

# **Steroids Kill... Or, Do They?**

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## ***The Medical Community Doesn't Get It***

If you're a foot soldier fighting the war against steroid usage, I have some news for you: Athletes using steroids are far smarter and more educated than you would like to believe they are. In a surprising number of cases, they are far more educated than many in allied health professions on the biochemical basis of androgenic and anabolic steroid pharmacodynamics. While you're fighting to put steroids users behind bars for life, you might want to fight to put Internet users in the slammer as well. Education and information sharing is available on scales never imagined, and because of that, people have access to knowledge that only a guarded few had before.

This paper isn't a soapbox "he-said-she-said" assessment of what's going on with steroids in athletics though. There's enough about that in the newspapers and Jose Canseco's new book. This is a presentation of the decision-making process of some users, and a call to reality for those in health and law-making professions at the highest levels.

The motivation for this paper came while listening to a "town hall meeting" on XM radio about steroids in athletics. Among members of the panel included the Surgeon General of the United States, Dr Carmona, and former Pro Baseball star turned author, Jose Canseco. Dr Carmona had just spent about 10 minutes listing the threats and diseases people will fall victim to by using steroids. After he stopped long enough to catch his breath, the moderator turned to Mr. Canseco and asked, "Do you have any of those problems?" Jose laughed and said that he started using them many years ago, is now 40-something, and has not experienced any of Dr Carmona's side effects whatsoever.

Neither have any of the other athletes who've used them that I personally know, including those who used them at quite high doses. So what's the point to this?

There are no shortages of people in the medical community who are quick to aggressively fight against steroids, which should be expected. However, when they (and those along their side) present the dangers of steroids with extremist language and non typical scenarios - yet it's passed to us as the *rule*, not the *exception*, then those passing the information look like nothing more than zealots pumping propaganda. They sound more like the commercials most people tune out between their favorite TV shows.

Let me word this another way... I know many people who decided to use steroids at some point or another. All were well educated and bright individuals. The decision to use them came after excessive amounts of research on their part. But one thing I've heard in common from conversations with these people, is that when you can't get a straight, direct, *objective* answer from the anti-steroid camp on what the *real* versus *perceived* risks are, then it's difficult not to discount everything they have to say. Most users do not want to hurt or kill themselves,

but a true assessment of the risks is difficult at best because of lack of objective information. When those “pro choice” about steroid usage are able to present information in a more objective basis -- describing statistics, studies that relate to real-world scenarios, and give technical biochemical explanations -- then it's difficult for an athlete to side with someone on the anti-usage side simply “because they say so.”

Below I present a list of the most commonly focused-on points in anti-steroid literature and how many athletes are forced to view those arguments.

### ***Steroids Cause Cancerous Tumors?***

This was a point addressed by the Surgeon General on XM. When Mr. Canseco stated he was in his 40's with no side effects experienced from steroids, Dr Carmona replied that Jose could still develop some form of cancer in his 60's or later. This common statement never ceases to amaze me. After 60 years of living, no amount of medical technology today can tie cancer of any kind to something the individual briefly did 40 years earlier. In fact, let's look at this in reverse: Should we assume that people dying of cancer in old age did steroids when younger?

Of course not, and the idea is silly for me to even suggest, but so is the assertion that steroids will give you cancer in 40 years. Athletes know this, and it's insulting to think the “Internet Generation” (or Information Generation) of today is gullible enough to fall for this. It's not to be taken that athletes believe there is *no* link between steroids and cancer, but with the lack of *objective* information on the real threat, many athletes just have to believe it's only in the extreme cases when people use many mega doses higher than those standardly used for athletic enhancement. True or not, there is no better information easily available.

Nevertheless, this argument gets better. A website called [www.AthletesAgainstSteroids.org](http://www.AthletesAgainstSteroids.org) (ironically abbreviated AAS - just like the abbreviation for Androgenic Anabolic Steroids) has a free book that costs \$5.00 on the dangers of steroid use. (If it really is free, why not make it available for electronic download?) As a service to athletes, they have seven pages worth of material on the dangers of steroid use on their website.

AthletesAgainstSteroids.org describes cancer this way:

“... we all have dormant cancer cells in our bodies. Thankfully, these pre-cancerous cells are held in check for the most part by our immune system... But given any slight immune hesitancy and you can be

looking at a full-blown case of cancer just about anywhere in your body."

