

An Abbreviated History of Anabolic Steroids

Having been around for nearly 40 years now, anabolic steroids are considered relatively old drugs. Unlike the more glamorous designer drugs produced of late, anabolic steroids are primarily derivatives of testosterone that act on the body's hormonal axis. In the 40's, injectable testosterone was manufactured primarily for the treatment of people suffering from severe malnutrition, mainly POW's. In the early 50's, scientists became convinced that testosterone was responsible for masculine characteristics in men. At around that time, athletes in the eastern world were already using anabolic injections in an effort to increase their strength. As Russian athletes crushed weight lifting records with surprising regularity some members of the medical community became convinced that the use of anabolic steroids were responsible. Since that time, as fitness in general and bodybuilding in particular "came out of the closet" in the 70's and became an accepted pastime of the mainstream, anabolic steroid usage has become increasingly prevalent (6 & 60). Today, of all recreational drugs used by the general population, anabolic steroids are by far the most common. Steroid abuse is the fastest-growing form of drug abuse in the U.S. The U.S. Food and Drug Administration estimates nationwide that there are 500,000 heroin and 500,000 crack cocaine abusers. Some recent estimates suggest that in excess of 4 million athletes have used anabolic steroids for physique or performance enhancement in the United States.

The Four Primary Benefits to Bodybuilders from Anabolic Steroids

Anabolic Steroids react on the body in four primary ways.

1. Anabolic steroids increase the deposition of protein as muscle or protein biosynthesis.
2. Anabolic steroids increase oxygenation of the blood
3. Anabolic steroids promote the retention of nitrogen -- and indication that protein is being converted to muscle.
4. Anabolic steroids prevent catabolism, or the naturally occurring breakdown of lean muscle tissue.

Anabolic steroids when combined with resistance training and a diet high in calories -- specifically protein, cause an increase in protein synthesis which in turn provides protein molecules used by the body to increase the size and strength of the skeletal muscle cell -- skeletal muscles being the major muscles of the body. The obvious goal of the bodybuilder is muscular hypertrophy or growth and anabolic steroids can accelerate this process. To maintain this hypertrophy, periodic stimulation (weight lifting) of the muscle is necessary. Without this stimulation, the protein synthesis process will reverse and the skeletal muscle will atrophy.

The cycle of protein in the body is constantly changing. The body is in a continual cycle of anabolism (muscle building) vs. catabolism (muscle breakdown). Anabolic steroids alter this cycle and prevent to a certain degree the catabolic phase and may actually bind to the cortisone receptors of cells preventing the highly catabolic hormone cortisol from binding to muscle cells and releasing protein. Methandrostenolone has a dramatic effect on cortisol; perhaps this is one reason for its tremendous efficacy. This cortisol binding inhibition, makes resistance training more effective as the muscle is now only growing. Reacting on the receptor sites of a muscle cell -- anabolic steroids promote nitrogen retention by the muscle. Nitrogen is a component of protein. When more nitrogen is retained than released, a muscle is said to be in a positive nitrogen balance state. A positive nitrogen balance equals muscle growth.

Anabolic steroids therapy in athletes increases the production of a nitrogenous compound called Creatine Phosphate (CP). CP promotes the storage of certain enzymes in a muscle cell including ATP (Adenosine Triphosphate). ATP is used by the body for muscle contractions. This enzyme breaks down to ADP (Adenosine Diphosphate) which is the fuel used to make muscles move. As more Creatine Phosphate is available, the conversion of ATP to ADP is enhanced meaning that strength will increase. Incidentally, this is the effect that is thought to be facilitated through creatine monohydrate supplementation -- making this a supplement of significant interest as of late. Oxandrolone, an oral anabolic steroid, is thought to significantly increase CP production by the muscle. This is likely the reason many athletes find Anavar to increase strength even when mass may not increase (60).

Anabolic steroids lead to an increase in the body's actual blood volume. Two to three weeks into a steroid cycle, blood volume increases by 10% to 20%. Athletes who have used steroids, refer to this as the "steroid pump" or a condition that develops during resistance training whereby, a muscle develops a much larger, more vascular appearance. This "steroid pump" is actually a side effect of the increase in blood volume specifically the red blood cells -- the oxygen carrying component of blood. The increase leads to greater blood flow to the working muscles during training periods. Besides the obvious desirable appearance of an enlarged muscle, the muscle becomes stronger as well. Obviously, this increases training intensity and is a stimulus for new growth. The second benefit to athletes relates to oxygen efficiency with increased RBC (red blood cell) volume. This reported increase in blood volume is the major benefit of steroids to endurance athletes. After the steroid therapy is discontinued, extra plasma volume returns to the normal level, leaving behind an increased RBC count. This increased hemoglobin concentration can increase maximum aerobic capacity. A similar beneficial effect can be achieved through a process known as blood doping. Blood doping involves the reinfusion of blood into an athlete prior to athletic competition. An athlete's blood is removed, cooled to increase oxygenation, and then injected back into the athlete (6).

Steroids themselves, possess both anabolic and androgenic properties. Anabolic means the steroids will promote the building of tissue or muscle. Androgenic means that steroids will promote the secondary male sex characteristics. These characteristics are the ones that are primarily affected during adolescence. They include: growth of body hair, growth of facial hair, male pattern baldness, the deepening of the voice, increased production of oil on the skin by the sebaceous glands, development of the penis, sexual behavior, and maturation of the sperm. Primarily the androgenic effects of steroids are the ones that athletes do not want. We do not want the development of male pattern baldness, or increased body hair. The search has been on since the 1960's to develop a steroid that is 100% anabolic and 0% androgenic. Unfortunately, such a product has not been invented. Steroids range from highly anabolic / low androgenic to highly anabolic / highly androgenic to low anabolic / highly androgenic. The later type of steroids would certainly want to be avoided and lengthy descriptions of such steroids have largely been excluded from this report.

The other negative effect of anabolic steroids relates to steroid toxicity. Toxic steroids are primarily the oral ones and are subject to processing by the liver. This liver processing is harsh and is best avoided. When making the personal decision to use anabolic steroids, one would want to pay special attention to the better steroids which are low in androgenic properties and low in toxic properties. This consideration greatly reduces the side effects that could potentially be experienced on a steroid cycle.

RELEVANT VOCABULARY

ALPHA ALKYLATED 17: The addition of an alkyl substitute on the 17 carbon position, or a C-17 position, of the steroid molecule. This manipulation increase the life of an oral steroid in the body, but also makes orals highly toxic.

ANABOLIC: The promotion of anabolism or the actual building of tissues -- primarily muscle. An anabolic or muscle building effect is the most sought after effect from steroid use by athletes.

ANABOLIC STEROIDS: These are synthetic derivatives of testosterone; a naturally occurring hormone in the body which controls many functions. One such functions is the promotion of anabolism. Steroids mimic this natural occurring effect and can accelerate the rate. Once in the blood, anabolic steroids bind to androgen receptor sites. Steroids enter the cell and alter the function of that cell. After changes in DNA and RNA patterns, an increased rate of protein synthesis is observed. Improved conversion of protein to muscle happens concurrently with increased nitrogen retention or slightly thereafter. The retention of nitrogen indicates that muscle tissue is being deposited. Anabolic steroids inhibit the amount of cortisol -- a catabolic hormone -- from entering muscle tissue. Less cortisol also aids in muscle growth. Anabolic steroids are classified as anabolic and/or androgenic. The kind and quantity of androgen receptors found within an organ or tissue determine how it is effected by the anabolic or androgenic properties of a steroid. All anabolic steroids are both anabolic and androgenic. Elite Fitness would rate a steroid a perfect ten if it could be totally anabolic and not at all androgenic. As this is presently impossible, the highest rating we have given any steroid is a nine. The ideal steroid would only exert its

effect on muscles; however, steroids effect many other parts of the body as well. This is why dramatic gains in muscularity are often accompanied by dramatic side effects (6).

ADP (Adenosine Diphosphate): An important cellular metabolite involved with energy exchange within the cell. Chemical energy is conserved in a cell by the phosphorylation of ADP to ATP primarily in the mitochondria, as a high energy phosphate bond. ADP combined with CP forms ATP, the usable fuel for muscular contractions.

ANDROGENIC: This designation refers to the second classification of testosterone. In addition to muscle development, testosterone is responsible for male secondary sexual characteristics like body hair, deepening of the voice, development of the male sex organs and sex drive. A steroid's androgenic properties cause the majority of side effects. The androgenic quality is preferred by some who feel they benefit from the increased aggressiveness and rather fast strength increases associated with androgens. Glycogen retention of androgenic steroids is very pronounced. High androgenic steroids are often very high in anabolic properties as well. This type of steroid will give good size and strength gains, but the prolonged use of highly androgenic compounds result in serious side effects.

AROMATIZE: The reaction in the body where excess testosterone or androgens are converted to estrogen. Steroid users do not want this effect. Androgenic steroids are the ones that most often aromatize. Numerous side effects can occur, the most common being the development of breast tissue in men. Estrogen deposited in the mammary gland is called gynecomastia. Limiting the prolonged use of androgenic steroids and using only small dosages is the best way to prevent this effect. Dianabol, Anadrol, and Testosterones aromatize very easily.

ATP (Adenosine Triphosphate): This is an intermediate high energy compound which upon hydrolysis to ADP releases chemically useful energy. ATP is generated during catabolism and utilized during anabolism. ATP can be thought of as the actual fuel that makes muscles move. Oxygen and glucose contribute to the formation of ATP.

BLACK MARKET: The illegal distribution and sale of illicit drugs. A majority of athletes obtain steroids on the black market.

BLOCKING AGENT: A prescription medicines that can prevent the excretion of steroids from the kidneys into the urine. By temporarily blocking this excretion many athletes can test negative for anabolic steroids on a blood test while currently on a cycle. Popular blocking agents have included: Probenecid, Carinamide, and Anturane. Most blocking agents are banned by committees who also ban anabolic steroids.

BUCCAL Sublingual: These steroids are made to be dissolved in the cheek or under the tongue.

CATABOLIC: The opposite of anabolic; catabolic means the breakdown of tissue. Catabolism often occurs in disease, infection, and immobilization. Intense weight training also induces catabolism. A negative nitrogen balance most often accompanies catabolic states. Anabolic steroids reverse this state and actually function optimally on muscles which are in this condition. Therefore, the intensity of a person's training can contribute to the effectiveness of an anabolic steroid.

COUNTERFEITS: Products which purport to be but which are not real pharmaceutical drugs.

CP (Creatine Phosphate): Creatine Phosphate is an inorganic phosphate molecule which binds with ADP to form ATP. Steroids potentially increase the availability or production of CP resulting in more available strength and endurance increasing ATP.

CYCLE: The time one is on steroids. Some simple cycles would function as follows:

Easy Diamond Cycle
Pump up the Dose Cycle
Decrease the Day Cycle

Example using a 10ml bottle (200mg/ml) of Testosterone Cypionate
Example using 10 bottle of 1 ml (200mg/ml) of Nandrolone Decanoate
Example using 8 redi-ject of Sostanon 250

Week 1. 200 mg
Week 1. 200 mg
Day 1 . 250 mg

Week 2. 250 mg
Week 2. 250 mg
Day 14. 250 mg

Week 3. 350 mg
Week 3. 300 mg
Day 24. 250 mg

Week 4. 400 mg
Week 4. 350 mg
Day 31. 250 mg

Week 5. 350 mg
Week 5. 400 mg
Day 38. 250 mg

Week 6. 250 mg
Week 6. 500 mg
Day 44. 250 mg

Week 7. 200 mg
Day 49. 250 mg

Day 54. 250 mg

DIHYDROTESTOSTERONE: The precursor of numerous steroids. The hormone occurs naturally in the body and is responsible for several androgenic effects including: facial hair, genetic balding and male reproductive organ development. DHT is important in the augmentation of skeletal muscle. Many endogenous and exogenous testosterone convert to DHT in the body. Common side effects of DHT are acne and accelerated balding.

DIURETIC: Any product that increases the body's excretion of urine. These range from herbal formulas to strong chemicals which drain the body of electrolytes and fluid. The primary clinical use is as a hypertension treatment. Bodybuilders use diuretics to remove subcutaneous water improving definition. This is effective for some bodybuilders but even often it leaves the athlete's muscles drawn and flat. Occasionally, too much potassium is depleted and muscle cramping is so severe that the bodybuilder cannot pose. Athletes also use diuretics to dilute drug test urine samples. Often the diuretics themselves are banned by most committees which ban steroids. Needing to make a certain weight class, athletes may use diuretics for rapid weight loss. Side effects are numerous and can include heart failure.

ENDOGENOUS: Naturally occurring in the body. Endogenous steroids are hormones which are a part of the body's natural day to day functions.

ERGOGENICS: The study of ergogenesis or muscle performance. Anabolic steroids are an ergogenic aid because they can enhance muscle performance.

ESTROGEN: The female sex hormone responsible for secondary sexual characteristics in females and found in small quantities in males.

EXOGENOUS: Originating outside the body. An injected synthetic steroid is an exogenous source of that hormone.

FAST PASS: A compound crossing from the stomach or intestines to the liver where it is either destroyed or enters blood stream. Oral steroids must undergo this process before entering the blood and binding to cells where they exert their functions. An oral steroid's first pass destroys a majority of the substance and is rough on the liver.

GC/MS: Gas chromatography and mass spectrometry. The most accurate analytical method for testing urine samples and for doing substance analysis. GC/MS is the superior method for analysis of steroids and urine because it detects extremely low levels of steroids and can differentiate one compound from another. A gas chromatograph (GC) isolates each individual component of a substance for analysis by the mass spectrometer (MS).

GYNECOMASTIA Abnormally large mammary glands in males. BITCH TITS are a popular gym term for Gynecomastia.

HYPERPLASIA: An increase in the number of cells. The majority of muscle bulk that comes from using anabolic steroids occurs from muscular hypertrophy. Some studies suggest that anabolic steroids can possibly cause hyperplasia or an increase in the actual number of muscle cells. Many feel that Growth Hormone causes hyperplasia which enables more muscular development than using anabolic steroids alone. This theory is controversial.

HYPERTROPHY: The goal of nearly all weight training athletes -- the increase in size or mass of a muscle.

LIPOLYSIS: The release of stored fat for use as fuel by the body.

METABOLISM: The phenomenon of catabolism -- the breaking down of substances in the body and anabolism -- the building of substances in the body. The entire process of substances entering the body, converting to particular compounds, and the rate of utilization. The rate is hormonally controlled.

NITROGEN: An important constituent of many cells and what distinguishes protein from other substances.

NITROGEN BALANCE: The state in which the daily nitrogen intake of from proteins equals daily nitrogen excretion. A negative nitrogen balance occurs when excretion exceeds intake. A positive balance exists when nitrogen ingestion is greater than what is excreted. A positive nitrogen balance possibly indicates that muscle acquisition is occurring.

NORTESTOSTERONE 19: The precursor of numerous steroids. Steroidal derivatives exhibit minimal liver toxicity and related side effects, but easily detectable on drug tests even up to 12 months after administering the drug.

ORALS: Drugs that are intended to be swallowed and ingested through the gastrointestinal tract. Oral steroids are subject to first pass before they enter the system and then must go back through the liver before they are eliminated. They both rapidly enter and exit the system. Often, the entire dosage is eliminated in less than a day requiring multiple dosages to keep a constant level of the drug in the blood. Oral compounds are typically hard on the liver, especially the 17 alpha alkylated group. Some of these are Anadrol, Metandren, Dianabol, and Halotestin.

OVER-THE-COUNTER (OTC): Drugs legally available without a prescription.

PARENTERALS or INJECTABLES refer to liquid drugs which are taken by injection. This might be intravenous (into the vein), subcutaneous (under the skin), or intramuscular (in the muscle). Anabolic steroids require deep intramuscular injection. This usually requires a 1 to 1 1/2" needle, 21 to 25 gauge. The recommended injection site is the upper outer quadrant of the gluteal muscle.

PLATEAU: The point in a cycle where a steroid's effectiveness diminishes. This often occurs because of receptor down regulation. At this point steroid receptor sites are no longer recognizing the exogenous androgens -- they then are of no further benefit to the user. Plateaus can occur after as few as three weeks, but are more often reported after six weeks. Athletes try to overcome plateaus by increasing the dosage of the drug to keep it working. This is effective up to a certain point, but soon reaches potentially harmful dosages. Another common practice is to cycle the steroids in a stack-stagger pattern. In this type of cycle the user takes a number of different steroids, each for three to six weeks. Taken in short intervals, the receptor sites usually do not shut down. Other steroid users stop the drugs when they reach a plateau. Other users feel special arrays do not reach plateaus. An array is a stack of two or more steroids, or drugs.

RADIOIMMUNOASSAY: (RIA) One method used for anabolic steroid detection. This method is inadequate as it produces false positive and negative readings.

REBOUND: A condition many athletes experience after they discontinue a steroid cycle. During this rebound state the athlete often incurs his best strength and size gains. This may be due to an over production of testosterone by the testes upon the cessation of exogenous steroid use. HCG administration further enhances this effect.

RECEPTOR MAPPING: This is a technique used in attempt to determine a certain steroid's effects on a given individual. Each person reacts differently to dosages of different steroids. Mapping is done in an effort to individualize dosages so that one maximizes gains while minimizing side effects. Mapping starts with recording a number of aspects of a cycle. First, all the steroids taken must be carefully documented everyday. Graphs of weight and strength gains should be made up and filled in once a week. A thorough diary should be kept which reports any side effects like acne, water retention, gynecomastia, etc. Other variables should be monitored like energy levels, sex drive, and appetite. Usually these are recorded three times a week. During the cycle, the dosages should be steadily increased. If side effects are occurring concurrently with strength and weight gains, the dosage should be lowered to see if gains outweigh the adverse reactions. All the variable readings can give clues as to whether the drugs are working. If effective, energy levels, appetite, and sex drive should be high. This method has some flaws. It does not account for variables such as a sufficient off cycle, improper training, and/or deficient nutrition. Mapping one drug at a time is more accurate than trying to map a stack of drugs (6).

RISK TO BENEFIT FACTOR: Using prudent restraint in administering anabolic steroids. The risk to benefit factor analyzes the increase in benefit derived from using additional quantities of a drug or by additional items to the anabolic steroid stack. The risk to benefit factor should favor the benefit to justify the additional use of anabolic steroids (6).

SIDE EFFECTS: The unwanted effects or adverse reactions from using drugs read anabolic steroids.

STACKING: Taking two or more anabolic steroids at the same time. Athletes will saturate multiple steroid receptor populations more effectively than if only one steroid was used. Thus lower dosages are necessary reducing side effects for the user. Users claim that certain drugs are synergistic or work better together. Popular stacks are Deca and Dianabol, Anavar and Testosterone, and Winstrol and Parabolan. Other drugs are "pre-stacked" by the manufacturer. Some of these are: Primoteston, Sustanon, Drive, and Spectriol. **ARRAY:** This is a term that some athletes refer to as a stack. This might refer to a number of steroid preparations being used in a select pattern and/or stagger combination.

STAGGER The use of several steroids in an overlapping pattern with or without variable dosage.

SUPPLEMENT: A non-food preparation, pill, powder or liquid, containing nutrients.

SYNERGISTIC: The cooperative enhancement when one drug multiplies the effectiveness of another.

VIRILIZE: The attainment of the characteristics of a mature male. Women who use steroids risk virilizing effects -- caused by the androgens which exist in all anabolic steroids to a varying degree.

The Ten Most Common Errors Made with Anabolic Steroids and Performance Enhancement Drugs:

Any bodybuilder who is considering the use of steroids should make certain to obtain as much information as possible. It is crucial to avoid the most dangerous brands of steroids and equally important to be familiar with the safe steroid brands that cut, define, and tone and those better used to increase muscle mass. One should also learn how to properly dose anabolics and the various advantages and disadvantages of oral steroids versus injectable steroids. Finally, it is important to understand how to stack and cycle multiple anabolics for short time periods in order to reduce dangerous side effects and to promote permanent gains in lean muscle tissue. Of the many mistakes athletes often make with anabolic steroids, W. N. Philips cites the following as the ten most common.

1. **EXCESSIVE DOSAGES:** When it comes to steroids, using exceedingly high dosages has become a major problem amongst users. Not only is this dangerous, but steroids in high dosages have been proven to be ineffective. Mega dosages put undue stress on the liver and kidneys that can lead to damage or even disease of those organs. Aromatizing effects, or the conversion of steroids to estrogen, and the suppression of the body's own testosterone production are also greatest when high dosages are used. The body can only use a certain amount of a synthetic steroid. It will not recognize any excessive dosage, and will most often convert it to estrogen. Once a steroid receptor site, i.e., a skeletal muscle or secondary sexual characteristic receptor such as facial hair is "full," any corresponding increase in the dose of the steroid will have no further positive benefit. This amount where the receptor site is fully activated occurs at a surprisingly low dosage. Reports that many successful bodybuilders, strength athletes, and top-models had to take up to 50 tabs of D-Bol a day, and 2000 mg of Testosterone a week to develop their superior physique are blatantly untrue (6).

2. **USING INSUFFICIENT DOSAGES:** The converse of the excessive dosage concern is the insufficient dosage problem. If a sufficient dose of a steroid is not used for a precise period of time then the effects of the drug will likely be negligible. Often, this is why many bodybuilders "stack" several different brands of steroids at once. By using multiple brands of steroids at the same time, athletes can use lower dosages of each brand and consequently prevent receptor downgrading and harmful side effects. The other important consideration when using steroids is the "cycle." This is the period of time that the athlete takes a steroid. Most cycles usually last for about eight to twelve weeks and then the athlete begins an "off-cycle" for usually around six months. Cycling in this pattern allows athletes to take relatively high dosages of steroids safely and then end the drug use before any damage to the body is done.

3. **THE NEVER ENDING CYCLE:** In many cases, an athlete will simply ignore warnings that steroids should not be utilized for more than 8 to 12 weeks without an off-cycle period. Numerous athletes will use steroids for up to 6 months, a year, or even longer. This practice is dangerous and ineffective as well. The prolonged use of steroids puts stress on the liver and kidneys. This damage often shows no symptoms, until substantial impairment has taken place. Health problems such as cholestatic hepatitis, jaundice, hepatic neoplasms, and kidney failure have arisen in patients who took anabolic and androgenic steroids for prolonged periods of time. Furthermore, steroids often fail to exhibit any anabolic effects after as little as 6 weeks. The positive nitrogen balance that is a primary benefit of using steroids, diminishes after 6 to 8 weeks. The continued use of the steroids is therefore ineffective (6).

4. **CYCLING THE STEROIDS IMPROPERLY:** Steroids are most effective and are safest when used in a proper cycle and stack. Research shows that for the initial positive nitrogen balance that steroids induce to continue, increasing the dosage is necessary. This positive nitrogen balance begins to return to normal after 6 to 8 weeks of a particular steroid's use. These facts indicate that a cycle should involve using steroids on an incline dose pattern and that switching to different steroids should occur at no more than 8 weeks. Research also demonstrates that side effects, strength losses, and weight losses suffered when steroid therapy is abandoned, can be minimized through a proper decline cycle. This involves gradual tapering off the drugs at the end of a cycle in order to permit the body's natural testosterone production to resume. A diamond pattern cycle best fits the facts presented here. Elite Fitness Research maintains a database providing examples of popular, safe and effective steroid stacks and cycles. A lengthy off cycle

should always follow an on cycle. Many steroid users take only a few weeks off the steroids before recommencing the program. Evidence supports a much longer off cycle period that allows the body to return to normal and recover from any stress suffered during the cycle. Steroid receptor sites are much more active when the user has been off the drugs for an extended time period. Most report that the longer they remain off the drugs, the more effective they are when they go back to them (6).

5. IMPROPER DIET: Ignoring the importance of nutrition can completely impair the positive effects of steroids, and increase the negative side effects. Anabolic steroids are most effective when used with a high calorie, high protein diet. In fact, only one steroid has exhibited any anabolic effects on a limited calorie diet. An optimum diet when on steroids involves consuming 6,000 to 9,000 calories per day. Most people regularly consume 2,500 to 3,000 calories per day. Second only to intense training, a high calorie diet is the most important factor to be in place for significant muscle gains. In other words, a thirty pound gain in lean muscle mass has to come from somewhere. Of those calories, 60% should be complex carbs, 20% complete protein, and 20 % fat. Supplements may be needed to meet this goal. Many athletes do not eat enough food for steroids to work, or if they do intake enough calories, often too much fat is consumed. Anabolic steroid themselves can increase cholesterol levels and blood pressure. This may lead to heart disease. An athlete should always attempt to keep excessive fat out of the diet to offset any additional threat of heart disease that steroids present. Concurrently, make sure protein and overall caloric consumption is high enough to fuel the full effectiveness of the steroids (58).

6. POOR TRAINING TECHNIQUE: Weight training must be intense to create a state of catabolism in the body. Steroids are most effective in this situation. An athlete can attain this state with regular, intense workouts. Remember, weight training is the stimulus that allows skeletal muscle cells to use the anabolic steroids. Without this proper catalyst, anabolic steroids will not exert the desired effect. Workouts should be progressive and involve maximum weights. The most important concept to understand, and one of the few on which almost all experts in the bodybuilding community agree, is the idea of training to muscular failure. In other words, if when performing a set, you are able to complete the ten repetitions without aid from a partner, then the set was performed with a weight that was too light. Although the experts often disagree on the most effective work-out duration, with opinions ranging from twenty minutes to three hours, almost all agree that the last two or three reps of each set should not be possible entirely by oneself. This holds true for both steroid users and non-users alike (6).

7. FAILURE TO OBTAIN REGULAR BLOOD TESTS: A simple blood profile can be of incredible benefit to steroid user. An initial plasma screen should be performed to establish a reference range, and to determine any existing problems that might preclude the use of steroids. If the initial test shows no contraindications, then another should be done about 6 weeks into the cycle to check for further abnormalities. During the initial weeks of a cycle, many readings often become elevated only to return to normal several weeks later. Blood screening every six weeks should bypass this normal fluctuation and give a more accurate interpretation. If this blood test shows elevated serum levels, it might justify ending the cycle to avoid serious damage. If this test checks out okay, another should be done a month after the cycle to indicate that the body is recovering from the steroid cycle. Finally, another blood test should be done before starting a new cycle. This test should confirm that all levels are back to normal before a new cycle commences. Hemoglobin testing can prevent many asymptotic side effects that do not surface until damage has been done. Unfortunately, only a fraction of steroid users ever gets a blood test (6).

8. USING THE WRONG STEROIDS: Many athletes increase the risk of side effects by using the wrong steroids. The use of androgenic steroids is frequently linked to serious side effects. Androgenic steroids exert their effects primarily on the secondary sexual characteristics of the body like the deepening of the voice, development of the sex organs, and male pattern baldness. If one feels he must use these items; they should never be used for more than 4 to 6 weeks at a time. Also, when stacking, it is not wise to use more than one highly androgenic product at a time. Injectable steroids are a better choice in most cases as they not only provide a steady influx of the drug to the blood stream, but they are not subject to first pass, a stage where an oral steroid goes through the liver losing a great deal of its potency, and causing a great deal of stress to the

organ. Most athletes still are not aware that they can achieve great gains on low androgenic and high anabolic or muscle development inducing steroids, while avoiding many hazards. Therefore, it is safe to conclude that a thorough knowledge of which steroids are highly anabolic versus those that are primarily androgenic is of paramount importance. The company Elite Fitness Research maintains a database of the various brands of steroids and how they exert their effects on the body (6).

9. USING COUNTERFEITS: This heading speaks for itself. Phony steroids are being used by thousands of unsuspecting athletes. Some of these bad steroids contain impurities that cause infections or even poisoning at the extreme. Other fake steroids, contain only inert ingredients, which will of course result in no muscle gains. Other counterfeits carry the name of one drug, but actually contain another. This can result in the athlete using a drug he or she does not desire to be using. For example, a recent test of a product called Liquid Anavar was found to contain a mixture of testosterone. Many athletes used this drug for contest preparation thinking it would help enhance definition, when in fact the drug was making them retain water and look bloated. This item was also used by several women who were told it was a very low androgenic steroid, when in fact the testosterone which the 'Anavar' contained was exactly what they wanted to avoid. Fake steroids do pose a serious threat to athletes. It is increasingly difficult to spot counterfeits; however, with a good eye and an accurate description of the real version's packaging it is possible (6).

10. FAILURE TO OBTAIN ADEQUATE INFORMATION: This last mistake is almost self explanatory. Information is the key to successful and safe steroid usage. One point bears additional consideration. The information should come from a reliable and knowledgeable source. Many athletes begin a cycle with only the advice of a black-market steroid drug dealer. Another source of very poor information is conventional gym wisdom. Often this information is based solely on anecdote with no regard to psychological fact. Finally, it is important to realize that the knowledge of steroids in the medical community varies widely from doctor to doctor. Some have excellent information and some have either very little knowledge of the subject or significantly outdated views. Make certain to ask anyone who has an opinion on the subject where he or she got the facts and do not be afraid to question those sources.

Of the athletes that I have interviewed that tried a cycle of legitimate anabolic steroids, those that did not make good gains in lean body mass most often have not paid special consideration to points 2, 5, and 6. For anabolic steroids to be effective, they must be used in relatively high dosages, on a high calorie diet, and an athlete must train intensely.

FEDERAL LAWS

The Anabolic Steroids Control Act of 1990 is the principal mode of federal law relating to anabolic steroids. Pursuant to the statute, as well as extant federal criminal laws, several anabolic steroids are now classified as Schedule III controlled substances, and (among other things) their possession and distribution may be criminalized. See Title 21 of the United States Code, section 802(41)(A), 841(a)(1), 333(e).

Also, you may wish to look at the following articles, all of which are prescriptive but which set forth, in varying degrees of usefulness, the current law:

¥ Jeffrey A. Black, "The Anabolic Steroids Control Act of 1990: A Need for Change," 97 Dickinson Law Review 131 (1992).

¥ John Burge, "Legalize and Regulate: A Prescription for Reforming Anabolic Steroid Legislation," 15 Loyola of L.A. Entertainment Law Journal 33 (1994).

¥ George Fan, "Anabolic Steroid and Human Growth Hormone Abuse: Creating an Effective and Equitable Ergogenic Drug Policy," 1994 Univ. of Chicago Legal Forum 439 (1994).

In 1990, Congress passed the Anabolic Steroids Control Act (Public Law No. 101-647, 104 Statutes-at-Large 4851), which in turn amended the Food, Drug, and Cosmetic Act, found at Title 21 of the United States Code (21 U.S.C.).

¥ 21 U.S.C. section 812(c) places "anabolic steroids" within the classification of Schedule III

controlled substances.

§ 21 U.S.C. section 802(41)(A)-(B) sets forth the definition of "anabolic steroids." That section provides:

(41)(A) The term "anabolic steroid" means any drug or hormonal substance, chemically and pharmacologically related to testosterone (other than estrogens, progestins, and corticosteroids) that promotes muscle growth, and includes --

- (i) boldenone,
 - (xv) methenolone,
- (ii) chlorotestosterone,
 - (xvi) methyltestosterone,
- (iii) clostebol,
 - (xvii) mibolerone,
- (iv) dehydrochlormethyltestosterone,
 - (xviii) nandrolone,
- (v) dihydrotestosterone,
 - (xix) norethandrolone,
- (vi) drostanolone,
 - (xx) oxandrolone,
- (vii) ethylestrenol,
 - (xxi) oxymesterone,
- (viii) fluoxymesterone,
 - (xxii) oxymetholone,
- (ix) formebolone,
 - (xxiii) stanolone,
- (x) mesterolone,
 - (xxiv) stanozolol,
- (xi) methandienone,
 - (xxv) testolactone,
- (xii) methandranone,
 - (xxvi) testosterone,
- (xiii) methandriol,
 - (xxvii) trenbolone, and
- (xiv) methandrostenolone,
 - (xxviii) any salt, ester, or isomer of a drug or substance described or listed in this paragraph, if that salt, ester, or isomer promotes muscle growth.

(41)(B)(i) Except as provided in clause (ii), such term does not include an anabolic steroid which is expressly intended for administration through implants to cattle or other non-human species and which has been approved by the Secretary of Health and Human Services for such administration.

(ii) If any person prescribes, dispenses, or distributes such steroid for human use, such person shall be considered to have prescribed, dispensed, or distributed an anabolic steroid within the meaning of subparagraph (A).

21 U.S.C. section 841(a)(1) sets forth the actual prohibition. That section provides:

- (a) Unlawful acts

Except as authorized by this subchapter, it shall be unlawful for any person knowingly or intentionally --

¥ (1) to manufacture, distribute, or dispense, or possess with intent to manufacture, distribute, or dispense, a controlled substance;

¥ (2) to create, distribute, or dispense, or possess with intent to distribute or dispense, a counterfeit substance.

21 U.S.C. section 846 also prohibits attempt and conspiracy. That section provides:

¥ Any person who attempts or conspires to commit any offense defined in this subchapter shall be subject to the same penalties as those prescribed for the offense, the commission of which was the object of the attempt or conspiracy.

21 U.S.C. section 841(b) (1) (D) sets forth (in part) the punishment. That section provides:

(D) . . . In the case of any controlled substance in schedule III, such person shall, except as provided in paragraphs (4) and (5) of this subsection, be sentenced to a term of imprisonment of not more than 5 years, a fine not to exceed the greater of that authorized in accordance with the provisions of Title 18, or \$250,000 if the defendant is an individual or \$1,000,000 if the defendant is other than an individual, or both. If any person commits such a violation after a prior conviction for a felony drug offense has become final, such person shall be sentenced to a term of imprisonment of not more than 10 years, a fine not to exceed the greater of twice that authorized in accordance with the provisions of Title 18, or \$500,000 if the defendant is an individual or \$2,000,000 if the defendant is other than an individual, or both. Any sentence imposing a term of imprisonment under this paragraph shall, in the absence of such a prior conviction, impose a term of supervised release of at least 2 years in addition to such term of imprisonment and shall, if there was such a prior conviction, impose a term of supervised release of at least 4 years in addition to such term of imprisonment.

Note also that the distribution of human growth hormones is prohibited as well under 21 U.S.C. section 333(e). That section provides:

(e) Prohibited distribution of human growth hormones

1. Except as provided in paragraph (2), whoever knowingly distributes, or possesses with intent to distribute, human growth hormone for any use in humans other than the treatment of a disease or other recognized medical condition, where such use has been authorized by the Secretary of Health and Human Services under section 355 of this title and pursuant to the order of a physician, is guilty of an offense punishable by not more than 5 years in prison, such fines as are authorized by Title 18, or both.

2. Whoever commits any offense set forth in paragraph (1) and such offense involves an individual under 18 years of age is punishable by not more than 10 years imprisonment, such fines as are authorized by Title 18, or both.

3. Any conviction for a violation of paragraphs (1) and (2) of this subsection shall be considered a felony violation of the Controlled Substances Act [21 U.S.C. sections 801 et seq.] for the purposes of forfeiture under section 413 of such Act [21 U.S.C. section 853].

4. As used in this subsection the term "human growth hormone" means somatrem, somatropin, or an analogue of either of them.

5. The Drug Enforcement Administration is authorized to investigate offenses punishable by this subsection.

Finally, note that if you're in the military, you are generally subject to military law, which has an independent prohibition on anabolic steroids that incorporate various provisions of the U.S. Code.

There are a number of steps that should be understood in order to complete a safe and proper

Intramuscular injection.

First off, before handling any needles or vials, the user should take a thorough shower.

Next, an alcohol swab should be used to clean the injection site and another alcohol swab should be used to clean the rubber stopper on top of the vial which will be drawn from.

Then, take a brand new syringe out of its wrapper, remove its plastic top, draw about 2 ccs of air into it and insert it into the vial. Inject this air into the vial; this creates pressure within the vial and makes it easier to draw out oil based preparations.

Then, turn the vial upside-down and slowly draw out the oil until you've overdrawn at least 1/4 cc. For example, if someone was going to take a shot of 1 cc, they should pull out approximately 1 1/4 to 1 1/2 ccs of liquid, then tap the side of the case to help get the air bubbles that were drawn into the syringe to come to the top. At that point, the excess 1/4 to 1/2 cc could be injected back into the vial and the needle removed.

Then, hold the syringe needle-side-up and continue to tap it to encourage all the air bubbles to come to the top of the syringe. Now, take another clean syringe, remove it from its sterile package and unscrew the needle from the syringe. Exchange the brand new needle for the one that has just been injected into the stopper. By using two needles for every injection, you can take advantage of using the full sharpness of the pin. The needle does suffer some dulling when it is pushed through the firm rubber stopper on a vial. It is important not to touch this needle before the injection. It should not come into contact with a counter top, your fingers, nor should it be cleaned with alcohol. This needle is sterile and should not be touched.

At this point, once again swab the injection site with alcohol, then press the stopper of the syringe holding it needle-side-up, until the slight air bubbles that are at the top are pressed out. Once a bead of oil has appeared at the top of the needle, allow it run down the surface of the needle which provides lubrication.

At this time, take the syringe and hold it like a dart. Use the other hand to stretch the skin at the injection site and simply push the sharp clean needle in. After inserting it deep into the muscle, pull back on the stopper for a few seconds to make sure it does not fill up with blood which would indicate that the needle had been injected into a blood vessel. Providing there is no blood present in the syringe, slowly press the stopper down until all the oil is injected.

Then, quickly pull the needle out and take another alcohol swab and press firmly on the injection site. This will minimize bleeding, if there is any, and by firmly pressing on the injection site and slightly massaging it, some of the soreness may be eliminated. It is important that the liquid is not injected too quickly as this causes more pain at the site during the injection and in the proceeding days.

After this procedure has been completed, return the plastic caps to shield the needles and make sure they are discarded properly. To avoid discomfort and excessive scar tissue at the injection site, it is not wise to inject more than 2 ccs of solution per shot. It is also not prudent to use the same injection site more than twice a week (once a week is preferred)

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WHERE TO INJECT

All oil based and water based anabolic steroids should be taken intramuscularly. This means the shot must penetrate the skin and subcutaneous tissue to enter the muscle itself. Intramuscular injections are used when prompt absorption is desired, when larger doses are needed than can be given cutaneously or when a drug is too irritating to be given subcutaneously. The common sites for intramuscular injections include the buttock, lateral side of the thigh, and the deltoid region of the arm. Muscles in these areas, especially the gluteal muscles in the buttock, are fairly thick. Because of the large number of muscle fibers and extensive fascia, (fascia is a type of connective tissue that surrounds and separates muscles) the drug has a large surface area for absorption. Absorption is further promoted by the extensive blood supply to muscles. Ideally, intramuscular injections should be given deep within the muscle and away from major nerves and blood vessels. The best site for steroid injections is in the gluteus medius muscle which is located in the upper outer quadrant of the buttock. The iliac crest serves as a landmark for this quadrant. The spot for an injection in an adult is usually to 7 1/2 centimeters (2 to 3 inches) below the iliac crest. The iliac crest is the top of the pelvic girdle on the posterior (back) side. You can find the iliac crest by feeling the uppermost bony area above each gluteal muscle. The upper outer quadrant is chosen because the muscle in this area is quite thick and has few nerves. The probability of injecting the drug into a blood vessel is remote in this area. Injecting here reduces the chance of injury to the sciatic nerve which runs through the lower and middle area of the buttock. It controls the posterior of each thigh and the entire leg from the knee down. If an injection is too close to this nerve or actually hits it, extreme pain and temporary paralysis can be felt in these areas. This is especially undesirable and warrants staying as far away from this area as possible.

If the gluteal region cannot be injected for some reason, the second choice would be the lateral portion of the thigh. Usually, intramuscular injections in the thigh are only indicated for infants and children. The vastus lateralis muscle is the only area of the thigh that should be injected intramuscularly. This site is determined by using the knee and the greater trochanter of the femur as landmarks. The greater trochanter is the bony area that you can feel where the femur joins the pelvic girdle. The mid portion of the muscle is located by measuring the handbreadth above the knee and the handbreadth below the greater trochanter. Injecting into the front of the thigh or inside of the thigh is extremely unwise. These areas contain nerves as well as a number of blood vessels.

WHAT TO USE FOR INJECTIONS

It is important to choose the proper syringe for the administration of injectable anabolic steroids. The principle components of a syringe include a cylindrical barrel to one end of which a hollow needle is attached, and a close fitting plunger. The most acceptable syringe for injecting anabolic steroids is a 22 gauge 1 1/2" or 23 gauge 1" apparatus with a 3 cc case. This length allows for penetration to reach deep inside the muscle tissue. Shorter needles, 5/8" or 1/2" are usually not sufficient for intramuscular injections and occasionally leave a portion of the injection in a subcutaneous area which will cause a swell between the skin and muscle as well as impaired absorption. The gauge size of a syringe represents the needle's diameter. The lower the gauge number, the wider it is. A 27 gauge needle is very thin. An 18 gauge is quite wide; it is often referred to as a cannon. The 22 and 23 gauge needles are not so large that they are difficult to insert, yet are large enough for solutions to easily be propelled through them. The use of insulin needles is not acceptable; they are simply too small. Usually, insulin pins are 25 to 27 gauge and only a 1/2" long with a 1 cc case.

A summary of the High-Fat (or Anabolic) Diet

The following is a summary of "The Anabolic Diet" by Dr. Mauro Di Pasquale, together with some additional info on low carb foods, as the list in the book is small.

Before you start on this diet. Get a complete physical, including blood work. Among other things, this will give you a baseline Cholesterol level. This diet is not recommended for children or pregnant women. This diet is controversial, use at your own risk.

Problems with low-fat diets

Low fat sends the body into starvation mode, it tries to hold on to fat, burns muscle instead. When carbohydrate stores are exhausted, it will burn protein first before switching to fat.

Carbohydrates can increase serotonin levels and cause sleepiness. Insulin swings can provoke mood swings. High insulin levels increase fat storage which can cause bloating, and water retention. Often, protein supplements are needed for the bodybuilder. Low-fat foods are often much more expensive than the conventional version, and contain more "chemistry" i.e. are highly processed.

How the high-fat diet works:

During the week (Monday - Friday), you eat (by calories) about 55..60% fat, 30..35% protein, and no more than 30g of carbohydrates.

The plentiful supply of fat causes a metabolic shift from primarily burning carbs to primarily burning fats. Insulin levels remains low (which increases GH release). Increased dietary fat is also linked to increased testosterone levels.

Despite popular belief, the human body can run pretty well without carbs (otherwise Eskimos wouldn't be doing too well).

During the weekend (Saturday - Sunday, about 24 to 48 hours), you eat a high carb, medium fat (30..40%), low protein (10..15%) diet. This causes an insulin spike. While this can increase fat deposits, it moves more nutrients into your muscles, and has an anabolic effect. The important thing is to switch back to the high fat / low carb mode before you put on too much fat.

What are the benefits ?

- ¥ Increased lean body mass without the use of illegal substances.
- ¥ Maximize the effects of your own hormones.
- ¥ Reduced cortisol levels resulting in reduced catabolism.
- ¥ Increased energy level compared to low-fat diets.
- ¥ Decrease body fat without increasing lean mass, e.g. lose 90% fat, 10% muscle instead of 60% fat / 40% muscle on most other diets.
- ¥ Burning fat is less efficient -> increased metabolic rate.
- ¥ Plentiful supply of protein.

What about Cholesterol ?

If you keep your fat intake somewhat balanced, i.e. not exclusively saturated fats, you should have no problem. For example, eggs tend to increase your HDL level (good Cholesterol). Your actual mileage may vary - test your Cholesterol level before you start.

Getting started / tips

- ¥ Eat 5 to 6 meals daily.
- ¥ Eat something when you are hungry - don't wait.
- ¥ Keep sodium intake reasonable, some meat products can be pretty high.
- ¥ Drink enough water !
- ¥ This diet doesn't work if your fat intake goes too low (below about 40%).
- ¥ Start at around 3000 calories per day (or $18 \cdot bw$), then adjust up or down depending on your results and goals.
- ¥ You may need to use a fiber supplement (watch out for hidden carbs).
- ¥ First week can be rough - stick with it.
- ¥ Regularly check bodyfat percentage (for example using calipers).

⚠ During the weekend, be careful with foods with high glycemic index - they can wreak havoc on your insulin level, and switch you into fat storage mode more quickly.

Low carb foods

Try to get as much natural fiber as possible from salad or vegetables, while staying within the 30g carb target.

The usual suspects:

Beef, Chicken etc. Fish Cheese Butter Any kind of oil

Veggies:

Almonds (1oz = 5.6g), Asparagus, Avocado (1/2 = 6g), Broccoli, Cauliflower, Eggplant, Green beans, Lettuce, Mushrooms, Olives, Peanuts (1oz = 6g), Red / Green peppers, Spinach, Sprouts, Tofu, soy milk, Zucchini

Condiments:

Caesar salad dressing, Oil and vinegar salad dressing, Mustard (e.g. Dijon), Pickles, Sour cream

For the sweet tooth:

Dole or Welch no sugar added fruit pops (6g each)

Sugar free Jell-O + whipped cream (within reason)

Caffeine can help burn fat (but only on a low carb / high fat diet). Ephedrine is questionable.

References

The anabolic diet Dr. Mauro Di Pasquale Optimum Training Systems 2945 S. Mooney Blvd. Visalia, CA 93277 (800)582-2083

The complete book of food counts Corinne T. Netzer Dell Publishing ISBN 0-440-21271-5 Supplements while on the anabolic diet

There are a bunch of supplements out there for the bodybuilder, a lot of junk and a few gleaming jewels. The problem anabolic dieters face is twofold. One problem resides in finding what exactly works, and what does not. The second problem begins when you first start the anabolic diet. You are creating an entirely different arena for which the supplements can or can not work. Some of it is simple. Obviously carb drinks are out of the question, so are most supplements like weight gainers and even some protein supplements which I will address later.

First let's address which supplements the anabolic dieter should stay away from.

1. Carb drinks, weight gainers with carbs, in fact anything with carbs in it that can be considered a supplement.

2. MCT oil. There has been quite a bit of debate as to whether an anabolic dieter can use this supplement. The answer is real simple, and although it has its place in a carb-based diet, it has ABSOLUTELY no place in a high fat diet. While having a protein-sparing effect on a diet high in carbohydrates, MCT's can play real havoc with the body on the high fat diet. Instead of using up the long chain fatty acids that make up most bodyfat, the body opts to use the MCT's. This results in a bypassing of the metabolic processes that the high fat diet sets up to burn its own fat. The decrease in fat to lean mass the diet seeks to deliver is thus lost. It should also be pointed out that the long chain fatty triglycerides used in the anabolic diet, have many advantages over MCT's. They have an EVEN GREATER protein-sparing effect than the MCT's used for energy. And, along with decreasing the production of bodyfat (which the MCT's also do) they increase the amount of existing body fat broken down and serve to greatly decrease body fat levels.

