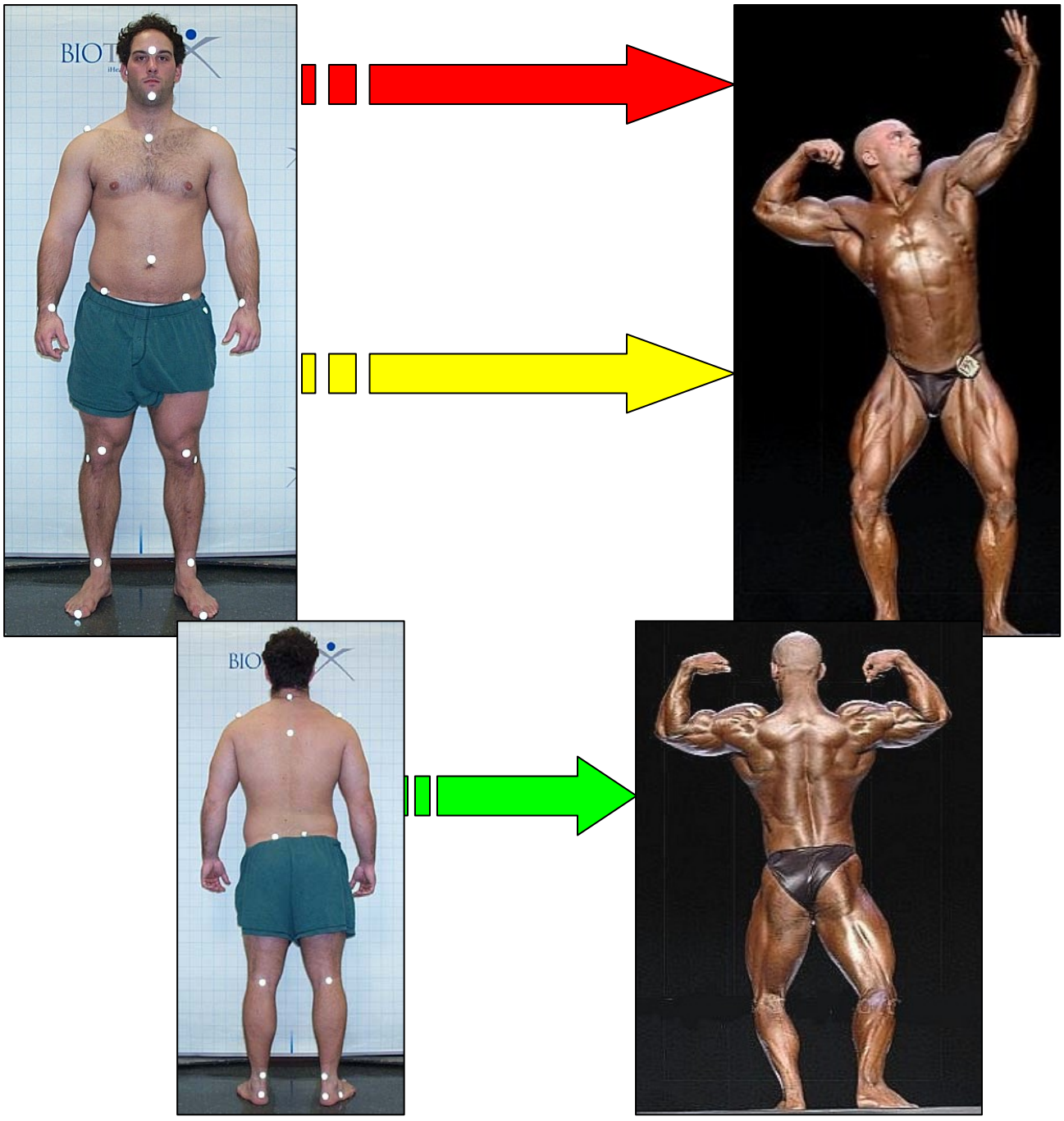
Dr.Jekyll and Mr.Hyde

Body Transformation From Both Sides of the Force

By Christian Thibaudeau
and Anthony Roberts

Chapter 1

What is a body transformation?



"TC, it looks like you will let anybody write for your magazine. That new guy, Christian Thibaudeau doesn't even look like he trains, why should I trust him?"

- Dan W.
11/16/2002

INTRODUCTION

We live in a superficial world; most people will do anything to give the impression or illusion of being something that they aren't in hope of gaining respect, adulation, admiration or other such things. And as a society we do encourage that type of behavior because we seem to only look at the part of the iceberg that we can see, ignoring the submerged portion which might really be more important. If it looks the part then it's good enough. "That guy has a BMW, a fancy house and all the new techno gadgets money can buy… he must be rich!" , never mind that the guy has two mortgages and a slew of credit companies harassing him to get their monthly dues. The guy looks like he's rich but in reality he's probably poorer than the average bum because of all the money he owes! This is what I call the "modified Honda Civic syndrome": when I walk around town I see all those young bucks adding flashy body parts, tinted windows, demonic logos and shiny mags to their car, yet they rarely invest in their engine. Sure the car looks like a street-ready NASCAR racer, but it still only has 115HP! Bottom line is that as a society we reward looks first and foremost. And this is no different when it comes to your physique and appearance.

Not so long ago when men went out they might spend a few minutes combing their hair and made an effort to select the shirt that wasn't as dirty as the others and that was it. Now we have men going to the hairdresser right before hitting the supermarket, selecting the right fuchsia tank top to fit perfectly with their brand new shirt… unbuttoning said shirt just enough to let that tank peak just right, giving that "neglected" look (that's right, men now spend 30-45 minutes adjusting their clothing in such a way that they look neglected). Basically looking good is now just as important for men as it is for women. Face it; most men want two things when going out:

1. To impress and seduce women

2. To intimidate other men

And in many circumstances focusing on clothing will work. Just buy the coolest treads, get a jazzy haircut (or go for the shaved look… all real men are shaved you know!) and voila, you are an instant sex symbol. However what happens when your amour of illusion (your clothes) aren't there to improve your image? When the clothes fly off? Do you look good *nekkid*? You bring a smashing girl to your place; she was seduced by how great you looked when you met her. You get ready to start to *know* each other when all of a sudden your armor falls off and, as Homer Simpson would say "*Look at that flubber fly*". You built yourself pretty high up and now you're sure to hit the ground pretty hard when you fall of your pedestal sire!

And what about summertime? Your mighty armor will be of little use at the beach, unless you want to be that weirdo wearing a three-piece Armani suit while playing beach volleyball!

Both of us (Anthony and I) are first and foremost performance guys. We both come from an athletic background (football and Olympic lifting for me, rugby for Anthony) and as such we can't help ourselves thinking that a body should not only look good, it should be able to perform too. We don't want that flashy Civic with 115HP, we want the new Dodge Charger that can rip the asphalt off the ground! However we do understand that those who start to hit the weights do so only to look good. They don't care if they can run a 4.3 forty or be the king of the scrum. We can't blame them; it's the way society works nowadays. With that in mind we decided to come up with a book detailing how you can build the Greek God body you want. While we love to talk about improving performance, in this book we will focus on the methods and strategies that will help you gain muscle, lose fat and sculpt the physique that will make you stand out when *showing some skin*. We will provide complete training, nutrition, supplementation and even performance-enhancing substances plans to help you get the results you want as fast as possible.

This book will be adequate for both the natural trainee and the enhanced one. Each of Christian's chapters will deal will the natural ways (training and nutrition) of improving your physique and will provide complete plans to reach your goals. Anthony's chapters will be tagged after each of

Christian's chapters and will provide "advanced" ways of making the training and nutrition plans outlined more effective.

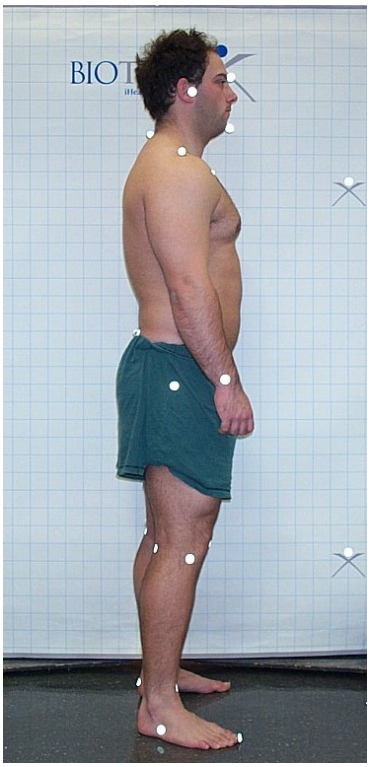
WHAT IS A BODY TRANSFORMATION?

In the world of strength training there are several specific goals, reasons why people slave and sweat day-in and day-out lifting heavy things for the heck of it (are we crazy?). Many of these goals are pretty much well defined and understood by most as they've been around for a long time: gaining strength, building muscle size, losing fat, improving performance, getting "in-shape" (whatever that means) and, for most … making friends while pretending to be training! To that list of objective we now must add body transformation, a catchy term that is actually simple to understand. But before we get into that, here's a table describing the different types of goals that peoples who train with weights may have.

Goal	Description	Comments
Strength gains	Consists of training to improve the capacities of the muscles to lift heavier weights.	Can either be general, as in strengthening every muscle group for its own sake; or specific to a greater objective? For example improving squat/bench press/deadlift strength for a powerlifting competition; the snatch and clean & jerk for an Olympic lifting competition; or specific events if competing in strongmen competitions. Most of the time this type of training is accompanied by super-human eating in hope or gaining more bulk and strength.
Muscle building	Consists of training with the objective of adding as much muscle mass as possible to your body.	Once again, this could be either in its general form: gaining as much size as possible for its own sake; or specific to a greater objective like the "off-season" phase of a bodybuilding preparation, a bulking period for an underweight football player, etc. While in an ideal world this "bulking" thing would occur without any fat gain, in reality most all-out muscle building phase leads to some fat gain. In most individuals a 1:1 ratio is acceptable however many misguided individuals end up gaining more fat than muscle in hope of getting huge.
Losing fat	Consists of using a combo of weight training and cardio to shed excess body fat.	This is another very common goal, especially nearing the summer months and after the holidays. The objective is to lose a ton of fat in a short period of time. Most people make cardio training and crash dieting the cornerstone of this objective and as a result tend to lose an equal amount of muscle as they do fat. They basically become smaller versions of themselves.
Improving performance	Consists of using various training means to improve the physical capacities needed to perform in your sport of choice.	This is the broadest objective as it often requires the development of several physical capacities concurrently: strength, power, speed, agility, general endurance, specific endurance, etc. As a result several different training means and methods are used (weight lifting, plyometrics, ballistic training, GPP, agility work, etc.)
Getting in general shape	Consists of training to improve well-being and health.	Normally revolves around the "big three": cardio, resistance training and flexibility work. However most of the time, training is not actually arduous or very serious, nor does it really need to be.
Body transformation	Consist of using cardio, strength training, nutrition and supplementation to transform the overall look of your body by changing the repartition of fat and muscle.	This is basically a combo of a fat loss and muscle building protocol. We do not want to simply lose fat: we want to lose fat while increase muscle mass, thus drastically changing the muscle to fat ratio. In simple words we're talking about training to look good

A real life story of a genetic anomaly – The Christian Thibaudeau's story

There I stood, in disbelief. A look of horror covering my face as I looked at a picture of myself, supposedly an expert in strength & conditioning; an authority on how to get in shape, sharing more than a few resemblances with the average great white whale! Hard to believe that I was actually … dare I say it? **Fat**! After all, I make a living getting peoples into great shape, yet there I was, reminiscent of our good friend the Pillsbury Dough Boy! "*Damn you dough boy*" uttered I in disgust. My world came crashing down in a few minutes.



What was hard to accept was not the fact that I wasn't a lean and muscular guy. I come from a family where adiposity reigns supreme. And myself having never been lean in my whole life, I had all but forgotten about one day getting a nice six-pack. No, what was hard to accept was that I hardly looked like I trained at all! At that point I actually believed that I looked like a powerhouse; after all I was lifting weights that most everybody would never even dream of lifting. But the reality was quite shocking: strong I may be, but powerhouse I wasn't!

A thought suddenly entered my mind: how could I expect peoples to follow my advice if I looked like hot fecal matter (notice the nice euphemism). After all, if my job is to get peoples in great shape, how come I wasn't?

So that's when I decided to consecrate three months of my life to getting into prodigious shape. While I don't feel like I have attained my ultimate goal (nor will I ever), I have achieved a physical transformation that's nothing short of extraordinary, even by my own high standards. I

lost more than 30 pounds of fat while gaining some muscle. Going from 18% body fat (and that's being nice!) to 5% body fat.

If I, a *genetic blunder,* can achieve such results and completely change my body in such a short time, so can you! This book will show you how.

If you are fat and want to become lean and ripped we'll show you how. If you are skinny and weak and want to become muscular and strong we'll also show you how. Basically this is not merely a book: it's a roadmap to the best body you can achieve!

BEFORE WE GO ON …

"Leaders lead from the front, not from the back"
- Richard Marcinko
Founder of the Navy S.E.A.L Team 6 unit

Just a little something before we get back to showing you how to become *sexay*. One thing that often boggles our mind is how many "experts" or "gurus" publish training or nutrition books about how to become muscular, lean or both and yet don't even look the part themselves. If someone touts himself as a specialist in body transformation he should normally be able to get himself in good shape, no? I mean, if he has all the answers the tricks of the trade and the secrets that can unlock one's capacity to get a beautiful body it goes to reason that he would be able to use some of these to get into good shape himself (unless the out of shape "expert" likes to be weak or fat for some unexplainable reason).

Now, don't misinterpret what we're saying, having a lean and muscular body is in no way an indication of one's knowledge about getting in shape. Some are genetically gifted to have a lean, muscular body and will get results from the dumbest approach possible. We are not implying that an expert trainer should be as muscular as a pro bodybuilder, look good as a Calvin Klein model or be as strong as a top powerlifter. We do have some genetic limitations to the ultimate best we can reach; an expert may very well be genetically cursed in the muscularity department. However, everybody can make tremendous strides in appearance. Every man can go down to at least 8-10% body fat and build some muscle. Considering that fact, I would be weary of any self-proclaimed expert that doesn't even look like he applied his own techniques.

Christian used to be a fat tub of lard (although he was pretty strong with a 600lbs full squat, 420lbs raw bench press and 365lbs clean at the time) but when he decided to get ripped, he was able to do so in minimal time despite having the worst genetic and sociological background for being lean. Everybody wants to look good, even the "experts", it is human nature. So when someone supposedly has all the tools to get it done, cannot even get past an average-guy look I'd be at least a bit weary about sending him/her some money for his secrets.

Rant mode off!

RACE TO A NEW BODY

As we saw earlier if you want to build a kick ass physique you will need to:

a) build muscle
b) lose fat
c) improve posture

To accomplish these goals several strategies come into play. Depending on the point you are starting from and your genetic makeup each of these strategies will play a more or less important role.

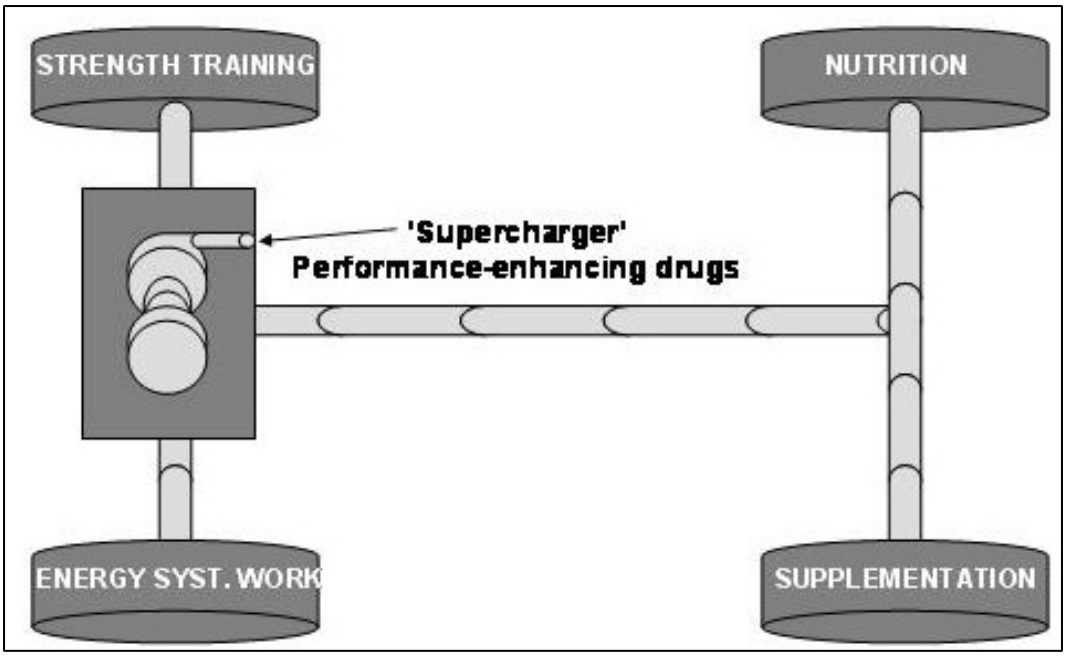
The four basic strategies that we will use to mold your physique are:

1. Strength training (to build muscle, lose fat, improve your posture)
2. Energy systems work (to lose fat)
3. Nutrition (to build muscle and lose fat)
4. Supplementation (to magnify the muscle-building and fat-loss strategies)

If you get these basic four strategies, let's call them the four wheels of body transformation, perfect you will be able to build the body you want without trouble. However it's still not an overnight thing. The best training methods, nutrition and supplements will not allow you to improve faster than your genetic makeup will allow you to.

For those impatient fellows there is the option of adding a supercharger to your car. That supercharger is the use of performance- (and appearance) enhancing drugs. These will definitely speed up the body transformation

process. However it cannot replace the four wheels: if you car has a flat in one or two of its wheels, adding more power to your vehicle will not allow you to drive faster or better. However if everything is in order, adding a supercharger will improve the performance of your car.



Unless you're genetically blessed with a naturally lean physique, if you want to develop a body that will turn heads you must make sure that all four wheels of the car are taken care of. Face it: if you bought this book in the first place you are not a genetic freak and you are not blessed with the capacity to build a lean physique easily. That's nothing to be ashamed of; most of us are in the same boat as you! It also doesn't mean that you cannot build a body to die for. It simply means that to get it, you must do everything right.

Each of the wheels (and the supercharger) will be explained in the early portion of this book. Christian (Dr. Jekyll) will tackle the training and nutrition portions in his chapters while Anthony (Mr. Hyde) will focus on the supplementation (both natural and pharmaceutical) aspects.

Afterwards we will give you several specific plans depending on your goals, body type and initial shape. Finally we will include a "how-to-maintain" guide. Once you get the body you want, how can you get back to a normal life without getting back to being a fat slob? After all, who wants to look good only 2 months out of the year?

WHEEL NO.1: STRENGTH TRAINING / BUILDING MUSCLE

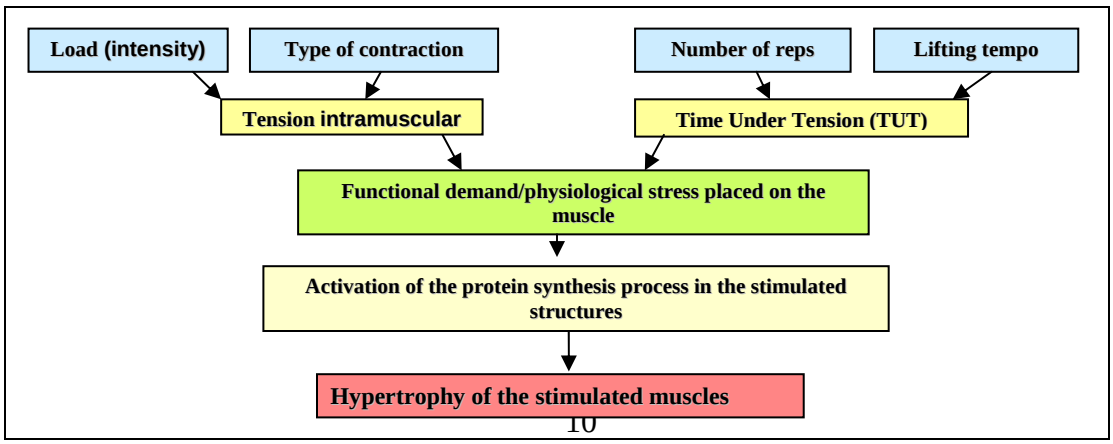
The first part of building a lean and muscular physique is to have muscle! A marathon runner might have only 5-6% body fat, yet he looks about as muscular as an anorectic runway model. Furthermore, the more muscle you have, the easier it is to lose fat (muscle being one of the biggest energy user in the body).

WHAT MAKES MUSCLES GROW?

Why do muscles grow when we lift weight? It's more than just pumping some iron and downing protein shakes! Yes resistance training can lead to gains in muscle size, especially when a proper nutritional plan is followed. However the mere act of going to the gym and doing some random exercises, for an unknown number of sets of an arbitrary amount of repetitions is not a guarantee of significant muscle growth. Indeed some individuals will spend years working out without making an ounce of progress. You got to admire their tenacity though … they spend hours upon hours in the gym yet still look like a coat rack or the Michelin man's fatter brother! A total lack of results will not discourage these poor chaps, no sir! Well I'm here to tell you: don't be that guy. If you are not making the kind of progress you'd like chances are that you are not doing everything optimally. Chances are that new muscle growth is just around the corner if you learn how to unlock the door to maximum hypertrophy.

<u>The two determining factors in muscle growth</u>

The amount of growth stimulated is directly proportional to the amount of stress (or of the functional demand) placed on the targeted muscles. This holds true as long as that functional demand doesn't exceed the body's capacity to recover.



The stress placed on the muscle is itself dependant on two main variables:

1. The importance of the intramuscular tension during the performance of the exercise.

2. The duration that the muscle is placed under that level of tension. This is also called the time under tension (TUT).

Protein degradation: the trigger for muscle growth

When you lift weights you inflict some damage to your muscle fibers. This is called microtrauma. Simply put, the more damage you inflict, the greater will the body's response be. And the response to muscle damage is muscle growth. This response, making the muscle tissue stronger and bigger, is a defense mechanism designed to protect the body if the same type of physical stress would ever occur again.

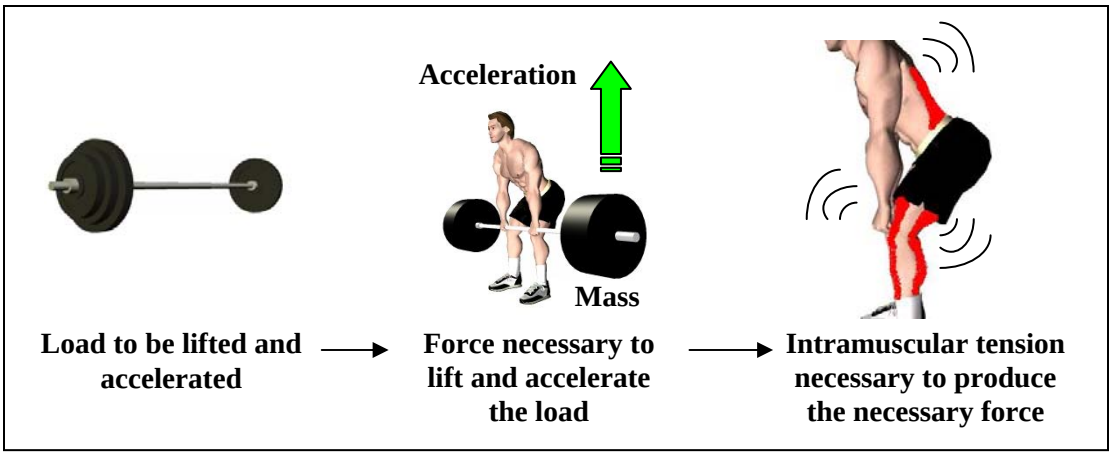
In that regard training is much like a vaccine. A doctor will inject a weak form of a virus into your body; this is a form of physiological stress. Your body perceives that stress and adapts to it by building anti-bodies against the injected virus. So if that same virus ever surfaces again, the body will be equipped to fight it.

However what would happen if instead of a weak from of the virus, the doctor would inject the real thing? Would you build even more anti-bodies? No, you would get sick! Same goes with training: the more damage you inflict on your muscles, the greater the growth stimulus will be, however if you exceed your capacity to recover you will regress not progress.

The amount of muscle damage is dependant on the two variables mentioned above (tension and TUT). The greater the intramuscular tension is, the higher the rate of muscle damage. The longer the TUT is, the more time you spend causing muscle damage.

Intramuscular tension is proportional to the force produced while lifting. Remember the formula for force?

$$\boldsymbol{Force = Mass \times Acceleration}$$



So basically you can increase force output either by lifting big weights or by lifting explosively. So basically, the heavier you lift the faster you create microtrauma. However when you lift big weights it's impossible to have a long TUT because only few reps are possible. So even if you create muscle damage at a fast rate, the total amount of muscle damage created will be small unless you perform a ton of sets (which isn't always the best idea as its very stressful for the nervous system).

On the other hand when you are doing a lot of reps per set or using a slow lifting tempo you spend a lot of time causing muscle damage. However since the load you will be able to use with such training parameters will be relatively low, the total amount of microtrauma will also be small. So as you can see to stimulate maximum hypertrophy limit weights (90%+) or high reps (15+) are not the solution. Your best bet is to use a load heavy enough to cause muscle damage rapidly, but low enough so that you can perform sets lasting 30-60 seconds.

Training zone	Reps	Duration of the set	Rate of damage	Time spent causing damage	Total microtrauma
85-100%	1-5	5-20 sec.	Very high	Very low	Low
80-85%	6-8	20-40 sec.	High	Moderate	High
70-80%	9-12	40-60 sec.	Moderate	High	High
50-70%	15-30	70-120 sec.	Low	Very high	Low
- 50%	+30	+120 sec.	Very low	Very high	Very low

From the table above you can see that to stimulate maximum muscle growth you should work in the 6-12RM zone (70-85%). That's not to say that training in the other zones is worthless. In fact including some low rep/high intensity work (in the 3-5 reps range) can be very beneficial for muscle growth, strength gain and improved muscle density. Training with higher

reps (15-20 reps range) can increase capilarization and sarcoplasmic (non-functional) hypertrophy. And working with even higher reps (30 or more) can serve as active recovery following an intense session. The following table briefly explains the benefits of each training zone.

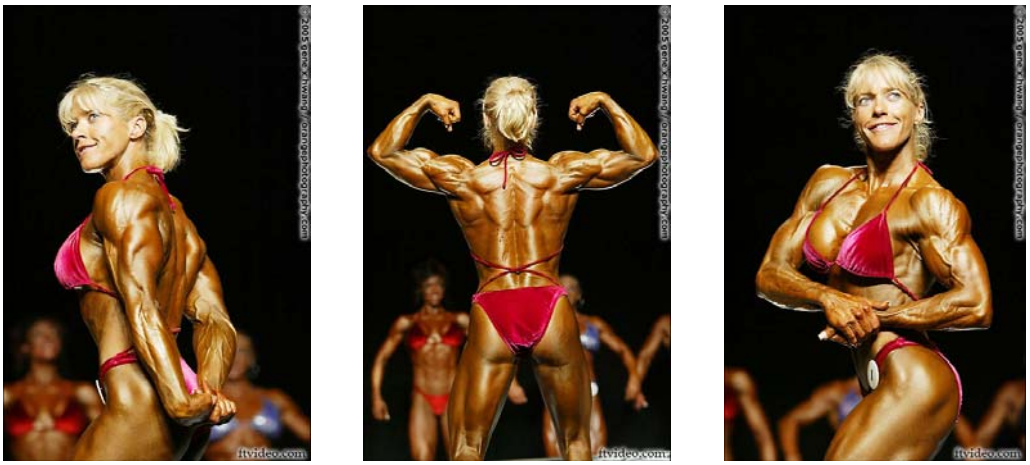
Training zone	Name of the zone	Positive effects
85-100%	Limit strength	· Increase in strength · Stimulation of functional hypertrophy · Increase in muscle density
80-85%	Functional hypertrophy	· Stimulation of functional hypertrophy · Increase in strength
70-80%	Total hypertrophy	· Stimulation of total hypertrophy (functional + non-functional) · Slight increase in muscle endurance · Improved lactic acid tolerance
50-70%	Strength-endurance	· Increase in non-functional hypertrophy · Increase in muscle endurance · Improved capilarization
- 50%	Endurance-strength	· Increase in muscle endurance · Improved capilarization · Active recovery · Speeds up recovery from tendon injuries

Intensity, hypertrophy and training experience

As I already mentioned, your body adapts to training-induced stress by making itself stronger and more resistive to physical loading. In simpler words the more experienced a trainee is, the better his body is built to tolerate training stress.

To explain that fact we can use a simple analogy: a man starts to work a physically demanding job (e.g. farm work). He does manual labor 8 hours a day. At first he sure will get extremely tired at the end of the day and painfully sore the next morning. But over time, the more experienced he becomes at his job, the daily workload doesn't affect his body as much. His body has adapted to the very brutal physical demands of his work.

Same goes for strength training (which is basically artificial manual labor). The more years a trainee has put in the trenches, the better his body is at handling training related stress. So it should be obvious that the more experienced a trainee is, the higher the training stress level should be to elicit progress.

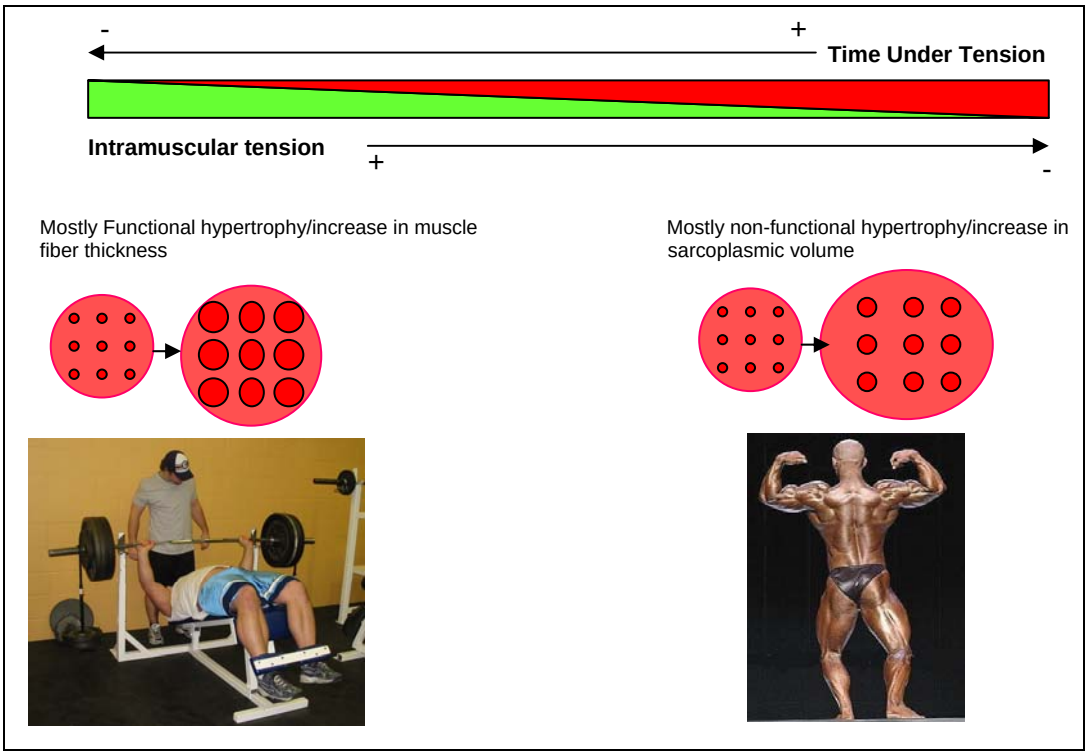


Christiane Lamy knows a thing or two about manual labour, having worked on a farm for years.

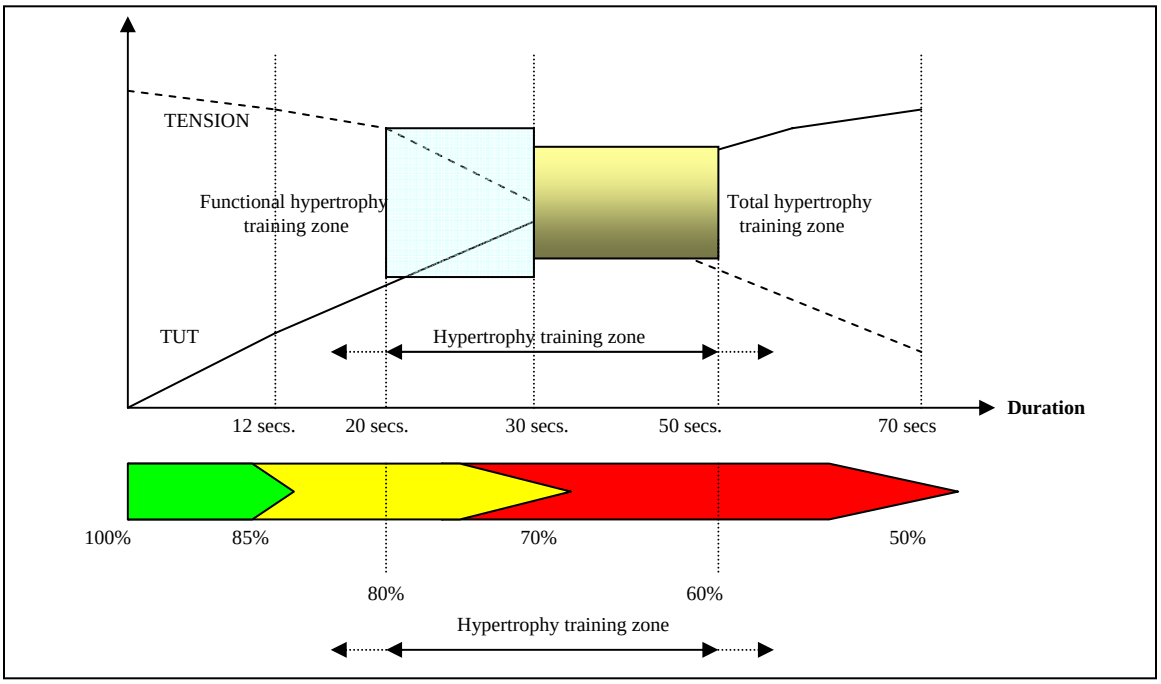
There is what is called an “optimal intensity threshold” (OIT) that must be surpassed if maximum hypertrophy is to be stimulated. You can use all the advanced methods in the world or perform sets until the cows come home; if you don’t train past that threshold you won’t stimulate maximum growth. The following table indicate the ideal training intensities depending on the level of the trainee.

Experience Level	Optimal intensity threshold	Acceptable intensity range
Beginner	60%	50-70%
Intermediate	70%	60-80%
Advanced	80%	70-90%

Now understand that even if you train under the optimal intensity threshold, or even under the acceptable intensity range, you can still stimulate some muscle growth. However this increase in muscle size will mostly be of the non-functional type. This is called sarcoplasmic hypertrophy and it refers to an increase in the elements of the muscle cell other than the muscle fibers. As a result of this type of hypertrophy a muscle can get bigger but its strength will not improve much, if at all.



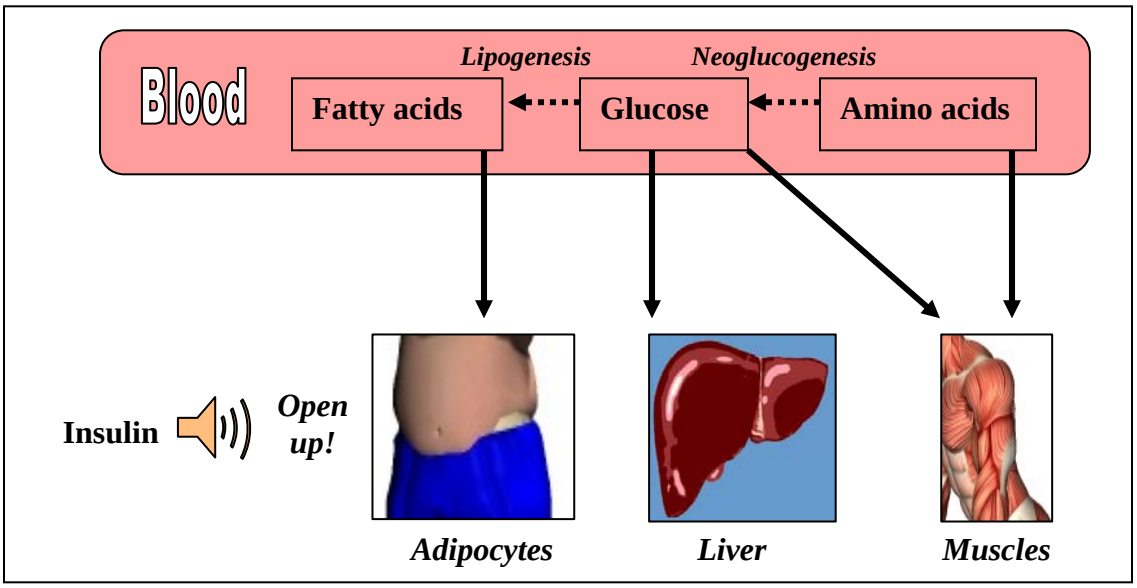
The following graphic gives a good illustration of the whole hypertrophy training zone concept:



Hormones can be used exogenously as performance-enhancing drugs (that's Anthony's area) but they can also be influenced by the way you train.

Hormones are sometimes misunderstood by many. Some automatically assume that "hormones" are something you must take with a syringe or in pill form! Hormones are basically biochemical messengers: their job is to

inform some tissues or structure that they must initiate a certain action. For example, insulin sends the message to open up the storage room to facilitate the entry of new nutrients to be stocked.



During (and after) a training session there is a wide fluctuation in hormone levels. This is indicative that the body is trying to either be ready for action or try to recover once the storm has passed. It is believed by some that using certain training techniques to accentuate certain hormonal responses during and after training can drastically increase your rate of progress. Are they right? Well yes and no.

Modulating hormonal responses to training might, in the long run, lead to a slight additional improvement. However the gains to be expected are not at the level of individuals using exogenous hormonal preparations and one should not expect miraculous stuff to happen overnight! Following is a table explaining all the hormonal responses to a training stimulus. I will then explain exactly what is relevant to us who want to either look good nekkid or be strong like bulls!

Hormonal responses to training

Hormone	Action(s)	Response to training	Other info
Growth Hormone (hGH)	Increase protein synthesis slightly (anabolism). Decreases protein breakdown significantly (catabolism). Increases lipolysis (using fat for fuel) and improves lipids and carb metabolism.	Increase dependent on the intensity and duration of the activity. The hGH threshold response level is 40% of maxVO2. Below that intensity level, there is no response. hGH levels can go up by a factor of 7 during a 30s. all out-sprint. Back to basal levels within an hour of the cessation of the activity.	An increase in intramuscular acidity (lactic acid) is a stimulus for hGH production. Heat favors hGH release. Lean individuals have a greater hGH response than fatter individuals.
Thyroid Stimulating Hormone (TSH)	Stimulates the production of thyroxine (T4)	Increase dependent on exercise intensity, reaching significant values above 50% of max VO2.	Doesn't seem to have any impact on exercise performance.
Adrenocorticotropic hormone (ACTH)	Stimulates the secretion of cortisol, aldosterone and thyroid hormones. Increase the release of fatty acids from the fat stores.	Increase dependent on the intensity and duration of the activity. Back to basal levels within an hour of the cessation of the activity.	
Prolactin	Inhibits the action of testosterone. Facilitate the release of fatty acids from the fat stores.	Increase during exercises of extreme intensity or duration. But the response is less than that of hGH. Hypoglycemia and hyperthermia facilitate the release of prolactin.	Prolactin can have feminizing effects in males. It can increase breast tissue size and sensibility and even cause lactation.
Follicle Stimulating Hormone (FSH)	Stimulates the production of estrogen and progesterone.	No variation during exercise.	
Luteinizing Hormone (LH)	Stimulates the production of testosterone and estrogens.	No variation during exercise.	
Endorphins	Masks pain. Eurphorizing action. Reduces anxiety and depression.	Increases during exercises of moderate or high intensity.	
Anti-diuretic Hormone (ADH)	Reduces the excretion of water and electrolytes.	An exercise above 70% of the max VO2 increases ADH de significantly. But an exercise of long duration and low intensity doesn't show any impact.	An increase in ADH favors re-absorption of water and electrolytes and reduces the risk of dehydration.
Thyroxine (T4)	Basically a thyroid hormone reserve; is converted to the more metabolically active T3.	Stays unchanged when the exercise duration is short; but decreases as the duration increases even if TSH levels are increased.	

Continued…

Hormone	Action(s)	Response to training	Other info
Triiodothyronine (T3)	The most metabolically active form of thyroid hormones. Increases the metabolism of lipids, carbs and proteins. Facilitates the utilization of glucose by the muscles.	Stays unchanged when the exercise duration is short; but decreases as the duration increases even if TSH levels are increased.	
Cortisol	Increases the release of fatty acids from fat stores. Increases muscle breakdown (catabolism) Increases the release of stored glucose to the bloodstream.	Increase dependent on the intensity and duration of the exercise. Back to basal levels within an hour of the cessation of the activity.	
Aldosterone	Favors the re-absorption of water and sodium by the kidneys. Favors potassium retention.	The greater the duration of the exercise is, the more important the effect. After long-duration endurance work, it can take up to 12-16 hours to be back to basal levels.	Athletes involved in sports with weight classes or in bodybuilding shouldn't perform excessive endurance work 24 hours before a competition to avoid unwanted water retention.
Catecholamines	Increases heart rate. Facilitate the use of glucose for fuel. Activate lipolysis (releasing fatty acids from the fat stores).	Exercise intensity is the most important factor in the release of catecholamines. The level is stable at intensities at or under 40% if the max VO2; increases slightly between 40 and 70%; and is increased exponentially at 70% or above.	Isometric work stimulates more catecholamines release than dynamic work. The standing position favors a greater release than the seated or lying positions. Lack of oxygen increases the release. Glycogen depletion increase catecholamines response up to 3 fold.
Insulin	Increases the entry of energy substrates in their respective reserves. Inhibits the release of the stored substrates. Favors protein synthesis and prevents muscle breakdown	The production of insulin decreases as soon as exercise begins and blood levels starts to fall when the intensity reaches 50-75% of the max VO2. At intensity above 75% of the max VO2 there is an increase in insulin blood level.	During the recovery period there in an insulin rebound which facilitate glycogen resynthesis and protein synthesis. When exercising, muscle contractions can increase the uptake of glucose by the muscles without any need for insulin. Any increase in the production of insulin reduces the use of fat for fuel.

Continued (2) …

Hormone	Action(s)	Response to training	Other info
Glucagon	Inhibits the uptake of glucose and amino acids. Increases the production of ketone bodies. Increases lipolysis. Increases the release of stored glucose to the blood.	Increase depending on exercise duration. There is a significant increase in glucagon levels only after at least 45 minutes of exercise.	Glucagon production in fully inhibited by cabs consumption during the exercise .
Estrogens and progesterone	Control the menstrual cycle. Favors female sexual characteristics. Possibly have a positive impact on protein synthesis (in women). Increases fat deposition/storage.	Increase depending on exercise intensity. This increase is not due to a greater production, but rather to a lower hepatic clearance of the hormone.	
Testosterone	Increases protein synthesis (anabolism). Partially inhibits the action of cortisol (anti-catabolic). Favors fat loss. Increases glucose storage in the muscles.	Moderate increase in plasma testosterone dependent on the intensity level. This increase is not due to a greater production, but rather to a lower hepatic clearance of the hormone. Significant decrease (35-60%) during endurance events; might be due to an increase in prolactin or to a restricted blood flow to the testes.	During ultra-endurance events the cortisol/testosterone ratio can go from 25 (at rest) to 120 (end of event). Lifting heavy weights and using compound exercises seems to lead to a greater level of free and total testosterone.
Leptin	Regulates the hunger/satiety mechanism. Has a certain impact metabolic control.	Leptin variations are more dependent on the athlete's nutritional state.	In the long run, exercise will induce a loss of bodyfat which will decrease leptin production. However the hypothalamus becomes more sensitive to this hormone (obese peoples have tons of leptin circulating but they are resistant to it).
Insulin-like growth factor 1 (IGF-1)	Increases protein synthesis (anabolism) Might increase muscle cell proliferation and ultimately hyperplasia (production of new muscle fibers). Increases glucose storage into the muscles.	IGF-1 levels increases in proportion of hGH but with a 12 hours delay. So what applies for hGH also applies to IGF-1.	Both insulin and hGH are needed to stimulate the release of IGF-1.

Some useful observations

- Exercises that stimulate a significant increase in lactic acid production will lead to a great hGH production. This means intense training (lifting, sprinting, swimming, etc.) for bouts of 30 to 70 seconds with minimal rest intervals.

- Compound movements that involve more than one joint at the same time and a large amount of muscle simultaneously seem to cause a greater testosterone production.

