

SARMS & PEPTIDES BEGINNER HANDBOOK



Introduction

My name is Daniel Louwrens, and I'm here to help you through your PED Journey.

It can be a difficult journey to navigate, but with the right guidance, peer reviewed science, and anecdotal data, we can make it a bit less stressful.

But first a little warning

This content is NOT medical advice; the information included in these pages are intended for entertainment and informational purposes only. It is not intended nor implied to be a substitute for professional medical advice. Prior to buying anything, check that it is compliant where you live with your current government laws and talk to your Doctor.

The journey of educating yourself on PEDs can be a scary and daunting task, but fear not, I'm here to help. With more than 8 years of experience in the fitness and bodybuilding world, my job is to help you reach your physique, strength, and health goals.

PEDs have been part of sports and fitness for years, and the first actual recorded history of "doping" goes back to even the days of Ancient Greeks, where they would take certain herbs to enhance their perception of life.

Today, the PED world has grown so much that it simply seems fair to educate folk on the do's and don'ts of this particular part of fitness. So, without further ado, let's get into it.



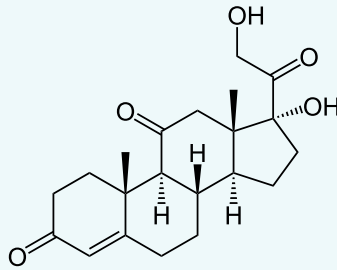
Chapter 01 Steroids

Steroids have been a part of sports for a very long time, primarily starting in the 1954 Olympics, when Russian Wrestlers were using Testosterone to increase performance. Fast forward to 2022, and the Steroid world has exploded into an amalgamation of reckless users, self-educated gurus, or just high school kids crushing DBol on their cereal.

First off, pay Steroids the respect they deserve. They can cause an immense amount of trouble in your life if you misuse them. No drug is inherently bad, however an inability to manage the drug you are using will be very bad for the user.

That being said, how do you actually use Steroids? How do you choose the correct ones? How do you dose them? In the next 5 – 10 minutes we're going to breakdown all of this





How to construct a **Steroid Cycle**?

Right, so you've decided to take training to the next level, and drive a needle in that milky white soft bum of yours. Before you load that syringe, take a few minutes to actually act like an adult and think about what you're going to do. First:

01 Get your Bloods Done

First thing you need to do before you even think about how much, how long, and how jacked you're going to look, is by making sure your health markers are in check by having a blood test done.

Your best bet is going to be by using an online clinic to help, like Lets Get Checked, or by going to your local doctor. But which tests are you going to need to take before tackling a Steroid cycle?



Urgent:

- [Hormone Testing](#): If you're delving into the world of altering your own hormones, being anal about managing the hormones will be key. Checking things like Estradiol, Prolactin and Sex Hormone Binding Globulin (SHBG) will allow you to know what's going on under the hood before starting your cycle
- [Kidney Function](#): The kidneys are often the first thing to go with Steroid users. Hardly any of us drink enough water, and we all carry too much body weight. This will put strain on the Kidneys, adding Steroids will worsen this further. It is vital to know your urea, creatinine and eGFR levels. Your kidneys will not recover from injury

Advanced:

- [Liver Function](#): The liver is needed for metabolizing most C-17 α alkylated Steroids (orals), and can lead to significant damage to your liver if taken too far. The liver can recover however
- [CRP Test](#): c-Reactive Protein can be elevated for a few different reasons, but particularly if you are already a user of Steroids. Steroids can cause an increase in in CRP which can lead to blood clots
- [Cholesterol Test](#): Cholesterol can be a silent killer as the effects are not very easily noticeable. Exogenous Testosterone and Steroids will significantly raise LDL and lower HDL levels. Make sure you're in range before jumping on the gain train.

You can save 30% off your LetsGetChecked with code: *muscle30* or read the [full review](#).

This is the bare minimum you can do, there are other tests available [\[1\]](#)[\[2\]](#). It is recommended that you do testing at least 3-4 times per year, even more if you use exceptionally high doses of PEDs.

02 Decide what your Goal is with Training

This seems like it is a rather obvious one, and most likely the answer will be "Looking to gain size bro!" or "Dick Skin Peeled". These are great overarching goals, but if you're about to delve on a journey where you are measuring certain things in mcg, you will need to be more anal with goals.

Your goal will determine what kind of drug and for how long you will take it. It will also determine the dosages you end up using.

Scenario A: Individual trains with High Volume

This individual prefers doing higher volume training, which will logically consist of doing tonnes of reps and sets. They will need a great influx of oxygen via blood, therefore a good Steroid for this person could be Boldenone (Equipoise, EQ). Boldenone raises hematocrit and hemoglobin levels within the blood, thus raising the amount of oxygen the blood can carry.



Your goal will determine your drug choices.

Scenario B: Individual trains with Super High Intensity

This individual prefers an intense training style that won't benefit from the oxygen increase from Boldenone. They may however benefit from a Dihydrotestosterone derivative, as these are known to increase force production as well as neural patterns. Therefore, something like Stanozolol (Winstrol) may be a better fit.

Cycle 3 Duration and Dosages

Now that you have decided which drugs to take in correlation with your goals, you need to take into consideration how long you are planning to use these drugs. Obviously no person will limit you, but your own body won't think twice to bite you in the ass. Here are some beginner guidelines to follow:

- Orals are only for short stints. They are not intended to be used for a great period of time as they can be hepatotoxic (toxic to the liver). Limit it to 6 - 8 weeks max.
- The longer you stay on cycle, the harder it will be to recover your own endogenous Testosterone levels.
- [Trenbolone](#) should ideally be left alone, but if you must use it, be swift, in and out as fast as you can.
- The longer your cycle is, the more problematic it may become.

These are just the basics of duration, and there are so much more you would need to discuss with your coach about your goals and health markers.



04 Plan Your Escape and Your PCT

Plan for things to go wrong. Plan for your Estrogen to raise enormously, prepare for any consequence. Being safe is always better than being sorry. Why? Because being sorry might mean you have damaged kidneys and cannot eat more than 80g of Protein per day and you wouldn't even place in the top three Bikini.