3. Vanadyl Sulphate. Vanadate (a salt of vanadic acid which is derived from vanadium) is an essential trace element in most body tissues of mammals but has an unknown function. However, both the vanadate and vanadyl forms of vanadium have been shown to stimulate possible insulin-like effects. Its effects have been reported to diminish the diabetic effect by either substituting for and replacing insulin or possibly enhancing the effects of the existing insulin in the body on diabetic rats. Oral vanadate, however, seems to have little effect on plasma glucose levels in non-diabetic rats. Another study done on rats found that despite the improvement of the rat's diabetic state, vanadate-treated rats did not gain more weight than the untreated rats, and in fact, in some studies, caused a DECREASE in bodyweight in control and diabetic rats due to decreased food intake. In real life, I have found that vanadyl sulfate seems to increase the "pump" from workouts and by some mechanism allows the pump to remain for some time after a workout. I also have noticed that it seems to increase "hardness" and in me, vascularity. The problem for anabolic dieters stems from the fact that it either works with insulin, or by itself acting like insulin. As you know, insulin on the 5 high fat days of the diet is chronically low, and glycogen levels are chronically elevated for very good reason. By taking the vanadyl sulfate during this time, I can assure you that it won't work for 2 reasons. Low insulin levels, and little or no carbohydrates in the diet to stimulate the insulin or the vanadyl sulfate. Therefore stay away from it on the high fat days. On the other hand, if you want to take it on your 2 carb-loading days, that is fine, and the vanadyl will work for you properly. But I still can't recommend it either way, from evidence of toxicity to the liver, and because further research is needed to substantiate any of the many claims made by the manufacturers.

Supplements to take on the Anabolic Diet

1. Caffeine

Caffeine is found in coffee, tea, chocolate, and cola drinks, which includes both diet cola drinks (unless specified that it is caffeine-free) and regular cola drinks. It is also present in related plant products like the kola (kola nut (ref.1), and guarana (ref.2)). Concentrated dosages are available in liquid, tablet, and suppository form and in certain medications/herbal preparations.

A number of studies have shown that caffeine may favorably affect long-term endurance performance (ref.3) but research results concerning high intensity, short-term exercise have been a bit mixed (ref.4). Still, it seems very likely from an analysis of the biochemical effects of caffeine that it has a beneficial effect on short-term fatigue and muscle fiber in high intensity, short-term exercise like weightlifting (ref.5 & 6).

Caffeine is also of great use for people on the anabolic diet. It has lipolytic, fat-burning properties that result in an increase in free fatty acid concentration in blood BUT ONLY ON THE HIGH FAT DIET. A high carbohydrate diet negates the fat-burning effects of caffeine (ref.7).

I would recommend a good, strong cup of coffee 20 minutes or so before training as a practical, natural way to make full use of the caffeine.

2. The caffeine, ephedrine, and tyrosine stack

This can have a positive effect on workload capacity and anabolic drive as a thermogenic cocktail (ref.1). It can promote energy while decreasing possible muscle breakdown.

I have used it quite extensively and know for an absolute fact that the "stack" works far better on the anabolic diet than on a regular carb-based diet. First we know from the reference above, that carbs can negate the effect of caffeine, but on the anabolic diet we have an inherent need for free fatty acids for energy, and caffeine will increase these levels in the blood and thus will improve both workload capacity, fat burning capabilities, and spare muscle, but only on the anabolic diet will the effects of the caffeine in the stack be realized to its full potential. This is not to say that if you are on a carb-based diet and use the stack that it won't work, because it will. What I am saying is that to get the most bang for your buck you have got to be on the anabolic diet -- period.

As far as ephedrine is concerned, it is a drug. And what comes with all drugs is a note of caution. If you use the stack, make sure that you use it correctly, don't remain on it for extended periods of time, and make sure that you "can" take it. What I mean is this. If you have a

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heart condition, high blood pressure, etc. this is not going to be something to play around with so don't! On the other hand, it works VERY WELL, and if you can take it, and want an overall more intense workout with energy to spare + increased fat burning capabilities by all means take it. But do so at your own risk. Ephedrine may be banned from over-the-counter sale by the FDA. If it is, ephedrine can be found in its herbal form under the name ma huang.

3. Creatine Monohydrate

Creatine Monohydrate is obtained from food (especially red meat -- 2 lbs. of steak has about 4 grams of creatine) and is also formed in the liver from the amino acids arginine, glycine and methionine. Creatine is then taken up by skeletal muscle where it forms phosphocreatine, the high energy phosphate compound.

Phosphocreatine serves as a backup source of energy for ATP, the immediate source of energy for muscular contraction. The amount of phosphocreatine in skeletal muscle partially determines the length of time that maximum muscle work can be done. Once the phosphocreatine is gone, ATP must be regenerated through the metabolism of substrates such as glycogen, glucose, fatty acids, ketones, and amino acids.

Recent research has shown that oral creatine supplements not only increase creatine content in the muscle (the increase is greatest in exercised muscles) (ref.1), but delays fatigue (ref.2), improves recovery (by increasing the rate of phosphocreatine resynthesis in muscle) (ref.3), and increases muscle torque during repeated bouts of maximal voluntary exercise (ref.4). Other studies have shown that oral creatine supplements increases both power output and the total amount of short term work (ref.5). Creatine may also independently result in increased body mass (ref.6), although much of this increase seen in the first few weeks may be due to increased water retention.

There is some conflicting data out there (ref.7) and I agree that more research need to be done, but it appears that the stuff works quite well.

The literature cites the dosages as: 5 to 10 grams of CM on an empty stomach 4 or 5 times a day, depending on bodyweight, as a loading phase, and then use 5 grams 2-3 times a day for maintenance.

Dr. Mauro Di Pasquale has found the dosages higher than those listed in the studies to work better. Here is what he says:

Use 2 grams per 10 lbs. pounds of bodyweight for five days and then 1 gram per 10 lbs. of bodyweight from then on for anyone weighing under 200 lbs. gives the best results.

Anyone over 200 lbs. should use: 40 grams per day, for five days, followed by a maintenance dose of 20 grams per day.

Optimal Training with the Anabolic Diet

Vince Gironda should be given credit for introducing the ideas of a high fat/ high protein/ low carb diet to get ripped as well as the value of brief intense workouts. (1 & 49)

High Intensity Interval Training or HIIT:

The basis premise is that the long and slow school of aerobics for fat-burning is now outdated. Shawn Phillips of Muscle Media 2000 claims the way to more fat-burning success is interval training done on a track, a bike, or stairs. It all starts with a basic four minute program that consists of 60 seconds at about 50% max. effort, then 30 seconds of max. or near max., 60 seconds at 50%, 30 seconds all out, then the 60 second phase again. Every 3rd workout you are to add one 30 second 'sprint' phase and one 30 second 'cool down' phase (42).

To get cut there is nothing else like a good diet. High reps and less weight is a myth as is spot reducing. Aerobics are good, however, too much will burn muscle. A good diet and moderate/light aerobics will work to get your body fat to less than 10%.

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Optimal Training for Muscle Growth

Intensity has been identified as the single most crucial factor to success in your training. Intensity can be defined as the percent of your momentary ability to perform an exercise.

Intensity has nothing to do with how much resistance you are using, nor what percent of your 1 repetition maximum is for a chosen exercise. It refers to the DEGREE OF DIFFICULTY that you experience during the exercise. The specific intensity required to produce optimal gains in strength is unknown at this point. However, if you are a healthy person and perform an exercise to the point of MOMENTARY MUSCULAR FAILURE (100% intensity), you can be assured that you have attained a level of intensity that will stimulate growth and strength (34& 35).

What is "HIT"?

The acronym "HIT" stands for HIGH INTENSITY TRAINING. HIT simply means organizing your workouts so that they are:

1. HARD - as hard as possible IN GOOD FORM.
2. BRIEF - 1-3 sets of a few basic exercises performed in an hour or less.
3. INFREQUENT - No more than three times per week, often times two, or even one.
4. SAFE - HIT is meant to be extremely productive in terms of size/strength gains AND also has a built-in safety component. One of the fundamental goals of strength training is to act as INJURY PREVENTATIVE

HIT is a disciplined style of training which is based on the two universally known factors affecting muscular growth - OVERLOAD and PROGRESSION.

The reps should be done in a controlled fashion so tension is placed on the muscles. Some use a 2 second count for the concentric (lifting) phase while others use a 20 second count. The key is performing QUALITY repetitions to a point of volitional fatigue.

One set IS productive, although some high intensity advocates sometimes choose to perform more than one set. Some people may require additional sets. As a general rule, with of course some exceptions, one set performed in a high intensity manner will provide all the stimulation you need.

ii) General Guidelines to HIT BRIEF, HARD work done INFREQUENTLY (34).

When you're in the gym you want to focus your energies on only performing work that is productive, i.e., growth producing. In good form, you push yourself as far as you can go on every set. Now, by training this way you simply CANNOT do the marathon 2-3 hour workouts the "champs" say they do in the muscle mags.

HIT can be summed up in the following GENERAL guidelines. These guidelines - or ones very similar - have formed the basis of strength training programs for years:

1. TRAIN WITH A HIGH LEVEL OF INTENSITY.

Intensity is defined as "a percentage of momentary ability". In other words, intensity relates to the degree of "inroad" or muscular fatigue, made into muscle at any given instant. Research, going back almost 100 years now to studies done by German scientists, has conclusively shown that intensity is the SINGLE MOST IMPORTANT FACTOR in obtaining results from strength training.

It has been shown that the HARDER that you train (intensity), the GREATER the adaptive response. A high level of intensity is characterized by performing an exercise to the point of concentric (positive) MUSCULAR FAILURE, i.e., you've exhausted your muscles to the extent that the weight cannot be moved for any more repetitions. Failure to reach a desirable level of intensity - or muscular fatigue - will result in little or no gains in functional strength or muscular size as low intensity workouts do very little or nothing in the way of stimulating muscle size/strength. Evidence for this "threshold" is suggested in the literature by the OVERLOAD PRINCIPLE (Enoka, 1988; Fox and Mathews, 1981; Hochschuler, Cotler and Guyer, 1993; Jones, 1988; Wilmore 1982). Essentially this principle states that in order to increase muscular size and strength, a muscle must be stressed - or "overloaded" with a workload that is beyond its present capacity. Your intensity of effort must be great enough to exceed this threshold level so that a sufficient amount of muscular fatigue is produced.

2. FOLLOW THE "DOUBLE PROGRESSION" TECHNIQUE IN REGARDS TO REPETITIONS AND WEIGHT.

For a muscle to increase in size and strength it must be forced to do PROGRESSIVELY HARDER WORK. Your muscles must be overloaded with a workload that is increased steadily and systematically throughout the course of your program. This is often referred to as PROGRESSIVE OVERLOAD.

Therefore every time you work out you should attempt to increase either the weight you use or the repetitions you perform relative to your previous workout. This can be viewed as a "double progressive" technique (resistance and repetitions). Challenging your muscles in this manner will force them to adapt to the imposed demands (or stress).

3. PERFORM 1 TO 3 SETS OF EACH EXERCISE.

In order for a muscle to increase in size/strength it must be fatigued or OVERLOADED in order for an adaptive response to occur. It really doesn't matter whether you fatigue your muscles in one set or several sets - as long as your muscles experience a certain level of exhaustion.

When performing multiple sets, the cumulative effect of each successive set makes deeper inroads into your muscle thereby creating muscular fatigue; when performing a single set to failure, the cumulative effect of each successive repetition makes deeper inroads into your muscle thereby

creating muscular fatigue. Numerous research studies have shown that there are NO significant differences when performing either one, two or three sets of an exercise, provided, of course, that one is done with an appropriate level of intensity (i.e. to the point of concentric muscular failure).

4. REACH CONCENTRIC MUSCULAR FAILURE WITHIN A PRESCRIBED NUMBER OF REPETITIONS.

As stated above, research shows that our level of intensity is the most important factor in determining your results from strength training - the HARDER you train, the BETTER your response. As muscle hypertrophy is an adaptive response by the body to stress, you should always strive to go as far as you can go on that "impossible" rep. Every centimeter matters. Your "impossible" rep should last between 10-15 seconds. One could even call this an "isometric rep".

If concentric muscular failure occurs before you reach the lower level of the repetition range, the weight is too heavy and should be reduced for your next workout. If the upper level of the repetition range is exceeded before you experience muscular exhaustion, the weight is too light and should be increased for your next workout by five percent or less.

The GENERAL recommendation is 8-12 repetitions But this can vary from individual to individual, and from body part to body part. In many cases people have been known to benefit from higher reps for their lower body (12-15), while lower reps for the upper body (6-8). The most important thing to remember here is that it the *number* of repetitions isn't the key factor - TIME is. One can perform a set of 10 reps in as low as 10-15 seconds, or a set of only 1 rep in 60 seconds. So how many seconds per repetition? The general guideline is a 6 second repetition consisting of a 2 second lifting (concentric) phase, followed by a 4 second lowering (eccentric) phase. The emphasis is placed on the lowering, or NEGATIVE, as research has shown this to be the most productive part of the rep.

The lowering of the weight should also be emphasized because it makes the exercise more efficient: the same muscles that are used to raise the weight concentrically are also used to lower it eccentrically. The only difference is that when you raise a weight, your muscles are shortening against tension and when you lower a weight, your muscles are lengthening against tension. So, by emphasizing the lowering of the weight, each repetition becomes more efficient and each set becomes more productive. Because a muscle under tension lengthens as you lower it, lowering the weight in a controlled manner also ensures that the exercised muscle is being stretched properly and safely. Thus in a 8-12 rep scheme with the above guidelines, each set should take you between 48-72 seconds until you reach concentric muscular failure.

5. TRAIN FOR NO MORE THAN ONE HOUR PER WORKOUT.

If you are training with a high level of intensity, more than one hour is counterproductive as it increases the probability of overtraining due to a catabolic hormone called cortisol. Overtraining, next to injury, is your worst enemy. Avoid it like the plague. In addition, the faster you can complete your workout, given the same amount of sets performed, the BETTER CONDITIONING obtained.

6. MOVE QUICKLY BETWEEN SETS

The transition time between each set varies with your level of conditioning. You should proceed from one exercise to the next as soon as you catch your breath or feel that you can produce a maximal level of effort. After an initial period of adjustment, you should be able to recover adequately within 1 to 3 minutes. Training with a minimal amount of recovery time between exercises will elicit a metabolic conditioning effect that cannot be approached by traditional multiple set programs.

7. EXERCISE THE MAJOR MUSCLE GROUPS FIRST.

The emphasis of your exercises should be your major muscle groups (i.e. your hips, legs and upper torso). You should select any exercises that you prefer in order to train those body parts. It is recommended that lower body work be done first, as it is more taxing. This is not always the case, as a technique for bringing up a lagging body part is to work it first in your routine, but it is a general outline.

8. DO NOT SPLIT YOUR ROUTINE - DO NOT WORK YOUR BODY ON SUCCESSIVE DAYS

Many bodybuilders practice a split routine. The reasoning is that training their upper body on one day and lower body on the next day allows them additional time to work each muscle group "harder". HIT advocates fervently believe that this is NOT the case.

First, split routines lead you to believe that *more* exercise is better exercise. Remember HARDER exercise is better. And if you train harder you MUST train briefer, not longer. You cannot train hard for a long period of time. Thus, out of physiologic necessity, people who use a split routine have to reduce the intensity of their exercise which leads to less growth stimulation.

9. GET AMPLE REST AFTER EACH TRAINING SESSION

Believe it or not, your muscles DON'T get stronger while you work out. Your muscles get stronger while you RECOVER from your workout. After high intensity training your muscle tissue is broken down (although that's a very basic way of describing it) and the recovery process allows your muscle time to rebuild itself.

10. AS YOU GET STRONGER DECREASE THE FREQUENCY OF WORKOUTS AND/OR AMOUNT OF SETS

Exercise physiologists have found that your strength increases disproportionately to your recovery ability. Thus the stronger you get the LESS high intensity exercise you can tolerate. Some authorities, such as Dr. Ellington Darden, mention a "300/50%" ratio of strength to recovery ability potential. Thus in theory, the average trainee has the potential to increase his untrained strength by a factor of 4, but his recovery ability will only increase by a factor of 1.5.

SECRETS TO SUCCESSFUL MAIL ORDER PURCHASES:

With the ever decreasing availability of non-counterfeit black market steroids athletes are increasingly turning to international mail order and the Internet for steroid purchases. The success of purchase attempts varies enormously, as does the reliability of the mail order pharmacies. As the laws in this area remain vague, the following general guidelines should be used in mail order transactions in order to insulate the purchaser from potential problems.

Ordering:

1. Never order using your real name.
2. Do not pay by a traceable means -- e.g., personal check or wire-transfer.
3. Keep the order small i.e. there should be no question that the order is for personal use.
4. Never include any personal information (e.g., telephone number) with order
5. Request non-registered delivery only and request a notice to be placed on package "leave at door."
6. Do not order by unencrypted E-mail, order by regular mail.

Receiving:

1. Never sign for or acknowledge ordering a package -- i.e., if a mailperson will not deliver without a receiving signature, write it off as a loss and change your supplier.
2. Check out arriving-orders carefully for dubious looking brands and containers. Use published literature and discussion forums like www.elitefitness.com.
3. Do not order any overseas package shipped via express. The chances of it getting intercepted and checked this way is 90% higher. Always use regular snail mail service. A delayed but delivered parcel is preferable to a fast, intercepted one.

**FOR PUBLIC
RELEASE**

Detailed Fina Instructions- courtesy of Animal himself!

Read the directions first, then the VARIATIONS and FAQ section! And please remember that these kits are for developing the ability of the user to create a sterile end solution and to experiment with the solubility of molecules in a vehicle in which 'the experts' say can't be done.

A note on pressure/syringe size to use with the filters. A 20ml syringe will create 80psi, while a 10ml syringe creates 140psi. With a 10ml syringe the solution will go through more than 2x faster.

Quick Access Links:

GMF Filters

Cleaning a spent sterile filter for 'pre-filtering' purposes.

What you should have in your 'Sterile' kit. What you should have in an 'EZ' kit.

How to keep a bottle sterile.

New 'Easy' kit directions.

'Sterile' kit directions.

Sterile filtering.

Descriptions of Variations...

GMF FILTERS: Resistant to weakening or disruption of the fibrous matrix by inorganic or organic solutions and has a broad chemical compatibility. Made of borosilicate glass microfibers. Presterilized by gamma irradiation.

--Typical Characteristics

--Filter 25mm GD/X

--Membrane GMF

--Prefilter GMF 150 (10:1mm) and GF/F (0.7mm)

--Autoclavable At 121°C (250°F), 15psi, for 20 min. Max. temp., 131C(267°F)

Now why mention all that? Well, if you mess up your filter you can run some methanol through it and then wrap it in a piece of aluminum foil, and then you can throw it in your oven at 250F for 20-30 minutes. Then it will be good as new again! You can also make a very good pre-filter which is specifically made for our solutions!

Cleaning a spent sterile filter for 'pre-filtering' purposes.

The GDX filters have a pre-filter built into them and it is a 10. By cleaning an old Sterile filter out with methanol you can use it again as a pre-filter if your solution hasn't cleared enough.

1. Run about 20ml of methanol through your syringe into your syringe filter.
2. When the syringe is empty, back draw on the syringe and that pulls much of the filler off the top of the filter and you will see the methanol turn white.
3. Discard the methanol.
4. Blow some air through the filter by taking off the syringe and filling it with air a couple times to dry out the filter.
5. Let sit 24hrs to let the rest of the methanol evaporate, or you can throw it in a 250F oven.

What you should have in your 'Sterile' kit. 1. A red stoppered clear vial with 5-10ml MAGIC solution marked '1'.

2. A red stoppered clear vial with oil in it.

3. A sealed clear, sterile, vial.

4. Two 18 gauge 1.5 inch needles.

5. A 5ml and a 10ml syringe. A QS also has a 20ml syringe. This is the largest syringe we can use with the Sterile filters.

6. 1 clear, sterile, 0.45um GD/X sterile syringe filter. QS kits have 2 filters.

7. A real cheap coffee filter.

What you should have in an 'EZ' kit.

1. A large sealed, clear vial marked '1' with 5-10ml solution.

2. A large clear sterile vial marked '2' with oil in it.

Note: In the following steps, the term 'hormone' can mean any AS type structure including, but not limited to, androstenedione, norandrostenedione and other 'pro-hormones'. It can also mean outright steroids in countries where they are legal. Please do not do anything illegal with these solubility experimentation kits.

How to keep a bottle sterile.

1. Tear out the aluminum center circle of the bottle.

2. Tear off the rest of the aluminum.

3. Using syringe filters or sterile contents from the clear bottle inject back into the bottle or just pull the stopper out and pour whatever you want into it and reseal. As long as you don't touch the lip of the bottle with something non-sterile it will remain sterile.

Preparation...

New 'Easy' kit directions.

The 'old easy' kit directions are available upon request, but I have found a better way to keep the glue from oxidizing. Oxidation is what causes the glue to turn into a gum and which also turns the solution brown.

1. Add 2000mg of your favorite 'hormone' to vial '1'. You may crush the pills in the vial to speed up the breakdown of the pills, but DO NOT let the pills (or crushed pills) sit for more than an hour without going to step 2 (or the glue will oxidize). You must do step 2 within that time frame as the oil keeps the glue from oxidizing. IF you have crushed the pills you can skip step 3.

2. Add the oil from 'vial 2' very slowly to vial 1 trying to disturb the pills as little as possible. (If you are increasing the mg/ml by using less oil you need to add less than the full amount of vial 2 which is set for 75mg/ml.)

3. Let it set at least 2 hours (or overnight) to soften the pills further.

4. Place vial '1' into some water which has been boiled or placed directly onto a heating element at its lowest setting. Swirl until the color is an even cloudy yellow/orange and the crystals dissolve and any little bits of 'pill' filler are dissolved. Do not shake. This should take about 15 minutes.

(When using a heating element the vial should be warm and not hot and you should be able to hold the vial at a point 3/4 down the vial. Boiled water is hot enough if you don't have an electric stove. IF the kit is turning any color other than gold or orange it is TOO HOT and the glue will turn into a 'gum' and inhibit settling, so heat slowly and gently.)

5. Keep the solution warm until you see the filler dropping to the bottom with only 1/2 remaining cloudy. At this point you turn off the heat, but let the vial sit on the element or in the hot water as it cools.

6. Replace stopper and let it set 1-2 hours (or overnight) to allow the fillers and glue to settle.

7. For better sterility put it into an oven that has been preheated to 250F. Leave in oven for approx. 30 minutes.

8. Plate out the solution to detect for sterility or use on research or farm animals, or discard after you have successfully completed this experiment which has proven that addition of the 'magic solution' permits mg/ml of 75mg/ml to 200mg/ml! This is a patent pending process.

'Sterile' kit directions.

The 'old sterile' kit directions are available upon request, but I have found a better way to keep the glue from oxidizing. Oxidation is what causes the glue to turn into a gum and which also turns the solution brown. By stopping air from getting to the solution the filler settles out on its own and eliminates, yes ELIMINATES the necessity of the coffee filter and increases your yield by approximately 2 ml.

Prep: Draw 2ml (SS) or 5ml (DS) of oil out of vial 2 using the 5ml syringe and set aside. Withdraw 5ml if using a QS. This will be used in step 26.

1. Add 2000mg of your favorite 'hormone' to vial '1'. If you have a DS kit you add 4000mg and for a QS you add 8000mg. You may crush the pills in the vial to speed up the breakdown of the pills, but DO NOT let the pills or crushed pills sit for more than an hour without going to step 2. You must do step 2 within that time frame as the oil keeps the glue from oxidizing. IF you have crushed the pills you can skip step 3.

2. Add the oil from 'vial 2' very slowly to vial 1 trying to disturb the pills as little as possible. (If you are increasing the mg/ml by using less oil you need to add less than the full amount of vial 2 which is set for 75mg/ml.

3. Swirl or stir gently and then let sit undisturbed at least 2 hours (or overnight) to soften the pellets.

4. Place vial '1' into some water which has been boiled (212F), or placed directly onto a heating element at its lowest setting. Swirl until the color is an even cloudy yellow/orange and the crystals dissolve and any little bits of pill filler are dissolved. Do not shake! That induces oxygen (causing oxidation) which we DO NOT want.

(When using a heating element, it should be warm and not hot. You should be able to hold the vial at a point 3/4 the way down the vial. Boiled water is hot enough if you don't have an electric stove. IF the kit is turning any color other than gold or orange it is TOO HOT and the glue will turn into a 'gum' and inhibit settling, so heat slowly and gently or you WILL be using the coffee filter steps!)

5. After all the pills have dissolved, keep the solution heated until you see the filler dropping to the bottom and only 1/3 to 1/2 of the vial is still very cloudy. At this point you turn off the heat, but let the solution sit on the element or in the hot water as it cools to room temperature. It works much better if you can let it cool on the heating element as the filler will then be more effectively 'pulled down' to the bottom of the vial.

6. Replace stopper and let set 1-2 hours (or overnight) to allow the fillers and glue to settle. (At this point you can let the solution set as long as you want and even a year or more if you want. The longer it sits undisturbed the more the filler will settle to the bottom and compact, that is...the filler layer gets smaller and smaller the longer it settles.)

7. If the filler has settled sufficiently to about 1/2 inch or less and the solution has become almost totally clear, then you can go directly to step 17. However you MUST NOT draw the filler into the syringe until you do the last draw. With a QS you would most likely want to do a coffee filter step on that last amount of gunk as there is a lot of filler in there which could hold up some of the oil and it's hormone.

Steps 7-13: Your solution is either very cloudy, very dark, or the filler is more than 1/2 inch the way up the vial or you would not be here, but on step 17. This non-settling cloudiness happens sometimes and we can't do anything about it, nor can we do anything about darker shades from old pills.

8. Insert a funnel into the now empty vial '2' and insert the coffee filter into the funnel. If you don't have a funnel to fit into a vial, you can secure the coffee filter over any glass container with a rubber band.

9. Warm the solution in vial 1 in some hot water again or in the microwave for about 30 seconds. It should be very warm, but not too hot to touch. Pour the liquid solution from vial 1 into the coffee filter leaving as much filler behind as possible. Allow all the solution to drip through.

10. Now pour the rest of the contents of vial 1 into the coffee filter and let drain.

11. You may want to let it set overnight as the draining will be slow due to the filler and glue from that last pour.

12. Put on some rubber gloves as the same stuff that is making the hormone soluble in oil will also solvate the oil out of your skin and leave you with dry skin. Close up the coffee filter and wring it from the edges inward to where the 'solution' was.

13. Begin twisting from the open edges of the filter. A 'balloon' will develop.

14. Press gently onto the balloon while holding onto the twisted part of the filter. Keep pressing that balloon smaller until most of the solution is out.

15. Twist the filter ever more into the balloon area, but be careful not to tear the filter. Wring it out like a miniature towel. This procedure lets you get all but about 1-2ml out of the coffee filter.

Note: In case you have doubts about what the brown residue is in the coffee filter, you can test it! Scrape the residue into a small clear glass vial or container. Add 5-10ml of methanol or acetone. The brown stuff will begin to turn white (filler) and the liquid you added will take on a tan tint. The white will stay on the bottom and will not go into solution. Your liquid will not turn yellow because there are no hormones in the residue. If you add some water to the methanol, almost all the white stuff will disappear! AS are NOT SOLUBLE IN WATER. (No applause, please) Discard the test products and pat yourself on the back for getting this far.

16. Pre-filter and reusing old cleaned sterile filters step. The GDX filters have a pre-filter built into them and it is a 10. By cleaning an old filter out with methanol you can use it again as a pre-filter if your solution hasn't cleared enough.

A. Draw the coffee filtered solution into the syringe.

B. Place a white pre-filter onto the tip of the syringe.

C. Push the liquid through into any vial.

D. After the solution is all into the and pre-filtered remove the pre-filter.

E. Draw more solution into the syringe.

17-29 Sterile filtering.

17. Warm the solution in hot water for 5-10 min. Draw 10ml oil out of the vial/container holding your gold or yellow colored solution. See V3 for an alternative to drawing.

18. Turn the syringe upside down.

19. Remove the needle.

20. Open the sterile filter package, but leave the filter in the plastic!

21. Holding the filter from the side through the plastic, screw the sterile syringe filter onto the syringe.

22. Remove the stopper from vial 3 and place it into the now empty sterile syringe container. (See V4 for an alternative for which you don't need to remove the stopper.)

23. Place the syringe filter/syringe combination immediately onto the mouth of the sterile vial '3'.

24. Push all the contents of the syringe into the vial by grasping the syringe with 2 hands. Using your index fingers or thumbs push down on the plunger while continuing to hold onto the syringe with 2 hands. DO NOT EXERT EXTREME PRESSURE DOWNWARD ONTO THE SYRINGE FILTERS! If you move the wrong way the vial will go shooting across the table and there goes your experiment. Also, if you push too hard the flow through the syringe filter will slow. It should take 5-10 second per ml of oil flowing through the syringe filter.

NOTE: If you have any questions on this step you need to email me. With the new filters and

procedure there is no longer any excuse for clogged filters. These filters should not clog even if you do 100ml.

25. When the oil is out of the syringe you will need to reload. Grasping the syringe filter by its sides, unscrew the syringe and LEAVE THE SYRINGE FILTER ON THE VIAL! Reload the syringe as in steps:17-19 or V3.

26. When the oil is out of the syringe there is still some oil left in the filter holding onto your hormone and you want to salvage that. Remove the syringe filter from the syringe by holding onto the sides of the syringe filter and unscrewing the syringe. LEAVE THE SYRINGE FILTER ON THE VIAL. Place the 5ml syringe with the 2ml of oil in it that you set aside earlier and push that oil through the sterile filter. With a DS kit, you will be into the neck of the vial, but don't go to the top. If you have extra oil, discard.

27. Replace the rubber stopper when all the oil has been pushed through the syringe.

28. After setting for a couple days you may notice some separation or what looks like bubble on the bottom. At this point you can heat it to about 212F and the separation should not come back except for the settling of some of the brown/red glue to the bottom.

29. Plate out the solution to detect for sterility or use on research or farm animals, or discard after you have successfully completed this experiment which have proven that addition of the 'magic solution' permits liquid densities of 75mg/ml to 200mg/ml! This is a patent pending process.

Descriptions of Variations...

V2.

1. Place the 18 gauge needle onto the syringe.
2. Draw 20ml of oil out of the container holding your caramel colored solution.
3. Turn the syringe upside down.
4. Remove the needle.
5. Open the sterile filter package, but leave the filter in the plastic!
6. Holding the filter through the plastic, place the sterile syringe filter onto the syringe.
7. Place the second sterile needle onto the syringe filter.
8. Place the needle through the stopper of the sterile vial, '3'.
9. Push all the contents of the syringe into the vial by grasping the syringe with 2 hands. Using your index fingers or thumbs push down on the plunger while continuing to hold onto the syringe with 2 hands. DO NOT EXERT EXTREME PRESSURE DOWNWARD ONTO THE SYRINGE FILTERS! If you move the wrong way the vial will go shooting across the table and there goes your experiment. Also, if you push too hard the flow through the syringe filter will slow. It should take 5-6 second per ml of oil flowing through the syringe filter.

V3. Tear out the center seal of the sterile vial. Insert a needle only into the vial to relieve pressure. Place a needle onto the syringe filter and go to step 23.

V4. I use this technique all the time as it is very fast.

- A. Pull the plunger out of the syringe.
- B. Place your finger over the hole where the needle would go.
- C. Pour the contents of vial #1 into the syringe.
- D. Keeping your finger over the hole, place the plunger about 1/8 to 1/4 inch into the syringe barrel.
- E. Turn the combination upside down while holding onto the plunger.
- F. Remove your finger from the hole. Push the air out of the syringe.

ANIMAL'S FAQ: Questions answered!

This is a statement often heard by Animal: Hi Animal, Go to this link, I think you've read it before by Bill Roberts who is one of the ASS Family.

http://www.testosterone.net/html/body_85julia.html

Animal: Hey, thanks, and thank him for the advertising, and to fuck off if you'd like. Like I've said, EVERYTHING in there is pharm grade or purer, and is patented and used in injectables even today. Too bad he doesn't know what's in there!, that pisses him off, but over 5000 customers are

happy and not one complaint!

Q1: Does comp TH have less binders/glue than the finaplix-h?

Animal: Different kind of binders that don't swell up as much and/or less/different glue.

Q2: Does ALL the glue and binders get filtered OUT from the coffee filter?

Animal: That takes care of most of the binders and some of the glue and that is why the residue is brownish and sticky.

Q3: Then how about the "sterile filter"?

Animal: The SF takes care of the rest of the fillers and a lot of the glue, but if you really want to get rid of the glue you heat it up to 250 in the oven and the glue will stick to the sides.

Q4: What's with all that fucking TASTE in the mouth shit that people are posting? Drives me nuts! I don't taste shit, and I will be doing a SAFE 0.5cc ED for 3 weeks, rest 2 weeks, and then 3 weeks again. That should be safe right?

Animal: That's a systemic nervous reaction. The only way they could possibly get that is if they inject into a vein. Bytor: Oddly enough, I get a nasty chemical-like taste in my mouth when I shoot fina, and as well I sometimes get the sensation that someone is pricking me with an insulin dart in random places over my body. All of this happens within 15-30 seconds of the injection and quickly fades.

Q5: I know liver cells regenerate and all that crap, how about kidneys? Like if they are STRESSED and OVERWORKED, what are the symptoms? It's my first time trying and i'll be drinking lots of water and cranberry juice....so do kidneys "regenerate" themselves?

Animal: Just about every soft cell in the body is replaced every 30 days. Even so, there is no research at all to show that any AS harms kidneys. Remember how they said hi protein diets would harm your kidneys, too? HAHA!

Inventory is as follows:

- 1.) Vial with "Magic Solution"
- 2.) Vial with Oil
- 3.) Sterile Vial
- 4.) 0.45um GD/X Sterile Syringe Filter
- 5.) 10cc Syringe
- 6.) 5cc Syringe
- 7.) Fina Cart
- 8.) Two 18g Needles
- 9.) One Coffee Filter

- 1.) Add pellets to vial 1(magic vial).

Be sure not to dump the pellets everywhere when you remove the plastic top off the cart. You can accelerate the breakdown of the pellets by crushing them. I did not. You can also use heat to accelerate the breakdown. I did not.

- 2.). Let it set for less than 1 hour to prevent glue oxidation.

I purposely allowed it to set for a couple of days so it would oxidize, thus forcing me to pre-filter using the coffee filter (I did this so the documentation would be more thorough). You do not want the glue to oxidize, unless you enjoy wasting.

- 3.) Get out the 5cc syringe and attach one of the 18g needles. Draw 2cc's of oil out of vial 2 for purging the sterile filter at the very end of this process.

- 4.) Recap the 5cc syringe and store the 2cc's of oil for later use.

- 5.) Add the oil from vial 2 to vial 1 ever so gently (remember to do it within 1 hr)

- 6.) Oil addition to vial 1 (again this should be done within 1 hr of adding pellets).

- 7.) At this point I gave it a gentle swirl and allowed it to settle. Your fina can sit at this state for over a years time and still be legit.

- 8.) By ensuring the oxidation of the glue (by not obeying the 1 hr rule). I was forced to pre-

filter. This is where the coffee filter comes in handy. Insert a small funnel into vial 2 and insert the filter into the funnel as shown below in the pic. Don't pour yet, you must warm the mixture first.

9.) Warm the mixture up. Animal suggests warming in boiling water or on an electric eye. I used hot water from the sink faucet as shown below. This helped lower the viscosity of the mixture so it was easily poured.

10.) Pour the top layer into the funnel leaving the glues behind in vial 1.

11.) Allow the oil to drip through the filter and then pour the remaining oil/glue into the funnel and allow it to filter overnight. The next morning use rubber gloves(I used zip-loc bags over my hands) to protect your hands while wringing out the filter into the funnel.

12.) Preparation for using Version 4 (or V4) of Animals Sterile filtering. You should have pre-filtered vial 2, sterile vial 3, sterile filter, 10cc syringe and two 18g needles. Attach one 18g needle to 10cc syringe. Remove cap from sterile vial 3 and insert the other 18g needle(you will feel the pressure equalize). You are now ready to draw and filter.

13.) Draw with the 10cc syringe.

14.) Replace the needle with the sterile filter. Insert filter into needle sticking out of sterile vial 3, and begin to filter.

As Animal warns, hold on to everything securely so your fina doesn't go flying.

Alternate instructions: Remove the needle, place the filter on the syringe, and then place the needle on the filter. Insert needle into stopper and filter the fina into the vial. NOTE: Leave the second needle in the stopper (the one used to release the pressure in the vial). By leaving the needle in the stopper this allows for the air inside the vial to remain at atmospheric pressure, thus when you release the plunger the air inside the vial will not be pressurized and try to back fill the syringe with what was liquid was left in the filter.

Repeat the draw and filter above until all fina is sterile filtered into sterile vial 3. Then take the 5cc syringe (with the 2cc of oil you have stored) and purge the sterile filter of any remaining 'good' stuff as shown below.

Information on how to make GHB

The chemicals you'll need:

gamma butyrol lactone

sodium hydroxide NaOH: also known as caustic soda. Sodium Hydroxide comes as either flakes or pellets, make sure to check purity with the supplier and buy the purest.

The only other things needed to make the GHB is your kitchen stove, a pot to heat the solution in, and some pH paper. Here's the recipe: You'll need a glass pot big enough to hold 2 quarts of liquid.

Note that purchasing the lactone will certainly be suspicious and most probably get your name on a mysterious DEA list somewhere. Also note that the makers of the lactone never expected someone to drink the stuff so no thought has gone into the toxicity of the impurities which it will contain. What commercial process is used to make the lactone? Remember the lactone can be used as a wood cleaner.

Into the glass container pour 1 quart of gamma-butyrol-lactone. Heat this liquid over a low heat. Lactone boils at about 192 degrees Fahrenheit, but you must not allow this to happen! It would be wise to check the temperature of the liquid with a thermometer.

You want just enough heat to dissolve the sodium hydroxide into the liquid.

Into the 1 quart of lactone start by adding one pound of caustic soda pellets.

Heat the mixture slowly until the pellets dissolve.

The ratio of the lactone to NaOH should be 1g NaOH : 2.02 ml butyrolactone.

At 760 mm Hg the lactone boils at 204 C (convert it to Fahrenheit yourself, $[9/5 * C] + 32$)

The temp. will rise quickly on adding the NaOH. Slowly adding it would be the key. Then again, I also suspect that there might be problems dissolving the NaOH so perhaps this rise in temp. is not a problem. Once the NaOH is dissolved, check the pH of the solution with the pH test paper. It should be in the range of 2-4. We are shooting for a pH of between 6-7. You must add small amounts of caustic soda to the initial one pound amount, check the pH, add pellets, back and forth until the correct range pH, between 6-7 is attained. Once you have attained the, correct pH reading turn off the heat and let the solution cool. What you have now is a 50% solution of GHB (50% GHB, 50% water).

For ideal measuring purposes, we want a 20% solution. To do this, you have to measure the total amount of liquid you have and add to it one and a half times as much water. At this 20% solution, one level teaspoon of liquid is equal to one gram of GHB if it were dry.

FREE BONUS REPORT ON IGF-1

IGF - 1

Everyone is talking about this substance as the new miracle growth product of the nineties. It is reported to have packed on thirty pounds of lean tissue on one top an Olympia contender in less than nine months. Others have reported gains of thirty to forty pounds of lean tissue in a matter of months (39).

INSULIN LIKE GROWTH FACTOR is nothing like insulin. It is a hormone that occurs naturally in the body that peaks through puberty and decreases as we get older in much the same way as testosterone and growth hormone. It's primary purpose as a hormone is as a messenger which makes its way to skeletal muscle cells and tells them to grow. This is why people are getting so excited. It is like cutting out all the intermediary stages and going direct to the grow message.

IGF - 1 is not a controlled or banned substance; nor is it on any list any where in the world. It is not tested and it is not illegal. From a legal and sports council standpoint, it does not exist as a performance enhancing substance. At least not yet. However, if it really works then it will

not be long before it will be regulated.

Not much is known about the substance; in fact, even the researchers have not performed detailed tests on laboratory animals let alone humans. If you ask Kabi, they will say that the molecule has not even been successfully stabilised yet. They are almost right. However, certain companies have managed to stabilise it. The resulting compound is very delicate, one mistake with the stuff and it is instantly destroyed.

HOW DOES IT WORK?

Like insulin, IGF - 1 will lower blood sugar levels and diabetics should be aware of this. Further, bodybuilders should be sure to eat well and be extremely careful if they intend to use the product on a pre-contest diet. If you go hypo after use then ingest some honey or sugar immediately.

There is evidence to suggest IGF - 1 causes actual muscle splitting action which, if true, would mean that it would cause one to increase the number of actual muscle fibres in the body. This is a genetic change and a miracle come true for those not so genetically gifted

IGF 1 levels in the body are effected by many things. The main factor though is nutrition. Starve someone and their levels fall to almost fifty percent, this is perhaps a part of the reason for the catabolic state created by a pre-contest diet -- stuff someone with food and the levels rise dramatically. This is basic survival in action and obvious when you know how it works. The body resists any tendency to put itself at risk and will keep its caloric need well within the available food supply. Feed it three thousand calories a day and the body will make sure it only carries the mass that needs two thousand calories to support it. It keeps the mass down by suppressing the hormonal messengers that make you bigger. This means you have to acclimatise your body system to a lot more food. Convince it that nutrition of the finest quality is in absolute abundance and, therefore, it is safe to creep up with the mass.

Drugs like anabolic steroids, especially testosterone propionate, will elevate IGF 1 levels by about twenty percent, so will primobolin depot. These are often viewed as anticatabolic steroids and now we have a little explanation as to why.

Medically, the treatment of diabetes is the best avenue for research, although fighting muscle wasting diseases like AIDS and MS must also be worth consideration. For this reason, tests on humans will commence in the next few years; I think that the bodybuilding population will get to the truth long before the medical experts.

Several of IGF - 1's properties are cause for concern. First, is this switching on of dormant genes. This recently discovered phenomena indicates that we all have these "off" genes that can be turned on by certain chemicals like IGF 1 -- some of these genes can have terrible effects like causing leukaemia or other forms of cancer. The chances are reasonably slim but there is a chance and the dice will roll when you use the stuff and this needs to be weighted up with the possible benefit.

Also, the drug does not know the difference between one form of cell and another. This means that pretty much everything will grow like intestines and kidneys and this could get nasty. It is a fact that the symmetry of things change when they get bigger and this stops efficient functioning. This is another roll of those dice of death that needs to be factored in the calculation.

IGF 1 will also produce reduction on bodyfat levels in much the same way as conventional growth hormone and for very similar reasons. For this reason, the diet must have a level of essential fatty acids. I suggest supplementing with a daily tablespoon of extra virgin olive oil for the omega three fatty acids plus a daily portion of fresh water fish like salmon, trout, or even sardine.

WHAT DOES IT LOOK LIKE?

IGF 1 comes in micro gram doses which are very small amounts.

Bottles range from 20 to several hundred micrograms with 100 microgram bottles being the most common. The substance is killed by light and heat so it must be packed in a dark container and

surrounded by a freezing material at all times. If a would-be dealer says it has been hand sent and kept in his freezer and it is not specially packed, then it is worthless.

Research showing clear mass gains, suggests doses of 15 mg per day, costing a second mortgage for a week's supply at current prices. Bodybuilders seem to be experimenting with doses of 20 micrograms a day taken in two doses, one at night and a second in the morning. They combine the product with growth and high androgen stacks.

COMPANIES THAT MAKE IGF 1

Hyclone Laboratories INC

This is the most popular, cheapest, and lowest grade product on the market. It is cell culture grade and not really made to inject into humans. Also, the protein quality is only about ninety percent. This is a very quick acting version as well because of the lack of binding protein so you need to take it more often. Still, it is a viable source and should work if it is going to work at all. Most of the counterfeits seen have been of the Hyclone product.

Other companies are Austral Biological, Biosource International, Sigma Bio sciences, Accurate chemical, ICN, Promega, R and D systems, Advanced Scientific and Chemical.

Price varies greatly but the average seems to be around \$1,000.00 for 100 micrograms. That would last about five days.

PROSTAGLANDIN'S! Prostaglandin F2 Alpha (PGF2A) Lutalyse

Is PGF2A for me?

Is PGF2A for everyone? Clearly not! Will it work? Yes! In this information, I will try to cover as much as possible about this drug. What I have put together here is based much upon personal experiences.... I feel no report can accurately prepare you for everything.... PGF2A is no exception! Contributing to this report are Big Brother Val, Ranger, Jeff rys, BigDawg, and E2, from the Elite Fitness Discussion board Mr. Nobody, and Efigy.... Thank you all for your patience!

PGF2A and anabolism.

Many studies have demonstrated an anabolic effect of PGF2A in skeletal muscles of both humans and animals. Paradoxically, PGF2A usage is still reserved to a bodybuilding elite and no one is willing to divulge its precious secret edge. One of the most remarkable effects of PGF2A is that it potentates the anabolic effects of insulin. By combining PGF2A, and insulin athletes can use much less insulin and get a much better muscle building effect than with insulin alone.

Is PGF2A safe?

The answer is clearly no, but neither is the use of steroids, insulin, clenbuterol, etc. By the way, PGF2A is invisible at any drug test. What kind of side effects to expect? The main side effect -- if we exclude the elevation of temperature - is a strong laxative effect. So make sure you have unrestricted use of a bathroom. This lasts around 20 minutes. What you do not want is to inject PGF2A into a vein! Learn to do the aspiration test. PGF2A is injected intramuscularly with an insulin needle if you are lean enough. Injecting in a vein will hurt like hell and for a very long time (up to an hour). You may feel as if you have a cold in your throat. This is due to the vasoconstriction effect PGF2A has in the lungs. Vomiting is a reported side effect but I have never heard of it in men.

PGF2A is not to be confused with steroids.

Although part of the anabolic actions of androgens are from a local release of PGF2A. PGF2A produces growth in a radically different way from steroids -- While steroid use is rather comfortable. PGF2A is used in a radically different way than Anabolic and Androgenic Steroids. With AS You inject or swallow them occasionally and wait for the growth to occur. This is not the case with PGF2A. PGF2A's main drawback is its difficult method of administration. Steroids once injected exert their effect for several days in the body. PGF2A's duration is only several minutes though its stimulatory action on anabolism lasts several hours. This means that to be effective,

frequent injections are compulsory. An ideal injection schedule would be five times daily, 30 minutes after meals. You will also notice immediately after injecting PGF2A into the muscle, the injection site becomes sore almost immediately. If the muscle was already sore from training, the pain may become intense. You definitely do not want to repeat injections to the same location, hence the necessity of rotation. Additionally, you will notice you cannot inject into a muscle and then train that muscle. PGF2A is algesic (a pain mediator). Therefore, the timing of injections is key. You should wait for at least 2 to 3 days after you have trained a muscle before using it for an injection. Then you will have to wait for 24 hours before training this muscle. Again If your muscle is sore, I advise not injecting into it until it is not sore. You will also learn that it is more comfortable to inject the outer part of the muscle rather than the inner part. For example, it is less painful to hit the outer head of the triceps than the inner head that touches the lats. Some bodyparts such as the biceps and back are especially sensitive to the pain sensation PGF2A will induce.