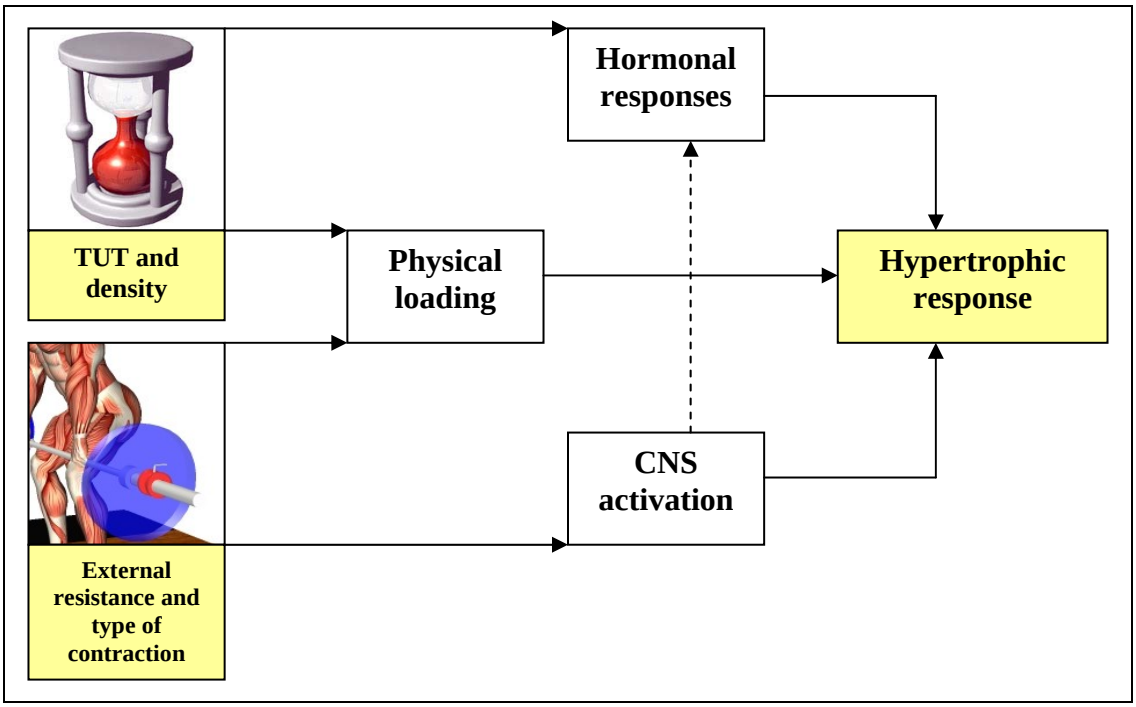
- Post-exercise carbs intake can: a) reduce cortisol and glucagons levels b) take advantage of the increases insulin sensitivity post training by increasing glucose storage is glycogen c) promotes the production of IGF-1 by increasing insulin levels at the same time as hGH is elevated.

- When using energy systems work (cardio) to loose fat it is best to stay below 75% of your max VO2 because that's where insulin levels are decreases and thus when fat use for fuel is facilitated. Above 75% there is an increase in insulin levels and that might block fatty acids release.

- When choosing a "cardio" activity to loose fat it is best to select one in which you are standing (treadmill, stairmaster, step, running, etc.) since this is the position at which catecholamines release is at its highest and that these hormones increase the release of fatty acids to be used for fuel.

So to recap …

The muscle mass scheme



Factor	Explanation	Impact	Comments
External resistance	Represents the "mass" element of the force production equation. Generally speaking, the greater is the external load, the more force one must produce.	Heavier loading increases CNS activation and can lead to an increase in testosterone production. It can also improve the efficacy of the CNS to recruit muscle fibers. The more fibers you can recruit; the more growth you can stimulate.	Studies have show a greater increase in "test" when heavy loads were used. For example Raastad et al. (2000) found that a protocol of sets of 3RM led to a greater increase than a protocol using 70% for more reps.
Type of contraction	The way one execute the movement: eccentric, isometric or concentric (mode of contraction). Explosive, controlled or slow (speed of contraction).	Eccentric actions have a greater impact on muscle hypertrophy by increasing physical loading of the fast twitch fibers, especially if performed slowly or under control. Explosive concentric actions increase CNS activation which could also lead to an increase in testosterone production and in muscle fiber recruitment.	The best way to execute an exercise is thus to lower (eccentric) the bar slowly and lift it (concentric) explosively.
Density	The amount of work performed per unit of time (higher reps and/or shorter rests).	A higher density of work increases lactic acid production which has been show to lead to the release of hGH.	Density is probably the most important factor involved in strength training as far as modulating hGH release goes.
TUT	Time Under Tension: for how long does a muscle have to contract?	A greater TUT can also increase lactic acid production provided that it doesn't go beyond 120-180 sec. per set.	

So we can make the following comments:

- Heavy lifting and higher reps work can both increase hypertrophy, but via different pathways.

- Testosterone and hGH can both be anabolic and biolytic; these two hormones are maximized by different types of training (heavy lifting and high density work) so both types should be used to maximize hypertrophy.

- Whenever possible execute the eccentric portion of a lift slowly (when using weights below 80%) or under control (when working above 80%) and attempt to lift the weight as fast as possible.

- CNS work (heavy and explosive lifting) lead to an increase in myogenic tone (also called tonus). Having an efficient CNS will make your muscles look harder and bigger even at rest.

- To get the most out of your training you should use methods that target both the muscles and the CNS.

Chapter 2

What is chemical body transformation?

Welcome to the darkside…my side of body transformation. If you aren't familiar with this side of body transformation, don't worry. It's not all about injections and drugs. Body Transformation appears to happen on the outside,

but in reality, you change from the inside out. There are chemical and biological changes which occur inside of you, well before you start to notice the changes on the outside. First, I'll tell you a bit about them- then in later chapters, I'll tell you how to "tweak" them by using a variety of nutritional…and yes, chemical, tricks.

First, we should go over some important metabolic pathways, and some basic biology, so we're all on the same page (ha ha) for later chapters. This information is important, because we need to understand exactly what we're working with before we can understand what kind of changes we want to occur within the body in order to elicit the visible transformation changes we want to occur on the outside. Sit tight, because you're about to get a crash course in biology!

As Christian so eloquently put it, we need to think of the body as a car. Our car can not run without tires and an engine, and we need to remember that. The addition of performance (and appearance) enhancing drugs or supplements can not replace the foundations of solid training or nutrition. Rather they should be thought as adding a supercharger to a car. Actually, we'll be adding a supercharger, a custom exhaust, better gears, and a new body!

But if we're going to be the mechanics who work on our own bodies, then we need to focus on certain areas. So for my part, I'll be showing you how to manipulate the areas of the body which will give us the fastest and most noticeable effects. This means we'll be focusing on the Hypothalamic-Pituitary-

Testicular Axis and androgens in general (including both endogenous and exogenous androgens), the GH/IGF axis (including insulin), the Thyroidal axis and thyroid gland, and finally the adrenergic system. Although this list is by no means all-inclusive of every system contained within the human body, by focusing on these key systems (and manipulating them) we'll be able to see maximum results in minimal time.

So we'll take a look at each of those four key areas in this chapter, so that in later chapters you'll know exactly what I'm talking about, and you can decide if tinkering with them is something you're interested in. But let's be realistic about things…

If you're trying to look good for the beach, following Christian's diet and training can get you there without any help from me. But following my advice can get you into beach shape faster. If you're trying to get to "ripped" or low single digit body fat levels…perhaps even contest ready shape, it will be difficult to do with training and diet alone. And if you're trying to compete at the national or professional level in bodybuilding, it will be impossible to transform your body to Olympian standards without drugs. Period.

So now that we've gotten all of that out of the way, let's take a look at the first of those four systems I told you about.

The HPTA and Androgens

Your body has within it a system of glands that secrete substances internally. This is known as your endocrine system. The way I remember this is that it's the internal version of sweating. When you sweat, your body senses a change in the temperature of your body (heat), and begins to release sweat to cool it off. This is a way that your body maintains a comfortable temperature for your skin- in other words; it's a way of maintaining healthy body temperature. Your body strives to maintain homeostasis, or a state of equilibrium where normal function within the body is maintained. This is your body's way of maintaining the status quo. Internally, your endocrine system works the same way. It maintains a healthy environmental

equilibrium for you by secreting or not secreting certain hormones. However, this homeostatic system is not particularly great for us if we want to look good (or great) at the beach or on a stage.

But this system has evolved over thousands of years, and has developed over that time to help you survive. And you know what helps you survive? Well, for starters, the body likes to maintain a nice, healthy layer of adipose tissue (fat) in order to help you survive hunger and famine. But I'm going to guess that if you're reading this book, chances are you won't have to survive through a famine any time soon …and the last time you were hungry you probably walked to your 'fridge and got a snack.

So what good is a nice thick layer of bodyfat going to do for you?

None.

But the thing is, your body is the result of thousands of years of evolutionary progress…and it doesn't like change. In other words, it hasn't quite gotten with the times yet…it hasn't figured out that there's no famine in your near future. And unfortunately, this means it wants to hold on to as much fat as possible.

Could this get any worse? Sure it can.

You see, too much (excess) muscle is not a great idea, from an evolutionary point of view. You see, your body doesn't like to build too much muscle, because that muscle aids in the burning of stored body fat for fuel. And your body is still in cave-man mode when it comes to this idea- it wants to protect you against that next famine. Cave-men, as you may recall, could not just run to the supermarket for some food.

So to an extent, when we're attempting a body transformation, we're attempting to trick the body into doing something it doesn't want to do. We're trying to get the body to build muscle and burn fat at the same time, and we're fighting against our own evolutionary programming to do so. Unless you're one of the genetically gifted, this is what your endocrine system and HPTA is helping (fighting) to maintain- and this is why it's the first of the areas we're looking at. It is of primary importance because your HPTA regulates the level of testosterone in your body…testosterone has been proven to have a proportionate relationship to the amount of fat free

mass you'll carry, and an inversely proportionate relationship to the amount of fat you carry.

So you see, in your body is a system of hormones which we can use to help us…and the first hormones of interest to us is our primary androgen, or male sex hormone; testosterone. Androgens are substances with the ability to develop and maintain male sexual characteristics. In addition to this characteristic, they also aid in building muscle as well as burning fat. As you may suspect, your body isn't too fond of allowing too much of them to circulate. Don't worry, though, we can always add more (to be discussed at length in a later chapter). Testosterone and Dihydrotestosterone (DHT) are the primary androgens in the body, but there are other (less than natural) androgens which are all similar in that they create both an anabolic (muscle building) as well as androgenic effect, serving to build muscle as well as burn fat. Clearly, we want to elevate these hormones as much as humanly possible. If you remember one thing about androgens, remember the point I touched upon in the preceding paragraph: Levels of androgens in your body will directly correlate with the amount of fat free mass you have, and inversely correlate with the amount of stored bodyfat you carry. As Christian explained in the preceding chapter, one way that we can elevate testosterone is by resistance training. As you might expect, another is to inject it.

But how does your body actually produce testosterone?

Well, bear with me for a second, because this may get slightly complicated. Testosterone is synthesized from cholesterol. So, that stuff that you were always told was bad for you (cholesterol) is actually converted within your body into testosterone. As you might suspect, eating a high cholesterol diet often produces an increased level of testosterone. This isn't a license to begin eating all the fried eggs and bacon that you want, however. There is a diminishing return on dietary cholesterol and its ability to be converted to testosterone…in other words, some cholesterol in your diet is actually good, but too much is still bad. Still, the world renowned powerlifters of Westside Barbell club mostly swear by a high cholesterol diet. And having met quite a few of them personally, I can tell you that they swear a lot…

Cholesterol is converted into testosterone by something called the Leydig Cells, which (in men) are located in the testes. To do this, 2 enzymes (cytochrome P450 and 3 and 17 ß-hydroxysteroid dehydrogenases) are required, in addition to cholesterol. When these enzymes interact with cholesterol, they can form Testosterone in your body. Then, after testosterone is produced it can elicit a variety of anabolic and androgenic effects. As previously stated, this is a good thing, because the more testosterone you have circulating, the more muscular you will likely be. So now that we have covered where testosterone comes from, how does the body actually receive the signal to release it from the testes?

At the age of puberty, Gonadatropin Releasing Hormone (GnRH) is released in increasingly large amounts from the Hypothalamus, in turn causing the secretion of Follicle Stimulating Hormone (FSH) and Luteinizing Hormone (LH) from the pituitary, and finally the male gonads (testes) are stimulated by those pituitary hormones (LH and FSH). This in turn causes the release of testosterone (which was produced from cholesterol) into the body.

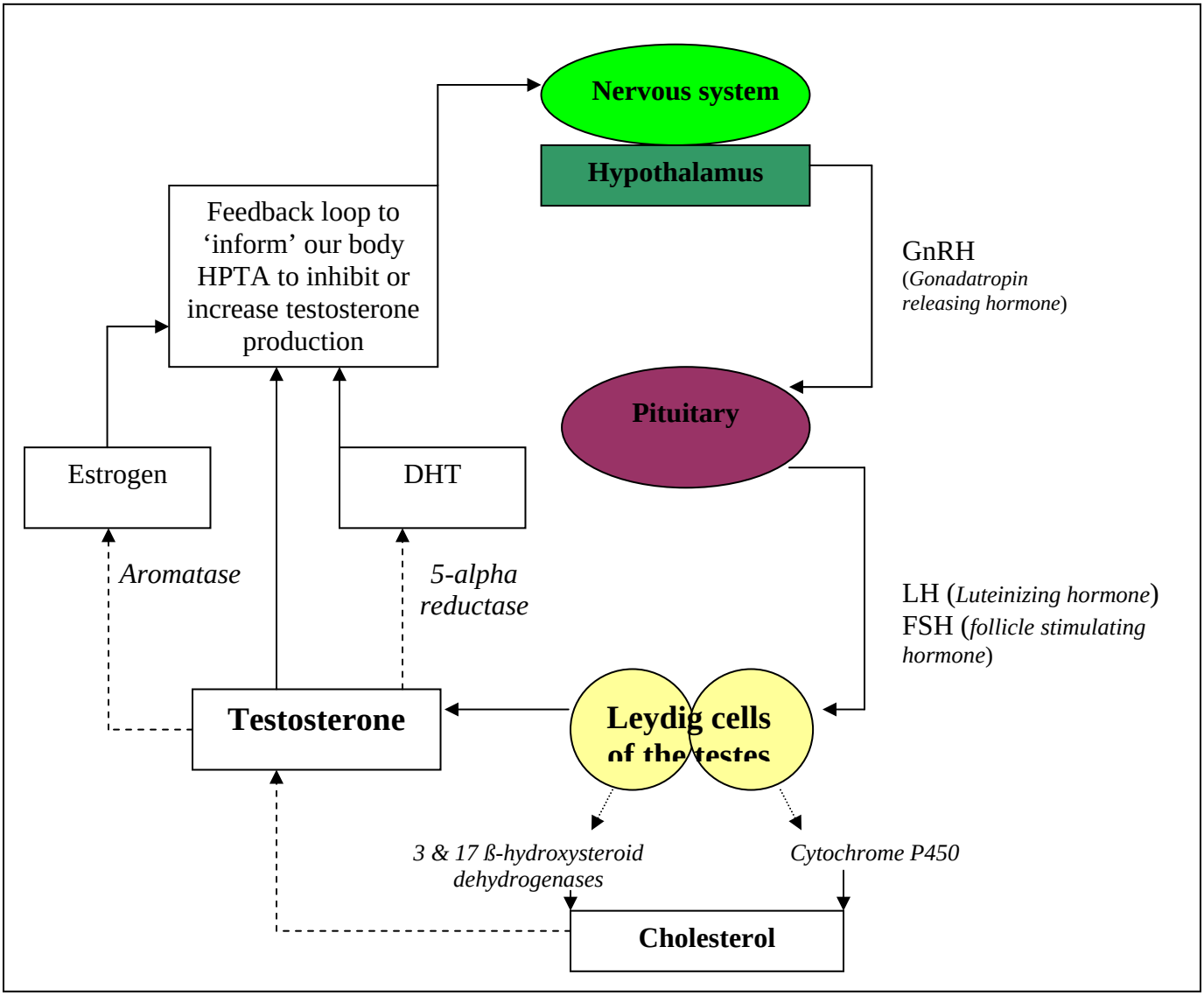
FSH, although formerly thought to only have a role in production of sperm, actually aids the in regulation of Leydig Cell function, while LH directly aids the Leydig Cells in the testes to synthesize testosterone from cholesterol and thereafter secrete it. The synthesis and subsequent secretion of testosterone then causes a surge in other anabolic hormones such as Insulin Like Growth Factor and Growth Hormone. Simple enough, right?

Oh yeah…I also mentioned something called “Dihydrotestosterone” if you recall. Well, this is actually more androgenic than testosterone, though less anabolic. It is created within the body by an enzyme called 5-alpha reductase. All of this sounds great, right? The body is a testosterone producing machine! Well, it’s not all roses. Remember how your body likes to maintain itself in a way so as to be evolutionarily sound? Well, obviously, if it creates too much testosterone, it’s not going to be able to survive a famine (as it will have too much muscle and not enough fat), so it makes use of something called the “negative feedback loop”.

So, once testosterone is created it has the ability to in turn to undergo various metabolic processes that will inhibit GnRH, which in turn inhibits the secretion of LH and FSH, and that brings a halt to natural testosterone production. This is the negative feedback loop.

One of those metabolic processes is called “aromatization”. This is the conversion of testosterone into Estrogen via the aromatase enzyme. And guess what? The more estrogen you have in your body, the less muscular and more fat you’re going to be. Think of it as the hormonal opposite of testosterone.

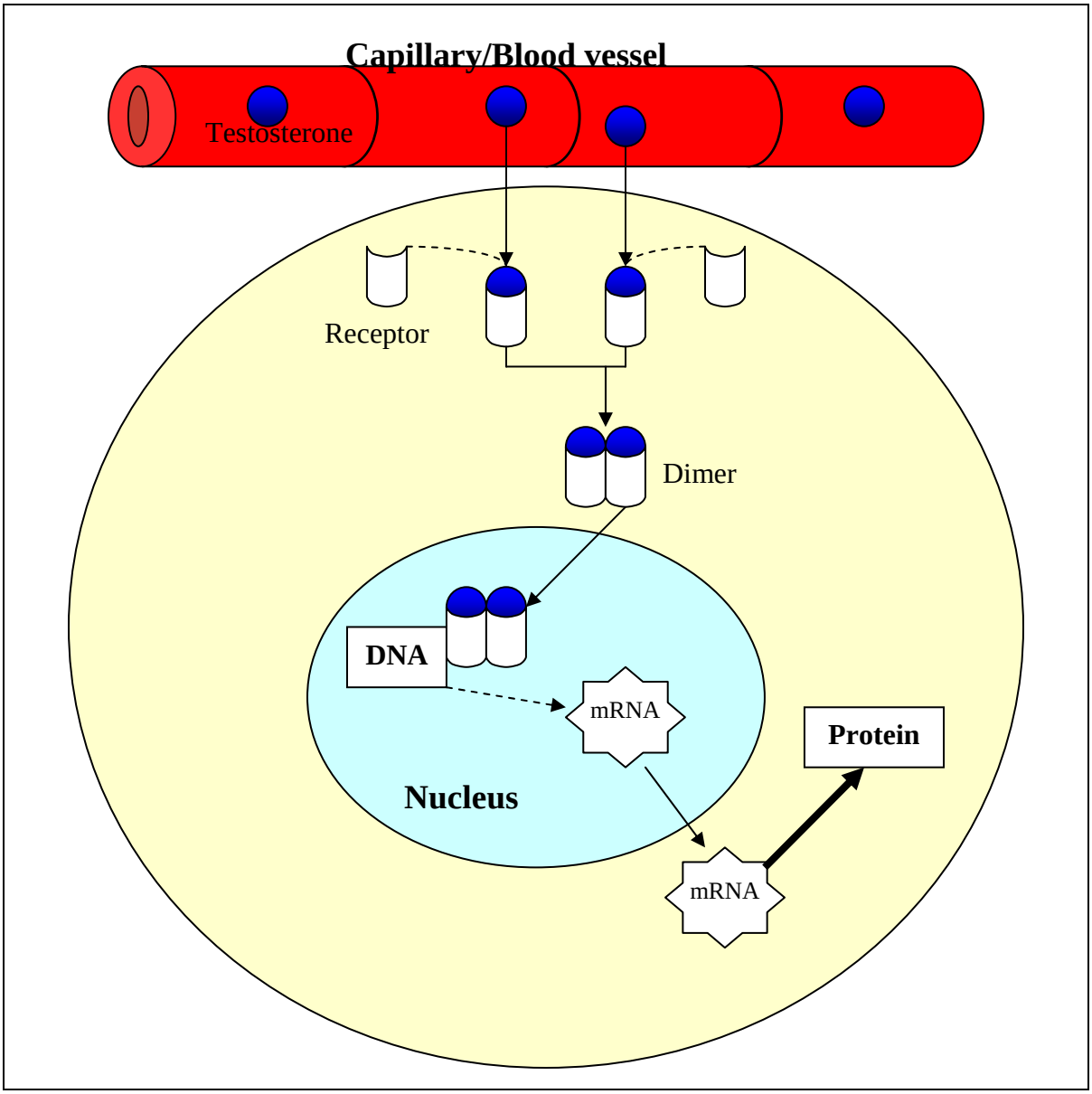
The production of estrogen as well as other factors all add up to put a halt to the production of testosterone as well hindering our body transformation efforts. And once testosterone has stopped being produced, it no longer converts to the hormones which send the negative feedback signal, and GnRH eventually begins to do its job again when it senses the need for more testosterone. In this way, your body prevents excess hormones from being secreted and thus maintains homeostasis- the dreaded status quo.



So now we know that we want some testosterone (as much as possible) floating around, but how does it actually do what it does?

Well, testosterone (or any natural as well as synthetic androgen) operates by binding the androgen receptor (AR). Once it binds, it travels to the cell's nucleus along with another Androgen/Receptor coupling, and initiates its various effects.

Once the androgen arrives in the nucleus, it begins a process known as "gene transcription" which basically means that it delivers a message to your cells. The message can be a variety of things, build more muscle or burn more fat (i.e. transform my body!).



It's important to note that testosterone and the actions of testosterone and other sex steroids also play an important role with regards to modulating and regulating both the Thyroidal and GH/IGF Axis, as well as having some interaction with the adrenergic system. If you haven't guessed by now, the four main areas I'm going to focus on are all inter-related.

Now, as previously touched upon, dihydrotestosterone (DHT) is considered androgenic relative to testosterone as it is both essential as well as nearly sufficient for the entire virilization of the male external genital organs. This is why females are cautioned not to handle drugs such as 5a-reducatse inhibitors/ DHT reducers such as finasteride or dutestaride while pregnant. However, DHT is not considered to be anabolic because it is not very active in skeletal muscle (it would be if it weren't deactivated by 3alpha-hydroxysteroid dehydrogenase). On the other side of the coin, testosterone is highly anabolic in this regard, being responsible, along with other various hormones and growth factors such as Growth Hormone, IGF, etc… for the growth and maintenance of muscle mass.

Remember that enzyme that deactivates DHT (3a-HSD)? Well, just because DHT is not anabolic per se in muscle tissue, doesn't mean that it can't be tweaked and modified to be anabolic. Indeed, most synthetic anabolic/androgenic steroids (AAS) were developed by tweaking either testosterone, DHT, or a version of testosterone which has had a slight modification to the 19^{th} carbon position (the last one being known as 19-nor steroids). These modifications to the base molecules of various AAS were made to meet the various and differing needs of clinical androgen deficiency. And, of course, we (yes, you and I) can use them to meet our body transformation goals.

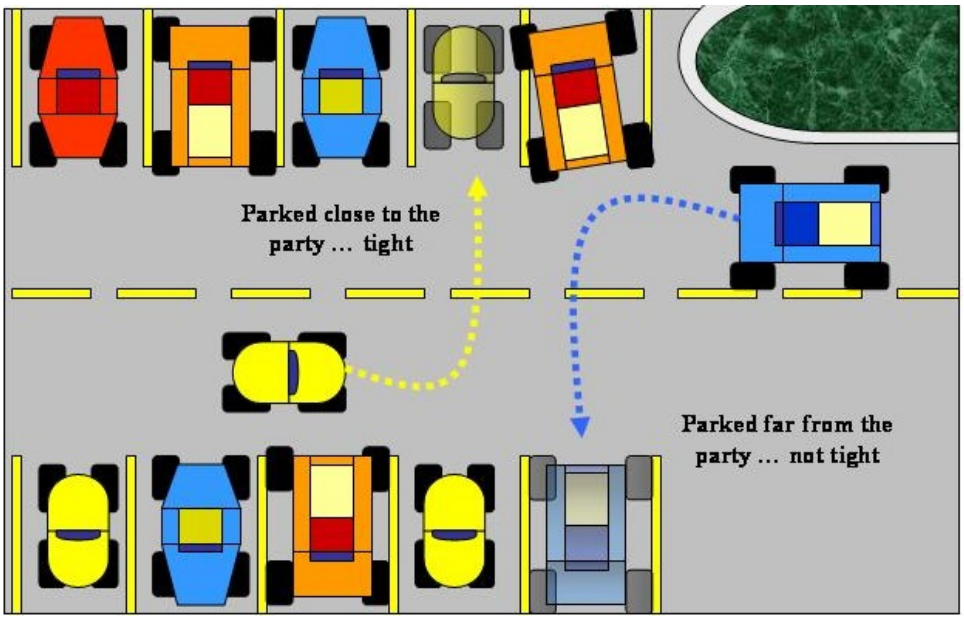
The various modifications made to androgens make them differ in their anabolic/androgenic potency and ratio, as well as giving some of them unique characteristics with regards to other areas. The 19-nor family, for example are all progestins (i.e. they stimulate the progesterone receptor). This makes them immunostimulating and typically helps them soothe aching joints. Some of the DHT derived steroids, on the other hand will produce a uniquely "dry" look to the physique, and this is because they possess some anti-estrogenic and anti-progestenic abilities. As you may suspect, this could actually make joints ache, in contrast to the soothing capabilities of the 19-

nor family. Some steroids in the testosterone family of derivations, such as methyltestosterone and fluoxymesterone are only relatively androgenic and don't produce much actual muscle gain (despite their very high anabolic ratings) and they are the ones typically indicated for both male and female androgen replacement therapy; while others like the DHT-derived oxandrolone are highly anabolic and produce very little in the way of androgenic effects. So what we have in our arsenal of anabolics is a wide range of varying effects and potencies, as well as special properties- all of which we will exploit in our quest for body transformation (if the chemically enhanced route is one you are going to pursue).

There have been literally hundreds of catalogued synthetic AAS that have been developed throughout the years, although their widely varying modes of action are not completely understood. Surprisingly, although we've been studying the human body for two millennia's, this also holds for the naturally occurring androgens as well- testosterone and DHT. Androgens are able to exert at least some of their actions through binding to the Androgen Receptor (AR) and some of them quite independently of the AR. The androgen attaches to a receptor, forms a homodimer with another Androgen/AR pair, and travels to the cell nucleus, initiates a process known as gene transcription, then travels back to the cell membrane.

You still with me? Basically, we need to think of this like going to a party, alright? Let's think of the androgen as a car, and the receptor as a parking space, ok? Once the car is parked, the people can get out, go inside to the party, and do their thing. At some point, later on in the night (or the early morning, if you're like me), the people leave and go back to where they came from. Got it?

Binding affinity (i.e. how tightly a particular androgen actually "attaches" to the androgen receptor- or how well the "car" fits in the parking space) is one factor in explaining the differing effects of various androgens. Some androgens bind very tightly and others don't. Some cars will be able to fit into very tight parking spots outside the party, while others are parked a block away. Clearly (or at least usually), the cars parked more tightly, and closer to the party…are more efficient.



This type of androgen action on various target cells, as I said previously, remains only partially understood. Originally it was believed that androgens exerted their various and differing effects only through what is known as a cytosolic androgen receptor present, which was located only in sex-dependent tissues of the body. However, now we know that things are actually much more complex. There are actions exerted b y androgens known as direct (or genomic, i.e. requiring gene transcription) as well as effects characterized as indirect (or non-genomic). Both types of effects have furthermore been uncovered in virtually every tissue of the human body. Androgen receptors have also been localized and characterized in many tissues previously not considered androgen sensitive. Now we know that androgen receptors are present in both two differing parts of the cell; the cytosolic as well as nuclear cellular compartments. So how does all of this factor into body transformation?

Well, we need to manipulate these hormones and have the body receive the messages we want it to receive, not the ones it has been receiving all along. If the body continues to maintain the same levels of testosterone, the same levels of Growth Hormone, and the same level of thyroid activity, then the body will maintain the same look that it has had previously. We're trying to transform the body here, not maintain it. And as Christian said in the first chapter, there are many reasons for wanting to change the look of your body. But we want it to function well also, as he and I both come from athletic

backgrounds…and manipulating hormones is only one piece of the body transformation puzzle. But we need to understand what we're manipulating first, as I told you, the changes will occur on a cellular level before you start to notice them in the mirror. So lets get back to androgens, and continue figuring out what they do, ok?

Now where was I? Oh…direct and indirect actions of androgens. Now that you have a better understanding of those 2 types of androgen action, I'll finish up with androgens and the HPTA. Hold on because we're almost done…Now, although androgens possess both genomic (direct) and non-genomic (indirect) actions, we typically see that the majority of their actions is through direct activation of DNA transcription (this is the people at the party, remember?). This all takes place through AR stimulation which occurs, as you know, by interaction with the androgen. Although the AR is generally thought to reside primarily in the cytoplasm of the cell, there is e androgen (ligand) diffuses into the cytoplasm and binds to the part of the receptor called, and eventually causes the transcription of RNA into mRNA.

This messenger RNA (mRNA) which was created from the DNA template of the gene then leaves the nucleus and enters the cytoplasm, where it serves as a template for the construction of a specific protein which will cause a particular effect within the body. Since this transcription involves genes, it is (obviously) a genomic effect.

An example of a non-genomic action of androgen action would be the increased aggression that users often experience (almost) immediately upon taking methyltestosterone, fluoxymesterone, or mibilerone.

Interestingly, (and oddly) androgens may also act indirectly on cells without the presence of an AR. In this case, it may be that androgens might act as mediators of secondary transcription factors, either acting in the regulation both autocrine and paracrine mediators of gene expression or that they may (either instead or in addition) influence the secretion of various other hormones that in turn mediate androgen effects in distant tissues. Some of these effects may also be the result of some (plasma protein bound) androgen interaction with other extracellular receptors.

Finally, the various structures of our androgen responsive genes vary in such a way that some genes are apparently more easily activated by certain androgens, with particular structures, than by others with differing

structures. This could explain how/why there are divergent effects from various steroids as well.

Growth Hormone and Insulin-Like Growth Factor

Now, one of the ways androgens stimulate muscular growth is by stimulating the body to release Growth Hormone, which in turn causes the secretion of IGF-1 and other growth factors. Exercise also causes GH to be secreted by the body, as well as IGF-1.

Before Growth Hormone can be released, Growth Hormone Releasing Hormone (GHRH) and/or Somatostatin (SST) are released by the hypothalamus. Growth Hormone is usually secreted en masse and in rhythmic pulses while you are sleeping, as two specific peptides, GHRH and Somatostatin (SST), are alternately released. GHRH (Growth Hormone Releasing Hormone) is the one responsible for the Release of Growth Hormone. As the name implies, Growth Hormone plays a major role in, growth and metabolism- and of course body transformation. I feel that I should note that there are many factors influencing the production and release of GH from the hypothalamus; these include nutrition and exercise (Christian will tell you all about that

Interaction between androgens, GH as well as IGF-I, T3, and other hormones are responsible for your ability to either burn fat, build muscle (or both). GH stimulates hepatic IGF-I secretion and local production of growth plate IGF-I, and also exerts direct actions in the growth plate. Circulating T3 is derived from the thyroid gland and by enzymatic deiodination of T4 in liver and kidney, and this process aids growth hormone in exerting many of its effects. GH, IGF, and even thyroid hormones all combine with androgens to elicit the type of transformation we wish to elicit here.

GH can stimulate the body's cells to both increase in size, as well as undergo more rapid cell division. It also enhances the movement of amino acids through cell membranes and helps to increase the rate at which these cells convert these molecules into proteins. These effects have an anabolic (muscle building) effect in the human body.

And since we're talking about transforming our bodies here, it's important to note that GH has the ability to cause cells to decrease the rate at which they

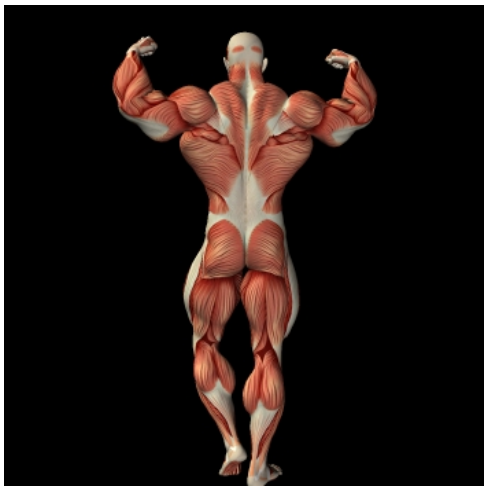
utilize carbohydrates, and concurrently increase the rate at which they use fats.

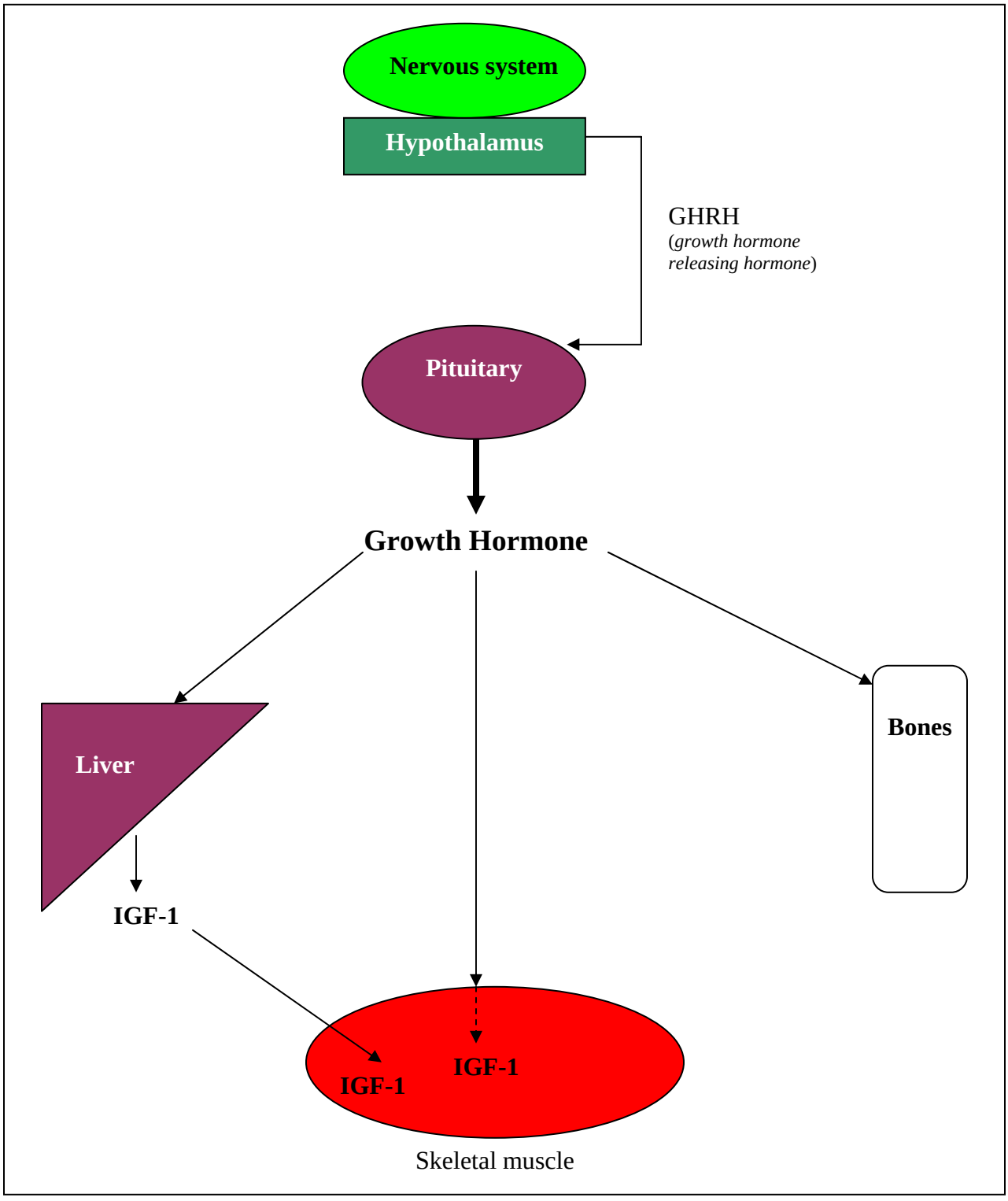
Additionally, since we're concerned with performance and not just looks, it's important to note that Growth Hormone can actually improve submaximal aerobic ability and also exerts a positive effect on erythropoeisis (bringing more oxygenated blood to your muscles).

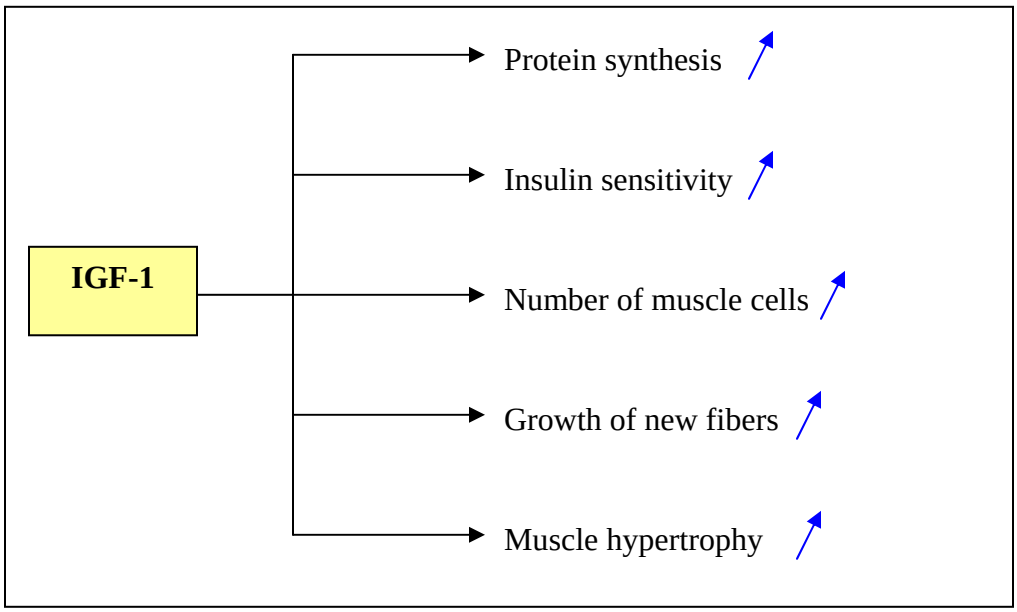
But Growth hormone isn't just another hormone that is both a fat burner and an anabolic (as we see with testosterone); it also has the ability to stimulate the production of cartilage. This may require the presence of a mediator substance, Somatomedin (IGF), which is released from the liver in response to GH. A majority of the anabolic effects of growth hormone are in fact mostly due to IGF-1 acting on its target cells, and not GH directly doing so. Of course, this is why it's called an indirect effect. GH, however, does not need to produce IGF to elongate bone tissue. And finally, GH causes the secretion of IGF and actually increases insulin resistance, IGF-1 increases insulin sensitivity. WE want to be more insulin sensitive, to burn more fat and use our foodstuffs more efficiently.

Injectable IGF-1

IGF-1, as was just noted is a hormone about the same size as insulin, or 70 amino acids and is highly anabolic, being released primarily in the liver (but also in peripheral tissues as well) following a growth hormone stimulus of some kind (or injection of GH). IGF-1, whether it is injected or produced naturally by your muscles, causes nitrogen retention and protein synthesis and muscle cell hyperplasia (increase in number of muscle cells) in addition to mitogenesis (the growth of new muscle fibers) and can also induce some skeletal muscle hypertrophy by activating what is known as the phosphatidylinositol 3-kinase (PI3K)-Akt pathway.




Nervous system
Hypothalamus
GHRH
(growth hormone releasing hormone)
Pituitary
Growth Hormone
Liver
Bones
IGF-1
IGF-1
IGF-1
Skeletal muscle



And this brings us to the thyroid gland.

The Thyroid Gland and Thyroid Hormones

GH can lower T3 levels, which is certainly something we don't want, as T3 levels are a very good gauge of how well your metabolism is functioning. In fact, when you diet, to prevent you from dropping too much weight, your thyroid will slow down to compensate for reduced calories, thus forcing you to drop them even further.

This is a defense mechanism against starvation, and is something your body has developed over the last several thousand years…since it's going to be an obstacle to transforming our bodies (if we don't take appropriate action), it bears going over how this gland functions.

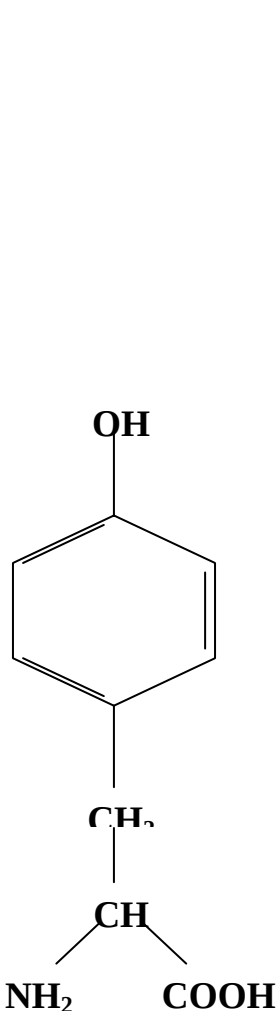
Your thyroid is a vascular structure with two lobes connected by a broad central isthmus. It's located around your larynx, wrapping around on both sides as well as in front of your trachea.

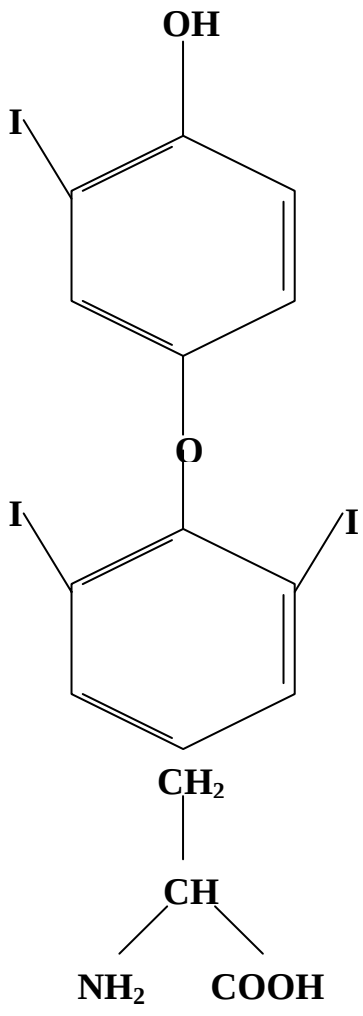
Of importance to us is that it secretes 3 hormones, only 2 of which will ones we can really fool around with. The first one is thyroxine (traiodothyronine) called T4; this is because its molecule contains 4 iodine atoms. The second

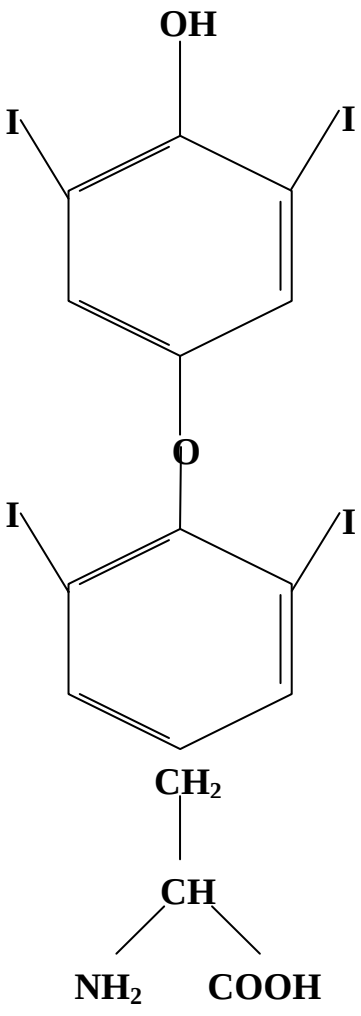
is called T3, or also called triiodothyronine. If you've been playing along at home, you have probably guessed that this one has 3 iodine atoms.

These hormones regulate the metabolism of carbohydrates and fats, as well as proteins. They serve to increase the rate at which cells release energy from carbs, enhance protein synthesis, and mobilize lipids (fats). Or they can be suppressed and serve to decrease that rate.

T3 is more physiologically active hormone, as T4 is converted into T3 which then serves to increase the metabolism. Eighty Percent of your body's T3 comes from this conversion of T4. Before that, thyroid stimulating hormone (TSH) (which is produced by the pituitary gland) controlled the secretion of T4 through release of something called thyrotropin releasing hormone (TRH), which is produced in the hypothalamus. As you suspected, there's another evolutionary catch. You see, the negative feedback loop that your body has for the HPTA is repeated with different enzymes and hormones with regards to thyroid function. In short, when your T3 levels go up, your TSH secretion is suppressed, and you will produce less T4 and ergo T3.







Tyrosine	Triiodothyronine (T_3) "Three iodine"	Traiodothyronine (T_4) "Four iodine"

This is important because if you have a low thyroid level, you will probably be tired and listless, as well as gain fat easily. On the other hand, a high thyroid level can make you energetic, and aid in burning fat because your metabolism will be optimal. So we clearly want a high level of T4 or T3 right? And yes, this is yet another hormone that Christian will be able to show you how to naturally manipulate…and I will show you how to do it the un-natural way. And of course, a high thyroid will produce a high body temperature (literally burning fat) and a low thyroid level, the opposite.

But, this isn't the only way to raise body temperature. You have a distant cousin of the temperature elevating thyroid gland in the short lived effects you experience from stimulation of your adrenoreceptors.

What am I talking about? I'm talking about the final piece of the puzzle…and one that typically gives the user the most instant gratification out of all the stuff I've covered so far: Beta and alpha 1 and 2 (or in some less important cases, the third type, or type 3 receptor) agonists and/or antagonists. These are the two types of adrenergic receptors, alpha and beta, and there are various sub-types of each.

The Adrenergic System

The most well known of the adrenoreceptors are the beta receptors. Beta receptors are embedded in the cell's outer phospholipid membrane, and are stimulated by all the really popular stimulants…ephedrine, clenbuterol, etc... These can further be divided into three subtypes 1, 2, & 3, (of which we are primarily concerned with types 1 & 2) while the alpha receptors are broken only into subtypes 1 & 2.

Alpha receptors differ from beta receptors in that they are activated at significantly lower catecholamine levels than are the beta receptors. A catecholamine is simply an organic compound that affects the sympathetic nervous system. For example, dopamine, norepinephrine and epinephrine are all catecholamines.