Of course, the immediate question is why not all people with compromised immune systems (from a cold or flu, to HIV and AIDS) die from cancer? However, we can discuss that at some other point. They go on to state:

"...those who use them are consuming extra-large quantities of protein – *the very nutrient craved by cancer cells*. It's just like waving a red flag in front of a bull."

So now, athletes are to infer that many Atkins and South Beach dieters should be dropping like flies from cancer. Furthermore, protein, one of the most essential macromolecules required by our bodies is a precursor to cancer? Of course not, and this is just one example why many athletes can do nothing but roll their eyes at the propaganda forced on them.

Nevertheless, the previous example brings up another interesting point. That is, the discussion of people with HIV/AIDS. While the medical community tells us in one breath that steroid usage will kill you, it's also used therapeutically to prevent/treat muscle wasting in AIDS patients, among others. Here's a conversation I had with a doctor that summarizes the point to be made here:

Me: How can you say that steroids kill athletes, then prescribe them for muscle wasting.

MD: Well it's not that steroids hurt you as much as the dosages athletes use compared to dosages used for therapeutics.

Me: Do you know the dosages athletes use compared to those used for therapeutics? I don't mean the documented "extreme" cases where someone is taking 1000's of mg of testosterone per week. I mean the average for athletic enhancement...

MD: No, I don't.

*That* is the bases for most of the arguments made by the medical community, yet they don't even know one of the most basic and fundamental facts needed to base their claims on. That is, what is the average or median ranges of dosages used by athletes?

I've done some of my own research in this area and have found that the average athletic dose is only slightly higher than the therapeutic dose for wasting in AIDS patients. When I say slightly higher, I mean about 25% higher, which is nowhere near the horror stories and abnormal cases sited by most anti-steroid proponents.

## ***Hormonal Imbalances?***

There isn't a single person I've ever talked to that didn't know most steroids are hormones. That being said, there isn't a single person I've ever talked to who didn't know short term supplementation of any hormone will create a temporary hormonal imbalance. Along those lines, let's look at what the anti-steroid literature has to say about hormonal imbalances in steroid users.

"Many male athletes have difficulty getting their hormone levels to normalize once they come off a drug cycle. One of the trickiest parts of steroid use for many athletes is how to keep their hormone levels balanced between drug cycles."

Again, something that users have been contending with for years and something very few users have problems with these days. I'll explain this in more detail below. This means, yet another example of propaganda. They go on to use technical terms to explain the "problem" further.

"Prolonged use of combined anabolic steroids (stacking) in relatively high doses is almost guaranteed to lead to *gonadotropic* hormonal imbalances. Gonadotropic hormones are hormones that stimulate the reproductive organs (gonads) and control reproductive activity. In addition to testosterone, the two other main gonadotropic hormones are *luteinizing hormone (LH)* and *follicle stimulating hormone (FSH)*. Even a moderate decrease of gonadotropic secretion can cause atrophy of the testes, as well as a decrease of sperm cell production. *Oligo-azoospermia* (fewer than the normal number of sperm in the semen) as well as an increased number of abnormal sperm cells, often leads to infertility in steroid users."

Since many users today have the ability to do extensive research on these drugs before deciding to use them, they also know that many of these drugs are prescribed in many countries as a birth control for men. In fact, testosterone injections have been shown to be *more* effective than "the pill" for birth control. Once the injections are ceased, sperm production returns to normal. The contraceptive effects of steroids are looked upon as a **benefit** to many users!

More disturbing is the passage that states that AAS usage, ". . . often leads to infertility in steroid users." This has never been shown to be true in any study. At

best, this is a play on words by anti-steroid proponents since steroids can be used as a contraceptive. At worst, this is flat-out fanatical deception.

The quote above also says that many users have problems getting their hormone levels to return to normal. In fact, this is not entirely true. It is almost standard practice for steroid users to finish a cycle with what is known as PCT, or Post Cycle Therapy. One popular PCT agent is Clomid, the female fertility pill.

"[Clomid] stimulates the hypophysis to release more gonadotropin so that a faster and higher release of FSH (follicle stimulating hormone) and LH (luteinizing hormone) occurs. This results in an elevated endogenous (body's own) testosterone level. Clomid is especially effective when the body's own testosterone production, due to the intake of anabolic/androgenic steroids, is suppressed. In most cases Clomid can normalize the testosterone level and the spermatogenesis (sperm development) within 10- 14 days."