Planning your [PCT](#) is also vital if you're hoping to do this for a long time. Failure to PCT properly might mean the loss of all your gains.

Chapter 01 Conclusion

Taking Steroids is a big step. It's dangerous, it's illegal, and more likely than not you're going to have so many questions about what's happening that it will be frightening to say the least.

"Failing to plan, is planning to fail" - Some smartass

Unfortunately, the smartass is very correct. You have to make sure you plan your cycle according to your goals, and that you have exit plans all around.

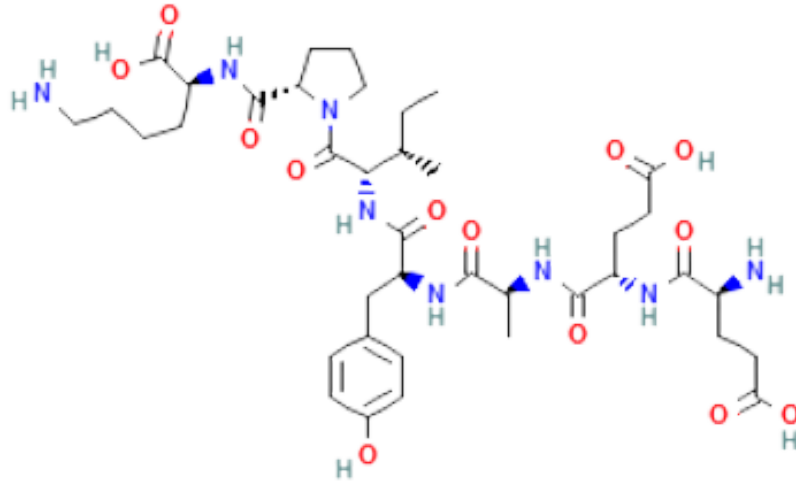
See you tomorrow when we talk about Growth Hormone and why it's one hell of a fat loss drug.

Chapter 2

Growth Hormone



Growth Hormone, the one with the biggest misleading name on the planet. Growth Hormone (Human Growth Hormone, HGH) is a hormone produced by the pituitary gland that will support metabolism, help with recovery, and greatly aid in longevity. Notice I didn't mention anything about actual muscle growth? It does help for that, the extent it does this at... is debatable. I have been coaching clients for years, and it is truly only a few that react extremely anabolic to HGH.



01 What does Growth Hormone do?

Growth Hormone is vital for the somatic growth via effectors such as IGF-1, but Growth Hormone can also greatly regulate metabolism and aid in lipolysis. It is also, as the name suggests, vital for growth and development, and will be prescribed to children who suffer from Prader-Willi syndrome or low HGH levels [1].

For athletic purposes, Growth Hormone has tremendous benefits such as increased fat loss, increased recovery rates, and a slight increase in muscle mass. The goal you are trying to reach will widely determine not only the dosage, but also the timing of your dosing as this could alter the results significantly.

02 When to take Growth Hormone

As aforementioned, growth hormone usage will be for a few different goals which will in turn determine the timing of the dosage. Many others will say that you only need to take it before or after training, before bed. The fact remains, that dosing Growth in certain patterns in line with your results will massively alter the results.

03 Growth Hormone for Fat Loss

If your goal is Fat Loss, the best time to take Growth Hormone will be before morning fasted cardio. Growth will by a chain of events dump your adipose tissue into your blood as free fatty acids, thus being able to be used as energy.

As mentioned, Growth is exceptional for fat loss. Growth can aid in fat loss by regulating lipoprotein lipase (LPL) and hormone sensitive lipase (HSL). By lowering LPL, lower amounts of Triglycerides enter fat cells. Growth will also allow for more free fatty acids to be used as energy.

Growth will assist in the action of HSL, which will break down stored triglycerides into free fatty acids, which then can be used for energy.

A study published in 1999 found that even low dose Growth Hormone can increase fat loss by 1.6 fold when combined with a calorie restriction and a high protein diet [2].

04 Growth Hormone for Muscle Gain

As taking HGH will release fats and sugars into the



bloodstream, the best time to take HGH for the goal of Muscle Gain, would be before bed. You will not be expending energy whilst sleeping, so any food within the blood will logically go towards muscle gain.

The chain of events of injecting (or your body producing) Growth Hormone, is that it firstly signals for the stem cells within the muscles to be "ready" for growth. No growth has taken place, it simply puts those cells in a preparatory state.

2ndly, it signals for the Pancreas to produce Glucagon and Lipase, and when Glucagon reaches the liver, it will release sugar into the bloodstream. Higher blood sugar will have the body react by releasing Insulin. The liver will also release a certain amount of IGF-1, which when combined with the sugar in the blood, the insulin release, and the prepared cells, will drive muscle growth. Everyone understand? You don't? I didn't either the 20 times I read it.

Do you need to stack anything with Growth?

No, of course not. Many doctors have patients that use Growth from a longevity aspect, and they have tremendous results without using grams of AAS on top of that. That being said, we can discuss some things that could potentially amplify the effects of Growth.

When exogenous HGH is injected into the body, we actually see rising levels of the T3 Hormone (Triiodothyronine). This is the converted version of the Thyroid Hormone T4 (Thyroxine). The body will naturally convert T4 into T3 which will basically predict how metabolically active your body will be. High levels of T3 = High metabolism [3].



When Growth is injected, T3 rises rapidly. T4 lowers just as rapidly. Of course the higher levels of T3 will greatly accelerate fat loss, but the limiting factor is going to be T4 levels. You only have so much? And if your enhanced body will rapidly convert so much T4, it could be a good idea to supplement with exogenous T4 to further enhance Fat Loss.

T4 is readily available on sites such as Swiss Chems, and I have seen quite a few of my own clients greatly aiding from the addition.

Stacking Growth with Berberine

Growth will drive down Insulin Sensitivity, I have even seen this with my own clients. If you push too hard, or for too long, that release of sugar into the blood from the liver will bite you back. This will make it harder to use any carbohydrates to fuel anabolism.

Berberine has been shown to be an effective fighter against insulin sensitivity, so when you're really pushing the food and using Growth, it could be greatly beneficial. Pure Rawz stocks some pretty well-dosed Berberine.



Does HGH require a PCT?