Anyway, activation of the alpha2 receptor inhibits the release of norepinepherine, a "fight or flight" hormone. These hormones differ a bit with regards to the sexes, and it may be the differences in regional distribution of alpha2 and the various beta receptors that is responsible for a large part of the gender differences in body fat storage. Regardless, we need

to know more about them in order to transform our bodies…and I'll tell you why.

You see, men have greater alpha2 density in abdominals as compared to women—and this contributes to our increased adipose storage there (while also providing a possible solution in it's reduction, as you'll see later) — however, the primary difference in body fat distribution between men and women, is actually caused by higher lower-body alpha2 activity in women, as well as by them having less beta receptors.

So what do beta receptors have to do with all this? Well, when you stimulate your beta receptors, it causes something called vasodilatation (increased blood flow). It also stimulates the breaking down of fatty acids into the blood stream for use as fuel (eventually)…and as I'm sure you can guess, the breaking down and transport of fatty acids to be used as fuel will cause a reduction in fat. Therefore, we can see that both beta 1 & 2 receptors have the ability to increase energy expenditure and free up body fat to be used as fuel. Also, when they are stimulated both Beta-1 adrenergic stimulation and Beta-2 adrenergic stimulation can also increase your body temperature a bit (just like your thyroid, remember?) by increasing heat production in the cell's powerhouse, the mitochondria, and also increase your basal metabolic rate, and decrease your appetite.

So when I noted that women have less of those receptors and more of a particular alpha type, this means that women will store fat in their hips and ass because they posses a higher alpha2 binding ability in lower body adipose than men, and have a pronounced decreased energy expenditure in gluteal obesity due to having less beta receptors in the area. Later on in the book, we'll learn how to stimulate the right beta and alpha receptors to elicit the ideal fat burning effect and rapidly transform our bodies from flab to fab.

Chapter 3

Energy systems work/Fat mobilization & oxidation

ENERGY SYSTEMS WORK (CARDIO)/FAT LOSS

The second part of our body transformation equation is minimizing body fat. It's one thing to have a muscular base, it's quite another to be able to show it to the world! Face it, you can have all the muscle mass in the world, if you have an inch of blubber covering your whole body you won't look good *nekkid.*

Shedding body fat to very low levels can actually make you look bigger. It's true. While the scale and measuring tape might tell you that you're technically getting "smaller", the fact that you are gaining muscle definition and separation creates the illusion of more size.

Take a quick look at the before and after pictures of Sébastien Cossette, a young bodybuilder I trained for his first competition in 2005. In the "before" pictures he is actually something like 15-20lbs heavier than in the "after" ones. However we will all agree that he looks much bigger after his transformation.

Still not convinced? Here are a few more examples. Below you can see two-

times Olympian Pascal Caron, who looks very muscular. He has what most would define as the perfect "beach body". Many people when they see him think that he is at least 190lbs (on 5'8") yet he barely tips the scales at 165lbs! But since he carries less than 6% body fat year round, he looks much bigger than he

really is (btw, he has bench pressed 425lbs and 225lbs x 33 reps at that body weight).

Then you have Christiane Lamy who is a competitive natural bodybuilder and trainer/nutritionist (as well as CT's significant other).

In the "casual" shots she is actually around 10-15lbs heavier than in the contest shape pictures.

So as you can see the amount of body fat covering your muscles can make a huge difference on how muscular and large you look (and face it, it's about looking good; nobody goes to the beach with a measuring tape or a scale to prove how big they are).

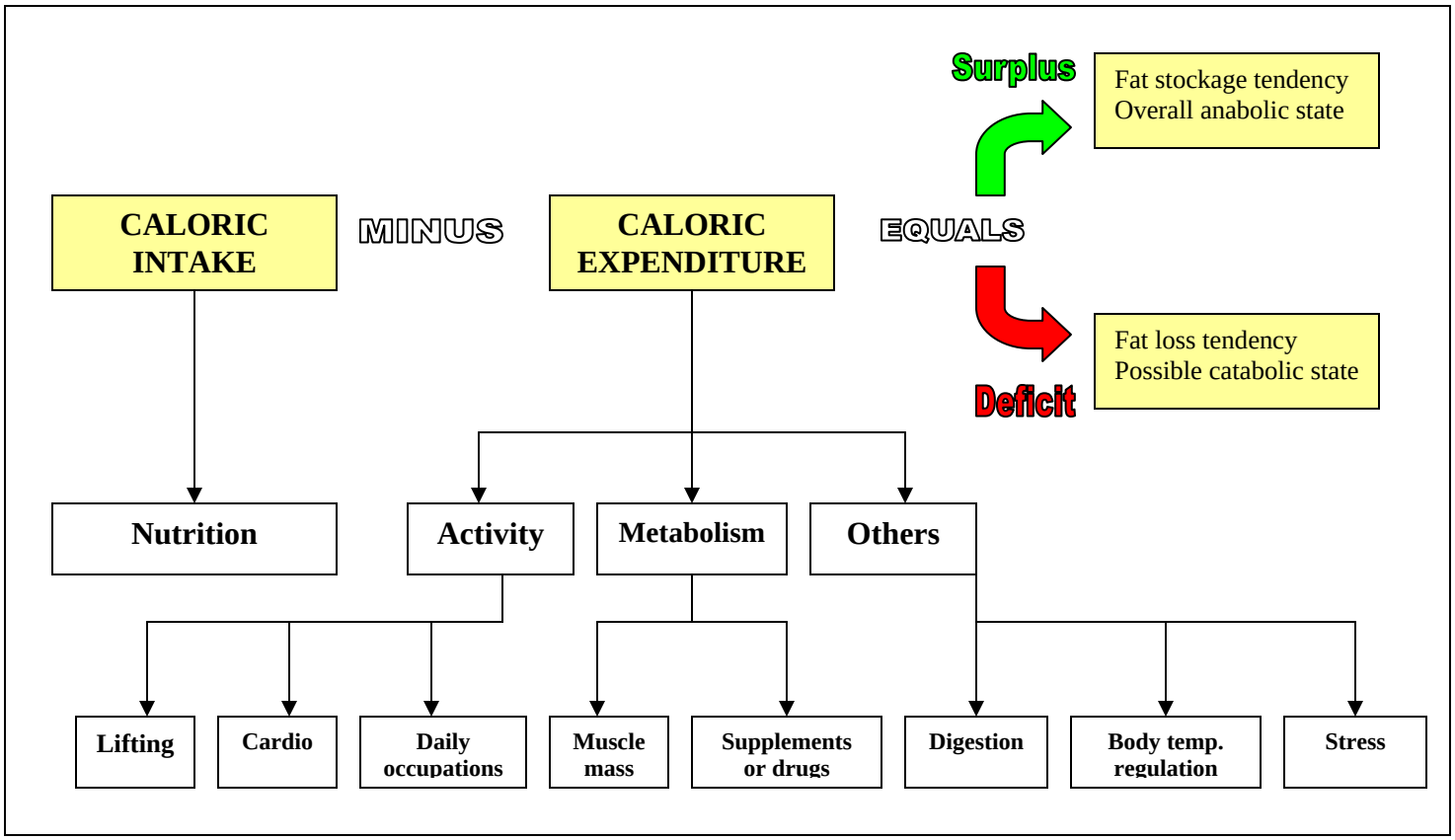
Now that we've established the importance of minimizing body fat (if you want to look good) we'll briefly tackle the first part of the fat loss equation: energy systems work, also known as "cardio".

LET'S TALK CARDIO … MAXIMUM INFO, MINIMAL WORDS!

Let's face it, writing and reading about cardio is about as boring as doing it! As bodybuilders or lifting enthusiasts we love everything related to hoisting weights, we could read or talk about it all day. But when it comes to cardio, if you're like me, you tend to skip right through those chapters … right? Well, don't do it this time. I'll take it easy on you and will only give you the Cliff notes version. But take the time to assimilate the info because if you want to get very lean and muscular you'll probably have to become friend

with the treadmill, stepmill, stationary bike or other such instruments of torture.

When it comes to losing body fat, cardio can either be used as an indirect fat loss agent (by increasing caloric expenditure) or as a direct fat loss agent (by increasing fat mobilization and oxidation). We will first talk about the indirect effect as it's the simplest one. Let's take a look at the following figure:



This figure shows how the difference in caloric intake vs. caloric expenditure can stimulates fat loss or fat gain. Basically if you "burn" more calories than you ingest you'll have to dip into your energy stores (either fat stores, glycogen stores or, God forbid, our amino acid reserves) to provide the necessary energy to function. This is where energy system work can have an indirect effect: by increasing the amount of calories we "burn" each day. In that regard it doesn't matter if the type of "cardio" we perform relies on fat or glucose/glycogen for energy; as long as it helps create a caloric deficit, it will help stimulate fat loss.

Without going into too much details, note that strength training also have a profound impact on caloric expenditure. First it directly increases it (you need to burn calories to fuel your workouts) but it also raise caloric expenditure indirectly by increasing muscle mass. The more muscle you have, the higher your metabolism will be.

Cardio can also have a direct impact on fat loss by:

a) increasing fat mobilization (pulling out fatty acids stored as body fat to fuel the activity)

b) increasing fat oxidation (using the mobilized fatty acids to produce physical work)

In regard to fat mobilization, take note that the more intense the effort (e.g. interval training, sprinting) the more you'll rely on glucose/glycogen for fuel (so the less fat you'll directly use). On the other hand, the more intense the work is, the more calories you use per minute. So if you go too low on the intensity scale even if most of the energy comes from fat oxidation, the total amount of fat burned will not be significant. The following table shows where the fuel comes from when training (cardio) at various intensities of effort:

Intensity of energy systems work and fuel use			
Intensity (% of maximum heart rate)	**% Glucose**	**% Fat**	**Energetic dominance**
65 – 70	40	60	Fat
70 – 75	50	50	Fat and glucose
75 – 80	65	35	Glucose
80 – 85	80	20	Glucose
85 – 90	90	10	Glucose
90 – 95	95	5	Glucose
100	100	0	Glucose

So as you can see, to directly stimulate fat use the ideal training intensity is between 65 and 70% of your maximum heart rate. Training below that range will increase the proportion of fat use, but the caloric expenditure will be too low to have a significant impact on fat loss (unless you perform the activity for a very, very long period of time).

LONG AND SLOW OR SHORT AND HARD?

There are several types of “cardio” you can perform on your way to leanness. All of these can normally be grouped into two camps:

1. Long and slow: low intensity of work (65-70%) for a relatively long period of time (30-45 minutes).

2. Short and hard: high intensity of work (75-90%) for shorter periods of time or intervals. GPP work such as sled dragging, sledgehammer striking, sandbag carrying can also be included in this camp.

Both types will help you lose fat but not via the exact same action. The long and slow techniques will favor direct fat oxidation over the total caloric expenditure increase while the short and hard techniques will act primarily via an increase in total energy expenditure rather than on direct fat mobilization.

So which one is better? There is no “best” way to perform energy system work. It all depends on the type of diet and training program you are using as well as some genetic factors. Without going into too much detail, the following guidelines give you the 411 on what type of technique to use depending on some factors:

- If you are on a very restrictive diet you should avoid short and hard cardio work because you are already causing a severe caloric deficit, dipping too low could lead to muscle loss.

- If you are on a low-carbs diet you should also avoid short and hard sessions because these rely heavily on glycogen for energy. When you don’t consume a lot of carbs your body will not be able to store a lot of glycogen and the little that you have will be needed to fuel your strength training workouts. Performing short and hard cardio work while in a glycogen-depleted state also increases the risk of muscle catabolism as the body will tend to breakdown muscle tissue into amino acids to produce new glucose from them.

- If you are on a moderate diet providing sufficient amounts of carbohydrates performing short and hard sessions will be best as it will allow you to create more of a caloric deficit.

- If you wish to quickly deplete your glycogen stores (if you are using a cyclical low-carbs diet and wish to deplete your glycogen stores after a carb-up to get back into a fat burning state as fast as possible) you can perform a short and hard session.

- Earlier in a fat loss/body transformation program it is possible to use a greater proportion of short and hard sessions. But as you get down to very low levels of body fat you should switch to more low intensity work because when you reach a very low level of body fat you tend to feel more lethargic and have less energy. As such low intensity cardio work is mentally easier to perform and will allow for a greater program compliancy.

EXAMPLES OF ENERGY SYSTEMS TECHNIQUES

There really is no need to explain long and slow cardio work as it's pretty straight-forward: train for 30-45 minutes at an intensity level of 65-70% of your maximum heart rate. You can use the treadmill, stepmill, stationary bike, recumbent bike, x-vest walking, etc. as long as you are in the proper intensity and duration range you'll be fine.

But what about short and hard techniques? Well, here are a few of my favorites:

400-Meter Running

I discovered the high fat-burning potency of 400 meter sprints without really looking for it. I use a lot of 400m running with my hockey players, mostly because it develops the energy system they require the most during a game. However, I quickly noticed how lean they were getting shortly after starting 400m runs. They were not only getting leaner but stronger!

I then experimented with the 400m for fat-loss purposes and found time after time how efficacious it truly was. To this day I still believe that few things can match up with 400m runs for fat loss.

For mathematically impaired Americans who never ran track in high school, 400 meters is one lap around a standard track.

I recommend using 400-meter sprints once per week at first as they're very hard work! However, some of my athletes use up to three sessions per week, two being the norm.

Interval Running

Interval running is another great way of burning body fat without jeopardizing your efforts to gain muscle and strength. It combines low-intensity and high-intensity work for a very large fat-burning effect. Basically you'll alternate between slow-pace running (slow jog) and fast-pace running (sprint).

This form of training is a bit less intense and stressful than 400-meter sprints. It can be started at a frequency of twice per week, building-up to three or four times per week for maximum fat loss. Stay with two weekly sessions if you're trying to build muscle.

Interval Build-Up Running (IBUR)

This is my personal favorite fat-burning strategy. IBUR is based on many of the same principles as regular interval training, but with each cycle (or each interval), the duration of the sprint and jog phases increase in length.

Here's an example:

Interval portion	Speed	Duration
1a	Jog	30 seconds
1b	Sprint	20 seconds
2a	Jog	60 seconds
2b	Sprint	30 seconds
3a	Jog	90 seconds
3b	Sprint	40 seconds
4a	Jog	120 seconds
4b	Sprint	50 seconds
5a	Jog	150 seconds
5c	Sprint	60 seconds
6a	Jog	180 seconds
6b	Sprint	70 seconds
Total		**15 minutes**

CARDIO: WHEN TO DO IT?

There is a big debate regarding the optimal time to perform cardio to shed a maximum of fat. The biggest aspect of that debates is in regard to morning (upon waking up) cardio. Some say that it can drastically increase the amount of fat you use while others state that it can actually be quite catabolic especially if performed in a completely fasted state. So, who's right?

First, let's look at the pros of fasted morning cardio:

Pro #1: Morning cardio could potentially increase the amount of free fatty acids (FFA) used up as fuel. This is not due to performing cardio in a glycogen depleted state though, since this isn't happening here. Unless you go to sleep in an already depleted state, you won't wake up in such a state.

During sleep almost 100% of the energy expended comes from fatty acids because of the extremely low intensity of the activity and because of the natural hGH burst which occurs 30 minutes or so after you enter the deep sleep phase (hGH increases fatty acid mobilization).

So you really aren't depleting your intramuscular glycogen stores during the night. You might be tapping your hepatic glycogen stores slightly, but even then that can't account for much since at best this contains maybe 200-300kcals of stored energy. So it's a fallacy to believe that when you wake up your muscles are emptied of their glycogen.

However, since fat is the primary energy source during your sleeping period, chances are that upon waking you have a greater amount of free fatty acids available. Since you don't have to mobilize them (they're already freed up) they become easier to oxidize for fuel and are thus more readily used up during morning cardio.

Pro #2: Fasted morning cardio could also potentially be glycogen-sparing for the same reason as stated above: the greater availability of FFAs reduces the reliance of glycogen for fuel during low-intensity energy systems work.

Pro #3: Fasted morning cardio could lead to an improved fatty acid mobilization during exercise and increase insulin sensitivity afterwards. This might be true of exercise at a low level of intensity (50-75% of max VO2)

since this decreases insulin levels via the stimulation of adrenergic receptors. A lower insulin level can increase fatty acid mobilization.

However, a higher intensity of work (above 75% of max VO2) can actually have the opposite effect. So in that regard a moderate or even low intensity of work would seem to be superior in the morning as far as fat mobilization goes. (Galbo, 1983, Poortmans et Boiseau, 2003)

To counterbalance the reduction in insulin production during exercise at a moderate intensity, insulin sensitivity is increased, especially in the muscle. Since insulin sensitivity is already high in the fasted state, morning cardio could allow you to significantly increase glycogen storage and reduce the storage of carbohydrates as body fat.

So in that regard, morning cardio in a fasted state could increase fat loss during a cutting period and allow a bodybuilder in a bulking phase to significantly increase his carb intake without gaining more fat.

However there aren’t just bright aspects to fasted morning cardio. If fasted state cardio could potentially increase fat mobilization, it's also potentially more catabolic to muscle tissue. This is due to an increase in cortisol production during fasted exercise. Since cortisol levels are already high in the morning, this could lead to more muscle wasting than during non-fasted cardio.

In fact, cortisol levels could increase muscle breakdown and the use of amino acids as an energy source. This is especially true if high-intensity energy systems work is performed. If an individual uses lower intensity (around 60-65% of maximum heart rate), the need for glucose and cortisol release are both reduced and thus the situation becomes less catabolic.

I personally do believe in the efficacy of morning cardio, but not in a completely fasted state. For optimal results I prefer to ingest a small amount of amino acids approximately 15-30 minutes before the cardio session. A mix of 5g of BCAA, 5g of glutamine, and 5g of essential amino acids would do the trick in preventing any unwanted muscle breakdown.

However, I'll also play devil's advocate and say that morning cardio won't be drastically more effective than post-workout or afternoon cardio work when it comes to fat loss.

Pre-strength workout cardio

If one chooses not to go the morning cardio route another option is to perform the sessions along with the strength training workouts. However this poses another conundrum: should we perform our cardio before or after our strength training work?

Some peoples claim that performing the cardio first will provide for a good warm-up and thus reduce the risk of injuries during the session and even improve performance by increasing body temperature. This is actually true, and a short 5-10 minutes warm-up before hitting the weights is certainly a good idea in most cases; it really doesn't apply to a full blown fat-loss cardio session. While a short, low intensity warm-up can help with your performance slaving on the treadmill for 45 minutes or hitting it hard with intervals is a sure way to drain yourself and as a result it will end up sapping your much needed strength thus reducing the efficacy of your lifting workout. So if you decide to perform your cardio work along with your lifting session it is much better to lift first and run second.

The last option is to perform your cardio on a non-lifting day. This can be adequate if a low-intensity approach is used as it will not reduce recovery capacities (it might actually help you recover faster). However if you decide to use a short and hard approach, it might not be the best option (to do it on your days off) especially if you are hitting the gym 4-5 times per week. A high intensity cardio session is just about as stressful as a lifting workout, so you basically are not giving your body any break. While this may be okay if fat loss is your only concern, it really isn't right if you are interested in a body transformation because muscle is built while you are recovering.

CONCLUSION

To get to a very low level of body fat, most peoples will need to perform cardio work. The type of cardio selected will depend on the type of diet and training program used. And while there will not be a huge difference in progress depending on when you perform you sessions, the morning and post-lifting windows seem to offer the best options in most cases.

Chapter 4

Chemically-enhanced fat loss: the adrenergic system

In the second chapter I told you that we'd be going over something called the adrenergic system. And since this chapter comes after the one on cardio, I'm thinking that you already suspect that it somehow ties into that. Well, the compounds I'm going to discuss in this chapter are going to make all of the cardio you do on Christians' program more effective. In other words, these drugs are going to raise your metabolic rate so 20 minutes of cardio gives you the same effect as a much longer session.

If you don't remember, now might be a good time to brush up on what I said previously in the chapter on the adrenergic system (Chapter 2, near the end), because that information is going to be very relevant here, when I cover some drugs which are agonists to the beta adrenergic system. If you'll recall (or if you cheat and go back and take a look at chapter 2), you remember something about the adrenergic receptors, and that stimulating them causes an increase in metabolic rate. Now, if you're paying attention, you'll probably be realizing that this increase in metabolic rate will allow you to burn calories (and body fat) around the clock, but would make your cardio more effective as well. So here we are, after the cardio chapter, and I'm going to let you in on some compounds that will help you burn more body fat during your cardio.

The first thing we'll do is go over Ephedrine, which is the most popular thermogenic currently available on the market.

Ephedrine is a stimulant, which works primarily on the beta-adrenergic receptors, and belongs to the sympathomimetics family. It is both an alpha (weak) and beta (strong) adrenergic, compound. Ephedrine causes the body to release norepinephrine, which is biologically and chemically similar to adrenaline, your primary fight or flight hormone. Adrenaline, incidentally, is an endogenous alpha & beta agonist. This means when you take ephedrine, your body temperature will rise and your heart rate will go up (similar to what happens when you experience a surge of adrenaline). This response is going to be typical of most of the compounds discussed in this chapter. Elevated heart rate (increased cardiac output) indicates more fuel being

burned for energy, and the beta-receptor- stimulation also carries with it the benefit of releasing more free fatty acids into the blood to be burned up as energy. That'll help you shed some of your body fat, and get you along your way to a body transformation…ephedrine is probably the compound that produces the quickest and most noticeable results in the least amount of time. You'll feel the elevation in body temperature and heart rate within half an hour of taking it.

How ephedrine helps stimulate fat loss

stimulates

Release of norepinephrine

binds to

Adrenergic receptors (beta-1, 2 and 3)

activates

Adenylate cyclase

Increases

cAMP levels

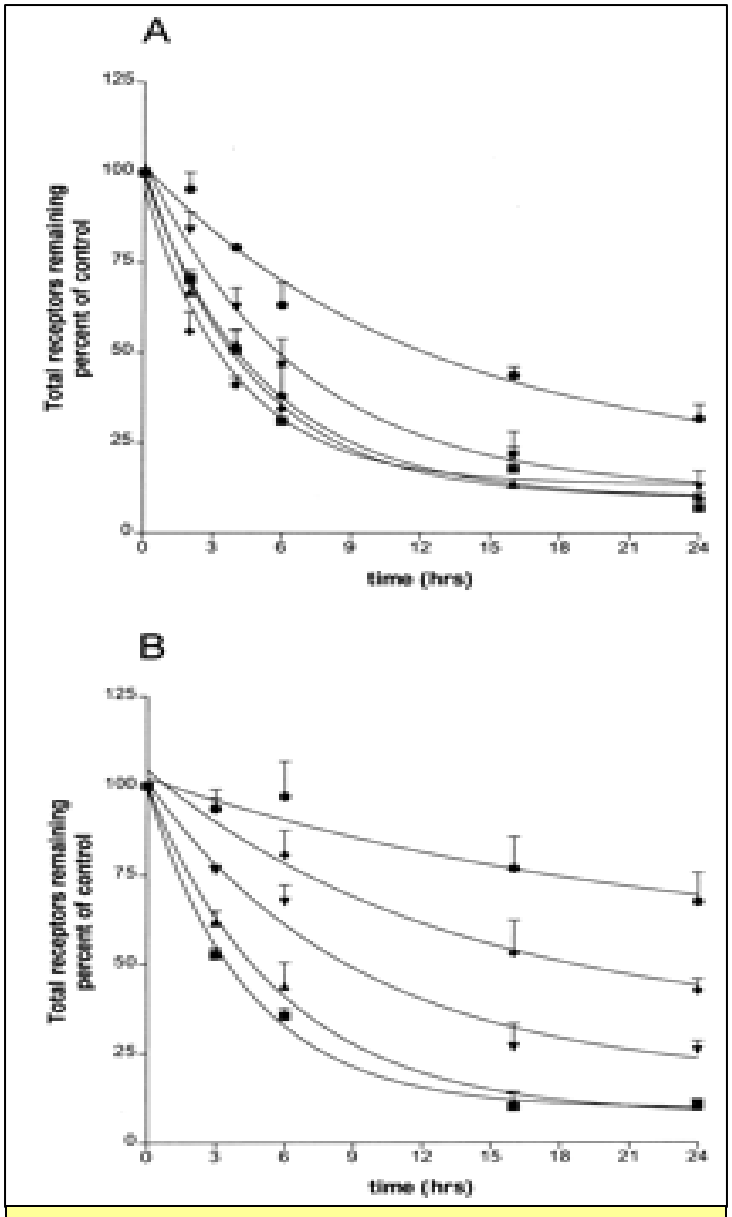
phosphorylates

Hormone sensitive lipase

stimulates

Release of stored fatty acids

Unfortunately, one thing you won't feel immediately is the huge receptor downgrade you'll experience with ephedrine. Your beta receptors are the "parking spaces" that different adrenergic chemicals "park" in. When you keep parking "cars" in the spot, eventually you wear it down a bit. When you use ephedrine, the receptors downgrade very quickly, and you notice a diminished effect over time. This is called receptor down-regulation. Stimulants are notorious for downgrading receptors, and ephedrine is one of the worst offenders.

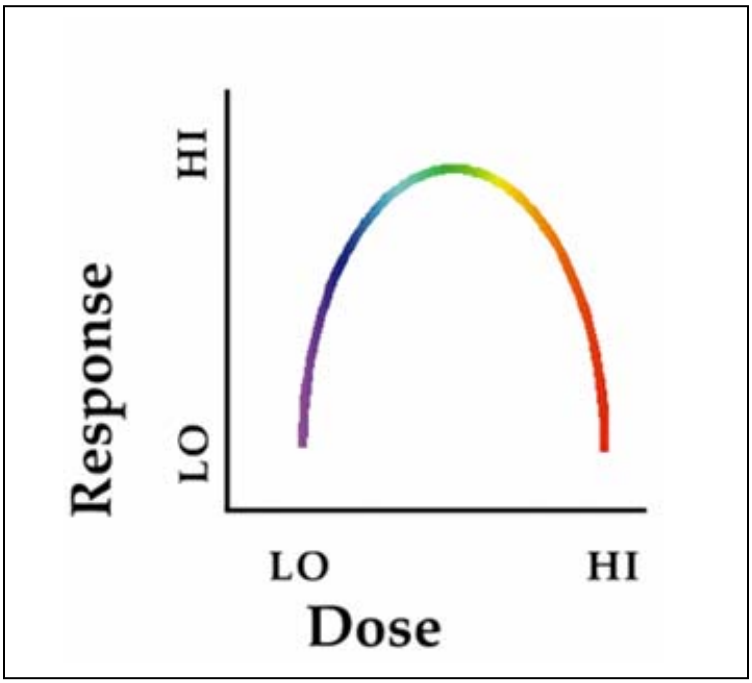


The solid circles in this graph represent ephedrine

Its stimulant p skeletal muscle as well d take longer to fatigue. It also slows gastric emptying which is very good on a diet

because it keeps you from being hungry; and stimulation of the beta receptors will also keep your appetite somewhat at bay, in and of itself.

However, as with anything else, it's possible to overdo a good thing. Stimulant provided strength and coordination (as well as focus) follows an "inverted U-shaped response curve," meaning that you take a certain amount and your physical and mental abilities peak at that (optimal) dose, and decline when you go over it, and rise as you approach it.

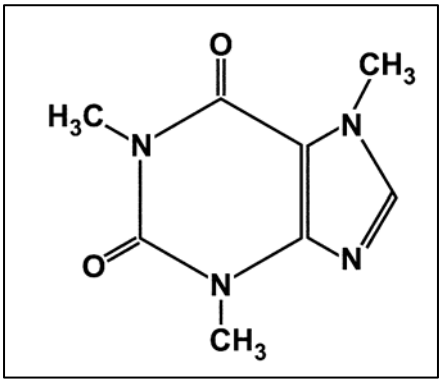


(Picture unapologetically stolen from Chris Shugart, assistant editor of T-nation.com)

It also helps many people focus in the gym, similar to caffeine, but with the notable difference that you aren't going to be able to write or perform complex or creative mental tasks very well. This is due to its ability to stimulate the beta receptors, and this unfortunately results in a subsequent (temporary) cognitive impairment, though this is really only noticeable when performing complex mental tasks.

Caffeine is another compound we can use in our body transformation, since it can also activate the sympathetic nervous system, but due to its adenosine receptor antagonist action, it's actually going to cause an increase in cognitive function. You see, while ephedrine relies on its ability to agonize your beta-receptors to cause its stimulatory effects, caffeine actually depends on its ability to reduce adenosine transmission in the brain to achieve bodily

stimulation. So, caffeine will improve cognitive function and ephedrine won't, although they're both stimulants.



Caffeine (chemically known as 1, 3, 7-trimethylxanthine) is another sympathomimetic, and a member of the xanthine family, and it’s over 99% orally bioavailable, which is an astonishing number. This means that you get quite a bit of bang for your buck when you buy a cup of coffee or some caffeine pills.

Caffeine will (as we also saw with ephedrine) raise your body temperature a bit, and also increase your ability to focus and concentrate on simple to complex tasks. Although it is not as potent as ephedrine, it’s got both (slight) strength (neuromuscular) enhancing effects as well as endurance enhancing abilities.

This is also why ephedrine is a better fat burner than caffeine. Beta receptors are found *en masse* in skeletal tissue, while Adenosine A(1) and A(2A) receptors are expressed in the basal ganglia, a nice little mass of gray matter that lies embedded within the white matter near the base of each cerebral hemisphere of the brain.

Specifically, caffeine acts on so-called "projection neurons" located in the striatum part of the basal ganglia, which is thought of as the main receiving area of the basal ganglia. It's this interaction with adenosine receptors in this area that makes caffeine a good choice for improving cognitive function. However, the action occurring primarily within skeletal muscle tissue is how we burn our fat, and thus ephedrine is a better choice than caffeine for that purpose.

Caffeine can also activate the sympathetic nervous system, but due to its adenosine receptor antagonist action, it's actually going to cause an increase in cognitive function. You see, while ephedrine relies on its ability to agonize your beta-receptors to cause its stimulatory effects, caffeine actually depends on its ability to reduce adenosine transmission in the brain to

achieve bodily stimulation. So, caffeine will improve cognitive function and ephedrine won't, although they're both stimulants.

The typically touted stack of ephedrine (25-50mg), caffeine (200-300mg) and aspirin (100mg) has been shown to be extremely synergistic for fat loss. In this combination, the ephedrine and caffeine both act as notable and synergistic thermogenic stimulants, while the added aspirin does its part to inhibit lipogenesis (the formation of new fat) by extending the duration of their effect and additionally blocking the incorporation of acetate into fatty acids; the best synergistic ratio is found when the ephedrine/caffeine ratio is 1:10.

One of the weirdest drugs in this category, for me personally, is Clenbuterol. I happened to write a fairly long and in depth write up about it, which happened to be posted widely on the internet. At this point, I began really getting some interesting e-mails from people, telling me all about their Clenbuterol use, and asking for advice. So now, I'm quite familiar with this drug in a very real sense (having also used it), because I've simply discussed it with hundreds of athletes. So this drug is kind of odd for me personally, because at the point where I'd written the article on Clen, I'd never really received such an enormous amount of feedback on a single compound, nor had the opportunity to speak to so many athletes about their use of any one drug.

Clenbuterol (Clen) is both a selective beta-2 agonist, and a bronchodilator. What this means, is that it stimulates your beta-2 receptors, as well as dilating (opening) your bronchial tubes). However, the really important thing here is that clenbuterol is a *selective* beta-2 agonist, meaning it has next to no carryover onto the other beta receptors, although it does have the ability to reduce bronchial constriction, and this is why it is used as an asthma medication.

When you take clenbuterol, it acts on your beta-2 receptors to increase your body temperature via increased heat production in the mitochondria. It also increases your basal metabolic rate, and decreases your appetite; Beta-2 agonists directly stimulate fat cells and increase fat loss. This all makes clen a highly effective repartitioning agent, and even used alone, it can positively alter your (FFM) to fat mass (FM) ratio. Most of the compounds discussed in this chapter are similar in this respect: they offer nearly instant gratification.

Clenbuterol also has the widely disputed ability (or does it?) to aid in muscle gain and prevent muscle loss, through beta-2 receptor stimulation. Although this has been widely proven in multiple animal studies, studies in humans have been inconsistent at best- or haven't examined this potential at all. This is largely due to the FDA, and the fact that they aren't huge fans of this compound- hence studies on it performed within North America, on humans, are rare.

You see, clenbuterol was never actually approved by the FDA for use in the United States of America, though at the time of this writing, you can easily purchase it off the internet through a research chemical company. However, the reason clen was never approved is because it has an inordinately long half life and slow rate of elimination from the body. Clenbuterol concentrations in the body decline with a ½ life equivalent to 7-9.2hours and then again up to as much as 35-36 hours later. The FDA doesn't like this and they prefer medications like clen to be in and out of the body as quickly as possible. This is the reason Albuterol has been approved as an asthma remedy in the US of A, while clenbuterol has not. Although the half life and rate of elimination may be interesting, it doesn't really help us that much when we're deciding how many times each day clen should be taken. We're not taking it every 36 hours, or every ten- so 3 x a day dosing are appropriate. This means if we're taking 3 clenbuterol tablets, we'd be splitting those doses into 3 separate times throughout the day. Taking clen in this manner keeps its stimulating effects from becoming overpowering, and causing anxiety, the shakes, or insomnia.

As previously stated, clenbuterol can, cause insomnia (and as with all stimulants, can cause anxiety or restlessness). I'm much more comfortable recommending separated doses.

My personal dosing protocol is the same for both men and women, as long as both are healthy with no history of high blood pressure. Basically, I think a good starting point is to take 20mcgs upon rising, and then repeat that same dose again later in the day, and finally once again in that day…if side effects are tolerable. Thus, I start with 20mcgs, and then repeat that dose 2 more times that same day if I can tolerate it (usually I can) I can then start increasing the dose gradually. Although, I wouldn't work my way up to more than 200mcg/day, and probably nowhere near that...60-120mcg/day is an average dose. Typically, if you can keep your blood pressure under 140/90, while on Clen, you're in a safe area. If you go over that, lower the dose.

As we saw with ephedrine, there exists the problem of receptor downgrade. To figure out (roughly) when your clen is starting to become less effective, take your body temperature, upon rising, for the week before you start taking your Clen, and then monitor it (again, as soon as you wake up) throughout your regimen. As it returns to the level it was at before you began taking the drug, you'll need to start taking either Benadryl or Ketotifen, either of which will help upregulate your beta receptors.

As with any stimulant, there are possible pulmonary, cardiac and central nervous system issues to consider. It's always a good idea to get a physical before attempting to incorporate any stimulants into your supplement protocol. Clenbuterol has such a long lasting effect in the body that it's an especially good idea to make sure your blood pressure and cardiovascular system is in good shape before considering its use.

There is, however, a shorter acting "type" of clen-like medication, and it's called Albuterol. Essentially, it's this stuff is clenbuterol's shorter acting cousin. All of the beta-2 stimulating capabilities of clenbuterol are also found in Albuterol- meaning it has all of the effects of clenbuterol, but is eliminated more quickly by the body. This could be a contributing factor in a lot of the studies I've seen on Albuterol, which have shown it to be a bit more useful to athletes than clen may be; it would seem (somehow) increase stamina (where clen has been shown to reduce it in some studies), as well as strength.

One final caution with regards to beta-2 adrenergic agents is that although they are stimulants, you may not feel "stimulated" when you first take them. That's ok. Don't take more. I can't tell you how many athletes took their first dose of clen, didn't feel anything, then took another 2 doses immediately- and then couldn't stop shaking. Gradually build up, and don't worry about "feeling" the effects- typically you will, but don't take more if you do.

Now, the first few compounds I touched on were all oral medications (for the most part). The next two have more interesting delivery methods. The first of concern to us is yohimbe. Yohimbe is a naturally occurring alpha-2 antagonist, meaning that it promotes sympathetic activity by central as well as peripheral mechanisms. Although unlike the other fat burners we've looked at, yohimbe, at moderately high doses, does not typically raise heart rate, increase blood pressure, or induce anxiety.

When you take this yohimbe prior to cardiovascular exercise, it potentially boosts fat burning for the entire duration of, and briefly following, your cardio (or weight training). I typically like to use it before my cardio work, because it would appear that yohimbe can potentially lower the respiratory quotient during and following exercise, thus promoting more fat loss during cardiovascular work. It has been speculated, and actually may be synergistic with Caffeine.

Now, I know I had mentioned that the next two compounds have potentially interesting methods of delivery, and here's what I meant. In lieu of taking yohimbe orally, you can actually inject tiny amounts of the prescription yohimbe into lower body fat stores (where alpha receptors are usually found in larger numbers); this could aid in producing localized fat loss. Another method would be to apply a yohimbe topical solution which has been dissolved in a transdermal carrier of some kind. This, again, would produce localized fat loss. Also, since yohimbe can increase peripheral blood flow, applying it topically would probably give you a good chance to burn more fat.

I think products like beta-stimulants are very useful for overall and systemic fat loss. Really, I'm at a loss to think of any medications which will take fat off a person (and transform their body) as rapidly as they do. I consider them to be really powerful and nearly indispensable tools for body transformation (the leaning down portion, anyway). Something like a yohimbe cream would be added when abs are nearly visible, and then only applied to the area where results are desired. Transdermal creams like that are useful, but are really only polishing up tools- not something to be used frequently, or for long times. Doing so would defeat the purpose. Orally active yohimbe (pills) would be more appropriate for long term use.

Now, there's one final compound that I need to tell you about, as it is a stimulant and has many other interesting effects.

Nicotine

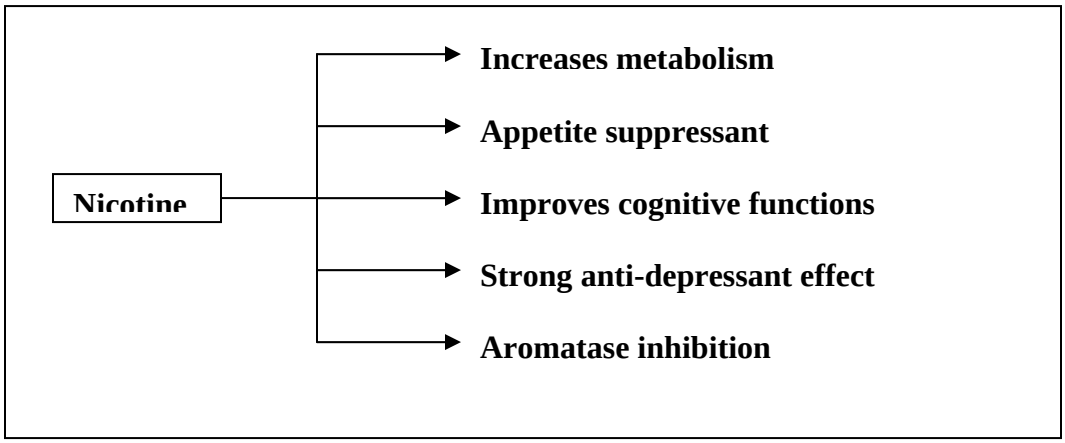
Although it's gotten a pretty bad rap, it's not such a bad compound when used for a specific purpose. I'm not talking about taking up smoking here, or starting up anything like that. I'm not even talking about tobacco; I'm talking about the active ingredient in tobacco- which is nicotine.

I've seen some studies where it is estimated that nicotine can boost your metabolism by roughly 10%, and personally, I've used it both systemically as well as in a transdermal carrier, and find that it's very useful on a diet, both as a stimulant, fat loss agent, and cognitive enhancer. I n fact, I think that nicotine is a pretty potent cognitive

enhancer. The Nicotinic systems in the hippocampus play important roles in memory function, and in fact, a reduced nicotinic receptor concentration is associated with severe cognitive impairment, like that seen with schizophrenia and Alzheimer's disease.

Nicotine and nicotinic agonists are strongly and positively correlated with improved memory function, and even have a strong anti-depressant effect.

Nicotine will have the additional effect of diminishing your appetite, which is a huge benefit when on a diet, as well as having some degree of aromatase inhibiting effects. Yes, I'm saying that the aromatase enzyme is actually inhibited by nicotine, and this can occur locally (via a transdermal cream or something to that effect) as well as systemically via another route.



I find nicotine to be an interesting drug, personally, because it is available in so many different forms. One can find it as sublingual tabs, a transdermal (patch), in energy drinks, cigarettes, chewing tobacco, chewing gum, etc…Clearly some of those forms actually contain the tobacco version of nicotine, and therefore are probably not what we're looking for (I'm sure I don't need to warn you of the potential danger of cancer through tobacco). Of course, nicotine is highly addictive, and precaution must be taken to avoid becoming addicted. When using nicotine transdermally, it may be a good idea to alternate days with a yohimbe cream.

Lastly, there is a relatively new product on the market which contains Glycyrrhetinic acid. This is actually a substance found in high concentrations in licorice, and when applied to the skin, can reduce the thickness of subcutaneously stored fat. In this case, it is speculated that the mechanism of action is mediated by the (previously mentioned) catabolic

hormone known as cortisol. Although I've primarily focused on its catabolic effects, it is also important to note that cortisol is involved in both the distribution as well as the deposition of fat. In this regard, cortisol, in turn is regulated by the activity of an enzyme which Glycyrrhetinic acid blocks the action of. This reduces the ability of cortisol to regulate (promote storage of) fat cells, resulting in an overall loss of body fat to the area the cream is applied to, much like the other transdermal creams we've looked at.

In a very interesting clinical study, the effect of topical Glycyrrhetinic cream was evaluated on women. In this study, measurements of thigh fat, before and after 1 month of treatment with the cream were taken. In both areas (circumference and the fat layer thickness) the thighs receiving the cream had significantly lower levels of fat. Anecdotally, I've seen similar effects with both yohimbe creams as well as with nicotine cream; but this stuff interests me because it's new and seems effective.

There's no potential of addiction here, as there is with a nicotine cream, and the compound is very safe, as the full study mentioned previously states that that there was absolutely no change in blood plasma levels of cortisol, blood pressure, or aldosterone. This means that the cream they applied had a localized effect on cortisol (and therefore fat), yet didn't go systemic and lower cortisol in the blood.

So now, I've given you several options to aid in your cardiovascular training, all of which will help you lose fat and get your body transformed in less time than with cardio alone. As I've already said, you can get there without drugs and without supplements, but it's going to be faster and you can get further- if you consider using some of the compounds I've mentioned.

Now, let's see what Christian has in store for us in Chapter 5…

Chapter 5

Nutrition to maximize muscle growth and fat loss

*"**Bodybuilding is at least 80% nutrition**"*
- Bodybuilding Guru Vince Gironda

"…nutrition is 100%, training is 100%, recovery is 100%..."
- 5 times Mr.Olympia Dorian Yates

"If you're not growing, it's probably your diet, not your training, that's holding you back"
- Dr. John Berardi Ph.D.

Put it anyway you want, if you want to build a lean and muscular body, nutrition is key. Rarely do peoples serious about building their body fail to train hard enough (although they often fail to train *smart* enough), in fact many unsuccessful would-be body transformer actually train harder and more often than more successful ones. How is that possible? Genetics? Maybe in some rare cases, but most of the time you'll find your answer at the kitchen table. Without proper nutrition you will not be able to reach your goal of a perfect body, especially if you are genetically average.

FOOD: THE ULTIMATE BODY TRANSFORMATION TOOL

Let me be perfectly honest with you: nothing can affect body composition as fast and as drastically as the food you eat, not even drugs! Let's talk fat loss for example, a substance like synthetic T_3 (e.g. cytomel) or T_4 (e.g. synthroid) can boost metabolism and daily energy expenditure by around 10%. If you are anywhere between 175 and 225lbs we're talking about 200-300 calories per day which is basically the amount of calories in ½ cup of rice measured dry or of a bagel. When we consider that your average fast food hamburger can provide anywhere from 750 to 1000 calorie and that an hour of cardio will "burn" an average of 450 to 500 calories; it's quite easy to see how simply controlling our food intake can have a huge impact on how our body looks.

MASS-BUILDING NUTRITION

In bodybuilding (which is basically extreme body transformation) I've seen three types of "off-season" or mass gaining approaches. You might not be a competitor but during a mass gaining phase the goal is pretty similar to that of an off-season bodybuilder.

The three approaches I've seen are:

a) Extreme bulk: ingesting a ton of food to gain as much bodyweight as possible so that the body has ample nutrients and a high level of anabolic hormone (especially insulin) to trigger muscle growth. In an extreme bulk basically anything type of food is fair game. Proponents of this method say that as long as you get an adequate protein intake you can eat any food you want to attain your high calories goal. This works, it will allow a bodybuilder to pack on muscle. However it comes at a price: gaining some body fat along with the muscle. While a fat-to-muscle gain ratio of 1:1 (gaining one pound of fat for each pound of muscle) is acceptable and will not hinder your appearance most bodybuilders actually approach a 2:1 or even a 3:1 ratio, meaning that they gain a lot more fat than muscle. It's much easier and quicker to store one pound of fat than to build one pound of muscle, so when you drastically jack up you caloric intake chances are that you will end up gaining more fat than muscle. This is especially true of endomorphs and endomesomorphs. Ectomorphs (tall and thin) can get away with it though.

b) Clean bulk: with this type of approach you also increase your total food intake drastically (more on what is needed later in my answer) however you consume exclusively "clean" or "bodybuilding-friendly" food. Basically you eat like you would during a fat-loss phase, but you eat more of everything. For avid T-nation readers this approach is exemplified in Dr. Berardi's massive eating plan. The merit of this method is that it minimizes fat gain while supporting muscle growth with adequate nutrients. The downside is that eating 5000kcals + per day of only clean food can be hard for some people. Plus, it's still possible to gain some fat even though you are only ingesting good food. If caloric intake is high enough compared to your daily expenditure you will gain some fat. However I'd say that this approach is a good compromise in that it will allow you to gain a lot of muscle while avoiding excessive fat gain. Expect a 1:1 ratio of gain with this method.

c) Lean gain: in this final approach the athlete strives to stay very lean year-round. Caloric intake is only slightly higher than maintenance and only clean food is consumed. With this approach muscle gain is slower this is mostly due to lower levels of circulating insulin which is one of the most anabolic hormone in the body. Insulin favors muscle gain by shuttling amino acids and glucose into muscle cells. It can also increase the hepatic release if IGF-1, the master anabolic hormone. On the other hand, insulin also facilitates fat

gain and decrease fat mobilization. With this approach you can stay very lean but you'll have to accept that you will gain muscle mass at a slower rate.