The personals!!!

This section contains a lot of personal experiences, and side effects with this new drug..

Big Brother Val!

According to Val pumps are INSANE! In addition, Val, as the rest of us found; needed the unrestricted use of the bathroom...Does it hurt? In Val's words, " This shit is awesome...Hurts like fucking hell!" As Val stayed with the injections, and SLOWLY increased the dosage, we got a report from him at the 2-week point of the cycle. Injections and dosages varied, but I will relate this as Val told it, " Hitting the arms 12 times a day...3 in each Biceps, 3 in each Triceps, for a total of 6cc's a day. I am being burned out on injecting myself so often, especially in the Biceps. The pain is reducing now, and I do not feel sick. Still get shortness of breath, and tightness in the chest each time. There is a visible difference in growth thus far, and my body fat has dropped significantly." As you can see, and as most of us found, the injections become a major burden to deal with, the benefit though, is the visible growth all of us have saw...it is a very hard choice. This was taken off the Elitefitness Board as one of Big Brother Val's Post's! I was injecting my arms 4 times a week. It went like this: Sun:..shoot/arms..... lift/rest
Mon:..shoot/shoulders..lift/arms, pump/chest Tues:..shoot/shoulders..lift/back, pump/shouders
Wed:..shoot/shoulders..lift/legs Thurs.shoot/arms.....lift/chest, pump/arms
Fri:..shoot/arms.....lift/shoulders, pump/calves Sat:..shoot/arms.....lift/rest Then repeat. I've switched it up a bit, and have found a lot better response... in a matter of a few days, I have new stretch marks starting on my tri's... and my arms have never felt so full. Now my lifting schedule is the same. However, I switched up the dosage on PGF2A. I read in the articles by Dharkam that you should shoot 24 hours before training a muscle... then wait 2 days after that to shoot it again. Maybe even three days if you train hard enough. I personally have found that if I shoot the muscle group the same day I train it... that my lifts go better... my pumps are absolutely incredible... and I keep my pump a lot longer, as well as feel more pumped the next couple of days. Now I follow this schedule: Sun:..shoot/arms..... lift/rest
Mon:..shoot/ARMS.....lift/arms, pump/chest Tues:..shoot/shoulders..lift/back, pump/shouders
Wed:..shoot/shoulders..lift/legs Thurs.shoot/arms.....lift/chest, pump/arms
Fri:..shoot/SHOULDERS.....lift/shoulders, pump/calves Sat:..shoot/arms.....lift/rest Then repeat. Val wrote "It's only a switch of two days... but for my personal results it's really working great. On arm day, I take six cc's throughout the day. I will up the dosage coming up next week, and see how that goes. My side effects are gone... besides the odd feeling in the chest... and the intense muscle pain. Just thought I would give an update for those interested in this." I have just come off a Sustanon, Eq. cycle... and will be doing a cycle of test, Eq, and Dbol after my PGF2A run. The pain sucks, absolutely. However, I want to focus on my arms and deltas, so they can catch up. A lot harder to do on regular gear. "My poundage's are definitely affected. Not nearly as dramatic as stated in that article, though. I was curling 65 lb. dumbbells for eight reps before I started this. Now I'm curling 45 lb. dumbbells and hoping for eight. The pump is insane." "One of the great things, is that you can REALLY feel the muscle working. Really, helps to focus on that muscle group and feel it work throughout the entire range of motion. The pain factor is intense... and the muscle REALLY burns bad while training it. More so when you shoot on the same day you train it. That feeling isn't as intense if you stop shooting that muscle 24 hours before you train it." "I'm never sore after a workout the following day, but hot damn am I sore after each shot." "Well.... the muscle pain you experience is INTENSE!! Right now for example... I hit arms on my lunch break... (got the most incredible pump I have EVER had, by the way), came

back, and shot in the bathroom. My arms hurt so badly right now, I can't explain it. Can't bend 'em very well, or straighten them all the way.... I have a tight feeling in the chest... Nevertheless, GODDAMN!!! This is the biggest my arms have EVER looked!! IT'S FUCKIN' INSANE!! I literally cannot put on the shirt I was wearing before break... it won't stretch enough to fit on my arms!!"

Jeff rys!

After 4 to 5 weeks of PGF2A injections, Jeff reported the following to me. " I'm doing 8 shots a day at .5cc. Left Biceps, Right Biceps would equal one full cc. I am fed up with the numerous injections, and if I can overcome being fed up with the needle, I will inject more. As for the results, ½ on arms when flexed. I did shoulders as well, and they are thicker. I did some injecting in the abs, by pulling the skin up, and injecting. The site turned red, in a spot of around 3 square inches. I am now injecting into the muscle of the abs, but this is dangerous because you may pass through and hit an organ. I only inject abs once a week, and the site gets thick, as if a vein is iriated. It is not a vein, but it feels like it. I have dropped 11 pounds, and everyone says how good I look... I tried lower back, and chest as well, not much results, but I think it works best if you inject in the same spot a lot more. I feel it's a good alternative to steroids...But, I don't know how safe it is."

PGF2A and weak bodyparts.

The cardinal rule of PGF2A is to inject as far away as possible from the intestines, PGF2A induces a very strong contraction of the intestine and the bladder (both smooth muscles). Bodybuilders found the best injection site was the front shoulder. But by repeating injections frequently in the shoulders, bodybuilders soon ended up with grossly overdeveloped front delt's. They looked like walking monkeys. The rest of their body was growing too, but not as fast as the muscles closest to the Injections site. What this means is that PGF2A is ideal for developing a lagging muscle, just inject PGF2A locally and watch! The muscle grows. And, the increased in size is real muscle growth and not artificial swelling like Synthol or Esiclene would induce. The calves are another obvious muscle of choice. In fact, even if your calves have failed to grow no matter how much you have trained them, PGF2A will Solve your problem. After a single cycle of PGF2A, unresponsive calves start to respond, even if they never did before! The localized growth induced by PGF2A may appear magical, but there is a Simple explanation. The Life Cycle of the injected PGF2A is terribly short (minutes). In minutes, most of it will be destroyed by the lungs.If you hit your right calf for example, the muscle is exposed to a Maximum Concentration of PGF2A. As the prostaglandin dissipates and passes into the Blood, it quickly reaches the lungs where most of it is destroyed. What is remaining Is dispersed evenly though the entire body. This limited dispersed means that other muscles away from the injection site will be Exposed to far less of the Anabolic effects of PGF2A. So unless you only want to make a weak body pant grow, you Should rotate the Sites of injections frequently. Let us continue with other personal experiences!

Efigy!

Okay, here's my info: 1/2 cc in both body parts (1cc total)at a time. biceps morning, triceps noon, delt's night. this is my third day. about 5 min. after injection stinging in bodypart. about 10 min. after injection coughing and "weird feeling" in my lungs, numb lips, intense waves of pain in the body part injected. about 20-30 min. after injection slight to moderate urge to shit, not that bad though, no running to bathroom. One and ½ to two hours after injection all bad sides are gone. pleasant pump/pain in bodypart. I am noticing a big difference already! Oh yea! I almost forgot, major chills and feeling VERY cold about 10 min. after and lasts about 30 min.

BIGDAWG!

What's up guys.. as we speak, I'm on my first dose of PGF2A. It was a little fucked up how it happened so I will just explain from the beginning. I decided to try the DMSO method first. I guess I am just curious like that. I put 1/4 of a cc on each gauze pad and some DMSO gel. I had my wife tape the shit to my shoulders and I waited. It got warm, and I was light-headed as well. I felt weird once it was absorbing and the DMSO gets warm! I'm not sure if its that or the PGF2A, but whatever. I did 1/4 of a cc because I just wanted to test it out a little. Well, after having it on there for like 30 minutes, I said fuck it, loaded another one up with 1/4 cc, and put them on my bicep's. Therefore, as I am typing this I have the pads on both areas and I am heating up rather warm. From what my boy tells me, the gel takes a little while to absorb, so I am giving it some time. I will say, my biceps's feel much-pumped right now. Kinda cool. He also told me, what

he noticed was with the DMSO, its like a more "all around" growth, where as with the pin, its like a peak growth. Not all around means the whole body. It means the whole muscle you put it on. He explained to me how the vessel's work, this dudes like a medical student, so I trust him. Fuck I gotta shit. Hang on! Ok I am back. Goddamn did not even see that one coming! Ok I just took off the deltoid pads; it has been almost an hour now. Well it looks like a big ass rash on my deltoids now. In addition, its WARM. The biceps's are still kicking full force now. I think the dose is the thing that determines the whole shit your pants thing and all just hope I get some results. My biceps are pumped! In addition, my veins are coming out like crazy from my BI's on down. Well, I am gonna go for now. Next time I will try the inject. Fuck, I can't wait for that shit! Okay, after reading over the Ranger's e-mail to me a couple of times I said fuck it and got up the balls to do it. I don't know why, but I was like, REALLY thinking it was going to be BAD. So after some prepping and all I had my wife stick my delts. when she injected, I didn't feel shit..nothing. in fact, I almost thought my shit was bunk..lol then I got light headed..like a paint high. then I felt a little soreness in the sites. I was waiting for the other sides and I got a couple cramps in the stomach and that was about it. now please keep in mind, I get explosive shits all the time.. I think my body was laughing at the PGF2A, McDonalds is worse. hehe As time went on ,I began to get more sore.. like I had did a BIG set of laterals I guess. Once the soreness starts, the short breath came. not too bad though.. I only felt it when I TRIED to breathe in hard. after that all sets in, nothing else happened.. I coughed a few times but that's it. If this is what's its like ,then I shouldn't have a problem with this. Not for the results, it's supposed to give. Ranger's right on this one.. after everything I read, I was waiting for it to be PURE HELL, but this is not the case. I will now retract my statement about the taking a shit part. I had a FULL stomach on my last inject, in fact I had just eaten a mcflurry well, at first I got a little rumble down there so I grabbed my favorite car audio magazine and went to town. the rumble was followed by some NASTY unloading, lets just say I made a swamp. fuck it though, I felt lean as a mofo once it was over! the burning/pain part isn't shit, on the delts at least, I'm sure the BI's would be worse but I'm not worried about it. I guess I was thinking it would be like REAL bad,but its not. as for injecting, I've sort of came up with my own little schedule. I figure this week I want to hit triceps and shoulders. so one-day ill do my tri's twice and shoulders once, then the next day ill change that around. this way they are getting hit twice one day and once the next day. I can't think of another way to do it without injecting like way more. The injects aren't bad at all, I could stand it like 5 times a day, but I don't have the time to take that many 45 min shits. Ranger, man my fucking lips get numb now! LOL the good thing is, I'm getting used to the sides now, and they don't bother me. it did bother me last night when my wife hit a nerve in my tricep. here is a list of my experience so far.. 1. the inject, no pain unless she hits the nerve.. ouch 2. slight sting on injection spot 3. begin to feel warm.. a little dizzy 4. get small cramps in stomach 5. sites get a little more sore 6. lips numb 7. HUGE SHIT, liquid 8. everything goes away.. chills sometimes. that's it.. it all lasts about 20-30 minutes for me and I'm done. I do this shit on my lunch break now. once one side hits, another goes away. PGF2A is not painful, it's fucking annoying. it sucks to have to feel that way three times a day, that's why it sucks.

Ranger

Well, I guess you could say I was a little more experimental in my use with PGF2A. I wanted to see how far I could take it, and what happened, and what I could do to minimize the side effects without hindering the growth process.....Well, I don't have all the answers to this one. I do know it takes dedication, as Val has showed us, and you will have to endure some pretty nasty sides from time to time...bottom line!!! The choice is yours, and yours alone!! I started out at 2.5mg's per bicep twice a day from the start. I experienced all of the aforementioned sides...Breathing, numb lips, diarrhea, hypoglycemia, muscle pain...the list goes on. However, in 2 weeks my arms grew ½ inches...doesn't sound like much? It's permanent 85growth...that's good! I did get pretty cocky at the end of the 2nd week and decided to inject calves...I injected 1cc per muscle, per leg, for a total of 4cc's or 20mg's. My GOD was the pain intense!! I couldn't walk for 30 minutes, Breathing was labored, lips completely numb, mucous in my throat, and when the diarrhea came, I had to crawl to the bathroom. I was laughing and wanting to cry at the same time, but I made it(barely)! I will say this now...UP THE DOSAGE SLOWLY!!! How much? I cannot give you the answers to that, everyone will be different. BIGDAWG'S side effects are no where near that of Val', Jeff, and mine. However, take it slowly! I decided to try a very strict diet to see the effects...I only had 100 grams of Carbohydrates per day, all before lunch...low fat. The third day into this diet I was getting added side effects...light headed, headaches, cold chills, shaky. I checked my blood sugar levels the fourth day after my morning injection...49mg/dl. Yup, Hypoglycemia(low blood sugar). I quickly drank some orange juice, protein shake, and ate some Gram Crackers...the sides quickly subsided. I

even made a Doctor's Appt. to have this checked further...everything came out fine...nothing! Here's what I found to work best for me...around 1 hour before injection, have a bowl of oatmeal, and a small protein shake. After your injection, and the sides(diarrhea) have subsided, eat 3 tablets of Glucose(chewable orange flavored...yummy!), and have a large protein shake. You can buy these over the counter and is a great sugar free Carb Booster!! This worked great for me!! I found out, and all who are using this will agree...I have become leaner than I ever have!! As my body fat dropped, my arms and calves continued to grow, as did the rest of my body. Only at a slower pace.

INJECTIONS SUCK!! You wanna grow?? Get used to the idea!! I use 28 or 29-gauge 1 inch Insulin pins. Works great Bro's! After three weeks, and all will once again agree, you will get needle phobia...heh heh heh...! That's where we come to the next section...PGF2A and DMSO!! These are some do's and don'ts I think is important: 1. Do up the dosage slowly! 2. Do take your time injecting! 3. Do have access to a restroom! 4. Do make sure the injection site is clean! 1. Don't inject into the ab's, lower back, forearms, and trap's(personal experience on this one)! I know Jeff rys is doing this with no lasting side effects, but I feel it is unsafe at best! 2. Don't get PGF2A near your wife or girlfriend! It can be absorbed through the skin, and will cause cramps, bleeding...etc. In women...Never get it near a woman that is pregnant! 3. Don't use this blindly...do all available research...then decide! I will in the coming weeks try another little experiment of my own. I will mix the PGF2A with DMSO and Yohimbe for spot fat reduction, and hopefully, localized growth! If anyone has tried this, or heard of anyone who has. Please post the information, and results...Thanks!!

PGF2A and DMSO

Prompted by BIGDAWG'S experiment, and my sudden lack of interest in injections !! I decided to conduct a few experiments of my own with DMSO and PGF2A...My conclusion...Injections work better, but DMSO is a welcome break!! I would spread DMSO on a 4 inch by 4-inch gauze pad, squirt ½ cc per pad, and then tape it to my Pectorals. I left it there for approximately 30 minutes. Sides were minimal at best...Somewhat heavy breathing, light headed, site becomes very warm, and once you pull the gauze off, you may see a slight rash(it will leave quickly). The site becomes rather pumped, and in the case of my Biceps, I noticed an increase in Vascularity. Now, once I pulled the gauze off my chest. I went straight to the gym. I worked my chest in a normal fashion. I became much more pumped!! I could even tell in the mirror. I did three sets of cable crossovers...MY GOD...It was Intense...veins everywhere!! For the next two days, my chest was crushed!! It felt good to be that sore again. Tried it again the same way the next week, no where near the same pump, or after effects!! For Biceps, I upped the dosage to 1 cc per pad, per Bicep. I achieved a good pump, and increased Vascularity. I feel you have to up the dosage a lot quicker with the DMSO method to achieve max results. Nevertheless, that is only my opinion...if anyone else has tried this method in more depth, please post the time and results!! Remember this report, is mostly based on personal experience. Remember, not much is known about PGF2A, so take it slow. I had a GTT test done..all results were negative. I have been on for 5 weeks now. I hope this has answered many your questions, but it doesn't answer them all!! You have to decide Brother's...Is PGF2A for me?? Maybe yes, maybe no!! But, it is for Ole Ranger!!! Cause, It's All Good!! Many thanks to all those who have ventured into the unknown with this new drug, and have shared the experience!

SAMPLE STEROID CYCLES

THE 2 X 4 STACK

High strength and high size gains.

The following cycle is designed with male, weighing 100KG, in mind. To adjust for the proper dosage for your weight, figure a factor of 10% / 10KG of body weight. Example: If you weigh 110KG, increase the dosage 10% (or to the closest possible dosage).

Week	Deca	Test Cypionate	HCG	Primobolan Depot	Sustanon	Clomid
1	500mg	800mg				
2	500mg	800mg				
3		1500iu (Mon+Thur)		50mg		
4		1500iu (Mon+Thur)		50mg		
5		400mg	750mg			
6		400mg	750mg			
7		1500iu (Mon+Thur)		50mg		
8		1500iu (Mon+Thur)		50mg		
9				50mg		

(NOTE) The foundation behind this cycle is that the receptor sites will not saturate within two weeks, so the object is to aggressively attack the receptor sites, till just before saturation, then stop steroid usage and kick-start the body's natural hormonal system into operation, then when the system returns back to normal you hit it again!!! If HCG and Clomid are not available, don't use this cycle, both are the key to the success of this cycle. This cycle is good for those on a budget as out of 9 weeks, only four utilize steroids, thus savings!!!

Make sure your daily intake of protein is at least 2.2 grams per kg/body weight and your daily caloric intake is 45 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 to 90 minutes per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least a gallon of water/day and most importantly eat, eat, eat (especially BEEF and Pasta, just watch the fatty stuff).

Gains with this oral and injection stacking combination for an average 100KG male is 4 - 9 kg. Females can also utilize this cycle by cutting the Deca and Primobolan Depot to 1/2 with the Testosterone Cypionate and Sustanon to 1/3, thus the gains will be approx. 1/3 to 1/2 that of the male stats. This is moderate cycle and little side-effects may be noted. Normally, the only noticeable side-effects are an increase in acne, bloating in the upper abdomen area, increased cholesterol level, and decreased sleeping pattern. But if have preexisting gyno, had gyno develop during puberty, or are susceptible to gyno. Either Nolvadex or Proviron is a recommended.

So, why stack Deca, Testosterone Cypionate, Primobolan Depot, Sustanon, Clomid, and HCG?

Deca-Durabolin (Nandrolone Decanoate) 200, 100 an 50mg/cc available

Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Both moderate strength and high size gains are noted. Deca is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist.

Testosterone (Cypionate) 200 and 100mg/cc

Very high anabolic, very high androgenic properties: This injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, rated as one of the most effective injectable steroids. Testosterone Cypionate is the most popular of the four testosterone's, being that it's superior to the others, but it's also known for water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is oil based, so shots can be taken weekly

Primobolan Depot (Methenolone Enanthate) 100 and 50mg/cc or 50 and 5mg tabs available

Very high anabolic, low androgenic properties: This injectable / oral steroid is known for is effectiveness in both bulking and cutting (depending on what it's stacked with) utilized for

bulking when stacked Testosterone or Dianabol, cutting when stacked with Winstrol or Anavar. Also associated with least number of adverse side-effects. This product is oil based so shots can be taken once a week.

Sustanon (Testosterone Propionate 30 mg, Testosterone Phenylpropionate 60 mg, Testosterone Isocaproate 60mg, and Testosterone Decanoate 100 mg) 250mg/cc

Very high anabolic, high androgenic properties: This injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, rated as the most effective injectable. The reasoning for the mixture / blend of four Testosterone products is to reduce the water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is oil based, so shots can be taken weekly

Clomid (Clomiphene Citrate) 50mg tab

Fertility medication: which causes an increase of follicle stimulating hormone and luteinizing hormone. Clomid is utilized to prevent the loss of gains made in size after the completion of a cycle, when endogenous testosterone levels are far below normal. Clomid also is known for it's mild anti-estrogen properties, although not as effective as Nolvadex or Proviron, it reduces the chances of gyno starting until the natural hormonal levels are back to normal.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation. Normally the dosage and schedule goes like this: 1500iu on Monday and Thursday.

Proviron (Mesterolone) 25mg tab

Androgenic properties: This oral steroid is known for it's estrogen blocking capabilities by competing with the estrogen at the targeted sites. Although, it doesn't have the same effective as Nolvadex, it's negative affect on the GH and IGF-1 production is much lower than that of Nolvadex. Also known for it's high toning capabilities when stacked with both a high anabolic - high androgenic steroid and reducing water retention normally associated with androgenic steroids.

Notes: A) Durabolin can be utilized instead of the Deca-Durabolin, but you have to cut the dosage in half and take it twice a week as the Durabolin effectiveness in the body is not as long as the Deca-Durabolin. B) Testosterone (Enanthate) can be utilized instead of Testosterone (Cypionate). C) An anti-estrogen is not required, but if one is used, Proviron should be utilized instead of Nolvadex, as Nolvadex is more pronounced in decreasing the GH and IGF-1 production (as compared to Proviron), while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. D) If Clomid is needed, this will assist the HCG in "Kick-Starting" your natural hormonal production back into full operation faster. Good luck and good gaining!!!
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THE ASIAN STACK

For those that only have access to products from Asia (mainly from Thailand and India)
High strength and high size gains.

The following cycle is designed with male, weighing 100KG, in mind. To adjust for the proper dosage for your weight, figure a factor of 10% / 10KG of body weight. Example: If you weigh 90KG, decrease the dosage 10% (or to the closest possible dosage).

Week Deca Testoviron DBOL Anadrol HCG

1	400mg	250mg	20mg	50mg	
2	400mg	250mg	30mg	50mg	
3	300mg	500mg	40mg	50mg	
4	300mg	500mg	50mg	50mg	
5	300mg	500mg	50mg	50mg	
6	200mg	250mg	40mg		
7	200mg	250mg	30mg		
8	100mg	20mg			
9		1500iu	(Mon+Thur)		

Make sure your daily intake of protein is at least 2.2grams per kg/body weight and your daily caloric intake is 45 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 - 90 minutes per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least ten glasses of water/day and most importantly eat, eat, eat (just watch the fatty stuff).

Gains with this oral and injection stacking combination for an average 100KG male is 7 - 12 kg. Females can also utilize this cycle by cutting the injectable and oral dosages to 1/2 and deleting the Anadrol dosages altogether, thus the gains will be approx. 1/3 to 1/2 that of the male stats. This is heavy cycle and little side-effects may be noted. Normally, the only noticeable side-effects are an increase in acne, minor bloating in the upper abdomen area, increased cholesterol level, and decreased sleeping pattern. But if have preexisting gyno, had gyno develop during puberty, or are susceptible to gyno. Either Nolvadex or Proviron is a recommended.

So, why stack Deca, Testoviron Depot, D-bol, Anadrol, and HCG?

Deca-Durabolin (Nandrolone Decanoate) 200, 100 an 50mg/cc available. Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Both moderate strength and high size gains are noted. Deca is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist.

Testoviron Depot (Testosterone Enanthate) 250mg amp

Very high anabolic, very high androgenic properties: This injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, rated as one of the top five most effective injectible steroids. Testosterone Enanthate is the second most popular of the four testosterone's, it's very similar to Testosterone Cypionate except has a slightly longer active life span in your system, but doesn't have the dramatic gains (but close). Also known for water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is oil based, so shots can be taken weekly.

Dianabol / D-bol (Methandrostenolone) 5mg tab

High anabolic, high androgenic properties: This oral or injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, in oral form it's only surpassed by Anadrol-50. Also known for causing mild headaches in the beginning of your cycle and mild water retention.

Anadrol (Oxymetholone) 50mg tabs

Very high anabolic, high androgenic properties: This oral steroid is the strongest oral known. It's known for it's superior strength and size gains, it's effectiveness is just short of injectible Testosterone. But all this comes with a price, high water retention (which will attribute weight loss after completion), increased blood pressure, aromatization, liver stress, and affects upon the body's natural hormonal levels.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation. Normally the dosage and schedule goes like this: 1500iu on Monday and Thursday.

Nolvadex (Tamoxifen Citrate) 10mg tab

This ia a nonsteroidal medication, is utilized as a very effective anti-estrogen. This is accomplished by the Nolvadex competing at the targeted sites with the estrogen (not decreasing the estrogen, but competing with it). Nolvadex is probably the most effective medication used by steroid users in preventing gyno and female pattern fat distribution. But, Nolvadex also decreases the GH and IGF-1 production, while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. thus reducing your possible gains in both

strength and size.

Proviron (Mesterolone) 25mg tab

Androgenic properties: This oral steroid is known for its estrogen blocking capabilities by competing with the estrogen at the targeted sites. Although, it doesn't have the same effectiveness as Nolvadex, its negative effect on the GH and IGF-1 production is much lower than that of Nolvadex. Also known for its high toning capabilities when stacked with both a high anabolic - high androgenic steroid and reducing water retention normally associated with androgenic steroids.

Notes: A) Primobolan Depot can be utilized instead of the Deca-Durabolin (but this is imported into Asia). B) An anti-estrogen is recommended, starting with week 3 and continuing through week 7, Nolvadex can be utilized instead of Proviron, but Nolvadex is more pronounced in decreasing the GH and IGF-1 production (as compared to Proviron), while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. C) If Clomid is available, this can be added by taking 50mg/day starting at week 8 and continuing for 3 weeks, this will assist the HCG in "Kick-Starting" your natural hormonal production back into full operation faster. Good luck and good gaining!!!

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THE AUSTRALIA STACK

For those that only have access to products from Australia
Moderate strength and high size gains.

The following cycle is designed with male, weighing 100KG, with at least 1 year experience with steroids, in mind. To adjust for the proper dosage for your weight, figure a factor of 10% / 10KG of body weight. Example: If you weigh 90KG, decrease the dosage 10% (or to the closest possible dosage).

Week Laurabolin Boldebal-H Test Cypionate

1	300mg	50mg	300mg
2	300mg	50mg	400mg
3	300mg	50mg	500mg
4	300mg	50mg	500mg
5	200mg	50mg	400mg
6	200mg	50mg	300mg
7	100mg	50mg	200mg
8	100mg	50mg	

Make sure your daily intake of protein is at least 2.2grams per kg/body weight and your daily caloric intake is 45 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 - 90 minutes per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least ten glasses of water/day and most importantly eat, eat, eat (just watch the fatty stuff)

Gains with this injectable stacking combination for an average 100KG male is 6 - 11 kg. Females can also utilize this cycle by cutting the Laurabolin and Boldebal-H dosages to 1/2 and Testosterone Cypionate dosages to 1/3, thus the gains will be approx. 1/2 that of the male stats. This is relatively safe cycle and little side-effects. Normally, the only noticeable side-effects are an increase in acne, minor bloating in the upper abdomen area, increased cholesterol level, and decreased sleeping pattern.

So, why stack Laurabolin, Boldebal-H, and Testosterone (Cypionate)?

Laurabolin (Nandrolone Laurate) 50 and 25mg/cc available

Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Laurabolin is considered a longer acting Deca-Durabolin. Both moderate strength and high size gains are noted. Laurabolin is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist. This product is oil based, so shots can be taken weekly.

Boldebal-H (Boldenone Undecylenate) 50mg/cc available

High anabolic, moderate androgenic properties: This injectable steroid is known for its effectiveness in both bulking and cutting (depending on what it's stacked with) and its ability to not only allow the user to make significant strength and size gains, but also strengthen the users Tendons / Ligaments and assists in the tissue recovery process, after each workout, thus reducing the chances of injury and a faster recovery time. This product is a water based, so shots are taken every second or third day.

Testosterone (Cypionate) 200 and 100mg/cc

Very high anabolic, very high androgenic properties: This injectable steroid is known for its superior properties that allow for both dramatic strength and size gains, rated as one of the most effective injectable steroids. Testosterone Cypionate is the most popular of the four testosterone's, being that it's superior to the others, but it's also known for water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This product is oil based, so shots can be taken weekly.

Notes: A) Drive tabs / Pace injectible (Boldenone Undecylenate 25mg, Methandriol Dipropionate 30mg tab / cc, respectfully) can be utilized instead of the Boldebal-H. B) Nolvadex is not required, unless you are prone to getting gyno, as Nolvadex also decreases the GH and IGF-1 production, while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. C) Deca-Durabolin (imported from India) can be utilized instead of Laurabolin. D) Testosterone (Enanthate) can be utilized instead of Testosterone (Cypionate). E) If Clomid is available, this can be added by taking 50mg/day starting at week 8 and continuing for 3 weeks, this will assist the HCG in "Kick-Starting" your natural hormonal production back into full operation faster. F) Both human and veterinary versions of the above are interchangeable. G) If HCG is available, this can be added to the end of the cycle at 1500iu (Mon,Thur) for two weeks. Good luck and good gaining!!!

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THE BODYBUILDING CONTEST STACK (IF NO DRUG TESTING IS DONE)

For an advanced steroid user (atleast 3 years)

This can be used for Bodybuilding Contests, in which drug testing is not administered.

Week Deca Primobolan Winstrol Parabolan

1 300mg 100mg 12mg/day
2 400mg 200mg 16mg/day
3 500mg 200mg 20mg/day
4 600mg 300mg 24mg/day 1amp
5 700mg 300mg 28mg/day 2amps
6 800mg 400mg 32mg/day 3amps

START THIAMUCASE

Deca Primobolan Winstrol Parabolan HCG Clomid

7 400mg 36mg/day 4amps
8 SEE CHART BELOW FOR DETAILS
9 400mg
10 300mg 100mg
11 200mg 1500iu (Mon+Thur)
12 100mg 1500iu (Mon+Thur) 50mg
13 50mg

Week 8=Breakdown

Sun=200mg/Primobolan, 18mg/Winstrol twice a day (total 36mg), 2amps/Parabolan

,3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total), Sun and also Sunless Tanning Lotion

(2 times a day)

Mon=18mg/Winstrol twice a day (total 36mg), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total), Sunless Tanning Lotion (2 times a day)

Tue=18mg/Winstrol twice a day (total 36mg), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total), Sun and also Sunless Tanning Lotion (2 times a day)

Wed= 200mg/Primobolan, 18mg/Winstrol twice a day (total 36mg), 2amps/Parabolan,

Sunless Tanning Lotion (2 times a day), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total)

Thur=18mg/Winstrol twice a day (total 36mg), Sun and also Sunless Tanning Lotion (2 times a day), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total), 20mg/Lasix three times a day.

Fri=(Registration, weight-in, and rules) 18mg/Winstrol twice a day (total 36mg), 100mg Masteron (Drostanolone Propionate) twice a day, 25mg/Methyltestosterone twice a day, 20mg/Lasix three times a day, Sunless Tanning Lotion (2 times a day)

Sat (morning)=(review for show and comparison stage of contest) 100mg Masteron (Drostanolone Propionate) and 100mg before bed, 25mg/Methyltestosterone four times through out the day, 20mg/Lasix three times a day.

Sat (evening)=(SHOW!!!, individual routine and winners announced) 100mg Masteron (Drostanolone Propionate) in the morning and after lunch, 25mg/Methyltestosterone in the morning, at lunch, and two hours before SHOW, 20mg/Lasix three times a day.

START THIOMUCASE: Purchase the Thiomucase Cream and DMSO Gel, mix the two thirds thiomucase and one third DMSO gel and apply it to abdomen, hip, etc... areas that have excess fat deposits. Apply once a day, every day till two days out from the contest.

Tips to help you on stage (BODYBUILDING)!!! Before going on stage, have someone spray you down with PAM, yes PAM the cooking spray!!! The effects will out last normal oil / lotion applications. When on stage have a good time, smile, treat and look at the judges like they are your best friends (you can beat them up after the contest). Don't allow another opponent to take over the stage (hog the show) be more aggressive, remember you're number one, so he should be behind you!!! Grease you hair back and make it look neat. Smaller hair styles make your body look bigger. Wear black trunks or suit, unless you have a super tan, then go with white. Don't wear flashy colors that takes away the attention from your body. Have a glass of Gatorade and a candy bar before going on stage, that should help keep you going till you can get off stage.

Make sure your daily intake of protein is at least 2.5 grams per kg/body weight and your daily caloric intake is 30 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 minutes twice per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least twelve glasses of water/day and most importantly eat, eat, eat (just watch the fatty stuff). Females can utilize this cycle with the only change being cutting the injectible steroids to 1/2.

So, why use Masteron (Drostanolone Propionate) and Methyltestosterone during the Contest?

Both exhibit strong aggression like characteristics which is needed in either a Bodybuilding or Powerlifting Contest!!!

So, why stack Deca, Primobolan, Winstrol, Parabolan, Clomid and HCG?

Deca-Durabolin (Nandrolone Decanoate) 200, 100 an 50mg/cc available. Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Both moderate strength and high size gains are noted. Deca is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist. This products is oil based, so shots can be taken weekly.

Primobolan Depot (Methenolone Enanthate) 100 and 50mg/cc or 50 and 5mg tabs available
Very high anabolic, low androgenic properties: This injectable / oral steroid is known for is effectiveness in both bulking and cutting (depending on what it's stacked with) utilized for

bulking when stacked Testosterone or Dianabol, cutting when stacked with Winstrol or Anavar. Also associated with least number of adverse side-effects. This product is oil based so shots can be taken once a week.

Winstrol (Stanozolol) 50mg/cc or 2mg tabs available

Moderate anabolic, very low androgenic properties: This injectable / oral steroid is one of the most effective cutting products available, with almost no water retention noted by it's users. Also associated with least number of adverse side-effects. Winstrol, when stacked with either Primobolan Depot or Equipoise is also known to improve the joints, tendons, and ligaments strengths thus dramatically reducing the chances of injury. This product is water based so shots are taken every second or third day. Tabs are taken twice a day to maintain an anabolic balance within your system.

Parabolan (Trenbolone Hexahydrobenzylcarbonate) 76mg/cc

High anabolic and high androgenic properties: This injectible steroid is is most known for it's high anabolic / androgenic properties, while not having the common problem of easily converting to estrogen. Aromatizing of this steroid is very rare. It's the steroid of choice when prepping for a bodybuilding contest as it produces a very hard and vascular physique, with no aromatizing / bloating.

Synthol 100cc

This is an injectible long-chain fatty acid that is injected right into the muscle. It's a localized size enhancer by filling a specific muscle with 3cc a day, starting a couple days before a contest. The effects last approximately two weeks. It has begun to take the place of Esiclene as far as enhancing one specific area of the body or muscle.

Clomid (Clomiphene Citrate) 50mg tab

Fertility medication: which causes an increase of follicle stimulating hormone and luteinizing hormone. Clomid is utilized to prevent the loss of gains made in size after the completion of a cycle, when endogenous testosterone levels are far below normal. Clomid also is known for it's mild anti-estrogen properties, although not as effective as Nolvadex or Proviron, it reduces the chances of gyno starting until the natural hormonal levels are back to normal.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation. Normally the dosage and schedule goes like this: 1500iu on Monday and Thursday.

THE BODYBUILDING CONTEST STACK (IF NO DRUG TESTING IS DONE)

For an advanced steroid user (atleast 3 years)

This can be used for Bodybuilding Contests, in which drug testing is not administered.

Week Deca Primobolan Winstrol Parabolan

- 1 300mg 100mg 12mg/day
- 2 400mg 200mg 16mg/day
- 3 500mg 200mg 20mg/day
- 4 600mg 300mg 24mg/day 1amp
- 5 700mg 300mg 28mg/day 2amps
- 6 800mg 400mg 32mg/day 3amps

****START THIOMUCASE****

Deca Primobolan Winstrol Parabolan HCG Clomid

- 7 400mg 36mg/day 4amps
- 8 SEE CHART BELOW FOR DETAILS
- 9 400mg
- 10 300mg 100mg
- 11 200mg 1500iu (Mon+Thur)
- 12 100mg 1500iu (Mon+Thur) 50mg
- 13 50mg

Week 8=Breakdown

Sun=200mg/Primobolan, 18mg/Winstrol twice a day (total 36mg), 2amps/Parabolan

,3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total), Sun and also Sunless Tanning Lotion

(2 times a day)

Mon=18mg/Winstrol twice a day (total 36mg), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total), Sunless Tanning Lotion (2 times a day)

Tue=18mg/Winstrol twice a day (total 36mg), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total), Sun and also Sunless Tanning Lotion (2 times a day)

Wed= 200mg/Primobolan, 18mg/Winstrol twice a day (total 36mg), 2amps/Parabolan,

Sunless Tanning Lotion (2 times a day), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total)

Thur=18mg/Winstrol twice a day (total 36mg), Sun and also Sunless Tanning Lotion (2 times a day), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total), 20mg/Lasix three times a day

Fri=(Registration, weight-in, and rules) 18mg/Winstrol twice a day (total 36mg), 100mg Masteron (Drostanolone Propionate) twice a day, 25mg/Methyltestosterone twice a day, 20mg/Lasix three times a day, Sunless Tanning Lotion (2 times a day)

Sat (morning)=(review for show and comparison stage of contest) 100mg Masteron (Drostanolone Propionate) and 100mg before bed, 25mg/Methyltestosterone four times through out the day, 20mg/Lasix three times a day

Sat (evening)=(SHOW!!!, individual routine and winners announced) 100mg Masteron (Drostanolone Propionate) in the morning and after lunch, 25mg/Methyltestosterone in the morning, at lunch, and two hours before SHOW, 20mg/Lasix three times a day

START THIOMUCASE: Purchase the Thiomucase Cream and DMSO Gel, mix the two thirds thiomucase and one third DMSO gel and apply it to abdomen, hip, etc... areas that have excess fat deposits. Apply once a day, every day till two days out from the contest.

Tips to help you on stage (BODYBUILDING)!!! Before going on stage, have someone spray you down

with PAM, yes PAM the cooking spray!!! The effects will out last normal oil / lotion applications. When on stage have a good time, smile, treat and look at the judges like they are your best friends (you can beat them up after the contest). Don't allow another opponent to take over the stage (hog the show) be more aggressive, remember you're number one, so he should be behind you!!! Grease your hair back and make it look neat. Smaller hair styles make your body look bigger. Wear black trunks or suit, unless you have a super tan, then go with white. Don't wear flashy colors that takes away the attention from your body. Have a glass of Gatorade and a candy bar before going on stage, that should help keep you going till you can get off stage.

Make sure your daily intake of protein is at least 2.5 grams per kg/body weight and your daily caloric intake is 30 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 minutes twice per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least twelve glasses of water/day and most importantly eat, eat, eat (just watch the fatty stuff). Females can utilize this cycle with the only change being cutting the injectible steroids to 1/2.

So, why use Masteron (Drostanolone Propionate) and Methyltestosterone during the Contest?

Both exhibit strong aggression like characteristics which is needed in either a Bodybuilding or Powerlifting Contest!!!

So, why stack Deca, Primobolan, Winstrol, Parabolan, Clomid and HCG?

Deca-Durabolin (Nandrolone Decanoate) 200, 100 an 50mg/cc available.

Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Both moderate strength and high size gains are noted. Deca is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist. This products is oil based, so shots can be taken weekly.

Primobolan Depot (Methenolone Enanthate) 100 and 50mg/cc or 50 and 5mg tabs available.

Very high anabolic, low androgenic properties: This injectable / oral steroid is known for is effectiveness in both bulking and cutting (depending on what it's stacked with) utilized for bulking when stacked Testosterone or Dianabol, cutting when stacked with Winstrol or Anavar. Also associated with least number of adverse side-effects. This product is oil based so shots can be taken once a week.

Winstrol (Stanozolol) 50mg/cc or 2mg tabs available

Moderate anabolic, very low androgenic properties: This injectable / oral steroid is one of the most effective cutting products available, with almost no water retention noted by it's users. Also associated with least number of adverse side-effects. Winstrol, when stacked with either Primobolan Depot or Equipoise is also known to improve the joints, tendons, and ligaments strengths thus dramatically reducing the chances of injury. This product is water based so shots are taken every second or third day. Tabs are taken twice a day to maintain an anabolic balance within your system.

Parabolan (Trenbolone Hexahydrobenzylcarbonate) 76mg/cc

High anabolic and high androgenic properties: This injectable steroid is is most known for it's high anabolic / androgenic properties, while not having the common problem of easily converting to estrogen. Aromatizing of this steroid is very rare. It's the steroid of choice when prepping for a bodybuilding contest as it produces a very hard and vascular physique, with no aromatizing / bloating.

Synthol 100cc

This is an injectible long-chain fatty acid that is injected right into the muscle. It's a localized size enhancer by filling a specific muscle with 3cc a day, starting a couple days before a contest. The effects last approximately two weeks. It has begun to take the place of Esiclene as far as enhancing one specific area of the body or muscle.

Clomid (Clomiphene Citrate) 50mg tab

Fertility medication: which causes an increase of follicle stimulating hormone and luteinizing hormone. Clomid is utilized to prevent the loss of gains made in size after the completion of a cycle, when endogenous testosterone levels are far below normal. Clomid also is known for it's mild anti-estrogen properties, although not as effective as Nolvadex or Proviron, it reduces the chances of gyno starting until the natural hormonal levels are back to normal.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation. Normally the dosage and schedule goes like this: 1500iu on Monday and Thursday.

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THE EUROPEAN STACK

For those that only have access to products from Europe
High strength and very high size gains.

The following cycle is designed with male, weighing 100KG, with atleast 1 year experience with steroids, in mind. To adjust for the proper dosage for your weight, figure a factor of 10% / 10KG of body weight. Example: If you weigh 90KG, decrease the dosage 10% (or to the closest possible dosage).

Week	Deca	Primobolan	Testoviron	Winstrol	HCG	Clomid
1	200mg	100mg	750mg	40mg		
2	300mg	200mg	750mg	40mg		
3	300mg	300mg	500mg	32mg		
4	400mg	300mg	500mg	32mg		
5	400mg	300mg	250mg	20mg		
6	300mg	200mg	250mg	20mg		
7	200mg	100mg	250mg	12mg		
8	100mg	100mg	12mg	100mg/day		
9	1500iu (Mon+Thur)		50mg/day			
10	1500iu (Mon+Thur)		50mg/day			
11	50mg/day					

Make sure your daily intake of protein is at least 2.2grams per kg/body weight and your daily caloric intake is 45 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 - 90 minutes per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least ten glasses of water/day and most importantly eat, eat, eat (just watch the fatty stuff).

Gains with this injectible stacking combination for an average 100KG male is 7 - 13 kg. Females can also utilize this cycle by cutting the Deca, Primobolan, Winstrol dosages to 1/2 and Deleting Testoviron Depot all together, thus the gains will be approx. 1/3 to 1/2 that of the male stats. This is relatively safe cycle and little side-effects. Normally, the only noticeable side-effects are an increase in acne, minor bloating in the upper abdomen area, increased cholesterol level, and decreased sleeping pattern.

So, why stack Deca-Durabolin, Primobolan Depot, Testoviron Depot, and Winstrol?

Deca-Durabolin (Nandrolone Decanoate) 200, 100 an 50mg/cc available.

Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Both moderate strength and high size gains are noted. Deca is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist.

Primobolan Depot (Methenolone Enanthate) 100 and 50mg/cc or 50 and 5mg tabs available.

Very high anabolic, low androgenic properties: This injectable / oral steroid is known for its effectiveness in both bulking and cutting (depending on what it's stacked with) utilized for bulking when stacked Testosterone or Dianabol, cutting when stacked with Winstrol or Anavar. Also associated with least number of adverse side-effects. This product is oil based so shots can be taken once a week.

Testoviron Depot (Testosterone Enanthate) 250mg amp

Very high anabolic, very high androgenic properties: This injectable steroid is known for its superior properties that allow for both dramatic strength and size gains, rated as one of the top five most effective injectable steroids. Testosterone Enanthate is the second most popular of the four testosterone's, it's very similar to Testosterone Cypionate except has a slightly longer active life span in your system, but doesn't have the dramatic gains (but close). Also known for water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is oil based, so shots can be taken weekly

Winstrol (Stanozolol) 50mg/cc or 2mg tabs available

Moderate anabolic, very low androgenic properties: This injectable / oral steroid is one of the most effective cutting products available, with almost no water retention noted by its users. Also associated with least number of adverse side-effects. Winstrol, when stacked with either Primobolan Depot or Equipoise is also known to improve the joints, tendons, and ligaments strengths thus dramatically reducing the chances of injury. This product is water based so shots are taken every second or third day. Tabs are taken twice a day to maintain an anabolic balance within your system.

Clomid (Clomiphene Citrate) 50mg tab

Fertility medication: which causes an increase of follicle stimulating hormone and luteinizing hormone. Clomid is utilized to prevent the loss of gains made in size after the completion of a cycle, when endogenous testosterone levels are far below normal. Clomid also is known for its mild anti-estrogen properties, although not as effective as Nolvadex or Proviron, it reduces the chances of gyno starting until the natural hormonal levels are back to normal.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation. Normally the dosage and schedule goes like this: 1500iu on Monday and Thursday.

Notes: A) Primobolan tabs can be utilized instead of the Primobolan Depot. B) Nolvadex is not required, unless you are prone to getting gyno or have a preexisting condition, as Nolvadex also decreases the GH and IGF-1 production, while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. C) Durabolin can be utilized instead of Deca-Durabolin, but you have to cut the dosage in half and take it twice a week as the Durabolin effectiveness in the body is not as long as the Deca-Durabolin. D) Testosterone (Propionate) can be utilized instead of Testosterone (Enanthate), but you have to cut the dosage in half and take it twice a week as the Propionate's effectiveness in the body is not as long as the Enanthate. E) If Clomid is recommended, this can be added by taking 100 and 50mg/day starting at week 8 and continuing for 4 weeks, this will assist the HCG in "Kick-Starting" your natural hormonal production back into full operation faster. F) Both human and veterinary versions of the above are interchangeable. Good luck and good gaining!