Technically, no. While Exogenous Growth will down regulate the natural production of Growth, it seems to restart quite easily [4]. That being said, this could actually be a prime position to use a Peptide to aid in this process. Growth Hormone Releasing Hormones (GHRH) and Growth Hormone Releasing Peptides (GHRP) will help the Pituitary gland reactivate and signal the release of endogenous Growth Hormone.

Precautions when using Growth Hormone

- Let's wrap this up real simple:
- Insulin Resistance: Make sure to check resting blood glucose levels
- Joint Pain: Joint pain is normal, and will not last long
- Water Retention: Not really much you can do about this
- Carpal Tunnel Syndrome: Due to water retention

And then one you won't really expect. Gyno. Yup, some individuals are just so sensitive that even HGH can cause Gyno, due to the fact that HGH raises Prolactin, which can cause Gyno.

Chapter 02 Conclusion

Coach, is Growth Hormone worth it?

Well, if you're looking for enormous longevity gains, fat loss, and some hypertrophic effects, absolutely. There's a reason why every single Pro bodybuilder uses growth, and there's also a reason why we have the oldest athletes ever in the Super Bowl or the NBL. Growth Hormone massively extends your career, keeps you looking young and fresh, and is just exceptional in every sense of fitness.



Chapter 3

Peptides



Granny hurt her hip? [BPC 157](#). Mommy is a bit overweight? Frag. Are you feeling a bit flat? IGF-1. For everything else there's Mastercard. That's right folk today you gonna learn about the wonderful confusing world of Peptides, all they have to offer, and totally lose track of which one does what. I don't blame you. They can help with muscle gain, fat loss, recovery, hair loss, joint health, sexual health, even skin tone.



What Are Peptides?

In case you haven't read the article Muscle & Brawn has posted on [this](#), let's give you a quick recap.

Peptides are chains of Amino Acids bound by Peptide bonds. They are found in nature, and not to be confused with Proteins. This means based on the specific chain, the Peptide will have specific effects on the body. For instance while both CJC-1295 and BPC 157 are classified as Peptides, they will act vastly different on muscle tissue and the different systems in the body

Unlike Steroids which bind to the Androgen Receptors in the body, Peptides will bind to other receptors, enzymes and certain biomolecules. The effects they can have vary greatly, from [fat loss](#) to [muscle gain](#). For ease of purpose, let's take a look at the 5 Most Popular Peptides, and some other things you might need to know.

CJC-1295

CJC-1295 is known as a HGH (Human Growth Hormone) secretagogue, and is known as a GHRH (Growth Hormone Releasing Hormone). This Peptide will act upon the anterior pituitary gland, signaling the pituitary gland to release large quantities of Growth Hormone in a pulsatile manner.

CJC-1295 aims to increase release of Natural Growth Hormone.

In case you don't know, having large amounts of Growth Hormone in the blood is a pharmacological home run. You can expect fat loss and muscle gain when using CJC-1295 like this one from [Swiss Chems](#). That being said, it does have limitations. CJC without DAC (Drug Affinity Complex) has an incredibly short half-life, like 30 minutes. CJC with DAC was invented to extend that half-life, giving the user a greater release of Growth Hormone.

CJC with DAC will therefore yield a more cost effective result. Bonus, less injections. That being said, it still comes down to personal preference. I haven't really seen any new clients ever having experience with CJC without DAC. Remember how I mentioned that CJC was a GHRH? Well, usually those are combined with a GHRP.

GHRP-6

A GHRP (Growth Hormone Releasing Peptide) is another HGH Secretagogue, but slightly different to CJC-1295. GHRP-6 will primarily act as a Ghrelin mimetic, and as a result this particular Peptide will massively increase hunger.

"Coach, I'll eat anything. Cardboard, just give me anything."

The body produces growth hormone-inhibiting hormone (GHIH), a safety mechanism that will limit the amount of growth the body can achieve. Through a mechanism that scientists aren't sure of, a GHRP seems to limit GHIH, which logically can lead to greater growth [\[1\]](#).

The primary reason my clients use a GHRP is purely for hunger. When pushing calories to such an extent where food becomes a chore, something like GHRP can really make all the difference.

BPC-157

Ever been injured? Of course you have. You mis grooved that bench, slipped something while deadlifting, or someone told you your calves were small. Yeah I've been there. Wouldn't it be great if you could inject something that's going to help with recovery and doesn't cost a fortune? Well... BPC-157 is standing in the corner.

BPC-157 (Body Protection Compound 157) is a pentadecapeptide, meaning it's composed of a chain of 15 amino acids. Primarily isolated from the gastric system, this Peptide actually has a lot of applications for individuals who suffer from gastric distress. Animal studies have shown that BPC can be a remedy for gastrointestinal tract therapy. But of course you're interested in the mechanism where it heals your torn muscles.

BPC-157 has the property of aiding in angiogenesis - the process of creating new blood vessels. BPC-157 also has the ability to form granulation tissue (connective tissue and blood vessels) over the surface of a wound and/or injury.

BPC-157 is a healing Peptide, often combined with TB500

04 Melanotan II

The first one on the list that isn't strictly just for performance, but still one of the most popular ones I come across in the fitness world. Melanotan II is a shortened version of the Melanocyte stimulating hormone. Melanotan II has skin tanning and Libido enhancing effects.

While a relatively small dose of Melanotan can induce erections in men who are even suffering from Erectile Dysfunction, Melanotan also has other effects on the body as well [3]. Some studies have hypothesized (and some people swear) that Melanotan can have the following effects as well:

- Appetite suppressant
- Reduce Fat gain

05 Fragment 176-191

Fragment 176-191 (or Frag) is exactly as the name suggests, a fragment of the full Human Growth Peptide amino acid Peptide. Particularly, the small analog region of the C-terminus end of the GH molecule which is responsible for the fat burning properties of HGH.

Normal HGH has negative side effects like inducing insulin resistance and downregulating endogenous HGH production. HGH Frag does not exhibit these two properties. HGH Frag can help with fat loss as well as blocking the build up of new fatty tissue. This is a very popular product that my clients use if they are not in a position to use HGH for its fat burning properties.