Energy cost of building muscle

How much energy is needed to build one pound of muscle? This is a very important question because it will help us design a plan that will allow us to provide our body with what it needs to build muscle without risking gaining too much fat. Some people have tried to answer that by simply taking into consideration the composition of a pound of muscle. Muscle tissue is around 22% protein, 5% fat, 3% carbs and the rest is water, minerals and trace elements.

Since one pound = 0.455kg, it's sometimes believed that one pound of muscle is composed of:

100g of protein (455g x 22%)
23g of fat (455g x 5%)
14g of carbs (455g x 3%)

Since there are 4 calories in one gram of protein and carbs, and 9 calories per gram of fat they assume that one thus needs around 660kcals to build one pound of muscle. According to that (erroneous) logic if one wanted to gain 10lbs of muscle he would need to consume 6600kcals more than his maintenance level over a certain period of time. For example if he wanted to gain 10lbs over 3 months he'd have to consume 70 calories above maintenance per day.

This is a mistake. The actual process of building muscle tissue requires a lot more energy beyond its simple composition. The body must take the nutrients absorbed and synthesize muscle tissue. This is a very energy-costly process! Basically when you are building muscle it's like when you are building a house: not only do you have to pay for the raw material needed, but you also have to pay the construction workers.

Studies have found that for each gram of protein synthesized into new muscle tissue, 220 calories are needed to turn the raw protein into new muscle mass. Since one pound of muscle contains approximately 100g of

protein it is thus clear that to build one pound of muscle we actually need more than 20 000kcals. Quite a bit more than the earlier estimated 660!

So if we want to build 10lbs of muscle we need to ingest around 22 000 calories above our maintenance level over a certain period of time. If we wanted to gain that 10lbs over a 5 months period of time this would mean consuming around 1400 calories above maintenance per day. So if you need to consume 3000kcals per day to maintain your current weight, you'd need to ingest around 4400kcals per day to gain 10lbs of muscle tissue over a 5 months period.

How much muscle can we build?

Now that we know how much calories are needed to build one pound of muscle, it becomes important to know exactly how many pounds of muscle we can build in a certain period of time. Obviously our body has a limited growth potential. If it could use all the nutrients ingested to build muscle we would only have to consume 15 000kcals/day and we'd all be 300lbs muscle freaks!

Well, the average natural body (non chemically-enhanced) can synthesize between 0.25 and 0.5lbs of muscle tissue per week. So it can build 1-2lbs of muscle per month of training on average (on some months you might gain 3-4lbs while on others zilch).

Now keep in mind that I'm talking about dry muscle weight. Every gain in muscle size will also lead to increases in glycogen storage among other things. It is possible to store up to 40g of glycogen per 100g of muscle (around 15g in an untrained muscle, up to 40g for a well-trained individual). So for 10lbs of new muscle, you'd also gain up to 4lbs of added glycogen storage. So you can gain around 14lbs of scale weight, not just the 10lbs.

So if we want to gain 10lbs of muscle we'd need 5-10 months to do so (unless the individual is a genetic freak or a total beginner). As a result it becomes necessary to increase caloric intake anywhere from 700kcals (10 months) and up to 1400kcals (5 months) per day to attain the desired muscle gain. Eating more than that will not stimulate more muscle growth. This is because the body simply cannot use more nutrients than that to build muscle due to its limited capacity to synthesize muscle tissue. So if you need 3000kcals daily to maintain your body weight/muscle mass you'd need to

consume 3700 to 4400kcals per day to build the desired amount of muscle. More than that and you'll risk gaining fat, without actually increasing potential muscle growth.

Your body cannot be "forced" into adding muscle mass. Understand that regardless of how good your training program is and how much good food you ingest, your muscle growth potential is ultimately limited by the physiological rate at which you body can fabric muscle tissue. This is one of the reasons why using performance-enhancing drugs such as steroids, hGH, IGF-1 and insulin can lead to greater gains: they bypass your natural physiological limit by basically changing your internal biochemistry. So individuals venturing into the darkside of body transformation can (and should) eat more food during their mass gaining phase to take full advantage of their enhanced biochemistry. In fact, I'll go as far as too say that ingesting insufficient calories while "chemically-enhanced" will not provide much more muscle growth than if you were training naturally.

Let's get back to our house-building analogy for a second.

Your muscles are like a house made of bricks. The bricks are the protein necessary to build the house and the carbs/fat represent the money you give to your employees.

Now, each man on your staff can only work as fast as his physical capacities will allow it. Even if you give him a lot more bricks or even a lot more money, there comes a point where he just cannot work any faster.

Now, if you do not give the employees enough bricks or cash, they won't work as fast (that's why it's harder to gain size while dieting down). So at some point, it's beneficial to increase food intake. But once the optimal intake is reached, there is no sense in eating more.

Anabolic performance-enhancing drugs basically allow you to hire more employees. So in that regard if you supply more bricks (protein) your production rate will be able to increase above what it was before the new workers came on board. However understand that more employees means a higher payroll (more carbs/fats) if we want the employees to work at an optimal rate. It's the same way with your body: to take full advantage of your use of PED, protein and caloric intake must be increased (by around 20%). However this is not a reason to visit all the fast-food joints in your

town! The cleaner you eat while getting the necessary protein and calories it, the greater will be your success at the end of the line.

In conclusion …

The advice to "eat everything in sight" is not necessarily a good one. It's true that food is the most anabolic substance known to man, and that under-eating is the simplest way to limit your muscle gains. However past a certain point, eating more food will only lead to increased fat gain especially if you are natural. Fat is not muscle. Gaining fat doesn't facilitate muscle gain. Additional nutrients increase muscle building, additional fat doesn't! So if you want to add muscle you will need to jack up your caloric intake. However doing it so blindly by eating everything in sight is certainly not the best way to go.

DESIGNING A NUTRITION PROGRAM – ESTABLISHING YOUR MAINTENANCE LEVEL

Knowing how much calories are required to maintain your current body weight is an important thing to know. Even though these measures are only an approximation, they still give us a number to start from. We can adjust this number up or down depending on our goal (fat loss or muscle gain).

First Step: Calculating Your Basal Metabolic Rate

Your basal metabolic rate (BMR) simply means the amount of energy used by your body during a 24-hour period if no activity is performed. In other words, if you're inactive for 24-hours straight, you'd still "burn" the amount of calories equivalent to your BMR.

Your BMR is a function of your size, sex, and age. It's also influenced by your metabolic status (hypo or hyperthyroid state for example). I opt for a modified Harris-Benedict formula to calculate the BMR. I say modified because I prefer to use the lean body weight (total body weight minus fat weight) to set up caloric intake.

<u>For Men</u>

BMR = 66 + (13.7 x lean weight in kg) + (5 x height in cm) - (6.8 x age)

So for a 30 year old bodybuilder of 235lbs with 10% body fat, so a lean mass of 212lbs (96kg) on 5'11" (178cm) it comes up to:

BMR = 66 + (13.7 x 96kg) + (5 x 178cm) – (6.8 x 30)
BMR = 2067 calories per day

For Women

BMR = 655 + (9.6 x lean weight in kg) + (1.7 x height in cm) - (4.7 x age)

So for a 28 year old figure girl of 140lbs with 15% body fat, so a lean weight of 119lbs (54kg) on 5'6" (165cm) it comes up to:

BMR = 655 + (9.6 x 54kg) + (1.7 x 165cm) – (4.7 x 28)
BMR = 1323 calories per day

Second Step: Factoring in activity level

The amount of calories found using the modified Harris-Benedict formula is what your body burns every day, even if you do nothing all day. Obviously, the more active you are the more you'll burn fuel. So, energy expenditure will be increased when your activity level goes up.

To get an adequate estimation you need to multiply your BMR by an activity level factor:

Activity level factor	Activity level
1.0	Sedentary
1.2	Very light activity
1.4	Light activity
1.6	Moderate activity
1.8	High activity
2.0	Extreme activity

By sedentary we mean doing nothing all day (sleeping and watching TV).

By very light activity we mean doing nothing physical. Working a desk job or on a computer and not performing any type of physical activity during your day.

By light activity we mean having a non-physical job (desk, computer, etc.) but performing some sort of physical activity during the day (e.g. above average walking) but no hard training.

By moderate activity we mean having a non-physical job, performing some sort of physical activity during the day, and including a daily workout session in your routine. This is where most of you are at.

By high activity we mean either training plus a physical job or non-physical job and twice-a-day training sessions.

By extreme activity we mean a very physical job and daily hard training.

So if our 235 pound bodybuilder with a BMR of 2067 calories/day is moderately active, his daily energy expenditure is bumped up to 2067 x 1.6 = 3307 calories per day. This is the amount of food to consume to maintain present body weight.

DESIGNING A NUTRITION PROGRAM – SETTING CALORIC INTAKE DEPENDING ON YOUR GOAL

The following tables give basic guidelines on how to set your average caloric expenditure depending on your goal.

Caloric intake adjustment depending on your goal (natural trainee)	
Maximum muscle gain while accepting a moderate fat gain	Maintenance x 125-130%
Significant muscle gain with a small fat gain	Maintenance x 115-120%
Average muscle gain without gaining fat	Maintenance x 105-110%
Average fat loss with small muscle gains	Maintenance x 90-95%
Moderate fat loss with no muscle loss	Maintenance x 80-85%
Maximum fat loss while accepting some muscle loss	Maintenance x 70-75%

The table above is for natural trainees. If one is using performance-enhancing drugs the amount of calories during a mass-gain phase should be increased by 10-20%. However during the fat loss phase, calories should be the same whether enhanced or not. Technically if one is enhanced he could consume fewer calories when “cutting” because the drugs will prevent excessive muscle loss. But by following the same recommendations an enhanced trainee would lose fat while being able to build muscle.

Approximate average caloric intake by goal and lean body weight in men (presuming a moderate activity level)						
Lean body weight	1*	2	3	4	5	6
130lbs	2860kcals	2634kcals	2409kcals	2071kcals	1846kcals	1621kcals
140lbs	3054kcals	2813kcals	2573kcals	2212kcals	1972kcals	1731kcals
150lbs	3296kcals	3037kcals	2777kcals	2388kcals	2128kcals	1869kcals
160lbs	3539kcals	3260kcals	2982kcals	2564kcals	2285kcals	2006kcals
170lbs	3733kcals	3440kcals	3146kcals	2704kcals	2410kcals	2117kcals
180lbs	3973kcals	3663kcals	3350kcals	2880kcals	2567kcals	2254kcals
190lbs	4217kcals	3885kcals	3553kcals	3055kcals	2723kcals	2391kcals
200lbs	4412kcals	4064kcals	3717kcals	3196kcals	2848kcals	2501kcals
210lbs	4606kcals	4244kcals	3881kcals	3336kcals	2974kcals	2611kcals
220lbs	4848kcals	4467kcals	4085kcals	3512kcals	3130kcals	2748kcals
230lbs	5043kcals	4646kcals	4248kcals	3653kcals	3256kcals	2859kcals
240lbs	5284kcals	4868kcals	4452kcals	3828kcals	3412kcals	2995kcals
250lbs	5527kcals	5091kcals	4657kcals	4003kcals	3658kcals	3133kcals
260lbs	5721kcals	5270kcals	4820kcals	4144kcals	3694kcals	3243kcals
270lbs	5963kcals	5494kcals	5025kcals	4283kcals	3850kcals	3381kcals

1 = Maximum muscle gain while accepting a moderate fat gain
2 = Significant muscle gain with a small fat gain
3 = Average muscle gain without gaining fat
4 = Average fat loss with small muscle gains
5 = Moderate fat loss with no muscle loss
6 = Maximum fat loss while accepting some muscle loss

DESIGNING A NUTRITION PROGRAM – SELECTING NUTRIENT PROPORTIONS/TYPE OF DIET

The amount of calories we consume is only the first element that can play a role in our fat loss or muscle gain efforts; simply adhering to the adequate caloric intake doesn't guarantee success. Surely you understand that 2000kcals in the form of donuts and 2000kcals in the form of veggies will not have the same effect on body composition! So when we are talking about improving body composition we should not simply focus on "*how much?*" but also on "*how good?*"

First and foremost – protein

We'll start by establishing our protein intake. We are mentioning proteins first because for bodybuilders/body transformers protein is of prime importance as it is the main building material for muscle tissue; but also because it's the easiest nutrient to plan in a diet.

The basic rule is that protein intake for individuals with a lean and muscular physique objective should be at least 1.0g per pound of bodyweight. This is the minimum that you should take in each day to get the best possible

results. However, depending on your situation and present goal, other amounts might be better suited:

Optimal protein intake depending on your situation		
Goal	Natural trainee	Enhanced trainee
Mass gaining phase (caloric excess)	1.0 – 1.25g per pound	1.75 – 2.0g per pound
Maintenance phase	1.0 – 1.25g per pound	1.5 – 1.75g per pound
Fat loss phase (caloric deficit)	1.25 – 1.5g per pound	1.75 – 2.0g per pound

Some notes from that table:

- When you are in a fat loss phase you should increase you protein intake regardless of if you are natural or enhanced. During a caloric deficit the added protein will have an anti-catabolic effect (the body will not need to breakdown muscle tissue to form amino acids because there is an increased supply of them). If one is drastically cutting carbs, the added protein can be used to produce glucose via a process called neoglucogenesis. Normally the body would breakdown its own muscle tissue to perform that function, but with an increased protein intake we are "protecting" our muscles.

- During a mass gaining phase, chemically enhanced bodybuilders should also increase protein intake as their body has a much higher physiological limit for protein synthesis. Natural trainees however do not need to jack up protein intake above 1.25g/pound when consuming a large amount of calories because the natural body cannot utilize the added protein to build muscle (it exceeds its capacity to do so) and since carbs and calories are high, there is no need for extra protein to protect the muscles.

- Regardless of the training goal, enhanced athletes should always consume more protein than natural trainees.

Optimal protein intake for body transformation purposes						
	Natural athlete			Enhanced athlete		
Total body weight	Fat loss phase	Maintenance phase	Muscle gain phase	Fat loss phase	Maintenance phase	Muscle gain phase
130lbs	160-195g	130-160g	130-160g	225-260g	195-225g	225-260g
140lbs	175-210g	140-175g	140-175g	245-280g	210-245g	245-280g
150lbs	185-225g	150-185g	150-185g	260-300g	225-260g	260-300g
160lbs	200-240g	160-200g	160-200g	280-320g	240-280g	280-320g
170lbs	210-255g	170-210g	170-210g	295-340g	255-295g	295-340g
180lbs	225-270g	180-225g	180-225g	315-360g	270-315g	315-360g
190lbs	235-285g	190-235g	190-235g	330-380g	285-330g	330-380g
200lbs	250-300g	200-250g	200-250g	350-400g	300-350g	350-400g
210lbs	260-315g	210-260g	210-260g	365-420g	315-365g	365-420g
220lbs	275-330g	220-275g	220-275g	385-440g	330-385g	385-440g
230lbs	285-345g	230-285g	230-285g	400-460g	345-400g	400-460g
240lbs	300-360g	240-300g	240-300g	420-480g	360-420g	420-480g
250lbs	310-375g	250-310g	250-310g	435-500g	375-435g	435-500g
260lbs	325-390g	260-325g	260-325g	455-520g	390-455g	455-520g
270lbs	335-405g	270-335g	270-335g	470-540g	405-470g	470-540g
280lbs	350-420g	280-350g	280-350g	490-560g	420-490g	490-560g
290lbs	375-450g	300-375g	300-375g	505-580g	450-505g	505-580g

Let's do a quick recap …

Let's say that you have an individual with the following characteristics:

- Male
- 23 years of age
- 5'11" (178cm)
- 210lbs
- 12% body fat
- 185lbs of lean body mass (210lbs minus the 12% in body fat) or 84kg
- Moderate activity level
- Natural trainee
- Starting a mass gain phase without wanting to add much fat

1. His BMR would be:

BMR = 66 + (13.7 x lean weight in kg) + (5 x height in cm) - (6.8 x age)

So…

BMR = 66 + (13.7 x 84kg) + (5 x 178cm) – (6.8 x 23)
BMR = 1950 calories per day

2. His daily energy expenditure on average would be:

DEE = BMR x activity factor
DEE = 1950 x 1.6 (moderate activity level)
DEE = 3120 calories per day to maintain current body weight

3. His caloric intake to reach his goal would be:

Daily caloric intake (DCI) = DEE x % depending on goal
DCI = 3120 x 115 to 120%
DCI = 3588-3755 calories per day

4. His protein intake would be:

- He is natural and wants is on a mass gaining phase so he should consume 1.0 to 1.25g per pound of bodyweight.

- He is 210lbs so his protein intake should be between 210 and 260g/day

- His protein intake (210-260g) comes up to 840-1040 calories (each gram of protein provides 4 calories)

- He now has 2548-2915 calories to distribute in the form of fats and carbs

Establishing energetic intake

Protein is mostly a “building” nutrient. While is does contain calories, it is rarely used for fuel. At the most it can account for 10-15% of your energy expenditure. Plus, protein is not easily converted into energy. First muscle tissue must be broken down into individual amino acids (or the body can use amino acids already floating in your amino acid pool/bloodstream) then the amino acids are shuttled to the liver which converts them into glucose (simplest form of sugar/carb) which can either be used for energy or stored as glycogen in the muscles/liver or as fat in the adipocytes. So protein isn’t really an energetic nutrient. The two main source of energy for our body are fats and carbohydrates. Our next step is to establish the proper ratio of each of these nutrients for your diet.

There are four main approached when it comes to selecting the amount of carbs and fats in your diet:

1. The carbs dominant approach: this is pretty much how bodybuilders used to eat back in the 80s and early 90s. And it's still pretty much how they eat in the off-season. It consists of having the majority of your energetic nutrients coming from carbs and not fat. With this approach, carbs should constitute around 70-80% of your energetic nutrient intake (note: not 70-80% of your total caloric intake; 70-80% of what's left after you subtracted the calories from protein). In our example we have 2548-2915 calories left to distribute as energetic nutrients. We'll say 2700 for convenience's sake. 70-80% of that 2700 calories comes up to 1890-2160 calories or 470-540g of carbs (since one gram of carbs provides 4 calories). That would leave our bodybuilder with 540-810 calories to consume in the form of fat; which comes up to 60-90g of fat (since one gram of fat provides 9 calories). Still in our example, using the carbs dominant approach our bodybuilder would this consume around 240g of protein, 500g of carbs and 75g of fat per day.

2. The fat dominant approach: this is the opposite of the carbs dominant approach in that the bulk of your energy comes from fats. This is similar to the Atkins-type of diets. This type of dieting is very effective for losing fat but for muscle-building purposes it is not your best option. Still, using this approach 80-90% of your energy comes from fats and 10-20% for carbs. Note that this is not a ketogenic diet (a ketogenic diet has you consuming less than 50g of carbs per day), it is a low-carbs diet, not the same animal, for one thing you'll be able to function much better than during a keto diet. Okay, so we still have 2700 calories to distribute, 80-90% as fat and 10-20% as carbs. This comes up to 2160-2430 calories or 240-270g of fat and 270-540 calories or 60-120g of carbs per day. To that we add our previous 240g of protein.

3. The balanced non-mixing approach: this approach is the one pioneered by Dr. John Berardi PhD. Who recommend getting a balanced amount of carbs and good fats *but* avoiding mixing the both of them in the same meal (in other words you can eat protein + fat or protein + carbs meals). So we will consume an equal amount of calories from carbs and fat each day, but at separate times during the

day (carbs + protein meals should be consumed earlier in the day or around workout time while fat + protein meals should be consumed later in the day). So of our remaining 2700 calories 50% will come from carbs and fat. That comes up to 1350 calories or 335g of carbs and 1350 calories or 150g of fat plus our 240g of protein.

4. The cycling approach: this approach is a mix of all three of the previous approaches. Basically you have carb dominant days, fat dominant days and balanced non-mixing days. The ratio of each is established depending on your workout schedule and objective. For example if you have a particularly draining lifting session followed by gut wrenching cardio planned, this is the right time for a carb dominant day. If you are not training at all you should go for a fat dominant day as you don't need as much quick energy in the form of carbs. If you have only a weight training session or a weight training session plus some easy cardio you should use a balanced non-mixing day.

So which diet approach is best? It depends…

- For maximum muscle gain phases the balanced non-mixing diet is best.

- For significant muscle gain phase with limited fat gain the cycling approach is best as it allows you to include low energy days to control fat gain.

- For maximum fat loss the fat dominant approach is best.

- For individuals who are super active or have a lightning fast metabolism and want to gain size the carb dominant approach is best.

Distributing the nutrients in each meal

Unless you've been totally disconnected from the bodybuilding/training world these past 20 years you no doubt know that it's best to divide your daily caloric intake over several (5-7) smaller meals rather than on a limited number (1-3) of larger meals. First because the smaller meals are easier to absorb which means that our body will have an easier time utilizing the nutrients we are giving him; but also because smaller meals don't leave you

bloated and tired afterwards. They also provide better insulin management which is conductive to increase muscle mass and lowered body fat.

So now that we know that we should divide our daily caloric intake over 5-7 meals, the question remains “how” de we repartition what we eat among those meals? When using a mono-dominant energetic nutrient approach (either carb dominant or fat dominant) we should divide the nutrient intake pretty much equally over all of our meals.

The table below illustrates how to divide your nutrients among your meals if you are using a carb or fat dominant approach. We will stick to our 210lbs bodybuilder example for the sake of simplicity.

Food repartition on a mono-dominant energy diet		
Parameter	Carb dominant approach	Fat dominant approach
Total daily caloric intake	3600 calories	3600 calories
Grams of protein per day	240g	240g
Grams of protein per meal (assuming 6 meals a day)	40g	40g
Grams of carbs per day	530g	97g
Grams of carbs per meal (assuming 6 meals a day)	88g	16g
Grams of fat per day	60g	250g
Grams of fat per meal (assuming 6 meals per day)	10g	42g

Now, even though the nutrients are divided equally among the six meals, it doesn’t mean that the actual food choices will be the same. This is especially true of a carb dominant approach where high and low glycemic carb should be used at different times during the day, more on that later.

If we are using a balanced non-mixing approach (still with 6 meals per day) we also repartition the nutrients equally, but not on the total meals of the day; rather on the meals of the same constitution. We will include three protein + carb meals and three protein + fat meals. So the total amount of carbs ingested during the day should be divided equally among those three meals and the same thing is true for fat.

The following table illustrates this type of diet. We will again stick to our now famous example!

Food repartition on a balanced non-mixing diet	
Parameter	Balanced non-mixing approach
Total daily caloric intake	3600 calories
Grams of protein per day	240g
Grams of protein per meal (assuming 6 meals a day)	40g
Grams of carbs per day	330g
Grams of carbs per meal (assuming 3 carb meals per day)	110g
Grams of fat per day	146g
Grams of fat per meal (assuming 3 fat meals per day)	49g

So each of the protein + carb meals would provide:

- 40g of protein
- 110g of carbs
- negligible amounts of fat (less than 5g)

** Once again, the type of carbs will vary depending on the function of the meal.*

And each of the protein + fat meals would provide:

- 40g of protein
- 49g of fat
- Negligible amounts of carbs (less than 5g)

Type of food at each meal

While it's true that ultimately there exist only carbs, protein and fat and that once fully digested it all boils down to a mix of glucose, amino acids and fatty acids. Yet, different types of food have different effects on our body biochemistry. As body transformers we can use these effects to improve our physique; adding muscle or losing fat.

I'll assume that it is not necessary to explain how and why junk food and fast food should be avoided during a body transformation program (except for the occasional cheat meal).

This obviously includes any type of food you find in fast food joints (yes, even the salads which actually have more fat than some burgers!), cake and bakery goods, ice cream and related product, any type of candy, chocolate and such, cookies or any kind, breakfast cereals, etc. But when it comes to

body transformation it also refers to “empty” foods which are basically over-processed version of acceptable products. For example white bread and pasta should be avoided while whole grain versions of these products are acceptable at certain times. Bagels, muffins, croissant, basically any type of bread-like food should be avoided too.

The simplest way to understand how to eat while trying to transform your body is to focus on foods that are as close as possible to their natural state. Lean cuts of meat, fish, poultry, egg whites (some egg yolk too) and cottage cheese are all prime example of good protein sources while on a body transformation diet. Oatmeal, cream of wheat, rice and veggies are the best carb sources with whole wheat bread, rye bread, fruits and yogurt are acceptable secondary sources.

Breakfast food choices

Breakfast is a crucial meal in the day of a bodybuilder; first because it stops the catabolic state of being without food and nutrients for 8-10 hours straight but also because at this time the body is in a positive (for us) nutrient portioning state. This means that a lesser proportion of the food we eat will be stored as body fat. This is mostly due to the fact that upon waking up (after several hours of sleep and food deprivation) our body has an increased sensitivity to insulin. For that reason, breakfast is a good time to ingest moderate (or even high) glycemic carbohydrates and fast-absorbed protein (like whey for example). In that regard, we should treat breakfast much the same way we do our post-workout meal.

Obviously, if you are on a low-carbs diet or a low-carbs day, it might not be possible to stock up on carbs in the morning.

If you are using an approach that allows you to have some carbs you want to include both starchy carbs and fruit in the morning as well as fast and slow absorbed protein. This will ensure that you can quickly break the catabolic state imposed by the night fast and continue to have a flow of nutrients for 2-3 hours, until its time to eat your next meal.

Example of good food choices for breakfast			
Starchy carbs	**Fruit**	**Fast-absorbed protein**	**Slow-absorbed protein**
Oatmeal Cream of wheat Rye bread Whole wheat bread Buckwheat pancakes (no syrup) Grits	Orange Apple Any type of berry Pineapple Mango Grapefruit Peach	Whey isolate Whey concentrate BCAAs Amino acids	Egg white Cottage cheese Yogurt Egg yolk Miscellar casein Low fat cheese Tuna Chicken

Post-workout meal

The post-workout meal is similar to the breakfast in that the body is very efficient at soaking up the ingested nutrients. Furthermore, the faster we can give nutrients to our body, the faster can the recovery/muscle building process start.

During the post workout meal we want to focus solely on fast-absorbed high glycemic carbs that will provoke an insulin spike as well as fast-absorbed protein. The ideal solution is to use a specialized post-workout drink (e.g. Surge by Biotest or Vitargo/waxy maize + whey isolate powder) instead of a solid meal. However, during more restrictive dieting periods, I feel that it's best to include at least some solid food during the post-workout meal as this increases satiety and makes diet compliance easier. For that second option the following carb choices are adequate (note that the protein portion of the meal should still be in the form of a whey isolate drink):

Good solid carb choice for the post-workout meal
Rice
Rice cake
Potato
White flour pancakes
Bagel
Cherries
Amy type of berry

The quantity of carbs to include in the post-workout meal will depend on the type of diet you are using as well as your set caloric intake.

Other meals

Beside the post-workout and breakfast meals, you should only ingest foods that have a low impact on your insulin levels. Basically we want to have an elevated insulin level in the morning and after a workout because your body is in a state that favors storage in the muscles (and liver) instead of in the fat cells. However if insulin levels are kept elevated all day, it will become hard to shed body fat. You see, insulin is a storage hormone. It tells the body to stock up on nutrients to fill its reserves. However it also tells your body to prevent the stored nutrients to be released for use. So if insulin levels are elevated, it becomes next to impossible to mobilize and burn body fat.

If we are using a balanced non-mixing diet or a low-carbs (fat dominant) diet, it becomes quite easy to control insulin because carbs are the main insulin stimulators. If you are using a balanced non-mixing diet you are not ingesting any carbs at all meals besides breakfast, mid-am snack and post-workout and if you are on a fat-dominant diet you are not consuming much carbs at all. In both cases, at those meals you should ingest only protein + fat food like meat, fish, poultry, eggs, etc. Green veggies are acceptable as they contain a negligible amount of carbs as well as a lot of fibers which slows down digestion (which helps keep insulin levels under control).

If you are using a carbs-dominant approach you should select very low-glycemic carbs as well as slow-digesting protein (any type of animal food).

Example of carbs and protein sources for a carbs-dominant diet	
Carb sources	**Protein sources**
Yams	Meat
Red potatoes	Fish
Whole wheat pasta	Poultry
Cream of Rye cereal	Miscellar casein powder
Rye bread	Cottage cheese
Apples	Eggs
Oatmeal	
Fiber Cereals (Fiber One bran Flakes)	
Black beans, kidney beans and red beans	

Chapter 6

Chemically assisted nutrition

In the last chapter, Christian told you how to optimize your diet. So if you follow that diet, and those recommendations, you'll have no problem getting your ass in shape.

But what if you want more? What if "in shape" isn't enough? What if you want to look great, and not just good? Well, then you might need to read this chapter. This chapter is all about getting more out of your diet.

Since that's what this chapter is all about, let's review a bit of last chapter. As Christian has already told you, you can absorb a bit more protein if you eat it after a workout and/or with come simple carbs. But now, I'm going to tell you how to use a few dirty tricks to get even more of that protein into your muscles, using several different compounds which have been briefly touched upon previously.

First, we'll take a look at insulin. You may know someone who is diabetic and has to inject this stuff a couple of times a day. But it can also be used to increase muscle mass.

You see, insulin is a protein secreted by the pancreas which acts on the liver to stimulate the formation of glycogen from glucose. This also inhibits the conversion of non-carbohydrates into glucose, which is clearly a beneficial effect in some respects (we don't want our protein becoming glucose, because we want it to. Insulin is able to exert effects on muscle cells because (of course) there are insulin receptors in muscle cells.

Now, here's the interesting part, for our body transformation goals: high concentrations of insulin have been positively correlated with stimulating muscle protein synthesis. Insulin is anabolic, therefore, as it can make ingested amino acids (protein) more efficient at building muscle by facilitating the transport of amino acids into muscle cells.

So we see that on its own, Insulin is highly anabolic. But, in fact, it may actually be that Growth Hormone's ability to stimulate Protein Synthesis may be related to insulin. Another strong (related) resemblance we see is between insulin and (no surprise here) Insulin-Like Growth Factor. This is both structurally, as well as with regards to an anabolic effect. I would think that insulin is probably anabolic, at least in part, because it not only closely resembles IGF-1, but it also increases your body's IGF-1 levels.

So there's definitely some kind of resemblance between insulin and GH as well as IGF-1, and we definitely want some insulin in our bodies…probably more than our body wants to give us. This is because there is a "negative feedback loop" in effect with insulin. Basically, this means that when you eat a something, insulin is then released from something called your beta cells. After that, there is a hormonal cascade, and what eventually happens is your body gets the message to stop secreting insulin, until more is needed. But if you're reading this chapter, that's probably not acceptable to you…you want to optimize the amount of insulin your body has in it, to absorb more nutrients and push more amino acids into your muscles. And that means using injectable insulin.

Just as we see with injectable steroids, insulin is available in a variety of time release formulas. Now, there's really only one or two types which I'm comfortable using, but here is a list of the most commonly available types:

-Humalog (Insulin lispro inj.) Fast acting

-Humulin-R (Regular Insulin) Fastest acting

-Humulin-N (Insulin Isophane) Medium acting

-Humulin-U(Medium Zinc Suspension) Medium acting

-Humulin-U, [ultalente] (Prolonged Zinc Suspension) Long acting

(*there are also blends available)

Out of those choices, I am only comfortable with the two fastest acting varieties (Humalog and Humulin-R). This is because I have only used insulin to spike my post-workout absorption of nutrients, not as an all-day long compound. I've heard of people doing it both ways, but I think using it post workout is much more safe and controlled. Have I mentioned that insulin, when used improperly,

can push you in to a coma and kill you? Well, now I have. This is why the proper type and amount of carbs needs to be taken when you are using insulin.

Whichever way you decide to use, insulin can still be dangerous. I've used it, and feel the way I've done so is safe- but again, I'm just telling you how I did it, not to personally do it yourself, ok?

I used Humulin- R, which has a fairly rapid onset and peak for its effects, and is much easier to deal with than the other types of insulin which are available. It's fast, but not the fastest and I only needed to worry about optimizing my post-workout nutrition when I took it. In other words, although you can utilize injectable insulin by taking a little bit with each meal, in doing that, you may have to eat a certain amount of carbs at each meal (to insure that you don't into a coma), and this would probably make you fat. What's the point of taking insulin if you are not going to be able to transform your body the way you want with it?

Anyway, the way I used it personally was to inject 2iu the first day, immediately after my weight training workout. At that time, I was also eating between 100-200 grams of mixed (complex and simple) carbohydrates and 50 grams of whey protein. Every day following that, I upped my post workout insulin dose by one iu until I reached 10iu per post workout shot. My nutrient intake remained the same throughout. Unfortunately, insulin has the ability to make you gain fat as well as muscle, so I was also using anabolics as well as a thyroid medication at the same time, to make sure that my insulin was creating nice new muscle tissue for me instead of ugly fat.

Some final warnings about insulin:

Don't take it at night before bed, because you won't know if your blood sugar is going low and that's making you drowsy (slipping into a coma) or you are just tired because it is time for bed. And if you ever feel yourself getting drowsy after using insulin, get some simple sugars in you quick! Also, keep your insulin refrigerated, as Insulin needs to be kept cold. Finally, don't use regular needles to inject insulin. They're too big, and you'll never be able to measure out the correct amount of units you'll be using.

An alternative to using insulin is using a hypoglycemic drug. Here, I'm talking primarily about metformin HCL, typically sold under the trade name of Glucophage. This drug is an oral anti-hyperglycemic used in type-II diabetics. This drug does not directly act on cells as insulin does, but rather it seems to "help" insulin do all the cool stuff we want it to do. The difference is that in this case, it is your own insulin being secreted and doing the work, with the aid of an outside compound.

Of course, this means that metformin is both safer and less effective than injectable insulin. However, there is still a chance of going into a coma with this stuff. Some people have gone up to some pretty high does, but typically, I have had results with 1 tab 3 x a day, with meals- following the same rules as I did with the insulin meals…adequate carbs and protein, with just a little fat. And speaking of "just a little fat"…it is important to remember that insulin and metformin both have the potential to make you fat if you don't watch yourself. But of course, there's a way to "watch yourself" by introducing something different to your pharmacological regimen.

Although we've gone over IGF-1 before, it bears mentioning because it will aid your diet by making foodstuffs become much more effective. IGF-1 will exert some of its effects by making your body more responsive to Insulin (kinda, sorta similar to metformin, in a way). When your body becomes able to process insulin more efficiently, it is called increasing your "insulin sensitivity". This is one possible mechanism that IGF-1 can cause fat loss, systemically. I say this because we know that IGF-1 must be acting in some "whole body" way and not directly on fat cells (there are no IGF receptors in those cells). This makes me think that IGF-1 probably aids with nutrient partitioning (making what you eat more efficient for building muscle and burning fat), and that's why I've included it in the chapter following Christians' dietary chapter.

Taking your insulin with IGF (at some other point in the day) would probably make both of those compounds more effective (anecdotally, I have heard this from several bodybuilders). In fact, with or without insulin, IGF-1 is probably one of the single most effective compounds you can take to make your diet produce optimal results, due to its systemic effects. Those effects include nitrogen retention as well as protein synthesis…all the things we would want in order to make the protein we're eating on Christian's diets more effective. And since it will increase insulin sensitivity that means it will make the carbs we are eating more effective as well. And finally, it bears mentioning that protein (amino acid) supply within muscle cells must be adequate in order for IGF-1 to have it's diet-related effects, so don't skimp on the protein! And what if we want to make the protein we're eating even more likely to transform our bodies?

Well, the compounds (drug) which will aid protein synthesis will also assist greatly in keeping fat off of you, and as a bonus one of them will most likely act synergistically with either insulin or IGF-1. I'm talking about Thyroid hormones here, specifically T3 (Cytomel) and T4 (Synthroid).

As stated previously (Chapter 2), most natural T3 is not produced directly by your thyroid gland, but rather is actually converted from the T4 thyroid hormone in the body. Although T4 isn't considered particularly "active" in the body, T3 (the natural type) is actually a major regulator of the oxidative metabolism of your energy producing substrates. It regulates metabolism, in part by the mitochondria (this can either be the regulation of food or substrates produced from food). The mitochondria in turn produce ATP, which is then used to power your muscles. T3 also plays a role in protein synthesis and the level of natural thyroid hormone you have in your body can affect your net protein synthesis rate. So why don't we take a look at optimizing this area as well.

The first option is to take some supplemental Cytomel. Taking Cytomel will aid your body transformation goals by (as you may have guessed) increasing the uptake of various nutrients into the mitochondria; also their oxidation rate (the rate your body "burns" up foodstuffs and the like), by will increase as Cytomel enhances the various activities of enzymes which are also involved with the oxidative metabolic pathway. Your body will then be producing more ATP, giving you more energy to expend (and a vastly

increased basal metabolic rate), and less food stuffs will be stored as body fat. This will all add up to help you burn (expend) more calories, while also making them preferentially be shuffled away from the storage of body fat, and towards energy or creating new muscle tissue. Sounds like body transformation to me!

Different brands of T3

Unfortunately, some portions of this oxidative process are less than ideal. Your body can create energy out of food, muscle, stored fat, etc…and we certainly don't want any of this energy to come from muscle. So what we want is for the T3 we are taking to be somewhat picky with regards to where it produces energy from. This brings me back to the other compound I've mentioned in this chapter: Insulin. Insulin use will send a message to your cells to preferentially push amino acids (protein) into muscle cells, over other nutrients. So clearly, insulin and thyroid medication are (speaking logically) synergistic and can be combined to aid our diets in pushing more protein into muscles and by pushing more carbs and fat to be burned up as fuel.

Typically, I have used Thyroid (T3) medication at a dose of 25-75mcgs/day, and found that to be sufficient to aid my fat burning goals, when combined with a proper diet and cardiovascular training.

However, there is an alternative to using T3, and that alternative is to use the relatively inactive hormone T4 (brand name "Synthroid"), and hope that it gets converted in a large enough quantity into metabolically active T3. Well, the good news is that if we are following Christian's dietary and training advice, and using insulin along with our post workout meal, there should be an increased conversion rate of T4-T3, so taking T4 instead of would actually be a viable strategy.

Typically, we see Synthroid as the less powerful of the two currently

available thyroid replacement drugs on the market (not counting "Armour" which is a combination product containing both T3 and T4 thyroid).

Different brands of T4

Different concentration (grains) and brands of Armour thyroid

Although bodybuilders typically prefer the quick results they see with T3, there is some merit to taking Synthroid and allowing it to convert naturally to T3. Actually, Synthroid is the more prescribed thyroid medication in the US of A as well as Canada. This is because if you have lower T3 levels, most doctors prefer to see your body convert the extra T4 (Synthroid) into higher T3 levels. Of course, this assumes that the conversion pathway isn't inhibited, at which point you need to supplement T3 to raise your T3 levels. Oh…and clearly if your T4 levels are low, then supplementing with T3 is pointless. But here, what we're concerned with is the way this drug can influence your body transformation, and it's a little known fact that the conversion process of T4 into T3, and the enzymes involved, can actually have a very beneficial effect on the anabolic state of your body. This would appear to be synergistic with IGF-1 as well as insulin.

Yes, synthroid can be anabolic- if it goes through the conversion process to T3. This is why for years, precontest bodybuilders have noticed that they

might not burn as much body fat on Synthroid, but they seem to keep more muscle on a hypocaloric diet. So depending on which of Christian's diets you follow, and how you apply his advice to your diet, Synthroid may be the better choice for you. If you hold onto muscle easily while dieting, and have a lot of fat to burn, then Cytomel may be the choice. What I'm saying here, is that it's your body transformation, and you need to figure out which of these approaches to manipulating the thyroid seem most applicable. This may mean Cytomel, Synthroid, or nothing at all. Of course, nothing at all would be the cheapest route…Cytomel burns the most fat per mg, and Synthroid may have the advantage in terms of being slightly anabolic.

However, when compared to Cytomel, Synthroid requires much higher doses to be effective. Cytomel tablets come in 20-25mcg tablets and Synthroid comes in tabs dosed roughly 2x high. Usually, that's a pretty accurate way to judge what dose would be effective…if 50mcgs of Cytomel are effective for someone, then there is a good chance that 100mcgs of Synthroid will have a comparable effect. However, this fact has made most bodybuilders shy away from Synthroid, in lieu of taking half as much Cytomel for the same results.

Dose equivalent between the three major thyroid products			
Drug	T3 (cytomel)	T4 (Synthroid)	Armour thyroid
Approximate dose equivalent	7.5mcg	25mcg	¼ grain
Approximate dose equivalent	12.5mcg	50mcg	½ grain
Approximate dose equivalent	25mcg	100mcg	1 grain
Approximate dose equivalent	37.5mcg	150mcg	1 ½ grains
Approximate dose equivalent	50mcg	200mcg	2 grains
Approximate dose equivalent	75mcg	300mcg	3 grains
Approximate dose equivalent	100mcg	400mcg	4 grains

In fact, precontest bodybuilders don't typically exceed 100-150mcgs of Cytomel during the last weeks of their contest diet. With Synthroid we actually see the doses climb significantly higher to achieve the same results, sometimes even triple the typical dose of the Cytomel, if only Synthroid is used. Synthroid isn't cost effective, in that regard, and that's probably a factor in why people shy away from it.

However, what we're looking at here is body transformation, and I think that should mean that if at all possible, we're trying to make the body utilize nutrients as efficiently as possible. That means that we are on a diet, drug, and training program which could possibly make optimal the use of Synthroid, Cytomel, or nothing at all.

All of the preceding compounds will aid in making the most of our diets. If a true body transformation is to take place, it starts with the diet. The compounds I just told you about don't take the place of a good diet. What they will do is make a good diet into one that will transform your body in ways that would be otherwise impossible. The other thing they will do is aid your body in transforming from bad to good and from good to great- in a much shorter time period.

What the aforementioned drugs will not do is take the place of the diet you just read in Christians' chapter. They'll help, but no amount of drugs will compensate for eating a dozen doughnuts every week, or cheating every other day. They're a tool; just like any tool, they won't build anything without someone using them properly.

Chapter 7

Strength training techniques to maximize muscle growth

In the first chapter we explained the basic principles responsible for the growth of new muscle tissue. We will now take that information and turn it into something that you can actually take to the gym! This chapter will thus deal with the various training techniques you can use to spark muscle growth. Each technique represents one more tool you can use to reach the body you want. Later on in the book we will provide you with complete long-term training programs making good use of these techniques to allow you to not only get the body you want, but also to get it *fast*.

Before getting into the specifics we'll backtrack to the hormonal response to training. A better understanding of how to manipulate the hormones responsible for the modeling of our body will allow you to comprehend the reason why certain training techniques are effective, why others aren't and what technique pairings are the most effective at stimulating maximum muscle growth.

When it comes to building muscle mass the hormones that interest us the most are:

- Testosterone (for its anabolic, CNS-boosting and anti-catabolic properties)

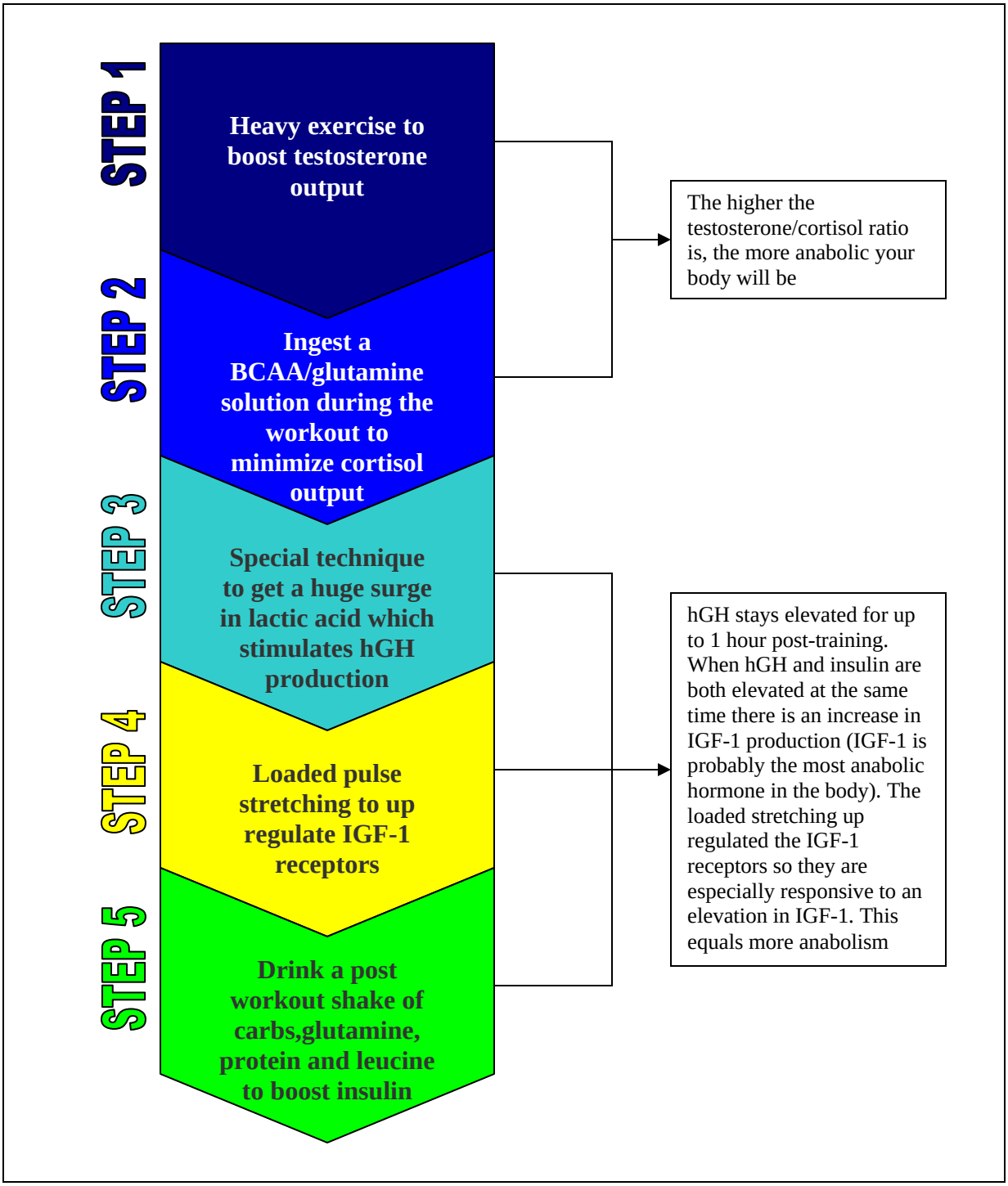
- hGH (for its lypolitic and anti-catabolic properties as well as its stimulatory role in IGF-1 production)

- Insulin (for its anti-catabolic property, its role in shuttling nutrients to the muscles so that they can recover and grow and for its stimulatory role in IGF-1 production)

- IGF-1 (for its extremely anabolic role)

- Cortisol (for its catabolic property… it must be kept under control!)