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THE BODYBUILDING CONTEST STACK (IF DRUG TESTING IS DONE)

For an advanced FEMALE steroid user (atleast 3 years)

This can be used for Bodybuilding Contests, in which drug testing is going to be held and there's no way around it (like you know the guy administering it or have a friend that can swap out a bottle after it is taken)

Week Sustanon Insulin Suspension Deca HCG Clomid

1 500mg 10iu

2 500mg 10iu

3 500mg 10iu
4 250mg 10iu
5 250mg 10iu
6 10iu 100mg
7 100mg
8 SEE CHART BELOW FOR DETAILS
9 200mg
10 100mg 50mg/day
11 1000iu (Mon+Thur) 50mg/day
12 1000iu (Mon+Thur) 50mg/day

***START THIOMUCASE TREATMENT after week 6

***START ESTROGEN TREATMENT during week 10

Week 8=Breakdown

Sun=100mg/Test Suspension, Sun and also Sunless Tanning Lotion (2 times a day), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total)

Mon=Sunless Tanning Lotion (2 times a day), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total)

Tue=100mg/Test Suspension Sun and also Sunless Tanning Lotion (2 times a day), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total)

Wed=Sunless Tanning Lotion (2 times a day), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total)

Thur= Sun and also Sunless Tanning Lotion (2 times a day), 3cc/Synthol into Biceps and Calf Muscles (3cc each / 12cc total)

Fri=(Registration, weight-in, and drug testing) Immediately after drug testing: 50mg Masteron (Drostanolone Propionate) and 50mg before bed, half a 25mg tablet/Methyltestosterone and another half 25mg tablet before bed. Sunless Tanning Lotion (2 times a day)

Sat (morning)=(review for show and comparison stage of contest) 50mg Masteron (Drostanolone Propionate) and 50mg before bed, 25mg/Methyltestosterone three times through out the day.

Sat (evening)=(SHOW!!!, individual routine and winners announced)

(see note) = Insulin: 10iu is taken just prior or in the middle of a workout as insulin usually reaches the blood within 30 minutes after injection. It peaks 2 to 4 hours later and stays in the blood for about 4 to 8 hours. You must consume a high carbohydrate drink immediately following the injection, during and after your workout!!! This product has no room for error, if you can't maintain stick compliance with how it is administered and with a high carbohydrate drink, DON'T USE IT!!! If your medically diagnosed with diabetes or have a family history of diabetes, DON'T USE IT!!! BLINDNESS and DEATH can occur!!!

START THIOMUCASE TREATMENT: Purchase the Thiomucase Cream and DMSO Gel, mix the two thirds thiomucase and one third DMSO gel and apply it to abdomen, hip, etc... areas that have excess fat deposits. Apply once a day, every day till two days out from the contest.

START ESTROGEN TREATMENT: This is utilized to get the females estrogen level back up to normal, this is very rarely done and can be seen by females starting to look like guys with wigs. It is very important that the estrogen hormone levels are not forgotten and corrected after taking any strong androgenic medication, like Testosterone. You take Estrogen for 30 days straight. Females in the Pro Catagory take Estrogen either continuously or one month on and then one month off, and repeat.

Tips to passing the drug test!!! Never give allow them to test your first urination of the day, if they drug test early, then wake up earlier and flush your system out. What ever makes you urinate fast (ice tea, coffee, Gatorade, etc...) drink it to dilute what's left in your system. Take an

herb called "Golden Seal" which can be purchased at almost any health / nutritional store, take it twice a day starting three days prior to the drug testing!!!

Tips to help you on stage (BODYBUILDING)!!! Before going on stage, have someone spray you down with PAM, yes PAM the cooking spray!!! The effects will out last normal oil / lotion applications. When on stage have a good time, smile, treat and look at the judges like they are your best friends (you can beat them up after the contest). Don't allow another opponent to take over the stage (hog the show) be more aggressive, remember you're number one, so he should be behind you!!! Grease you hair back and make it look neat. Smaller hair styles make your body look bigger. Wear black trunks or suit, unless you have a super tan, then go with white. Don't wear flashy colors that takes away the attention from your body. Have a glass of Gatorade and a candy bar before going on stage, that should help keep you going till you can get off stage.

Make sure your daily intake of protein is at least 2.5 grams per kg/body weight and your daily caloric intake is 30 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 minutes twice per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least twelve glasses of water/day and most importantly eat, eat, eat (just watch the fatty stuff)

So, why use Masteron (Drostanolone Propionate) and Methyltestosterone during the Contest?

Both exhibit strong aggression like characteristics which is needed in either a Bodybuilding or Powerlifting Contest!!!

So, why stack Sustanon, Insulin, Testosterone Suspension, Deca, Clomid, and HCG?

Sustanon (Testosterone Propionate 30 mg, Testosterone Phenylpropionate 60 mg, Testosterone Isocaproate 60mg, and Testosterone Decanoate 100 mg) 250mg/cc

Very high anabolic, high androgenic properties: This injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, rated as the most effective injectable. The reasoning for the mixture / blend of four Testosterone products is to reduce the water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is oil based, so shots can be taken weekly

Insulin (Humulin R) 100iu/ml vial

Insulin is a hormone produced by the pancreas. In diabetes mellitus, the body does not produce enough insulin and therapy with insulin may be required. In Bodybuilders it is utilized to increase the amount of glycogen and other nutrients introduced to the muscle cells. Insulin is very effective, but extreme caution must be used. Insulin may cause minor side effects such as rash, irritation or redness at the injection site. Too much insulin can cause low blood sugar (hypoglycemia). The symptoms include chills, cold sweat, shaking, rapid heart rate, weakness, headache, fainting. If you experience these symptoms, eat a quick source of sugar such as table sugar, orange juice, honey, or non-diet soda. To help prevent hypoglycemia, eat meals on a regular schedule. Too little insulin can cause symptoms of high blood sugar (hyperglycemia) which include confusion, drowsiness, flushing, rapid breathing, fruity breath odor.

Insulin must be injected. Learn the proper way to inject insulin. First gently rotate the vial to mix. Draw up the proper amount into the syringe. Check the dose carefully. Clean the injection site with rubbing alcohol. Change the injection site daily to prevent scarring. Do not inject cold insulin. Monitor your urine or blood for glucose as required. Keep track of your results. Dosage adjustments may be required when you become ill, are under stress, or when quitting smoking. If you buy more than one bottle of insulin at a time, store the extra bottles in the refrigerator until you start to use them.

Testosterone (Suspension) 100mg/cc

Very high anabolic, very high androgenic properties: This injectable steroid is very similar to Testosterone Cypionate with the exception that it is water based, so injections are required every 2 or 3 days.

Synthol 100cc

This is an injectible long-chain fatty acid that is injected right into the muscle. It's a localized size enhancer by filling a specific muscle with 3cc a day, starting a couple days before a contest. The effects last approximately two weeks. It has begun to take the place of Esiclene as far as enhancing one specific area of the body or muscle.

Deca-Durabolin (Nandrolone Decanoate) 200, 100 an 50mg/cc available.

Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Both moderate strength and high size gains are noted. Deca is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist. This products is oil based, so shots can be taken weekly

Clomid (Clomiphene Citrate) 50mg tab

Fertility medication: which causes an increase of follicle stimulating hormone and luteinizing hormone. Clomid is utilized to prevent the loss of gains made in size after the completion of a cycle, when endogenous testosterone levels are far below normal. Clomid also is known for it's mild anti-estrogen properties, although not as effective as Nolvadex or Proviron, it reduces the chances of gyno starting until the natural hormonal levels are back to normal.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation.

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THE GROWTH HORMONE AND INSULIN STACK

Moderate strength and moderate size gains.

The following cycle is designed with male, weighing 100KG, in mind. To adjust for the proper dosage for your weight, figure a factor of 10% / 10KG of body weight. Example: If you weigh 110KG, increase the dosage 10% (or to the closest possible dosage).

Week GH Insulin

- 1 2iu (Mon, Wed, Fri+Sun) 15iu
- 2 2iu (Mon, Wed, Fri+Sun) 15iu
- 3 2iu (Mon, Wed+Fri) 15iu
- 4 2iu (Mon, Wed+Fri) 15iu
- 5 2iu (Mon, Wed+Fri) 10iu
- 6 2iu (Mon, Wed+Fri) 10iu

(see note) = Insulin: 15iu/10iu is taken just prior or in the middle of a workout as insulin usually reaches the blood within 30 minutes after injection. It peaks 2 to 4 hours later and stays in the blood for about 4 to 8 hours. You must consume a high carbohydrate drink immediately following the injection, during and after your workout!!! This product has no room for error, if you can't maintain strict compliance with how it is administered and with a high carbohydrate drink, DON'T USE IT!!! If your medically diagnosed with diabetes or have a family history of diabetes, DON'T USE IT!!! BLINDNESS and DEATH can occur.

Make sure your daily intake of protein is at least 3 grams per kg/body weight and your daily caloric intake is 45 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 45 minutes twice a day (morning and evening), during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minute single workout sessions per day. Also, drink at least a gallon of water/day and most importantly eat, eat, eat (especially BEEF and Pasta, just watch the fatty stuff)

Gains with this injection stacking combination for an average 100KG male is 4 - 8 kg. Females can also utilize this cycle by cutting the dosages to 1/3, thus the gains will be approx. 1/3 that of the male stats. This is moderate cycle and little side-effects may be noted. Normally, the only noticeable side-effects that you have to be aware of is the dangers of Insulin.

So, why stack Growth Hormone and Insulin?

Growth Hormone 16, 8, and 4iu.

Endogenous hormone: This is the synthetic version of "Human Growth Hormone" which is naturally produced by your pituitary gland. This product promotes growth in every muscle tissue fiber in your body (including the heart, kidney, etc...) dramatic strength and size increases are noted, especially when stacked with a high androgenic cycle like that noted above. This product has become very popular due to its ability to go undetected during drug testing. Very few side-effects are noted except possible squaring of the forehead and jaw area, but this is caused by excessive dosages. Growth Hormone is given by injection into a muscle or under the skin. It is usually given three times a week. Store this medication in the refrigerator as directed. Do not freeze. Do not use this if the solution is cloudy. Properly discard of any unused medication after the expiration date marked on the label.

Insulin (Humulin R) 100iu/ml vial

Insulin is a hormone produced by the pancreas. In diabetes mellitus, the body does not produce enough insulin and therapy with insulin may be required. In Bodybuilders it is utilized to increase the amount of glycogen and other nutrients introduced to the muscle cells. Insulin is very effective, but extreme caution must be used. Insulin may cause minor side effects such as rash, irritation or redness at the injection site. Too much insulin can cause low blood sugar (hypoglycemia). The symptoms include chills, cold sweat, shaking, rapid heart rate, weakness, headache, fainting. If you experience these symptoms, eat a quick source of sugar such as table sugar, orange juice, honey, or non-diet soda. To help prevent hypoglycemia, eat meals on a regular schedule. Too little insulin can cause symptoms of high blood sugar (hyperglycemia) which include confusion, drowsiness, flushing, rapid breathing, fruity breath odor.

Insulin must be injected. Learn the proper way to inject insulin. First gently rotate the vial to

mix. Draw up the proper amount into the syringe. Check the dose carefully. Clean the injection site with rubbing alcohol. Change the injection site daily to prevent scarring. Do not inject cold insulin. Monitor your urine or blood for glucose as required. Keep track of your results. Dosage adjustments may be required when you become ill, are under stress, or when quitting smoking. If you buy more than one bottle of insulin at a time, store the extra bottles in the refrigerator until you start to use them.

Notes: A) An anti-estrogen is not required, as Nolvadex is more pronounced in decreasing the GH and IGF-1 production (as compared to Proviron), while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. B) Clomid is not needed. Good luck and good gaining!

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THE IRON BROTHERHOOD STACK

Very high strength and very high size gains.

The following cycle is designed with male, weighing 100KG, in mind. To adjust for the proper dosage for your weight, figure a factor of 10% / 10KG of body weight. Example: If you weigh 110KG, increase the dosage 10% (or to the closest possible dosage).

Week	Deca	Test	Cypionate	Sustanon	DBOL	Anadrol	HCG	Clomid
1	200mg	600mg	250mg	20mg	50mg			
2	200mg	600mg	250mg	30mg	50mg			
3	300mg	400mg	500mg	40mg	50mg			
4	400mg	400mg	500mg	50mg	50mg			
5	400mg	200mg	250mg	50mg	50mg			
6	300mg	200mg	250mg	40mg	50mg			
7	200mg	250mg	30mg					
8	100mg	250mg	20mg	100mg				
9		1500iu (Mon+Thur)	50mg					
10		1500iu (Mon+Thur)	50mg					
11					50mg			

Make sure your daily intake of protein is at least 3 grams per kg/body weight and your daily caloric intake is 50 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 90 minutes per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least a gallon of water/day and most importantly eat, eat, eat (especially BEEF, just watch the fatty stuff)

Gains with this oral and injection stacking combination for an average 100KG male is 8 - 14 kg. Females can also utilize this cycle by cutting the injectable and oral dosages to 1/2 and deleting the Anadrol dosages altogether, thus the gains will be approx. 1/3 to 1/2 that of the male stats. This is heavy cycle and little side-effects may be noted. Normally, the only noticeable side-effects are an increase in acne, bloating in the upper abdomen area, increased cholesterol level, and decreased sleeping pattern. But if have preexisting gyno, had gyno develop during puberty, or are susceptible to gyno. Either Nolvadex or Proviron is a recommended.

So, why stack Deca, Testosterone Cypionate, Sustanon, D-bol, Anadrol, Clomid, and HCG?

Deca-Durabolin (Nandrolone Decanoate) 200, 100 and 50mg/cc available.

Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Both moderate strength and high size gains are noted. Deca is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist.

Testosterone (Cypionate) 200 and 100mg/cc

Very high anabolic, very high androgenic properties: This injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, rated as one of the most effective injectable steroids. Testosterone Cypionate is the most popular of the four testosterone's, being that it's superior to the others, but it's also known for water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is

oil based, so shots can be taken weekly.

Sustanon (Testosterone Propionate 30 mg, Testosterone Phenylpropionate 60 mg, Testosterone Isocaproate 60mg, and Testosterone Decanoate 100 mg) 250mg/cc

Very high anabolic, high androgenic properties: This injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, rated as the most effective injectable. The reasoning for the mixture / blend of four Testosterone products is to reduce the water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is oil based, so shots can be taken weekly

Dianabol / D-bol (Methandrostenolone) 5mg tab

High anabolic, high androgenic properties: This oral or injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, in oral form it's only surpassed by Anadrol-50. Also known for causing mild headaches in the beginning of your cycle and mild water retention.

Anadrol (Oxymetholone) 50mg tabs

Very high anabolic, high androgenic properties: This oral steroid is the strongest oral known. It's known for it's superior strength and size gains, it's effectiveness is just short of injectable Testosterone. But all this comes with a price, high water retention (which will attribute weight loss after completion), increased blood pressure, aromatization, liver stress, and affects upon the body's natural hormonal levels.

Clomid (Clomiphene Citrate) 50mg tab

Fertility medication: which causes an increase of follicle stimulating hormone and luteinizing hormone. Clomid is utilized to prevent the loss of gains made in size after the completion of a cycle, when endogenous testosterone levels are far below normal. Clomid also is known for it's mild anti-estrogen properties, although not as effective as Nolvadex or Proviron, it reduces the chances of gyno starting until the natural hormonal levels are back to normal.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation. Normally the dosage and schedule goes like this: 1500iu on Monday and Thursday.

Proviron (Mesterolone) 25mg tab

Androgenic properties: This oral steroid is known for it's estrogen blocking capabilities by competing with the estrogen at the targeted sites. Although, it doesn't have the same effective as Nolvadex, it's negative affect on the GH and IGF-1 production is much lower than that of Nolvadex. Also known for it's high toning capabilities when stacked with both a high anabolic - high androgenic steroid and reducing water retention normally associated with androgenic steroids.

Nolvadex (Tamoxifen Citrate) 10mg tab

This ia a nonsteroidal medication, is utilized as a very effective anti-estrogen. This is accomplished by the Nolvadex competing at the targeted sites with the estrogen (not decreasing the estrogen, but competing with it). Nolvadex is probably the most effective medication used by steroid users in preventing gyno and female pattern fat distribution. But, Nolvadex also decreases the GH and IGF-1 production, while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. thus reducing your possible gains in both strength and size.

Notes: A) Durabolin can be utilized instead of the Deca-Durabolin, but you have to cut the dosage in half and take it twice a week as the Durabolin effectiveness in the body is not as long as the Deca-Durabolin. B) Testosterone (Enanthate) can be utilized instead of Testosterone (Cypionate). C) An anti-estrogen is recommended, starting with week 4 and continuing through week 7, Proviron should be utilized instead of Nolvadex, as Nolvadex is more pronounced in decreasing the GH and IGF-1 production (as compared to Proviron), while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. D) If Clomid is recommended, this will assist the HCG in "Kick-Starting" your natural hormonal production back into full operation

faster. Good luck and good gaining!

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THE MEXICO STACK

For those that only have access to products from Mexico
High strength and high size gains.

The following cycle is designed with male, weighing 100KG, in mind. To adjust for the proper dosage for your weight, figure a factor of 10% / 10KG of body weight. Example: If you weigh 90KG, decrease the dosage 10% (or to the closest possible dosage).

Week Laurabolin Ganabol Sustanon HCG Proviron

1	400mg	50mg	(Mon, Wed+Fri)	500mg	
2	400mg	50mg	(Mon, Wed+Fri)	500mg	
3	300mg	50mg	(Mon, Wed+Fri)	500mg	
4	300mg	50mg	(Mon, Wed+Fri)	500mg	25mg/day
5	200mg	50mg	(Mon, Wed+Fri)	250mg	25mg/day
6	200mg	50mg	(Mon, Wed+Fri)	250mg	25mg/day
7	100mg	50mg	(Mon, Wed+Fri)	250mg	25mg/day
8	100mg	50mg	(Mon, Wed+Fri)		25mg/day
9		1500iu	(Mon+Thu)		
10		1500iu	(Mon+Thu)		

Make sure your daily intake of protein is at least 2.2grams per kg/body weight and your daily caloric intake is 45 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 - 90 minutes per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least ten glasses of water/day and most importantly eat, eat, eat (just watch the fatty stuff).

Gains with this oral and injection stacking combination for an average 100KG male is 7 - 12 kg. Females can also utilize this cycle by cutting the injectable dosages to 1/2 and deleting the Sustanon and Proviron dosages altogether, thus the gains will be approx. 1/3 that of the male stats. This is safe cycle and little side-effects. Normally, the only noticeable side-effects are an increase in acne, minor bloating in the upper abdomen area, increased cholesterol level, and decreased sleeping pattern.

So, why stack Laurabolin, Ganabol, Sustanon, Proviron, and HCG?

Laurabolin (Nandrolone Laurate) 50 and 25mg/cc available

Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Laurabolin is considered a longer acting Deca-Durabolin. Both moderate strength and high size gains are noted. Laurabolin is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist. This products is oil based, so shots can be taken weekly.

Ganabol (Boldenone Undecylenate) 50mg/cc available

High anabolic, moderate androgenic properties: This injectable steroid is known for its effectiveness in both bulking and cutting (depending on what it's stacked with) and its ability to not only allow the user to make significant strength and size gains, but also strengthen the users Tendons / Ligaments and assists in the tissue recovery process, after each workout, thus reducing the chances of injury and a faster recovery time. This product is a water based, so shots are taken every second or third day.

Sustanon (Testosterone Propionate 30 mg, Testosterone Phenylpropionate 60 mg, Testosterone Isocaproate 60mg, and Testosterone Decanoate 100 mg) 250mg/cc

Very high anabolic, high androgenic properties: This injectable steroid is known for its superior properties that allow for both dramatic strength and size gains, rated as the most effective injectable. The reasoning for the mixture / blend of four Testosterone products is to reduce the water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is oil based, so shots can be taken weekly

Proviron (Mesterolone) 25mg tab

Androgenic properties: This oral steroid is known for its estrogen blocking capabilities by competing with the estrogen at the targeted sites. Although, it doesn't have the same effectiveness as Nolvadex, its negative affect on the GH and IGF-1 production is much lower than that of Nolvadex. Also known for its high toning capabilities when stacked with both a high anabolic - high androgenic steroid and reducing water retention normally associated with androgenic steroids.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation. Normally the dosage and schedule goes like this: 1500iu on Monday and Thursday.

Notes: A) Primobolan Depot can be utilized instead of the Ganabol. B) Nolvadex can be utilized instead of Proviron, but Nolvadex is more pronounced in decreasing the GH and IGF-1 production (as compared to Proviron), while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. C) Deca-Durabolin can be utilized instead of Laurabolin. D) If Clomid is available, this can be added by taking 50mg/day starting at week 8 and continuing for 3 weeks, this will assist the HCG in "Kick-Starting" your natural hormonal production back into full operation faster. E) Both human and veterinary versions of the above are interchangeable. Good luck and good gaining!

THE SIZE STACK

High strength and very high size gains.

The following cycle is designed with male, weighing 100KG, in mind. To adjust for the proper dosage for your weight, figure a factor of 10% / 10KG of body weight. Example: If you weigh 110KG, increase the dosage 10% (or to the closest possible dosage).

Week Deca Cypionate Anadrol DBOL HCG Clomid

1	400mg	800mg	100mg/day	20mg/day		
2	400mg	700mg	50mg/day	20mg/day		
3	300mg	600mg	50mg/day	20mg/day		
4	300mg	500mg	50mg/day	20mg/day		
5	200mg	400mg	50mg/day	20mg/day		
6	200mg	300mg	50mg/day	20mg/day		
7	100mg	200mg	20mg/day			
8	100mg	100mg	20mg/day	100mg		
9		1500iu (M+Th)	50mg			
10		1500iu (M+Th)	50mg			
11		50mg				

(Proviron) = week 2 through 7 at 25mg/day.

Make sure your daily intake of protein is at least 3 grams per kg/body weight and your daily caloric intake is 50 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 to 90 minutes per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least a gallon of water/day and most importantly eat, eat, eat (especially BEEF and Pasta, just watch the fatty stuff)

Gains with this oral and injection stacking combination for an average 100KG male is 7 - 14 kg. Females should utilize this cycle at all. This is heavy cycle and some side-effects will be noted. Normally, the only noticeable side-effects are an increase in acne, bloating in the upper abdomen area, increased cholesterol level, and decreased sleeping pattern. But if have preexisting gyno, had gyno develop during puberty, or are susceptible to gyno, utilize Nolvadex otherwise use Proviron.

So, why stack Deca-Durabolin, Testosterone Cypionate, Anadrol, D-bol, Clomid, and HCG?

Deca-Durabolin (Nandrolone Decanoate) 200, 100 an 50mg/cc available.

Very high anabolic, moderate androgenic properties: This injectable steroid is one of the most effective, yet associated with least number of adverse side-effects, steroid known. Both moderate strength and high size gains are noted. Deca is also known, to boost the immune system, while also adding in the rehabilitation of joint or tendon injuries and inflammation, like Tendonist. This products is oil based, so shots can be taken weekly.

Testosterone (Cypionate) 200 and 100mg/cc

Very high anabolic, very high androgenic properties: This injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, rated as one of the most effective injectable steroids. Testosterone Cypionate is the most popular of the four testosterone's, being that it's superior to the others, but it's also known for water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is oil based, so shots can be taken weekly.

Anadrol (Oxymetholone) 50mg tabs

Very high anabolic, high androgenic properties: This oral steroid is the strongest oral known. It's known for it's superior strength and size gains, it's effectiveness is just short of injectable Testosterone. But all this comes with a price, high water retention (which will attribute weight loss after completion), increased blood pressure, aromatization, liver stress, and affects upon the body's natural hormonal levels.

Dianabol / D-bol (Methandrostenolone) 5mg tab

High anabolic, high androgenic properties: This oral or injectable steroid is known for it's superior properties that allow for both dramatic strength and size gains, in oral form it's only surpassed by Anadrol-50. Also known for causing mild headaches in the beginning of your cycle and mild water retention.

Clomid (Clomiphene Citrate) 50mg tab

Fertility medication: which causes an increase of follicle stimulating hormone and luteinizing hormone. Clomid is utilized to prevent the loss of gains made in size after the completion of a cycle, when endogenous testosterone levels are far below normal. Clomid also is known for it's mild anti-estrogen properties, although not as effective as Nolvadex or Proviron, it reduces the chances of gyno starting until the natural hormonal levels are back to normal.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation. Normally the dosage and schedule goes like this: 1500iu on Monday and Thursday.

Proviron (Mesterolone) 25mg tab

Androgenic properties: This oral steroid is known for it's estrogen blocking capabilities by competing with the estrogen at the targeted sites. Although, it doesn't have the same effective as Nolvadex, it's negative affect on the GH and IGF-1 production is much lower than that of Nolvadex. Also known for it's high toning capabilities when stacked with both a high anabolic - high androgenic steroid and reducing water retention normally associated with androgenic steroids.

Notes: A) Durabolin can be utilized instead of the Deca-Durabolin, but you have to cut the dosage in half and take it twice a week as the Durabolin effectiveness in the body is not as long as the Deca-Durabolin. B) Testosterone (Enanthate) can be utilized instead of Testosterone (Cypionate). C) An anti-estrogen is recommended, starting with week 2 and continuing through week 7 at 25mg/day, Proviron should be utilized instead of Nolvadex, as Nolvadex is more pronounced in decreasing the GH and IGF-1 production (as compared to Proviron), while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. D) If Clomid is recommended, this will assist the HCG in "Kick-Starting" your natural hormonal production back into full operation faster.

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THE STRENGTH STACK
Very high strength and high size gains.

The following cycle is designed with male, weighing 100KG, in mind. To adjust for the proper dosage for your weight, figure a factor of 10% / 10KG of body weight. Example: If you weigh 110KG, increase the dosage 10% (or to the closest possible dosage).

Week	EQ	Sustanon	GH	Anadrol	Insulin	HCG	Clomid
1	400mg	1000mg	2iu (M, W+Th)	100mg/day	S		
2	400mg	1000mg	2iu (M, W+Th)	50mg/day	E		
3	300mg	750mg	2iu (M, W+Th)	50mg/day	E		
4	300mg	750mg	2iu (M, W+Th)	50mg/day			
5	200mg	500mg	2iu (M, W+Th)	50mg/day	N		
6	200mg	500mg	2iu (M, W+Th)	50mg/day	O		
7	100mg	250mg	2iu (M, W+Th)	T			
8	100mg	250mg	2iu (M, W+Th)	E	100mg		
9		! 1500iu	(M+Th)	50mg			
10		! 1500iu	(M+Th)	50mg			
11		!	50mg				

***Insulin: 10iu is take within 15 minutes following a workout, then consume a high carbohydrate drink immediately!!! This product has no room for error, if you can't maintain stick compliance with how it is administered and with a high carbohydrate drink, DON'T USE IT!!! If your medically diagnosed with diabetes or have a family history of diabetes, DON'T USE IT!!! BLINDNESS and DEATH

can occur!!!***

(Equipoise) = The dosage noted above is broken down into 1/3 and taken on Mon, Wed, Fri. This is done due to Equipoise is water based and it's effectiveness within the body is limited.

(Proviron) = week 2 through 4 at 50mg/day and week 5 through 7 at 25mg/day.

Make sure your daily intake of protein is at least 3 grams per kg/body weight and your daily caloric intake is 50 cal per kg/body weight. Utilize a high intensity, high weight, low rep workout routine 6 days on, 1 day off at 60 to 90 minutes per day, during the cycle. After completing the cycle, utilize a 3 days on, 1 day off at 60 minutes per day. During the cycle take Evening Primrose Oil and Cod Liver Oil to assist your kidney/liver. Also, drink at least a gallon of water/day and most importantly eat, eat, eat (especially BEEF and Pasta, just watch the fatty stuff)

Gains with this oral and injection stacking combination for an average 100KG male is 6 - 10 kg. Females should utilize this cycle at all. This is heavy cycle and some side-effects will be noted. Normally, the only noticeable side-effects are an increase in acne, bloating in the upper abdomen area, increased cholesterol level, and decreased sleeping pattern. But if have preexisting gyno, had gyno develop during puberty, or are susceptible to gyno, utilize Nolvadex otherwise use Proviron.

So, why stack Equipoise, Sustanon, Growth Hormone, Anadrol, Insulin, Clomid, and HCG?

Equipoise (Boldenone Undecylenate) 50 and 25mg/cc available

High anabolic, moderate androgenic properties: This injectable steroid is known for its effectiveness in both bulking and cutting (depending on what it's stacked with) and its ability to not only allow the user to make significant strength and size gains, but also strengthen the users Tendons / Ligaments and assists in the tissue recovery process, after each workout, thus reducing the chances of injury and a faster recovery time. This product is a water based, so shots are taken every second or third day.

Sustanon (Testosterone Propionate 30 mg, Testosterone Phenylpropionate 60 mg, Testosterone Isocaproate 60mg, and Testosterone Decanoate 100 mg) 250mg/cc

Very high anabolic, high androgenic properties: This injectable steroid is known for its superior properties that allow for both dramatic strength and size gains, rated as the most effective injectable. The reasoning for the mixture / blend of four Testosterone products is to reduce the water retention, aromatization, liver stress, and affects upon the body's natural hormonal levels. This products is oil based, so shots can be taken weekly.

Growth Hormone 16, 8, and 4iu.

Endogenous hormone: This is the synthetic version of "Human Growth Hormone" which is naturally produced by your pituitary gland. This product promotes growth in every muscle tissue fiber in your body (including the heart, kidney, etc...) dramatic strength and size increases are noted, especially when stacked with a high androgenic cycle like that noted above. This products has become very popular due to its ability to go undetected during drug testing. Very few side-effects are noted except possible squaring of the forehead and jaw area, but this is caused by excessive dosages.

Anadrol (Oxymetholone) 50mg tabs

Very high anabolic, high androgenic properties: This oral steroid is the strongest oral known. It's known for its superior strength and size gains, its effectiveness is just short of injectable Testosterone. But all this comes with a price, high water retention (which will attribute weight loss after completion), increased blood pressure, aromatization, liver stress, and affects upon the body's natural hormonal levels.

Insulin (Humulin R) 100iu/ml vial

Insulin is a hormone produced by the pancreas. In diabetes mellitus, the body does not produce enough insulin and therapy with insulin may be required. In Bodybuilders it is utilized to increase the amount of glycogen and other nutrients introduced to the muscle cells. Insulin is very effective, but extreme caution must be used. Insulin may cause minor side effects such as rash, irritation or redness at the injection site. Too much insulin can cause low blood sugar

(hypoglycemia). The symptoms include chills, cold sweat, shaking, rapid heart rate, weakness, headache, fainting. If you experience these symptoms, eat a quick source of sugar such as table sugar, orange juice, honey, or non-diet soda. To help prevent hypoglycemia, eat meals on a regular schedule. Too little insulin can cause symptoms of high blood sugar (hyperglycemia) which include confusion, drowsiness, flushing, rapid breathing, fruity breath odor.

Clomid (Clomiphene Citrate) 50mg tab

Fertility medication: which causes an increase of follicle stimulating hormone and luteinizing hormone. Clomid is utilized to prevent the loss of gains made in size after the completion of a cycle, when endogenous testosterone levels are far below normal. Clomid also is known for it's mild anti-estrogen properties, although not as effective as Nolvadex or Proviron, it reduces the chances of gyno starting until the natural hormonal levels are back to normal.

Proviron (Mesterolone) 25mg tab

Androgenic properties: This oral steroid is known for it's estrogen blocking capabilities by competing with the estrogen at the targeted sites. Although, it doesn't have the same effective as Nolvadex, it's negative affect on the GH and IGF-1 production is much lower than that of Nolvadex. Also known for it's high toning capabilities when stacked with both a high anabolic - high androgenic steroid and reducing water retention normally associated with androgenic steroids.

Nolvadex (Tamoxifen Citrate) 10mg tab

This is a nonsteroidal medication, is utilized as a very effective anti-estrogen. This is accomplished by the Nolvadex competing at the targeted sites with the estrogen (not decreasing the estrogen, but competing with it). Nolvadex is probably the most effective medication used by steroid users in preventing gyno and female pattern fat distribution. But, Nolvadex also decreases the GH and IGF-1 production, while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. thus reducing your possible gains in both strength and size.

HCG (Human Chorionic Gonadotrophin)

This medication is a hormone which stimulates the ovaries and the testes. It is used in males to stimulate testicular descent or testicular growth and development. In females, this medication is used in combination with other medication to induce ovulation. Females may require only one dose a week. Males may receive a series of injections 2 to 3 times a week. HCG helps "kick-start" your natural production of hormone / testosterone into operation. Normally the dosage and schedule goes like this: 1500iu on Monday and Thursday.

Notes: A) Deca-Durabolin can be utilized instead of the Equipoise, but Deca-Durabolin only needs to be taken weekly, due to it's oil based. B) Testosterone (Cypionate) can be utilized instead of Sustanon. C) An anti-estrogen is recommended, starting with week 2 and continuing through week 4 at 50 mg/day and week 5 through week 7 at 25mg/day, Proviron should be utilized instead of Nolvadex, as Nolvadex is more pronounced in decreasing the GH and IGF-1 production (as compared to Proviron), while part of the gains made, are a direct result of the anabolic / androgen increasing the GH and IGF-1 production. D) If Clomid is recommended, this will assist the HCG in "Kick-Starting" your natural hormonal production back into full operation faster.

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The following Counterfeit tests should help:

Vial vs Ampoule: Use the guide to determine if an item comes in a Vial or an ampule. Ampules, self enclosed glass containers, are much more difficult to counterfeit than are Vials. If an item is made in an ampule, do not purchase it if you find it for sale in a vial.

Air bubble test: The ampules should not have any bubbles in the glass. Liquid yes, glass no.

Parabolan: 95% of Black market Parabolan is fake. It is only made by one company in France.

Nandrolone: This is the most common counterfeit. Nandrolone comes in 50, 100, & 200 mg/ml strengths. The 200 mg/ml is more often faked -- the 50 mg/ml strength is less often faked.

Vial's metal ring: All vials contain a metal ring and a rubber stopper. On many fakes, the ring can be rotated with your hand. Never on a real product.

Rounded corners: 90% of the lables on steroids have rounded labels. Sustanon is the exception with square lables.

Stamped on or Burnt on Date: On all Steroids, there should be an expiration date and lot number. On legitimate products, they are burned, stamped, or ink jet sprayed on the box and or label. On many fakes, they are printed with the lable -- maybe not in the same color ink -- but in the same print process. On a real AS, it is always a separate process.

Scratch test: The silk-screened lettering on an Amp should not come off when scratched with your fingernail.

Loose Pills: Always to be avoided -- the easiest counterfeit.

American Domestic Drugs: Never make it to the black market -- if you find them there, they are fake.

Guide lists everything: Everything you find on the streets should be in the guide.

Liquid Level Test: One of the best tests. When purchasing multiple vials or amps, be sure to line them up in a row to make sure the liquid is all the same level. On a fake, often the liquid will not be even in all bottles.

Quality Label Test: There should be no bubbles in the label. The label should look quality.

1. The basic ketogenic diet - new information on the ultimate hardcore diet.

In recent consultations with my personal clients I have seen an increase in questions and studies on the topic of dieting. In response I would now like to share with you what I have found to be the ultimate in hardcore dieting—THE KETOGENIC DIET. I will also tell to you about a controversial method for entering ketosis using injectable insulin, and why you might want to consider this secret weapon.

There is no better way to get them ripped and into contest ready shape than the use of a modified ketogenic diet. In fact, when helping a bodybuilder get ready for a contest, I will not work with him until he is in the metabolic state called ketosis. This state is the point at which the body burns fats for fuel in the absence of carbohydrates. A high fat diet you ask—won't that make me fat? The answer is YES. If you do not restrict carbohydrates, perhaps there is no better way of getting fat. The answer is NO if you restrict your carbohydrates to the point that your body makes the metabolic shift from burning carbohydrates for its daily energy needs to burning fat. This metabolic shift occurs when your blood sugar levels drop below normal and your body starts converting fatty acids into what is called ketones or fractured fats. At this point your body will burn those ketones as its primary energy source. More on this in a moment, let's first take a look at the problems with traditional low-fat diets, especially when used by people who are not fat (i.e. athletes) in order to better understand the exclusive benefits to the high fat, low carbohydrate ketogenic diet.

Traditional Low fat diets:

Low fat diets make the body's metabolism lazy. The body will prefer to get all of its energy requirements from glycogen (carbohydrates) than from the body's fat reserves. Low fat sends the body into starvation mode, it tries to hold on to body fat, and will burn muscle instead.

When carbohydrate stores are exhausted the body will burn protein before switching to fat.

Carbohydrates increase serotonin levels and cause sleepiness.

Carbs cause insulin swings that cause the body to deposit unburned carbs as body fat.

Protein supplements are needed for the bodybuilder on a low fat diet.

Low-fat foods are much more expensive than the conventional version and contain more "chemistry" i.e. are highly processed.

The high fat, low carbohydrate ketogenic diet:

Increases lean body mass without steroids while dieting.

Maximizes the bodybuilding effects of your own hormones such as testosterone, insulin, and natural GH (growth hormone).

Lowers cortisol levels resulting in reduced catabolism or muscle breakdown.

Increases energy level compared to low-fat diets.

Decreases body fat without sacrificing lean mass: lose 90% fat and only 10% muscle vs. the 60% fat and 40% muscle loss of other diets.

Burning fat is less efficient which results in an ever increased metabolic rate.

Plentiful supply of protein—found in all the meat that is consumed.

This diet makes an excellent base for using additional "tricks" that stimulate metabolism and burn additional body fat. Drugs like clenbuterol, Cytomel, Synthroid, Phenyltropic PPA and even caffeine become more effective.

Before explaining how a ketogenic diet works there are three things many dieters do to get ready.

First of all, before you start on this diet, many athletes get a physical including blood work.

Among other things, this gives you a baseline cholesterol level. Knowing that your cholesterol levels are healthy at the start of a high fat diet is a good safety precaution.

PLEASE NOTE: This diet is controversial and should not be used by pregnant women.

Second, to achieve goal results on a ketogenic diet, or any diet for that matter, it is important to determine how many calories you eat each day? To best answer this question you need to calculate your Basal Metabolic Rate (BMR) and your Active Metabolic Rate (AMR.) Your BMR is the number of calories your body needs to sustain basic body functions while at rest. This means if you have a BMR of 2000 calories, you need to take in this many calories each day to simply maintain your body weight if you were to spend the whole day at rest. Your AMR is the amount of calories your body needs to sustain basic functions plus the calories needed to perform at your average daily activity level. If you eat more calories than your AMR then you will gain weight, if you eat less calories than your AMR then you will lose weight. It is that simple.

2. Calculating caloric intake based on your Basal Metabolic Rate (BMR) and your Active Metabolic Rate (AMR).

Here is the basic formula for calculating your BMR and AMR. (Do not worry if this looks hard, an easy way follows.)

Women: $655 + [4.36 \times \text{Weight (lbs.)}] + [4.32 \times \text{Height (inches)}] - (4.7 \times \text{Age}) = \text{your BMR}$
Men: $66 + (6.22 \times \text{Weight (lbs.)}) + [12.7 \times \text{Height (inches)}] - (6.8 \times \text{Age}) = \text{your BMR}$

Next, to determine the amount of total calories your active body needs or its AMR simply multiply your BMR by the appropriate activity factor listed below.

Lightly active (normal, everyday activities)... BMR x 1.3 = Maintenance Calorie Level
Moderately active (exercise 3 to 4 times a week)... BMR x 1.4 = Maintenance Calorie Level
Very active (exercise more than 4 times a week)... BMR x 1.6 = Maintenance Calorie Level
Extremely active (exercise 6 to 7 times a week for more than 1 hour duration)... BMR x 1.8 = Maintenance Calorie Level

Interestingly, simply by changing from a lightly active lifestyle to a very active lifestyle you can increase your caloric intake by 24% (about 500 calories).

Once you've completed the above calculations you should cut your AMR by 15% and consume this number of calories in total each day while on the ketogenic diet.

For a quick and easy way to calculate all that, here's a web site that will do the math for you:
<http://tqd.advanced.org/10991/german/bmr.html>

The third thing to do before you begin is to purchase Ketostix from your local pharmacy. They are found behind the pharmacy counter, but you do not need a prescription to purchase them. These sticks are traditionally used by diabetics to measure the amount of ketones in their urine and are an intrigal part of a successful ketogenic diet, but more on this later.

How a ketogenic diet works:

This diet starts at around 6-8 p.m. on Sunday night with a meal of carbohydrates and lasts until the following weekend (approximately 5-7 days). This Sunday night meal should be made up of simple carbs like breakfast cereal or fruit and no fats. Complex carbs like pasta, bread, or rice should be avoided as they take a long time for your body to break down and use as fuel. We want carbs that are easily available to the body in order to create an insulin spike prior to the beginning of the diet. This insulin spike will allow the body to lower blood sugar levels and enter ketosis more efficiently once you begin the high fat, low carb portion of the diet.

Following this final high carb meal and lasting until you enter ketosis, you need to eat about 75 to 80% of your daily calories from fat and 20% to 25% daily calories from protein. This very high fat intake is necessary to enter ketosis as quickly as possible so that you can begin the fat burning process. If the protein amounts are too high, then the body might not be able to make the required metabolic shift to producing ketones. More importantly, you must not eat more than 15-20 grams of carbs during this period. This means that you can eat no more than 3-4 grams of carbs per meal spread out between 5-6 meals per day. Eating 20 grams of carbs per day is fine, but eating all 20 grams of carbs at once will definitely bring you out of ketosis.

You may be asking yourself what kinds of food can be eaten on this diet that are high in fat and also contain no carbs. Unfortunately, the menu on this diet is very limited. Few foods contain near zero carbs. Fortunately, you can eat any combination of ground beef, prime rib, and sirloin steaks, which all contain high amounts of fat with zero carbs as long as you eat them without breading or sauces. Chicken with the skin on is also a good choice. This is also your chance to eat Buffalo Wings with blue cheese and even McDonald's beef patties without the bread or condiments. You will definitely have to be careful at restaurants because you never know exactly how the food is prepared. Eggs are good while on a ketogenic diet; they have less than 1 gram of carbs per egg, but be careful with any dairy products like processed cheeses, which often contain 2-3 grams of carbs per slice. Other foods like sausage, pork, flounder, cheddar cheese, tuna, and butter have near-zero carbs and are high in fat. Green vegetables like lettuce, broccoli, and celery are great as they are made up of mostly water and contain near-zero carbs. When it comes to food choices the bottom line is that you have to read nutrition labels. If you are not sure if the food contains carbs simply don't eat it.

In terms of training it would be great if you could do aerobics and weight train with the same energy and intensity as you would with carbohydrates in your system. Unfortunately you cannot. When your body is in a state of ketosis, you will probably feel a little lethargic, especially the first week. This doesn't mean that you should stop aerobic activity or weight training—just lower the intensity. Limit aerobics to 2 days per week on an empty stomach first thing in the morning. Limit weight training to 2 or 3 days during the week on nonaerobic days. You should train big

muscle groups like legs, back, and/or chest on Monday when you still might have stored glycogen in your muscles. Save the small muscle groups like arms, shoulders, and calves for Tuesday or Wednesday.

By about Wednesday your body should be in ketosis. This means that there will be detectable ketone bodies present in your urine, which you can measure with a Ketostix. Remember, the darker the shade of purple on the stick, the deeper you are in ketosis. Most people will reach only the moderate level (pink to light purple) while others will be able to get into deep ketosis more easily. Once you are in at least moderate ketosis it is o.k. to up your protein intake to 35-40% of your daily calories. Fat intake should be between 60-65% with less than 5% from carbs. For a person who is eating between 2400-2700 cal/day this would translate into no more than 30 grams of carbs per day. Again remember, it is important that the carbs be spread throughout the day to not bring you out of your ketogenic state. I also recommend that you check the Ketostix at least twice a day once they show that you are in ketosis. This will allow you to do some damage control by eating almost all of your calories from fat if you've made a mistake and start to come out of ketosis.

On Saturday or Sunday, you will be ready to begin the fun part of the diet, the carb up! In order to achieve the best results, you need to deplete the muscles of glycogen with a full body circuit workout on Friday in order to prep them for maximum carb absorption on the weekend. This means that you have to do a few sets of exercises for all of your muscle groups in one exhaustive workout. Use lightweights and high repetitions on all exercises with as much intensity as you can muster. I recommend using compound exercise movements that involve the most muscle groups in an effort to fatigue all of your muscles in the shortest amount of time. Exercises such as squats, incline bench presses, front barbell shoulder presses, and front machine pulldowns will take care of all the big muscle groups while incorporating smaller muscle groups as well. Throw in 1-2 sets of bicep curls, tricep pushdowns, and calf raises and your total body workout is completed.

On Saturday and Sunday eat 10-15% above your (AMR) active maintenance number of calories broken down as follows: high carb (60%), low fat (15-20%), medium protein (20-25%). This will again cause an insulin spike as it did at the beginning of your diet week. The spike of insulin drives the carbohydrates into your depleted muscles, which has an anabolic effect. You will need to eat often, every 2-2 1/2 hours. Bodybuilding guru Dan Duchaine even recommends waking-up during the night to eat. Remember, that for these two days you will no longer be in the ketogenic state that uses fat as the body's primary fuel. Now is the time to cut back and eat no more than 20% of your calories from fat

The first day of the weekend carb meals should contain foods with the highest glycemic index in order to cause the greatest possible insulin spike. The rate at which food raises blood glucose is called its glycemic index. Some foods with a high glycemic index are instant rice, baked potatoes, carrots, graham crackers, rice cakes, bagels, watermelon, and pineapple. You can eat high glycemic foods like bowls of sugary breakfast cereals with skim milk or waffles with maple syrup. Eating these foods will cause a rush of carbohydrates that will be forced directly into your muscle cells. Since added fat will slow down this insulin response and negatively effect the carb up, it would be wise to limit your intake of meats and cheeses during the first day. You can increase your protein intake by using a protein supplement like a soy or whey protein and eating foods like tuna or chicken breasts. [Click here for a comprehensive glycemic index guide for various foods.](#)

NOTE: On Sunday evening be sure to switch back to the high fat / low carb mode after your last high carb meal (from 6-8PM).

These are the basics of a ketogenic diet. The most important thing you should remember is that your body needs to make the metabolic shift necessary to convert fatty acids into ketones which it will then burn for energy-without the shift the diet will not work. As a dieter, you will be able to drive your body into ketosis by following the diet procedures outlined above. Though definitely effective the diet process outlined above takes you into ketosis in anywhere from 48 to 72 hours. That means your body is using stored fatty acids as fuel for only 48 to 72 hours before you begin the weekend carb-up stage of the diet.