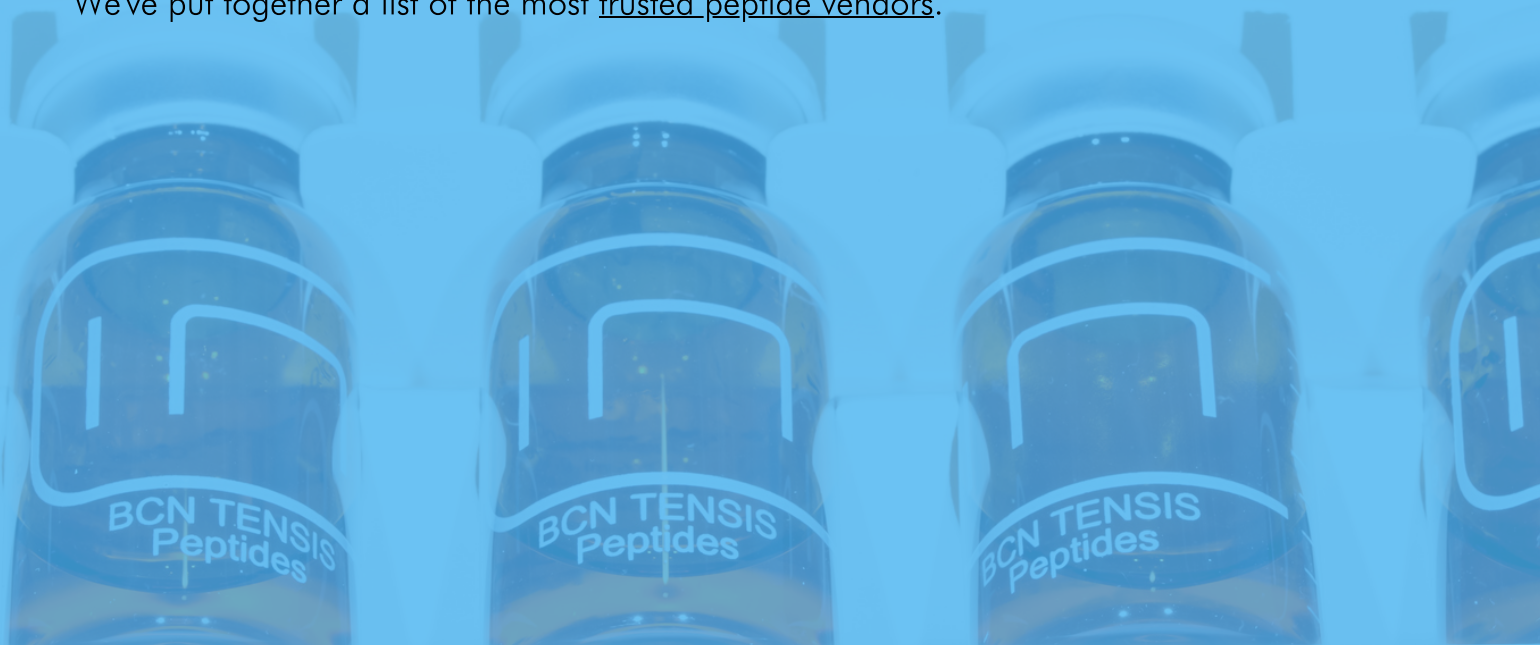
Are Peptides Legal?

Peptides are only legal if sold under the terms of "Research Chemicals". It may not be labeled as dietary supplements or for human consumption.

Chapter 03 Conclusion Where to Buy Peptides?

Peptides work. Growth Hormone works. They can have tremendous effects on your body, performance, and recovery. While they won't be nearly as strong as Anabolic Steroids, they can be extremely good when administered in the correct situation.

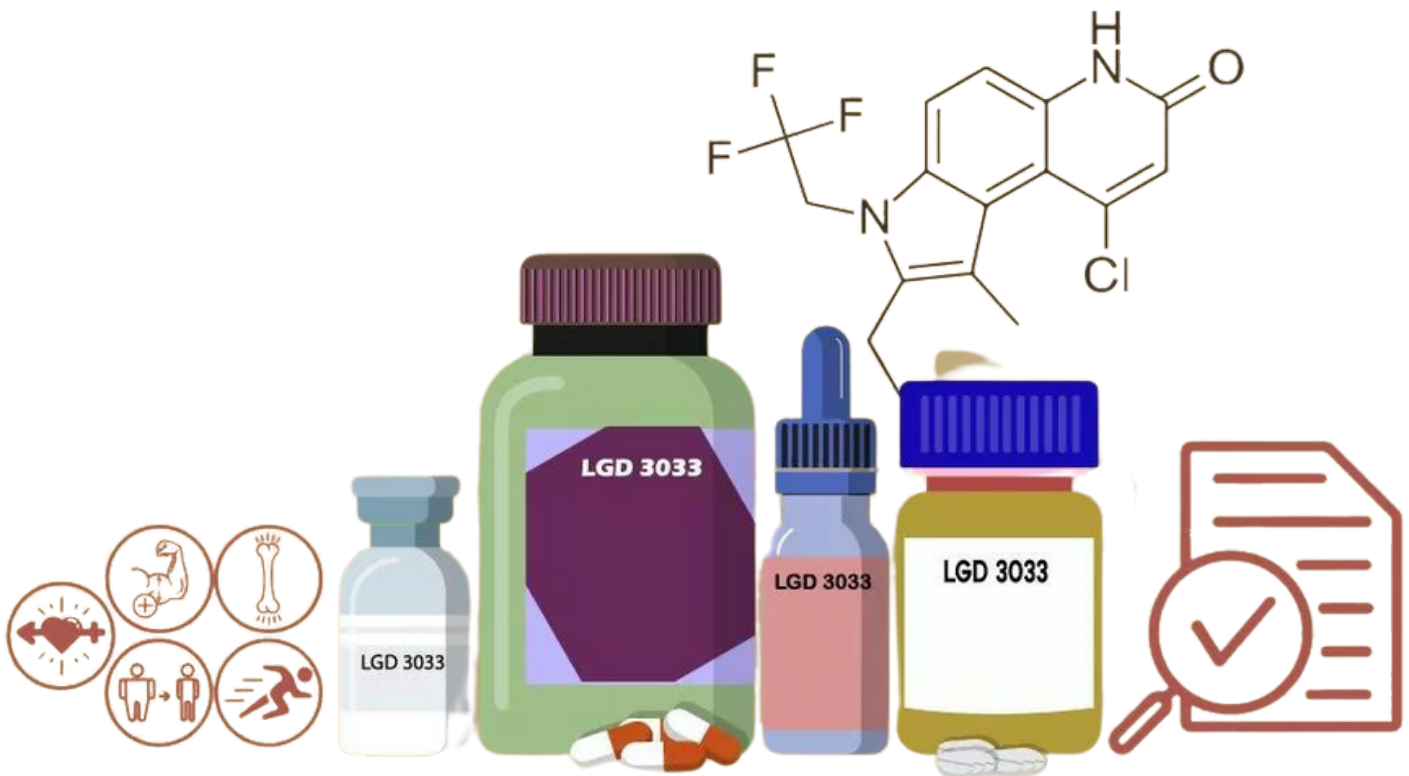
We've put together a list of the most trusted peptide vendors.