The following figure illustrates how we can create a highly synergistic hormonal milieu, conductive to optimum muscle growth.



As we saw earlier, heavy lifting increases testosterone and free testosterone for up to 30 minutes post-workout. So by including one heavy lift (preferably a compound movement) in our program we take our first step in establishing an optimally anabolic milieu.

To maximize the anabolic action of the increased testosterone levels we also want to decrease the production of cortisol. Ingesting a mix of BCAA and glutamine (5-10g of each) during the workout can significantly lower cortisol levels (ingesting simple carbs also work, but can make fat loss harder). We can also add a phosphatidylserine supplement (400-800mg before the training session) as it has been shown to decrease cortisol production during training by as much as 30%. This is our second step in the establishment of an anabolic cascade.

We have also seen that there is a strong correlation between lactic acid/lactate accumulation and hGH release. So we should also include a strength training technique aimed at producing the maximum release of lactic acid (think of attaining a maximum pump/burning sensation). This/these special exercise(s) or training technique(s) constitute the third step in our quest for the all mighty anabolic cascade.

It has been demonstrated that intense loaded stretching (extreme stretching against a load/resistance) can up regulate the IGF-1 receptors, making them more responsive to the unbound IGF-1. The more response you get, the more muscle you'll build, it's that simply. So including an intense loaded stretch at the conclusion of our workout (when the muscle is pumped up to the max) is the fourth step in building the cascade. Note that an added benefit of extreme loaded stretching while the muscle is pumped to the max is what is called fascial stretching. The fascia is the envelope surrounding the muscle. It's its too tight, it can actually limit muscle growth. Fascial stretching has been used extensively by John Parillo and more recently by bodybuilding coaching phenom Dante Trudel (better known in the underground circles as "*Doggcrapp*").

Finally, once the workout is over we want to spike insulin by ingesting a drink containing simple carbohydrates, leucine (which provides the dual benefits of being anabolic in itself and a stimulator of insulin release), glutamine and whey protein. This mix will significantly elevate insulin in less than 15 minutes. When both hGH and insulin are elevated at the same time, the body produces more IGF-1 (the most potent anabolic hormone). Remember that we upregulated our IGF-1 receptors earlier, so by stimulating IGF-1 release in that state we magnify its anabolic effect. This is our final step in establishing the perfect anabolic milieu for optimal muscle growth.

TRAINING TECHNIQUES

Lactate-inducing training methods

Here we are basically talking about bodybuilding methods, which involves doing a lot of work in a series with a moderate load. The objective is to recruit as many motor units as possible within a muscle by what's known as cumulative fatigue. As some motor units/muscle fibers become too tired to handle the load, more and more are recruited. When using a high volume of work more motor units are recruited due to the large amount of muscle fatigue.

These methods are thus very effective at increasing the quantitative aspect of the training adaptations. However, because the level of intramuscular tension (proportional to the force output) produced during the set is relatively low, these methods don't lead to maximum improvement in the muscle's functions.

However, to increase muscle size these methods are optimal.

A. Sets to failure

This is your basic bodybuilding scheme. You select a load that is 60-80% of your maximum in a lift and you perform reps until failure (the point where completing another rep is impossible).
Ideally:

- Novice lifters will want to use a load permitting 12-15 repetitions and perform 2-4 sets per exercise.

- Intermediate lifters will want to use a load permitting 8-12 repetitions and perform 3-5 sets per exercise.

- Advanced lifters will want to use a load permitting 6-8 repetitions and perform 4-6 sets per exercise.

The most effective way of performing this type of training is to lower (eccentric portion) slowly (3-6 seconds) and to lift (concentric portion) as fast as you can. This will maximize muscle tension. The rest intervals should

be very short to prevent full muscle recovery, thus forcing the body to recruit more and more motor units for each set.

B. Post-fatigue, pre-fatigue, post- and pre-fatigue

The objective of all three of these techniques is to further fatigue a certain muscle group by using an isolation exercise (for the target muscle) either before (pre), after (post), or before and after (pre and post) a multi-joint exercise. The logic is that in a compound exercise the load is distributed over several muscles at the same time, so each muscle is not necessarily being fully stimulated. By using an isolation exercise in conjunction with the multi-joint exercise you are making sure to fully fatigue (thus to recruit and stimulate as many motor units as possible) the target muscle group.

B1. Post-fatigue

In short, the post-fatigue method consists of adding a less complex movement after your main movement to fully stimulate and fatigue the target muscle group. These two exercises are done with no pause in between them.

The logic behind this method is that in complex (multi-joint) movements the weaker muscle groups will always fail first, leaving the prime movers under-stimulated. For example, in the bench press the triceps or deltoids are likely to fail before the stronger pectorals, thus leaving the pectorals under-stimulated.

By adding an isolation exercise for the pectorals (e.g. flies) right after your set of bench presses you will be able to fully fatigue and stimulate your pectorals. The more stimulation you put on your muscles, the more protein degradation occurs, the higher the anabolic response.

Example of the post-fatigue method : close-grip bench press (compound) followed by dumbbell triceps extension (isolation)

B2. Pre-fatigue

The objective of this method is somewhat similar to the post-fatigue method in that the goal is to fatigue a specific muscle group that might not get fully stimulated from a complex exercise.

As I have mentioned, the strongest muscle involved in a movement will rarely be fully stimulated from this movement because the weaker muscles will fail first. However, if you fatigue this muscle before you perform the main exercise, then you will be able to fully stimulate it when you do the main exercise.

This technique is very effective at stimulating hypertrophy in a specific body part (the body part for which you do the isolation exercise). However, it is not as good for developing overall hypertrophy as the post-fatigue method because it is possible that you will not be able to use as much weight on the main exercise due to the pre-fatigue set.

Because of this characteristic, the main use of this method is to improve a weak body part. If you have an underdeveloped chest compared to your shoulders and arms use a pre-fatigue set for the chest. If your back is lacking behind your arms and shoulders, use a pre-fatigue set for the back. And it isn't even obligatory to do a pre-fatigue set for the strongest muscle group in the main exercise. For example, if you feel like your triceps are proportionally weaker compared to your chest, you can pre-fatigue them before doing the bench press.

Example of the post-fatigue method : seated lateral raises (isolation) followed by a seated dumbbell press (compound)

B3. Pre- and post-fatigue

This is certainly the most difficult hypertrophy method of all, and probably the most effective as well. It simply is a mix of the pre-fatigue method and post-fatigue method. It leads to the greatest possible hypertrophy response of all the methods that you can use in the gym. Because this method is so intense, it should not be used for more than 2-3 weeks straight.

You can do two types of pre-/post-fatigue training:

1. Targeting the same muscle group during the pre-fatigue exercise and the post- fatigue exercise; this will place a large hypertrophy stimulus on the targeted muscle group.

Example of the first type of pre/post-fatigue : cable flies (isolation) followed by a bench press (compound) and then by cable crossovers (isolation)

2. Targeting one muscle group during the pre-fatigue exercise and another one during the post-fatigue exercise. This allows you to correct two different weaknesses at the same time.

Example of the second type of pre/post-fatigue : cable flies (isolation chest) followed by a bench press (compound) and then by overhead rope triceps extensions (isolation triceps)

C. Drop sets

Drop sets can be a very effective way to stimulate muscle growth, however most trainees do them all wrong. The basis is fairly simple: you perform a regular set to muscle failure and then reduce the weight to continue on with more reps (without rest). While one can perform several drops within one set, most overdo it; they often don't remember the ideal intensity threshold to stimulate muscle growth: they often work their way down to weights so low it's ridiculous. Always remember that growth is stimulated both by load and duration. If you go down in weight too much, the load factor is too low to stimulate growth even if the duration is very long.

Ideally one should stay in the total hypertrophy zone when it comes to total reps per set. So we are basically talking about sets of 15 for beginners and intermediates and 12 for advanced. Normally only 1 or 2 drops would be necessary. Once again remember, we don't want to go above 12-15 total reps, regardless of the number of drops. For example:

Mini-set 1 (185lbs) = 7 reps (so the trainee has 5-8 reps to perform)
Lowers the weight to 165lbs and without rest continues his set
Mini-set 2 (165lbs) = 4 reps (so the trainee can still perform 1-4 reps)
Lowers the weight to 155lbs and without rest continues his set
Mini-set 3 (155lbs) = 3 reps
Set is over (total 14 reps)

The less drop-off (weight reduction) there is from mini-set to mini-set, the more effective the set will be.

C. Iso-dynamic contrast

Don't let the complex name fool you, this training method is actually quite simply: you perform a regular exercise normally except for the addition of a 2-5 seconds pause during the movement on each rep. During that pause your muscle(s) should be contracted as hard as possible. This training method will not only increase the TUT without you having to significantly reduce the load, but it will also help you recruit up to 10% more muscle fibers! The more fibers you recruit, the more you grow.

The position of the pause will vary depending on the type of movement:

Position of the pause depending on the exercise type	
Peak contraction (end of concentric phase)	Mid-range point (middle portion of the range of motion)
Lat pulldown and variations Seated rowing and variations Barbell rowing and variations Dumbbell rowing and variations Upright rowing and variations Shrugs and variations Leg extension Leg curl Calf raises and variations Lateral raises and variations Back extension Triceps work at pulley station Biceps work at pulley station Cable cross-over Pec Deck machine Flies at pulley station	Bench press and variations Dumbbell press and variations Shoulder press and variations Squat and variations Leg press Hack squat Biceps work with barbells Biceps work with dumbbells Triceps work with barbells Triceps work with dumbbells Deadlift and variations

Example of the iso-dynamic contrast method with a peak contraction exercise

Example of the iso-dynamic contrast method with a mid-range exercise

D. “Burn” reps

This training technique consist of adding partial repetitions once muscle failure has been reached with full range of motion reps. For example you perform a maximum number of reps on the barbell curl and when you reach muscle failure you continue the exercises, only performing half (or even quarter) reps.

While you are not going through a full range of motion, your muscles are still contracting and the muscle fibers must perform the work. This allows you to continue to place more training stress on the muscles even when the nervous system/lactate accumulation prevents you from completing full reps.

There are three types of “burn reps”:

1. Low-position burns: once you reach full range of motion failure, you continue to perform partial reps at the initial ½ or ¼ (as fatigue sets in) portion of the concentric (lifting) phase. You basically perform these partial reps until you cannot move the weight at all.

2. Peak-contraction burns: you will probably need a training partner to execute this training technique because as you reach muscle failure you’ll need to bring the bar to the end of the lifting motion (that’s where you’ll need your training partner) and perform partial reps at the final ½ or ¼ portion of the lifting phase. You basically perform these partial reps until you cannot lower the weight under control.

3. Dual burns: this is simply a combination of the preceding two methods. Start with the peak-contraction burns (after you reach full range of motion failure) and then move on the low-position burns. This training technique was the favorite of the first Mr.Olympia: Larry Scott.

E. Double contraction

This technique is often called one & a half reps. It is somewhat similar to burn reps in that each set is a mix of full range of motion and partial reps. The difference is that each “repetition” in the set includes one full range of motion action and one partial action. For example, you can squat down then squat back halfway up (until the knees are at a 90 degrees angle)

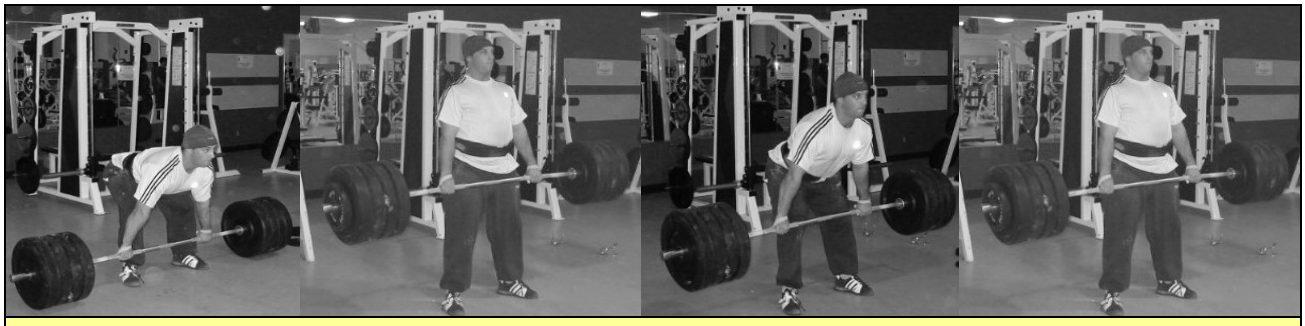
then go back down and finally squat back up completely; this is one repetition.

You can either perform low-position double contractions or high-position double contractions.

1. Low-position double contraction: you perform the half rep at the beginning of the lifting (concentric) motion.

Example of a low-position double contraction on the deadlift

2. High-position double contraction: you perform the half rep at the conclusion of the lifting motion.



Example of a high-position double contraction on the deadlift

F. Tempo contrast

This method is fairly simple: you alternate between superslow reps and superfast reps within the same set. My classic template is to use a 604/explosive contrast, meaning that the slow reps are performed with a 604 tempo (6 seconds eccentric, no pause, 4 seconds concentric) while the fast reps are done as fast as possible.

Normally, eight reps are performed using this method, with the tempo changing every two reps:

Rep 1: 604
Rep 2: 604
Rep 3: explosive
Rep 4: explosive
Rep 5: 604
Rep 6: 604
Rep 7: explosive
Rep 8: explosive

This method is very effective at stimulating as many motor units as possible and thus can provide for a very important growth stimulus. When using this method, three to four sets are performed for each exercise.

Max tension/force training methods (testosterone boost)

The following methods are those that should be used for the first exercise of your workout. Ideally you select a compound lift in which you can use a lot of weight. If you are training a muscle that really isn't train using compound movements (biceps, forearms, calves, traps for example) you should select the exercise for that muscle group that allow you to use the most weight (e.g. a barbell curl is better than a concentration curl).

G. Sets in the absolute strength and functional hypertrophy zones

Simply pick a compound/heavy lift and perform sets either in the absolute strength zone (3-5RM or 87-90% of your maximum) or functional hypertrophy zone (6-8RM or 80-85% of your maximum). Anywhere from 3 to 6 sets should be performed. Contrary to lactate-inducing methods, you do not have to reach muscle failure with max tension methods as the nature of the techniques will lead to adequate fast twitch fiber recruitment/stimulation anyway.

H. Cluster training

The methods I will present can be grouped into a category called "cluster training" or "rest/pause training". While I will present several different methods, they all share three common characteristics:

- They make use of intra-set pauses of 7-12 seconds
- They utilize training loads above the optimal tension threshold
- They allow you to perform more reps than you normally could with a certain weight

And most of all, they will stimulate gains at a truly amazing rate!

H1. Cluster method no.1 "Classic" cluster

This first method is the grand daddy of all cluster training approaches. I've been taught this method by international level coach Nelson Ayotte and find it to be one of the most effective ways to boost strength and size gains.

It's also the simplest cluster method:

Intensity level: 87-92% of your 1RM
Number of reps per cluster set: 5
Total number of cluster reps: 15-25 (so 3-5 sets)
Rest between reps: 7-12 seconds
Rest between sets: 120-180 seconds
Tempo: always try to lift the bar as fast as possible and lower it slowly (4-6 seconds)

Note that between each repetition you rack (of let go) the weight. So a good partner might be useful.

A workout might look something like this:

Set no.1	Set no.2	Set no.3	Set no.4	Set no.5
1 rep at 87%	1 rep at 90%	1 rep at 90%	1 rep at 92%	1 rep at 92%
7 sec. rest	10 sec. rest	10 sec. rest	10 sec. rest	12 sec. rest
1 rep at 87%	1 rep at 90%	1 rep at 90%	1 rep at 92%	1 rep at 92%
7 sec. rest	10 sec. rest	10 sec. rest	10 sec. rest	12 sec. rest
1 rep at 87%	1 rep at 90%	1 rep at 90%	1 rep at 92%	1 rep at 92%
7 sec. rest	10 sec. rest	10 sec. rest	10 sec. rest	12 sec. rest
1 rep at 87%	1 rep at 90%	1 rep at 90%	1 rep at 92%	1 rep at 92%
7 sec. rest	10 sec. rest	10 sec. rest	10 sec. rest	12 sec. rest
1 rep at 87%	1 rep at 90%	1 rep at 90%	1 rep at 92%	1 rep at 92%

H2. Cluster method no.2: "Mentzer cluster"

This second method was a favorite of the great bodybuilder, Mike Mentzer. While we may all have opinions regarding his super-low volume and frequency workouts, this one method of his is actually quite effective. Obviously, being a believer in slightly more training volume than what Mentzer advocated, I modified the set variable. This method is slightly more demanding than the classic cluster. However it can lead to even greater gains, but because of the fantastically high neural demands, it cannot be used for more than 3 straight weeks.

Intensity level: 95-98% of your 1RM and 85-90% of your 1RM
Number of reps per cluster set: 4
Total number of cluster reps: 12-20 (so 3-5 sets)
Rest between reps: 7-12 seconds
Rest between sets: 120-180 seconds
Tempo: always try to lift the bar as fast as possible and lower it slowly (4-6 seconds)

Note that between each repetition you rack (of let go) the weight. So a good partner might be useful.

This cluster differs from the classic cluster in the following aspects:

- It uses a greater load initially (only 10lbs or so less than your 1RM)
- It includes a 10% drop between the 3rd and 4th rep

A set looks like this:
Repetition no.1: 95-98% of your 1RM
Rest 7-12 seconds
Repetition no.2: 95-98% of your 1RM
Rest 7-12 seconds
Repetition (or slightly assisted repetition) no.3: 95-98% of your 1RM
Rest 7-12 seconds, partner unload weight by 10%
Repetition no.4: 85-90% of your 1RM

H3. Cluster method no.3: Extended 5s

This is a favorite of mine. You start the exercise with the maximum load that you can lift 5 times (5RM or around 85%). You perform your 5 reps (try for

the sixth one if you can) then rest for 7-12 seconds and try to squeeze 2-3 more reps, rest for 7-12 seconds again and go for 1-2 more reps. Basically you have to complete 10 repetitions per set. Take as many pauses as you need to get the 10 reps (most will need to take 2 pauses).

Intensity level: 82-87% of your 1RM (or your 5RM)
Number of reps per cluster set: 10
Total number of cluster reps: 30-50 (so 3-5 sets)
Rest between reps: 7-12 seconds
Rest between sets: 120-180 seconds
Tempo: always try to lift the bar as fast as possible and lower it slowly (4-6 seconds)

Note that between each repetition you rack (of let go) the weight. So a good partner might be useful.

H4. Cluster method no.4: Drop set cluster

This method is similar to a classic cluster, but with one difference: you decrease the amount of weight used on each repetition, making each rep a maximal rep.

Intensity level: 85-98% of your 1RM
Number of reps per cluster set: 5
Total number of cluster reps: 15-25 (so 3-5 sets)
Rest between reps: 7-12 seconds
Rest between sets: 120-180 seconds
Tempo: always try to lift the bar as fast as possible and lower it slowly (4-6 seconds)

In theory a set should look like this:

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
98%	95%	92%	90%	87%

However at this point percentages are hard to use, instead you should go for a 5-10lbs drop on each rep (depending on the movement). So something like the following is more practical.

Example for someone with a 275lbs bench press:

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
270lbs	260lbs	250lbs	240lbs	230lbs

There is still 7-12 seconds between each repetition, time enough for you or your partner to decrease the weight accordingly.

Intense loaded stretching (upregulation of IGF-1 receptors)

The following is from Christian's ebook "Theory and application of modern strength and power methods" and was written by strength coach Tony Schwartz. He describes the method called EQI, which is just another term to define extreme loaded stretching.

Introduction

Eccentric quasi-isometrics (EQIs) (Siff 1994) are not your ordinary type of stretching. As such, they may be able to deliver results and benefits that you won't see with any other type of stretching.

Please notice that I say, "may be able to." This statement is in reference to the fact that no direct research has been done on the effects of this specific type of muscle action. All of the information presented below is based on either published research on topics indirectly related to EQIs or on anecdotal evidence gathered from the real-world application of EQIs with athletes. Please make no mistake about it, the effects of EQIs have not been written about in many other publications. Thus, the information presented below is theory based on direct anecdotal and indirect empirical evidence.

What are EQIs?

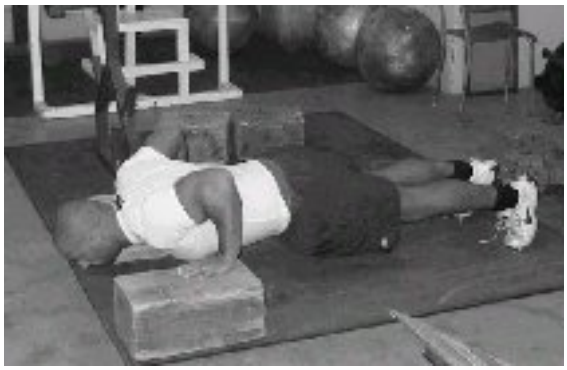
EQIs are essentially just what the name says:

Eccentric: The muscles are lengthening as they are contracting.
Quasi-Isometrics: The action is very slow (nearly static).

Strictly defined, EQIs are simply an eccentric action. However, the eccentric action takes place at such a slow rate that the term "quasi-isometric" is applied (EQIs can also be described as a yielding-isometric).

The descriptive term “quasi-isometric” lets us know that the action is nearly isometric, because almost no movement takes place relative to the duration of the muscle action.

To better understand just what EQIs are, it is best that we take a look at an example.



EQI Push-up

In this example, the athlete is in a push-up position with his hands on blocks. This is the starting position. In this position, the athlete will attempt to hold an isometric contraction. As time goes on, the athlete will begin to fatigue. Because an isometric contraction is nothing more than a slow eccentric, the athlete will slowly start to “sink down” between the blocks. The athlete is still attempting to hold an isometric contraction, but it has turned into a very slow eccentric contraction.

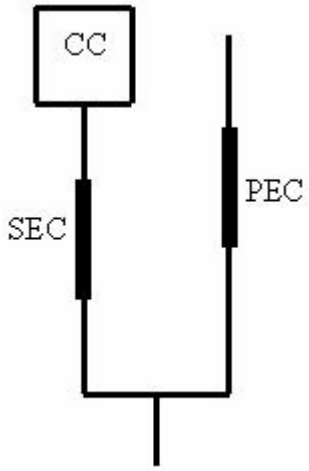
As the athlete sinks lower and lower, the muscles (and their associated connective tissue) begin to lengthen. The athlete continues to attempt an isometric contraction. This contraction in the lengthened state is where most of the benefits of EQIs are derived. Note that weights (dumbbells, barbell) can also be used. You only have to reach the stretched position of a strength exercise (e.g. bottom portion of a fly) and hold the weight.

Benefits of EQIs

As previously mentioned, EQIs offer a myriad of potential benefits that cannot be had with traditional stretching. These benefits include everything from injury prevention to increased lactic acid tolerance. Let’s explore a few of these benefits in depth.

Primary Benefits

With traditional stretching methods (static stretching of a relaxed muscle) primarily the parallel elastic component (PEC) of a muscle is stretched (Siff 1993; Tumanyan and Dzhanyan 1980; Iashvili 1982). Stretching of a contracted muscle will have a more pronounced effect on the series elastic component (SEC). To understand what this means, we must understand the difference between the PEC (made up of the sarcolemma, titin, and other structures) and SEC (made up of tendon and other structures).



Graphic adapted from "Tendinitis: its etiology and treatment" by Sandra Curwin and William D. Standish

From the picture, we can see that the contractile component (CC) of muscle is "in series" with an elastic component (the SEC).

Having the SEC in series with the contractile component means that the SEC will be under tension when the contractile component produces tension (Levangie and Norkin 2001).

With the PEC things are a little different. The PEC is an elastic component of muscle that functions in parallel with the contractile component. This means that as the contractile component lengthens or shortens, so does the PEC (Levangie and Norkin 2001).

What does all this have to do with EQIs? Well, there are two types of tension, active and passive. The PEC is responsible for producing passive tension, while the contractile component is responsible for producing active

tension. The total tension in a muscle is the sum of both active and passive tensions.

As the PEC lengthens it produces more and more passive tension. However, the contractile component of muscle has a specific range in which it produces the greatest amount of tension. If the contractile component is shortened or lengthened beyond this range, then the tension it produces will decrease. This is known as the isometric length-tension relationship (Levangie and Norkin 2001).

Let's go back and relate this information to our EQI push-up example. At the beginning of the action the athlete is producing tension with the contractile component of muscle. Since the SEC acts in series with the contractile component, the SEC is also under tension. However, since the athlete has not yet begun to fatigue and "sink down," the contractile component is not lengthened significantly and therefore, neither is the PEC.

As the athlete begins to fatigue and sink down, the contractile component begins to lengthen, and so does the PEC. At this point, both passive and active tensions contribute to the total tension.

This is one of the strengths of EQIs over other stretching methods. It allows the athlete to stretch both the SEC and PEC at the same time.

As mentioned before, with traditional stretching methods (static stretching of a relaxed muscle) primarily the parallel elastic component (PEC) of a muscle is stretched. If the emphasis is put on traditional methods of stretching, then primarily the PEC will become more flexible. This worsens the ratio of passive (which the PEC is responsible for) to active flexibility (which the SEC is primarily responsible for), which may cause a higher incidence of injuries in athletes (Iashvili 1982). In addition, increasing only passive flexibility will not improve dynamic flexibility (the kind needed in most sport actions) to a significant extent. Furthermore, Iashvili (1982) has shown that there is a greater correlation between active flexibility and sport achievement than passive flexibility and sport achievement.

Since passive static stretching primarily impacts the PEC, the SEC is left un-stretched. This is important to note because one of the primary applications of passive static stretching is to re-lengthen the muscle after work that involves contraction (i.e. strength-training). However, passive static

stretching does not stretch the components of muscle that are involved in contraction! This is another reason why EQIs are superior to traditional stretching.

Secondary Benefits

In addition to the injury prevention and SEC lengthening benefits of EQIs, there are several other benefits that they may offer:

Shifting the length-tension curve: As mentioned above, muscle contracts most effectively at a specific length. By putting your muscles into a quasi-isometric contraction in a lengthened position, you are requiring your muscles to produce force in an area of the length-tension curve in which they are typically weak. By doing this over and over again, it may be possible to shift this curve slightly, so that your muscles can produce greater force in a lengthened state.

Strengthening the tendon: Because eccentric training leads to more hypertrophy at the distal portions of the muscle (Seger et al. 1998), it is logical to believe that more stress is put on the distal ends of the muscle during an eccentric contraction. Consequently, this is where the tendons are located. In addition, Griffiths (1991) has shown that stretches at a slow or moderate rate occur entirely at the tendon. Combine this with the fact that EQIs put the SEC (of which the tendon is a major component) under tension, and it seems obvious that EQIs put a tremendous amount of stress and strain on the tendon.

It has been shown that changes in activity can promote subsequent changes in the structure and strength of connective tissue (Komi 2003; Hayashi et al. 1996). This is one of the reasons that EQIs have the potential to reduce injury. EQIs may also produce changes in the SEC that allow more elastic strain energy to be stored by the tendon.

Strength transfer to all joint angles: Unlike traditional isometric exercises, which only produce strength gains at the specific joint angle, EQIs produce strength gains at all joint angles. This is due to the fact that EQIs are done with the muscles in extension. Raitsin (1974) showed that training muscles isometrically in a stretched position leads to a greater transfer of strength gains to all joint angles. In addition, EQIs are not a strict isometric contraction. Rather, they are a quasi-isometric contraction. Because of this,

the muscles are trained at more than one joint angle, enhancing the carry-over to all of joint angles used.

Hypertrophy and possible hyperplasia: The work of Dr. Jose Antonio with birds has shown us that a prolonged, weighted stretch of a muscle can result in a 318% increase in muscle mass (Antonio and Gonyea 1993). In addition, this same study showed an 82% increase in fiber number. This study was performed on birds that were stretched for hours and days at time however. The types of results seen in this study are not likely to be replicated with EQIs, but some hypertrophy (and possibly hyperplasia) may result.

Lactic acid tolerance: One peculiarity of EQIs is the fact that blood cannot effectively travel into or out of the muscle due to the strength of the contraction (assuming the strength of the contraction is great enough). This results in a build-up of metabolic by-products that cannot effectively be cleared from the muscle until the contraction has stopped. One of these by-products is lactic acid.

During many sports (basketball, hockey, etc.) it is common for a large amount of lactic acid to build-up in the muscle. Being able to tolerate this lactic acid build-up and continue contraction of the muscles is an important matter in these sports.

Reactive hyperemia: As mentioned above, during EQIs a tremendous amount of lactic acid and other by-products build-up in the muscle. However, when the contraction is completed the body attempts to wash all of these by-products out of the muscle. This is accomplished through a process called "reactive hyperemia." During reactive hyperemia the blood vessels of the previously contracted muscles dilate. This transient phenomenon can be doubly beneficial if the blood contains large amounts of glucose, amino acids, and other nutrients that may aid in the muscles' recovery from an exhausting contraction.

Increase mental toughness: Anyone who has ever done interval training, or any other type of work where lactic acid builds-up in the body, knows what a challenge it is to keep going when your body is telling you to stop. EQIs can present this same challenge. The difference is, there is nothing else to look at, nothing else to concentrate on. For an athlete, this can be a very effective tool to increase mental toughness and relaxation. If, while doing EQIs, you start to think about how hard it is and how you don't want to go

on, you are almost guaranteed to fail long before your body is done. However, if you can relax while your body is in tremendous pain, then you will be able to push your body to its true limits. This is an aspect of EQIs that is not often talked about, but it is also an aspect that may carryover to the playing field better than any other.

Recognition of postural weakness: One of the major determinants of a good training program is whether or not it addresses the individual weak points of an athlete. To do this however, either the athlete or his coach must first recognize what these weak points are. There are several ways to determine weak points (and there are various types of weak points), but EQIs offer a distinct advantage over some of the other methods currently used to determine postural weaknesses during sport actions. Namely, EQIs are a nearly static (quasi-isometric) exercise. This affords the coach the opportunity to analyze an athlete's posture in sport-specific positions over a prolonged period of time. Effective analysis of posture during rapid dynamic actions without a highly trained professional and/or the use of special equipment (i.e. high-speed cameras) are nearly impossible.

Admittedly, the nearly static nature of EQIs is also one of the downsides to using them for postural analysis, as sports involve dynamic actions. However, EQIs can be an important weapon in the analysis arsenal, because more information about an athlete's condition can translate into the formulation of a more effective training program.

In regard to the duration and intensity of EQIs, it is important to note that to reap all of the benefits mentioned above, duration must be emphasized. Because of this, intensity must be sufficiently low so as to allow sufficient duration of the muscle action.

However, while duration is favored over intensity, proper posture is emphasized above all else. As soon as posture begins to degrade, the exercise should halt. This is a small point, but is cannot be emphasized enough.

EQIs should be performed to muscular failure (or the aforementioned degradation in form) in order to get the most benefit. This is due to the fact that as you fatigue, you will sink lower into the stretch. The further (up to a point) the SEC and PEC stretch, the more benefit you can expect to see.

The time you can hold an EQI for is largely dependent on what exercise you are doing. However, as a guideline, I have provided a table below so that you can have an idea of how your athletes' performances rate. Again, keep in mind that proper posture must be emphasized over duration. A long duration EQI with poor posture will not translate into good results, and may even have negative effects.

Using EQIs after a training session will re-lengthen the contracted tissue. This is important because if the muscles are left in a contracted state, then blood flow to the muscle will be significantly reduced (Zatsiorsky 1995). This is bad news for those of you who are worrying so much about post-workout nutrition. If blood can't effectively reach the muscle, then how do you expect it to utilize the various nutrients in the blood to repair itself?

One of the first benefits people notice is that they are not nearly as sore the next day if EQIs are done after a training session. This is most likely because the muscles have been re-lengthened, allowing for optimal recovery. The implications of this are great. If the body can achieve complete recovery at a rapid rate, then more training sessions are possible in a given time-period. To further accelerate the recovery process, take advantage of reactive hyperemia by drinking your post-workout shake 15-30 minutes before doing your EQIs. This will provide the exhausted muscles with a large dose of the substrates they need to recover.

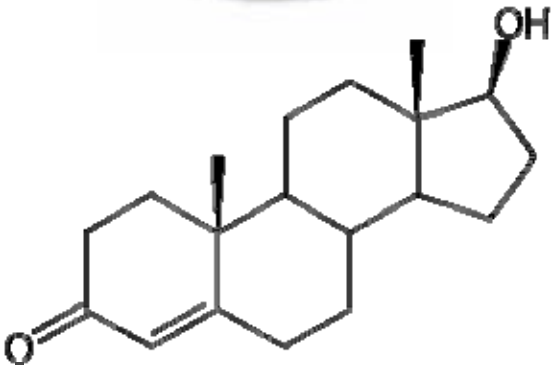
Conclusion

Traditional stretching has recently been looked down upon, and rightly so, by many as being ineffective at promoting flexibility during dynamic sporting actions, as well as being ineffective at relieving muscle soreness. While both of these criticisms are valid, traditional stretching has often been removed with nothing to take its place.

EQIs not only do a better job of enhancing dynamic flexibility and relieving muscle soreness, but they offer a myriad of other benefits to the strength coach and the athlete who are willing to put in the hard (and painful) work involved.

Chapter 8

Anabolic techniques to maximize muscle growth



In the last chapter, Christian explained some of the techniques you'll be using for maximizing muscle growth. In this chapter, I'm going to show you how to combine those methods along with an optimal cycle of anabolics, to make the most of your training sessions. However, just as this chapter follows the one on workout techniques, you need to remember that anabolic use is to follow proper training, not the other way around. In other words, if you haven't optimized your training, then there's no need to use anabolics yet.

So what I'm going to show you is how to design your cycle to follow the training and diet we've just seen outlined. Hopefully, you've taken the time to read all of the previous chapters, and haven't just skipped ahead to this chapter to learn how to create a body-transforming cycle. There's no magic in steroids. When I read the first "Underground Steroid Handbook" I learned that the rabbit was always in the hat, and the cards were up a sleeve all along. Steroids used to look like magic to me; I found it hard to believe you can take a few pills and become more muscular seemingly overnight. Well, without a proper diet and training, you can't. I'm not giving you a magic pill here; I'm simply going to tell you how to optimize your body-transformation in a chemical way.

If you read Chapter 2, you'll remember that steroids are not magic- instead they are a means of optimizing your own network of hormones to produce optimal results in minimal time. But if you have ever seen the kinds of results that they produce, they sure can seem like magic. If you are a beginner and have seen their effects first hand (perhaps in a friend or on yourself) they probably still seem like magic to you. I assure you that there´s no magic here…perhaps a little hormonal slight of hand, or chemical trickery, but certainly no magic.

So let's get to work figuring out what kind of cycle would be appropriate to compliment Christian's training and diet routine(s). This will require a bit of mental effort on your part, because instead of throwing some drugs and cookie cutter dosages and cycles at you, I'm going to do something a bit different. First I'm going to ask you to figure out where you are in your training age. This means you need to know how many years you've been training. I strongly advise against using steroids at all if you've been training

for less than 2 years. Personally, I had 5 years of training under my belt before I touched anabolic steroids- and as you may know, I'm not exactly the model of self restraint.

The next question you need to ask yourself (if you've been training for at least two years) is "have I done steroids before?" If the answer to the second question is yes, then you still might (or might not) be a beginner to the world of anabolic use.

I typically limit my suggestions for most beginners' cycles to two compounds at most. And also typically limit my suggestions to the most cost effective cycles possible and I don't ever include any bizarre or hard to find drugs in beginners' cycles. Besides, if you're a beginner, you usually can't get all the exotic drugs people talk about- but as a beginner, you're better off without them. So let's take a look at some cycles first, and then I'll tell you about the drugs involved. The first one we'll be taking a look at is one geared towards someone who is not too lean, but has decent size. This cycle is for someone who has problems taking that final body transforming step into being really lean but who doesn't want to forget about getting bigger either:

Lean mass gain cycle for beginners		
Week	**Testosterone** *enanthate or cypionate*	**Equipoise** (optional) *Boldenone undecyclate*
1	300 to 400mgs	300 to 400mgs
2	300 to 400mgs	300 to 400mgs
3	300 to 400mgs	300 to 400mgs
4	300 to 400mgs	300 to 400mgs
5	300 to 400mgs	300 to 400mgs
6	300 to 400mgs	300 to 400mgs
7	300 to 400mgs	300 to 400mgs
8	300 to 400mgs	300 to 400mgs
9	300 to 400mgs	300 to 400mgs
10	300 to 400mgs	300 to 400mgs
11	300 to 400mgs	300 to 400mgs
12	300 to 400mgs	300 to 400mgs

So you'll notice a few things here, and I'll explain them one by one. The first thing that I suggest is that a beginner should run a twelve week cycle. Well, basically, I happen to think that 12 week cycles are ideal (I usually recommend them for all levels). This is because as a beginner, I feel like you want to have some time to deal with your cycle and make gains from it.

You're going to gain a lot of weight at first, and you need to get used to it. Gains will begin to taper off towards the end of this cycle. Most people find minor side effects to begin immediately or within the first month of starting a cycle (acne, etc...) and subside within the first to second month also. This is as a result of your body compensating.

When athletes go on and off steroids, for set periods of time, this is known as "cycling". When on a cycle, if two or more anabolic steroids are used at the same time, it is typically known as "stacking". Athletes and bodybuilders often stack anabolic steroids with each other to optimize and combine the best qualities of each, to produce a desired result. In this case, we're concerned with body transformation, so the steroids we're going to take a look at are very specific, and most suitable to achieve this goal.

It is often the case that other drugs are also included in a stack, to help maximize the results of it. Since different anabolic steroids have different effects on the body, when you stack two different steroids you can create either an additive or synergistic effect. Optimally, we want to look at products and stacks which will produce a synergistic effect, not just an additive one.

The first compound we're looking at for this cycle is testosterone. Testosterone is a great compound for use as the base of every cycle (I use it in all of mine), and it is especially good in a beginner's cycle This is because, as you know, it is the primary male sexual hormone and as we've gone over already, it will produce a variety of beneficial effects in your body including the synthesis of new protein and increase in IGF (both of which will build muscle), it will increase red blood cell count (thus increasing endurance), and, importantly, will provide an increase in both strength and aggressiveness in the gym. Finally, as you already know, it will convert to that much stronger androgen called Dihydrotestosterone (DHT) and also the female sex hormone Estrogen (some of which, but not too much, we actually want around). It will, of course, also shut off your own natural testosterone production while you are on it.

I typically choose testosterone as a base for all cycles as it will give you the full spectrum of effects provided by your own natural testosterone, albeit at a much higher dose, and with more of an anabolic effect. At this dose, not too many side effects should occur- if any. If your nipples get sore (signaling the onset of Gyno), then 10mgs/day of Nolvadex or .5mgs/day of Arimidex could be added in. It wouldn't be a bad idea to keep one of those compounds on hand, just in case.

As a beginner, using a long estered testosterone gives you the advantage of having to inject (either Testosterone Enanthate or Testosterone Cypionate) only once a week at this dose.

The second drug I've decided to include as optional in this cycle is Equipoise (or "boldenone undeclynate" more commonly known as "Eq"). Eq is simply testosterone which has been modified to convert to estrogen at a much lower rate (roughly half that of testosterone). The addition of a compound like this into our cycle allows us to further tilt the body transformation scales in our favor. Since Eq aromatizes at half the rate of testosterone, it will aid us in building muscle with less water retention. And Eq has been found to increase appetite in users, that gives us an opportunity to eat more of the clean foods Christian has outlined in the chapter on diet, and thereby further increase our muscle mass to transform our body.

Now, let's look at another cycle, which is primarily targeting someone who is lean and shows abs all the time, but has problems gaining any kind of decent muscle mass:

Mass cycle for a lean beginner who has trouble gaining size		
Week	**Testosterone** *enanthate or cypionate*	**Dianabol (optional)** *Methandrostenolone*
1	300 to 400mgs	20 to 40mgs every day
2	300 to 400mgs	20 to 40mgs every day
3	300 to 400mgs	20 to 40mgs every day
4	300 to 400mgs	20 to 40mgs every day
5	300 to 400mgs	20 to 40mgs every day
6	300 to 400mgs	20 to 40mgs every day
7	300 to 400mgs	
8	300 to 400mgs	
9	300 to 400mgs	
10	300 to 400mgs	
11	300 to 400mgs	
12	300 to 400mgs	

In this particular cycle, the first compound is still testosterone, but the second (and optional) steroid is Dianabol (or Methandrostenolone, commonly known as “D-bol”). This is an oral version of testosterone that has been modified by scientists to have less conversion to estrogen. In fact, it’s actually been modified in exactly the same way that Eq has, relative to testosterone - they added something called a c1-2 double bond. Dianabol, however, has an added methylation, which allows it to be consumed orally and not be destroyed by the liver. Technically, this adjustment is also called c17 alpha alkylation. Adding this steroid into this beginner’s cycle will allow the (already ripped but skinny) user to achieve more gains in strength and muscle mass quickly. Using it at just the outset of the cycle is what’s known to experienced steroid users as “kick starting” a cycle. In other words, the rapid build up of muscle mass will be experienced almost immediately, due to the rapid onset of the effects experienced with an oral anabolic. However, most oral compounds make the liver work extra hard to break them down, so I don’t suggest staying on them for much longer than 6 weeks.

Combined with Christian’s diet and training routine, there is no reason why a cycle like this shouldn’t provide a beginning steroid user with a good twenty+ (or more) pounds. If you’re following this cycle, training and diet, and you live in Canada where Christian is from, you can probably expect good ten (or more) kilograms, eh?

Now, even if you are naturally pretty lean, some of this weight is going to be water retention, since the two steroids being used can both convert to estrogen, which can cause water weight to be accrued. However, by following (Christian’s) clean diet, the bloated look that’s common with first time steroid users can be certainly avoided. Also, it is important to note that it’s a very good idea to do your cardio work when using steroids, not just to transform your body, but to keep your cardiovascular system running optimally, and able to support all of the new weight (and stress) you are placing on it.

The final cycle we’re going to have a look at is the classic testosterone + Deca (Nandrolone) stack. All of the things I had said about testosterone still hold true, but in this case we’re going to add in the option of taking some Deca along with our testosterone. This option is for someone who is right in the mid range of being of average size and leanness. Sure, he could get

bigger, but he also wants to get leaner. This is where most people fit in, and this is the cycle most people will probably benefit from:

Basic Test/Deca cycle for a beginner		
Week	**Testosterone** *enanthate or cypionate*	**Deca-Durabolin** *Nandrolone decanoate*
1	300 to 400mgs	300 to 400mgs
2	300 to 400mgs	300 to 400mgs
3	300 to 400mgs	300 to 400mgs
4	300 to 400mgs	300 to 400mgs
5	300 to 400mgs	300 to 400mgs
6	300 to 400mgs	300 to 400mgs
7	300 to 400mgs	300 to 400mgs
8	300 to 400mgs	300 to 400mgs
9	300 to 400mgs	300 to 400mgs
10	300 to 400mgs	300 to 400mgs
11	300 to 400mgs	300 to 400mgs
12	300 to 400mgs	300 to 400mgs

The compound we're looking at here is (of course) Testosterone with the addition of Deca-Durabolin (or Nandrolone Decanoate, commonly just called "Deca" by bodybuilders.

Nandrolone is produced by modifying the base structure of testosterone at the 19th carbon position, producing a structure known as 19-nor testosterone. Deca causes only slight water retention, and is known for being able to produce nice, quality mass gains.

Now that I've explained some compounds and cycles for beginners, we should probably move on to intermediate cycles. It's relatively easy to figure out what a beginner to steroids is…and it's probably easy to figure out what an advanced user is as well. But the next couple of cycles are for that person who falls in the grey middle area of steroid use…the intermediate user. I define intermediate (with regards to training and steroids) as having been lifting for at least 3 years and done at least 3 cycles, with multiple compounds in at least one of those cycles. Intermediate users have different needs for their cycle design than both beginners as well as advanced users, and here I'm going to outline two body transforming cycles for the intermediate. We'll look at a lean bulking cycle first:

Lean bulking cycle for an intermediate individual				
Week	**Testosterone Propionate**	**Nandrolone Phenylpropionate**	**Oral-Turinabol**	**Arimidex**
1	75mgs/EOD*	100mgs/ E3D**	50mgs/day	.5mgs/day
2	75mgs/EOD	100mgs/E3D	50mgs/day	.5mgs/day
3	75mgs/EOD	100mgs/E3D	50mgs/day	.5mgs/day
4	75mgs/EOD	100mgs/E3D	50mgs/day	.5mgs/day
5	75mgs/EOD	100mgs/E3D	50mgs/day	.5mgs/day
6	75mgs/EOD	100mgs/E3D	50mgs/day	.5mgs/day
7	75mgs/EOD	100mgs/E3D		.5mgs/day
8	75mgs/EOD	100mgs/E3D		.5mgs/day
9	75mgs/EOD	100mgs/E3D		.5mgs/day
10	75mgs/EOD	100mgs/E3D		.5mgs/day
11	75mgs/EOD	100mgs/E3D		.5mgs/day
12	75mgs/EOD	100mgs/E3D		.5mgs/day
*** EOD = taken every other day** **** E3D = taken every third**				

Ok, so what we have here is a nice lean bulking cycle that uses testosterone, nandrolone, Oral-Turinabol, and Arimidex. This cycle is really for someone who has some experience with steroids, and needs some size to really transform their body.