3. How to enhance fat metabolism with Phenyltropic PPA and how you can get it.

Phenyltropic PPA is a new and improved drug based diet product unsurpassed in its ability to help athletes burn body fat, and is currently legal for sale in the United States. In fact while

working with my clients, I have found that the combination of a ketogenic diet and Phenyltropic PPA is the best way for you to lose body fat while protecting muscle mass. Phenyltropic PPA is the Mass Quantities version of the EAC stack—a combination of ephedrine, caffeine, and aspirin. Though chemically similar, Mass Quantities has replaced the ephedrine component of the stack with DL norephedrine HCl because of its greater potential to raise the body's metabolic rate—resulting in greater lipolysis or fat loss. Studies have in fact shown norephedrine to be the most potent and the most thermogenic of all the ephedrine alkaloids, making this switch a very beneficial one. Since norephedrine does not cross the blood-brain barrier to the same extent as ephedrine we do not see the same level of central nervous system stimulation or side effects as with ephedrine. No more jitters! It also does not (currently) carry the same FDA restrictions as ephedrine, and is therefore more readily available to the public.

The combination of norephedrine with caffeine works synergistically to drastically increase the body's production of adrenaline and noradrenaline—the primary adrenergic hormones. These hormones bind to the various adrenergic receptors, of which there are the beta sub 2, beta sub 3, and alpha sub 2 receptors, that together affect fat loss and fat dispersal. The stimulation of the beta sub 2 and the beta sub 3 receptors in particular is what's responsible for the mobilization and burning of adipose tissue (fat). These are the receptors that you want to stimulate to affect fat loss in a positive way and thankfully the caffeine/norephedrine combination is quite efficient at this.

The other receptor of great interest to the bodybuilder is the alpha sub 2. Studies have shown that this receptor blocks the mobilization of adipose tissue. In men these receptors are concentrated primarily in the lower abdomen and sides or love handles; in women, they are concentrated in the lower body. This explains why on many diets weight is lost, but the physique is not drastically improved because the lost fat is intermuscular, with the subcutaneous fat—the fat just under the skin—not being effected. Here is where the addition of Yohimbine proves useful. Yohimbine blocks the alpha sub 2 receptor, enabling a greater level of fat loss in the body's most resilient areas.

Click here for more of the science behind this amazing new product and to receive a FREE \$34.97 bottle.

4. A controversial secret for getting into fat burning ketosis faster with Humulin R—8 hours instead of 3 days—and how you can get it!

There is a hardcore trick the pro's use that forces your body into ketosis within only 8 to 12 hours allowing more time for the body to burn fatty acid stores before your carb-up stage. The trick, originally brought to my attention by Dan Duchaine, is the use of Humulin R injectible insulin. Humulin R insulin is important compared to other types of insulin because it reaches its peak effect in 2 hours, causing a quick metabolic shift into ketosis. Using small amounts of insulin will cause your blood glucose to drop, in a quick and controlled manner. Glucose levels hit about 50 mg/ml and force your body into ketosis at a much faster rate. Insulin is one of the most controversial drugs used in bodybuilding today. The reality is that if you slip up and use too much insulin, you could enter a hypoglycemic coma, which could cause irreversible damage to your body and in some cases prove fatal. Please note that that the following information is highly controversial and provided solely for informational purposes.

Despite the controversy surrounding its use insulin is one of the easiest substances in bodybuilding to obtain legally. It is available over the counter in most U.S. states and costs between \$20–\$30 in local pharmacies and is even cheaper through U.S. mail order pharmacies. In most U.S. states a prescription is required to purchase and possess the insulin syringes used to administer the drug. This problem can be avoided by ordering syringes from mail order sources. A person using insulin for bodybuilding purposes should face no real legal ramifications. The only problems that can arise is getting caught possessing syringes with out a script or actually selling insulin for any purpose other than the treatment of diabetes.

A glucometer, to display your blood glucose levels, is highly recommended while attempting to use insulin safely. A glucometer costs around \$100. It is possible to use insulin without a glucometer if your are cautious but it is not recommended. You will also need to purchase insulin syringes that hold up to 100 units. Do not use regular syringes. You will need to measure out precise amounts of insulin, between 2–3 units, which cannot be measured accurately using a regular syringe.

Here's how it works: After you eat your last carb meal on Sunday night, you will need to take a reading on the glucometer to check your blood glucose level. The body's normal blood glucose level is usually between 80mg/ml and 120 mg/ml. At this point, draw 2-3 units of insulin into a syringe and inject it subcutaneously into a fold of skin. After waiting between two or three hours, take another reading with the glucometer. Your blood glucose level will have dropped since your last measurement. Again inject 2 units of insulin and measure your blood glucose level around 2 hours after your injection. Repeat this cycle until your blood glucose level is between 55 mg/ml and 65 mg/ml. When your blood glucose is at this level, you will descend into ketosis while you sleep. ALWAYS REMEMBER TO STAY AWAKE FOR AT LEAST 2 HOURS AFTER AN INSULIN INJECTION. The last thing you want is to fall asleep after an injection and have your blood glucose drop to a dangerously low level while you sleep. You could fall into a hypoglycemic coma and no one will recognize the symptoms until it is too late.

Upon waking in the morning, measure your urine with the Ketostix. Measuring ketones in the morning is necessary because the sticks show only the unused level of ketones in your body and should show trace to moderate ketone levels. If you measure them in the afternoon the numbers will not be as accurate, because most of the ketones that were produced will have been used by your body as fuel.

If you do not have access to a glucometer, you will need to be much more cautious when attempting to use insulin. Since you will not be able to accurately measure your blood glucose, only small amounts of insulin should be used. You can start out with 2 units of insulin after your carb meal on Sunday. After that you should not use anymore than 1-1 1/2 units of insulin every two hours. A total of two or three injections should be made and then you should measure with the ketostix upon waking in the morning. If you still have not entered ketosis, use insulin injections of 1-1 1/2 units every two hours until you enter ketosis. This way takes longer, but you should enter ketosis within 18-20 hours.

In the not too distant future, Insulin intake will become even easier. Thanks to a new insulin inhaler, by Generex, insulin injections may become relics of the past. The inhaler sprays insulin out into the mouth like a mist, which coats the membranes of the mouth, throat and tongue. The insulin then passes quickly through the membranes into the bloodstream. The new insulin inhaler is in phase two clinical trials. If all goes well, the Food and Drug Administration could put it on a fast track for approval, making it available on the market in less than two years.

5. The Phenyltropic PPA/Humulin R Cutting Stack

Week One: Follow the ketogenic diet alone, or on Sunday night of the diet inject 1 to 2 Units Humulin R Insulin, until blood sugar levels have dropped. No more than 3-4 small injections (1-2 units) should be necessary to enter ketosis, as outlined above.

Week Two: Begin using Phenyltropic PPA on Monday at one tab/day and work up to three tabs/day.*

Week Three: Continue as outlined above making Sunday the Humulin R insulin day with no Phenyltropic PPA.

*NOTE: As with any other type of supplement containing caffeine and norephedrine, Phenyltropic PPA should be titrated onto slowly and titrated off the same way. As with all stimulants, one tends to become accustomed to them over time. Soon you need to take more to get the same effect. The individual taking Phenyltropic PPA is really the only one who can answer if the dose is too high. Most athletes work up to three tabs/day. You've also got to watch out for other sources of caffeine when using a product such as Phenyltropic PPA. Within three weeks after the full dosage has been reached, the body will adjust and the caffeine will lose its effect. However, if you add a baby aspirin with each dose, the potentiating effect of the aspirin will prolong the effectiveness of the "stack" for quite a while longer. Remember there is additional stress on the adrenal glands and at least one day per week the stack should be discontinued. A total break for at least two to three weeks after 4-6 weeks of usage is also a good idea.

6. Here are the profiles of some diet drugs favorites: clenbuterol, Cytomel, Synthroid, and tiratricol. All will enhance the Phenyltropic PPA/Humulin R Cutting Stack.

Clenbuterol

You may be familiar with clenbuterol, as it is a very popular dieting drug among bodybuilders. Specifically this drug has an effect on the body similar to the endogenous hormone adrenaline (epinephrine). The properties of this drug are similar to ephedrine and norephedrine, which work

mainly to stimulate certain adrenergic receptors. Clenbuterol most specifically binds to the beta-2 receptor, which is directly related to fat loss. When this receptor is activated, the body is prompted to release fatty acids into circulation (lowering fat stores). Clenbuterol also acts as a strong CNS stimulant, and users quite commonly report associated side effects like shaky hands, insomnia, sweating, increased blood pressure and nausea during treatment. Such side effects generally subside after a week or so once the user becomes accustomed to the drug. Only consider clenbuterol when the stimulating effects of Phenyltropic PPA have subsided.

Much more detailed information on clen can be found right on the Elite Fitness site in a free excerpt from the cutting and bulking guides.

Cytomel

Cytomel is a synthetic form of the endogenous thyroid hormone triiodothyronine (T-3). Thyroid hormones are the primary regulators of body metabolism, and affect virtually all organ systems. T-3 is the hormone that displays the most pronounced activity in the body, although there are a number of other hormones and precursors in this group. Thyroid drugs are advantageous to the athlete for their ability to markedly increase the metabolic rate (affecting the rate in which proteins, fats and carbohydrates are utilized by the body). In particular, the use of thyroid drugs can have a dramatic impact on an individual's body-fat stores. So much that many bodybuilders find it possible to shred off excess fat without the same level of caloric restrictions needed with "natural" diets. Dieting is in fact very difficult for most people, because the body will quickly notice a deficit in food intake, and will respond by reducing the level of thyroid hormones in the blood. This makes it increasingly more difficult for the average person to consistently lose weight during a diet, as the body is constantly striving to lower its daily need for calories. Thyroid use clearly circumvents this problem, making this type of drug use very popular among serious competitors. These drugs are not without side effects however, which include, but are not limited to, heart palpitations, agitation, shortness of breath, irregular heartbeat, sweating, nausea, headaches, and psychic/metabolic disorders. Cytomel is a powerful hormone, one that can permanently alter the functioning of the body if it is misused. When administering it, one must take caution to increase the dosage slowly. It is also a good recommendation to take no more than 100mcg daily.

Synthroid

Synthroid is a synthetic form of the thyroid hormone thyroxine (T-4). Thyroxine was the first thyroid hormone isolated by scientists, who at first mistakenly thought it was the primary thyroid hormone. Later we have come to find however that T-3 is the hormone which displays the most activity. Thyroxine is actually looked at as a relatively inactive thyroid product in its initial state, and exerts most of its action by converting to T-3. 80% of blood T-3 actually comes from the conversion of T-4, so thyroxine can be thought of as a form of storage for active thyroid hormone in the body. Administration of a synthetic T-4 can markedly increase basal metabolism however, its effect is limited by the rate at which the body can convert it. It is therefore considered as a weaker thyroid option, although its effect is still quite substantial. As with Cytomel, side effects can be a major concern (see above). Synthroid is also believed to have the potential to permanently alter thyroid functioning if misused, so don't be tricked into thinking it is completely weak or benign. Similar dosing regimens to Cytomel apply, with the total daily amount not to exceed 300-400mcg.

Tiratricol

Tiratricol is a synthetic thyroid hormone popular among bodybuilders in Europe. Similar to Synthroid, this compound is relatively inactive in its initial state. Its effect on the body stems from its ability to convert to T-3, the body's primary thyroid hormone. It is interesting to note that tiratricol is commonly used in Europe to treat cases of hyperthyroidism (overproduction of thyroid hormones). Apparently in such conditions the intake of tiratricol can cause the body to recognize a surplus of thyroid hormone levels (feedback mechanism), signaling for the reduced secretion of TSH (thyroid stimulating hormone). This will ultimately aid in the regulation of hormone production, as natural T-3 and T-4 output would be reduced. Healthy bodybuilders however do not feel the use of this item lowers thyroid levels, and instead find it to be a very effective drug for elevating T-3 and increasing the removal of excess body fat. Tiratricol is comparatively weaker than the previously mentioned thyroid products, although one should still take caution when administering it. The maximum dosage should not be taken from the onset; instead it is to be built

up slowly. A typical daily dosage is somewhere in the range of ten to fourteen .35mg tablets, with two to four tablets being considered the customary starting point. This is usually increased by two tablets every subsequent day (or two). Likewise the dosage should be slowly reduced as the drug is discontinued. This drug is not without side effects, however; they are much less prevalent than with other thyroid medications.

For more information on these and other diet drugs, please check out the Elite fitness Cutting Guide.

7. Profiles of the only two new diet drugs released in the last two years: Sibutramine and Orlistat

Sibutramine

Sibutramine hydrochloride monohydrate, brand name Meridia, is an FDA approved oral prescription medication used for the management of obesity and maintenance of weight loss and is known to work best when used in conjunction with a reduced-calorie diet and increased physical activity. Meridia works by affecting natural chemicals in the brain involved in regulating the appetite and allows them to act longer. The appetite control center in the brain is what is believed to regulate the amount of food eaten through feelings of hunger and fullness. Unlike many other appetite suppressant drugs, Meridia is not a releasing agent. It does not get inside the cells to boost the release of neurotransmitters, such as serotonin. Instead, as an uptake inhibitor, Meridia works outside the cells to stop these neurotransmitters from being reabsorbed and thereby allowing appetite control to last longer. In clinical trials of 6,000 individuals, Meridia produced clinically and statistically significant weight loss results. Meridia was studied among men and women, ages 18 to 65, and on average, patients achieved 5-10% reduction of baseline weight. If appetite control is necessary while on a ketogenic diet this drug might be a good addition. Most side effects associated with Meridia are mild and momentary in nature, including dry mouth, headache, constipation and insomnia. In some patients, Meridia substantially increases blood pressure. MERIDIA should be taken once a day without regard to meals. It will also be available in multiple doses (5, 10, and 15 mg), enabling physicians to individualize therapy for their patients. The recommended starting dose of MERIDIA is one 10 mg capsule per day. Patients with inadequate weight loss should be titrated to a 15 mg dose.

Orlistat (Xenical)

On May 24, 1999, a new diet drug that reduces fat absorption finally won approval from the Federal Drug Administration. It was only the second diet drug (after sibutramine) to receive FDA approval since 1997, when the administration banned the popular fen-phen combination after it was linked to several heart-related deaths. Orlistat, the first of a new class of drugs called lipase inhibitors, can decrease absorption of dietary fat in the gastrointestinal tract by about 30 percent, according to drug manufacturer Roche Laboratories. This would indicate it would not be an optimal choice for a ketogenic diet. The FDA approved it by prescription for the seriously obese only and not casual dieters who want to shed five or 10 pounds. The drug, trade-named Xenical, was tested over seven years on more than 4,000 patients and on average, 57 percent of patients treated with Xenical and 31 percent of placebo-treated patients lost at least 5 percent of their body weight. All patients in the studies received nutritional counseling as well. In January, the results of a two-year study on the effectiveness of Xenical were released in the Journal of the American Medical Association. The study, funded by the drug's manufacturer, found Xenical helped patients lose weight, but only about seven pounds more after two years than the patients who took a dummy pill. The JAMA study also showed Xenical was associated with a slight reduction in cholesterol, blood pressure and glucose. For those taking the drug, health authorities recommend a nutritionally balanced diet with no more than 30 percent of calories from fat. Xenical reduces absorption of some fat-soluble vitamins such as A, D, E, K and beta carotene, so users of the drug are advised to take dietary supplements. Side effects of Xenical include gas, diarrhea and intestinal cramping. Typically the more fat patients eat, the more effects they experience.

1. WHAT AN ESTER IS, AND HOW IT WORKS.
2. ACTIONS OF DIFFERENT ESTERS.
3. ESTER PROFILES AND CONCLUSION

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1. WHAT AN ESTER IS, AND HOW IT WORKS

I'm sure that if you have taken an interest in anabolic steroids you have noticed the similarities on the labeling of many drugs. Let's look at testosterone for example. One can find compounds like testosterone cypionate, enanthate, propionate, heptylate; caproate, phenylpropionate, isocaproate, decanoate, acetate, the list goes on and on. In all such cases the parent hormone is testosterone, which had been modified by adding an ester (enanthate, propionate etc.) to its structure. The following question arises: What is the difference between the various esterified versions of testosterone in regards to their use in bodybuilding?

An ester is a chain composed primarily of carbon and hydrogen atoms. This chain is typically attached to the parent steroid hormone at the 17th carbon position (beta orientation), although some compounds do carry esters at position 3 (for the purposes of this article it is not crucial to understand the exact position of the ester). Esterification of an injectable anabolic/androgenic steroid basically accomplishes one thing, it slows the release of the parent steroid from the site of injection. This happens because the ester will notably lower the water solubility of the steroid, and increase its lipid (fat) solubility. This will cause the drug to form a deposit in the muscle tissue, from which it will slowly enter into circulation as it is picked up in small quantities by the blood. Generally, the longer the ester chain, the lower the water solubility of the compound, and the longer it will take to for the full dosage to reach general circulation.

Slowing the release of the parent steroid is a great benefit in steroid medicine, as free testosterone (or other steroid hormones) previously would remain active in the body for a very short period of time (typically hours). This would necessitate an unpleasant daily injection schedule if one wished to maintain a continuous elevation of testosterone (the goal of testosterone replacement therapy). By adding an ester, the patient can visit the doctor as infrequently as once per month for his injection, instead of having to constantly re-administer the drug to achieve a therapeutic effect. Clearly without the use of an ester, therapy with an injectable anabolic/androgen would be much more difficult.

Esterification temporarily deactivates the steroid molecule. With a chain blocking the 17th beta position, binding to the androgen receptor is not possible (it can exert no activity in the body). In order for the compound to become active the ester must therefore first be removed. This automatically occurs once the compound has filtered into blood circulation, where esterase enzymes quickly cleave off (hydrolyze) the ester chain. This will restore the necessary hydroxyl (OH) group at the 17th beta position, enabling the drug to attach to the appropriate receptor. Now and only now will the steroid be able to have an effect on skeletal muscle tissue. You can start to see why considering testosterone cypionate much more potent than enanthate makes little sense, as your muscles are seeing only free testosterone no matter what ester was used to deploy it.

2. ACTIONS OF DIFFERENT ESTERS

There are many different esters that are used with anabolic/androgenic steroids, but again, they all do basically the same thing. Esters vary only in their ability to reduce a steroid's water solubility. An ester like propionate for example will slow the release of a steroid for a few days, while the duration will be weeks with a decanoate ester. Esters have no effect on the tendency for the parent steroid to convert to estrogen or DHT (dihydrotestosterone: a more potent metabolite) nor will it effect the overall muscle-building potency of the compound. Any differences in results and side effects that may be noted by bodybuilders who have used various esterified versions of the same base steroid are just issues of timing. Testosterone enanthate causes estrogen related problems more readily than Sustanon, simply because with enanthate testosterone levels will peak and trough much sooner (1-2 week release duration as opposed to 3 or 4). Likewise testosterone suspension is the worst in regards to gyno and water bloat because blood hormone levels peak so quickly with this drug. Instead of waiting weeks for testosterone levels to rise to their highest point, here we are at most looking at a couple of days. Given an equal blood level of testosterone, there would be no difference in the rate of aromatization or DHT conversion between different esters. There is simply no mechanism for this to be possible.

There is however one way that we can say an ester does technically effect potency; it is calculated in the steroid weight. The heavier the ester chain, the greater is its percentage of the total weight. In the case of testosterone enanthate for example, 250mg of esterified steroid (testosterone enanthate) is equal to only 180mg of free testosterone. 70mgs out of each 250mg injection is the weight of the ester. If we wanted to be really picky, we could consider enanthate slightly MORE potent than cypionate (I know this goes against popular thinking) as its ester chain contains one less carbon atom (therefore taking up a slightly smaller percentage of total weight). Propionate would of course come out on top of the three, releasing a measurable (but not significant) amount more testosterone per injection than cypionate or enanthate.

ESTER PROFILES

Sustanon: The "king" of testosterone blends.

The four different testosterone esters in this product certainly look appealing to the consumer, there is no denying that. But for the athlete I think it is all just a matter of marketing (Hell, why buy one ester when you can get four?). In clinical situations I can see some strong uses for it. If you were undergoing testosterone replacement therapy for example, you would probably find Sustanon a much more comfortable option than testosterone enanthate. You would need to visit the doctor less frequently for an injection, and blood levels should be more steadily maintained between treatments. But for the bodybuilder who is injecting 4 ampules of Sustanon per week, there is no advantage over other testosterone products. In fact, the high price tag for Sustanon usually makes it a very poor buy in the face of cheaper testosterone enanthate/cypionate. Bodybuilders should probably stop looking at the four ester issue, and stick with totals (Sustanon is just a 250mg testosterone ampule). Were enanthate to be available for say \$10 per amp of 250mg, and Sustanon priced nearly double that, buying the Sustanon would be like throwing money away. If you could get nearly double the milligram amount for the same price with enanthate, this is the better product to go with hands down. Leave the high priced stuff for the guys who don't know any better.

IN CONCLUSION

While the advent of esters certainly constitutes an invaluable advance in the field of anabolic steroid medicine, clearly you can see that there is no magic involved here. Esters work in a well-understood and predictable manner, and do not alter the activity of the parent steroid in any way other than to delay its release. Although the lure surrounding various steroid products like testosterone cypionate, Sustanon, Omnadren etc. certainly makes for interesting conversation, realistically it just amounts to misinformation that the athlete would be better off ignoring. Testosterone is testosterone and anyone who is going to tell you one ester form of this (or any) hormone is much better than another one should do a little more research, and a lot less talking.

Acetate: Chemical Structure C₂H₄O₂.

Also referred to as Acetic Acid; Ethylic acid; Vinegar acid; vinegar; Methanecarboxylic acid. Acetate esters delay the release of a steroid for only a couple of days. Contrary to what you may have read, acetate esters do not increase the tendency for fat removal. Again, there is no known mechanism for it to do so. This ester is used on oral primobolan tablets (metenolone acetate), Finaplix (trenbolone acetate) implant pellets, and occasionally testosterone.

Propionate: Chemical Structure C₃H₆O₂.

Also referred to as Carboxyethane; hydroacrylic acid; Methylacetic acid; Ethylformic acid; Ethanecarboxylic acid; metacetonc acid; pseudoacetic acid; Propionic Acid. Propionate esters will slow the release of a steroid for several days. To keep blood levels from fluctuating greatly, propionate compounds are usually injected two to three times weekly. Testosterone propionate and methandriol dipropionate (two separate propionate esters attached to the parent steroid methandriol) are popular items.

Phenylpropionate: Chemical Structure C₉H₁₀O₂.

Also referred to as Propionic Acid Phenyl Ester. Phenylpropionate will extend the release of active steroid a few days longer than propionate. To keep blood levels even, injections are given at least twice weekly. Durabolin is the drug most commonly seen with a phenylpropionate ester (nandrolone phenylpropionate), although it is also used with testosterone in Sustanon and Omnadren.

Isocarpoate: Chemical Structure C₆H₁₂O₂

Also referred to as Isocaproic Acid; isohexanoate; 4-methylvaleric acid. Isocarpoate begins to

near enanthate in terms of release. The duration is still shorter, with a notable hormone level being sustained for approximately one week. This ester is used with testosterone in the blended products Sustanon and Omnadren.

Caproate: Chemical Structure C6H12O2.

Also referred to as Hexanoic acid; hexanoate; n-Caproic Acid; n-Hexoic acid; butylacetic acid; pentiformic acid; pentylformic acid; n-hexylic acid; 1-pentanecarboxylic acid; hexoic acid; 1-hexanoic acid; Hexylic acid; Caproic acid. This ester is identical to isocaproate in terms of atom count and weight, but is laid out slightly different (Isocaproate has a split configuration, difficult to explain here but easy to see on paper). Release duration would be very similar to isocaproate (levels sustained for approximately one week), perhaps coming slightly closer to enanthate due to its straight chain. Caproate is the slowest releasing ester used in Omnadren, which is why most athletes notice more water retention with this compound.

Enanthate: Chemical Structure C7H14O2.

Also referred to as heptanoic acid; enanthic acid; enanthylic acid; heptylic acid; heptoic acid; Oenanthylic acid; Oenanthic acid. Enanthate is one of the most prominent esters used in steroid manufacture (most commonly seen with testosterone but is also used in other compounds like Primobolan Depot). Enanthate will release a steady (yet fluctuating as all esters are) level of hormone for approximately 10-14 days. Although in medicine enanthate compounds are often injected on a bi-weekly or monthly basis, athletes will inject at least weekly to help maintain a uniform blood level

Cypionate: Chemical Structure C8H14O2.

Also referred to as Cyclopentylpropionic acid, cyclopentylpropionate. Cypionate is a very popular ester here in the U.S., although it is scarcely found outside this region. Its release duration is almost identical to enanthate (10-14 days), and the two are likewise thought to be interchangeable in U.S. medicine. Athletes commonly hold the belief that cypionate is more powerful than enanthate, although realistically there is little difference between the two. The enanthate ester is in fact slightly smaller than cypionate, and it therefore releases a small (perhaps a few milligrams) amount of steroid more in comparison.

Decanoate: Chemical Structure C10H20O2.

Also referred to as decanoic acid; capric acid; caprinic acid; decylic acid, Nonanecarboxylic acid. The Decanoate ester is most commonly used with the hormone nandrolone (as in Deca-Durabolin) and is found in virtually all corners of the world. Testosterone decanoate is also the longest acting constituent in Sustanon, greatly extending its release duration. The release time with Decanoate compounds is listed to be as long as one month, although most recently we are finding that levels seem to drop significantly after two weeks. To keep blood levels more uniform, athletes (as they have always known to do) will follow a weekly injection schedule.

Undecylenate: Chemical Structure C11H20O2.

Also referred to as Undecylenic acid; Hendecenoic acid; Undecenoic acid. This ester is very similar to decanoate, containing only one carbon atom more. Its release duration is likewise very similar (approximately 2-3 weeks), perhaps extending a day or so past that seen with decanoate. Undecylenate seems to be exclusive to the veterinary preparation Equipoise (boldenone undecylenate), although there is no reason it would not work well in human-use preparations (Equipoise certainly works fine for athletes). Again, weekly injections are most common

Undecanoate: Chemical Structure C11H22O2.

Also referred to as Undecanoic Acid; 1-Decanecarboxylic acid; Hendecanoic acid; Undecylic acid. Undecanoate is not a commonly found ester, and only appears to be used in the nandrolone preparation Dynabolan, and oral testosterone undecanoate (Andriol). Since this ester is chemically very similar to undecylenate (it is only 2 hydrogen atoms larger), it has a similar release duration (approximately 2-3 weeks). Although this ester is used in the oral preparation Andriol, there is no reason to believe it carries any properties unique of other esters. Andriol in fact works very poorly at delivering testosterone, bolstering the idea that oral administration is not the ideal use of esterified androgens.

Laurate: Chemical structure C12H24O2.

Also referred to as Dodecanoic acid, laurostearic acid, duodecyclic acid, 1-undecanecarboxylic

acid, and dodecoic acid. Laurate is the longest releasing ester used in commercial steroid production, although longer acting esters do exist. Its release duration would be closer to one month than the other esters listed above, although realistically we are probably to expect a notable drop in hormone level after the third week. Laurate is exclusively found in the veterinary nandrolone preparation Laurabolin, perhaps seen as slightly advantageous over a decanoate ester due to a less frequent injection schedule. Again athletes will most commonly inject this drug weekly, no doubt in part due to its low strength (25mg/ml or 50mg/ml)

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EFFECTIVE CUTTING & BULKING DRUG PROFILES

This section includes anabolic steroids and other drugs that athletes use to increase performance, cosmetic appearance, and inhibit side effects. These drugs are effective on both cutting and bulking cycles.

RATINGS: These items are rated based on a scale of one to ten. One is the low end of the scale and ten the high end. The ratings are based on a risk to benefit factor with risk referring to the dangers to one's health and benefit referring to the drugs efficacy at providing the intended result -- increased performance, improved cosmetic appearance, and reduced side effects. Items receiving a rating of one to three are usually excluded because they tend to have no positive training effect. No items received a perfect ten as a performance enhancement drug has yet to be invented that provides risk free, exceptional results. The steroids with a higher rating, are low androgenic and low toxic items.

AVERAGE DOSAGES: These dosages are what the majority of research on steroid use has shown to be optimal for increased performance, improved cosmetic appearance, and reduced side effects. The raw data on these dosages varied largely from one individual to another. What is presented in the drug profile is a sample mean of these readings.

PRICES: Prices are included in some profiles. These are black market estimated prices unless the pharmaceutical price in the country of origin is specified -- converted to U.S. dollars. Black market prices and availability vary enormously.

Profile Components: We have provided all the information that is at our disposal on each substance. Any specific topic not covered as it pertains to a specific substance indicates that not enough reliable information was available.

Pharmaceutical Name:
anastrozole

Brand Names:
Zenica Pharmaceuticals: Arimidex, 1MG tabs.

Description:
Arimidex is an anti-Estrogen drug originally intended to treat advanced breast cancer. It is reserved for postmenopausal women whose cancer has progressed in spite of treatment with drugs like tamoxifen. While other drugs such a Nolvadex and Clomid work by merely blocking Estrogen receptors Arimidex works by inhibiting the enzyme aromatase altogether. This enzyme is responsible for the conversion of Testosterone and other androgens into estrogen and estradiol. As we know, high levels of Estrogen in men is the cause of water retention and the growth of breast tissue in men, a condition known as Gynocomastia (Gyno or bitch tits). Bodybuilders may use this drug to prevent aromatization while on a high androgen cycle.

Effective Dose:
1MG a day for four days will completely rid your body of all estrogen.

Pharmaceutical Price:
\$5 per tab.

Average Street Price:
\$17-\$30 per tab.

Side Effects:

The down side of this drug is that it will completely shut down the production of estrogen. This is not as good as it sounds since low levels of estrogen are needed to potentate the effectiveness of androgens as well as normal bodily functions. One approach might be to take one cap every third day along with Clomid instead of daily. This would ensure that estrogen levels are being suppressed enough to prevent side effects but not so low that it interferes with normal bodily functions.

Counterfeits:

No known counterfeits.

Effectiveness Rating: 9

Pharmaceutical Name:

Nandrolone Decanoate

[Click here for pictures.](#)

Brand Names:

Countries of Origin:

Anaboline 50 mg/ml; Adelco GR

Androlone-D 200 (o.c.) 200 mg/ml; Keene U.S.

Deca-Durabolin 25 mg/ml; Bender A; Donmed

South Africa;

Organon G. B. CH,

DK, ES, GB, GR, I,

NL, PL, Fl, Hermes/

Organon YU

Deca-Durabolin 50 mg/ml; Organon G. B. CH,

DK, ES, FR, GB,U.S,

GR, I, NL, PL,FI;

Mexico, Thailand

Hermes/Organon

YU, Steris U.S.,

Bender A, Donmed

South Africa

Deca-Durabolin t100~ 100 mg/ml; Organon NL

Deca-Durabolin 100 mg/ml; Organon GB, GR,

Fl, Canada, U.S.,

Steris U.S.

Deca-Durabolin 200 mg/ml; Steris U.S.

Deca-Durabol 25, 50, 100 mg/ml; Organon S

Elpihormo 50 mg/ml; Chemica GR

Extraboline 50, ml; Genepharm GR

Hybolin Decanoate 50, 100 mg/ml; Hyrex U.S.

Jebolan 50 mg/ml; EtemTK

Nandrolone Dec. 50, 100, 200 mg/ml; Steris U.S.

Nandrol. Dec. (o.c.) 100 mg/ml; Lyphomed U.S.,
Quad U.S.

Nandrobolic L.A. (o.c.) 100 mg/ml; Forest U.S.

Neo-Durabolic (o.c.) 100, 200 mg/ml; Hauck U.S.

Nurezan 50 mg/ml; RafarmGR

Retabolil 25 mg/ml; Gedeon Richter U,BG

Retabolil 50 mg/ml; Gedeon Richter
HU,BG

Retabolin 50 mg/ml; Medexport Russia

Sterobolin (o.c.) 50 mg/ml; Orion FL

Turinabol Depot (o.c.) 50 ma/ ml; Jenapharm G

Turinabol Depot 50 mg/ml; Jenapharm BG, CZ

Ziremilon 50 mg/ml; Demo GR

Veterinary:

Anabolicum 25 mg/ml; 10 ml/50 ml Bela-Pharm G

Norandren 50 50 mg/ml; 10 ml/50 ml Brovel Mexico

DYNABOLON: (Nandrolone Undecanoate) 80.5 milligrams per injection. This is a French anabolic steroid similar to Deca-Durabolin but slightly more androgenic. It produces dramatic increases in size and strength. Average dosages are in the area of 2 to 4 ccs a week. It is popular in Italy. It is often preferred over Deca-Durabolin because it is less expensive.

Description:

Injectable steroid derivative of 19-Nortestosterone. This product is a favorite to thousands of steroid users. Deca is the most widely used and most widely available steroid in America. Manufactured by numerous domestic pharmaceutical suppliers, it is one of a diminishing number of steroids that are available at American pharmacies. It promotes excellent size and strength gains. This steroid has been used for cutting and for bulking. Deca has a reputation for alleviating sore joints and tendons. Athletes report that sore shoulders, knees and/or elbows are somehow without pain on the Deca cycle. This drug dramatically improves nitrogen retention and recuperation time between workouts.

Effective Dose:

Men: 200-400 mg per week; Women: 50-100 mg per week.

Average Street Price:

\$30 per vial .

Stacking

Athletes have stacked it with virtually every drug and reported positive results. It seems to be an excellent base drug on any cycle.

Side Effects:

Deca can be used by almost all athletes, with positive results and very few side effects. The drug is a moderate androgen, highly anabolic compound. It has minimal liver toxicity and only aromatizes in excessive dosages. Deca does have an effect on the body's natural hormone axis yet it is not nearly as pronounced as it is with drugs like testosterone. Unfortunately, Deca has very stubborn metabolites which have been known to show up on a steroid test as long as 12 months after it was administered. This, in combination with the number of athletes using it, has contributed to its showing up on more steroid tests than any other compound. For this reason, any athlete that has the potential of being subjected to a steroid test should not be using Deca. For those who are not steroid tested, it remains the number one choice.

Counterfeits:

Deca is the most popularly counterfeited steroid on the market.

Effectiveness Rating: 9

DURABOLIN: (nandrolone phenylpropionate) 50 mg/cc, 2 cc/vial.

Almost identical to Deca-Durabolin except it is active for less than a week. Shots must be administered around two times weekly where as Deca can be taken as little as once every 10 days. Durabolin can yield dramatic results similar to Deca; in fact, it is one of the safest, most effective steroids available to athletes. It is produced domestically and costs about \$15 per vial.

ACTIVIN: Spanish Nandrolone Phenylpropionate -- 4 ampules 10 mg each.

NANDROLIN: Veterinarian Durabolin. TROBOLIN: Veterinarian Durabolin 10 ml vials 50 mg/ml.

FHERBOLICO: (Nandrolone Ciclohexilpropionate) 50 mg x 3 injections (one amp each). A Spanish steroid derivative of 19-Nortestosterone. It is similar in action to Durabolin and is used in a dose of 100-200 mg weekly. Also, Anabolin and Nandrocot.

NANDRABOLIN: (Nandrolone Laurate) 25 mg or 50 mg per cc 50 cc/vial. This veterinarian steroid is found primarily in Canada and Europe. It is a very long acting version of Deca. Whereas Deca can stay active in the system for two weeks, this product is usually active from three to four. Nandrabolin is only available in low milligram doses. This product is presently not being counterfeited and is cheap.

LAURABOLAN: This is a version of Mexican Nandrabolin

NORABOLIN: A veterinarian steroid containing nandrolone laurate.

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Pharmaceutical Name:
EPO Erythropoietin

Description:

This drug is being used by some athletes. EPO has recently been synthetically engineered through recombinant DNA techniques; the same techniques used to produce the popular synthetic forms of growth hormone. EPO is a protein hormone secreted by cells in the kidney in response to lowered oxygen content in the blood. It acts on bone marrow, stimulating erythropoiesis which is the production of red blood cells. Clinically, it is used on patients suffering anemia due to disease; in some cases it is a replacement for blood transfusions. Athletes use EPO to dramatically increase red blood cells, the oxygen carrying components of blood. Increase the oxygen-storing ability of blood can increase performance. Blood doping has the same effect as EPO; however, as EPO just requires a number of injections blood doping requires drawing out a liter of blood, freezing it, then thawing it and reinfusing it several weeks later.

Side Effects:

EPO has some serious side effects. EPO increases hematocrit -- the percentage of red blood cells in blood. A normal hematocrit of 40 equals a 40% red blood cells volume. Athletes often have a higher-than-average hematocrit. Injecting EPO, can raise hematocrit up to 40%. When hematocrit levels gets too high blood can clog an artery leading to vascular complications such as heart attack, stroke, cardiac failure, or pulmonary edema -- this is a form of water logging of the lungs because of left ventricular failure.

Dehydration can raise the concentration of hematocrit even more, increasing the risk of a fatality. EPO is mostly used by endurance athletes yet weightlifters do experiment with it. EPO's risks outweigh its benefits as an ergogenic aid.

Effectiveness Rating: 9

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Pharmaceutical Name:
formebolone

Brand Names:

Countries of Origin:

Esiclene 1 mg drops; LPB I; Biofarma PT

Esiclene 4 mg/2ml LPB I;

Esiclene 5 mg tab.; LPB I; Biofarma PT

Hubernol (o.c.) 1 mg drops; ICN Hubber ES

Hubernol (o.c.) 5 mg drag.; ICN Hubber ES

Description:

This is an Italian water based steroid that is used as a muscle inflammatory. It will inflame a local injection site, like the biceps, calves, or rear delts, and cause a muscle to gain size temporarily. Esiclene has best results when used in smaller muscles. The drug also gives the muscle additional definition and hardness for the duration of the 20 to 30 hour reaction. Athletes claim to add up to an inch to their arms or calves in a week. Attaining a dramatic peak on the biceps is the most effective use of this drug. Some use it the morning of a show or night before and get a great extra peak on each bicep at just one ampule each. Esiclene is a popular drug at drug tested shows. Often, urine samples are taken on a Wednesday for a Saturday show. Thus Wednesday night, Thursday, Friday, and Saturday morning the bodybuilders shoot the Esiclene. Many claim it has a hardening effect on all the body's muscles in addition to the inflammation effect of the specific body part when used this way, especially in women. Many of Ms. Olympia bicep shots owe a great deal to Esiclene. Some use the drug on a regular basis, one shot per week into the muscle, in attempt to accelerate growth in lagging biceps or calves.

Effective Dose:

One to Two ccs of the drug is injected right into the muscle with a 25 gauge needle.. Usually, Esiclene is only effective in 2 muscle groups at a time about 7 days before a contest.

Average Street Price:
\$20 per vial.

Side Effects:

Esiclene contains a pain killer which eases the soreness that the inflammation causes. User may end up with lumpy looking muscle. This often happens in the calves. The inflammation goes away in a day or two, and besides a little soreness, the drug has not caused any side effects.

Effectiveness Rating: 8

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Pharmaceutical Name:

GABA Gamma Amino Butyric Acid

Brand Names:

Countries of Origin:

Two legitimate versions:

Mielomade: Swedish Pharmaceutical Grade

AST Research: Powder

Description:

This amino acid that is used by a number to promote pituitary growth hormone release. GABA acts as a neurotransmitter in several areas of the brain including the neural circuits important in pituitary function. Popularity has increased since GHB was taken off the market late in 1990. GABA has a high level of conversion to GHB once in the body. Many athletes feel GABA will produce similar effects to GHB with the exception of the extreme drowsiness GHB causes. Some athletes and researchers claim that the use of GABA will harden the physique, increase strength, and slightly increase well being. Whether the positive effects seen from GHB use were even due to growth hormone elevation is undetermined. GABA's effectiveness remains to be seen.

Effective Dose:

Medical reviews document a dose of 5 grams administered orally causes a significant increase in plasma growth hormone levels. Some athletes claims to have achieved excellent results by using as little as 1-2 grams prior to sleeping and another gram immediately upon awakening.

Pharmaceutical Price:

AST Research: Powder 100 grams \$32.95

Cycles & Stacking

Some athletes claim GABA is effective when stacked with Clenbuterol. This would appear logical as GABA may have a sedative effect and may improve rest and recuperation on a clen cycle. GABA is also combined with the ephedrine, aspirin, caffeine stack.

Side Effects:

Few if any although no data is available.

Counterfeits:

There are numerous counterfeit versions of this product out on the market.

Effectiveness Rating: 6

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Pharmaceutical Name:

GHB gamma hydroxy butyrate

Description:

This compound is a naturally occurring metabolite of the amino acid GABA. Before it was removed from the over-the-counter market, supplement distributors purported GHB ability to increase natural growth hormone secretion. These claims were based on a 1977 study by the Third Department of Internal Medicine, Okayama University School of Medicine, Okayama Japan. In this study, it was discovered that GHB has a significant effect on pituitary hormones, specifically growth hormone

(GH) and prolactin. In this trial, a dose of 2.5 grams of GHB was administered to a sample of healthy male subjects prior to sleep. What they observed were significant increases in plasma GH over a period of 90 minutes. These plasma GH levels reached peaks of nearly 40 mg/ml. This lead researchers to conclude that the supplementation of GHB stimulates the secretion of GH by the pituitary gland in healthy human subjects. GHB may cause a release in GH by modifying the amount of serotonin available from the nerve terminals. Others believe that GHB blocks the release of dopamine from nerve endings thus increasing the dopamine concentration of the brain. Others feels that a serotonergic mechanism is responsible. GHB has been used for many years in parts of Europe and Japan for a variety of medical purposes. The therapeutic applications of this drug have been proven effective in the following areas: treatment of insomnia, anxiety, as an anesthetic, to relieve the withdrawal symptoms of alcoholics, to treat narcolepsy, to improve REM sleep, as a muscle relaxant, to treat tachycardia (rapid heartbeat), to treat sexual anxiety and inhibitions, and as a tranquilizer. This drug has a very wide mode of action. GHB is extremely popular with bodybuilders for a variety of reasons as web. Some feel the GH releasing effect contributes to anabolism and lipolysis. Other athletes use GHB to induce and improve the quality of sleep. This proven effect of GHB may aid in the recovery process. Other athletes use GHB as a diuretic. A number of athletes use GHB simply to tranquilize themselves. Often, a very euphoric sensation occurs after taking GHB which is attributable to an increase in brain dopamine levels. One expert has theorized that GHB exhibits its most beneficial effect on bodybuilders by reducing the body's endogenous cortisol levels. In this respect, GHB may be exhibiting its actions through an anti-catabolic mode.

Effective Dose:

1 teaspoon of the powder mixed with water before sleep.

Average Street Price:

\$20 per gram

Side Effects:

GHB can cause extreme drowsiness. Large doses combined with central nervous system depressants including alcohol have caused some users to become extremely ill and required hospitalization. These cases of product misuse caused the FDA to remove GHB from the over-the-counter market.

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Pharmaceutical Name:

HCG Human Chorionic Gonadotrophin

[Click here for pictures.](#)

Brand Names:

Countries of Origin:

A.PL. 5000 I.U., 10000 I.U., Wyeth-Ayerst U.S.

20000 I.U. amp.;

Biogonadyl 500 I.U., 2000 I.U. amp.; Biomed PL

C.G. (o.c.) 10000 I.U. amp.; Sig U.S.

Choragon 1500 I.U., 5000 I.U. amp.; Ferring G

Chorex 5000 I.U., 10000 I.U. amp.; Hyrex U.S.

Chorigon (o.c.) 10000 I.U. amp.; Dunhall U.S.

Chorion-Plus (o.co.) 10000 I.U. amp.; Pharmex U.S.

Choron 10 1000 I.U., 10,000 I.U. amp. Forest U.S.

Corgonject (o.c.) 5000 I.U. amp.; Mayrand U.S.

Follutein (o.c.) 10000 I.U. amp.; Squibb Mark U.S.

Gestyl 1000 I.U. amp.; Organon BG

Glukor (o.c.) 10000 I.U. amp.; Hyrex U.S.

Gonadotraphon 500 I.U., 1000 I.U. Paines+Byrne GB
5000 I.U. amp.;

Gonadotrafon LH 125 I.U., 250 I.U., Amsa I
1000 I.U. amp.;

Gonadotrafon LH 2000 I.U., 5000 I.U., amp.; Amsa I

G. chor. "Endo" 500 I.U., 1500 I.U., Organon FR
5000 I.U. amp.;

Gonadotrotyl 5000 I.U. amp.; Roussel Mexico

Gonic (o.c.) 1000 I.U. amp.; Hauck U.S.

Gonic 1000 I.U. amp.; Roberts U.S.

Harvatropin 10000 I.U. amp.; Harvey U.S.

H.C.G. (o.c.) 1000 I.U., 10000 I.U. amp.; Huffman U.S.

H.C.G. 5000 I.U., 10000 I.U. amp.; Pharmed Group
U.S.

HCG 5000 I.U., 10000 I.U. amp.; Steris U.S.

HCG Lepori 500 I.U., 1000 I.U., Lepori ES
2500 I.U. amp.;

Neogonadil Bruco 1000 I.U. amp.; Opocrin l(o.c.)

Physex 1500 I.U., 3000 I.U., amp.; Leo DK, NO

Physex Leo 500 I.U., 1500 I.U., Leo ES
5000 I.U. amp.;

Praedyn 1500 I.U., 3000 I.U. amp.; Leciva CZ

Predalon 500 I.U., 5000 I.U. amp.; Organon G

Pregnesin 250 I.U., 500 I.U., Serono G. CZ
1000 I.U. amp.;

Pregnesin 2500 I.U., 5000 I.U. amp.; Serono G. CZ

Pregnyl 10000 I.U. amp.; Organon U.S.

Pregnyl 100 I.U. amp.; Organon l, BG

Pregnyl 500 I.U., 1500 I.U., Organon A, B. CH,
5000 I.U. amp.; GB, BG, GR, I, NL,
PL, S. Fl; YU; CZ,
NO, HU, Medika/

Santa TK

Pregnyl 1500 I.U., 5000 I.U. amp.; Organon Mexico

Primogonyl (o.c.) 250 I.U., 500 I.U. amp.; Schering A

Primogonyl 250 I.U., 500 I.U. amp.; Schering CH, G,CZ

Primogonyl 1000 I.U., 5000 I.U. amp.; Schering G. CH,

YU, CZ

Profasi 10000 I.U. amp.; Serono CH, B.

Mexico, S. Fl,

GB,NO, NL

Profasi 500 I.U. amp.; Serono CH, GB,

Mexico, HU, FR

Profasi 1000 I.U. amp.; Serono HU, NL

Profasi 1500 I.U. amp.; Serono FR

Profasi 2000 I.U., 5000 I.U. amp.; Serono A, B. CH,

DK, HU, GB, GR,

S,FR, NL, NO,

Mexico

Profasi HP 5000 I.U., 10000 I.U. amp.; Serono U.S.