Chapter 4

SARMs - Selective Androgen Receptor Modulators

Ah yes SARMs... The one most of you have probably been waiting for. Hold on to your pre workout Kellogg's Square Bar, let's delve into the real science behind these "new compounds" on the market. Are they safe? Are they worth it? Are they better than even Steroids?



What are SARMs really?

SARMs (Selective Androgen Receptor Modulators) are chemical compounds that were engineered and designed to replace Steroids in the medical world. If you're unaware, Steroids were originally designed to help people suffering from illnesses like AIDS who have muscle wastage problems. As we all (hopefully) know, Steroids can have quite intense side effects, especially to females in regards to Androgenic sides.

SARMs were then invented to replace Steroids, with the aim of still providing the muscle gaining effects without any of the Side Effects we associate with Steroids. That being said, SARMs do exactly the same thing as Steroids. Both will bind to Androgen Receptors in the body and induce muscle growth, fat loss, increased bone density, and certain SARMs will also increase endurance as well. SARMs will only bind to the Androgen Receptors in bone and muscle tissue, whereas Steroids will bind to ALL the Androgen Receptors throughout the body, even at places like the Prostate - which can be problematic.



So do SARMs still have Side Effects?

Unfortunately, yes they do. I'm not going to bullshit you, yes they do. Predominately, these will largely be dictated by things like dosage, timing, sex, body size, and even just personal genetics. One thing often left unsaid is that some people just have great genetics to manage side effects. That being said, let's look into some of the side effects you can expect under certain conditions [\[1\]](#):



- **Decreased Testicular Size:** There have been studies published that stronger SARMs (Such as S-23) can have a negative effect on spermatogenesis and testicle size via hypothalamic-pituitary-gonadal axis. In fact, S-23 has been shown to lower LH and FSH levels in the body as well [\[2\]](#)
- **Liver Damage:** As you learnt on Day 1, Oral Steroids will have a negative effect on the liver. Some SARMs will as well. Taking SARMs like Ligandrol at super physiological doses has been shown to be quite neurotoxic [\[3\]](#)
- **Suppression of Testosterone:** Taking exogenous Testosterone lowers the Endogenous production of Testosterone, however some SARMs have been found to do the same. Administration of certain SARMs (Particularly the stronger ones) have been found to lower Endogenous Testosterone production [\[4\]](#)

At this point you might be thinking "That's pretty bad" - and true it is. However most of these side effects will heal with time, and proper management of the substances you're taking can greatly reduce the risk of side effects such as these. More on that with the Risk Management Day Email.

Which SARMs are Best?

As a coach, I really hate this question - and anyone with a fragment of scientific knowledge should hate it as well. See, there is no "Best" when it comes to anything. What do you measure "Bestness" in? Pounds gained per 12 weeks? Which one decreased Testosterone the least? Which is the most cost effective? These are all relative to the person at hand, what works for me might not work for you. That being said, we can have a look at some of the more favorite ones on the market:

Best for Fat Loss: Cardarine GW501516

[Cardarine](#) is quite a popular SARM, especially amongst women and Crossfitters - and for good reason. Cardarine isn't technically a SARM but rather a selective PPAR- δ agonist (Peroxisome Proliferator-Activated Receptor), which unlike normal SARMs bind to Androgen Receptors with the primary end result of increasing muscle protein synthesis, a PPAR Agonist will bind to Androgen Receptors with the end result of increasing Glucose metabolism in muscles.

So not only will Cardarine help with fat burning, it will also stop the build up of fatty tissue in the body. As a bonus, studies have found that Cardarine could also help with lowering Cholesterol levels in test subjects [5]. Of course Cardarine does have side effects such as potential liver damage and potentially causing digestive issues.



Best for Muscle Gain: Testolone RAD 140

[RAD 140](#) was originally created for treating muscle wastage in postmenopausal women, and also as a treatment for breast cancer. Soon it was discovered that RAD 140 has massive anabolic capabilities when combined with sufficient food, rest and training.

Usually SARMs have quite a lot of side effects we expect, a study published in 2010 found something I honestly didn't expect. In animal studies (primates) RAD 140 dramatically increased lean muscle mass with minimal impact on liver enzymes we usually associate with oral drugs such as these. That being said, it did still lower lipids within the blood. It also was found to be particularly good at increasing muscle mass whilst not being so impactful on prostate mass [6].

Best for Endurance: Ligandrol LGD-4033

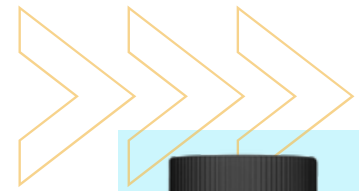
Developed by Ligand Pharmaceuticals as a treatment for breast and prostate cancer, this SARM has the ability to increase muscle mass, boost metabolism, increase bone density, and aid in endurance [7].

Another SARM that will bind to Androgen receptors, however [Ligandrol](#) has actually undergone some human trials. They found it to be tolerated quite well, and doing everything you expect from Ligandrol. It does have its side effects of course, particularly with lowering Testosterone levels within the body.