Oral-Turinabol is a steroid which will is derived from testosterone with the same alteration we see on Eq and Dianabol, but with an added 4-chloro modification. This final modification keeps it from converting to estrogen, so we can expect some nice size gains with no water retention. However, since we are including 2 aromatizable steroids in this cycle, I've decided that it would be prudent to include an aromatase inhibitor (Arimidex) in the cycle. Arimidex will inhibit the aromatase enzyme and keep production of estrogen in this cycle to a minimum. This will help produce a leaner look to the physique, while still allowing some nice size gains.

I think Oral-Turinabol is a nice bulking drug, and with the recent emergence of so many quality UG Labs, it is reasonably easy to find as well. I've included it at the beginning of the cycle because it gives the user an increase in strength and size almost immediately, and with the use of the short estered products, this cycle should produce quality gains from the outset on through the completion.

A cycle like this can give the intermediate user a good fifteen plus pounds of new body weight, as well as the strength that accompanies it, and with the

inclusion of Arimidex, those gains should be nice hard muscle and not watery bloat. This cycle of course is most suited for someone who does not put fat on too easily. The next cycle I am going to outline will make use of some compounds which are more suited for the intermediate user who has issues with adding too much extra fat and water when gaining weight.

Mass gaining cycle for intermediates who gain fat easily and hold water				
Week	**Testosterone Propionate**	**Masteron**	**Trenbolone Acetate**	**Arimidex**
1	100mgs/EOD*	100mgs/EOD	75mgs/EOD	.5mgs/day
2	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
3	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
4	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
5	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
6	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
7	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
8	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
9	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
10	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
11	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
12	100mgs/EOD	100mgs/EOD	75mgs/EOD	.5mgs/day
*** EOD = taken every other day**				

Now, we're looking at two totally new drugs in this cycle, both of which need some explaining. Masteron is derived from DHT, and is an excellent hardening drug. It won't add much weight to the user, but all of the weight gained will be very lean, high quality muscle. It also has some anti estrogenic properties and is well known for producing very noticeable strength gains. The other (new) drug in this cycle is Trenbolone, which is a 19-nor derived steroid, and will help the user put on several new pounds of quality muscle mass, with no water retention whatsoever. It's known for being a slightly "harsh" steroid, and can kill your ability to do intense cardio. Most people find the trade off to be acceptable, however, as Trenbolone can produce lean gains which are almost unrivaled by any other steroid.

The final cycle I'm going to outline is the most body-transforming one that you will find in this chapter. It's for advanced users only and will add pounds and pounds of lean muscle to the user. It includes a new drug, and it'll be explained afterwards. You're an advanced user if you've stacked three or more drugs, and done at least 5 cycles. So here it is:

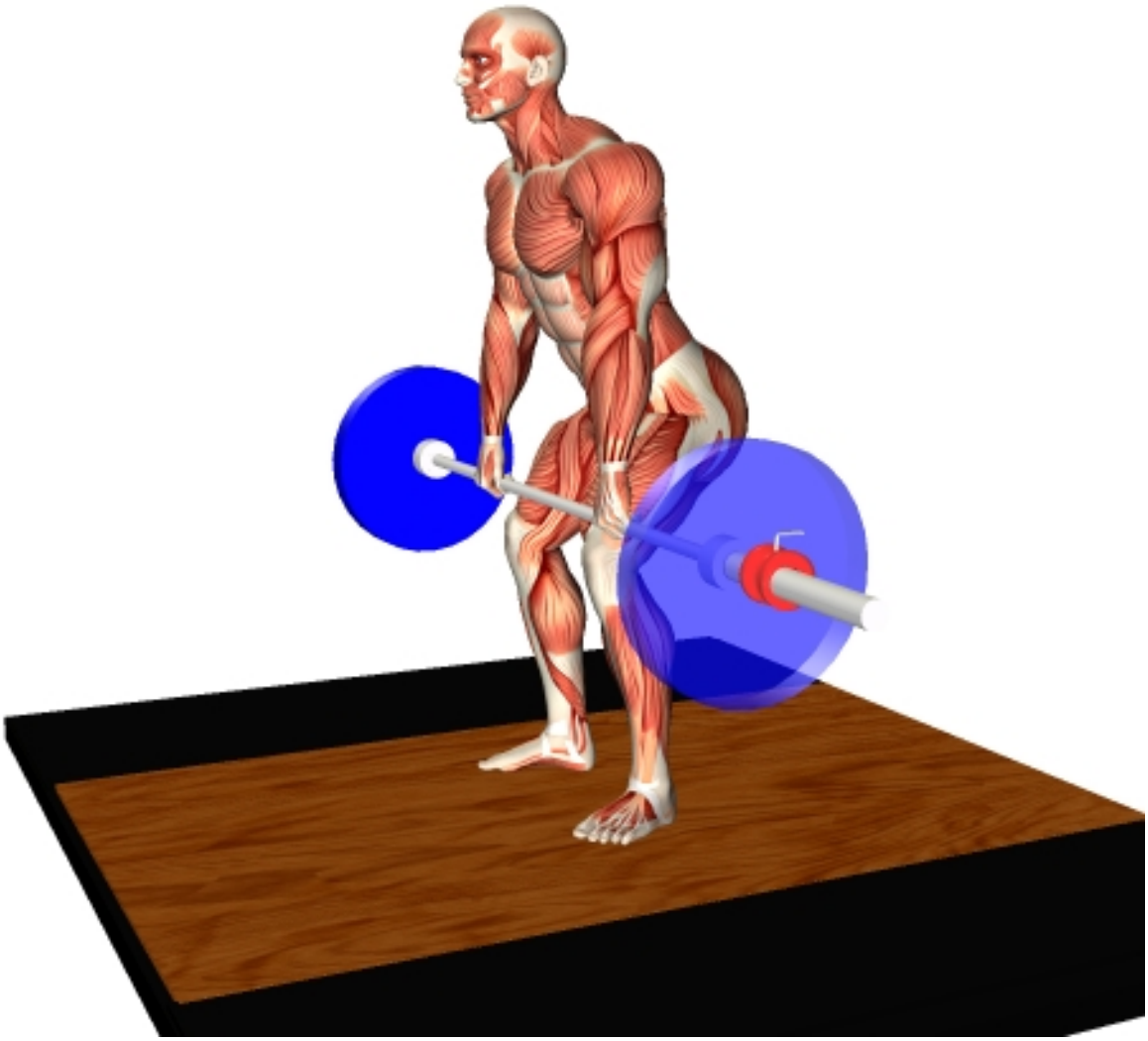
Advanced body-transformation cycle				
Week	**Testosterone Propionate**	**Masteron**	**Trenbolone Acetate**	**Anavar**
1	100mgs/EOD*	100mgs/EOD	75mgs/EOD	50mgs/day
2	100mgs/EOD	100mgs/EOD	75mgs/EOD	50mgs/day
3	100mgs/EOD	100mgs/EOD	75mgs/EOD	50mgs/day
4	100mgs/EOD	100mgs/EOD	75mgs/EOD	50mgs/day
5	100mgs/EOD	100mgs/EOD	75mgs/EOD	50mgs/day
6	100mgs/EOD	100mgs/EOD	75mgs/EOD	50mgs/day
7	100mgs/EOD	100mgs/EOD	75mgs/EOD	
8	100mgs/EOD	100mgs/EOD	75mgs/EOD	
9	100mgs/EOD	100mgs/EOD	75mgs/EOD	
10	100mgs/EOD	100mgs/EOD	75mgs/EOD	
11	100mgs/EOD	100mgs/EOD	75mgs/EOD	
12	100mgs/EOD	100mgs/EOD	75mgs/EOD	
*** EOD = taken every other day**				

(*Arimidex can be included at .5mgs per day if any unwanted estrogenic side effects are experienced.)

This cycle includes Anavar (Oxandrolone), at 50mgs/day. This drug is an orally available version of DHT which has had an oxygen added to the base structure. On a milligram for milligram basis, I am hard pressed to think of an oral steroid which produces the kind of lean gains possible with Anavar. It is, unfortunately, an expensive compound, so most people can't afford to run very much of it for very long. I've included it in this cycle at the outset so you will be able to immediately begin seeing dramatic changes to your physique. Of course, another DHT derived steroid can be substituted for Anavar (Winstrol, perhaps), but for the most part Anavar is the preferred oral steroid for our body transformation goals.

Chapter 9

Yearly body transformation training plan



In this chapter you'll find a complete, 52-weeks training program designed to drastically change your appearance. It includes 4 training cycles (called mesocycles), each having a specific purpose (maximum muscle growth, lean muscle gain, moderate fat loss, maximum fat loss). Each cycle is of a duration of 8 to 18 weeks and includes 3 to 5 different training phases. All an all your yearly body transformation plan includes 15 training phases (so 15 different training programs). Obviously the best way to proceed is to start the whole yearly cycle from phase 1 and work your way through all 15 phases. However each training cycle or even phase can be used by itself depending on your goal. For example if you already have plenty of muscle mass but desperately need to lose fat you might want to start right off with the moderate or maximum fat loss phases. If you still want to gain muscle size but do not want to bulk up you can start at the second mesocycle, etc.

In a later chapter we will also provide info on how to structure you diet depending to be synergistic with the training program. We will also provide a pharmaceutical plan adapted to each of the training cycles. Understand that to reap optimum benefits, all the related factors should work together, not independently.

Overall outline of the yearly plan	
Training cycle/phase	**Dietary recommendations**
MESOCYCLE I - MAXIMUM MASS-GAINING (18 weeks) Phase 1 (4 weeks): General mass building Phase 2 (4 weeks): Chest and shoulders specialization Phase 3: (4 weeks): Back (width, thickness, traps) specialization Phase 4: (4 weeks): Arms specialization Phase 5: (2 weeks): Low-volume mass training/transition/recovery	During phases 1 and 5 you will use a carb-dominant approach. For phases 2-4 You will use a carb cycling approach. The specialized workout days are carb-dominant days while the other days are fat-dominant days. Caloric intake is set at 125-130% of daily expenditure (see chapter 5 for info on how to plan your diet)
MESOCYCLE II - LEAN MASS-GAINING (14 weeks) Phase 6 (4 weeks): Heavy loading dominant Phase 7 (4 weeks): Volume dominant Phase 8 (4 weeks): Density dominant Phase 9 (2 weeks): Low-volume mass training/transition/recovery	Use a balanced non-mixing diet for the whole training cycle. Caloric intake is set at 115-120% of daily expenditure (see chapter 5 for info on how to plan your diet)
MESOCYCLE III - INITIAL (MODERATE) FAT LOSS (8 weeks) Phase 10 (4 weeks): Volume dominant + moderate cardio Phase 11 (4 weeks): Density dominant + moderate cardio	Use a balanced non-mixing diet for the whole training cycle. Caloric intake is set at 80-85% of daily expenditure (see chapter 5 for info on how to plan your diet)
MESOCYCLE IV - MAXIMUM FAT LOSS (10 weeks) Phase 12 (3 weeks): Heavy loading dominant + high cardio Phase 13: (3 weeks): Volume dominant + high cardio Phase 14 (3 weeks): Density dominant + high cardio Phase 15 (1 week): Shape peaking	Use a fat-dominant diet for the whole cycle with a caloric intake set at 70-75% of your daily expenditure. Include one "carb-dominant day" every 2 weeks.

MESOCYCLE I – MAXIMUM MASS BUILDING PHASE (18 WEEKS)

PHASE NO.1 – GENERAL MASS GAINING (4 WEEKS)

Monday – Chest/Shoulders/Triceps (high loading)
Tuesday – Quads/Hamstrings/Calves (high loading)
Wednesday – Back/Biceps/Rear delts/Traps (high loading)
Thursday – OFF / Abs
Friday – Chest/Shoulders/Triceps (low volume)
Saturday – Back/Biceps/Rear delts/Traps (low volume)
Sunday – OFF/ Abs

Monday workout – Chest/Shoulders/Triceps – High loading					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Incline dumbbell press	5	4 to 6	Normal lifting	2 min	Use a 30 deg. Bench angle
B1. Wide grip bench press	4	6 to 8	Post-fatigue	None	Elbows flared out
B2. ¾ dumbbell flies	4	8 to 10	Post-fatigue	2 min	Full stretch up to mid-range
C. Dips (weighted if possible)	3	4-6+max+max	Rest/pause	2 min	Elbows flared out
D. Loaded chest stretch	1	60-90 sec.	EQI	1 min	Full stretch
E1. Neutral grip seated DB press	5	4 to 6	Post-fatigue	None	Stop 1-2” short of lockout
E2. Seated pitcher lateral raise	5	6 to 8	Post-fatigue	2 min	Pinky higher than thumb
F. Loaded shoulder stretch	1	60-90 sec.	EQI	1 min	Full stretch
G. Decline skullcrusher	5	4 to 6	Normal lifting	90 sec	Only use a slight decline

Tuesday workout – Quads/Hamstrings/Calves - High loading					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Back squat	4	4 to 6	Normal lifting	2 min	Shoulder-width stance
B. Leg press	4	8 to 10	Normal lifting	90 sec	Close stance
C. Frog hack squat	4	12 to 15	Normal lifting	60 sec	Knees flared out, close stance
D. Leg extension	1	15 to 20 + 2 drops	Drop set	90 sec	Feet turned out slightly
E. Loaded quads stretch	1	60-90 sec	EQI	1 min	Max stretch
F1. Romanian deadlift	5	6 to 8	Post-fatigue	None	Low-pos. double contraction
F2. Lying leg curl	5	8	Post-fatigue	2 min	Tempo contrast
G. Loaded hamstring stretch	1	60-90 sec	EQI	1 min	Max stretch
H1. Seated calves raise	3	20 to 30	Pre-fatigue	None	Hold stretch position for 2 sec.
H2. Standing calves raise	3	6 to 8	Pre-fatigue	90 sec	Explosive reps

Wednesday workout – Back/Biceps/Rear delts/Traps – High loading					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Pin pull (partial deadlift)	4	4 to 6	Normal lifting	2 min	Start bar at the knees
B1. Chest supported DB rowing	4	6 to 8	Post-fatigue	None	Elbows close to the body
B2. Lat pulldown	4	8 to 10	Post-fatigue	2 min	Try to bring elbows to ribs
C. Chins (weighted if possible)	3	4-6+max+max	Rest/pause	2 min	Control the whole movement
D. Loaded back stretch	1	60-90 sec.	EQI	1 min	Full stretch
E1. Wide-grip preacher curl	5	6 to 8	Post-fatigue	None	5 seconds up, 5 seconds down
E2. Close-grip barbell concentration	5	6 to 8	Post-fatigue	2 min	5 seconds up, 5 seconds down
F. Loaded biceps stretch	1	60-90 sec.	EQI	1 min	Full stretch
G1. Dumbbell shrugs	4	4 to 6	Post-fatigue	None	Hold peak for 2 seconds
G2. Bent over lateral raise	4	8 to 10	Post-fatigue	90 sec	Thumbs facing floor

Friday workout – Chest/Shoulders/Triceps – Low volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Bench press in smith machine	3	5 x 1	Classic cluster	2 min	5 reps with 10 sec. between reps
B. Cable cross-over	2	10 to 12 + 3 drops	Drop set	2 min	Aim for a total of 30-35 reps
C. Seated shoulder press in smith	3	5 x 1	Classic cluster	2 min	5 reps with 10 sec. between reps
D. Standing lateral raise	2	10 to 12 + 3 drops	Drop set	2 min	Aim for a total of 30-35 reps
E. Close-grip bench in smith machine	3	5 x 1	Classic cluster	2 min	5 reps with 10 sec. between reps
F. V-bar triceps cable pressdown	2	10 to 12 + 3 drops	Drop set	2 min	Aim for a total of 30-35 reps

Saturday workout – Back/Biceps/Rear delts/Traps – Low volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Seated cable rowing to abdomen	3	4 to 6	Iso-dynamic	1 min	5 sec. squeeze on each rep
B. Close-grip lat pulldown	2	10 to 12 + 3 drops	Drop set	2 min	Aim for a total of 30-35 reps
C. Seated cable rowing to face	3	4 to 6	Iso-dynamic	1 min	5 sec. squeeze on each rep
D. Rear delts machine	2	10 to 12 + 3 drops	Drop set	2 min	Aim for a total of 30-35 reps
E. Barbell curl	3	5 x 1	Classic cluster	2 min	5 reps with 10 sec. between reps
F. Machine preacher curl	2	10 to 12 + 3 drops	Drop set	2 min	Aim for a total of 30-35 reps

PHASE NO.2 – CHEST & SHOULDER SPECIALIZATION (4 WEEKS)

Monday – Chest/Shoulders (heavy weights)
Tuesday – Quads/Hamstrings/Calves (low volume)
Wednesday – Chest/shoulders (density loading)
Thursday – OFF / Abs
Friday – Chest/Shoulders (high volume)
Saturday – Back/Biceps/Triceps (low volume)
Sunday – OFF/ Abs

Monday workout – Chest/Shoulders – Heavy weights					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Incline bench press (45 degrees)	6	7/5/3/7/5/3	Normal lifting	2 min	Lower the bar to the clavicle
B. Barbell push press	6	7/5/3/7/5/3	Normal lifting	2 min	Use a slight leg drive to start bar
C. Low incline DB press (30 degrees)	4	8/6/4/15	Normal lifting	2 min	Elbows flared out
D. Neutral grip seated DB press	4	8/6/4/15	Normal lifting	2 min	Stop 1-2” short of lockout

Tuesday workout – Quads/Hamstrings/Calves - Low volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Close-stance DB squat	3	10 to 12	Post-fatigue	None	Close stance
A2. Leg extension	3	12 to 15	Post-fatigue	2 min	2 sec. squeeze on each rep
B1. DB Romanian deadlift	3	10 to 12	Post-fatigue	None	Push hips back on the way down
B2. Gironda-style leg curl	3	12 to 15	Post-fatigue	2 min	2 sec. squeeze on each rep

Wednesday workout – Chest/Shoulders – Density loading					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Wide-grip bench press to neck	4	8 to 10	Triple set	None	Elbows flared out, bar to neck
A2. Dips (weigthed if possible)	4	6 to 8	Triple set	None	Elbows flared out, leaning forward
A3. Decline DB flies	4	15 to 20	Triple set	2 min	Only use a slight decline
B1. Seated barbell press	3	8 to 10	Triple set	None	Stop 1-2” short of lockout
B2. Barbell front raise	3	8 to 10	Triple set	None	2 sec. squeeze on each rep
B3. Seated pitcher lateral raise	3	15 to 20	Triple set	2 min	Pinky higher than thumb

Friday workout – Chest/Shoulders – High volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Decline bench press to neck	4	4 to 6	Normal lifting	2 min	Elbows flared out, bar to clavicle
B1. Flat dumbbell press	4	6 to 8	Post-fatigue	None	Elbows flared out, do not lockout
B2. Push ups	4	Maximum reps	Post-fatigue	2 min	Stop 1-2” short of lockout
C. Cable crossover	4	6-8 + 2 drops	Drop set	1 min	Aim for a total of 15-20 reps
D. Loaded chest stretch	1	60-90 sec.	EQI	1 min	Full stretch
E. Seated DB press	4	4 to 6	Normal lifting	2 min	Stop 1-2” short of lockout
B1. DB front raise	4	8 to 10	Post-fatigue	None	2 sec. squeeze on each rep
B2. Standing lateral raise	4	8 to 10	Post-fatigue	2 min	2 sec. squeeze on each rep
C. Gironda dumbbell swing	4	6-8 + 2 drops	Drop set	1 min	Aim for a total of 15-20 reps
D. Loaded shoulder stretch	1	60-90 sec.	EQI	1 min	Full stretch

Saturday workout – Back/Biceps/Triceps - Low volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Bent over barbell rowing	3	8 to 10	Normal lifting	90 sec	2 sec. squeeze on each rep
B. Lat pulldown in front	3	10 to 12	Normal lifting	60 sec	2 sec. squeeze on each rep
C. Haney shrugs	3	15 to 20	Normal lifting	45 sec.	Pull as high as you can
D. Decline DB triceps extension	4	8 to 10	Normal lifting	60 sec.	Use a slight decline
E. Wide-grip preacher curl	4	8 to 10	Normal lifting	60 sec.	3 seconds up, 3 seconds down

PHASE NO.3 – BACK SPECIALIZATION (4 WEEKS)

Monday – Back (thickness)
Tuesday – Quads/Hamstrings/Shoulders (low volume)
Wednesday – Back (width)
Thursday – OFF / Abs
Friday – Back (traps, rear delts)
Saturday – Chest/Biceps/Triceps (low volume)
Sunday – OFF/ Abs

Monday workout – Back - Thickness					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Deadlift	6	5/4/3/5/4/3	Normal lifting	2 min	Conventional deadlift
B. Chest-supported DB rowing	4	6 to 8	Normal lifting	90 sec	2 sec. squeeze on each rep
C. Seated rowing to low abdomen	4	8 to 10	Normal lifting	60 sec.	2 sec. squeeze on each rep
D. Seated rowing to mid pec line	4	12 to 15	Normal lifting	45 sec.	2 sec. squeeze on each rep

Tuesday workout – Quads/Hamstrings/Shoulders - Low volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Close-stance leg press	3	12 to 15	Post-fatigue	None	Close stance
A2. Leg extension	3	12 to 15 + 2 drops	Post-fatigue	2 min	Aim for a total of 25-30 reps
B1. DB stiff-leg deadlift	3	12 to 15	Post-fatigue	None	Keep legs fully extended
B2. Lying leg curl	3	12 to 15 + 2 drops	Post-fatigue	2 min	Aim for a total of 25-30 reps
C1. DB seated shoulder press	3	12 to 15	Post-fatigue	None	Stop 1-2" short of lockout
C2. Standing lateral raise	3	12 to 15 + 2 drops	Post-fatigue	2 min	Aim for a total of 25-30 reps

Wednesday workout – Back - Width					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Chins (weighted if possible)	6	5/4/3/5/4/3	Normal lifting	2 min.	2 sec. squeeze on top of each rep
B. Motorcycle rowing	5	8 to 10	Normal lifting	60 sec	2 sec. squeeze on each rep
C. Straight-arms pulldown	5	10 to 12	Normal lifting	45 sec.	3 seconds up, 3 seconds down

Friday workout – Back – (traps, low back & rear delts)					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Power barbell shrugs	6	4 to 6	Normal lifting	2 min	Use a slight leg kick to lift heavier
B. Calves machine shrugs	4	6 to 8	Normal lifting	90 sec	2 sec. squeeze on each rep
C. Weighed back extension	4	8 to 10	Normal lifting	60 sec.	2 sec. hold on top of each rep
D. Seated rope row to face	4	10 to 12	Normal lifting	60 sec	2 sec. squeeze on each rep
E. Bent over lateral raise	4	12 to 15	Normal lifting	45 sec.	Thumbs facing floor

Saturday workout – Chest/Biceps/Triceps - Low volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Wide-grip bench press to neck	3	12 to 15	Post-fatigue	None	Elbows flared out, bar to neck
A2. Cable crossover	3	12 to 15 + 2 drops	Post-fatigue	2 min	Aim for a total of 25-30 reps
B1. Barbell curl	3	12 to 15	Post-fatigue	None	No special comment
B2. Machine preacher curl	3	12 to 15 + 2 drops	Post-fatigue	2 min	Aim for a total of 25-30 reps
C1. Close-grip bench press	3	12 to 15	Post-fatigue	None	No special comment
C2. V-bar cable triceps extension	3	12 to 15 + 2 drops	Post-fatigue	2 min	Aim for a total of 25-30 reps

PHASE NO.4 – ARMS SPECIALIZATION (4 WEEKS)

Monday – Biceps/Triceps (heavy weights)
Tuesday – Quads/Hamstrings (low volume)
Wednesday – Biceps/Triceps (density loading)
Thursday – OFF / Abs
Friday – Biceps/Triceps (high volume)
Saturday – Back/Chest/Shoulders (low volume)
Sunday – OFF/ Abs

Monday workout – Biceps/Triceps – Heavy weights					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Close-grip bench press	6	7/5/3/7/5/3	Normal lifting	2 min	Keep elbows close to the body
B. Barbell power curl	6	7/5/3/7/5/3	Normal lifting	2 min	Use a slight low back drive to start
C. Close-grip pin press in power rack	4	5/4/3/2	Partials	90 sec	Start the bar in the mid range
D. Close-grip preacher curl	4	4 to 6	Normal lifting	90 sec.	No special comment
E. Decline skullcrusher	4	8/6/4/15	Normal lifting	2 min	Close-grip (hands 6-8" apart_
F. DB hammer curl	4	8/6/4/15	Normal lifting	2 min	Stop 1-2" short of full contraction

Tuesday workout – Quads/Hamstrings - Low volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Front squat	3	10 to 12	Post-fatigue	None	Shoulder-width stance
A2. Close-stance DB squat	3	6 to 8	Post-fatigue	2 min	5 sec. down, 5 sec. up
B1. Goodmorning	3	10 to 12	Post-fatigue	None	Keep legs slightly bent
B2. Lying leg curl	3	12 to 15 + 2 drops	Post-fatigue	2 min	Aim for a total of 25-30 reps

Wednesday workout – Biceps/Triceps – Density loading					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. EZ- bar standing curl	4	8 to 10	Triple set	None	Lower bar in 5 seconds
A2. Lying dumbbell triceps extension	4	6 to 8	Triple set	None	Lower DB in 5 seconds
A3. Low-pulley cable curl	4	15 to 20	Triple set	2 min	Normal reps
B1. Decline close-grip bench press	3	8 to 10	Triple set	None	Lower bar in 5 seconds
B2. Alternate dumbbell hammer curl	3	8 to 10	Triple set	None	Normal reps
B3. Close-grip push-ups	3	maximum	Triple set	2 min	Stop 1-2" short of lockout

Friday workout – Biceps/Triceps – High volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Decline close-grip bench press	4	4 to 6	Normal lifting	2 min	Elbows close to the body
B1. Lying skullcrusher	4	6 to 8	Post-fatigue	None	Close grip (hands 6-8" apart)
B2. Straight-bar cable triceps exten.	4	10 to 12	Post-fatigue	2 min	Stop 1-2" short of lockout
C. Lying Tate press	4	6-8	Normal lifting	1 min	5 sec. down, 5 sec. up
D. Loaded triceps stretch	1	60-90 sec.	EQI	1 min	Full stretch
E. Wide-grip barbell curl	4	4 to 6	Normal lifting	2 min	Stop 1-2" short of lockout
B1. Wide-grip preacher curl	4	8 to 10	Post-fatigue	None	3 sec. up, 3 sec. down
B2. Reverse grip barbell curl	4	8 to 10	Post-fatigue	2 min	3 sec. up, 3 sec. down
C. Standing dumbbell curl	4	21s	21s	1 min	7 full reps, 7 low reps, 7 high reps
D. Loaded biceps stretch	1	60-90 sec.	EQI	1 min	Full stretch

Saturday workout – Back/Chest/Shoulders - Low volume					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Lat pulldown in front	3	10 to 12	Post-fatigue	None	2 sec. squeeze on each rep
A2. DB pullover	3	15 to 20	Post-fatigue	2 min	Full stretch of the lats
B1. Low-incline DB press (30 deg.)	3	10 to 12	Post-fatigue	None	Bench at 30 degrees incline
B2. Pec deck machine	3	12 to 15 + 2 drops	Post-fatigue	2 min	Aim for a total of 25-30 reps
C1. Standing military press	3	8 to 10	Post-fatigue	None	No special comment
C2. Standing lateral raise	3	12 to 15 + 2 drops	Post-fatigue	2 min	Aim for a total of 25-30 reps

PHASE NO.5 – LOW VOLUME RECOVERY/TRANSITION (2 WEEKS)

Monday – Whole body (heavy compound)
Tuesday – OFF/Abs
Wednesday – Whole body (isolation)
Thursday – OFF / Abs
Friday – Whole body (moderate compound)
Saturday – OFF/Abs
Sunday – OFF

Monday workout – Whole body – Heavy compound					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Back squat	5	4 to 6	Normal lifting	2 min	Shoulder-width stance
B. Bench press	5	4 to 6	Normal lifting	2 min	No special comment
C. Deadlift	5	4 to 6	Normal lifting	2 min	Conventional deadlift

Wednesday workout – Whole body - Isolation					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Leg extension	3	10 to 12	Normal lifting	1 min	2 sec. squeeze on each rep
B. Lying leg curl	3	10 to 12	Normal lifting	1 min	2 sec. squeeze on each rep
C. Machine seated rowing	3	10 to 12	Normal lifting	1 min	2 sec. squeeze on each rep
D. Pec deck machine	3	10 to 12	Normal lifting	1 min	2 sec. squeeze on each rep
E. Machine shoulder press	3	10 to 12	Normal lifting	1 min	Stop 1-2” short of lockout
F. Seated incline DB curl	3	10 to 12	Normal lifting	1 min	Stop 1-2” short of lockout
G. Rope cable triceps extension	3	10 to 12	Normal lifting	1 min	2 sec. squeeze on each rep

Friday workout – Whole body – Moderate compound					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Leg press	4	8 to 10	Normal lifting	2 min	Close stance
B. Incline bench press	4	8 to 10	Normal lifting	2 min	No special comment
C. Bent over barbell rowing	4	8 to 10	Normal lifting	2 min	2 sec. squeeze on each rep
D. Standing military press	4	8 to 10	Normal lifting	2 min	Stop 1-2” short of lockout

MESOCYCLE II - LEAN MASS-GAINING (14 weeks)

PHASE NO.6 – HEAVY LOADING DOMINANT (4 WEEKS)

Monday – Lower Body quads dominant
Tuesday – Upper body “horizontal” dominant
Wednesday – OFF/Abs
Thursday – Lower body hips dominant
Friday – OFF/Abs
Saturday – Upper body “vertical” dominant
Sunday – OFF

Monday workout – Lower body – Quads dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Back squat	6	5/4/3/5/4/3	Normal lifting	2 min	Shoulder-width stance
B. Leg press	5	5 x 1	Classic cluster	2 min	5 reps with 10 sec. between each
C. Hack squat	3	4-6 + max+max	Rest/pause	2 min	4-6RM, 10 sec., max reps, 10 sec, max reps
D. DB lunges	3	6 to 8 /leg	Normal lifting	2 min	Alternate legs on each rep

Tuesday workout – Upper body – Horizontal dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Bench press	6	5/4/3/5/4/3	Alternate	60 sec	No special comment
A2*. Seated rowing to mid pec line	6	4 to 6	Alternate	60 sec	2 sec. squeeze on each rep
B1. Low-incline DB press (15 degrees)	4	4 to 6	Alternate	60 sec	Bench set at a 15 degrees incline
B2. Seated rowing to low abdomen	4	4 to 6	Alternate	60 sec	2 sec. squeeze on each rep
C1. Close-grip bench press	6	5/4/3/5/4/3	Alternate	60 sec	No special comment
C2. Wide grip preacher curl	6	4 to 6	Alternate	60 sec	3 sec. up , 3 sec. down
D. Bent over lateral raise	4	8 to 10	Normal lifting	45 sec.	Thumb towards the floor
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 60 seconds then perform a set of A2., rest 60 seconds then go back to A1. etc.					

Thursday workout – Lower body – Hips dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Romanian deadlift	6	5/4/3/5/4/3	Normal lifting	2 min	Push hips far back to stretch hams
B. Leg press with feet high on pad	5	5 x 1	Classic cluster	2 min	5 reps with 10 sec. between each
C. Lying leg curl	3	4-6 + max+max	Rest/pause	2 min	4-6RM, 10 sec., max reps, 10 sec, max reps
D. Standing leg curl	3	6 to 8 /leg	Normal lifting	2 min	Squeeze 2 sec. on each rep

Saturday workout – Upper body – Vertical dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Push press	6	5/4/3/5/4/3	Alternate	60 sec	Use a slight leg drive at the start
A2*. Close-grip chins (weighted if possible)	6	4 to 6	Alternate	60 sec	2 sec. squeeze up top on each rep
B1. High incline DB press (60 degrees)	4	4 to 6	Alternate	60 sec	Bench set at a 60 degrees incline
B2. Wide-grip lat pulldown behind head	4	4 to 6	Alternate	60 sec	Only being the bar down to ear level
C1. Decline skullcrushers	6	5/4/3/5/4/3	Alternate	60 sec	Use a relatively steep decline
C2. Standing barbell curl	6	4 to 6	Alternate	60 sec	3 sec. up , 3 sec. down
D. Upright rowing	4	8 to 10	Normal lifting	45 sec.	Only bring the bar to the sternum
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 60 seconds then perform a set of A2., rest 60 seconds then go back to A1. etc.					

PHASE NO.7 – VOLUME DOMINANT (4 WEEKS)

Monday – Lower Body quads dominant
Tuesday – Back/Biceps/Rear delts/Traps
Wednesday – OFF/Abs
Thursday – Lower body hips dominant
Friday – OFF/Abs
Saturday – Chest/Shoulders/Triceps
Sunday – OFF

Monday workout – Lower body – Quads dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Close-stance hack squat	10	8 to 10	Normal lifting	1 min	Close stance
B. Leg press	3	12 to 15	Normal lifting	1 min	Wide stance, feet turned out 45 degrees
C. Leg extension	1	30-45 seconds	Isometrics	N/A	Squeeze peak contraction for 30-45 seconds

Tuesday workout – Back/Biceps/Rear delts/Traps					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Chest-supported DB rowing	8	8 to 10	Alternate	30 sec	Keep elbows close to your body
A2*. Lat pulldown in front	8	8 to 10	Alternate	30 sec	2 sec. squeeze on each rep
B. Wide-grip preacher curl	5	8-10+burns	Low pos. burns	45 sec.	Perform low ½ reps when you reach failure
C. Close-grip standing barbell curl	5	8-10+burns	High pos. burns	45 sec.	Perform high ½ reps when you reach failure
D. Chest-supported incline rear delt raise	3	12 to 15	Normal lifting	30 sec.	2 sec. peak on each rep
E. Haney shrugs	3	12 to 15	Normal lifting	45 sec.	2 sec. peak on each rep
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 60 seconds then perform a set of A2., rest 60 seconds then go back to A1. etc.					

Thursday workout – Lower body – Hips dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. DB stiff-leg deadlift	10	8 to 10	Normal lifting	1 min	Keep legs fully extended
B. Leg press feet high on pad	3	12 to 15	Normal lifting	1 min	Wide stance, feet turned out 45 degrees
C. Gironda-style leg curl	1	30-45 seconds	Isometrics	N/A	Squeeze peak contraction for 30-45 seconds

Saturday workout – Chest/Shoulders/Triceps					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Wide-grip bench press to neck	8	8 to 10	Alternate	30 sec.	Elbows flared out
A2*.1/2 dumbbell flies	8	8 to 10	Alternate	30 sec	3 sec. up, 3 sec. down
B. Neutral grip seated dumbbell press	5	8-10	Normal lifting	45 sec.	Stop 1-2” short of lockout
C. Seated lateral raise	5	8-10+hold	Isodyanmic	45 sec.	Hold peak for max time on the last rep
D. Skullcrushers	3	10 to 12	Normal lifting	30 sec.	3 sec. up, 3 sec. down
E. Overhead rope triceps extension	3	12 to 15	Normal lifting	30 sec.	2 sec. peak on each rep
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 60 seconds then perform a set of A2., rest 60 seconds then go back to A1. etc.					

PHASE NO.8 – DENSITY DOMINANT (4 WEEKS)

Monday – Back/Biceps/Rear delts
Tuesday – Quads/Hamstrings/Calves
Wednesday – Chest/Shoulders
Thursday – OFF / Abs
Friday – Back/Biceps/Traps
Saturday – Chest/Triceps
Sunday – OFF/ Abs

Monday workout – Back/Biceps/Rear delts					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Motorcycle rowing	3	8 to 10	Pre/post fat.	None	2 sec. peak contraction
A2. Seated row to low abdomen	3	6 to 8	Pre/post fat.	None	2 sec. peak contraction
A3. Straight-arms pulldown	3	10 to 12	Pre/post fat.	2 min	3 sec. up, 3 sec. down
B1. Wide-grip preacher curl	3	8 to 10	Pre/post fat.	None	3 sec. up, 3 sec. down
B2. Standing barbell curl	3	6 to 8	Pre/post fat.	None	*Slight* cheating allowed
B3. Incline DB curl	3	10 to 12	Pre/post fat.	2 min	2 sec. peak on each rep
C. Seated row to face	3	12 to 15	Normal lifting	30 sec.	2 sec. peak on each rep

Tuesday workout – Back/Biceps/Rear delts/Traps					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Close-stance DB squat	3	8 to 10	Pre/post fat.	None	3 sec. up, 3 sec. down
A2. Leg press	3	6 to 8	Pre/post fat.	None	3 sec. up, 3 sec. down
A3. Leg extension	3	10 to 12	Pre/post fat.	2 min	2 sec. peak contraction
B1. Lying leg curl	3	8 to 10	Pre/post fat.	None	2 sec. peak contraction
B2. DB Romanian deadlift	3	6 to 8	Pre/post fat.	None	3 sec. up, 3 sec. down
B3. Gironda-style leg curl	3	10 to 12	Pre/post fat.	2 min	2 sec. peak contraction
C. Standing calves raise	3	15 to 20	Normal lifting	30 sec.	2 sec. peak on each rep

Wednesday workout – Chest/Shoulders					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Decline DB flies	3	8 to 10	Pre/post fat.	None	3 sec. up, 3 sec. down
A2. Decline bench press	3	6 to 8	Pre/post fat.	None	2 sec. peak contraction
A3. Push-ups	3	maximum	Pre/post fat.	2 min	Stop short of lockout
B1. Standing lateral raise	3	8 to 10	Pre/post fat.	None	2 sec. peak on each rep
B2. Seated DB press	3	6 to 8	Pre/post fat.	None	3 sec. up, 3 sec. down
B3. Standing DB front raise	3	10 to 12	Pre/post fat.	2 min	2 sec. peak on each rep

Friday workout – Back/Biceps/Traps					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Bent over dumbbell rowing	3	8 to 10	Pre/post fat.	None	2 sec. peak contraction
A2. Seated row to mid pec line	3	6 to 8	Pre/post fat.	None	2 sec. peak contraction
A3. DB pullover	3	10 to 12	Pre/post fat.	2 min	3 sec. up, 3 sec. down
B1. Reverse grip barbell curl	3	8 to 10	Pre/post fat.	None	3 sec. up, 3 sec. down
B2. Hammer curl	3	6 to 8	Pre/post fat.	None	*Slight* cheating allowed
B3. Low-pulley cable curl	3	10 to 12	Pre/post fat.	2 min	2 sec. peak on each rep
C. DB shrugs	3	12 to 15	Normal lifting	30 sec.	2 sec. peak on each rep

Saturday workout – Chest/Triceps					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Cable crossover	3	8 to 10	Pre/post fat.	None	2 sec. peak on each rep
A2. Dips (weighted if possible)	3	6 to 8	Pre/post fat.	None	Elbows flared out
A3. ½ dumbbell flies	3	maximum	Pre/post fat.	2 min	3 sec. up, 3 sec. down
B1. Lying DB triceps extension	3	8 to 10	Pre/post fat.	None	3 sec. up, 3 sec. down
B2. Close-grip bench press	3	6 to 8	Pre/post fat.	None	3 sec. up, 3 sec. down
B3. Tate press	3	10 to 12	Pre/post fat.	2 min	3 sec. up, 3 sec. down

PHASE NO.9 – LOW VOLUME RECOVERY/TRANSITION (2 WEEKS)

Monday – Whole body (heavy compound)
Tuesday – OFF/Abs
Wednesday – Whole body (isolation)
Thursday – OFF / Abs
Friday – Whole body (moderate compound)
Saturday – OFF/Abs
Sunday – OFF

Monday workout – Whole body – Heavy compound					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Front	5	4 to 6	Normal lifting	2 min	Shoulder-width stance
B. DB bench press	5	4 to 6	Normal lifting	2 min	Elbows flared out
C. Pin pulls (1/2 deadlift from knees)	5	4 to 6	Normal lifting	2 min	Start bar 1" above knees in rack

Wednesday workout – Whole body - Isolation					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Bulgarian squat	3	8 to 10 /leg	Normal lifting	1 min	3 sec. up. 3 sec. down
B. Lying leg curl	3	10 to 12	Normal lifting	1 min	2 sec. squeeze on each rep
C. 1-arm DB rowing	3	10 to 12 /arm	Normal lifting	1 min	2 sec. squeeze on each rep
D. Cable crossover	3	10 to 12	Normal lifting	1 min	2 sec. squeeze on each rep
E. Barbell front raise	3	10 to 12	Normal lifting	1 min	2 sec. squeeze on each rep
F. Wide-grip preacher curl	3	10 to 12	Normal lifting	1 min	Stop 1-2" short of lockout
G. Decline DB triceps extension	3	10 to 12	Normal lifting	1 min	3 sec. up. 3 sec. down

Friday workout – Whole body – Moderate compound					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Hack squat	4	8 to 10	Normal lifting	2 min	Close stance, stop short of lockout
B. Low incline (30 degrees) DB press	4	8 to 10	Normal lifting	2 min	3 sec. up. 3 sec. down
C. Seated rowing to low abdomen	4	8 to 10	Normal lifting	2 min	2 sec. squeeze on each rep
D. Standing military press	4	8 to 10	Normal lifting	2 min	Stop 1-2" short of lockout

MESOCYCLE III - INITIAL (MODERATE) FAT LOSS (8 weeks)

PHASE 10 (4 WEEKS): VOLUME DOMINANT + MODERATE CARDIO

Monday – Lower body quads dominant
Tuesday – Upper body "horizontal" dominant + Cardio
Wednesday – OFF/Abs
Thursday – Lower body hips dominant
Friday – OFF/Abs
Saturday – Upper body "vertical" dominant + Cardio
Sunday – OFF

Monday workout – Lower body – Quads dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Back squat	4	8	Tempo contrast	1 min	Close stance
B1. Leg press	4	10 to 12	Post-fatigue	None	Wide-stance, feet turned out 45 degrees
B2. DB squat	4	15 to 20	Post-fatigue	90 sec	Wide stance, feet turned out 45 degrees
C. Walking lunges – long steps	2	10 steps/leg	Normal lifting	60 sec.	Do not fully extend your legs on the way up
D. Walking lunges – short steps	2	10 steps/leg	Normal lifting	60 sec.	Do not fully extend your legs on the way up
E. Leg extension	1	100	Normal lifting	N/A	Take pauses if needed, but try to avoid them

Tuesday workout – Upper body – Horizontal dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Wide-grip bench press	4	8 to 10	Low double contraction	1 min	Moderate width grip
B. Bent over barbell rowing	4	8 to 10	Low double contraction	1 min	Squeeze 2 sec. per rep
C1. Seated rowing to abdomen	4	10 to 12	Superset	None	Squeeze 2 sec. per rep
C2. Low incline (30 deg.) DB press	4	10 to 12	Superset	60 sec	Elbows flared out
D1. Close-grip bench press	4	10 to 12	Superset	None	3 sec. up, 3 sec. down
D2. Body drag curl	4	10 to 12	Superset	60 sec.	Keep the bar touching the body at all times
Low-intensity cardio	1	30 min	Treadmill	N/A	3.0mph / 12 deg. incline

Thursday workout – Lower body – Hips dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Romanian deadlift	4	8	Tempo contrast	1 min	Push hips far back to stretch hams
B1. Leg press with feet high	4	10 to 12	Post-fatigue	None	Feet as high on pad as possible
B2. DB stiff-leg deadlift	4	15 to 20	Post-fatigue	90 sec	Keep legs fully extended, push hips back
C. Lying leg curl	4	8	Tempo contrast	1 min	No special comment
D. Standing leg curl	4	8 to 10/leg	Normal lifting	1 min	No special comment

Saturday workout – Upper body – Vertical dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Standing military press	4	8 to 10	Low double contraction	1 min	Do not lockout (even on the full reps)
B. Lat pulldown	4	8 to 10	Low double contraction	1 min	Moderate width grip
C1. Straight-arms pulldown	4	10 to 12	Superset	None	3 sec. up, 3 sec. down
C2. High incline (60 deg.) DB press	4	10 to 12	Superset	60 sec	Elbows flared out
D1. Decline DB triceps extension	4	10 to 12	Superset	None	3 sec. up, 3 sec. down
D2. Hammer curl	4	10 to 12	Superset	60 sec.	3 sec. up, 3 sec. down
Low-intensity cardio	1	30 min	Treadmill	N/A	3.0mph / 12 deg. incline

PHASE 11 (4 WEEKS): DENSITY DOMINANT + MODERATE CARDIO

Monday – Lower body quads dominant
Tuesday – Upper body “horizontal” dominant + Cardio
Wednesday – OFF/Abs
Thursday – Lower body hips dominant
Friday – OFF/Abs
Saturday – Upper body “vertical” dominant + Cardio
Sunday – OFF

Monday workout – Lower body – Quads dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Back squat	3	12 to 15	Circuit	30 sec	Shoulder-width stance
A2. Right leg Bulgarian squat	3	12 to 15	Circuit	30 sec	Stop just short of lockout
A3. Leg leg Bulgarian squat	3	12 to 15	Circuit	30 sec	Stop just short of lockout
A4. DB squat	3	15 to 20	Circuit	30 sec.	Close-stance
A5. Leg extension	3	15 to 20	Circuit	3 min	2 sec. squeeze on each rep

Tuesday workout – Upper body – Horizontal dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Wide-grip bench press to neck	3	12 to 15	Circuit	30 sec	3 sec. up, 3 sec. down
A2. Bent over DB rowing	3	12 to 15	Circuit	30 sec	2 sec. squeeze on each rep
A3. Flat dumbbell flies	3	15 to 20	Circuit	30 sec	Stop just short of finish position
A4. Bent over lateral raise	3	15 to 20	Circuit	30 sec	2 sec. squeeze on each rep
A5. DB triceps extension	3	12 to 15	Circuit	30 sec	3 sec. up, 3 sec. down
A6. Standing DB curl	3	12 to 15	Circuit	3 min	3 sec. up, 3 sec. down
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline

Thursday workout – Lower body – Hips dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Romanian deadlift	3	12 to 15	Circuit	30 sec	Push hips far back to stretch hams
A2. Right leg standing leg curl	3	12 to 15	Circuit	30 sec	2 sec. squeeze on each rep
A3. Left leg standing leg curl	3	12 to 15	Circuit	30 sec	2 sec. squeeze on each rep
A4. Right leg side lunges	3	15 to 20	Circuit	30 sec	Keep hips and torso facing forward
A5. Left leg side lunges	3	15 to 20	Circuit	3 min	Keep hips and torso facing forward

Saturday workout – Upper body – Vertical dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Neutral seated DB press	3	12 to 15	Circuit	30 sec	3 sec. up, 3 sec. down
A2. DB upright rowing	3	12 to 15	Circuit	30 sec	2 sec. squeeze on each rep
A3. High incline (60 deg.) DB press	3	12 to 15	Circuit	30 sec	Elbows flared out
A4. DB shrugs	3	15 to 20	Circuit	30 sec	2 sec. squeeze on each rep
A5. DB standing triceps extension	3	12 to 15	Circuit	30 sec	3 sec. up, 3 sec. down
A6. Hammer curl	3	12 to 15	Circuit	3 min	3 sec. up, 3 sec. down
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline

MESOCYCLE IV - MAXIMUM FAT LOSS (10 weeks)

PHASE 12 (3 WEEKS): HEAVY LOADING DOMINANT + HIGH CARDIO

Monday – Lower body quads dominant
Tuesday – Upper body “horizontal” dominant + Cardio
Wednesday – Cardio/Abs
Thursday – Lower body hips dominant
Friday – Cardio/Abs
Saturday – Upper body “vertical” dominant + Cardio
Sunday – OFF

Monday workout – Lower body – Quads dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Back squat	6	8/8/6/6/4/4	Normal lifting	90 sec	Shoulder-width stance
B. Leg press	4	10/8/6/6	Normal lifting	90 sec	Feet together (very close stance)
C. Hack squat	3	6 to 8	Normal lifting	90 sec	Stop just short of lockout
D. Leg extension	3	6-8+max+max	Rest/pause	90 sec.	2 sec. squeeze on each rep

Tuesday workout – Upper body – Horizontal dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Bench press	6	8/8/6/6/4/4	Alternate	1 min	No special comment
A2. Bent over barbell rowing	6	8/8/6/6/4/4	Alternate	1 min	2 sec. squeeze on each rep
B1. Decline DB press	4	6 to 8	Alternate	1 min	Elbows flared out, max stretch in bottom
B2. Seated rowing to low abdomen	4	6 to 8	Alternate	1 min	2 sec. squeeze on each rep
C1. Low-incline close-grip bench	4	6 to 8	Alternate	1 min	Elbows close to the body
C2. Chest-supported hammer curl	4	6 to 8	Alternate	1 min	2 sec. squeeze on each rep
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 60 seconds then perform a set of A2., rest 60 seconds then go back to A1. etc.					