Profasi HP 250 I.U., 2000 I.U., Serono I

5000 I.U. amp;

Profasi HP 500 I.U., 1000 I.U., amp; Serono I

Profasi HP 500 I.U., 1000 I.U., Serono ES

2500 I.U. amp;

Rochoric (o.c.) 10000 I.U. amp.; Rocky-Mount

Description:

HCG is a natural protein hormone secreted by the human placenta and purified from the urine of pregnant women. This hormone is not a male hormone but mimics the natural hormone LH (Luteinizing Hormone) almost identically. LH stimulates the production of testosterone by the testis in males. HCG sends the same message and results in increased testosterone production by stimulating the leydig cells of the testis. HCG treats women with certain ovarian disorders and stimulate the testes in hypogonadal men. Athletes use HCG to increase the body's own natural production of testosterone -- often depressed by long term steroid use. When steroids are used in high dosages, they can cause a false signal to go to the hypothalamus that results in a depressed signal to the testicles. Over a period of weeks, this depressed signal causes the testicles to atrophy. To avoid this, athletes will use HCG to keep an artificial signal going to the testis. When administered, HCG raises serum testosterone very quickly. A rise in testosterone first appears about 2 hours after injecting HCG. The second peak occurs about 2 to 4 days later. HCG therapy has been found to be very effective in the prevention of testicular atrophy as well as to use the body's own biochemical stimulating mechanisms to increase plasma testosterone levels during training.

Effective Dose:

The optimal dosage for an athlete using HCG has never been established, but it is thought that a single shot of 1000 to 2000 IU per week will get the desired results. HCG must be refrigerated after it is mixed together and it then has a life of about 10 weeks. It is taken intramuscularly only. This drug is often available by order of a physician if you show symptoms of hypogonadism.

Average Street Price:

\$50

Cycles & Stacking

Cycles of 3 weeks at a time with an off cycle of at least a month in between. HCG can be used for 2 or 3 weeks in the middle of a cycle, and for 2 or 3 weeks at the end of a cycle. Steroid users make some of their best strength and size gains while using HCG in conjunction with steroids. Perhaps due to the fact that the body has a high level of natural androgens as well as the artificial steroid hormones at that time.

Side Effects:

Prolonged use of HCG may repress the body's production of gonadotrophins permanently. Side effects from HCG use include gynecomastia, water retention, increased sex drive, mood alterations, headaches, and high blood pressure. HCG raises androgen levels in males by up to 400% but it also raises estrogen levels dramatically as well which can lead to gynecomastia. Other side effects include nausea and vomiting. There have been no cases of overdose complications with the use of HCG nor have there been any associated carcinomas, liver or renal impairment. HCG was at one point looked at to see if it could carry the AIDS virus, due to the fact that it is biologically active, but the latest word is that this could not be possible in any way.

Effectiveness Rating: 6

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Pharmaceutical Name:

mesterolone

[Click here for pictures.](#)

Brand Names:

Countries of Origin:

Mestoranum 25 mg tab.; Schering DK, S. NO

Pluriviron 25 mg dry.; Asche G

Proviron 10 mg tab.; Schering TK

Proviron 10 mg tab.; Leiras FI

Proviron 20 mg tab.; Leiras Fl

Proviron 25 mg tab.; Schering G. A, B. CH, ES, FR, GB,

GR, PL, NL, CZ, TK, Mexico,

Dom. Rep., Panama, Guatemala,

El Salvador, Honduras, Paraguay,

Costa Rica, Nicaragua; Uruguay;

Alkaloid YU

Proviron 50 mg tab.; Schering I

Vistimon 25 mg tab.; Jenapharm G

Description:

Whereas nolvadex blocks the estrogen receptors of the body and will inhibit steroid related side effects such as gynecomastia, mesterolone or Proviron actually prevents aromatization. In other

words, Proviron cures the problem of aromatization; Nolvadex treats the symptoms. Legitimately used to treat impotency and reduced sperm count Proviron treats testosterone deficit related dysfunction. Athletes use Proviron in conjunction with the stronger aromatizing steroids. Proviron increases muscle hardness because it increases the androgen level and decreases the estrogen level.

Effective Dose:

One or two 25 mg tablets per day

Average Street Price:

\$1.50 per tablet

Cycles & Stacking

When stacked with Nolvadex or teslac, estrogen is completely suppressed. Proviron is most often used with cycles of the stronger steroids such as Dyanabol and the testosterones.

Side Effects:

Proviron causes minimal side effects if used in conservative dosages of up to three tablets for several weeks. Liver related dysfunction is very rare. At high dosages, excessive sexual stimulation can cause frequent and problematic erections. Virilization can occur in women if more than one tablet per day is used.

Effectiveness Rating: 9

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Dear Mr. Rea:

I just bought 40 Anadrol 50 tablets and 10 ampules of Sustanon 250. This is my second cycle, as I did an eight week cycle equipoise and d-bol pills a year ago. I gained about 12 pounds after that cycle and lost most of the gains within two months after the cycle. Can you recommend the best way to cycle the A-50's and Sustanon? And is this a good stack together? I've also read that A-50's are really hard on the liver. I appreciate any advice.

M.L. Garrot -- Wisconsin

A: Wow, you can really pack the questions into one paragraph. I suppose it is the nature of our ways as muscle maniacs to get it all in one breath as a whole.

AD-50 and Sustanon are both excellent mass weight and strength gain drugs. Though each is androgenic and anabolic in nature, both have high estrogenic activity potential (though through different mechanisms). This means that each can dramatically suppress the natural testosterone production regulated by the body's HPTA (hypothalamus-pituitary-testes-axis) system due to the negative feed-back loop caused by too much estrogen in a males body. Interestingly enough is the fact that the same estrogenic activity has a profound positive effect upon the amount of weight and strength gain an individual will realize during the administration of either or both of these drugs.

Estrogens in any form trigger glucose up-take by some tissues. In this case the tissue of interest is muscle and the result is greater levels of glycogen and water stored inside of the muscle cell. The benefits are rather obvious but bare mentioning none the less. Increased glycogen means increased fuel in the cells to make our favorite muscle gasoline called ATP (Adenosine Tri-Phosphate). This provides for an increase in training intensity and faster post-training recovery. Each gram of glycogen synthesized and stored brings with it about 3 grams of water. This adds to the cells structural integrity like putting a foundation under a house. With a stronger foundation comes a greater load capacity. Big weights and extra fuel will ultimately increase muscle mass and allow for bigger weights. One factor positively effects the other.

Anabolics increase protein synthesis in muscle tissue and androgens aid the process while increasing training intensity. A greater weight and work-load from increased training intensity results in a greater stimulus to the trained muscles that tells it to adapt by getting stronger and bigger. However without the anabolic effect that tells the muscle fibers to grow... nothing happens. So the combination of a high androgenic drug with an anabolic substance will result in growth, but the addition of one that has estrogenic activity (by way of structure like AD-50 or aromatization like testosterone) will fuel the process at a greater rate.

Sounds great but the problem is the cycle exit and the set of raisins swinging comically down stairs post-cycle. Remember the HPTA? The excess estrogen shuts down natural testosterone production from "the boys" in a time progressive manner. This means that as the cycle or protocol continues the inhibition of the HPTA grows greater. With the resulting lack of natural androgen production post-cycle the male body finds itself in an estrogen dominant environment (kind of like having a wife and two teenage daughters) that in itself destroys male attributes. Yes, this does include the newly acquired muscle mass as well. There simply is not enough natural androgen production going on to make Pee Wee Herman sport wood.

If you have read this so far with an eye on the point then you already realize that the AD-50 and Sustanon-250 stack will result in a rapid weight and strength gains that will be lost post-cycle due to HPTA shut-down.

AD-50 does not actually aromatize to estrogens but it does possess a progesterone-like structure. Progesterone is a female hormone with estrogenic qualities. It is rough on the HPTA and liver both in a dosage and time dependant manner. This means that it is the dosage and period of time "the boys" and liver are exposed that matters most. Sustanon-250 is a mixture of 4 testosterone esters (with different active-lives) and as such is aromatized into estrogens such as 17b-estradiol...a more powerful estrogen. "So" ? Well progesterone is less inhibitive to the HPTA than estradiol. This means some intelligent timing of each drug with some minor HPTA regeneration will allow for greater results and improved post-cycle lean mass retention. (And the rains will be less comical) This is simply because function is restored to near normal in phases to prevent total HPTA shut-

down.

Day

1. Sus. 250mg

16.

31. Sus. 250mg

46.

2.

17. AD-50 100mg

32.

47. AD-50 100mg

3.

18. AD-50 100mg

33.

48. AD-50 100mg

4. Sus. 250mg

19. AD-50 100mg

34. Sus. 250mg

49. AD-50 100mg

5.

20. AD-50 100mg

35.

50. AD-50 100mg

6.

21. AD-50 100mg

36.

51. AD-50 100mg

7. Sus. 250mg

22. AD-50 150mg

37. Sus. 250mg

52. AD-50 150mg

8.

23. AD-50 150mg

38.

53. AD-50 150mg

9.

24. AD-50 150mg

39.

54. AD-50 150mg

10. Sus. 250mg

25. AD-50 150mg

40. Sus. 250mg

55. AD-50 150mg

11.

26. AD-50 150mg

41.

56. AD-50 150mg

12.

27.

42.

57.

13. Sus.250mg
28.
43. Sus. 250mg
58.

14.
29.
44.
59.

15.
30.
45.
60.

Day 21, 23, 25, 27, 29 & 55, 57, 59, 61, 63 HCG 1000iu

Optional: Day 60-65 Clomid 100mg & 66-76 Clomid 50mg

Divide AD-50 administrations into 2-3 equal daily dosages

So why is the example protocol created with the administration of each drug in a series instead of co-administered? Different drugs have different active-lives or periods in which they remain active in the body and capable of inducing the intended effect. Sustanon has about a 21 day active-life. But since it is made up of 4 different testosterone esters, each with different active-lives, the period of build-up and decline of actual testosterone in the circulatory system requires an administration schedule intended to allow for this. In short, as one begins to run out the next replaces it after the dosage peaks. AD-50 has an active-life of less than 16 hours so it is easily scheduled to act as a replacement androgen for the shorter acting testosterone esters in Sustanon. The result is a fairly stable androgen activity level and the ability to keep the HPTA functioning nearer to normal. Additionally this allows for improved post-cycle lean mass retention...if an athlete continues to train and eat properly. There has of course been better choices for this type of protocol and the specific intended application bares a reason for discussion as well.

Dear L. Rea,

Some supplement companies have been making claims for years that their supplements are as good as taking anabolic steroids. Are there any supplements on the market that are even close to giving the same effect as steroids? Also, I'd like to know what supplements you recommend taking while taking steroids. Thanks!

G. Lambert-- Canada

The companies making claims of anabolic steroid equality between their products and the real deal are not only wrong but also in violation of multiple laws. Unfortunately sensationalism is what sells products. However, If the products were that powerful they would be scheduled as drugs. Sometimes a few make it past the legal eagles such as certain prosteroids, ephedrine and T-2. As example is the so-called 1-Test esters sold as oral OTC androgens in the US. They are nearly as effective as Primobolan orals and remarkably safe in comparison to other prescription AAS orals.

As a whole the supplement industry is comprised of a few innovative individuals and an endless number of sales people. Each of which has to be concerned with legalities and liability. A supplement has to be nearly benign in nature to avoid the usual class action law suits that have destroyed the industry and allowed common sense to be replaced by laws (and 3 letter organizations carrying guns and badges for your betterment).

Athletes are not like most average everyday people. We tend to test the limits of any idea possible as much as we test the limits of our own bodies. For the most part if we push too far while utilizing chemistry (legal or otherwise) we simply say "...damn, guess I should have backed off a little. But did you see that lift?" while the rest of the public envies our border-line sanity and cartoon proportioned bodies yet sues the manufacture of whatever it was they misused.

As a result of law suits and idiocy in general many excellent products either never made it to

market or will soon be gone from the few places they are legal.

Since you are in Canada (beautiful country and fun people) there is really no single supplement I would attach "powerful in the sense of AAS" to the word "available". But I will say that the use of creatine, glutamine, EFAs and quality protein powders will make a profound difference in the results a hard training athlete will realize. There are a few other intent specific supplements available I will mention in other Q & A's as we progress, but none available in Canada fit the "as good as taking anabolic steroids" description.

Several supplements have either protective or synergistic value with AAS administration.

Creatine: Increases androgen receptor site counts and supplies greater ATP for improved recovery. Additionally, research suggests creatine is beneficial in cholesterol management and positively influence muscle fiber counts. Aids in post-cycle lean mass retention.

Glutamine: Improves toxic ammonia clearing from the system and aids in restoring a positive nitrogen/anabolic profile to injured tissues post work-out.

CLA: Aids in inhibiting fat accumulation during mass weight gain protocols.

Milk Thistle: Inhibits liver toxification from c17 Alkylated AAS while aiding in hepatic clearing and cell regeneration.

EFA's: Increase HDL (good cholesterol) and decrease LDL (bad cholesterol).

Guggul Sterones: Decrease total cholesterol count through liver inhibition.

Niacin: Aids in cholesterol control and protects hepatic detoxification function.

Flaxseed Oil: Though an effective source of omega 3 & 6 EFA's, flax seed oil contains lignans that act as estrogen site antagonists. This means that they help prevent estrogenic activities such as female pattern fat deposits and the need for male wet T-shirt contests by blocking estrogens from their receptor sites.

Mr. Rea:

I hope that this communication finds you and yours in the best of health and spirit. Winstrol tabs have now become available in 50mg. and even 100 mg. dosages. I know you can't give specific recommendations but what if you had about 200 or 300 Winstrol 50 mg. tabs as the only anabolic to use. How would you use them, for how long, would the "the boys" shrink, any hair loss, libido increase or decrease? Also, how would you rate minstrel's muscle building activity? Thanks for your time and information.

C. Graham

Thank you for your well worded communication. My family is well as am I...and thank you for your well wishes in our behalf. I do not know as to whether or not you have read Chemical Muscle Enhancement (BDR) or not but this is actually in the book. Nonetheless we can answer this without rewriting the entire text in an E-mail format and perhaps bring to light a few additional thoughts. By the way it is possible that your question and reply will appear in one of the Q & A columns I do for various magazines and possibly on one or more Internet sites.

Winstrol (stanozolol) is a c17 alkylated non-aromatizing AAS utilized both orally and as an injectable preparation. Oddly enough is that the only commercially available injectable is a non-hydrophilic (does not dissolve in water) veterinarian preparation in sterile water. I say odd due to the fact that an oil preparation is notably more effective due to a prolonged active-life and the lymphatic percentage absorption factor. More bang for your buck so to speak. The oral has the distinct advantage of possessing a surprising degree of IGF-1 stimulation as it passes through the livers hepatic passages and as a result of cellular interaction in lean mass tissues. This has failed to be validated in most clinical research due to the low dosages (about 10mg/d) administered. Oddly enough reviews of blood work performed upon several notable athletes administering stanozolol in excess of 40mg/d showed that IGF-1 was elevated significantly. The injectable preparations appear to induce some increase in natural localized MGF (Mechano Growth Factor), PGF-2, IGF-1 and IGF-2 production "site specifically". In that lies the key to a more synergistic approach to utilization.

One of the greatest down falls of AAS administration is the period of time in which AAS remain effective. I refer to effective at the cellular level, not actual active-life. Some old school mentality seems to embrace the ever ascending dosages and prolonged administration periods ideals. This is simply a matter of progressively trying to keep up with the body's anti-growth counter measures as they mount until at some point the protocol is ended and the AAS induced progress is lost unnecessarily. In short at that point "The boy's ain't doing nothing manly" and every other natural anabolic pathway has long since shut down as well. This is a physiological environment best for the better endowed females and certainly not for an athlete of any kind. So a progressive alternative is mandatory for continued progress.

The full body circulation of liver produced IGF-1 is full body effectual. This means that the extra IGF-1 from oral stanozolol administration has an effect on the entire musculature as does the AAS itself. Unfortunately within a period of about 2 weeks this effect decreases significantly due to an adaptive response in the liver that shuts down the extra growth goodies and a decrease in IGF-1 receptor site sensitivity results as well due to various other hormone actuated events (Action/Reaction Factors). Less IGF-1 production and less receptor sensitivity means less muscle growth and poor chemical synergy.

Site specific administration of an injectable preparation of stanozolol has full body effects due to AAS induced androgenic and anabolic activity but only significant "localized" MGF, PGF-2, IGF-1 and IGF-2. MGF increases IGF-1 receptor sensitivity, PGF-2 increases androgen receptor count and sensitivity, and the localized IGF-1 production acts synergistically with the AAS. Oh, did I mention that the IGF-2 initiates an increase in vascular tissue growth for better nutrient supply?

Day 1-10 & 21-30 25-50mg 2xd (orally)

Day 11-20 & 31-40 50-75mg 2xd (site specifically)

Since stanozolol is a derivative of DHT (dihydrotestosterone) the occurrence of premature balding has been noted in individuals who are predisposed to MPB when administering this drug. For the same reason real stanozolol does not convert to estrogens and has a lesser degree of HPTA

inhibition and the effects last for a shorter period post-cycle. However due to the peripheral nervous system and the presence of an abnormally high degree of androgenic activity some "shrunken nuts syndrome" can occur with prolonged use. The effect is greatest upon the testes themselves so most have realized minimal interruption in natural androgen production with intermittent HCG only administration.

Stanozolol has been a very effective drug employed to increase lean tissue mass with minimum increase in water retention thus providing a lean muscular appearance.

Dear Mr. Rea,

Question #1

I have taken veterinarian quality steroids in the past simply because they are cheaper in cost and easier to obtain. On occasion, I hear about underdosing and fakes. Are there any concerns with taking this type of drugs and are there certain manufacturers to stay clear from?

Question #2

My last cycle was a duration of 12 weeks. I obtained great results and plan to repeat this cycle again. My cycle (keeping in mind the drugs were veterinarian quality) consisted of Testosterone Enanthate 250mg/ml at 1000mg/week for a duration of 12 weeks, Methandrostenolone beginning at 25mg/day increasing to 50mg/day for a duration of the first 6 weeks, Nandrolone Decanoate 200mg/ml at 400mg/week for a duration of 12 weeks. Other supplements I took were Creatine, CLA, Milk Thistle, Clomid, HCG. The problem I experienced was the correct timing for the Clomid and HCG. I obtained advise from several sources which were conflicting. As a result, my "boys" shrunk and took forever to return to normal size and functionality post cycle. And even though I did retain a great deal of muscle mass, I did loose some weight (which I know was probably mostly water weight). How do I take the ancillary drugs to get the best permanent results from my cycle and keep my "boys"? Also, do you have any suggestions to my cycle, i.e., dosing and timing of AAS and supplements?

Thank you

M.L. - Dallas

Veterinary sources have become the mainstay of many athletes AAS protocols. This is simply a matter of availability and pricing. Unfortunately with the various legitimate brands comes a supply of black market products manufactured in underground labs of questionable means. But if one considers the number of lads that make their own preparations for injection type administration from cattle implants and a few basic chemicals with few side effects you would likely assume "what does it matter?" and proceed without caution anyway.

The problem with black market products is the question of who made them. I have known a few AAS chemist who produced for several different so-called companies that would never consider making manufacturing anything but a pharmaceutical grade product. Sadly I have also known a few pieces of dirt that once produced a well known product who boasted the saying "The vat ain't done until we pee in it" and did. Still there are others who simply purchase legitimate products and cut the dosage in half with an inert (hopefully) oil and repackage it as the original. You simply just never know what you are getting for sure. Fortunately bad products get a bad name rather quickly these days thanks to the many AAS sites and discussion boards. The result is a lack of profitability for the maker and the obvious loss of buyers. The outcome is either an improved product next time around or going out of business. As to manufacturers to stay away from...they change weekly.

Many athletes prefer the 12-16 week protocols simply because being on cycle is far more fun than being off. For those in contest prep-mode nearly year round this is sadly necessary do to competition and appearances requirements. I really do not feel that the longer protocols provide the same degree of progress as briefer harder hitting protocols with appropriate Action/Reaction Factor considerations. "Shrunken nuts syndrome" is an example of not properly anticipating the body's reaction to the AAS actions. However, since the question was in regard to 12 week structures the simplest approach to "the boy's" remaining in the game is intermittent HPTA regeneration to sustain a degree of testicular function stimulation. This allows the entire HPTA to be simply brought back up to speed rather than a complete reinitiating of function.

Day 10, 20, 30, 40, 50, 60, 70, 80, 90, 97, 99, 101 HCG 1500iu

Day 29-35, 57-63, 92-105 Bromocriptine 2.5mg AM

Day 92-105 Clomid 50mg

Hopefully you are scratching your head at this point wondering why. There are several approaches to HPTA regeneration and each depends upon the active-life of each drug employed in the protocol as well as the potential for aromatization, progesterone activity, and the degree of prolactin release that is stimulated during the protocol from the stack. Contrary to what some have listed, nandrolone decanoate has an active-life of about 15-16 days and testosterone enanthate has about an 8 day active-life. Nandrolone has progestin like activity with limited aromatization to a weaker estrogen and testosterone aromatizes freely to estrogens predominantly the powerful estrogen 17 β -estradiol. D-ball has an active-life of only hours but readily aromatizes to a super-girl-like estrogen. All of these have a potential to promote prolactin release which in turn inhibits the HPTA through multiple pathways thus teaming up with estrogen to shut down androgen and sperm production while promoting adipose tissue...if the levels rise too much.

By employing HCG intermittently athletes have maintained some degree of testicular function. Stimulated too much for too long of a period would result in another negative feed-back loop to the demise of the lads in the sack.

Bromocriptine is a prolactin inhibitor that simply decreases the amount of prolactin that the pituitary can release. Intermittent use of this drug keeps prolactin in check while stimulating sperm production and erectile function. Used too frequently or for too long of a period would result in a poor appetite and decreased receptor sensitivity. Clomid is a highly misunderstood drug in that many feel more is better. This is an estrogen and as such will promote estrogenic activity if dosages are high enough.

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Think the Big Fat bastard program in the article is something I would like to incorporate but I wish to make sure I am fully informed to do it to the best degree possible. For note I am a National level competitor.

Here are my questions that I would like you to help with:

Q1-- Is taking GH a good idea at say 3iu 3x/day or will it be released as a consequence of mechanisms to a far greater degree naturally through this program and therefore not necessary as exo??

Q2--Can you eat as much fat as you wish due to the extra calorie expenditure (like with DNP) or is there a limit--I was eating about 4800 last bulking phase with minimum fat gain so if I ate about 800g protein how much fat is optimal with this plan, also would try to use 'good' fats predominantly like omegas, olive, walnuts, CLA, GLA, fish?

Q3-- Obvioulsy in this plan am I correct to assume you CAN have slin and fat in system simultaneously or is that still best to try to avoid???

Q4--The table in the article shows that slin and test suspension are taken EOD each is this correct??

Q5--I see perhaps slin best to do EOD for the reason of sensitivity maintenance perhaps, but is it not best to have the most consistent levels of Test and use an oil based suspension either ED or 2xED??

BTW, I would likely do this with 150-200 ED or a tren base/Test base mix, maybe some d-bol for IGF-1 increase

How does one eat in the off/no slin days if that is what is implied, less calories or stay the same?

Have you read Oliver Starr's program and have any comments on his differing points like ED slin usage??

Thank you for all your help ...I want to do this as best as possible !!!

Regards/Eric

A: Thank you for taking the time to not only read but to think about my article Big Fat Bastards and Insulin, Eric.

First let me say that the use of insulin without proper medical supervision is quite dangerous in itself and I do not advise anyone to do so otherwise

The principal behind the protocol is the stimulation of growth factors and the facilitation of Action/Reaction Factors of the body that simultaneously reduce adipose tissue and increase lean tissue mass: Insulin and IGF-1. When there are reasonably high physiological increases in circulatory insulin levels in the presence of hyperaminoacidaemia (lots of extra amino acids in the circulatory system) and the absence of significant carbohydrate derived glucose, the result is an increase in the release of IGF-1 (both liver and cell derived). Additionally the cross over stimulation of insulin upon IGF-1 receptors becomes excessive. The result is a storing effect of nutrients focussed upon muscle tissue instead of adipose tissue or a division of the two. This is why athlete's prosper through increase lean mass tissue as a result of GH use in the presence of carbohydrate derived glucose. The GH short cuts the series of metabolic Action/Reaction Factors facilitated by the Big Fat Bastard discussion protocol by inducing a very similar hormonal and enzymic environment. So the benefits of adding GH would be comparatively minimal and a waste of a perfectly primed alternative growth environment for the most part. Additionally you should realize that the idea behind protocol phasing is to allow the various anabolic pathways and receptor mechanisms a regeneration period for improved long term results. I will however add that if this were utilized during a calorie deficit period such as pre-contest the added anti-catabolic value of GH would be of value. This would also be effective in a few other specific intent protocols, but as I said prior...why waste a perfectly primed alternative growth environment?

This obviously leads us to an expanded bit of information regarding diet. If an individual normally made good lean tissue progress with minimal fat accumulation during bulking phases employing a mixed macronutrient diet allowing for 5000 calories then the alterations are simple. The amount of protein necessary to support maximum growth and gluconeogenesis is calculated (Please refer to the Big Fat Bastards article) and the rest is calculated in fat calories plus 10%. This means calories are increased 10% or to 5500 calories daily. Fat sources are highly important. The addition of fish or hemp seed oil is a necessary consideration so as to off-set the potential for omega-6 vs. omega-3 EFA dominance. In short the excessive production of certain prostaglandins over others can be growth and health inhibitive due to an excess of their production substrates (omega-6 EFAs) being available at the wrong times. The use of CLA is mandatory during insulin employment and increased calorie consumption for a greater reduction in the possibility of adipose tissue augmentation. (Most actually lean out rather quickly considering the calorie intake) As a rule athletes have been told that the practice of having exogenous insulin and fat in the circulatory system simultaneously will lead to increased adipose tissue stores and other anti-growth events. In truth this is so when one employs a more common mixed diet that allows enough excess carbohydrate intake to elevate triglycerides significantly. Without going into a multi-page nutrient Action/Reaction chart let it be said that diets that foster ketosis and/or gluconeogenesis fail to result in this situation. Instead we realize an increase in fatty acid use as an energy source but a decrease in the enzyme process that allows for fat storage. A wiser individual would however have glucose tabs and a glucagon kit handy for emergencies.

The every other day protocol structure employed for testosterone suspension and insulin out-lined in the Big Fat Bastard discussion protocol is designed to best utilize the alternating of both insulin and non-insulin mediated glucose/amino acid up-take mechanisms by muscle cells. Additionally the estrogen spikes and pits facilitate the natural release of GH and subsequently IGF-1 in a pulsatile fashion that compliments the opposing spikes and pits of exogenously administered insulin. Since the hepatic manufacture and release of IGF-1 is dependent upon these opposing activities it seems obvious that the protocol as designed was done so with this intent in mind. And in truth it has worked quite well in the past while remaining economical.

It should be noted that even though the administration active-life of testosterone suspension is only about a day, its metabolites and plasma values exceed this. An example is that the DHT

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realized from a single administration of testosterone suspension will remain active for an additional day after the testosterone administration active-life has elapsed. This is a plus in that, like most variations of 5 α -reductase androgens, DHT promotes glucose up-take by muscle cells and increased training intensity. This acts synergistically with the increase in estrogens to trigger growth mechanisms not insulin dependant. (Glucose derived from gluconeogenesis I should add) The by-line on this is that it is the sea-saw effect of alternating high plasma concentrations of insulin and testosterone in this properly timed sequence that results in a highly anabolic environment to muscle via multiple pathways. This in turn allows a so-called resting period for each pathway as the other is initiated.

Personally I prefer the long term goal value of saving the trenbolone and D-ball for other protocols that they fit better into. Though I should add the note that the addition of both on the testosterone suspension administration days would produce greater short term results. I often find myself in a position where athletes simply are not aware of the fact that it is the proper use of phases, not simply cycles, that allows the most amazing potential for alterations in the project we call ourselves.

Mister Rea

What do you know of the use of growth hormone releasing peptides in bodybuilding? Can growth hormone releasing peptides (GHRHP-2/GHRHP-6/hexarelin etc) lead to increase in muscles/ muscle sparing during caloric restriction? Would it be more efficient to take before bed, or before workout? Has anyone tried combining with androgens and or high dose arginine, low dose t3? How long is the increase in growth hormone? I hope these are not to many questions to ask, but thanks in advance!

K. Boden

A: I see that you have done some home-work on the subject, Lad. Knowledge leads to the ability to make better choices and in return predictable progress of a specific intent.

As a drug administered in the absence of others for the purpose of muscular augmentation the GH secretagogues pretty much just suck. Let me babble for a bit and explain this to some extent.

All of the chemicals you ask about including the amino acid arginine fall into a class called Growth Hormone Secretagogues (GHS). A GHS is just a chemical that by Action or Reaction aids in increasing the secretion or release of GH. If you recall several supplement companies were mass selling arginine and ornithine amino acid based products as the great steroid replacement supplements claiming that the huge increase in GH release would add 20 LBS of rock hard muscle in a short period of time...while you sleep! How did that work out for you? Like the rest of us, it didn't. The claims were based upon a study that involved intravenous transfusions of 30 grams of arginine given to test subjects in a fasted state before sleep. Do the oral amino acid product's work as well as the intravenous transfusions? (Quit laughing) No. But they can help in the right environment.

Endogenous GH Release

Before anyone can grasp the value of the effects (positive or negative) any chemical may or may not offer it seems obviously necessary to have a fundamental understanding of its origin and regulatory Action/Reaction Factors. In the case of GH secretagogues and related substances it is rather easy to explain.

As is the case with other hormones and hormone-like substances, the body regulates GH secretion and activity by way of a series of checks and balances. Through chemical messengers your body is able to increase or decrease the release and activity of other substances. This is like sending an E-mail or letter with a set of instructions for the receiver while trying to avoid spamming. The two primary regulatory pep-tide hormones for GH originate at the hypothalamus.

Growth Hormone Releasing Hormone (GHRH): Acts as a stimulator of GH release by binding with pituitary gland receptors thus triggering secretion of GH into the vascular system. When circulatory GH and IGF-1 levels are low the hypothalamus releases pulses of GHRH to go play nice with the pituitary gland.

Somatostatin (SS): Acts as an inhibitor of GH release by binding with pituitary gland receptors

and shutting down the GH secretion cascade. SS also inhibits cellular GH and IGF-1 interaction. When circulatory GH and/or IGF-1 Levels are high a negative feed-back loop occurs by the two hormones themselves merging with hypothalamic receptors that in turn trigger the up-regulation of SS release and shut down the goodies production.

*Of course there are other functions dependent upon SS such as thyroid activity but that is not our point of interest here.

So how do the chemicals you asked about act as GHS? Arginine and ornithine act as SS inhibitors and the pep-tides act as GHRH stimulators or analogs. Oddly enough these GHRH analogs are not structurally similar to GHRH and likely act upon other receptors (yet unidentified) than those of the GHRH origin. (Simple enough?) The important fact here is that some pep-tides have been documented to increase GH secretion by as much as 4000% over normal base-line for brief periods of time.

The idea of a 4000% increase in endogenous GH secretion certainly sounds as if it would elicit a correlating increase in lean tissue growth.

Studies on hexarelin, the most effective secretagogue tested so far, have shown a 40% decrease in action by the second week of administration and a 12% decrease each week after. This strongly suggests that there is a negative feed-back loop in play other than the shut-down of GHRH release by SS since the prior has been endogenously introduced in replacement. The progressive decline in GH release realized from hexarelin administration may appear trivial in the face of a 4000% increase but the data is misleading in this respect. The 4000% increase was based upon individuals who were nearly devoid of endogenous GH release and 400 times next to nothing is still nothing special. Sorry, my goal was to point out how the appearance of effectiveness can be misunderstood.

So how do the chemicals you asked about work in the real world? In a well structured study called: "Arginine and growth hormone-releasing hormone restore the blunted growth hormone-releasing activity of hexarelin in elderly subjects" by Arvat E; Gianotti L; Grottoli S; Imbimbo BP; Lenaerts V; Deghenghi R; Camanni F; Ghigo E. performed at the Department of Clinical Pathophysiology, University of Turin, Italy and reported in the J Clin Endocrinol Metab 1994 Nov; 79(5):1440-3 we find useful answers.

In this study researchers compared the GH responses to hexarelin, GHRH, and the combined administration of hexarelin and GHRH or arginine in young and elderly subjects. Thirteen young (24 to 30 years old) and 16 elderly (65 to 84 years old) average healthy males were divided into 2 test groups. The first group had 7 young and 8 elderly subjects who received the following as single iv injections during 3 different treatment sessions: hexarelin 2mcg/kg, GHRH 2mcg/kg, or hexarelin 2mcg/kg plus GHRH 2mcg/kg. The second group consisted of 6 young and 8 elderly subjects who were administered single iv injections of hexarelin 2mcg/kg or hexarelin 2mcg/kg plus arginine 0.5g/kg during 2 different treatment sessions. In both groups basal IGF-I levels in the elderly were lower than those in young subjects with a comparison value of 114.5 +/- 18.7 vs. 211.5 +/- 19.1mcg/L; P 0.001. In the first group the GH response to hexarelin was greater in young test subjects when compared to elderly subjects (area under the curve from 0-120 = 4849 +/- 601 vs. 2112 +/- 683 mcg.min/L; P 0.001). Interesting is that GHRH elicited a lower GH response than that induced by hexarelin in both young (1455 +/- 102mcg/h.L ; P 0.02) and elderly subjects (563 +/- 87mcg/min. L; P 0.02). GHRH potentiated the somatotrope response to hexarelin in both young (7725 +/- 503 micrograms/min. L; P 0.02) and elderly subjects (3895 +/- 612 micrograms/min. L; P 0.02), but to a lesser extent in the latter (P 0.001). In the second group, the GH response induced by hexarelin was also higher in young subjects than in elderly subjects (4819 +/- 668 vs. 1649 +/- 459 micrograms/min. L; P 0.001). The GH response to hexarelin was potentiated by arginine in elderly (4139 +/- 1057 micrograms/min. L; P 0.001), but not in young subjects (4743 +/- 774 micrograms/min. L) due to the lower SS release realized by younger males. This study shows that the maximal effective dose of hexarelin releases more GH than the maximal effective dose of GHRH in both young and elderly healthy test subjects. The effect of hexarelin on GH secretion is age dependent, and the GH response to the combined administration of hexarelin and GHRH was significantly higher in young subjects compared to elderly subjects. Arginine does not potentiate the GH response to hexarelin in young subjects, whereas it significantly enhances it in normal elderly test subjects.

As most readers know by now the amount of IGF-1 produced as a result of an increase in circulatory

GH is the reason an increase in muscle protein synthesis occurs. Therefore it is also a prime indicator as to the potential value of any chemical intended to increase circulatory GH levels. By this guidelines we see that there is actually a possible increase in IGF-1 of 250-1000% plus through administration of these secretagogues.

Now that I had you suffer through some science geek stuff to make sure that everyone was on the same page, so to speak, we need to get to the part most are curious about: Do the drugs work? I looked for any studies on the use of secretagogues in relation to wasting diseases or athletics since both apply to the goal of increased protein synthesis and/or decreased catabolism of lean tissue mass. Sorry, none of any value. From personal experiences I can tell you that as a stand-alone chemical intended for any anabolic or anti-catabolic effect the substances have little value. However, they have shown a degree of regenerative value for suppressed endogenous GH release concerns originating from prolonged exogenous GH administration most have yet to consider. Or another point of interest is..

The idea of utilizing drugs such as hexarelin and arginine during periods of calorie restriction has a great deal of potential value in relation to an improved biochemical profile most favorable to adipose tissue oxidation. One of the problems an individual faces when dieting for fat loss is the down-regulation of thyroid stimulating hormone (TSH) that begins at about 2 weeks and subsequent decrease in

T-4 to T-3 conversion. This means that metabolic rate and specific uncoupling proteins decrease resulting in an increase in the amount of lean tissue mass lost with the intended fat (Yikes!). The reason TSH decreases is in part due to an increase in SS that inhibits its synthesis signal. So a substance that inhibits SS while promoting the release and effects of GH/IGF-1 would allow for less suppression of thyroid hormones and the all important uncoupling proteins related to their activity. Simply replacing the lost thyroid hormone with Cytomel or another T-3 drug does not allow for the entire synergistic hormone cascade to occur that is most favorable for fat loss and lean tissue retention during calorie restricted periods. The goal would therefore be to prolong the natural cascade for as long as possible or create protocols that regenerate the process intermittently similar to what is done with the HPTA and "The Boys". But that is another science geek lesson.

Q: Mr. Rea, you mention in your book CME that lactic acid increase during working out increases IGF-1 and GH in the body, but also lactic acid truncates the last 3 amino acids off the IGF-1 and creates Des(I-3) IGF-1 which you say is 10 times anabolic than IGF-1. You also mention that lactic acid build is a very effective PROSTAGLANDIN release stimulator, so from this, it seems lactic acid is really helpful but then why all these supplements to reduce lactic acid during training etc etc in the bodybuilding industry?

A: Lactic acid is a highly versatile substance when we speak of its effects in relation to bodybuilding progress...or not. It has the metabolic duties of triggering GH release through bio-feedback, truncates intracellular IGF-1 thus altering its structure to become the far more anabolic specific chemical Des (1-3) IGF-1, and of course shuts down the ATP synthesis pathways necessary to muscular contraction (the last rep is a SOB due to a lack of local/working muscle fiber ATP and the lovely burning sensation partially due to lactic acid build-up.) What we need to focus upon is the issue of ratios anytime we discuss a chemical's value or the lack thereof. In this case lactic acid elevation in itself is paramount to the hormonal cascade that allows us to recover and build upon our musculature. This should seem obvious when one considers the alteration of IGF-1 to a more anabolic hormone-like substance. But that is only a part of the anabolic equation. Lactic acid also increases PGF-2a and other members of the anabolic cascade. However problems can occur when lactic acid concentrations are elevated beyond that of the anabolic substances (in activity) that we all love and cherish and the inability to perform those final reps that act as the stimulus for repair and growth is certainly detrimental to progress. So the goal becomes to allow adequate lactic acid build-up that allows the anabolic cascade to occur without reaching a point of interfering with training capacities.

Many companies have attempted to capitalize on the lactic acid issue by making it a negative one-action physiological chemical. Consumers are taught that running farther and 5 more reps is a good thing without question. The truth is that we seek that perfect balance between damage and repair that allows for our best progress in whatever athletic goal we may have. This means that damage is necessary to trigger the repair and growth pathways and that lactic acid in the correct ratio to other body chemistry plays its role in both.

Q: Sir, in your article on ***** you mentioned heavy resistance training results in upregulation of the androgen regulators of the muscle. And quoted this study:

J. Streng Cond. Res. 14(1): 102-113, 2000

Hormonal responses to high and moderate intensity strength training exercise. Eur.J. Appl Physiol. 82:121-128, 2000

Why do we have to increase dosages used if androgen receptor count is increased due to training? Obviously AS receptors do not up-regulate to a noticeable degree then? Is this the reason for the required higher doses each subsequent cycle for growth?

A: You do my heart good, Lad. Your questions on this are bright and insightful. More importantly, you are thinking! Androgen receptors up-regulate as an adaptive response to various stimuli including work-load requirements that exceed 75% SRM. This is commonly accepted as a need for the organism to employ a greater number of type-IIb muscle fibers in an attempt to exceed the number required to carry the load minimal duress so to speak. In short it is another example of the body taking the easiest road to accomplish a task. The increase in androgen receptors results in a greater number of AAS pairing and subsequent transcriptions (anabolic messages in this case). As a result the long-term effect is an increase in type-II fibers at the expense of type-I thus allowing an adaptation that enables the working muscle to more easily accomplish its tasks and avoid injury as a result. (Which is another growth limiting factor we will no doubt discuss another time)

The concern relating to an increase in androgen receptors not resulting in an increase in anabolic reaction due to DNA/mRNA transcription rates is just that: An issue of rate or speed. The coupling of an AAS molecule and androgen receptor is not permanent. Each AAS variation has a binding time or the time in which it can remain lodged in its receptor delivering its message. When only a few androgen receptors are occupied by an AAS molecule, the DNA/mRNA transcription easily keeps up with time to spare. As the number of androgen receptors increases so does the odds of AAS/receptor pairing. This means that due to more receptors delivering their AAS message the time to spare is lost. But, due to the finite period of transcription being filled there is an increase in

anabolism.

The primary reason AAS administration dosages are necessary to increase is due to Action/Reaction Factors. Initially there is a balance between anabolic and catabolic chemistry naturally present and active in the body...when we first administer a given amount of AAS. As example is the endogenous/natural testosterone level combined with the administered exogenous dosage to consider. As the HPTA down-regulates and shuts down the manufacture and release of endogenous testosterone, our example athlete loses the equivalent of a 200mg dosage of testosterone enanthate weekly. If the athlete were administering 600mg weekly of that testosterone the loss from the HPTA reaction is about 33%. So we already need to increase the administration dosage by 200mg weekly to maintain the initial anabolic environment. When the additional Action/Reaction Factors of binding proteins, cortisol, aromatization and others are accounted for the result is another increase in administered dosage being required.

Please realize that dosage = results is not a numerical progression. In many cases the amount of AAS administered is simply a matter of increasing the amount of circulatory androgens to a point that supports new tissue as well as old. The goal is continual progress not a quest to learn new mathematical errors at the expense of health.

Q: In your first year sample cycles section for the male (In Chemical Muscle Enhancement), the cycle outlined for weeks 1-4 is 200 mg deca per week. now that much deca per week is less anabolic than what the natural test (HPTA) can produce (test being stronger than nandrolone mg to mg) . and because of the ester attached to nandrolone , 4 weeks long is hardly enough for blood levels to reach a constant level, also, how is deca easy on the HTPA , u go ahead and say post cycle meds are not necessary as deca is easy on the HTPA which we from multiple examples know is so not true , cases of testicular shrinkage , limp dick etc are so much reported normally on a deca only cycle sir . Can u please explain your logic behind this ??

You also mention cytomel increased cellular androgen receptor clearing (pg 181 and 182 in the book). How true is this sir ??

Looking forward to your answers to these questions sir, thanks.

A: Nandrolone is actually more anabolic but less androgenic than testosterone and as such allows an increase in muscle protein synthesis in excess of that seen with testosterone. So the next question should obviously be "why then does testosterone deliver more weight gain than nandrolone?" Since nandrolone is about 80% less affected by aromatase when compared to testosterone, it should seem obvious that the lack of GLUT-4 (increased muscle glycogen synthesis) activity will also result in a decrease in intracellular content but not cellular wall protein synthesis. Since we are speaking of post-cycle retention as well here we would be in error if we included the on-cycle increase in the body's water table from estrogen/aldosterone resulting from the higher aromatizing testosterone in our comparison.

When we employ brief cycles of 4 weeks, a 200mg dosage of nandrolone decanoate would have an additive effect to the endogenous (naturally produced in the body) testosterone for the first 3 weeks. For a novice this accounts for about twice the normal rate of anabolism possible if diet is correct (anabolism is not potentiated unless the macronutrient environment is as well). Many do not realize that the body actually produces about 150mg of testosterone weekly. It circulates about 50mg of testosterone weekly, but it produces about 150mg. Much testosterone is lost to enzymic conversion to 4-androstenediols and various intermediates of DHT. So in essence we are creating a close hormone environment comparison to that realized at about week 6 of a 200mg each testosterone cypionate and nandrolone decanoate protocol.

The issue of nandrolone having such profound progesterone effects is a bit overplayed for some reason that I cannot grasp. For periods of only 4 weeks and at dosages of up to 400mg weekly, the actual progestin effect is not really of concern. Though it should be noted that the HPTA will not supply adequate testosterone (and subsequently DHT) to support a healthy libido beyond that point. And the estrogenic value is far less for nor-estrogens as a whole. As example is the effect upon HPTA function. LH and FSH are the determining factors for HPTA function itself. For this reason we can determine the degree of HPTA function inhibition that occurs as a result of the administration of different AAS. Novices that had normal LH/FSH levels prior to nandrolone administration showed an average decrease in LH/FSH of only about 33% at day 21 and 39% at day 28. Additionally at day

42 (2 weeks after discontinuance) LH/FSH level were only suppress an average of 21% thus showing a positive rebound effect. In comparison testosterone administration for the same period results in an addition decrease in LH/FSH of about 12% (bodyfat levels can have a profound effect upon this)

Normal

Male FSH reference range: 1.4-18.1 mIU/ml

Male LH reference range: 1.59.3 mIU/ml

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Q1: sir , you suggest best way of GH use is to inject it directly in the muscle group trained that day , this is site specific application u say (page 116) , now we know all the conversion of GH to IGF-1 is done in the liver, so what benefits are u mentioning here cos site increase og-1 , or MGF is not going to happen , so what's the use of this method ?

2)u also suggest post workout GH injects (page 117) , now , frank is using Humulin post workout which is active I think for 6 hrs or so , now ure suggesting gh shot an hour after the slin shot , he wudve also got in his huge protein shake , carbs etc with his post workout slin shot , simply means insulin levels are very high . its common knowledge gh doesnt work in high insulin environment , as they contradict each other , so arent we wasting a gh shot here ??

Q 2: sir , in most of ur writings , u mention the hepatic liver production a lot and seem to give it a lot of importance , recent studies show that increased hepatic-1 is linked with cancer development(growth of unwanted cells) and it seems like localised-1 and mgf is much more important , also , in a study done in rats that are engineered not to produce hepatic IGF, growth of the rats, including skeletal muscle development, is still normal. This suggests that liver produced IGF is not very significant for muscle development. this itself is enough to show liver-1 is playing very lil role, if any in muscle hypertrophy , isnt it sir ?

A: Interesting contradictive questions to say the least. You appear to be suggesting that localized IGF-1 formation is non-existent yet more effective for building muscle as well. Hmmm. Okay!

In truth research has validated on several occasions that GH and insulin do indeed have a site-specific response of anabolism on target tissues. The fact remains that it is the interaction between GH and insulin that allows for the formation of somatomedins such as

IGF-1...which is part of the synergistic response.

The issue concerning cancer is moot as we are discussing a single source of origin for IGF-1 as if it were actually a fact to come to this supposition. Cancer cells produce a great deal of IGF-1 themselves.

We will talk about rats in a moment but I think it is time for a basic review of factual information.

The Latest Research on IGF, Growth Hormone, Insulin...and Site Specific Response

A Brief Lesson To Help Catch Up First

It seems reasonably certain the almost every hard-core and serious athlete is aware of the paramount importance of testosterone and growth hormone (GH) for actualizing gains in lean mass tissue. Unfortunately it seems that not as many are aware of insulin's powerful and symbiotic anabolic effects. This is especially so in regards to its synergistic role in producing one of the body's most potent growth factors called IGF-1 (Insulin-like Growth Factor-1).

Any enhanced athlete could employ the best coaches and training protocols while utilizing polypharmacology yet realize only a fraction of their muscle mass potential unless they realize the facts about interaction between GH, insulin and IGF-1.