"This 3-week phase I study, by demonstrating the safety and tolerability of LGD-4033 and significant gains in muscle mass and strength, paves the way for longer term efficacy trials in one or more populations of older individuals for which SARMs may be indicated."

Which SARM do I use?

Well, it depends on your goals. If I were your coach, we would sit down and discuss your goals, limitations and history. By knowing as much as possible we can make an informed decision. Are you afraid of Androgenic side effects? Well make a choice based on that, choose a SARM that has low Androgenic side effects like Ostarine. Looking to get increased hunger because you were never a hungry person? Well let's look at the ghrelin effects of YK-11.



Chapter 04 Conclusion

Are SARMs worth it?

This question boils down to two main factors: Risks and Effectiveness.

01 Risks

SARMs have risks, and the big problem with SARMs is that they haven't been around for long enough for us to know all of these risks. Yes, we know about cholesterol, we know about Testosterone suppression, but there could be more. Compared to Steroids, we just don't know the long term effects of SARMs. We know what the long term effects of Steroids are, so just be careful with SARMs. You truly are running your own research.

02 Effectiveness

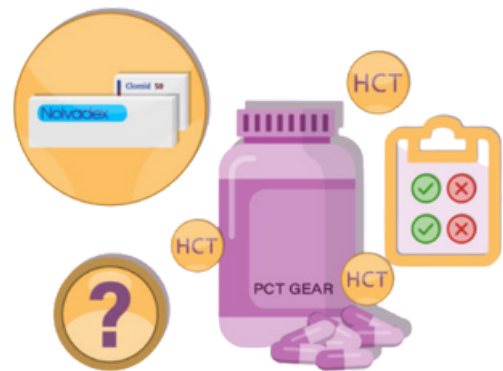
SARMs are plenty effective! They can dramatically increase muscle size, strength, endurance, and have been shown to also increase bone strength - something vital to strength athletes. That being said, SARMs are definitely not as effective as Steroids. Steroids will have more side effects, sure, but the simple matter is they are stronger. If you're used to Steroids, chances are SARMs won't make a huge difference unless you're taking an off or cruise period. That being said, if you just want to get an extra boost in the gym or on the field, SARMs can definitely do that for you.



Chapter 5

PCT - Post Cycle Treatment

Newsflash buddy, when you stop taking PED's you might sit with some lingering issues for quite a while. Have no fear, your burnout on the way to hell can be saved as long as you follow a good enough PCT or Post Cycle Treatment. This aims to repair, replenish, and restore your body to its previous state but whilst retaining as much of the good effects from the PED Cycle you ran.



PCT for Steroids and SARMs

As you may or may not know, when you use Steroids or Testosterone, your body will begin to down regulate the production of your own Testosterone production.

This will happen with all Anabolic Steroids, at any dose,

at any duration. The rate and extent this happens at however is going to be greatly depending on what type of drug, the dosage, and the extent you use it at.

Studies have shown that individuals who are long time users of AAS suffer from Drug induced Hypogonadism, and even when a TRT dose is administered, you still run the risk of developing erectile dysfunction [1]. So, needless to say it's going to be very important for you to restart your junk when hopping off.



01 HCG - (Human Chorionic Gonadotropin)

HCG is one of the most popular treatment options in the PCT arsenal, and for good reason. HCG will increase ITT (Intra Testicular Testosterone) which will stimulate the Leydig Cells. HCG will also act like LH (luteinizing hormone) which will stimulate the Leydig Cells even more, causing the production of Testosterone. LH will also bring upon the production of sperm within the seminiferous tubules.

Studies have found that HCG is quite effective at increasing Testosterone production as well as increasing fertility in those who have negatively altered their own [2]. When you use Steroids, your LH levels begin to drop, thus your Leydig Cells begin to shut down, decreasing Endogenous Testosterone production. Using HCG post cycle is thus a great idea to increase Endogenous Testosterone production ASAP.



02 HMG (Human Menopausal Gonadotropin)

HMG is one we don't often see in the bodybuilding world, but I've seen great results with my clients. While originally only used by females to increase their ability to conceive by increasing LH and FSH (follicle-stimulating hormone), it has been utilized with great success by men as well.

HMG is actually a mixture of hormones, particularly FSH and LH. FSH will help the production of sperm, and thus HMG is a pretty good compound to take if you're looking to impregnate your good lady. This will be amplified even more if you use it around her fertile window, as studies have shown that HMG and HCG together increases sperm count in ejaculated semen.



03 Estrogen Control

If you know anything (hopefully) about Steroids and other chemicals like SARMs, you've probably been exposed to the reality that Estrogen will probably increase as a result of these chemicals when taken in super-physiological doses. This is a reality you have to face, but it can be managed with AI's (Aromatase Inhibitors) and SERMs (Selective Estrogen Receptor Modulators).

04 Aromatase Inhibitors

The body will naturally convert Testosterone into Estrogen (via the enzyme Aromatase), as some Estrogen is extremely important for male sexual function, and running Estrogen too low does have side effects. Of course, running Estrogen too high also has side effects. Water retention, less control over emotions, and of course the big one, Gyno - the development of breast tissue. Running Estrogen as high as you can without experiencing Gyno is also a good idea as Estrogen has been positively linked to Anabolism.

Popular AI's include [Arimidex](#), Letrozole and [Aromasin](#). These will inhibit the enzyme Aromatase from converting Testosterone into Estrogen, Letrozole being the strongest, then Arimidex and then Aromasin. These will substantially lower Estrogen in the body, Letrozole will crash Estrogen to a point where it becomes scary. The use in a PCT is to stop the remaining Testosterone to convert into Estrogen - however most individuals will probably make use of a SERM instead.



SERMs (Selective Estrogen Receptor Modulators)

As mentioned, most people will opt for a SERM instead of the more aggressive AI. The reason for this is purely based on the results wanted. AI's are incredibly strong (compared to SERMs) and will completely crash Estrogen which isn't great for health or sexual function. If you're just looking to block the binding of Estrogen to their respective receptors, a SERM might work better.

Drugs like [Clomid](#), [Nolvadex](#) and [Enclomiphene](#) are the most commonly used SERMs. These will just lower the ratio of bound vs free Estrogen in the blood, thus lowering the effects and affinity of Estrogen. These are very common to use post cycle, especially Nolvadex and Enclomiphene as these will not have the mental side effects associated with Clomid.