Wednesday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Low-intensity cardio	1	40 min	Treadmill	N/A	3.0mph / 12 deg. incline

Thursday workout – Lower body – Hips dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Romanian deadlift	6	8/8/6/6/4/4	Normal lifting	90 sec	Push hips back to stretch hams
B. Sumo deadlift	6	8/8/6/6/4/4	Normal lifting	90 sec	Very wide stance, feet 45 deg. out
C. Lying leg curl	4	6 to 8	Normal lifting	90 sec	2 sec. squeeze on each rep

Friday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Low-intensity cardio	1	40 min	Treadmill	N/A	3.0mph / 12 deg. incline

Saturday workout – Upper body – Vertical dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Seated press in Smith machine	6	8/8/6/6/4/4	Alternate	1 min	Stop just short of lockout
A2. Barbell shrugs in Smith machine	6	8/8/6/6/4/4	Alternate	1 min	2 sec. squeeze on each rep
B1. High incline (60 deg.) DB press	4	6 to 8	Alternate	1 min	Elbows flared out
B2. Close parallel grip lat pulldown	4	6 to 8	Alternate	1 min	2 sec. squeeze on each rep
C1. Decline nosebreaker	4	6 to 8	Alternate	1 min	Elbows close to the body
C2. Standing barbell curl	4	6 to 8	Alternate	1 min	3 sec. up, 3 sec. down
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 60 seconds then perform a set of A2., rest 60 seconds then go back to A1. etc.					

PHASE 13: (3 WEEKS): VOLUME DOMINANT + HIGH CARDIO

Monday – Chest/Shoulders/Triceps workout A + cardio
Tuesday – Quads/Hamstrings/Calves
Wednesday – Back/Biceps/Rear delts workout A + cardio
Thursday – Cardio/Abs
Friday – Chest/Shoulders/Triceps workout B + cardio
Saturday – Back/Biceps/Traps workout B + cardio
Sunday – OFF/ Abs

Monday workout – Chest/Shoulders/Triceps workout A					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Cable crossover	5	12 to 15	Pre-fatigue	None	2 sec. squeeze on each rep
A2. Wide-grip bench press to neck	5	8 to 10	Pre-fatigue	90 sec	Stop just short of lockout
B1. Seated lateral raise	5	12 to 15	Pre-fatigue	None	2 sec. squeeze on each rep
B2. Neutral grip seated DB press	5	8 to 10	Pre-fatigue	90 sec	Stop just short of lockout
C1. Lying DB triceps extension	5	12 to 15	Pre-fatigue	None	3 sec. up, 3 sec. down
C2. Close-grip bench press	5	8 to 10	Pre-fatigue	90 sec	3 sec. up, 3 sec. down
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline

Tuesday workout – Quads/Hamstrings/Calves					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Leg extension	5	12 to 15	Pre-fatigue	None	2 sec. squeeze on each rep
A2. Back squat	5	8 to 10	Pre-fatigue	90 sec	Stop just short of lockout
B1. Leg curl	5	12 to 15	Pre-fatigue	None	2 sec. squeeze on each rep
B2. Romanian deadlift	5	8 to 10	Pre-fatigue	90 sec	Stop just short of lockout
C1. Seated calves raise	5	12 to 15	Pre-fatigue	None	3 sec. up, 3 sec. down
C2. Standing calves raise	5	8 to 10	Pre-fatigue	90 sec	2 sec. squeeze on each rep

Wednesday workout – Back/Biceps/Rear delts workout A					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Seated row to mid-pec line	5	12 to 15	Pre-fatigue	None	2 sec. squeeze on each rep
A2. Seated row to low abdomen	5	8 to 10	Pre-fatigue	90 sec	2 sec. squeeze on each rep
B1. Wide-grip preacher curl	5	12 to 15	Pre-fatigue	None	3 sec. up, 3 sec. down
B2. Standing barbell curl	5	8 to 10	Pre-fatigue	90 sec	Stop just short of lockout
C1. Bent over lateral raise	5	12 to 15	Pre-fatigue	None	2 sec. squeeze on each rep
C2. Seated rope rowing to face	5	8 to 10	Pre-fatigue	90 sec	2 sec. squeeze on each rep
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline

Thursday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Low-intensity cardio	1	40 min	Treadmill	N/A	3.0mph / 12 deg. incline

Friday workout – Chest/Shoulders/Triceps workout B					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Incline DB flies	5	12 to 15	Pre-fatigue	None	3 sec. up, 3 sec. down
A2. Low-incline DB press	5	8 to 10	Pre-fatigue	90 sec	Stop just short of lockout
B1. DB front raise	5	12 to 15	Pre-fatigue	None	2 sec. squeeze on each rep
B2. Standing military press	5	8 to 10	Pre-fatigue	90 sec	Stop just short of lockout
C1. Rope cable triceps extension	5	12 to 15	Pre-fatigue	None	2 sec. squeeze on each rep
C2. Decline close-grip bench press	5	8 to 10	Pre-fatigue	90 sec	3 sec. up, 3 sec. down
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline

Saturday workout – Back/Biceps/Traps workout B					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Straight-arms pulldown	5	12 to 15	Pre-fatigue	None	3 sec. up, 3 sec. down
A2. Lat pulldown	5	8 to 10	Pre-fatigue	90 sec	2 sec. squeeze on each rep
B1. Incline DB curl	5	12 to 15	Pre-fatigue	None	3 sec. up, 3 sec. down
B2. Hammer curl	5	8 to 10	Pre-fatigue	90 sec	Stop just short of lockout
C1. Calves machine shrugs	5	12 to 15	Pre-fatigue	None	2 sec. squeeze on each rep
C2. Barbell shrugs	5	8 to 10	Pre-fatigue	90 sec	2 sec. squeeze on each rep
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline

PHASE 14 (3 WEEKS): DENSITY DOMINANT + HIGH CARDIO

Monday – Whole body workout A + cardio
Tuesday – Cardio/Abs
Wednesday – Whole body workout B
Thursday – Cardio/Abs
Friday – Whole body workout C + cardio
Saturday – Cardio/Abs
Sunday – OFF

Monday workout – Whole body workout A					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Bench press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
A2. DB squat	4	12 to 15	Alternate	15 sec	Stop just short of lockout
B1. Bent over barbell rowing	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
B2. Romanian deadlift	4	12 to 15	Alternate	15 sec	Stop just short of lockout
C1. Standing military press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
C2. Leg press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
D1. Wide-grip preacher curl	4	12 to 15	Alternate	15 sec	Stop just short of lockout
D2. Standing EZ bar overhead exten.	4	12 to 15	Alternate	15 sec	Stop just short of lockout
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Tuesday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Intervals	1	10 intervals	30 sec. fast/60 sec. jog	none	On treadmill

Wednesday workout – Whole body workout B					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Decline bench press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
A2. Lunges	4	12 to 15/leg	Alternate	15 sec	Stop just short of lockout
B1. Lat pulldown	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
B2. DB stiff-leg deadlift	4	12 to 15	Alternate	15 sec	Stop just short of lockout
C1. Seated DB press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
C2. Hack squat	4	12 to 15	Alternate	15 sec	Stop just short of lockout
D1. Body drag curl	4	12 to 15	Alternate	15 sec	3 sec. up, 3 sec. down
D2. Close-grip bench press	4	12 to 15	Alternate	15 sec	3 sec. up, 3 sec. down
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Thursday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Intervals	1	10 intervals	30 sec. fast/60 sec. jog	none	On treadmill

Friday workout – Whole body workout C					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Low-incline DB press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
A2. Bulgarian squat	4	12 to 15/leg	Alternate	15 sec	Stop just short of lockout
B1. Seated row to mid-pec line	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
B2. Leg curl	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
C1. Standing lateral raise	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
C2. Leg extension	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
D1. Alternate DB curl	4	12 to 15	Alternate	15 sec	3 sec. up, 3 sec. down
D2. V-bar cable triceps extension	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Saturday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Intervals	1	10 intervals	30 sec. fast/60 sec. jog	none	On treadmill

PHASE 15 (1 WEEK): SHAPE PEAKING

Monday – Whole body workout A (depletion)
Tuesday – Whole body workout B (depletion)
Wednesday – Whole body workout C (depletion)
Thursday – Upper body (depletion)
Friday – OFF (carb up)
Saturday – OFF (carb up)
Sunday – OFF (carb up)

Monday workout – Whole body workout A					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Bench press	2	15 to 20	Alternate	15 sec	Stop just short of lockout
A2. DB squat	2	15 to 20	Alternate	15 sec	Stop just short of lockout
B1. Bent over barbell rowing	2	15 to 20	Alternate	15 sec	2 sec. squeeze on each rep
B2. Romanian deadlift	2	15 to 20	Alternate	15 sec	Stop just short of lockout
C1. Standing military press	2	15 to 20	Alternate	15 sec	Stop just short of lockout
C2. Leg press	2	15 to 20	Alternate	15 sec	Stop just short of lockout
D1. Wide-grip preacher curl	2	15 to 20	Alternate	15 sec	Stop just short of lockout
D2. Standing EZ bar overhead exten.	2	15 to 20	Alternate	15 sec	Stop just short of lockout
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Tuesday workout – Whole body workout B					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Decline bench press	3	12 to 15	Alternate	15 sec	Stop just short of lockout
A2. Lunges	3	12 to 15/leg	Alternate	15 sec	Stop just short of lockout
B1. Lat pulldown	3	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
B2. DB stiff-leg deadlift	3	12 to 15	Alternate	15 sec	Stop just short of lockout
C1. Seated DB press	3	12 to 15	Alternate	15 sec	Stop just short of lockout
C2. Hack squat	3	12 to 15	Alternate	15 sec	Stop just short of lockout
D1. Body drag curl	3	12 to 15	Alternate	15 sec	3 sec. up, 3 sec. down
D2. Close-grip bench press	3	12 to 15	Alternate	15 sec	3 sec. up, 3 sec. down
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Wednesday workout – Whole body workout C					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Low-incline DB press	4	10 to 12	Alternate	15 sec	Stop just short of lockout
A2. Bulgarian squat	4	10 to 12/leg	Alternate	15 sec	Stop just short of lockout
B1. Seated row to mid-pec line	4	10 to 12	Alternate	15 sec	2 sec. squeeze on each rep
B2. Leg curl	4	10 to 12	Alternate	15 sec	2 sec. squeeze on each rep
C1. Standing lateral raise	4	10 to 12	Alternate	15 sec	2 sec. squeeze on each rep
C2. Leg extension	4	10 to 12	Alternate	15 sec	2 sec. squeeze on each rep
D1. Alternate DB curl	4	10 to 12	Alternate	15 sec	3 sec. up, 3 sec. down
D2. V-bar cable triceps extension	4	10 to 12	Alternate	15 sec	2 sec. squeeze on each rep
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Thursday workout – Upper body					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Bench press	3	8 to 10	Alternate	15 sec	Stop just short of lockout
A2. Bent over DB rowing	3	8 to 10	Alternate	15 sec	Stop just short of lockout
B1. Pec deck	3	8 to 10	Alternate	15 sec	2 sec. squeeze on each rep
B2. Rear delt machine	3	8 to 10	Alternate	15 sec	Stop just short of lockout
C1. Standing military press	3	8 to 10	Alternate	15 sec	Stop just short of lockout
C2. Upright rowing	3	8 to 10	Alternate	15 sec	Stop just short of lockout
D1. Low-pulley cable curl	3	8 to 10	Alternate	15 sec	Stop just short of lockout
D2. Rope cable triceps extension.	3	8 to 10	Alternate	15 sec	Stop just short of lockout
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Chapter 10

Yearly Cycle

This cycle is meant for an intermediate user, and is meant to compliment the training cycle outlined in the last chapter. Now, this is a comprehensive yearly cycle, using several of the drugs we've already taken a look at, and is to be used in conjunction with Christian's yearly diet and training routine.

The other cycles I've outlined aren't integrated in this way, and they allow you to mix and match with whatever cycle, training, and diet you wish to combine. This cycle will take you from the start of autumn straight through to the beach next summer.

Of course, a couple of notes need to be added here. I haven't included any thyroid meds, IGF, insulin, etc…this is because I've outlined their proper use in another chapter, and I feel that you (the reader) shouldn't be adding them into a cycle unless you're already experienced with them. This particular year long cycle includes breaks, off-time, PCT and full on cycling…and of course, it follows Christians' yearly plan for you…

MESOCYCLE I - MAXIMUM MASS-GAINING (18 weeks)

Phase 1: (4 weeks): General mass building			
Week	**Testosterone Cypionate**	**Deca-Durabolin**	**Dianabol**
1	400mgs	400mgs	30mgs/day
2	400mgs	400mgs	30mgs/day
3	400mgs	400mgs	30mgs/day
4	400mgs	400mgs	30mgs/day
*Remember, you can include Arimidex at any point during the year at.5mgs/day if you begin to experience estrogenic side effects.			

Phase 2 (4 weeks): Chest and shoulders specialization		
Week	**Testosterone Cypionate**	**Deca-Durabolin**
5	400mgs	400mgs
6	400mgs	400mgs
7	400mgs	400mgs
8	400mgs	400mgs

Phase 3: (4 weeks): Back (width, thickness, traps) specialization		
Week	**Testosterone Cypionate**	**Deca-Durabolin**
9	400mgs	400mgs
10	400mgs	400mgs
11	400mgs	400mgs
12	400mgs	400mgs

Phase 4: (4 weeks): Arm specialization				
Week	**Aromasin**	**Nolvadex**	**HCG**	**Vitamin E**
1	20mgs/day	20mgs/day	500iu/day	1,000iu/day
2	20mgs/day	20mgs/day	500iu/day	1,000iu/day
3	20mgs/day	20mgs/day	500iu/day	1,000iu/day
4	20mgs/day	20mgs/day		

Phase 5: (2 weeks): Off Low-volume mass training/transition/recovery
OFF

MESOCYCLE II - LEAN MASS-GAINING (14 weeks)

Phase 6 (4 weeks): Heavy loading dominant		
Week	**Testosterone Propionate**	**Trenbolone Acetate**
1	100mgs/EOD	100mgs/EOD
2	100mgs/EOD	100mgs/EOD
3	100mgs/EOD	100mgs/EOD
4	100mgs/EOD	100mgs/EOD

Phase 7 (4 weeks): Volume dominant		
Week	**Testosterone Propionate**	**Trenbolone Acetate**
5	100mgs/EOD	100mgs/EOD
6	100mgs/EOD	100mgs/EOD
7	100mgs/EOD	100mgs/EOD
8	100mgs/EOD	100mgs/EOD

Phase 8 (4 weeks): Density dominant		
Week	**Testosterone Propionate**	**Trenbolone Acetate**
9	100mgs/EOD	100mgs/EOD
10	100mgs/EOD	100mgs/EOD
11	100mgs/EOD	
12	100mgs/EOD	

Phase 9 (2 weeks): Low-volume mass training/transition/recovery				
Week	**Aromasin**	**Nolvadex**	**HCG**	**Vitamin E**
1	20mgs/day	20mgs/day	500iu/day	1,000iu/day
2	20mgs/day	20mgs/day	500iu/day	1,000iu/day

MESOCYCLE III - INITIAL (MODERATE) FAT LOSS (8 weeks)

Phase 10 (4 weeks): Volume dominant + moderate cardio		
Week	**Clenbuterol**	**Ketotifen**
1	60-120mcgs/day	
2	60-120mcgs/day	
3	60-120mcgs/day	3mgs/day
4	60-120mcgs/day	

Phase 11 (4 weeks): Density dominant + moderate cardio		
Week	**Clenbuterol**	**Ketotifen**
5	60-120mcgs/day	
6	60-120mcgs/day	3mgs/day
7	60-120mcgs/day	3mgs/day
8	Off	Off

MESOCYCLE IV - MAXIMUM FAT LOSS (10 weeks)

Phase 12 (3 weeks): Heavy loading dominant + high cardio				
Week	**Testosterone Propionate**	**Masteron**	**Trenbolone Enanthate**	**Clenbuterol**
1	100mgs/EOD	100mgs/EOD	75mgs/EOD	60-120mcgs/day
2	100mgs/EOD	100mgs/EOD	75mgs/EOD	60-120mcgs/day
3	100mgs/EOD	100mgs/EOD	75mgs/EOD	60-120mcgs/day
*For the next ten weeks, Arimidex may be needed at .5mgs/day. Use as Necessary.				

Phase 13: (3 weeks): Volume dominant + high cardio				
Week	**Testosterone Propionate**	**Masteron**	**Trenbolone Enanthate**	**Clenbuterol**
4	100mgs/EOD	100mgs/EOD	75mgs/EOD	60-120mcgs/day (With 3mgs of Ketotifen)
5	100mgs/EOD	100mgs/EOD	75mgs/EOD	60-120mcgs/day
6	100mgs/EOD	100mgs/EOD	75mgs/EOD	60-120mcgs/day

Phase 14 (3 weeks): Density dominant + high cardio				
Week	**Testosterone Propionate**	**Masteron**	**Trenbolone Enanthate**	**Clenbuterol**
7	100mgs/EOD	100mgs/EOD	75mgs/EOD	60-120mcgs/day
8	100mgs/EOD	100mgs/EOD	75mgs/EOD	60-120mcgs/day
9	100mgs/EOD	100mgs/EOD	75mgs/EOD	60-120mcgs/day

Phase 15 (1 week): Shape /peaking	
Week	**Testosterone Propionate**
10	100mgs/EOD

At this point, the final 4 weeks of Phase 4 should be run, and a break taken:

Recovery				
Week	**Aromasin**	**Nolvadex**	**HCG**	**Vitamin E**
1	20mgs/day	20mgs/day	500iu/day	1,000iu/day
2	20mgs/day	20mgs/day	500iu/day	1,000iu/day
3	20mgs/day	20mgs/day	500iu/day	1,000iu/day
4	20mgs/day	20mgs/day		

Chapter 11
Women and Strength Training

In this chapter we'll explain why women are often afraid of what I call “serious strength training” and why they shouldn't be. I'll also explain the slight differences in planning the training program of female athletes compared to male athletes.

I'm not the biggest fan of feminist extremism; you know, the type that claims that men and women are equal in everything. This just isn't true! Men and women each have different strength and weaknesses as well as different needs. Their respective training programs should reflect this.

Caroline power cleaned 185lbs, deadlifted and squatted 315lbs … not bad for a 15 years old figure skater of 135lbs!

Why women are afraid of lifting big weights

Since the dawn of time, big manly physiques and strength have been bonded together tightly, so much so that many women were led to believe that if they got stronger they'd build a big, bulky, manly physique. Those of us who are slightly more illuminated know that an increase in strength can be associated with neural factors as well as muscular factors. As a result, just because a woman gains a lot of strength doesn't mean that she'll look like Jay Cutler with hooters. Here's why:

First of all, most women have much lower testosterone levels than men. In fact, they have approximately 10 times less. Since testosterone is known to increase protein synthesis and muscle size, it seems evident that women would be much less likely to build up huge muscles than their male counterparts when using intense strength training.

I firmly believe that the neural factors involved in strength production are much less developed in female beginners than in male beginners. This is probably because, by tradition, young boys are more active. As a result, women will improve this function to a greater extent than men.

That's not to say that women can't build muscular physiques. Women can build muscle with training, but not to the extent of their male counterparts.

However, their potential for strength improvement is similar or greater than men's, mostly because of a beginning set-point that's lower than that of men. Trainer Jennifer Blomquist agrees that women can gain strength sometimes at a faster rate then men:

I find this to be true, especially when the women get passed the "I don't want to get huge" mindset and they finally give it their all.

It's obvious that most men have a hard time gaining 15-25 pounds of muscle in a year (in my opinion this size improvement will lead to significantly visible changes). So women should not be too worried about morphing into the Incredible Hulk!

I'd say that a woman can build 7-12lbs of quality muscle tissue in a year (once she's past the beginner level), which will give her a nice firm body! And to quote strongwoman competitor Patricia Smith:

I do firmly believe that most women would look better with the addition of 5-10lbs of LBM anyways. And that the current trend of that too skinny look has just got to go!

Jennifer Blomquist leans distinctly in the same direction when she talks about a woman's fear of getting too big:

I used to tell my female clients that they weren't going to wake up one morning screaming "My God, I went too far at the gym yesterday and now I'm HUGE!!!"

Another fear of women (and their *dimwit* personal trainers) is getting injured. I don't know why, but most people seem to think that women are more injury prone than their male counterparts. There is absolutely no data indicating that women are generally more susceptible to weight-training related injuries. We need to take this myth of the frail, fragile woman out to the curb!

However, in recent years we have noted an increase in ACL injuries in female athletes. This may indicate that women may be more prone to ACL injuries (because of the configuration of their hips and legs), or simply that women are now more active and thus the chance of injury is increased. This is yet another good reason to utilize strength training. Strengthening the leg muscles, especially the vastus medialis, will improve knee stability and thus reduce the risk of sport injuries to the knees.

Why women should strength train

Women can greatly benefit from strength training.

Here are some benefits we can note:

1. Reduced risk of osteoporosis as a woman ages. The mechanical stress placed on the body structure during strength training (especially ground-based movements) will help increase bone density and prevent calcium loss and bone frailty in latter years.

2. Reduced risk of sport injuries. While women are no more prone to weight-training injuries than men, it's true that women who practice sports are often more prone to injury than their male counterparts. But this is probably because, by tradition, men have been involved in a more serious off-season strength training regimen, which can help reduce the risk of injuries. A woman who is heavily involved in sports has a much smaller chance of being injured if she trains seriously in the gym.

3. Change in body composition. With proper strength training a woman will add more lean body mass and will lose fat mass. Furthermore, including serious strength training while dieting down prevents loss of muscle, and as a result will prevent the "yo-yo" effect of regaining all the lost weight and then some!

4. More strength to use in daily chores or sport activities. If women gain strength in the muscles involved in their daily tasks, they'll have to use a lesser proportion of their available strength, and thus they'll perform their tasks more efficiently and with less fatigue accumulation.

5. Better in-and-out. Improving strength will enhance self-confidence and self-esteem and make a woman feel sexier and sleeker.

How women should train

Parameter	How women traditionally train	How men should train	How women should train
Load (intensity)	Light (40-65%)	Moderate to heavy (75-100%)	Slightly lighter than men (70-95%)
Tempo	Super slow eccentric, slow concentric	Slow eccentric, fast concentric	Slow eccentric, fast concentric
Reps per set	High (12-20)	Low to moderate (1-12)	Slightly higher than men (3-15)
Sets per exercise	Low (1-2)	Moderate (3-5)	Slightly higher than men (4-6)
Exercises per session	High (5-6)	Moderate (3-5)	Moderate (3-5)
Type of exercises	Light isolation exercises	Emphasis on multi-joint exercises with some isolation work	Emphasis on multi-joint exercises with some isolation work
Frequency	2-3 times per week	3-5 times per week	3-5 times per week
Type of training plan	None, repeat same program over and over	Periodized with periods of loading and unloading	Periodized with periods of loading and unloading

The preceding table gives a good guideline when planning training programs for females. You must understand that women can lift relatively heavy weights, do a greater volume of work than believed by most (in fact they have a greater tolerance for volume than most men), and should focus on multi-joint exercises.

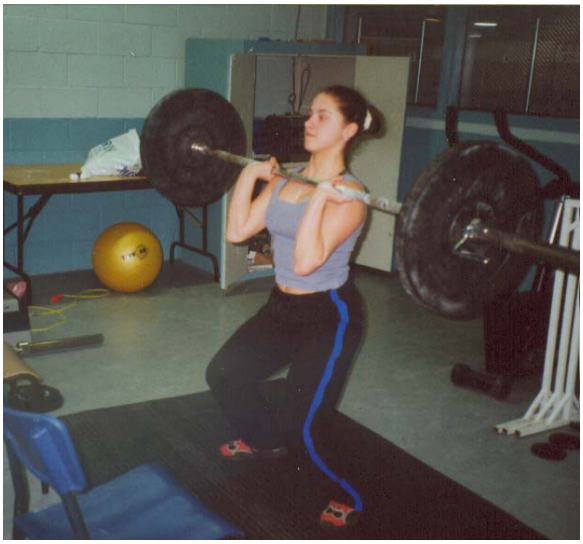
Basically, women should train almost exactly like men, with a few minor differences:

1. Slightly more reps per set: Women do not have the capacity to recruit as many motor units as men do. As such, they'll need 1-2 more reps to fully stimulate their muscles. So when training for strength, a man should use between 1 and 5 reps while a woman will benefit more from doing 3-6 reps. When training for muscle gains, men will benefit from doing 5-10 reps while women should stick to 7-12 reps.

2. Slightly more sets per exercise: The reason is the same as above. Most women will need to perform 1-2 more sets of an exercise to achieve the

same degree of stimulation as a man, once again because of their lower motor unit activation.

3. Slightly less intensity: This is *not* to say that women aren't as strong as men. But since they need a few more reps and a few more sets, the relative intensity must be decreased a little to allow for proper progression.



Sample training programs

Program no.1 – General mass-building program

Monday – Lower Body quads dominant
Tuesday – Upper body "horizontal" dominant
Wednesday – OFF/Abs
Thursday – Lower body hips dominant
Friday – OFF/Abs
Saturday – Upper body "vertical" dominant
Sunday – OFF

Monday workout – Lower Body quads dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Front squat	5	6 to 8	Normal lifting	2 min	3 sec down, 3 sec up
B1. Close-stance leg press	4	6 to 8	Post-fatigue	None	Stop just short of lockout
B2. Lunges – short steps	4	8 to 10/leg	Post-fatigue	2 min	Take 24" steps
C. Leg extension	3	8 to 10	High pos. dbl contraction	1 min	1 and ½ reps (add ½ at peak)
D. Sissy squat	3	max	Normal lifting	1 min	3 sec down, 3 sec up

Tuesday – Upper body "horizontal" dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Low-incline DB press	5	6 to 8	Normal lifting	2 min	3 sec down, 3 sec up
B. Chest-supported DB rowing	5	6 to 8	Normal lifting	2 min	2 sec. squeeze at peak
B1. Wide-grip bench press to neck	4	8 to 10	Superset	None	Flare elbows out, lower to neck
B2. Seated rowing to mid pec line	4	8 to 10	Superset	1 min	2 sec. squeeze at peak
C1. Lying DB triceps extension	4	8 to 10	Superset	None	3 sec down, 3 sec up
C2. Wide-grip preacher curl	4	8 to 10	Superset	1 min	3 sec down, 3 sec up
D. Seated rope rowing to face	3	10 to 12	Normal lifting	45 sec	2 sec. squeeze at peak

Thursday – Lower body hips dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Romanian deadlift	5	6 to 8	Normal lifting	2 min	Push hips far back to stretch hams
B1. High-feet leg press	4	6 to 8	Post-fatigue	None	Feet as high on pad as possible
B2. Lunges – long steps	4	8 to 10/leg	Post-fatigue	2 min	Take steps as long as you can
C. Gironda-style leg curl	4	8 to 10	Normal lifting	1 min	2 sec. squeeze on each rep
D1. Adduction machine	3	10 to 12	Superset	None	2 sec. squeeze on each rep
D2. Abduction machine	3	10 to 12	Superset	1 min	3 sec. up, 3 sec down

Saturday – Upper body "vertical" dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Incline bench press (60 degrees)	5	6 to 8	Normal lifting	2 min	Stop just short of lockout
B. Lat pulldown	5	6 to 8	Normal lifting	2 min	2 sec. squeeze at peak
B1. Neutral grip seated DB press	4	8 to 10	Superset	None	Stop just short of lockout
B2. DB upright rowing	4	8 to 10	Superset	1 min	2 sec. squeeze at peak
C1. Reverse grip shoulder press	4	8 to 10	Superset	None	In SMITH machine
C2. Seated lateral raise	4	12 to 15	Superset	1 min	3 sec down, 3 sec up
D1. Overhead barbell triceps ext.	4	10 to 12	Superset	None	3 sec down, 3 sec up
D2. Standing barbell curl	4	10 to 12	Superset	1 min	3 sec down, 3 sec up

Program no.2 – Lower body specialization program

Monday – Quads/Hamstrings/Glutes (heavy weights)
Tuesday – Chest/Shoulders/Triceps
Wednesday – Quads/Hamstrings/Glutes (density)
Thursday – OFF / Abs
Friday – Back/Biceps/Rear delts
Saturday – Quads/Hamstrings/Glutes (volume)
Sunday – OFF/ Abs

Monday – Quads/Hamstrings/Glutes (heavy weights)					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Back squat	5	4 to 6	Normal lifting	2 min	3 sec down, 3 sec up
B. Romanian deadlift	5	4 to 6	Normal lifting	2 min	3 sec down, 3 sec up
C. Front squat	5	8 to 10/leg	Normal lifting	2 min	Stop just short of lockout
D. High-feet leg press	5	8 to 10	Normal lifting	2 min	Feet as high on pad as possible

Tuesday – Chest/Shoulders/Triceps					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Wide-grip bench press to neck	5	8 to 10	Normal lifting	2 min	Flare elbows out, lower to neck
B1. Low-incline DB press	4	6 to 8	Post-fatigue	None	Stop just short of lockout
B2. DB flies	4	8 to 10/leg	Post-fatigue	1 min	3 sec. up, 3 sec down
C. Standing military press	5	8 to 10	Normal lifting	1 min	Stop just short of lockout
D1. Standing barbell front raise	3	10 to 12	Superset	None	2 sec. squeeze on each rep
D2. Seated lateral raise	3	10 to 12	Superset	1 min	3 sec. up, 3 sec down
E1. Close-grip bench press	4	10 to 12	Superset	None	3 sec. up, 3 sec down
E2. Lying DB triceps extension	4	10 to 12	Superset	1 min	3 sec. up, 3 sec down

Wednesday – Quads/Hamstrings/Glutes (density)					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Leg press	4	4 to 6	Triple set	None	Stop just short of lockout
A2. Lunges short steps	4	8 to 10/leg	Triple set	None	3 sec down, 3 sec up
A3. DB squat – wide stance	4	12 to 15	Triple set	2 min	Stop just short of lockout
B1. Stiff-leg deadlift	4	6 to 8	Triple set	None	3 sec down, 3 sec up
B2. DB Romanian deadlift	4	8 to 10	Triple set	None	3 sec down, 3 sec up
B3. Lying leg curl	4	12 to 15	Triple set	2 min	2 sec. squeeze on each rep

Friday – Back/Biceps/Rear delts					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Bent over barbell rowing	5	8 to 10	Normal lifting	2 min	2 sec. squeeze on each rep
B1. Lat pulldown	4	6 to 8	Post-fatigue	None	2 sec. squeeze on each rep
B2. DB pullover	4	12 to 15	Post-fatigue	1 min	3 sec. up, 3 sec down
C. Standing barbell curl	5	8 to 10	Normal lifting	1 min	3 sec. up, 3 sec down
D1. Wide-grip preacher curl	3	10 to 12	Post-fatigue	None	3 sec. up, 3 sec down
D2. Close-grip bar concent. curl	3	10 to 12	Post-fatigue	1 min	2 sec. squeeze on each rep
E1. Seated rope rowing to face	4	10 to 12	Post-fatigue	None	2 sec. squeeze on each rep
E2. Bent over lateral raise	4	12 to 15	Post-fatigue	1 min	2 sec. squeeze on each rep

Saturday – Quads/Hamstrings/Glutes (volume)					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Hack squat machine	5	8 to 10	Normal lifting	2 min	Stop just short of lockout
B1. DB squat close stance	4	8 to 10	Post-fatigue	None	Stop just short of lockout
B2. Leg extension	4	12 to 15	Post-fatigue	1 min	2 sec. squeeze on each rep
C. Romanian deadlift	5	8 to 10	Normal lifting	1 min	3 sec. up, 3 sec down
D1. DB stiff leg deadlift	3	10 to 12	Superset	None	3 sec. up, 3 sec down
D2. Gironda-style leg curl	3	10 to 12	Superset	1 min	2 sec. squeeze on each rep

Program no.3 – Moderate fat loss program

Monday – Lower Body quads dominant
Tuesday – Upper body "horizontal" dominant - Cardio
Wednesday – Cardio/Abs
Thursday – Lower body hips dominant
Friday – OFF
Saturday – Upper body "vertical" dominant - Cardio
Sunday – OFF

Monday workout – Lower Body quads dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Front squat	5	8 to 10	Normal lifting	1 min	3 sec down, 3 sec up
B1. Hack squat	4	12 to 15	Post-fatigue	None	Stop just short of lockout
B2. Bulgarian squat	4	12 to 15/leg	Post-fatigue	90 sec	Stop just short of lockout
C. Walking lunges – medium steps	3	8 to 10/leg	Normal lifting	1 min	No special comment
D. Leg extension – feet turned out	3	15 to 20	Normal lifting	30 sec	2 sec. squeeze on each rep

Tuesday – Upper body "horizontal" dominant - Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Lying DB press	4	8 to 10	Normal lifting	1 min	3 sec down, 3 sec up
B. Bent over barbell rowing	4	8 to 10	Normal lifting	1 min	2 sec. squeeze at peak
B1. Wide-grip bench press to neck	4	10 to 12	Superset	None	Flare elbows out, lower to neck
B2. Seated rowing to low abdomen	4	10 to 12	Superset	1 min	2 sec. squeeze on each rep
C1. Decline skullcrusher	4	10 to 12	Superset	None	3 sec down, 3 sec up
C2. Body drag curl	4	10 to 12	Superset	1 min	3 sec down, 3 sec up
D. Seated rope rowing to face	3	15 to 20	Normal lifting	45 sec	2 sec. squeeze on each rep
Steady-state cardio (treadmill)	1	30 minutes	Treadmill	N/A	3.2mph/10 deg. incline

Wednesday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Intervals	1	10 intervals	30 sec. fast/60 sec. jog	none	On treadmill or stationary bike

Thursday – Lower body hips dominant					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Sumo deadlift	5	8 to 10	Normal lifting	1 min	3 sec down, 3 sec up
B1. Wide-stance back squat	4	12 to 15	Post-fatigue	None	Stop just short of lockout
B2. High feet leg press	4	12 to 15	Post-fatigue	90 sec	Feet as high on pad as possible
C. Walking lunges – long steps	3	8 to 10/leg	Normal lifting	1 min	No special comment
D. Lying leg curl	3	12 to 15	Normal lifting	30 sec	2 sec. squeeze on each rep

Saturday – Upper body "vertical" dominant - Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A. Seated DB press	4	8 to 10	Normal lifting	1 min	3 sec down, 3 sec up
B. Lat pulldown	4	8 to 10	Normal lifting	1 min	2 sec. squeeze at peak
B1. Seated lateral raise	4	10 to 12	Superset	None	3 sec down, 3 sec up
B2. Rope lat pulldown	4	10 to 12	Superset	1 min	2 sec. squeeze on each rep
C1. Overhead cable triceps ext.	4	10 to 12	Superset	None	3 sec down, 3 sec up
C2. Cable curl	4	10 to 12	Superset	1 min	3 sec down, 3 sec up
Steady-state cardio (treadmill)	1	30 minutes	Treadmill	N/A	3.2mph/10 deg. incline

Program no.4 – Maximum fat loss program

Monday – Whole body workout A + cardio
Tuesday – Cardio/Abs
Wednesday – Whole body workout B
Thursday – Cardio/Abs
Friday – Whole body workout C + cardio
Saturday – Cardio/Abs
Sunday – OFF

Monday workout – Whole body workout A					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Bench press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
A2. DB squat	4	12 to 15	Alternate	15 sec	Stop just short of lockout
B1. Bent over barbell rowing	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
B2. Romanian deadlift	4	12 to 15	Alternate	15 sec	Stop just short of lockout
C1. Standing military press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
C2. Leg press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
D1. Wide-grip preacher curl	4	12 to 15	Alternate	15 sec	Stop just short of lockout
D2. Standing EZ bar overhead exten.	4	12 to 15	Alternate	15 sec	Stop just short of lockout
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Tuesday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Intervals	1	10 intervals	30 sec. fast/60 sec. jog	none	On treadmill

Wednesday workout – Whole body workout B					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Decline bench press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
A2. Lunges	4	12 to 15/leg	Alternate	15 sec	Stop just short of lockout
B1. Lat pulldown	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
B2. DB stiff-leg deadlift	4	12 to 15	Alternate	15 sec	Stop just short of lockout
C1. Seated DB press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
C2. Hack squat	4	12 to 15	Alternate	15 sec	Stop just short of lockout
D1. Body drag curl	4	12 to 15	Alternate	15 sec	3 sec. up, 3 sec. down
D2. Close-grip bench press	4	12 to 15	Alternate	15 sec	3 sec. up, 3 sec. down
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Thursday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Intervals	1	10 intervals	30 sec. fast/60 sec. jog	none	On treadmill

Friday workout – Whole body workout C					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
A1. Low-incline DB press	4	12 to 15	Alternate	15 sec	Stop just short of lockout
A2. Bulgarian squat	4	12 to 15/leg	Alternate	15 sec	Stop just short of lockout
B1. Seated row to mid-pec line	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
B2. Leg curl	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
C1. Standing lateral raise	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
C2. Leg extension	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
D1. Alternate DB curl	4	12 to 15	Alternate	15 sec	3 sec. up, 3 sec. down
D2. V-bar cable triceps extension	4	12 to 15	Alternate	15 sec	2 sec. squeeze on each rep
Low-intensity cardio	1	35 min	Treadmill	N/A	3.0mph / 12 deg. incline
* In this program the A1./A2.(or B1./B2.; C1./C2.) denotes alternate sets (not supersets). You perform one set of A1., rest for 15 seconds then perform a set of A2., rest 15 seconds then go back to A1. etc.					

Saturday workout – Cardio					
Exercise	**Sets**	**Reps**	**Technique**	**Rest**	**Notes**
Intervals	1	10 intervals	30 sec. fast/60 sec. jog	none	On treadmill

Chapter 12

Anabolic use and women

This chapter is going to be a bit different than the preceding ones. Instead of simply outlining how women can or do use anabolics, I'm taking a bit of a different course…Over the last year or so, I've had the privilege of knowing several people who are intimately connected with female figure, fitness, and bodybuilding. I have also consulted with one or two national level fitness competitors, as well as a couple of national level female bodybuilders, as well as some figure competitors. Actually, this chapter started out as an article, which was slated to appear on a website.

In any case, I wanted this chapter to be very objective, and to examine both how women use anabolics to transform their bodies. However, the more I became involved in conversations with these women, and began to develop friendships with them, that became impossible. Even disregarding my blatant unprofessionalism, it was virtually impossible to avoid admiring them and developing friendships. It's really amazing (and sometimes nerve wracking) to know these women, and see their body transformations occur with the use of anabolics.

So roughly a year ago, I began researching women and steroid use, with no idea that this would end up being a chapter in this work (mostly because I didn't even know I'd be writing this!). I had figured that my name was recognizable enough to give me a modicum of credibility, and not someone with vested (and unsavory) interests. I contacted all of the women I was on good terms with (not surprisingly, a relatively small number), and had them introduce me to some likely candidates to anonymously talk about their drug use.

Several figure, fitness, and bodybuilder women were all gracious enough to speak with me, very frankly and candidly (on the condition of anonymity). I have also retained a few connections with first division athletes in various colleges around the country, so I have decent insight into the world of female athletics as well. So I ended up doing dozens of interviews, and collecting reams of data on female anabolic use from various female competitors (and even a couple of recreational users). This data is important on many levels, for a woman trying to figure out which anabolics to use, or if she should use them at all.

Recreational use of anabolics by women (and by this, I mean non-competitive) is pretty much limited to low doses of a select group of compounds. Typically, this is because we're looking at a 5-10lb weight shift that amounts to the most that an average female recreational steroid user is trying to attain.

Regarding female physique competitors it's a bit different; the first thing which struck me is that, in the off season, they are all remarkably similar in stats, and they typically experience reasonable weight swings. This is not unlike the type of weight swing that we're going to be aiming for in a chemically assisted female body transformation. As an example, while a 5'3" (ish) female bodybuilder may bulk up to 155-165 lbs in the off season, I have seen more than one figure girl get up to about ten lbs shy of that, and fitness girls are typically around the same. One very popular figure model gets about 50lbs overweight between photo shoots. To look at her in the times between shoots, she basically looks like a fat girl with a pretty face. To look at her portfolio and magazine shoots, she looks like the type of girl high-school boys tape pictures of in their lockers. Granted, most women aren't looking for that kind of yo-yo inconsistency after their body transformation goals are reached, but you get the idea. Anabolic use isn't necessary for most women to really transform their bodies, but at the competitive level it will be. Of course, it makes it easier to effect a body transformation for a woman while on anabolics, but I'll get to that in a second…

Anyway, a typical off season weight for a female bodybuilder is only about 10 lbs higher than a figure or fitness competitor, if they are all still in reasonable shape (not super-fat). This immediately made me think that their drug intakes, diet, and training routines would be shockingly similar, and in some regards I was correct, and in others I was not. This is why real care and precaution needs to be taken when a female is attempting a body transformation aided by anabolics.

Let's go over what I'm talking about here, so we're all on the same page. Fitness girls do the same physique comparison rounds as the figure girls, but also have a routine which contains compulsory moves. Figure girls are compared doing quarter turns in both a one and two piece "swimsuit". It's

called a “swimsuit” but you can’t swim in it (naturally). In fact, it doesn’t resemble a swimsuit in any way except for the shape.

Now that we’re vaguely on the same page, we can go over some basics regarding female anabolic use. It’s pretty common to hear people say things like “even fitness competitors use a low dose of ‘Var or Winny here and there…maybe some Clenbuterol”. This is absolute bullshit. Competition level doses I’ve seen are actually much higher than people think… basically around 10 mgs of Anavar (never less), stacked with an equal amount of Winstrol, and a bunch of Clenbuterol. But for a simple body transformation, we’re talking about very low doses as being appropriate. The average female looking to transform their body should be looking for a slight edge; not for a drug to do the work for her. Low doses of anabolics are all the average woman needs to give an added edge to their body transformations.

At the competitive level, however, I can’t remember the last time I’ve read a female bodybuilder or fitness girl’s drug program and not seen Growth Hormone in it- usually about 2IU’s a day (interestingly, IGF-1 hasn’t really busted onto the female anabolic scene yet, nor has MGF or the other peptides). Thyroid hormone is used in nearly every woman’s precontest phase, and doses can get pretty outrageous here. Proviron is pretty big when they can get it, and most of them take the same dose I do (25-50mgs/day). Some take more. Primobolan, both tabs and injectable, are popular with women, when there’s enough cash around to afford it. Most of the upper level competitors usually don’t have that kind of cash when they first break onto the national scene, though. Why? Because breast implants are expensive- and the last show I went to, there were only four that weren’t fake. And I don’t mean four women, I mean four breasts.

So what do I think are the best drugs for women to take (in small doses)? Typically, I think the safest choices for female anabolic use are Primobolan, Anavar, Winstrol, and Masteron. This is, as previously stated, for a little edge in body transformation, and only for 12-16 weeks at most (perhaps the summer). Perhaps slightly higher (dosage-wise) amounts of these drugs would be permissible in the off season (*when on a yearly body

transformation undertaking). Low amounts of steroids, like the ones I just mentioned, will help our female body transformation by helping to build muscle and burn fat. I think that by staying at an average of 10mgs (or less) per day, of any of the aforementioned steroids, the average woman can safely transform their bodies into a much leaner, nicer looking physique. Of course, non-hormonal methods (clenbuterol, etc…) can also be used, and my suggestions regarding those (thyroid, etc…) are basically the same in both men as well as women.

So where was I? Oh…right, off-season drug intake…

In terms of their off season drug intake, female bodybuilders differ from their figure and fitness sisters. Typically their doses are only slightly higher, but they are much more experimental with compounds they will use. Testosterone propionate, Trenbolone Acetate, Oral Turinabol, Deca-Durabolin, and occasionally Equipoise are used by female bodybuilders. I need to be totally honest, and say that if the woman didn't start off as exceptionally pretty, these drugs, in the dosages commonly used by top level female bodybuilders, will not win them any beauty contests. Still, even at the top levels of competition or in photo shoots, when their make-up and hair is done, there are a lot of beautiful female bodybuilders, who haven't lost their looks. However, what's typically seen in the lower levels is a different story. Girls who are trying to break into the professional ranks, who haven't done it after several tries, typically turn to much higher drug intakes, and sometimes ruin their femininity. Why bother transforming your body if you end up ruining your femininity (however you choose to define that word).