The amount of hepatic and site specific IGF-1 the body secretes is dependent upon insulin management.

The ratio and interaction between GH, insulin and IGF-1 is paramount for correct and maximum

protein and glucose metabolism.

Many do not realize that IGF-1 is so powerful that it has even been documented to reverse age related metabolic inhibitors such as insulin resistance and muscle loss while improving muscular contractile force.

Hepatic and tissue specific IGF-1 formation is optimized by a more steady tide effect circulatory exchange/interaction between GH and insulin.

Intense training increases testosterone, GH and IGF levels. However it also decreases insulin levels and increases cortisol (the catabolic muscle breakdown hormone)

Whenever insulin is low the life of GH-IGF secretion is short lived.

Heavy, eccentric weight training causes the highest increases in circulating bioactive IGF-1.

GH release via sleep, supplements or exogenous administration is useless without sufficient circulating insulin and blood amino acids.

Huh?

Human secretion of GH occurs from the pituitary gland (which is found at the base of the brain). Some travels the vascular system to muscle and bone tissue resulting in direct initiation of anabolism through alternate growth factor/somatomedin formation (IGF-1&2 are formed due to cascade responses). Some travels to the liver where it interacts with insulin and other factors to form hepatic introduced circulatory growth factors/somatomedins.

Once in circulation both IGF-I and IGF-2 have very short lives. IGF-II is predominantly responsible for nerve growth. IGF-I exerts most of its profound growth effects on muscle. Unless an individual actuates both insulin and IGF circulating in the correct amounts, muscle growth will be about zero.

Consider the Obvious...

It was from research performed on diabetics that initially provided the earlier examples. Insulin-dependant diabetics have chronic low IGF levels both circulatory and site-specific. They also commonly have a very bad time when attempting to increase muscle mass. Realize that diabetes is a disease of inconsistent, ineffective insulin secretion by the pancreas. A diabetic's circulatory insulin level is always going up and down depending on how much they administer and what they eat...and always mistimed to GH release. It's almost impossible to keep constant during the right periods thus resulting in little IGF formation.

Intense Training and local IGF-1 response...

Previous research has shown conflicting results with regard to IGF-1 secretion and exercise of various types. However, recent research has demonstrated that that a large amount of IGF-1 is secreted within the first 12 minutes of intense training protocols.

Properly designed current research also has shown that muscle tissue employed in weight training produced a great deal more bioactive IGF-1 (locally) and that IGF-1 circulates in a sort of "system" consisting predominantly of a group of six binding proteins, free IGF-1 and an acid-labile unit. Did you know that these six binding proteins in blood and muscle alike regulate the biological activity (usability) of IGF-1? (Say what?)

The latest body of research on IGF-1 validates that intense weight training induces a signal within muscle causes a rearranging effect to the ratio of these binding proteins that results in increased activity and availability of IGF-1. This appears to be essential to the growth and repair process...or Action/Reaction Factors.

In fact, the total amount of IGF-1 secreted by any means is not as important as the rearrangement of the IGF-1 binding protein ratio itself. Heavy resistance training triggers this rearrangement quite nicely of course as it is one of the strongest adaptive response actions there is. By the way, big issue here, this modulation of the IGF-1 binding proteins to create active IGF-1 is not fully realized until six to 12 hours after training. HMMMMM, and this just happens to be about the same time that peak muscle protein synthesis rates occur. Are you starting to see the timing and connection?

So What have we (Hopefully) learned so far?

Without proper timing of the insulin supply, kept within a narrow physiological range, GH levels are quickly destroyed and the active-life of IGF-I is sadly short lived. Precisely prolonged circulatory insulin levels prolong the active life of IGF and GH secretion so their powerful effects on muscle likely last longer.

Even though there is a great deal of IGF-1 present a maximum growth stimulus is require to alter the binding proteins ratio as a means of optimizing the amount of bio-active IGF-1.

Without proper timing of insulin and GH introduction IGF formation is reduced or lost and we look like a weenie-boy.

Now that we have the basics out of the way let's look at some other points of consideration.

It appears that for some the question of hepatic vs. local IGF formation and GH utilization is still a question. Though several exist the studies below eliminate this misperception.

Effects of local administration of GH and IGF-1 on longitudinal bone growth in rats

J Isgaard, A Nilsson, A Lindahl, J O Jansson, O G Isaksson

AMERICAN JOURNAL OF PHYSIOLOGY , 250(4 Pt 1):E367-E372 1986

The effect of local administration of growth hormone (GH) and insulin-like growth factor 1 (IGF-1) on longitudinal bone growth was studied in the proximal tibia of hypophysectomized rats, by using the tetracycline method. Human GH (hGH) stimulated local bone growth when administered into the epiphysial growth plate, into the epiphysis through an implanted cannula, or into the knee joint intraarticularly. In contrast, hGH administration into the metaphysis did not cause such a stimulation. The effect of hGH was dose dependent, and the lowest daily dose of hGH that caused a stimulation was 50 ng. hGH produced by cloned bacteria was as effective as pituitary-derived hGH, excluding the possibility of a pituitary growth factor being the active compound. GH from other mammalian species (rat GH, ovine GH, and bacterially produced bovine GH) also stimulated local bone growth. Ovine prolactin (oPRL) stimulated local bone growth but the threshold dose of oPRL was approximately 100 times higher than that of hGH, suggesting that contamination of this preparation by GH may account for the stimulation. Reduced carboxymethylated human GH, that has a greatly reduced anabolic activity, did not stimulate local bone growth. Local administration of 5 micrograms of bacterially produced human IGF-1 per day produced a small but significant effect on unilateral bone growth. Simultaneous administration of hGH had no additive effect with, nor did it potentiate, the stimulatory effect of IGF-1. The present study confirms and extends earlier investigations, showing that local injection of GH at the site of the epiphysial growth plate stimulates unilateral bone growth. The study also shows that local administration of IGF-1 stimulates longitudinal bone growth.

So we have rat bones that grow in response to IGF-1 and GH administered locally (site-specific)? Ya, but what about the humans that are not rats? Is it the same reaction to the same action? And is IGF-1 formed in places other than the liver?

Autocrine regulation of cell proliferation and secretion of insulin-like growth factor I (IGF-I) in osteoblastic cell line MC3T3-E1]

F TrÃ©molliÃ¨res, S Mohan, C Ribot

ANNALES D ENDOCRINOLOGY , 55(2):95-102 1994

Bone cells maintained in culture produce different growth factors which modulate cell growth via a mechanism of auto/paracrine regulation. IGF-1 is abundantly produced by murine bone cells where it acts as a mitogenic agent. The aim of this work was to study the effect of IGF-II, TGF beta 1, basic FGF (FGFb) and PDGF on cell growth and production of IGF-1 in the murine osteoblastic clonal cell line MC3T3-E1. IGF-1 was assayed by RIA after elimination of the IGF binding proteins. After 24th of treatment in culture conditions without serum, incorporation of [3H] methylthymidine increased significantly in MC3T3-E1 treated with IGF-II, FGFb and PDGF. The effect was dose-

dependent. At low cell density (2.5×10^4 cells/cm²) and after 24 h treatment, IGF-II at 10 ng/ml led to a 220% increase in IGF-I production in MC3T3-E1 cells (9.5 ± 1.5 vs 4.2 ± 0.44 ng/micrograms protein, $p < 0.001$) while TGF beta 1, FGFb and PDGF at 1 ng/ml led to a significant decrease (65, 95 and 85% respectively) in IGF-I (TGF beta 1: 1.5 ± 0.3 ng/micrograms; FGFb: 0.21 ± 0.04 ng/micrograms; PDGF: 0.66 ± 0.1 ng/micrograms; $p < 0.001$). Production of IGF-I was controlled by a dose-dependent relationship and varied as a function of incubation time and cell density. IGF-II led to an increase in mRNA coding for IGF-1 as early as the first hour after IGF-II addition with a maximal effect at 6 hours.

So other cells in the body do produce growth factors. But is it due to GH and Insulin exposure locally (site-specific) Oh, and where are the humans?

Regulation and action of insulin-like growth factors at the cellular level

L S Phillips, J B Harp, S Goldstein, C I Pao

Proceedings of the Nutrition Society , 49(3):451-458 1990

Present understanding of IGF-1 as a growth factor mediating integration of nutritional-hormonal interactions indicates that IGF-1 acts in both an endocrine mode on distant targets and an autocrine-paracrine mode on local targets. In the liver, the combined presence of GH, insulin, and critical metabolic fuels such as essential amino acids results in increased levels of IGF-1 messenger RNA, increased production of a high-MW IGF-1 precursor, and increased release of IGF-1 into the circulation, permitting action on distant target tissues bearing specific receptors for IGF-1. The net effect is distant amplification of anabolic hormone action via IGF-1 acting in an endocrine mode. In extrahepatic tissues, both 'general' anabolic hormones (insulin and GH) as well as 'specific' hormones (e.g. gonadotropins) acting on a wide variety of targets (including fibroblasts and chondrocytes as well as granulosa and Leydig cells) promote both local secretion of IGF-1 and an increase in IGF-1 receptors. Local actions of IGF-1 then result in a secondary increase in both hormone receptors and hormone responses. The net effect is local amplification of hormone action via IGF-1 acting as a growth factor in an autocrine-paracrine mode.

Q: My friend said that almost all professional athlete's use performance enhancement drugs. This does not seem possible to me because they test them. Is he right? Are there any natural athletes left?

A: Simply said, yes on all counts. But the question of drugs is as complex as a political debate in that each country and state may have profound differences in laws that regulate what is considered a drug and more so what is deemed a performance enhancing substance. As example are the many prosteroids legal is the US and other countries that would get an athlete a trip to jail in others. Whereas anyone can purchase anabolic/androgenic steroids (AAS) over the counter in many south or the boarder countries, other countries have entire badge carrying task forces seeking those who do the same.

To begin with, I neither advocate nor have dissention to express for the employment of performance enhancing chemistry. I simply research and report upon the realities and facts of it both good and bad alike. Personally I build very healthy and competitive beasts. In doing so I hope to allow an advanced level of informed choices to be made by those who I work with, or who read the various articles, columns and books I am fortunate enough to have written. With that said, you have to realize that all things in life are chemical in structure. From the food we eat to the air that we breathe all things are simply a matter of chemistry. So often perception of right and wrong depend upon the political climate you live in, but the facts remain the same. Creatine is a performance enhancing substance capable of increasing an athletes lean mass tissue about 3-8% with an accompanying increase in anaerobic capacity of 8-12%. That is pretty profound when you consider that a 200lb man can realize an increase in lean tissue of 6-16lbs. Consider as well that the same individual could easily add 16-24lbs to a single rep max effort on the bench also. Many AAS cannot compete with these results and it is a legal substance in most every country and banned by few sports organizations. Most athletes use creatine at the least, Lad. This means that they too are chemically enhanced. It is merely an issue of perception that bears the weight of legality for some and availability for others.

Testing for specific drugs does just that: Test only for specific drugs. Additionally, items like GH (growth hormone), IGF-1 (insulin-like growth factor-1, insulin and animal origin testosterone are nearly impossible to detect. Many American power and size-oriented athlete's employ all or most of the above even in tested events without concern. I often laugh when someone comments upon the nearly 100lb increase in average weight for professional football lineman in the last 20 years and comment on the removal of AAS from professional sports in the same breath. It is amazing to think that anyone assumes that evolution has come that far so quickly. Such an evolutionary change would take a few 100,000 year to transpire at best. Some will point to improved training and dietary protocols and I would agree to a certain extent...the extent being about 30-40 lbs of course. This is large but by no means does it account for the monsters we see on the playing fields and upon the stages in different events today. The fact is that we each strive to be our best through what means we deem acceptable.

I have worked with many athletes whom do not employ illegal drug use as a performance aid. And I might add that those who are competitive do rather well for themselves. They have made a choice and accept the consequences both favorable and otherwise (they also accept that others may choose otherwise for themselves).

I do hope that you choose for yourself and do not feel the need to do as others do for any reason except that you agree with the course that they have chosen. Being the best you can be can mean a variety of things to different people and who knows, you just may be that epic point in evolutionary events that changes the future forever. You may be that good and not even know it.

Q: There are so many people telling me different ways to take creatine monohydrate that I had to get some expert advice. I want to gain some muscle but not put on a lot of fat. Does it really matter how I take the stuff? Help!

A: For Creatine supplementation to result in an increase in strength and protein synthesis, the cellular concentration level must reach 20 MMOL/KG DM. During a 5 day loading periods with a high glycemic carbohydrate such as Dextrose and Creatine, the level reaches MMOL/KG DM. When Creatine levels increase in muscle cells, the active Creatine transporters are down-regulated, so less Creatine is transported. This could be avoided if the Creatine is fortified with the Creatine substrate 3-guanidinopropionate. Second, Creatine cannot be diffused across the muscle cell

membrane without the co-transporters of sodium and chloride ions to cause enough electrical charge to transport the Creatine. (Table salt) Other up-regulators of Creatine transport are Clenbuterol and Ephedrine as well as T-3 thyroid hormone. These are quite potent transporters to say the least. Of course, Insulin (Humulin) and IGF-1 are very effective Creatine transporters. Though Dextrose is an excellent trigger for Insulin release there is a higher glycemic carbohydrate. Malt extracts contain a mixture of maltodextrins, glucose, and dextrose which are made of glucose chains of 3-7 glycosyl units. And guess what? The small intestines absorb glucose chains containing 3-7 glycosyl units much faster than dextrose. This means a higher and stronger Insulin spike. So barley malt extract or maltodextrin is a better carb choice and can be utilized in lower levels than 75 GMs per dose. Whey protein also creates an Insulin spike which can prolong the spike from high glycemic carbs. By the way, caffeine intake over 400 MG daily, as well as the isoflavone genistein in soy protein inhibit creatine transport. Genistein inhibits tyrosine kinases which is necessary for nutrient transport.

The body has 3 periods when creatine uptake is highest: After a nights sleep, the body is in a fasted state due to a period of natural GH pulses (about half of your daily total GH production is released during the first 4 hours of sleep) and a prolonged period without nutrients. This results in an up-regulation of nutrient transporters and enzymes which favor intramuscular uptake of nutrients, including Creatine.

When Creatine is ingested 45-90 minutes before a work-out, an athlete can take advantage of the training induced increases in blood flow to muscle tissue to transport essential nutrients across muscle cell membranes. (This also acts as a buffer to lactic acid) Since high intensity work-outs trigger the release of adrenal hormones such as Epinephrine and Norepinephrine, the cellular uptake of nutrients is improved.

Within the first 45-90 minutes following an intense work-out, the body is in a very nutrient receptive state. Heavy training reduces muscle glycogen stores (glycogen comes from blood sugars such as carbs) and receptor-sites for nutrients become sensitive. This means the body is in a catabolic state requiring nutrient supply. Several storage enzymes are up-regulated and creatine (CP) levels are lower which of course means intramuscular nutrient storage ability is at a high level. It also means the muscle cells need ATP regeneration.

So what was the best Creatine mixture currently available?

16-32 OZ of water	300 MG of Lipoic Acid and/or 50 MG of D-Pinitol
5-10 G of Creatine	A source of 3-guanidinopropionate
250-500 MG of salt	4-25 G of Glutamine
25 G of Malt Extract	30 G-50 G of whey protein

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Q: Hello, Mr. Rea. I am competing at a power lifting event in a few months and wanted to know what AAS work best for strength increases? The event is untested and I can gain all the weight I want. I have over 4 months to get ready.

A: I often relate to readers the absolute necessity for protocols being designed for a "specific intent" rather than the "everything including the kitchen sink" approach. Often I review past protocols that have been employed by athletes and find a countless number of so-called stacks that actually have counter-productive chemistry included in their structure. When the goal is to induce a significant response of some type, it seems idiocy at best to include drugs, supplements or training that act to mitigate the effects of any positive part of the protocol. Of course a progressive approach to a power cycle is no exception.

Know The Goal

The average training approach for a power meet is commonly done in a progressive weight/descending rep manner. I realize that it sounds rather simplistic to say, but we first have to decide the goals of a protocol if we are to correctly choose specific chemistry that best facilitates its requirements best. The goal here is: 1. An increase in muscle mass to better carry the upcoming increase in maximum weight-load 2. Followed by a period of teaching new tissue to contract at a

maximum rate (and teach old tissue to work with the new) 3. And a final period of maximizing neurological stimulus between the brain and the target muscle groups for best muscle fiber pattern recruitment. In this case we realize that an athlete would likely use a 12 week training plan divided into 4 week intervals with a Lean Tissue Growth Phase, Fiber Recruitment Phase and Maximum Neural Stimulation Phase. As we have discussed many time before (like in the prior question as well), the body employs Action/Reaction Factors to maintain homeostasis. In that lies the best way to construct our chemistry specific protocol to compliment our training requirements and goal.

Plan For Power Example 1

Lean Tissue Growth Phase

Day

- 1. Oxandrolone 50mg/Boldenone Udecyclenate 200mg/Nandrolone Decanoate 200mg
- 2. Oxandrolone 50mg
- 3. Oxandrolone 50mg
- 4. Oxandrolone 50mg
- 5. Oxandrolone 25mg/Boldenone Udecyclenate 200mg/Nandrolone Decanoate 200mg
- 6. Oxandrolone 25mg
- 7. Oxandrolone 25mg
- 8. Oxandrolone 25mg
- 9. Oxandrolone 12.5mg/Boldenone Udecyclenate 200mg/Nandrolone Decanoate 200mg
- 10. Oxandrolone 12.5mg
- 11.
- 12. Boldenone Udecyclenate 200mg/Nandrolone Decanoate 200mg
- 13.
- 14.
- 15.
- 16. Boldenone Udecyclenate 200mg/Nandrolone Decanoate 200mg
- 17.
- 18.
- 19.
- 20. Boldenone Udecyclenate 200mg/Nandrolone Decanoate 200mg
- 21.
- 22.
- 23.
- 24. Boldenone Udecyclenate 200mg/Nandrolone Decanoate 200mg
- 25.
- 26.

27.

28. Boldenone Udecyclenate 200mg/Nandrolone Decanoate 200mg

*Administration dosages are based upon a bodyweight of 200-220 lbs

Lean Tissue Growth Phase

Oxandrolone, nandrolone and boldenone are all highly anabolic/low-moderate androgenic AAS with the latter two possessing only low to moderate aromatization potential. This allows for a high rate of protein synthesis and "lean mass" accumulation with only moderate neuronet stimulation. Since this period of training is predominantly structured from a 12-15 rep protocol, the need for a higher degree of protein synthesis is mandatory. As we have discussed prior, the body has many intricate Action/Reaction Factors to consider: By increasing the amount of lean tissue an athlete carries we are better able to increase total weight and work-load capacities needed for the next phase. By limiting the degree of estrogenic activity the accumulation of excess fat is hindered thus providing a better nutrient partitioning focus upon lean tissue and fewer issues in relation to blood pressure and edema at this time. For the most part the body easily deals with brief elevations in blood pressure rather well. But by no means is 12 weeks a brief period of time. Remembering that the body has time frames for Action/Reaction Factors for most physiological events, it would be unwise to stimulate the neuronet as of yet to any real degree as the result is a sluggish CNS (central nervous system) by the time the meet day arrives 12 weeks later. Ever wonder why your max goes down when you attempt it weekly?

Plan For Power Example 1

Fiber Recruitment Phase

Day

29. Methandrostenolone 40mg

30. Methandrostenolone 40mg

31. Methandrostenolone 40mg

32. Testosterone Enanthate 300mg/Boldenone Undecyclenate 200mg Methandrostenolone 40mg

33. Methandrostenolone 40mg

34. Methandrostenolone 40mg

35. Methandrostenolone 40mg

36. Testosterone Enanthate 300mg/Boldenone Undecyclenate 200mg Methandrostenolone 40mg

37. Methandrostenolone 40mg

38. Methandrostenolone 40mg

39. Methandrostenolone 40mg

40. Testosterone Enanthate 300mg/Boldenone Undecyclenate 200mg Methandrostenolone 40mg

41. Methandrostenolone 40mg

42. Methandrostenolone 40mg

43. Methandrostenolone 40mg

44. Testosterone Enanthate 300mg/Boldenone Undecyclenate 200mg Methandrostenolone 40mg

45. Methandrostenolone 40mg

46. Methandrostenolone 40mg
47. Methandrostenolone 40mg
48. Testosterone Enanthate 300mg/Boldenone Undecyclenate 200mg Methandrostenolone 40mg
49. Methandrostenolone 40mg
50. Methandrostenolone 40mg
51. Methandrostenolone 40mg
52. Testosterone Enanthate 300mg/Boldenone Undecyclenate 200mg Methandrostenolone 40mg
53. Methandrostenolone 40mg
54. Methandrostenolone 40mg
55. Methandrostenolone 40mg
56. Testosterone Enanthate 300mg/Boldenone Undecyclenate 200mg Methandrostenolone 40mg

*Administration dosages are based upon a bodyweight of 200-220 lbs

Fiber Recruitment Phase

During the Fiber Recruitment Phase, synergistic chemistry that significantly increases total body mass, fosters an improved weight bearing foundation and continues to support an increased rate of protein synthesis is needed. The reason is due to an increase in weight-load and decrease in the number of reps performed weekly during each successive work-outs. The body's reaction to this is triggering an increase in the number of muscle fibers recruited with each rep. The use of a testosterone allows for an increase in androgenic activity resulting in better neuronet stimulation and an improvement in muscle fiber recruitment numbers and patterns. Since testosterone aromatizes an up-regulation in the body's water table is realized. This means that muscle tissue is fuller and firmer allowing for a better foundation to leverage weight with and from. It's like the difference between building a house on sand or rock.

The latter will support a much greater weight-load. Methandrostenolone is highly androgenic and quite anabolic thus having respectable synergistic value with testosterone. In fact there have probably been more power athletes build with these two AAS than any other 3 stacks combined. However, monitoring of blood pressure during use of this combination is paramount as both tend to draw a great deal of water into the vascular system. Most larger athletes (240 lbs or better), have above average blood pressure readings. In most cases this is due to a larger heart is required to supply blood to a larger body. The administration of 20mg of Lasix nightly is commonly employed by chemically enhanced athletes when blood pressure is over 160/100...though this is certainly not a recommendation. The addition of boldenone? To aid in maintaining the elevated state of anabolism as there is still a great deal of tissue growth occurring.

Plan For Power Example 1

Maximum Neural Stimulation Phase

Day

57. Fluoxymesterone 20mg
58. Trenbolone Acetate 75mg/Fluoxymesterone 20mg
59. Fluoxymesterone 20mg
60. Testosterone Enanthate 300mg/Trenbolone Acetate/75mg Fluoxymesterone 20mg
61. Fluoxymesterone 20mg
62. Trenbolone Acetate 75mg/Fluoxymesterone 20mg

63. Fluoxymesterone 20mg
64. Testosterone Enanthate 300mg/Trenbolone Acetate 75mg/Fluoxymesterone 20mg
65. Fluoxymesterone 20mg
66. Trenbolone Acetate 75mg/Fluoxymesterone 20mg
67. Fluoxymesterone 20mg
68. Testosterone Enanthate 300mg/Trenbolone Acetate/75mg Fluoxymesterone 20mg
69. Fluoxymesterone 20mg
70. Trenbolone Acetate 75mg/Fluoxymesterone 20mg
71. Fluoxymesterone 20mg
72. Testosterone Enanthate 300mg/Trenbolone Acetate 75mg/Fluoxymesterone 20mg
73. Fluoxymesterone 20mg
74. Trenbolone Acetate 75mg/Fluoxymesterone 20mg
75. Fluoxymesterone 20mg
76. Testosterone Enanthate 300mg/Trenbolone Acetate 75mg/Fluoxymesterone 20mg
77. Fluoxymesterone 20mg
78. Trenbolone Acetate 75mg/Fluoxymesterone 20mg
79. Fluoxymesterone 20mg
80. Testosterone Enanthate 300mg/Trenbolone Acetate 75mg/Fluoxymesterone 20mg
81. Fluoxymesterone 20mg
82. Trenbolone Acetate 75mg/Fluoxymesterone 20mg
83. Fluoxymesterone 20mg
84. Testosterone Enanthate 300mg/Trenbolone Acetate 75mg/Fluoxymesterone 20mg (Meet Day)

*Administration dosages are based upon a bodyweight of 200-220 lbs

*Optional: Day 74-83 Humulin-R 10iu 2xd with creatine monohydrate 10g & BCAA 10g

Maximum Neural Stimulation Phase

At this point in the protocol our example athlete has increased weight-loads significantly and drop the rep count to triples and singles. This means the need for the best connection possible between the brain and muscles should be accentuated by the chemistry employed.

Most readers are aware of the excitatory hormones adrenaline and noradrenaline or may know them as epinephrine and norepinephrine respectively. When secreted by the adrenal gland, these hormones travel the vascular system until they contact their adrenergic receptors in various tissues including muscle, heart and brain. Once receptors are stimulated the result is CNS stimulation and a series of fight or flight reactions...including an increase in the number of muscle fibers recruited to perform any given task (Like moving way more weight than is normally humanly possible). This is the reason so many lifting and athletic federations ban the use of ephedrine products also. The mind/muscle connection is improved allowing for greater employment of every muscle fiber under load.

Most AAS androstane structures possess an adrenalgenic stimulatory effect. The magnitude of this effect is decided by the level of androgenic value the drug maintains. For anyone who has had to stand in a DMV or Post Office line while administering Halotestin, this is stating the obvious. (Ya, I would like to see a half dozen of my favorite Halo/Fina/Methyltest stacking muscle freaks on the Jerry Springer show. Who cares what the topic is!) The use of fluoxymesterone at this point in the protocol is a no-brainer as its androgenic/adrenalgenic effects are well noted by the strongest men in the world. The addition of trenbolone has a synergistic androstane value of course with the additional value of a very high rate of protein synthesis occurring as well.

Testosterone enanthate? As you will recall the importance of having a profound increase in weight bearing foundation is paramount to big numbers.

All In The Planning

The need for this example to be laid out in 3 four week phases is intended to create a series of adaptive responses best for working within the body's Action/Reaction time frames for peak power output. The addition of a decent diet and appropriate training was necessary for maximum effect of course. And..

I know of more than a few standing world records accomplished by those using this protocol. Some added injectable ATP and most used the creatine/insulin loading layer. But all realized results to brag about.

Q: I have read two of your books and noted that you think highly of an insulin-like chemical named 4-Hydroxy-Isoleucine. From what you write it sounds great but I can't find anyone who has it. Is it a drug?

A: Actually 4-Hydroxy-Isoleucine is a naturally occurring amino acid that has received some interest from the medical and research communities as of late. I say "some interest" due to the fact that, since it is naturally occurring, the patent and exclusive resale issues are difficult to lock-in. So "some interest" is closely related to "some financial possibility". 4-Hydroxy-Isoleucine is a rather novel amino acid that acts as a potentiator of insulin. (Huh?)

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The way the body regulates circulating blood glucose levels is through the secretion of two hormones called glucagon and insulin. The latter's secretion is a result of the pancreas's beta cells receiving a "make insulin" signal as a reaction to food-stuff ingested. Since insulin is the body's main storage hormone the transport of energy and growth nutrients into cells is dependent upon it. A significant decrease in insulin release in response to food ingested results in catabolism of muscle tissue and (strangely enough) an increase in fat stores. This simply means that there is not enough insulin released to accommodate the amount of calories eaten. It is often said that insulin makes people fat. In truth poor dietary habits, ineffective training, and "insulin insensitivity" actually is the villain. But that is an entirely different topic for now.

The reason growing bodybuilders want an increase in insulin secretion is to facilitate metabolic factors that initiate the anabolic process:

(1) Glucose derived predominantly from carbohydrates is stored as the energy substrate glycogen in the liver and muscle tissue. Insulin shuts off the rate limiting enzyme responsible for glycogen synthesis inhibition.

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So the reason is simple. More insulin results in more growth promoting nutrients being forced into muscle cells and a decrease in muscle catabolism. That, boys and girls, means major growth potential.

The primary occurring source for natural 4-Hydroxy-Isoleucine is as an extract from fenugreek seed. The ground seed provides between 0.08-0.10 mg of the pure substance per 100 mg. This means that 1 gram of ground fenugreek seeds contains 80-100 mg of the amino acid. Some studies suggest that as little as 45 mg of 4-Hydroxy-Isoleucine can initiate a significant elevation in insulin release in the presence of adequate circulating blood glucose and amino acids. However, I find it unlikely that healthy individuals would realize benefits at dosages below 200 mg.

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deal and who cares how big your arms are?

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A: Yes, it does make sense. Sex is a great form of aerobic activity and yohimbe is a noted product for putting a little extra bark in your in your bite...or something like that. Actually yohimbe bark contains a chemical called yohimbine which is a noted adrenergic A-2 receptor antagonist. This simply means that yohimbine can block the receptors on fat cells that normally shut down the fat release process. This is controlled by the hormones epinephrine and norepinephrine (also called adrenaline and noradrenaline) which normally bind with fat cell adrenergic receptors to signal the release of fat into the circulatory system so that it can be burned up as an energy source. The body tries to stop this process by stimulation of A-1 receptors that tell the fat cells to hoard the goodies. When yohimbine blocks the A-1 receptors more fat is released and is burned as fuel for your efforts. A well structured study was performed that validates this quite well.

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Q1: I have never taken any performance enhancing drugs of any kind but I think I have bitch-tits (gyno). I don't even take creatine! Is this possible? Help!

J. Armono

A: Do you have the urge to dance around in wet T-shirts? Sorry, I just could not resist that one.

Gynecomastia is the medical term for gyno or bitch tits. The slang term "bitch-tits" refers to the way a female dog's teats hang when lactating (milk is being produced as a means of feeding her pups). Human males can experience gyno due to a variety of situations. For the most part the formation of gyno is the result of excess estrogens and/or prolactin in the system and not enough androgens such as testosterone to counteract the effects. The ratio of an individual male's hormone profile is more of an issue than the mere existence of increased estrogen in a male's system.

Though estrogen is considered a female sex hormone, males manufacture it as well, though to a lesser degree. Oddly enough males are dependent to a certain extent upon estrogen's activity to facilitate erectile and sexual function. As example is our libido being supported in some ways by the actions of estrogens in the brain.

Several factors can tribute to a build-up of estrogens and decrease in androgens in a man's body:

Medications: Many medications can have an effect upon the formation of estrogens or activity of androgens in the body. The diuretic spironolactone is a good example as it has an anti-androgenic

effect upon males.

Environmental Estrogens: Our environment is actually a major source of estrogens...both man made and natural. Plastics of any kind and certain ingredients in cosmetics such as shampoo have estrogenic activity.

Diet: Diets low in zinc and high in soy protein are a man's feminizing nightmare. Zinc facilitates the production of natural androgens by the testes and decreases the number of estrogen receptor sites in a man's body. Additionally zinc fosters the formation and utilization of about 300 hormonal and enzymic functions necessary for recovery and growth. Soy products contain phytoestrogens that act as weak estrogens in the body. If enough is consumed from dietary sources-sweater puppets will result in many cases.

Bodyfat Percentage: Testosterone is susceptible to an enzyme called aromatase. When the two meet up in the body the result is an amount of your manly testosterone being converted into feminizing estrogens. Adipose sites (fat cells) are a major source of aromatase enzyme production. So an increase in body fat results in an increase in testosterone conversion to estrogens.

Hormonal imbalances: Certain physiological conditions can decrease a man's testosterone production and increase the production of feminizing hormones like estrogens and prolactin. For this reason an unfavorable androgen - to - estrogen ratio can occur. An individual whom is obese can convert the predominance of their natural androgen production into estrogens and realize addition feminizing effects. A tumor on the pituitary gland can result in increased prolactin secretion. There are several possibilities in fact. (This is not to say any of these apply to you, simply that the conditions do exist)

Age: As a man ages natural androgen production declines. In fact I have often been amazed at how many males are boarder-line hypo-gonadal (androgen deficient) by age 40. This seems to apply to the less athletic types to a significant percentage. For the most part those who have reasonable training and dietary practices seem to show respectable natural androgen production into their 40's 50's and even 60's in many cases.

Supplements: Some supplements intended to decrease a man's estrogen levels actually increase them. Genistein and Black Cohosh are used in many of these supplements yet each has clinical estrogenic activity. The principle is similar to that of the anti-estrogen drug tamoxifen citrate. It itself is a weak estrogen that occupies estrogen receptors so that the more powerful estrogens are blocked from entering. Weaker estrogens means less activity. The idea is actually sound but the lack of standardization allows for misdosing too frequently.

These are some of the primary possibilities relating to your experience with the feminizing side of hormones. I suggest that you evaluate your diet and environmental issues as well as your bodyfat percentage. If this seems sound seek the guidance of your physician and some basic blood work. The blood work will most likely include test values for testosterone, DHEA(S), estradiol, estrone and prolactin. If however, you find yourself in need of some significant fat loss take the time read through a Nutritional Almanac and learn the basic macronutrient values of your current diet and adjust the caloric intake so as to provide an average of 10 calories per pound of bodyweight daily and divided into 5-6 small meals. But if you find yourself with an uncontrollable desire to dance around in your mother's high heels please feel free to contact anyone except me in the future.

Q2: Dear L. Rea,

Some supplement companies have been making claims for years that their supplements are as good as taking anabolic steroids. Are there any supplements on the market that are even close to giving the same effect as steroids? Also, I'd like to know what supplements you recommend taking while taking steroids. Thanks!

G. Lambert-- Canada

A: The companies making claims of anabolic steroid equality between their products and the real deal are not only wrong but also in violation of multiple laws. Unfortunately sensationalism is what sells products. However, If the products were that powerful they would be scheduled as drugs.

Sometimes a few make it past the legal eagles such as certain prosteroids, ephedrine and T-2 in the United States. As example is the so-called 1-Test esters sold as oral OTC androgens in the US. They are nearly as effective as Primobolan orals and remarkably safe in comparison to other prescription AAS orals.

As a whole the supplement industry is comprised of a few innovative individuals and an endless number of sales people. Each of which has to be concerned with legalities and liability. A supplement has to be nearly benign in nature to avoid the usual class action law suits that have destroyed the industry and allowed common sense to be replaced by laws (and 3 or 4 letter organizations carrying guns and badges for your betterment).

Athletes are not like most average everyday people. We tend to test the limits of any idea possible as much as we test the limits of our own bodies. For the most part if we push too far while utilizing chemistry (legal or otherwise) we simply say "...damn, guess I should have backed off a little. But did you see that lift?" while the rest of the public envies our border-line sanity and cartoon proportioned acid etched bodies yet sues the manufacture of whatever it was they horribly misused.

As a result of law suits and idiocy in general many excellent products either never made it to market or will soon be gone from the few places they are legal. But in truth there have been terribly dangerous products removed or banned as well.

Since you are in Canada (beautiful country and fun people) there is really no single supplement I would attach "powerful in the sense of AAS" to the word "available". But I will say that the use of creatine, glutamine, EFAs and quality protein powders will make a profound difference in the results a hard training athlete will realize. There are a few other intent specific supplements available I will mention in other Q & A's as we progress, but none available in Canada fit the "as good as taking anabolic steroids" description.

Several supplements have either protective or synergistic value with AAS administration, but as a whole are simply a sound foundation for natural beasts with quality results and good health in mind (And they are legal)

Creatine: Increases androgen receptor site counts and supplies greater ATP for improved recovery. Additionally, research suggests creatine is beneficial in cholesterol management and positively influence muscle fiber counts. Aids in post-cycle lean mass retention.

Glutamine: Improves toxic ammonia clearing from the system and aids in restoring a positive nitrogen/anabolic profile to injured tissues post work-out.

CLA: Aids in inhibiting fat accumulation during mass weight gain protocols.

Milk Thistle: Inhibits liver toxification from c17 Alkylated AAS while aiding in hepatic clearing and cell regeneration.

EFA's: Increase HDL (good cholesterol) and decrease LDL (bad cholesterol).

Guggul Sterones: Decrease total cholesterol count through liver inhibition and increase thyroid hormone production.

Niacin: Aids in cholesterol control and protects hepatic detoxification function.

Flaxseed Oil: Though an effective source of omega 3 & 6 EFA's (for anabolic prostaglandin production and joint function), flaxseed oil contains lignans that act as estrogen site antagonists. This means that they help prevent estrogenic activities such as female pattern fat deposits and the need for male wet T-shirt contests by blocking estrogens from their receptor sites. Many natural athletes have realized a significant improvement in recovery and a harder appearance to their musculature simply by adding 1 tablespoon 3 times daily to their diets.

Q 3: Me and my training partner have read your Ask Author L. Rea and Chemical Corner columns since they started. You talk a lot about the importance of insulin and mentioned an herb named fenugreek for its insulin like effects. We have been using it for a few weeks now and we both think that we

are leaner and more muscular but at the same weight. I can tell you that the pumps are almost too painful while we are lifting and our recovery seems better. We want to know what else you have in the OTC supplement box for insulin like results?

A: Of course! There are several effectual supplemental possibilities in the insulinogenic category thanks to the on going research by many reputable companies searching for treatments focused upon diabetics. With some luck a few of the more innovative supplement companies will use this research for applicable purposes. Insulinogenic just means insulin-like in action. There really are no perfect OTC equivalents to the practices of self-administration of pharmaceutical insulin meant for diabetics, but there are some very result producing options that are legal and far safer in practice.

As you know through your own experiences with fenugreek, insulinogenic activity results in an increase in cellular up-take of growth nutrients and an anti-catabolic (decrease in tissue wasting) effect that reduce the amount of lean muscle tissue loss that occurs as a result of inadequate energy stores available at the cell. This translates into greater lean mass growth with less loss from catabolic hormones turning hard-earned tissue into muscle munchies. Additionally the body increases its utilization of fat stores as an energy substrate for muscles and you get to be leaner in as well. The latter is an issue of insulin resistance or insensitivity. When the body's cells become less sensitive to the activity and actions of insulin the excess glucose has to go somewhere. In most cases this manifests itself as an increase in bodyfat and in extreme cases the need to avoid whaling ships.

I would say that *Catharanthus roseus* is the next viable option to the glucose/amino acid utilization issue relating to insulinogenic substances. In animal research studies the herb has been shown to lower blood sugar (glucose) about 50% from a single dose. This is rather impressive as a 50% clearing rate is almost comparable to an effectual dose of medically prescribed insulin. It would require a total daily dosage of about 2.50-3.00g of *Catharanthus roseus* for humans to achieve the results realized in the animal studies.

Some readers may know *catharanthus roseus* as Madagascar or Common periwinkle and both species are sometimes called myrtle. Regardless of the name applied it is an evergreen herb in the dogbane family (Apocynaceae) that was originally from the island of Madagascar.

Historically the plant has been used to treat a wide assortment of diseases. In Europe *catharanthus roseus* has been employed as a folk remedy for diabetes for several centuries. In other countries the herb has been used to treat wasp and bee stings, to stop bleeding and even as a diuretic and as a cough medication.

Sometime in the 1950's western researchers came across a *catharanthus roseus* Tea used by the Jamaicans for the treatment of diabetes. Testing showed that the herb actually contains a multitude of active alkaloids (over 70 of them). Of these some (vincristine and andvinblastine) are currently used to treat cancers like Hodgkin's disease and acute lymphocytic leukemia quite successfully. Catharanthine, lochnerine, vindolinine, tetrahydroalstonine, leurosine sulphate and vindoline all have glucose lowering value by acting either as or supporting of insulinogenic substances. Though in minor concentrations, the herb also contains the alkaloids reserpine and serpentine. These are actually tranquilizers in effect, but the amount required to experience any level of a so-called drug induced high would lead to vomiting and porcelain throne worship long before anything else.

It should almost go without saying that anything that increases muscle cell up-take of amino acids and glucose will also facilitate the up-take of other growth nutrients such as creatine.

(Part 1)

So there you are in the prime of your life looking like you have just descended from Mount Olympus itself. It seems as if you can lift any weight or train for days and still have the energy to go dance and romance all night. You can eat a diet of fast foods and sodas yet appear to have the physique of a serious dedicated athlete. Then you blink and 20 years has passed in a blur leaving you in a state of physical disarray. Yes, you are middle aged and life has been far kinder to you then you have been to it (but it certainly has been fun, huh?). You look in the mirror to realize that despite your heroic efforts and years of consistent training and reasonable diet some fat has begun to accumulate around your waist and under your lower pectorals. Your hips and thighs appear to be less muscular and yet a little wider than they were only a few years before. This sucks!

Before we go any further it is absolutely paramount that you realize that age is a man made thing and that the body solely knows Action/Reaction to the experiences one provides. The only thing that has changed in your life is your hormone profile and the way your body appears is directly respondent to it. But until one forgoes the belief that age is a disease-like thing that creeps upon the body and spirit age will win over fact.

A man's musculature is affected by several hormones and hormone-like substances. Some have anabolic (meaning to add) effects upon muscle tissue while being catabolic (meaning to subtract) to adipose (fat) tissue. Others are anabolic toward adipose tissue while having a muscle wasting effect. Still others alter the activity of different hormones by mediating hormonal effects. It is the ratio of one hormone to the others that we refer to as a hormone profile.

The primary man's hormone is testosterone. It is generally accepted that testosterone is what makes a man male: Deeper voice, increased body hair, greater muscle mass, and the formation of sexual gender appendages are attributed to the activity of testosterone. But in truth a normal testosterone level and abnormally high estrogen level will result in feminizing effects and a rapid decrease in testosterone production. Testosterone is only one of a male's androgens produced by way of the HPTA and HPAA.

HPTA FUNCTION

The HPTA refers to the Hypothalamus-Pituitary-Testes-Axis. This is the endocrine systems primary androgen and testosterone making area for males (most readers already know that women do not have testes so they also lack the HPTA).

Under normal conditions testosterone production begins when the hypothalamus senses low circulatory androgen levels such as testosterone. In response to the signal the hypothalamus secretes and releases a hormone called Gonadotropin Releasing Hormone (GnRH) that contacts receptors of the pituitary gland. As you recall, hormones and receptors are simply a method of organs, glands and tissues communicating with one another. GnRH tells the pituitary gland to secrete two gonadotropic hormones called Luteinizing Hormone (LH) and Follicle Stimulating Hormone (FSH). Next, both LH and FSH enter the vascular system and take a trip down south to the testes where the leydig cells (interstitial cells and sertoli cells) are located. The merrgence of LH and FSH with interstitial and sertoli cell receptor results in testosterone manufacturing and sperm production.

HPAA FUNCTION

A small percentage of testosterone and other androgens come from another source called the Hypothalamus-Pituitary-Adrenal-Axis or HPAA. When the pituitary gland secretes adrenocorticotrophic hormone (ACTH) the adrenal glands release a series of adrenalgenic/androgenic hormones. The main one for our point of discussion is dehydroepiandrosterone (DHEA). Through a series of enzymic interactions beginning with DHEA various other hormones are produced. These enzymic interactions are referred to as pathways. Much like a road or pathway one can imagine in life, each can lead to a different goal.

DHEA > Androstenedione > androstenediol > Testosterone

This is not to say that an elevation in DHEA will result in a corresponding elevation in testosterone. There are many enzymic reactions possible that can lead to DHEA and/or

androstenedione being converted or aromatized into estrogens instead. However the ability to increase total androgen production can be done with a little work.

Testosterone exists in either a bound or unbound state. Unbound is also called free or active testosterone. The S & M team that bind testosterone and other sex hormones are sex hormone binding globulin (SHBG) and albumin. The average male produces between 6-10 mg of testosterone daily. Of that 6-10 mg only 1-2% is free or active. Think about that for a minute. Do you recall those kids in school who always seemed to be the most muscular, strongest, and fastest? They were the ones who produced the upper range of testosterone, while the rest fell somewhere below. So obviously a few extra milligrams of naturally produced testosterone can make a profound difference.

We now see that the key to a growth promoting elevation of endogenous androgens is dependent upon supercharging the HPTA and HPAA. This can be accomplished by inducing one or all of the following metabolic alterations:

- (1) An increase in LH production.
- (2) An increase in androgen producing substrates.
- (3) An increase in free/active androgen levels.

A note of prime interest as you read on is that an increase in circulating LH levels also results in an increase in synthesis of the enzymes that favor androgen production by the HPAA and HPTA.

The Feminine Side of Things

The hormone group that makes a female a woman is estrogen. There are several different forms of estrogen including the progesterone, hydroxyestrone's and 17 β -estradiol, the latter being a particularly powerful estrogen. Males produce estrogen as well. In fact our dominant estrogen is 17 β -estradiol, though we produce androgens far in excess of estrogens. The way a male's body produces estrogens is predominantly by way of aromatization. Aromatization is the conversion of androgens into estrogens...which is what occurs when susceptible androgens encounter the enzyme aromatase. A primary site for aromatase enzyme production is adipose sites or fat cells. The reason for this is simply explained: Every cell in our body has its own series of survival mechanisms and hormones that trigger them. In the case of fat cells estrogen triggers anabolism for them so they assure their place in the feeding hierarchy by producing lots of aromatase enzyme. Testosterone and other androgens are anabolic to muscle cells and catabolic to adipose sites. Unfortunately muscle has a very poor storage system for calories so nature gave the adipose site the advantage to assure long-term storage of energy for times of need. So more fat cells results in greater amounts of aromatase enzyme being produced and more androgens being converted to estrogens. Did I happen to mention that males can be feminized by estrogen?

An increase in circulatory estrogens induces a negative feed-back loop in the HPTA. A negative feed-back loop is a chemically transmitted message that tells an organ or gland to decrease or shut down production of another chemical. In this case estrogen tells the hypothalamus and pituitary to shut down the production of GnRH, LH and FSH. The result is a decrease in androgen production and less testosterone to rival the effects of estrogen. The dominant hormone therefore becomes estrogen and the obvious effects are feminizing traits such as "...fat has begun to accumulate around your waist and under your lower pectorals. Your hips and thighs appear to be less muscular and yet a little wider than they were only a few years before. This sucks!"

Of Course it Gets Worse...

When a woman's body prepares to give birth it begins to produce a hormone called prolactin. Its job is to trigger an increase in breast and glandular tissue to produce milk for the coming baby's sustenance. Men produce prolactin as well!

Prolactin is a single-chain protein hormone that is closely related to growth hormone (GH). It is secreted by so-called lactotrophs in the anterior pituitary gland. It should be noted however that is also synthesized and secreted by a broad range of other cells in the body, most prominently various immune cells, the brain and the decidua of the pregnant uterus.

Prolactin Control

In opposition to what we normally see with all of the other pituitary hormones, the hypothalamus predominantly suppresses prolactin release from the pituitary gland. In other words, there is usually a hypothalamic "Stop that" order set against the lactotroph, and prolactin is released only when the order is released. A note of interest is that if the pituitary stalk is severed, prolactin release increases, while secretion of all the other pituitary hormones decreases dramatically due to loss of hypothalamic releasing hormones. But this is an unlikely scenario for most athletes and should obviously be avoided nonetheless.