In addition to Clomid, users may also take HCG, which is a hormone produced by pregnant women. In men, the hormone triggers the natural production of testosterone and androgenic hormones. Not only is HCG used after a cycle to return the testis back to their normal size quickly, but can also be used during a cycle to prevent atrophy of the testis.

However, with drugs designed for women, one must ask what the side effects are when men take them. (This is what an *objective* discussion is all about, isn't it?) With Clomid, hot flashes and occasional blurred vision can occur. Inadequate liver functions cannot be excluded; however, they are very unlikely. Clinical studies with male patients have shown Clomid to be used for up to a year or longer.

With HCG, the side effects reported are similar to those of normal steroid usage since it increases the amount of natural free testosterone in the blood. However, since the drug is only used to jump-start the natural production of testosterone, side effects directly attributed to HCG are rare.

Additionally, anti-steroid proponents often site the increase of estrogen in steroid users as reason enough to steer clear.

"In some cases, large imbalances of female hormones in males can even lead to an unsightly fatty enlargement of the breasts known as *gynecomastia*, or the more common street term *bitch tits*."

Again, as with the previous case, there are many ways of dealing with the side effects of increased levels of estrogen from the aromatization of excess testosterone in the blood.

Two of the most common are taking the drugs Nolvadex and Proviron. Nolvadex works against gynecomastia by blocking the estrogen receptors of the effected body tissue, thereby inhibiting a bonding of estrogens and receptor. Proviron is also an estrogen antagonist that prevents the aromatization of steroids in the first place. Combined, the two are extremely effective at eliminating the risks of elevating estrogen levels. In fact, estrogen can be helpful for building muscle mass, so many users actually try to find a balance where controlled amounts of estrogen are allowed to exist in the body. The side effects of both drugs are similar to the symptoms experienced by women entering menopause, including hot flashes, nausea, blurred vision, etc...

### ***“Roid Rage”***

This one could be the focus of it's own paper entirely. The sad fact is that most lay-people associate rage with steroid users because of sensational journalism. Again, here's what athletes are being told about this subject.

"... it has been concluded that an overabundance of testosterone causes aggressive and even hostile behavior. There are even reports of violent criminal behavior linked to steroid usage."

The fact is, many psychologists and scientists still debate the validity of this. To go so far as to draw the line that using steroids is responsible for violent criminal behavior is preposterous. Saying that athletes who use them are violent criminals because of “reports” of such cases, is the same as saying that priests are child molesters. Depending on how you want to play the words, both statements are correct. The most I can say about this subject is from antidotal experience with dozens of users. That is - *once an asshole, always an asshole* – whether you use steroids or not.

Most users I've spoken with describe being on steroids as a feeling of more “attentiveness” and “focus” on any situation. It could be studying, or any one of the confrontations everyone faces daily or weekly. Keeping your cool is no more difficult off steroids than on. If you're an ignorant jerk with emotional, psychological, or self control issues before you take steroids, you'll be just as big of a jerk on them. If you're a normal individual who thinks before acting, you'll continue to think before acting while taking them. Suggesting otherwise is ridiculously untruthful.

## ***Psychological Problems?***

Some of the claims made in this arena are so out of the ordinary that I had difficulty finding additional information on them for this paper. Sited claims include confusion, anxiety, paranoia, and hallucinations. I could not find anything showing the hormone testosterone producing these effects. Additional statements made in anti-steroid propaganda include the following.

"Cessation of anabolic steroid use can lead to various psychological withdrawal symptoms including aggressive and violent behavior, mental depression, sudden mood changes, fatigue, acute psychosis and in the worst case – suicide."

What? In a previous section of the same paper, they were talking about how increased testosterone leads to violent behavior and stopping steroids makes all your testosterone go away leaving you infertile. Now they're saying the complete opposite...

*This is a perfect example of how most ALL the information available to athletes about the dangers of steroids is so riddled with inconsistencies and backpedaling, it's impossible for any intelligent reader to take it seriously, even if they wanted to. And believe me, many users do want to know the truth.*

Additionally, I believe many people are aware of the mood swings possible when discontinuing the use of steroids, although it's not as magical and mystical as the propaganda makes it seem. Going from very high to very low levels of free testosterone in the blood definitely will cause a drastic swing in mood - from high to low. That's another reason why people do the PCT described in the previous section, mostly avoiding psychological side effects such as these altogether.