Most of the side effects I've seen in women are manageable, and only temporary. Yeah, horror stories exist, but they're few and far between. Permanent deepening of the vocal chords is very uncommon, and I've only seen it with much larger female bodybuilders- who typically don't go off steroids long enough to have their voices recover before it becomes semi-permanent. I know of one woman who lost the highs in her voice, but it didn't deepen…she was, however, under the mistaken impression that her voice had started out much higher than it really did. I think a little precaution here goes a long way. In particular, women need to be more receptive to what their bodies are telling them when they're on a cycle, and they need to

come off the drugs, regularly and periodically. When undesirable side effects start showing themselves, doses need to be cut in half, or discontinued immediately. Do I even need to remind everyone that blood work is a must throughout the year, when you're going to be tampering with your hormones, and adding in additional ones?

The side effect most commonly ignored (believe it or not) is the growth of body hair, and hair loss (from the head). Most women I know brush off the growth of body hair by rationalizing that they have to shave anyway, and the loss of any hair from their head is quickly re-grown after the cycle is over. Body hair growth doesn't go away usually, but girls who are blonde (natural ones, anyway) usually only grow a very fine layer of mostly unnoticeable hair, and brunettes who compete often have to do regular full body shaves anyway. Ever see any hair on the arms of a bodybuilder (male or female)? Yeah, that's how that one goes down. The men and the women usually shave every day or every other day anyway, so it's going to be growing back a bit heavier and coarser. If you wanna compete, you have to shave…so this side effect is usually ignored. And the thinning hair just doesn't faze the women too much because they have so much of it.

How about acne? Yeah, it happens. I knew of a man taking 300mgs of injectable steroids every other day right now, along with 50 mgs/day of orals, and he didn't have a single zit or pimple. Genetics obviously play a role here, and that's what I've seen with the women who use anabolics too. Women who had severe break outs during their teenage years often find them to recur if they use anabolics. Conversely, if a woman has had exceptionally clear skin her whole life, the addition of steroids doesn't usually produce much if any acne. Look at some pictures of the top figure or fitness competitors next time you see them. Do they look like they spent their teenage years as awkward, skin blemished girls? Right… and this is probably why we don't see too much acne from them now either- genetics.

Some slight clitoral enlargement is common, but usually (mostly) goes away for the most part when the woman stops using the drugs. Some slight enlargement is going to be permanent, but the "man-like" level of enlargement is really not common at all. And here's a hot tip: Some do it on purpose. To be perfectly frank, most women appreciate the temporary effect of clitoral enlargement and swelling, because it makes it much easier for them to orgasm- and combined with the libido increase experienced through

the use of anabolics- well, I'll leave it to you to figure out the advantages here.

But is it permanent? Lets think about this objectively for a moment, ok? Men use tons of DHT based anabolics, in much higher doses, and we never hear of grossly enlarged and permanent external genetalia enlargement in men, from those compounds. Topical DHT has been used successfully to treat inordinately small penis size in males (technically called Microphalia), but this is really only marginally successful and involves rubbing DHT on the area every day, for months on end. And no, this isn't something I've needed to try- thank you very much.

One of the alarming trends I see with female competitors is that they usually are listening to men, with regards to their drug intake. Contest Prep "Gurus" (read: drug dealers) usually recommend the "mild" drugs which are used in the world of male bodybuilding as cutting agents. This includes Anavar, Primobolan, Proviron, and Winstrol, most commonly. These are obvious choices for men, because none of them aromatize (convert to estrogen). When you take a look at their androgenic rating, they're all quite low, and have very decent anabolic effects. None of them really provide any huge weight gains, but they do provide very high quality gains, of mostly muscle, and very little water retention. In low doses, any of them are reasonably safe. Sounds great, right? Surely, this is why men recommend these drugs to women- when they use these drugs, men typically experience very hard, quality gains in muscle, with only small increases in muscle, on the level of a few pounds, with no water gain. This is just what women usually want out of their cycles, so the reasoning behind these recommendations is sound- almost.

Did I mention that all of the drugs I just listed are also the most expensive anabolics on the market? Not a bad deal for the "gurus" who recommend them…

In reality, when I look at the commonly recommended steroids for women, the striking thing that occurs to me is that they are all derived not from Testosterone, but rather from it's much more potent cousin, Dihydrotestosterone (DHT). Most people think that testosterone is the most potent natural androgen, but in fact, it's not. DHT is the most potent naturally occurring androgen, and it's responsible for several androgenic effects in both men as well as women. In men, it deepens the voice at

puberty, is responsible for male pattern baldness, aids in the growth of body and facial hair, and in the fetus is responsible for the development of external genetalia. Testosterone gets converted to Dihydrotestosterone by the 5alpha-Reductase enzyme, and the presence of 5a-R in the womb is a major determinant in of the sex of the baby. Have I mentioned that DHT is both anti-estrogenic and anti-progesteronic? See where I'm going with this?

The reason men experience very nice gains with the DHT family of steroids is that they not only reduce estrogen, but they also are very potent androgens, despite their misleadingly low androgenic ratings. Androgens in men produce far less of an effect on a Mg for Mg basis, than they do in women, and this is due to the differing endocrinology of the two sexes.

In female endocrinology, we see what's called a two-cell/two-gonadotropin concept LH is delivered to the theca interstitial cell which leads to the secretion of androstenedione. This is then aromatized into estrone, which is then converted to the more potent estradiol. In addition, some testosterone is produced, and this is also subject to aromatization just as it is in men, as well as being subject to 5a-Reductase and conversion to DHT. The overall amount of androgens produced in the woman is, however, far less than what is produced in men. This is why women only need to use lower doses to produce really nice changes in their physiques.

Their threshold for experiencing undesirable side effects is also very low, so doses need to be increased incrementally, and this isn't usually done. Let's discuss why. The popular brands of Anavar used by most women, for example, typically come in 5mg tabs. So when a woman decides to up her dose, she goes from one tab to two. That's a huge increase, and I've never heard of a woman going from five to six mgs, or anything like that. Winstrol comes in amps of 50mgs, and it's very difficult to measure out 1/th of a ml in a syringe. Consequently, most women use a quarter ml every other day, and then they jump to double that dose when they move up. The pattern here is that doses are doubled every time they're increased, and this is something unique to women. A man doing 500mgs of testosterone per week will usually jump to 750mgs if they aren't receiving the effects they want. At lower doses, and lower side effect thresholds, the trend in female anabolic

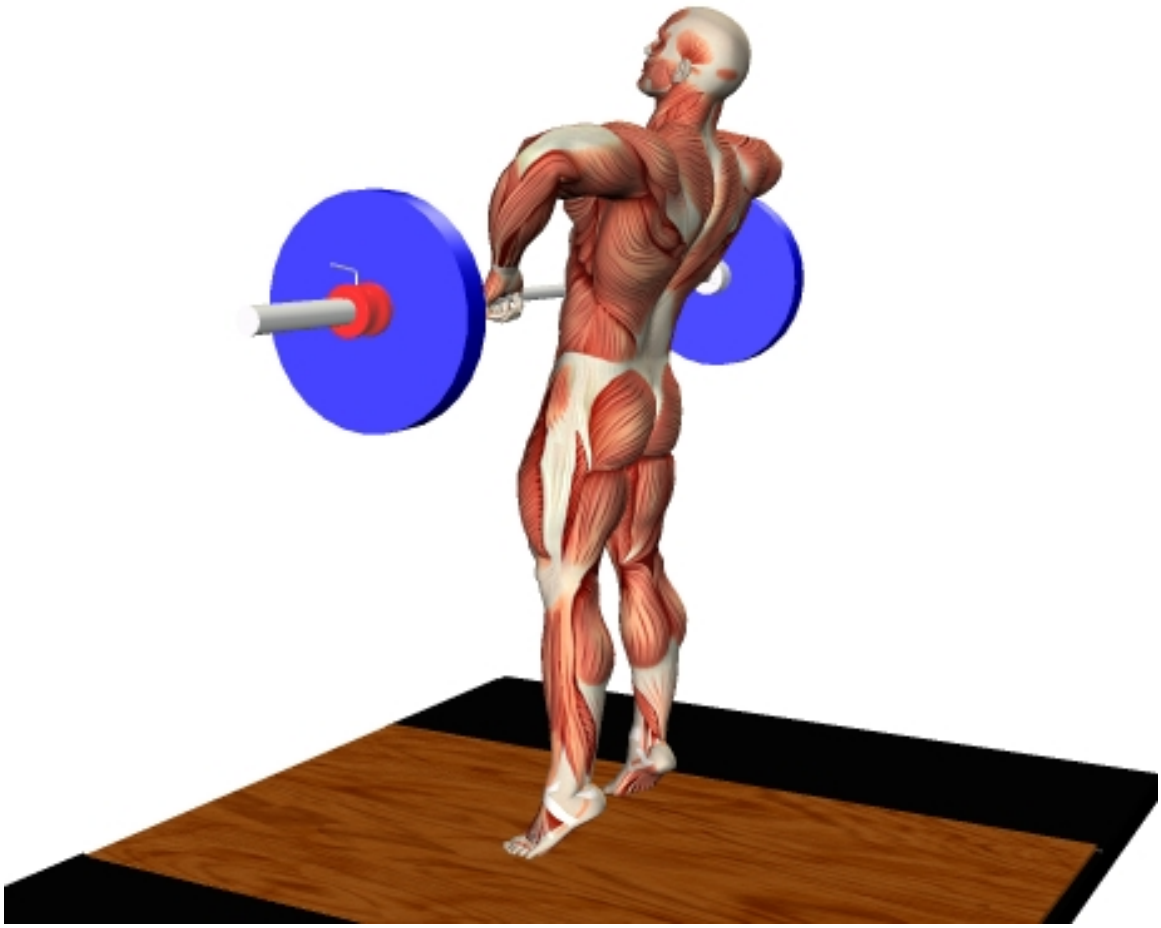
use is (unfortunately) to double the dose. I would recommend moving up in mg amounts, rather than arbitrarily doubling doses.

I noticed another trend, in speaking with some of the top level female competitors I interviewed. Unfortunately, I saw what would be technically classified as compulsive behavior in some women, who either experience anxiety when they come off the drugs, or feel a degree of anxiety when they aren't using the kind of doses they perceive their competition to be using. As with any compulsive act, as anxiety levels rise, the desire to relieve that anxiety (in this case by using steroids) also rises. As the compulsive behaviors begins to manifest itself, and as more compulsive acts are committed- i.e. drug intake is continued or increased- anxiety levels decline. This creates a pattern of unnecessary psychological reliance on the drugs, not necessarily to build a better physique, but rather to decrease anxiety.

This, obviously, is not something that's going to help you transform your body- and is out of control. Clearly, physical side effects are not the only ones that women need to consider if they are thinking about using anabolics to transform their physiques.

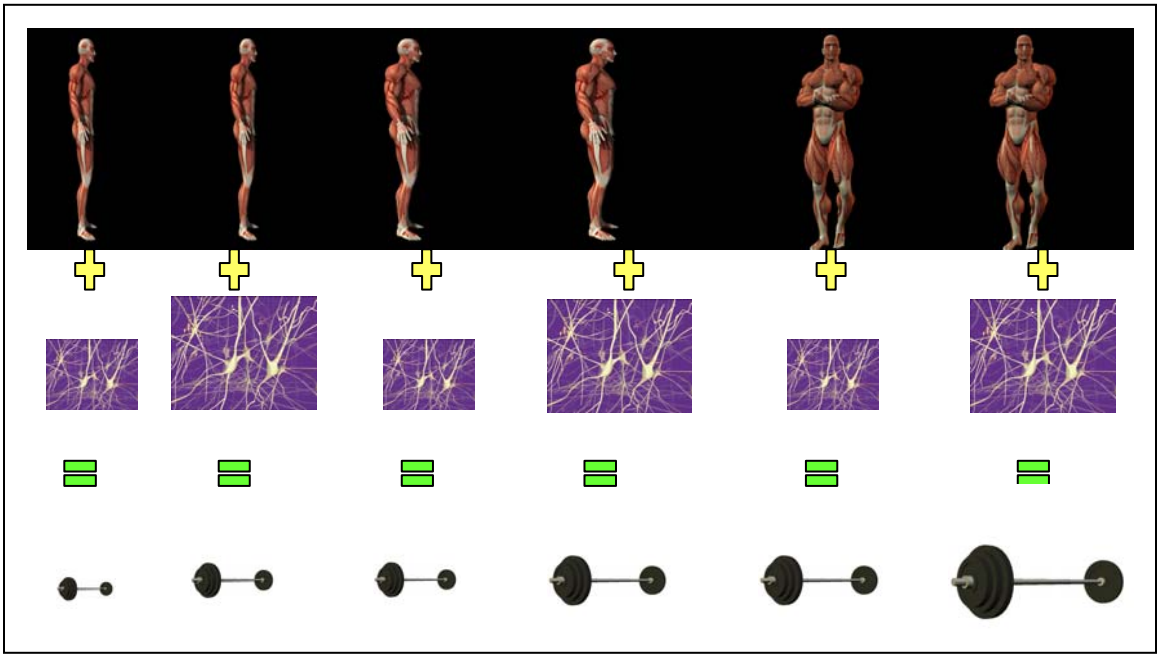
Chapter 13

Bonus section: Gaining Strength and Muscle-building Q&A

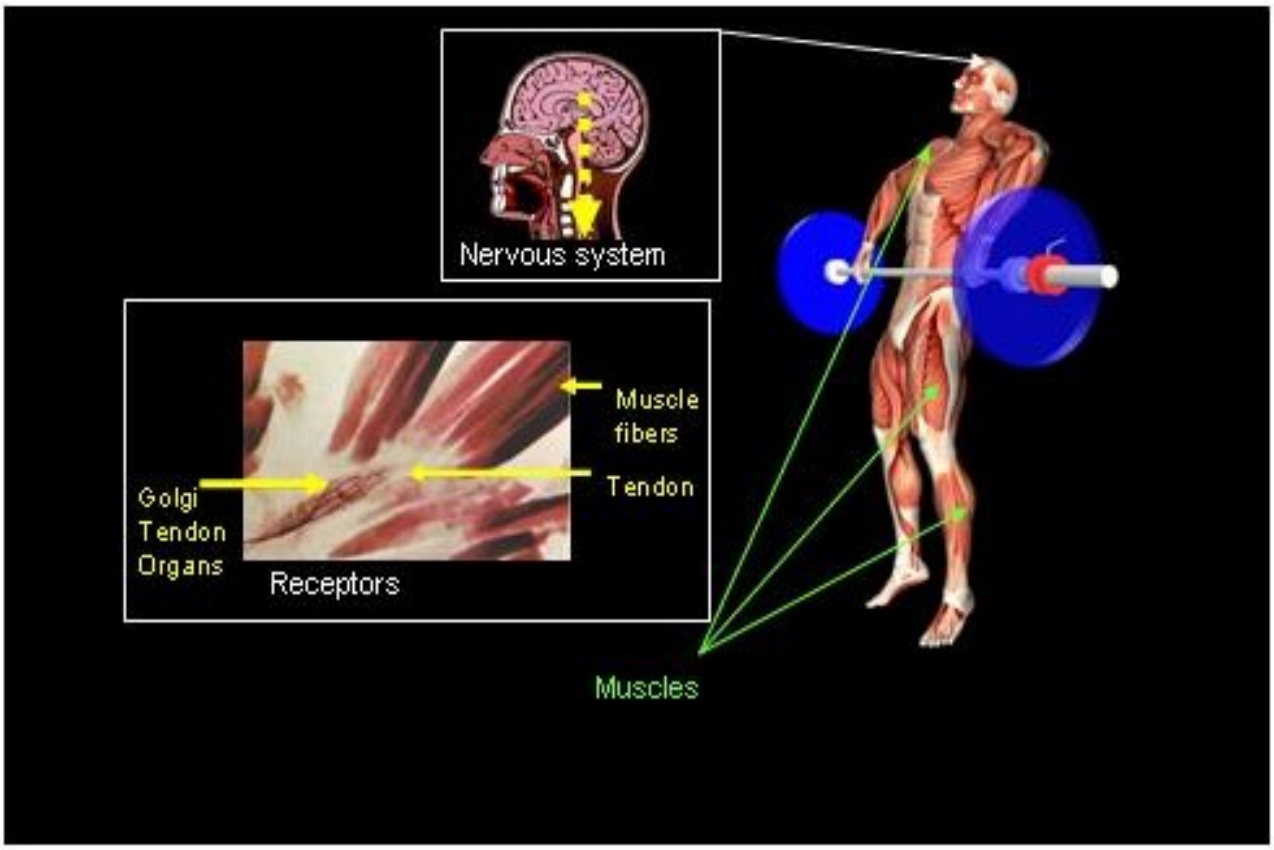


WHAT MAKES YOU STRONG?

Strength and size are two different animals. It's true they remain somewhat intertwined, especially if one gained his muscle mass while training mostly in the functional hypertrophy zone (80-85%/6-8RM) with some strength work thrown in there. However it's quite possible for an individual to have large muscles and be somewhat weak. On the other hand there are also individuals with less muscle mass but who have phenomenal strength. This is mostly due to central nervous system efficiency, a lower muscle fiber innervation threshold and lowered protective mechanisms. An example of such an athlete is Canadian bobsledder Pascal Caron who bench pressed 425lbs and full squatted 500lbs at a bodyweight of 167lbs on 5'7". There are also the obvious examples of elite Olympic lifters. For example, 3-times Olympic gold medalist Pyrros Dimas who snatched 396lbs, clean & jerked 469lbs and front squatted over 600lbs at a bodyweight of 185-187lbs! The fact is that big muscles give you the potential to be strong. However it is the nervous system that allows you to reach that potential. The following graphic illustrates the relationship between muscle mass, CNS efficiency and strength.



As we mentioned the size of your muscles determine your strength potential. It is agreed by most sport scientists that a muscle's strength is proportional to its cross-sectional area (so ultimately to its size). However if the nervous system is not effective it will be impossible to make good use of an important muscle mass. Your muscles are much like a factory: a bigger factory has the potential to produce more because it has more employees, space and equipment. However if the boss doesn't know what he's doing and cannot for the life of him get his employees to be productive, then the factory will not live up to its potential. In fact it may very well be beaten by a smaller enterprise with highly motivated workers. However, if you get the employees of the big factory motivated you will obviously have one highly productive business! The same goes with strength. You should spend time building up your muscles mass (mostly via functional hypertrophy) and some time learning how to use that mass, by working on improving CNS efficiency (lifting heavy weights or lifting explosively). The following graphic shows the various factors involved in strength production.



Factors involved in strength production

The following structures are heavily involved in one's capacity to showcase limit strength:

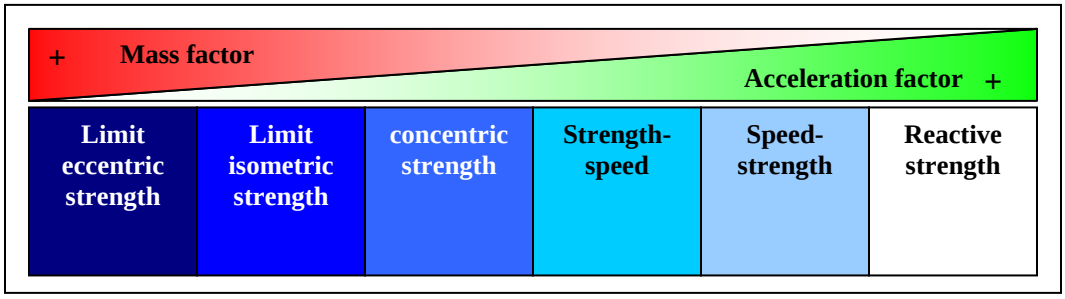
1. **Muscle size**: As I mentioned, a muscle's strength potential is proportional to its size. By increasing muscle mass you thus increase your capacity to produce force, if you learn how to use that added mass.

2. **Nervous system efficiency**: The more efficient the CNS is the more of your muscle's potential strength you can use. An effective CNS leads to the recruitment of a larger number of motor units/muscle fibers, to a faster activation of those fibers, to a better coordination between the recruited fibers within a muscle, to a better coordination between all the muscles involved in the movement, etc.

3. **Desensitisation of the protective mechanisms**: Your body has the capacity to lift a car, it just doesn't know it yet! Your muscles have a much larger strength potential than you can imagine. The average trainee can use around 30% of his strength potential. Why? Because of the protective mechanisms in place to make sure that you don't tear a muscle because it pulled too hard. The Golgi Tendon Organs (GTOs) are activated when what is perceived as excessive intramuscular tension is felt. As a result it basically shutdown your muscles, greatly reducing your capacity to produce force. By training with heavy weights you can eventually desensitize this protective mechanism. Elite strength athletes can use upward to 70%+ of their strength potential. So by simply improving the CNS efficiency and reducing the sensitivity of the GTOs you could almost double your strength!

The various types of strength

Strength is the capacity to produce a high level of force during a muscle contraction. There are several types of strength which can be placed in a strength continuum that looks like this.



Limit eccentric strength: The maximum amount of force that can be produced while the muscle is lengthening. This is the contraction regimen where the most resistance can be used.

Limit isometric strength: The maximum amount of force that can be produced while the muscle is contracting without any movement (static).

Limit concentric strength: The maximum amount of force that can be produced while the muscle is shortening.

Strength-speed: The capacity to produce a high level of force by accelerating a moderate/heavy external load.

Speed-strength: The capacity to produce a high level of force by accelerating a light external load.

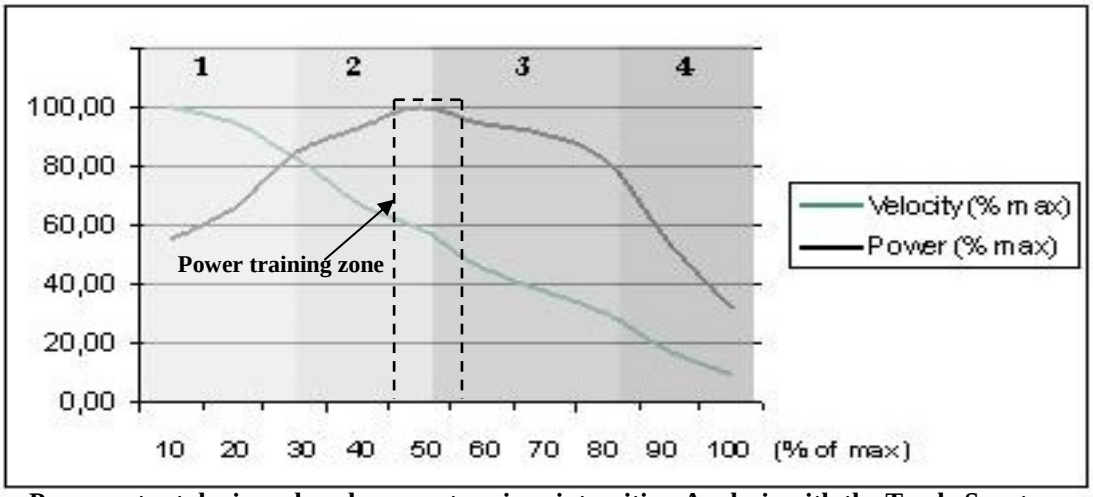
Reactive strength: The capacity to produce a high level of force while rapidly switching from an eccentric action to a concentric action (sometimes referred to as plyometrics).

When designing a strength-building or a performance-enhancing program you should follow these parameters when planning work in the strength continuum.

Training zones of the strength continuum						
Zone	**Reps per set**	**Sets per exercise**	**Exercises per session**	**Intensity**	**TUT**	**Rest intervals**
Limit eccentric strength	1-5	3-6	1-3	90-120%	5-20 sec	180-300 sec.
Limit isometric strength	1-3	2-3 for 3 positions	2-4	Maximum voluntary effort	6-10 sec. per rep	120-180 sec.
Limit concentric strength	1-5	4-8	2-4	85-100%	1-20 sec.	180-300 sec.
Strength-speed	1-5	4-8	2-4	45-55%* 70-80%*	1-20 sec.	120-180sec.
Speed-strength	5-10	3-5	2-4	15-30%*	5-20 sec.	90-120sec.
Reactive strength	5-10	3-5	2-4	bodyweight	5-20 sec.	90-120sec.
* 45-55% for traditional lifts performed explosively (e.g. speed bench, speed squat) 70-80% for the Olympic lifts 15-30% for ballistic lifts (jump squats, jump lunges, bench throws, med ball throws, etc.)						

You will notice that three types of explosive training are included in the table:

a) Traditional lifts performed explosively with 45-55% of your maximum. It has been shown that it's in that intensity range that power output is at its highest point, provided that the athlete is trying to achieve maximum acceleration.

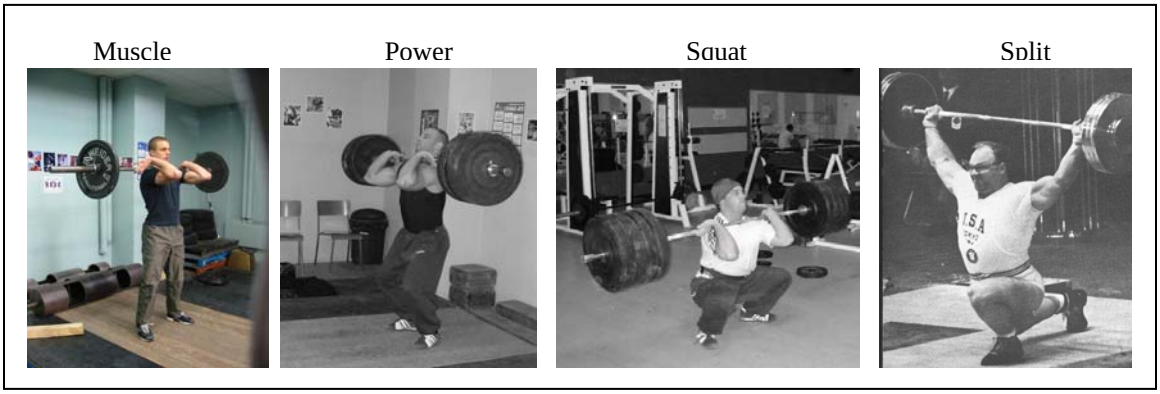


Power output during a bench press at various intensities. Analysis with the Tendo Sports Unit (Thibaudeau 2004)

b) Olympic lift variations performed with 70-80% of your maximum. The ideal percentage to use with the Olympic lifts is higher than for traditional lifts because the Olympic lift variations are explosive in nature. Quite simply you cannot complete a rep if acceleration is insufficient. You can always

grind out a bench press or deadlift max, but such a thing is impossible with the Olympic lifts. The Olympic lifts include the competitive lifts (snatch, clean & jerk) as well as their derivatives. When talking about Olympic lifts we should use a three-word term:

- **First word**: position of the catch/reception of the barbell (muscle; power; squat; split)
  Muscle = catch with no bending of the knees
  Power = catch with a slight bending of the knees
  Squat = catch with an important bending of the knees
  Split = catch with one leg forward and one leg backwards



- **Second word**: general type of lift (snatch; clean; jerk)
  Snatch = lifting the bar straight to overhead
  Clean = lifting the bar to the shoulders/clavicles
  Jerk = lifting the bar from the shoulders to overhead

- **Third word**: starting position (floor; hang; blocks)
  Floor = the bar starts on the floor
  Hang = the bar starts above or below the knees, with the lifter holding it there
  Blocks = the bar starts on blocks leaving it above or below the

knees

When prescribing an Olympic lift variation you thus use those three words to describe exactly what movement you want. For example ***Power Clean*** from the ***Hang***; ***Muscle Snatch*** from ***Blocks; Power Jerk*** from the ***clavicle***, etc.

So if we use the three words system we can create the following variations of the Olympic lifts. However, as we will see, not all of these lifts are appropriate to non-olympic lifters. Athletes should stick to the easier variations to be able to reap the maximum benefits without having to spend years mastering perfect competitive lifting technique.

Type of exercise	Variations
Snatch	Muscle snatch from the floor Muscle snatch from the hang Muscle snatch from the blocks Power snatch from the floor Power snatch from the hang Power snatch from the blocks Squat snatch from the floor Squat snatch from the hang Squat snatch from the blocks Split snatch from the floor Split snatch from the hang Split snatch from the blocks

Type of exercise	Variations
Clean	Muscle clean from the floor Muscle clean from the hang Muscle clean from the blocks Power clean from the floor Power clean from the hang Power clean from the blocks Squat clean from the floor Squat clean from the hang Squat clean from the blocks Split clean from the floor Split clean from the hang Split clean from the blocks

Type of exercise	Variations
Jerk	Muscle jerk from the clavicles Muscle jerk from behind the neck Power jerk from the clavicles Power jerk from behind the neck Squat jerk from the clavicles Squat jerk from behind the neck Split jerk from the clavicles Split jerk from behind the neck

An athlete who doesn't plan on competing in Olympic lifting should stick with the easier variations of these lifts:

Muscle snatch from the hang
Muscle snatch from the blocks
Power snatch from the hang
Power snatch from the blocks
Muscle clean from the hang
Muscle clean from the blocks
Power clean from the hang

Power clean from the blocks
Muscle jerk from the clavicles
Power jerk from the clavicles
Split jerk from the clavicles

Athletes should stay from Olympic lift variations starting from the floor and caught in the full squat position. Why?

- Lifts from the floor are more technical because of the transition from the first pull (floor to knees) to the second pull (knees to completion of the lift). In fact, that transition (which is also called the double knee bend) is the most technical aspect of the Olympic lifts. An athlete often doesn't have much time to improve his physical capacities; utilizing highly technical movements which take a long time to master are thus not an efficient way of training.

- Many athletes (especially large and/or muscular ones) lack the flexibility to assume a proper position with the bar on the floor. This increases the risk of injury and further reduces technical efficiency.

- Performing the Olympic lifts from the floor provide no added benefits over the variations from the hang or from blocks because it is the second pull (explosion) that has a positive impact on athletic performance. Some will argue that the first pull phase will build leg and lower back strength. This is not so; even in the best case scenario, an athlete will rarely be able to use more than 60% of his maximum deadlift when performing the Olympic lifts. This training load will not lead to significant strength gains.

- Lifts from the hang or from blocks have a shorter acceleration path. So you must go from zero to max speed much faster. This will build up the capacity to have a higher rate of force development.

- Olympic lifts caught in the full squat position require a very precise timing which, much like the double knee bend, can take a long time to master.

- The full squat lifts are designed to help Olympic lifters hoist more weight by reducing the distance one has to pull to complete the lift. However athletes who are after maximum power development should always try to pull as high as possible because this requires a greater force, power and acceleration production.

As you can see, unless you plan on being a competitive Olympic lifter there is no need to perform the full Olympic lifts. In fact they are even less effective than the truncated variations.

c) Ballistic lifts performed with 15-30% of your maximum. Ballistic refers to an exercise where there is an actual projection of the source of resistance and/or body. Good examples include:

Jump squats and jump lunges

Ballistic bench press

MUSCLE-BUILDING Q&A

From the seminars I give I learned that answering questions from the crowd is on of the best ways to teach. Oftentimes when someone asks a question he is also speaking for others who don't have the guts to ask. It can also address some subjects that I might have not covered deep enough. I decided to apply this concept to this book. Here are some questions regarding muscle building that were sent to be by individuals all over the world. Later on the same will be done for strength-building and GPP work.

Question 1. *"I'm trying to gain mass and lose fat at the same time. Is it possible and if so, what's the best way to accomplish this?"*

Answer 1. To be honest this is very difficult to do. You see, gaining a significant amount of muscle mass requires you to consume an excess of calories to support the muscle building process. You need extra proteins which are the building blocks of the muscle tissue, but you also need extra carbohydrates/calories. First because insulin is released mostly from ingesting carbs. Insulin is anabolic (support muscle building) because it increase the amount of amino acids that enters the muscle cell and prevent stored amino acids (stored as muscle tissue) from being broken down.

On the other hand, losing a significant amount of fat requires a reduced caloric intake. Basically you need to ingest less calories than you use up every day, and that holds true for all types of diets. If you are consuming less calories than you use up, your body will not be inclined to add muscle tissue because muscle is very energy-consuming.

Basically building muscle and loosing fat are somewhat opposite to each other. So accomplishing both goals at the same time can be difficult. There exceptions however.

1. A beginner: When some first starts training with weights the body will be more responsive to the training stress and will thus add muscle mass more easily and since it is perceived as an emergency state by the body, even if you are not consuming a ton of calories you can still gain size. It is quite common to see a beginner gain muscle and loose fat at the same time. Unfortunately, after the first 2-3 months of training this pretty much cease to happen.

2. A genetic wonder: Some lucky peoples are super effective at nutrients partitioning. This basically means that their body is more effective at storing ingested nutrients in the muscles. These peoples will not have to eat as much to send the necessary building blocks to the muscles and as a result can gain muscle mass while loosing fat. My girlfriend Christiane is like that. When she is preparing for a bodybuilding competition she looses fat while gaining muscle. So her body weight doesn't change much during her preparation but her body composition is drastically modified.

3. Going from junk to clean: If someone goes from eating most of his calories from junk food to eating it as good clean food he can loose fat while building muscle without having to alter his caloric intake. For example, if Maurice consumes 3500kcals per day, mostly in the form of white bread, breakfast cereal, ice cream, pastries and fast food and suddenly decide to clean up his diet and focus more on oatmeal, brown rice, yams, eggs, lean meat, poultry, fish and green veggies he will loose fat **even if he continues to ingest 3500kcals per day**. If that 3500kcals is sufficient for him to gain muscle, then he will gain muscle and loose fat at the same time. Just like a beginner, this wont last for ever though.

4. Using anabolic aids: Obviously those who choose to use steroids and other compounds will be able to gain more muscle and loose fat at the same time. These compounds were already discussed in Anthony's chapters.

Question 2. *"Is there a single method that would you say to be the most effective in building muscle?"*

Answer 2. Not really. Any method that respects the "winning conditions" for hypertrophy will lead to good gains. Those conditions are:

- **Necessitate a high level of intramuscular tension** (loads above 60% for a beginner, above 70% for an intermediate and above 80% for an advanced trainee).

- **Present a sufficient total time under tension**: either by performing sets lasting 40 to 60 seconds or by performing a greater number of shorter sets of the same exercise.

- **Recruit and <u>fatigue</u> the high-threshold motor units** (fast twitch fibers). This is accomplished either by performing sets to failure or by lifting near-maximal and maximal weights.

- **Lead to progress**: if you do not strive to improve at each session, you will not increase muscle nor strength significantly. You can progress either by lifting more weight for the same number of reps; by performing more reps with the same amount of weight; decreasing the rest intervals without lowering the weight or amount of reps; by performing more sets (within reason) without decreasing the weight; by including advanced training methods or by moving on to more challenging exercises.

If all of these conditions are present, you will improve the quality of your physique. It doesn't mean that it's pointless to use various training methods; just that it's not the most important thing to look for when trying to gain size or strength.

That having been said, the more tools you have available the more variety you can have. More variety = more motivation = more gains in the long run.

<u>Question 3</u>. *"When someone has a stressful job and stressful home life what would you say to him if he wanted to build muscle?"*

Answer 4. I will being by saying that stress, either physical or psychological, is one of the worst thing that can happen to someone trying to build muscle.

Stress lead to an increase in cortisol, which is basically (among other things) a muscle scavenger: it breaks down muscle tissue to produce amino acids that can be used either to produce energy (converted into glucose by the liver), to repair body structures or to fabricate neurotransmitters. In that regard, stress can literally eat up your muscle!

Sadly, some peoples put themselves into tremendously stressful situations. This is often due to our materialistic society: we always need more money to afford our lifestyle. To be comfortable we have to make our life miserable! Many peoples put a lot of pressure on themselves and as a result have a chronically high level of stress. This is obviously bad for muscle building purposes. Especially considering that training is itself a form of stress.

The first thing someone with a high level of stress should do when trying to build muscle is to reduce training frequency and volume: a cortisol level is not compatible with a high volume of work. Three weekly sessions is what I'd recommend as far as frequency goes with each session lasting no more than an hour. Focus on basic lifts that hit a lot of muscle groups at the same time; get rid of accessory exercises that will increase training volume more so than they can increase muscle volume. The other important thing is nutrition. A stressed out person trying to gain muscle should ingest at least 6-7 meals during the day: each time you eat you decrease cortisol levels. Obviously we are not talking about junk food here! Whole food (meat, poultry, fish, eggs, shellfish, veggies, oatmeal, yams, nuts and seeds) are easier on the body and are more conductive to developing a lean and muscular physique. On the other hand, junk food and "artificial" food are actually a stress on the body and might even contribute to a chronic increase in cortisol levels! Lastly, the post-workout shake (a mix of fast-absorbing proteins, carbs and BCAA) is the key to progress for everybody serious, but especially stressed out peoples. As an advanced strategy I like to use what I call my "anabolic mix". This is a drink that you ingest 5 times during the day (between meals or 30 minutes before a meal) and it consists of:

- 5g of creatine
- 5g of glutamine
- 10g of BCAAs
- 5g of taurine

This mix has helped many of my clients gain muscle mass despite some pretty hectic schedules!

Chapter 14

Sample Cycles

Listed below are some examples of cycles which may be considered for your body transformation needs:

Basic Beginners Cycle	
Week	**Testosterone** (*Cypionate or Enanthate*)
1	500mgs
2	500mgs
3	500mgs
4	500mgs
5	500mgs
6	500mgs
7	500mgs
8	500mgs
9	500mgs
10	500mgs
11	500mgs
12	500mgs

Beginners Cycle II (front loading)		
Week	**Testosterone** (*Cypionate or Enanthate*)	**Equipoise** (*Boldenone Undeclynate*)
1	1000mgs	400mgs
2	1000mgs	400mgs
3	500mgs	400mgs
4	500mgs	400mgs
5	500mgs	400mgs
6	500mgs	400mgs
7	500mgs	400mgs
8	500mgs	400mgs
9	500mgs	400mgs
10	500mgs	400mgs
11	500mgs	400mgs
12	500mgs	400mgs

Intermediate Cycle- Including Growth Hormone					
Week	**Testosterone** (Cypionate or Enanthate)	**Equipoise** (Boldenone Undeclynate)	**Dianabol** (Methandrostenolone)	**Anavar or Winstrol** (Oxandrolone or Stanozolol)	**Growth Hormone**
1	1000mgs	400mgs	25mgs/day		4iu/day
2	1000mgs	400mgs	25mgs/day		4iu/day
3	500mgs	400mgs	25mgs/day		4iu/day
4	500mgs	400mgs	25mgs/day		4iu/day
5	500mgs	400mgs	25mgs/day		4iu/day
6	500mgs	400mgs			4iu/day
7	500mgs	400mgs			4iu/day
8	500mgs	400mgs		50mgs/day	4iu/day
9	500mgs	400mgs		50mgs/day	4iu/day
10	500mgs	400mgs		50mgs/day	4iu/day
11	500mgs	400mgs		50mgs/day	4iu/day
12	500mgs	400mgs		50mgs/day	4iu/day
Remember to use supplemental T4 throughout this 12 week cycle.					

Intermediate Bulking cycle				
Week	**Testosterone** (Cypionate or Enanthate)	**Deca – Durabolin** (Nandrolone Decanoate)	**Dianabol** (Methandrostenolone)	**Anavar or Winstrol** (Oxandrolone or Stanozolol)
1	1000mgs	400mgs	25mgs/day	
2	1000mgs	400mgs	25mgs/day	
3	500mgs	400mgs	25mgs/day	
4	500mgs	400mgs	25mgs/day	
5	500mgs	400mgs	25mgs/day	
6	500mgs	400mgs		
7	500mgs	400mgs		
8	500mgs	400mgs		50mgs/day
9	500mgs	400mgs		50mgs/day
10	500mgs	400mgs		50mgs/day
11	500mgs	400mgs		50mgs/day
12	500mgs	400mgs		50mgs/day
(With this cycle, as with any, you have to remember to include proper ancillaries if necessary to prevent Gynocomastia, water retention, etc…)				

Lean Mass Cycle with Bulking Kickstart				
Week	**Testosterone** (Propionate)	**Trenbolone Acetate** (Nandrolone Decanoate)	**Masteron** (Drostanolone Propionate)	**Dianabol or Anadrol** (Methandrostenolone or Oxymetholone)
1	100mgs/EOD	100mgs/EOD		50mgs/day
2	100mgs/EOD	100mgs/EOD		50mgs/day
3	100mgs/EOD	100mgs/EOD		50mgs/day
4	100mgs/EOD	100mgs/EOD		50mgs/day
5	100mgs/EOD	100mgs/EOD		50mgs/day
6	100mgs/EOD	100mgs/EOD	75mgs/EOD	50mgs/day
7	100mgs/EOD	100mgs/EOD	75mgs/EOD	
8	100mgs/EOD	100mgs/EOD	75mgs/EOD	
9	100mgs/EOD	100mgs/EOD	75mgs/EOD	
10	100mgs/EOD	100mgs/EOD	75mgs/EOD	
11	100mgs/EOD	100mgs/EOD	75mgs/EOD	
12	100mgs/EOD	100mgs/EOD	75mgs/EOD	

Intermediate Lean Bulking Cycle			
Week	**Testosterone** (Cypionate or Enanthate)	**Masteron Enanthate** (Drostanolone Enanthate)	**Dianabol** (Methandrostenolone)
1	1000mgs	400mgs	25mgs/day
2	1000mgs	400mgs	25mgs/day
3	500mgs	400mgs	25mgs/day
4	500mgs	400mgs	25mgs/day
5	500mgs	400mgs	25mgs/day
6	500mgs	400mgs	
7	500mgs	400mgs	
8	500mgs	400mgs	
9	500mgs	400mgs	
10	500mgs	400mgs	
11	500mgs	400mgs	
12	500mgs	400mgs	
(Remember to keep some Arimidex on hand in case Estrogen levels get too high)			

Mass cycle with Insulin Like Growth Factor			
Week	**Testosterone cypionate**	**Equipoise**	**Lr3IGF-1**
1	500mgs/week	500mgs/week	80mcg/day
2	500mgs/week	500mgs/week	80mcg/day
3	500mgs/week	500mgs/week	80mcg/day
4	500mgs/week	500mgs/week	80mcg/day
5	500mgs/week	500mgs/week	80mcg/day
6	500mgs/week	500mgs/week	80mcg/day
7	500mgs/week	500mgs/week	80mcg/day
8	500mgs/week	500mgs/week	80mcg/day
9	500mgs/week	500mgs/week	80mcg/day
10	500mgs/week	500mgs/week	80mcg/day
11	500mgs/week	500mgs/week	80mcg/day
12	500mgs/week	500mgs/week	80mcg/day

Advanced Cutting cycle with IGF					
Week	**Testosterone** (Propionate)	**Trenbolone Acetate** (Nandrolone Decanoate)	**Masteron** (Drostanolone Propionate)	**Anavar** (Oxandrolone)	**Lr3IGF-1**
1	100mgs/EOD	100mgs/EOD		50mgs/day	80mcg/day
2	100mgs/EOD	100mgs/EOD		50mgs/day	80mcg/day
3	100mgs/EOD	100mgs/EOD		50mgs/day	80mcg/day
4	100mgs/EOD	100mgs/EOD		50mgs/day	80mcg/day
5	100mgs/EOD	100mgs/EOD		50mgs/day	80mcg/day
6	100mgs/EOD	100mgs/EOD	75mgs/EOD	50mgs/day	80mcg/day
7	100mgs/EOD	100mgs/EOD	75mgs/EOD		80mcg/day
8	100mgs/EOD	100mgs/EOD	75mgs/EOD		80mcg/day
9	100mgs/EOD	100mgs/EOD	75mgs/EOD		80mcg/day
10	100mgs/EOD	100mgs/EOD	75mgs/EOD		80mcg/day
11	100mgs/EOD	100mgs/EOD	75mgs/EOD		80mcg/day
12	100mgs/EOD	100mgs/EOD	75mgs/EOD		80mcg/day

Appendix

Explanations for some of Thib's odd exercises

As you probably noticed, I use some exercises that are quite unique… or at least ones that you don't see everyday in the gym. For example, how many times have you heard: "*Dude, let's go do some motorcycle rowing for our back*"… my guess is … never! Well in this appendix I'll illustrate and explain some of the odd lifts utilized in my programs.

Frog hack squat

End of eccentric portion	End of concentric portion
	

Pin pull

Start of movement	End of concentric portion
	

Chest supported DB rowing

Start of movement	End of concentric portion
	

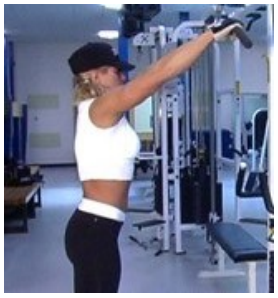
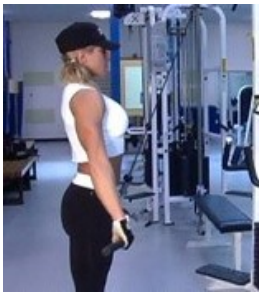
Wide-grip preacher curl

Start of movement	End of concentric portion
	

Close-grip barbell concentration curl

Start of movement	End of concentric portion
	

Straight-arms pulldown

Start of movement	End of concentric portion
	

Neutral grip seated DB press

Start of movement	End of concentric portion
	

Gironda-style leg curl

Start of movement	End of concentric portion
	

Seated pitcher lateral raise

Start of movement	End of concentric portion
	

Gironda dumbbell swing (alternate sides)

Start of movement	End of concentric portion
	

Haney shrugs

Start of movement	End of concentric portion
	

Calves machine shrugs

Start of movement	End of concentric portion
	

Power barbell shrugs

Start of movement	End of concentric portion
	

Goodmorning

End of eccentric portion	End of concentric portion
	

Rope lat pulldown

Start of movement	End of concentric portion
	

Push press

Start of movement	End of concentric portion
	

Bulgarian squat

End of eccentric portion


Body drag curl

Start of movement	End of concentric portion