PCT for Human Growth Hormone

Technically you do not need a PCT for HGH usage, but exogenous HGH will without doubt lower your own HGH production. I have seen positive results from using a [GHRH](#) and [GHRP](#) (see Peptide email) as a kickstarter to that process similar to how HCG can be a kickstarter for natural Testosterone production.

Do supplements help for PCT?

Depending on which ones you mean, surprisingly yes. Your body will be toxic after drug use, so it would be best to channel your inner Gwyneth Paltrow to detoxify yourself. Particularly, we're looking at the following situations:

- Liver Detox: In case you were on Orals or Trenbolone, using an Liver Detox product like TUDCA will be key for recovery
- Total Detox: Glutathione seems to be a particularly good detox agent, and is used by various bodybuilders even whilst on cycle
- Others: While the two above are great, if you want to cover all bases, you can spend a bit more on some [Supplements for your PCT](#)



Chapter 06

Risk Management

Let's face it, if you're going down the route of PED use, you're going to be undergoing some major risks. Not only are these products dangerous to just inject (risk of infection) they also have grave dangers based on what, how much, and for how long you use them. Then we also have to take individual genetics into consideration as well. Here follows a few tips from professionals and from what I've picked up myself.



01 Just don't do Drugs

Simple. The most effective way to avoid side effects (especially from certain drugs) are to just not take them in the first place. If you're particularly scared of the Neurotoxic side effects of Trenbolone (and you should be) WELL DON'T TAKE IT! Don't try using even more drugs to upset and justify your usage of Tren. Be a grown up, you take the risks. I am not for a single moment condoning drug use, but if you do make the adult choice to take them, do so correctly.

02 Just do the right Drugs

This ties in very closely with point number one. You have to do a tonne of research about which drugs you take in order to know what will happen if things go bad. Some prime examples:

1. **Deca:** Will act upon the Progesterone receptors, and cause Prolactin side effects. If you are prone to Estrogenic side effects, don't use Deca.
2. **Tren:** Will cause a massive increase in aggression. If you are already an ill tempered person, don't use Trenbolone.
3. **HGH:** The continuous use of HGH will increase insulin resistance. If you are already quite insulin resistant, lose some fat before trying to gain muscle with HGH in your protocol. Identify your goal, and your limitations. BASED OFF THAT, you may choose the correct drugs for your situation.

03 Have a "Oh Shit" Kit

Whether it be an infection, Gyno, going Hypo, or just using the wrong drug at the wrong time, it is important to have some products and equipment at home in case something happens:

- Some sort of Estrogen controlling compound like an AI or a SERM
- First Aid kit in case of an Infection
- If you are venturing down the line of Insulin use, it would be wise to have simple sugars (or just plain sugar) with you at all times in case you go Hypo (I've gone Hypo three times even though I wasn't even using Slin)
- Lastly, a detailed list of what you're using. This is in the unfortunate case that you need to be taken to the Hospital, they will need to know what you have been using - make it easy for them

04 Bloodwork

As mentioned on the very first email, having your blood work done is crucial. You can save yourself a tonne of guessing and headache work by just doing blood work at least 3 times per year (possibly more often if you are cycling a lot). I would highly suggest using [Lets Get Checked](#), their tests are mailed in and will save you some money when you just need a simple test and don't want to spend \$1000s on a Dr. visit.



LetsGetChecked is discrete and less than half the price of work with a Dr. and with a 30% off code, you'll save even more. (code: muscle30)

We already discussed taking your [Testosterone](#), and [Kidney test](#).

Some more advanced tests you can consider are...

- [Liver Function](#): The liver is needed for metabolizing most C-17 α alkylated Steroids (orals), and can lead to significant damage to your liver if taken too far. The liver can recover however
- [CRP Test](#): c-Reactive Protein can be elevated for a few different reasons, but particularly if you are already a user of Steroids. Steroids can cause an increase in in CRP which can lead to blood clots
- [Cholesterol Test](#): Cholesterol can be a silent killer as the effects are not very easily noticeable. Exogenous Testosterone and Steroids will significantly raise LDL and lower HDL levels. Make sure you're in range before jumping on the gain train.

You can save 30% off your LetsGetChecked with code: muscle30 or read the [full review](#).

These are the mere basics if you are looking to keep yourself as healthy as possible. If these figures are out of range (for someone in your situation) you best damn well get them in range first before putting anything else into your body again.

Be an Adult

Look, you're delving into uncharted territory by using these drugs, especially at these dosages. You cannot avoid side effects completely, and you will need to manage the drugs. No drugs are inherently bad, you just mismanage them. Forums are not the best sources of information anymore, and if you're going to be using big doses, you might be better off just using the services of a coach.

Chapter 06 Conclusion

Look, none of these are really going to work unless you do the work - except for Growth Hormone in certain situations, of course. You're going to have to think about your future, your overarching goals, your financial situation, and so much more before making a conscious decision about which type of PED is right for you.

This is real life and the substances you take should reflect the training and work you're already putting into yourself. PEDs are awesome, don't get me wrong, nothing quite like feeling loaded up on Androgens, strong as shit, and just loving life.

That being said, I don't recommend anyone should take these things. If you are keen, I would highly recommend you do as much research as you possibly can before pulling the trigger.

Chapter 7

How to Choose a Coach

If you haven't noticed, we offer coaching here at Muscle & Brawn. My name is Daniel Louwrens, I have been working in the fitness industry for 8 years as a coach, personal trainer, educator, and advisor. My expertise lies in Training, Nutrition, and Pharmacology.

My fitness career started as I finished my International Rugby career after I had eight concussions, and was forced to quit. I developed a massive fascination for fitness, and in particular nutrition and how we could manipulate food on a daily basis, to reach our goals.

From there I quickly got qualifications in Nutrition and Personal Training so I could train people on the side online, as I was finishing my degree in Natural Sciences, Chemistry. I had always been an athlete, and it was incredibly fascinating how certain foods and nutrition protocols could make performance change in both beneficial and sometimes bad ways. We learn by trial and error.