## ***Real Problems and Concerns***

While the point of this paper is to show that one possible reason so many athletes are choosing to use steroids is that anti-steroid propaganda is so ridiculous, I'd be remised not to mention the true dangers of using them. This is on top of the obvious one: They're illegal and looked at (from a legal perspective) the same way heroin, cocaine, and amphetamines are – even though steroids do have therapeutic uses.

On the top of the list, most people are familiar with the increased risk of heart disease in steroid users. Testosterone supplementation (550 to 1100 mg steroids



per week)<sup>1</sup> has been shown in studies to significantly decrease the levels of "good" cholesterol and raise the levels of "bad" cholesterol. This is one of the leading causes of fatal heart diseases. These elevated lipid profiles can remain for seven months after stopping steroid use before returning to normal.

It's also been said steroid use can increase heart attack risks by four-fold, which is probably accurate in some cases. Keep in mind however that like cancer, heart disease is very dependant on hereditary genetics. Therefore, athletes should consider their family medical history when making the decision. Incidence of heart diseases in immediate family members is a sign that an athlete should be very cautious about proceeding with the use of steroids, if not avoiding them altogether.

There is also an unfortunate side to the information available to athletes in this arena. Many of the reported negative cardiovascular effects attributed to steroids come from cases where only a single person was documented as being affected. This is illustrated perfectly in an article which appeared in the May 1997 issue of Muscle and Fitness (and is cited by many anti-steroid proponents). A chart is given of all the cardiovascular problems associated with steroid use, of which over **half** the list is inferred from single individual cases!<sup>2</sup> This is an incredible generalization that normally would never fall outside standard deviations in scientific practice. In other words, you can't generalize from single cases, unless you're a marketing person, not a scientist. Overall, steroids do have a negative effect on the cardiovascular system, the extent of which is not fully known.

Other truly documented negative effects are problems associated with the liver, especially an inflammation of the liver leading to bile blockage known as hepatitis. This is highly documented in orally ingested alkylated steroids, which must be taken in high doses for the testosterone to be available outside the digestive system. Many athletes avoid such issues by not using orally based steroids, and instead only taking injectables. Very few injectables are shown to cause significant liver damage when taken in reasonable doses.

Again, unfortunately, much of the anti-steroid propaganda loses its credibility when they focus on statements like the following.

"...one bodybuilder who took Anadrol-50 for five consecutive years paid the ultimate price when he died from liver cancer."

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<sup>1</sup> The range cited in this study seems to be an relatively accurate portrayal of steroid usage, as many people that I know stay in these ranges. Most beginners stay around 400mg/week and get very effective results, while more advanced users go up to 500-800mg/week. The latter is far beyond that of therapeutic dosages, while the former is closer to therapeutic prescriptions.

<sup>2</sup> In men. Two additional are given from women.

Especially when most normal cycles don't last longer than 8 to 12 weeks...

Finally, tendon problems can be common in steroid users. Tendons connect muscles to bones, however when muscles are growing faster than the tendons (steroids do not seem to have any positive effects on tendons, although some studies have shown they do), it's possible for the muscle to be stronger than the tendons can handle. This can lead to tendon rips that cause enough pain to affect the athlete's workouts. In the worst of cases, complete ruptures are possible, where the muscle completely rips itself from the bone, requiring a very long and painful surgery to recover from, if full recovery is even possible at all.

Many users I know have experienced tendon pains at some point in time from getting too strong too fast, but backing off the weight for a short amount of time allows the tendons to catch up. Most users know this, and don't get too aggressive about allowing their weight increases to get ahead of their capabilities.

## ***Summary***

As stated earlier: All of this is a perfect example of how most the information available to athletes about the dangers of steroids is so riddled with inconsistencies and backpedaling, it's impossible for any intelligent reader to take it seriously, even if they wanted to. And believe me, many users do want to know the truth.

Until the anti-steroid community figures this fact out, and starts dealing with athletes truthfully and intelligently, I predict steroid usage will only continue to rise, even with additional regulation.