The neurotransmitter Dopamine appears to act as the top dog prolactin-inhibiting factor. Dopamine is secreted into portal blood by the hypothalamic neurons. Next it binds to receptors on lactotrophs, and inhibits both the synthesis and release of prolactin. So chemicals and drugs that interfere with dopamine release or receptor binding also increase the release of prolactin. These are called antagonists. Drugs and chemicals that either increase, act as, or potentiate dopamine are agonists.

Of course there are other chemicals in the body's Action/Reaction Factor closet that positively regulate prolactin. The major ones are GnRH, TRH (thyroid Releasing Hormone) and VIP (Vasoactive Intestinal Polypeptide). By the way, hyper-stimulation of the nipples may have a stimulatory effect upon prolactin release as well. But that is one we will leave alone.

So Why Do Non-Cross Dressing Men Produce Prolactin?

As a man ages his body begins to decrease the amount of androgens that it synthesizes. In fact many studies have shown that an average 40 year old male produces about half of the testosterone that he did when he was 18. So he possesses a lower rate of muscle anabolism yet a higher rate of fat anabolism. Many researches have claimed that this is due to normal physiological changes that occur as we progress through the years. In truth this is bullshit and supposition based upon average sedentary individuals. I monitor the physiological indicators of athletes for a living. I can say conclusively that almost any otherwise healthy male that remains in peak condition and eats a proper diet will retain a superior androgen production profile. So this is more so a matter of choice than pre-programmed physiological events. With that said let's get on with the why of prolactin.

Estrogen is a primary promoter of prolactin release. Of course there are other factors to consider (which we will discuss in a moment) that may trigger excessive prolactin secretion, but the normal trend toward increased prolactin release is due to increased estrogen synthesis.

More Action/Reaction

The clinical term for excessive release of prolactin is hyperprolactinemia. It is actually a relatively common disorder in humans. There are many causes that initiate the condition including prolactin-secreting tumors and therapy with certain drugs.

Males that experience hyperprolactinemia commonly develop hypogonadism (the shut down of the HPTA) with decreased sperm production, decreased sex drive and impotence. Those affected normally show breast enlargement (gynecomastia), but very rarely actually lactate. The gyno can initially manifest itself as an increase in fatty tissue under the lower pectorals and a puffy appearance to the areola and nipple.

A simple blood test for serum prolactin levels is commonly employed to evaluate the degree of potential feminization a male can or is experiencing. The lab results are quite simple to read, though a trained professional should interpret the results.

Normal Levels:

Adult: <20 ng/ml

Newborn: 100 to 300 (falls below 20 after 6 weeks)

Pregnancy

First Trimester: <80 ng/ml

Second trimester: <160 ng/ml

Third Trimester: <400 ng/ml

So in summery thus far we have learned that:

- (1) Testosterone is a male's primary androgen that makes him a man.
- (2) Testosterone and other androgens can be converted into the female hormone estrogen by the enzyme aromatase.
- (3) Adipose sites mass produce the aromatase enzyme and estrogen is anabolic to fat cells.
- (4) Increased estrogen production can result in prolactin secretion.
- (5) All of this in turn propagates increases adipose tissue synthesis and decreases androgen production.

(Kind of a vicious circle isn't it?)

Now that we know why we have fallen from the favor of Upon High, next we will discuss how to re-ascend Mount Olympus!

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(Part 2)

As we watch our female counter-parts fight the battle of the bulge and attempt to defy gravity with a secretive smirk we erroneously assume that we, as males, are somehow immune to the effects of time. Suddenly a day arrives when we look in the mirror to find a softer rounder stranger staring back at us with the same look of denial upon his edifice as is upon our own. With a sense of both horror and dismay we grasp at straws assuming a trick of the light has diminished our reflective-self no longer an example of those who dwell upon Mount Olympus. Yup, middle age and fat sucks.

In part 1 we had discussed the hormonal events that take place as we age which foster the accumulation of feminizing fat deposits below a mans pectorals as well as around his waist and hips. Interestingly enough, many young men these days suffer the same physical demise for the same exact reasons.

So in summery thus far we have learned that:

- (1) Testosterone is a male's primary androgen that makes him a man.
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- (4) Increased estrogen production can commonly result in prolactin secretion.
- (5) All of this in turn propagates increased adipose tissue synthesis and decreases androgen production.

The result is a less masculine physique slipping slowly into femininity when compared to our former selves. (Yikes!)

(Kind of a vicious circle isn't it?)

Now that we know why and how we have fallen from the favor of Upon High, next we will discuss how to re-ascend Mount Olympus!

Diet of the Gods

As we age our bodies become less effective at handling metabolic events such as simple digestion and assimilation of food. This is not because we are "getting old" as some may suggest, but instead is directly respondent to the life we have lived and the hormone profiles our bodies produce as a result. Due to the increase in fast foods containing trans-fats (any man-made

hydrogenated or partially hydrogenated oil such as margarine and Crisco) and endless exposure to simple sugars we become somewhat (or even clinically) insulin insensitive or resistant. This is a condition under which our bodies process carbohydrates poorly and store the predominance of them as fat due to poor insulin receptor function on muscle cells. As a result our muscle tissue receives less nutrients than we need for growth and repair but the adipose sites (fat cells) feed ravenously. Advanced insulin insensitivity is called type-I diabetes, by the way. Since insulin resistances and the resulting augmentation in adipose tissue furthers the increase in estrogen and prolactin release while aiding in the inhibition of androgen production, it should seem evident that this is not a favorable situation for a non cross-dressing male. This is actually quite unfortunate as insulin, under the correct conditions, can greatly aid in making a man of any age a beast.

Muscle Is Protein...Feed It First!

The first step upon a quest to re-ascend the coveted Mount is a diet that promotes an increase in protein synthesis and acts to utilize fat stores as a source of energy to fuel it. This is not as difficult as one may think. The goal is to allow the body a constant base supply of protein to inhibit muscle tissue wasting while well timed periods of plasma amino acid spiking are employed to induce an anabolic response due to supraphysiological levels. This is not hard to grasp when you accept that the body regulates many functions through balance. As example is the reality that when muscle cells sense a higher concentration of amino acids on the outside of the cell than within a sequence is initiated to create a balance. The end result is an increase in cellular amino acid content and the resulting increase in protein synthesis and growth. Whey protein and amino acid supplements are the best source for this goal as both are easily assimilated and enter the blood circulatory system at a rapid enough rate to induce hyperaminoacidemia. To maintain the elevated state an individual would have need of a constant lower concentration of amino acids from slower digesting high protein foods. Eggs, milk, red meat, fish and poultry fill the need here as does casein protein powders. For the athlete attempting to increase muscularity while decreasing fat stores (and the related negative problems occurring from estrogen and prolactin) a full 50% of total daily calorie intake should be in the form of protein. This will promote a higher rate of calorie expenditure as well due to a higher number of calories being necessary to assimilate protein in comparison to either carbohydrates or fats. In fact the body burns about twice as many calories in comparison. Oddly enough the fat content in foods helps to promote protein synthesis and a favorable higher androgen hormone profile.

Fats For Manly Mass

The body synthesizes all of our manly androgens including testosterone from fat. In fact several studies have documented that diets containing less than 10% fat can significantly decrease a male's androgen production and increase estrogen synthesis. In most cases a diet that provides a minimum of 20% of its calories from fat will also augment a male's total and free testosterone production.

Fat source is just as important as protein and carbohydrate sources. This is due to certain fats containing essential fatty acids (EFA's) that promote fat burning through thermogenesis and increase the effective value of existing androgens in a man's body. These are those that contain higher concentrations of omega-3 fatty acids or those that can be readily converted into them by the body. The reason they have this overall effect is their relation to prostaglandin production.

My first choices here are fish oil and sterile hemp seed oil as both have the correct ratio of omega-3 to omega-6 fatty acids. Next would come flaxseed oil, walnut oil and olive oil.

Flaxseed oil is a good source of lignans and alpha-linolenic acid (ALA). Lignans have the ability to decrease estrogenic activity by blocking the estrogen receptor sites in tissues thus acting as an estrogen antagonist. ALA is one of the Omega-3 series EFA's that is also a precursor to eicosapentaenoic acid. This is important stuff due to the necessity for eicosapentaenoic acid being available in adequate amounts for the production of series 3 prostaglandins (PGE-3). The PGE-3's are critical hormones that regulate several cellular activities. (What?)

Our bodies regulate many cellular events through mediators or substances that act with or for other chemicals to create a specific environment. Of these the prostaglandins are primary factors in determining the amount of muscle mass you are able to build and the percentage of fat you burn

daily as heat or simple calorie expenditure. There are three types of prostaglandins defined as series:

Prostaglandin Series 1 (PGE-1): Anabolic in action with the ability to mediate many the activities of growth promoting hormones. They also protect the body against the negative effects of the PGE-2 series. I have noted that any client who has undergone pre-contest preparation employing a 50/50 split for whole food protein sources using equal amounts of fish and red meat had the least problems with fat loss and lean mass retention. ALA sources such as hemp seed and flaxseed oil are reasonable second choices. As little as 2 tablespoons or 10 grams of either daily makes a notable difference in musculature in only 42 days.

Prostaglandin Series 2 (PGE-2): With the exception of the highly anabolic PGF-2 the PGE-2 series induces negative and anti-growth effects. Some of the more obvious side effects of excess or unchecked production are sticky platelets, excessive inflammation, water retention, decreased rate of recovery and suppressed immune function. The series 2 prostaglandins are made from arachidonic acid, which is derived from the Omega 6 family of fatty acids and from consumption of excess animal products. Interesting that keto diets high in fish oil, seed oils and sources of GLA (Omega-9) counter-act almost any amount of animal fat intake and further promote growth of lean muscle tissue.

Prostaglandin Series 3 (PGE-3): The PGE-3 series has the dubious job of inhibiting the activities of PGE-2 while aiding the activities of PGE-1.

*Gamma-linolenic acid (GLA): This substance also promotes the secretion of prostacyclin. GLA makes blood corpuscles more flexible, aids in regeneration of capillaries, and helps to nourish nerves. Combining GLA with vitamin C helps to increase its efficiency. Borage and olive oils are the better source of GLA.

GLA has also been documented to effectively activate brown adipose tissue (brown fat). Brown fat has the primary function of initiating a prostaglandin driven pathway to burn white storage fat. Every single cell in our bodies must constantly maintain certain ratios of sodium and potassium in order to remain alive and healthy. This balance or homeostasis is regulated by a cellular process called the Sodium (Na)-Potassium (K) Pump. The Na-K-Pump is an essential life sustaining biochemical pathway that actually "pumps" sodium and potassium in and out of each cell of the body 24 hours per day. This is crucial to maintaining important biochemical homeostasis and intercellular integrity. Many aspects of the process involving the absorption of ATP substrates and growth nutrients are mediated by this cellular pump. With regard to the intent of fatty acid oxidation (fat burning) it should be note worthy to add that this process requires 20-50% of total caloric energy supplied daily. So it should seem obvious that when this biochemical "Pump" is not working properly the whole efficiency of muscle building and fat burning becomes far less possible. This includes a propensity toward adipose tissue accumulation. This is simple to understand.

The regulation of this "Pump" is provided by an enzyme called Sodium-Potassium-Adenosine Triphosphatase (Na-K-ATPase). Na-K-ATPase is activated when the body can make enough of the correlating prostaglandins through a critical intermediary Essential Fatty Acid (EFA) called GLA Gamma-linolenic acid. If there is not enough GLA-prostaglandin production occurring in the body the pump fails as well. This is because we end up storing more body fat and putting on more weight while burning less calories.

Studies show that GLA-prostaglandin production is significantly inhibited by the common consumption of normal everyday items like margarines, man-made oils, peanut butters, salad dressings and fried foods to name a few. This is due to the fact that most available brands of these contain specific trans-fatty acids which directly shut down GLA-prostaglandin production, and stall the function of Na-K-ATPase. And the obviously the Sodium/Potassium Pump. The bottom line is that when the Na-K-Pump is not working correctly, our thermogenic response to foods decreases and we in turn realize unwanted weight whether we diet or not. Off course this situation only increases the effects of estrogen and prolactin while increasing their production as well. By now you also realize that a circulatory increase in these two feminizing hormones also means a decrease in the synthesis and release of manly androgen.

*Scientific research has demonstrated that genetically obese individuals have lower levels of GLA

than normal and ineffectual Na-K-Pumps as well (the latter is normally the result of the prior). They are simply destined to burn much less fat as fuel for energy thus producing as much as 50% less heat from their meals than the rest of us.

Fats should make-up about 30% of total daily calories with a focused effort made to eat adequate amounts of EFA's and reduce the intake of trans-fats. It really is not all that difficult to do if you just take a few minutes to plan each day's dietary needs.

Carbs For...?

Carbohydrates are the prime source of glucose manufacture in the body. They are also the only macronutrient we can live better without and the prime source of cholesterol and adipose tissue synthesis.

It is rather interesting how it works: When foods are ingested carbohydrates are digested and broken down into glucose. As I said prior glucose is the body's favorite substrate for making energy in the form of glycogen. However, if glucose molecules are not quickly used for energy or the body's glycogen stores are full then the molecules are quickly converted then stored as fat and cholesterol by an enzyme called ATP-citrate lyase.

The body has another glucose manufacturing pathway called gluconeogenesis that involves the hepatic (liver) conversion of certain amino acids into glucose. Due to hepatic regulatory factors, the amount of glucose produced through gluconeogenesis closely matches the body's needs. If sufficient amounts of protein is ingested to constantly fuel both gluconeogenesis and protein synthesis the body naturally fails to synthesize adipose tissue due to its inherent loss of status through enzymic down regulation in the food hierarchy. So how much of an ascending individuals daily calories need to come from carbohydrates? None, but 20% of total daily calories can come from carbohydrates if they are ingested within the first 90-180 minutes post-training only.

During periods of high anaerobic or aerobic exertion the body begins to up-regulate the release of catecholamines. Catecholamines are a class of hormones released from the adrenal gland in response to high-energy expenditure stress that have a central nervous system (CNS) excitatory effect. One of the primary functions they have is to increase the amount of fatty acids being released from adipose sites and burned for energy by metabolically active cells like muscle tissue. They have a protein sparing or anti-catabolic effect upon the musculature but a wasting effect upon fat. When there is an existing "give up the stores" signal being transmitted to a fat cell it cannot simultaneously feed efficiently upon the macronutrients (even glucose) available to other cells from the vascular system. The two best known catecholamines are epinephrine and norepinephrine. These are known to some as adrenaline and noradrenaline respectively. The bottom line here is that during high intensity training the body secretes an increase in catecholamines that remain elevated for up to 3 hours post-training. As a result an athlete has little reason to fear increased adipose tissue synthesis and muscle/hepatic glycogen stores become the top of the feeding hierarchy. Starve the fat and feed the muscles!

Keep It Simple

So the obvious question in relation to diet is "how many calories daily", right? It seems that the average approach to dieting is to reduce calories below the amount necessary to maintain current body weight. Therefore the dieter loses weight by way of subtraction. This also usually results in the subtraction of lean muscle mass due to the fact that the metabolic rate slows after a couple of weeks and the feeding hierarchy begins to again favor fat stores since protein synthesis slows. By increasing the metabolic expenditure of calories the rate of protein synthesis increases. So adipose tissue loss by way of increased expenditure is loss through efficiency and an improved positioning for muscle cells in the feeding hierarchy. The latter is what happens when an individual incorporates a diet inclusive of 50% of total daily calories coming from protein. A point of interest in relation to this is that each new pound of muscle added to an athlete's body burns 50 additional calories per day even at rest. So the answer to the question "how many calories daily" becomes a question of calorie expenditure occurring from the diet itself (remember that protein digestion burns twice as many calories as fats or carbohydrate digestion). If an individual ingests the 50% protein/30% fats/20% carbohydrates as outlined prior a diet providing 10 calories per pound of bodyweight daily will result in an obvious increase in lean tissue mass and a decrease in adipose tissue.

Additional notable effects of this type of diet structure have been:

- *Decreased triglycerides *Increased androgen production
- *Improved HDL/LDL ratio *Improved insulin sensitivity
- *Lower total cholesterol *Decreased adipose tissue
- *Reduced blood pressure *Increased libido

This will be even more effective once we include supplementation for optimizing androgen production...and of course for dealing with the estrogen/prolactin factors as well. In part 3 we will continue our quest to Re-Ascend Mount Olympus. Until then find a copy of a Nutritional Almanac and Keep It Simple!

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An Interview with Professional Bodybuilder Toney Freeman
by Jason Mueller

For those of you who don't know who Toney Freeman is, let me give you a little background. Coming out of nowhere at the 2002 Nationals, Toney easily won the Super-heavyweight and Overall title, beating out top amateurs like Dave Palumbo and Matt Duvall. At a height of 6'2", Toney won the show at a bodyweight of only 250 lbs! Kinda scrawny for a guy who's 6'2", huh? Perhaps, until one realizes that Toney competed at that show with a 30" waist.

Now, as Toney Freeman prepares to battle it out in the pro ranks, he's got a new attitude, a new Coach, and a massive physique. You're now dealing with a man who has the potential to reach the pinnacle of success in bodybuilding, the ONLY pro competing who has the ability to carry insane amounts of mass while maintaining an aesthetic that is second to none.

I met with Toney in his hotel room in Columbus, Ohio which is where some of the pictures in this interview were taken. You can get a true idea of his awesome size by viewing the last picture in this interview of Toney standing next to his coach, the 5'9", 250 lb Author L. Rea. At 285 lbs and still growing as he prepares for his pro debut, Toney Freeman is going to be a force to be reckoned with.

JM: Toney, when were you born?

TF: August 30, 1966.

JM: What's your current height and bodyweight?

TF: I'm 6'2" and weighing in at about 283 right now.

JM: What's your competitive history? It's my understanding that you took from 1995 to 2000 off?

TF: Yes, I took quite a bit of time off. Prior to my break, I won the '93 Junior Nationals and placed 6th that year in the Nationals. I was 4th in the Nationals in both '94 and '95, and then didn't make the cut in '96. I took off from that time until 2001, when I did the Nationals and got 8th, and I finally won in 2002.

JM: What was the reason that you took those five years off?

TF: Number one, I tore my pec in '95 nine weeks out from the Nationals, and then after that went through the usual political ups and downs. I subsequently lost my desire to compete, especially with a torn pec. My forte was symmetry and I didn't want to build an unsymmetrical physique by having one unattached pec, so it kind of snowballed from there. I also was suffering from the usual post-contest depression, which was worsened by the fact that I couldn't understand how I went from 4th in '95 to not even making the cut in '96 when I had made significant improvements in my physique, even with a partially torn pec. I didn't really want to deal with competing anymore, I got tired of hearing people tell me, just be patient, it's not your turn.

JM: When you tore your pec, did you immediately have it surgically repaired or did you end up waiting?

TF: No, I didn't get it repaired until September of 2000. None of the orthopedic surgeons I talked to made me feel confident that they could help me, they were all telling me that I would have a huge scar and couldn't promise that the surgery would greatly improve my situation. In 2000, the guy who I trained with who was also my physical therapist introduced me to this orthopedic surgeon who was also a plastic surgeon earlier in his career. This doctor made me feel very comfortable, so we set up a surgery date and he went right in and fixed it.

JM: So when you won the Nationals in 2002, how did it feel to realize that dream of finally turning pro?

TF: It was very overwhelming at first. I didn't realize it had taken me 9 years of competing at that level to win the Nationals, and going into the show, I didn't have any expectations of winning. I just knew for this show I was going to follow my own game plan, I wanted to come in shredded and not worry about being the biggest guy onstage. I didn't believe I had any political

pull, and that I would be competing against athletes who were very well known by the judges, so for me it was more of an issue of competing at my personal best. I guess it worked.

JM: You competed at the Nationals at what bodyweight?

TF: I weighed in at 250. I thought I would come in slightly heavier but that's just how it landed. Thursday night at the weigh-in I was 250 lbs and I stayed 250 all the way until Thanksgiving Day.

JM: So you competed at 250 and now you're weighing approximately 283 lbs. Now that you're a pro, at what show are you going to make your professional debut and how do you think you'll place?

TF: I'm doing the Toronto Pro May 24th and the Night of Champions May 31st. I'm 12 weeks out from the Toronto, I'm about 283 and between 4-5% body fat. At the bottom end, you'll see me competing at 275+, it's just depends on how things go from now until then. If I continue to make gains like I have and still maintaining this level of body fat, I really can't see me competing at less than 285.

JM: You follow a pre-contest strategy similar to that of Levrone in that you actually gain weight as your contest date approaches. While most athletes tend to get extremely large in the off-season and then diet down, you follow a different approach. What compels you to follow such an unusual pre-contest strategy?

TF: Number one, I can't stand being bloated, or looking like a bloated-pig. I enjoy my physique, and I try to enjoy my physique year round. Since I don't have any problems both gaining muscle and losing fat at the same time, I just thought this was a more appropriate approach for me. You see so many guys blowing up to 300 lbs or more just for the sake of being able to say they weigh 300 lbs, and in my opinion, nobody really cares. Bodybuilding is a sport about how you look, not how much you can move the scales. I just want to present the best possible package and maintain not only a healthy look, but my overall health as well. I don't want to overstretch my skin, or overstress my organs, this sport is supposed to be about looking and being healthy, and if you only present that onstage, you're doing yourself a huge injustice.

JM: Do you feel that most pro bodybuilders are not concerned about their health and only really care about how they look onstage?

TF: A lot of people have that "win at all costs" attitude, and I'm not saying that I don't, I think to win a pro card in this sport, you have to take some risks. But there's also the reality of being 60-80 lbs overweight in the off-season, the constant fluctuation of weight has to be extremely unhealthy and uncomfortable. It doesn't look good, if you're arms are 22 inches when you weigh 300 lbs and then you diet down and their 19.5", what have you accomplished? My arms are close to 22 inches now at 4% body fat, and I always know that I can be ready for a show within a matter of weeks.

JM: Do you think it's a matter of genetics that allows you to stay this lean in the off-season and utilize such a different approach to your pre-contest preparation?

TF: No, I think it's entirely an issue of self-control. Hey, I could sit there and pig out and gorge myself just like many of these other guys, but I choose not to because I don't like the way it looks. I'm admittedly a very vain person on the inside, I try not to show it too much outwardly, but I like to look at myself. I don't want to have to cover up everything that I've worked so hard for, that's the primary reason why I prepare for shows in the fashion in which I do. When you walk around at 285 at 4% and you're still 3 months away from a show, that blows peoples minds. I get off on that. I don't know how much my genetic ability plays into that, a lot of people say I'm a genetic freak, but they don't realize that I started this sport at 160 lbs at the same height I am now. I don't chalk my success up to being a genetic freak, I just think that if you do something consistently for 10, 12, 15 years, you're supposed to be good at it. I've learned my body over the years. Earlier in my career, I was labeled as being lazy, I didn't have to worry about working out or taking drugs year round and I could still have an impressive physique. But I think that people who never take a break are miserable, there's more to life than carrying around a cooler of food and being a bodybuilder. There's got to be a happy medium, a balance in your life. Now that I'm a pro and make my living from the sport, I'll definitely be

more strict, more consistent, a little more of everything, but I still intend to enjoy my life.

JM: Are there any particular athletes in the pro ranks that you view as being competition for you once your physique matures and you begin to realize your full potential?

TF: Down the road, when I'm closer to achieving my full potential, I really don't see anyone out there as competition. I'm not trying to sound cocky or start any crap, but I'm a realist. When you walk out onstage at 6'2", 295 lbs shredded with a 31-32" waist, I don't see anyone in the pro ranks that would be competition for me. Everyone in the pro ranks is shorter than 6' with the exception of Gunter, and everyone has pretty much maxed their potential. By that, I mean I don't see any of these guys getting bigger while getting better at the same time. Yes, some of the pros could certainly be bigger, but in doing so, they lose the aesthetic look that gives them an edge in the first place. I still have at least 25 lbs of contest weight I can add in the next few years, and I plan on competing at 285 this year. In the next couple of years, working with [Author L. Rea], I'll be onstage at 300 lbs, shredded. With my small joints, symmetry, and taper, I just don't see anyone being competition. Now there's certainly someone out there, someone we haven't heard of yet, that can probably come in bigger and tighter than I can. But I look at the current crop of pros and just don't see a lot of competition, and I hope that doesn't make me sound cocky. Like I said, I'm a realist.

JM: You are the only guy I see in the pro ranks that has the ability to carry tremendous amounts of size and still retain that aesthetic look. We currently see athletes that seem to do one or the other, either they have an extremely aesthetic physique but aren't that big like Flex or Dexter Jackson, or they're extremely big but lack any aesthetic, guys like Marcus Ruhl or Gunter. Even Ronnie, who seemed to have the ability to do both, has problems with his midsection when he tries to compete at a heavier bodyweight. Given that you've been competing for so long, do you think your methodology of diet, training, and chemistry have played a significant role in your ability to maintain pleasing lines while carrying tremendous mass?

TF: Yes, most definitely. For example, the way I'm doing my chemistry now is not significantly different from the way I did it in the past in terms of substances, but the way in which I take it is radically different. I firmly believe now that it's not necessarily what you take, but the fashion in which you take it. It's also important to stay in tune with your body and formulate a program that is based around your specific abilities. The reason why I tore my pec is because I was following someone else's workout and I was also chasing what was currently popular which was size. If I had stuck to a program that was more conducive to my abilities, I'm sure I would have avoided that injury altogether. But this sport is so subjective, and I felt that I was being judged not only on my physique, but a lot of other things that shouldn't matter onstage. I'd like to see bodybuilding develop where athletes are judged solely on the package they put forth in any particular contest, and not judged by things they have or haven't done in the past. There's a look, a mystique, a certain way that you carry yourself that the judges can't deny you, and that's what I'm going for right now. I'm shooting for that ultimate look, carrying humongous, freaky mass, but still pleasing to the eye, and still able to present your package well onstage. I see a lot of guys that fall short in this area, they look good but they don't know how to present it, or they have good presentation but are always slightly off. Every time I hit the stage, I plan on presenting a package that is a result of dotting all my I's and crossing all my T's. That way I cannot be denied, and I'll be very successful.

JM: Was it when you tore your pec that you realized you needed to follow your own course and you couldn't play someone else's game?

TF: That was a turning point for me. Until that happened, I felt invincible, I felt like Superman. At the time, Dorian Yates was Mr. Olympia and I was doing one of his chest workouts. I'll be damned if that wasn't what caused me to tear my pec. It was an incredible workout, one of the best chest workouts I had ever done, but it wasn't for me. It either worked too well, or my body wasn't ready for that kind of shock. I fell into the trap of following a path that was fine for someone else, but it wasn't for me. After that I realized that I had to listen to my body, and do what was right for me, not for someone else. The things that work for someone else are not necessarily going to work for you, and part of being a successful bodybuilder is finding that combination that works for you.

JM: I know you're being coached by Author L. Rea. How is it that you came into contact with Mr.

Rea and what kind of impact do you feel his coaching has had on your physique?

TF: It was kind of a fluke that we actually met, perhaps it was fate.

Of course I do a lot of research and studying, and consider myself a very open-minded individual. I ended up reading one of his articles on Meso-Rx and it really intrigued me, so I ended up emailing him. I guess my email intrigued him, and he emailed me back. I ended up sending a couple of pictures, and we just hit it off really well. The thing that impressed me most about him is that before he would even agree to take me on as a client, he had certain requirements of me. I thought that was totally impressive, because so many self-proclaimed "gurus" will just sit you down and make up a program for you and tell you to follow it. They don't take the time to review your blood work, to review what you've done in the past to get you to the place you're now at, they just hand you a program and expect you to follow it. I was just very impressed by how he approached the entire situation, he's very professional, he cares about my health, he's a family man, and I had a great deal of respect for him immediately. We have our mutual interests at heart and I know we're going to be successful as a result.

JM: You mentioned that he had requirements before he worked with you and this is what really impressed you. What kind of requirement did he have?

TF: He needed to know what I had done for the past year as far as diet, supplementation, training, and pharmacology. I also had to have blood work done. Stuff like that. I've never met anyone else in the sport that's like this, they feel like they're the guru and they want you to follow the same protocol all of their other athletes are following. I don't see these guys attempting to customize programs to an athlete's specific needs. Of course, this is just my opinion, I haven't worked with everyone in the sport. But I do know what a lot of guys are on, and I know what their programs consist of and I just don't see their programs being tailored specifically for them, both inside and out. Coach (Author L. Rea) has ways of altering your genetics by looking at you and carefully studying your blood-work, I've never seen anything like it.

JM: Without giving away any trade secrets, what are some of the changes you've instituted since being coached by Mr. Rea that you feel have been crucial to some of the amazing changes you've seen in your physique?

TF: Coach calls me a "protein synthesis machine." One of the main things we're doing right now is taking advantage of that, by changing my diet to consist of high protein, moderate fats, and low carbs. Before I used to eat a tremendous amount of carbohydrates, between 400-600 g of carbs every day. Right now I'm eating about 200 g and I can barely do that. The other thing we do is utilize short protocols, about 28 days at a time with a short break before beginning another 28 day cycle. Before I was just doing 8, 12, 16 week cycles straight through, but I'm getting much better gains this way. He's showed me so many different things as far training, ways to stimulate muscle fibers I hadn't been stimulating over the years. That's why my back, arms, calves, and chest have improved so much. Just little tiny tricks that I can utilize in my training that I've never seen or heard of before that are proving enormously effective. It's really awesome.

JM: I know you're not currently contracted with any supplement company, so you can answer this question without bias. Do you use any OTC supplements and if so, why?

TF: Throughout my career I've stuck with the basics, branched-chain amino acids, glutamine, whey protein, stuff like that. As far name brands go, if I had to pick one company I'd go with VPX. I use their meal replacement, their Plasma Expander, and a few of their other products. The number one reason for that is when they first hit the market, I went out and bought their products. I'm the kind of guy who likes to try all the new stuff, so I purchased some of their Paradeca and Decavar. I gained 18 lbs of muscle by using these two products, I can tell you that I was shocked. They really had a drug-like effect. Usually when you take supplements, you can't really tell if it's working or not, but everything I've ever taken made by VPX has an immediate effect.

JM: In wrapping this up Toney, is there anything you'd like to say to the people out there reading this?

TF: Basically, focus on yourself and train within your own abilities. Always seek knowledge, never think you know it all, because I guarantee there is someone out there far more knowledgeable than you. Train hard and stay focused, really focus is what it is all about.

So many people have the genetics and the work ethic needed to be successful in this sport but they fail to keep their eyes on the prize and they lose the focus that is necessary to win.

I know I just turned pro and probably a lot of people out there don't even know who I am, but they will soon. I've got a website being built that should be up shortly, if people are interested they can go to www.toneyfreeman.com and sign up to be notified when the site is complete. I'll be interacting directly with the people who come to my site and plan on updating it on a regular basis, so it will be a great place for people to learn from a pro without all the hype.

Ask any of the elite who has become truly massive beasts which anabolic substance has had the most profound effect upon their physique and the answer from the largest mammals will unanimously be insulin. Though GH has brought to the forefront of competitive stages the well retained lean muscle mass tissue displayed beneath an onion skin exterior of today, it is the symbiotic relationship insulin has with all other physical enhancement chemistry that has made beasts what they are in the new millennium.

Insulin is predominantly a storage hormone in that it initiates a cascade of cellular events that result in up-regulation of cellular nutrient content. It obviously goes without saying then that supraphysiological plasma levels of insulin result in supraphysiological cellular levels of nutrients. This in itself allows for a highly anabolic effect known as an osmotic response. A cellular osmotic response is nothing more than an increase in water and growth potentiating nutrients intracellularly that has an effect similar to increasing the amount of air in a balloon. More air in the balloon means a larger balloon. More water and proportionate growth nutrients means a larger cell. Interesting enough is the fact that this also triggers another survival mechanism that tells the stretched cell wall to increase in thickness to accommodate the osmotic response. This is due to an up-regulation in localized IGF-1 and MGF production and the synergistic response initialize. Oh ya. That is anabolism in the form of hypertrophy. Unfortunately, insulin is quite anabolic to fat cells too.

Since insulin is the body's main "storage" hormone it should come as no surprise to the reader that many diabetics and would-be beasts alike have become horribly fat as a result of improper insulin use and misguided dietary habits. Many bodybuilders have employed the 10-15 grams of carbohydrates per IU of insulin-administered protocol with a great deal of success in spite of the inherent dangers of non-medical insulin use. However many, who have either become insulin resistant/insensitive or are genetically predisposed to inordinate adipose (fat) tissue accumulation, have endured a greater anabolism of adipose tissue than muscle. Some have foolishly put on more covering clothing and simply accepted this as a necessary side effect endured for the greater eventual goal. Others have added the additional potential negative side effects of heart arrhythmia/tachycardia, diabetes, and other not so fun stuff as well.

As I have pointed out many times before, adipose tissue is a major site for aromatase enzyme activity, which in itself compounds the Big Fat Bastard problem. Many AAS (anabolic/androgenic steroids) are susceptible to the effects of aromatase enzyme conversion to estrogens as is endogenously produced (made inside the body) androgens such as testosterone. Obviously the greater the volume and activity of this enzyme that exists in the body, the greater the chance and degree of aromatization that occurs. Estrogen is directly anabolic to a minor degree to muscle tissue. Both fortunately and unfortunately it is highly anabolic to adipose tissue. Since estrogen is the hormone that induces female pattern fat deposits it is fortunate because a nice rack is a thing of beauty. Unfortunately I have as of yet not noted a single male bodybuilder who looked good or happy with boobs or any other fatty female attributes. So a greater degree of adipose tissue accumulation from insulin administration results in a compounded adipose tissue storage effect from aromatase enzyme susceptible AAS employment.

In some instances the result of this vicious cycle is bodybuilders who fail to ingest adequate calories during AAS protocols as a means of decreasing adipose tissue accumulation. Unless you are from another planet you realize this also limits muscular growth potential as well.

Before we discuss all of the interesting facts concerning the means of becoming a big fat bastard, it is necessary to have a fundamental understanding of the macronutrient product glucose.

GLUCOSE

Glucose is the body's preferred energy substrate. Though the brain's nutrient make-up is nearly 1/3 omega-3 fatty acids it is glucose that is without fail mandatory for continued sentience. So carb up a little and read closely as we learn a few things about the body we have been entrusted to play nice with.

When we ingest food stuffs in the form of the three macronutrients protein, carbohydrates, and fats the GI track introduces a series of chemical Action/Reaction Factors that result in the breakdown of these nutrients to metabolic substrates.

Proteins = amino acids

Carbohydrates = glucose

Fats = fatty acids

It appears simple on the surface but in fact glucose can be converted to triglycerides and adipose tissue or lean tissue glycogen stores and toilet tinkle. Like wise fatty acids can be stored as fat or utilized as an energy substrate by the body's tissues but it cannot be converted to glucose. This is interesting when one considers the fact that carbohydrates can become glucose or fat, but fat cannot become glucose (though the cellular mitochondria can use fatty acids as an energy substrate as a keto response). Protein is ultimately destined to become amino acids employed for cellular repair and growth or intimate moments with the bathroom. But certain amino acids called gluconeogenic amino acids can be converted to glucose too. This can be disastrous for a bodybuilder who hopes to be a beast one day since lean muscle mass is predominantly made up of protein in the form of amino acids and a complete spectrum is necessary. We will get to this later. For now simply accept that glucose is necessary for life and bodybuilding progress alike.

The average circulatory value for glucose allows for about only 4 grams of glucose. It is actually uncommon for blood glucose levels to rise beyond an additional 1.5-2.0 grams or to drop below the 4 gram mark. A healthy individual who ingests a meal containing 50-150g of mixed carbohydrates will realize the normal increase in circulatory glucose for only about an hour. Interesting thing here is that endogenous (made by the body) insulin secretion will remain elevated for an additional 2 hours after glucose clearing. When the same individual ingests 300g of carbs (Fat Bastard) at one time the resulting insulin secretion levels will be 300% above normal for an additional 7 hours after blood glucose clearing. This is clearly a highly anabolic environment, but after tissue glycogen stores reach maximum levels a grotesque amount of the excess glucose finds its way to adipose tissue. And don't worry. If all of the existing fat cells are full, the body is way to happy to make new ones to secrete lots of aromatase enzyme. And herein awaits the key to greater lean mass tissue and a decrease in adipose tissue.

GLUCONEOGENESIS

Gluconeogenesis is the biosynthesis of new glucose. This means that glucose is synthesized from other substrates than carbohydrates or glycogen stores. Obviously since the only source of fuel for the brain, testes, kidneys, and erythrocytes is glucose the body in its amazing adaptive manner can manufacture glucose from other materials. Those who are up on keto diets are aware of the fact that the body can derive energy from ketone bodies (which are converted into acetyl-CoA). But that is an entire different topic for now. In short the body utilizes the carbon structures within substrates to create energy in the eventual form of ATP (adenosine triphosphate). ATP is cellular energy that, as readers are aware, is the body's only energy currency. In the case of gluconeogenesis the carbon structures can come from other sources.

Triglycerides are structures consisting of three fatty acids adjoined by a glycerol molecule. By cleaving the fatty acids away from the glycerol molecule the body can utilize the freed glycerol molecule to make glucose through a series of conversions and subsequent carbon utilization.

With the exception of lysine and leucine all 20 (or 22 if you are of that school of thought) amino acids can be turned into TCA cycle intermediates which in turn allows for the carbon skeletons of the amino acids to be converted to pyruvate. The newly formed pyruvate can then be utilized by the gluconeogenic pathway to create glucose by way of another series of metabolic pathways. Let me explain that a little better. When glycogen stores in the liver and muscle are depleted the working/recovering muscles, brain and organs need another energy source. Catabolism of muscle tissue proteins to amino acids becomes the main source of carbon skeletons for the maintenance of mandatory blood glucose. As you will recall the body can clear 50 -150 grams of carbohydrates in only a few hours.

So how much muscle do you think the gluconeogenic adaptive process can munch in the same period of inadequate nutrient supply from diet? By the way, the amino acid Alanine is the favorite gluconeogenic snack with Arginine and Glutamine coming in as close seconds.

THINK ABOUT IT

In the presence of circulatory insulin elevation gluconeogenesis in the liver and muscle tissue decreases. During periods of circulating supraphysiological levels of amino acid muscle catabolism decreases. In the presence of both protein synthesis occurs.

So it would seem that the two choices a wanna-be beast faces is 300 grams of carbohydrates to

induce a sufficient prolonged insulin spike and a Big Fat Bastard pose down or non-stop keto diets and declarations of "Hey, I may look like a weenie but I am really cut" for life.

The obvious solution is an elevation in both circulatory insulin and a corrected amino acid pool rendered highly efficient by design and not by chance.

Insulin administration is nothing new to the larger beasts of the bodybuilding world. Unfortunately neither is Big Fat Bastard status in the brief off-season. So it should come as no surprise to those who have entered the realm of the chemically enhance athlete to learn that insulin can make even the best genetically predisposed individual fat. It has been my experience that this is simply not necessary.

Insulin forces excessive amounts of amino acids into muscle cells when an adequate supply exists at the time of insulin exposure. Insulin also triggers increased muscle cell glycogen synthesis by way of positively effecting the rate limiting enzyme glycogen synthase. We also know the positive effects correct application of supraphysiological insulin levels has had upon the most catabolic pathway there is that affects muscle mass from reading my two prior books. Add to this the fact that insulin is synergistic to and with all other chemicals of muscular enhancement and realize the potential.

In relationship to goals it would seem evident that a protocol employing the attributes of insulin would necessitate the symbiotic relationship the hormone has with macronutrients as it applies to lean muscle mass tissue.

Muscle is more than 80% protein by dry weight.

ATP is the energy currency of muscular contractions, repair, and growth.

Glucose is the prime source substrate for ATP synthesis and mandatory for proper brain and organ function (yes, that one also).

Excess blood glucose will result in excess adipose tissue accumulation.

The Protocol

Diet

When this protocol was created its intent was rapid accumulation of lean mass tissue without an increase in adipose tissue deposits. Since the foundation of the diet was structured for efficient gluconeogenic dependant upon a correct ratio and amount of amino acids, a great deal of protein was consumed daily. The most effective protein intake minimum was the equivalent of 3 grams of protein per pound of bodyweight daily divided into at least 6 meals. Using a 200 pound individual as an example it was possible to reduce this slightly by simply eating 4 whole food meals daily providing 50 grams of whole protein each and sipping on whey protein drinks in water throughout the day

providing the remaining 400 grams of protein. I preferred whey protein simply because it is one of the only two drinkable products I am aware of that allows for actual hyperaminoacid response in the circulatory system. Casein, egg, and (some people still use it) soy proteins fail to clear the GI track at a rate significant enough to induce the necessary supraphysiological amino acid concentrations for the protocol. The fact that whey protein is easily oxidized by the liver should be the first clue to the reason why results are superior. By the way, the other is Human Profile by Hazardous Materials (it is nearly 100% absorbed)

So here is the kicker. Though fat intake could be quite high, total daily carbohydrate intake could not exceed 0.5 grams per 25 pounds of bodyweight daily. The reason is simple: The goal was to force the body to employ the gluconeogenic pathway as a means of energy production. Any degree of actual glycogen regeneration resulted in the body returning to the glycolysis pathway which allows for adipose tissue accumulation. The reason this worked so well was simplistic in nature. The making of ATP through amino acid gluconeogenesis is very inefficient thus allowing for a huge calorie expenditure similar to what occurs during DNP utilization. During calorie expenditure the body does not store fat but it does undergo protein anabolism. When enough protein was ingested the result was always a net increase in lean body mass of 5-8 pounds by the end of a two week protocol. Not bad for an experienced beasts, huh?

Additional Supplements

Since exogenous insulin was utilized during this protocol and, as mentioned prior, the gluconeogenic energy pathway loves certain amino acids it is easy to realize that the normal ratio

of amino acids derived from whey protein and whole foods was not likely adequate. A mixture of 4 parts Alanine, 2 parts Glutamine, 2 parts Arginine and 1 part Taurine was created and capsulated. The dosage ingested was 1 gram of the supplemental mix per I.U. of insulin administered daily divided into 2 post administration dosages.

The preparation for this protocol required a liver glycogen depletion period of 24 hours prior to initial insulin administration. This was done to initiate the gluconeogenic pathway prior to protocol onset thus preventing any loss of lean tissue growth potential.

Though only a total idiot would ever assume that non-medical exogenous insulin use was safe, the utilization of a fast acting insulin was the better choice for this protocol. The first reason of course being that short acting chemistry also means shorter periods of potential exposure to negative side effects like a coma. Second is the fact that it was necessary due to the relevance in liver capacity for glucose manufacture by way of gluconeogenesis. Running out of adequate glucose reserves would introduce a series of potential negative side effects that would have required the ingestion of dextrose to inhibit.

EXAMPLES OF INSULIN

Name of Insulin

Start Activity

Highest Activity

Ends Activity

Low BS

Very short-acting (Humalog)

10 minutes

1.5 hours

3 hours

2-4 hours

Short-acting (Regular/-R)

20 minutes

3-4 hours

8 hours

3-7 hours

Intermediate acting (Nor L)

1.5-2 hours

4-15 hours

22-24 hours

6-13 hours

Long-acting (Ultra Lente)

4 hours

10-24 hours

36 hours

12-28 hours

Combination: 70% N/30% R

0-1 hour

3-13 hours

12-20 hours

3-12 hours

Combination: 50% N/50% R

0-1 hour

3-12 hours

12-20 hours

3-12 hours

Humalog was administered about 15 minutes before an appropriate meal

Regular Type-R was administered 30 minutes before an appropriate meal

Low BS = Low blood sugar (Glucose).

As the reader can see when viewing the examples of insulin above, the employment of Humalog allowed for a total of 4 daily administrations of 10-15iu each and Humulin-R (Short-acting) only allowed for 3 daily administrations. This is not to say some have not increased the dosage or chose different insulin analogs, but it is to say that under these circumstances it was not necessary or more effective.

When looking at the following example consider these facts:

Testosterone suspension has an active-life of about 24 hours tough plasma androgen levels remain elevated for about an additional 24 hours.

Sex hormones such as testosterone and estrogens are inactive when bound by SHBG (sex hormone binding globulin) and free or active when not.

Insulin is a powerful SHBG inhibitor.

Insulin increases muscle glucose transporters and androgen receptors

Protocol Example

Day

Protocol

Day

Protocol

1.

Testosterone Sus. 150mg

15.

Testosterone Sus. 150mg

2.

Humalog 10iu 4xd

16.

Humalog 10iu 4xd

3.

Testosterone Sus. 150mg

17.

Testosterone Sus. 150mg

4.

Humalog 10iu 4xd

18.

Humalog 10iu 4xd

5.

Testosterone Sus. 150mg

19.

Testosterone Sus. 150mg

6.

Humalog 10iu 4xd

20.

Humalog 10iu 4xd

7.

Testosterone Sus. 150mg

21.

Testosterone Sus. 150mg

8.

Humalog 10iu 4xd

22.

Humalog 10iu 4xd

9.

Testosterone Sus. 150mg

23.
Testosterone Sus. 150mg

10.
Humalog 10iu 4xd
24.
Humalog 10iu 4xd

11.
Testosterone Sus. 150mg
25.
Testosterone Sus. 150mg

12.
Humalog 10iu 4xd
26.
Humalog 10iu 4xd

13.
Testosterone Sus. 150mg
27.
Testosterone Sus. 150mg

14.
Humalog 10iu 4xd
28.
Humalog 10iu 4xd

Testosterone Sus. = testosterone suspension

150mg of testosterone suspension created a great deal of estrogen since it originates as a non-esterfied AAS. Estrogen up-regulated the muscle cells glucose transporters called GLUT-4 and increased androgen receptor sensitivity. This also meant that the administered testosterone was free or unbound from its inactivating protein SHBG. A great deal of the hormone entering the circulatory system was quickly bound, though not before a serious degree of anabolism occurred. But there is a portion left bound and in reserve.

Insulin inhibited SHBG resulting in a synergistic pro-anabolic response. By freeing the remaining prior days administered testosterone from SHBG an increase in androgenic activity was realized. Since SHBG is also estrogens binding protein the excretion of estrogens was dramatically accelerated. This resulted in rapid estrogen clearing and a notable increase in GH secretion which was amplified by the lack of the inhibitory effect normally caused by excess glucose. As most readers are aware, GH and insulin must both be present in the liver to produce IGF-1.

The end result was adequate glucose regeneration at the expense of adipose tissue with a profound degree of lean tissue protein synthesis and growth. No more Big Fat Bastard!