From there, I completed my degree, and went on to do Personal Training whilst coaching select athletes online as well. I am also employed by Domnik Sky, a world famous Calisthenics Athlete to manage his entire clientele's nutrition. I also frequently write researched articles about all things fitness, ranging from the least Ecologically Impactful Protein Powders, to the Pharmacology of Modern Bodybuilding.

Fitness and Bodybuilding has become my greatest passions in life, saving me from a battle with depression, and enabling me to live my dreams.



133kg (34% Body Fat) vs 113kg (6% Body Fat)

My Journey

On the left I was struggling with depression, Low Testosterone, Hypothyroidism, and so much more. I made a conscious decision to change my life for the better and that led me on the amazing life of Fitness.

I would love to help you on your journey.

If you're keen on getting started, you can schedule a consultation [call here.](#)

References

Chapter 1

- Bahar A, Akha O, Kashi Z, Vesgari Z. Hyperprolactinemia in association with subclinical hypothyroidism. *Caspian J Intern Med*. 2011;2(2):229-233.
- Grace FM, Davies B. Raised concentrations of C reactive protein in anabolic steroid using bodybuilders. *British Journal of Sports Medicine* 2004;38:97-98.

Chapter 2

- Vijayakumar A, Yakar S, Leroith D. The intricate role of growth hormone in metabolism. *Front Endocrinol (Lausanne)*. 2011;2:32. Published 2011 Sep 27. doi:10.3389/fendo.2011.00032
- Kim KR, Nam SY, Song YD, Lim SK, Lee HC, Huh KB. Low-dose growth hormone treatment with diet restriction accelerates body fat loss, exerts anabolic effect and improves growth hormone secretory dysfunction in obese adults. *Horm Res*. 1999;51(2):78-84. doi: 10.1159/000023319. PMID: 10352397.
- Gács G, Bános C. The effect of growth hormone on the plasma levels of T4, free-T4, T3, reverse T3 and TBG in hypopituitary patients. *Acta Endocrinol (Copenh)*. 1981 Apr;96(4):475-9. PMID: 6782790.
- Rosenthal SM, Hulse JA, Kaplan SL, Grumbach MM. Exogenous growth hormone inhibits growth hormone-releasing factor-induced growth hormone secretion in normal men. *J Clin Invest*. 1986;77(1):176-180. doi:10.1172/JCI112273

Chapter 3

- Ghigo E, Arvat E, Muccioli G, Camanni F. Growth hormone-releasing peptides. *Eur J Endocrinol*. 1997 May;136(5):445-60. doi: 10.1530/eje.0.1360445. PMID: 9186261.
- Sikiric P, Seiwerth S, Rucman R, Turkovic B, Rokotov DS, Brcic L, Sever M, Klicek R, Radic B, Drmic D, Ilic S, Kolenc D, Vrcic H, Sebecic B. Stable gastric pentadecapeptide BPC 157: novel therapy in gastrointestinal tract. *Curr Pharm Des*. 2011;17(16):1612-32. doi: 10.2174/138161211796196954. PMID: 21548867.
- Wessells H, Fuciarelli K, Hansen J, Hadley ME, Hraby VJ, Dorr R, Levine N. Synthetic melanotropic peptide initiates erections in men with psychogenic erectile dysfunction: double-blind, placebo controlled crossover study. *J Urol*. 1998 Aug;160(2):389-93. PMID: 9679884.

Chapter 4

- Efimenko IV, Valancy D, Dubin JM, Ramasamy R. Adverse effects and potential benefits among selective androgen receptor modulators users: a cross-sectional survey. *Int J Impot Res*. 2021 Sep 1. doi: 10.1038/s41443-021-00465-0. Epub ahead of print. PMID: 34471228.
- Jones A, Chen J, Hwang DJ, Miller DD, Dalton JT. Preclinical characterization of a (S)-N-(4-cyano-3-trifluoromethyl-phenyl)-3-(3-fluoro, 4-chlorophenoxy)-2-hydroxy-2-methyl-propanamide: a selective androgen receptor modulator for hormonal male contraception. *Endocrinology*. 2009 Jan;150(1):385-95. doi: 10.1210/en.2008-0674. Epub 2008 Sep 4. PMID: 18772237; PMCID: PMC2630904.
- Barbara M, Dhingra S, Mindikoglu AL. Ligandrol (LGD-4033)-Induced Liver Injury. *ACG Case Rep J*. 2020;7(6):e00370. Published 2020 Jun 11. doi:10.14309/crj.00000000000000370
- Solomon ZJ, Mirabal JR, Mazur DJ, Kohn TP, Lipshultz LI, Pastuszak AW. Selective Androgen Receptor Modulators: Current Knowledge and Clinical Applications. *Sex Med Rev*. 2019;7(1):84-94. doi:10.1016/j.sxmr.2018.09.006
- Park, Jeremy; Kim, Joon Young *Journal of Health, Sports, and Kinesiology*, Volume 2, Number 2, August 2021, pp. 22-27(6) International Organization for Health, Sports, and Kinesiology (IOHKS) <https://doi.org/10.47544/johsk.2021.2.2.22>
- Miller CP, Shomali M, Lyttle CR, et al. Design, Synthesis, and Preclinical Characterization of the Selective Androgen Receptor Modulator (SARM) RAD140. *ACS Med Chem Lett*. 2010;2(2):124-129. Published 2010 Dec 2. doi:10.1021/ml1002508
- Basaria S, Collins L, Dillon EL, et al. The safety, pharmacokinetics, and effects of LGD-4033, a novel nonsteroidal oral, selective androgen receptor modulator, in healthy young men. *J Gerontol A Biol Sci Med Sci*. 2013;68(1):87-95. doi:10.1093/gerona/gls078

Chapter 5

- Kanayama G, Hudson JI, DeLuca J, et al. Prolonged hypogonadism in males following withdrawal from anabolic-androgenic steroids: an under-recognized problem. *Addiction*. 2015;110(5):823-831. doi:10.1111/add.12850
- Lee JA, Ramasamy R. Indications for the use of human chorionic gonadotropic hormone for the management of infertility in hypogonadal men. *Transl Androl Urol*. 2018;7(Suppl 3):S348-S352. doi:10.21037/tau.2018.04.11