

Hi-Ground

A PRACTICAL PRIMER

ON SAFER USE OF **ANABOLIC STEROIDS** & OTHER PERFORMANCE ENHANCING DRUGS



Dr Timothy Piatkowski

ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the Traditional Owners and First Nations people’s lands of where we work and live, in Meeanjin. We recognise that these have always been places of continued culture, teaching, and learning.

We wish to pay respect to their Elders – past, present, and emerging – and acknowledge the important role Aboriginal and Torres Strait Islander people continue to play within health services and the harm reduction community, by providing services that are culturally appropriate and safe.

We recognise the harm and destruction colonisation has had, and continues to have, on Aboriginal and Torres Strait Islander people and aim to be inclusive and welcoming to all communities.

ACKNOWLEDGEMENTS

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Hi-Ground

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Anabolic-androgenic steroids (AAS), also known as androgens, encompass testosterone and its synthetic derivatives which require a legal prescription for medical purposes ¹². Testosterone replacement therapy (TRT) is indicated for organic hypogonadism resulting from pathological disorders affecting the hypothalamo-pituitary testicular axis ^{3,4} and medical treatment for transgender men ^{5,6}. TRT is justified when irreversible defects in the reproductive system impede androgen-sensitive tissue functions ^{2,4}. The diagnostic process involves clinical assessments, hormonal assays, and a reproductive hormone profile to determine the need for lifelong testosterone replacement ³.

However, androgens are often used for off-label indications, with or without a prescription for a variety of reasons including wellness, aesthetics, and management of libido and depression ⁷⁻⁹. See Table 1 for some of the compounds commonly used in circulation.

Table 1. Some of the compounds which you may come across

Injectables

Testosterone C-17 esters	19-Nortestosterones	Dihydrotestosterone (DHT) derivatives
Testosterone cypionate (Test C)	Nandrolone compounds (Deca Durabolin, NPP)	Drostanolone (Masteron)
Testosterone enanthate (Test E)	Trenbolone compounds ("Tren,")	Stanozolol (Winstrol)
Testosterone propionate (Test P)		Methenolone (Primobolan, "Primo")
Testosterone decanoate		
Boldenone undecylenate (Equipose, EQ)		
Sustanon 250 (Blend of testosterone esters)		

Orals

Methylated testosterone derivatives	Dihydrotestosterone (DHT) derivatives	PEDs and off-label medicines
Methyltestosterone ("MIT", MethylTest")	Oxandrolone (Anavar)	Human Growth Hormone
Methandienone ("Dianabol", "D-bol")	Oxymetholone (Anadrol)	Insulin
Fluoxymesterone (Halotestin)	Metenolone (Primobolan, "Primo")	Peptides
Chlorodehydromethyltestosterone (Turinabol/TBol)	Stanozolol (Winstrol,)	Prohormones
	Methasterone (Superdrol)	
	Mesterolone (Proviron)	

HALF LIFE

The half-life of androgens is the time it takes for the concentration of that substance in the blood or plasma to reduce to half its initial value¹⁰. Understanding the half-life of AAS is crucial for several reasons:

- * **Dosing Regimens:** The half-life determines how often a substance needs to be administered to maintain effective therapeutic levels¹¹. Shorter half-lives typically require more frequent dosing, while longer half-lives allow for less frequent administration.
- * **Detection in Drug Testing:** Athletes and individuals using AAS may be subject to drug testing. Knowing the half-life helps in understanding how long a substance might remain detectable in the body.
- * **Pharmacokinetics:** The half-life influences the pharmacokinetic profile of the AAS, including its onset of action, peak effects, and duration of action¹⁰. This information is vital for optimising treatment protocols and minimising side effects.
- * **Effects on the Body:** AAS with shorter half-lives may lead to more pronounced fluctuations in hormone levels, potentially resulting in more significant side effects. In contrast, substances with longer half-lives tend to produce a steadier state of hormone levels. This is, of course, dependent on dosing protocol and frequency.

Table 2. Half-life of compounds.

AAS Name	Type	Half-Life
Injectable Steroids		
Boldenone Undecylenate	Injectable	14 days
Drostanolone Propionate	Injectable	3 days
Methenolone Enanthate	Injectable	10 days
Nandrolone Decanoate	Injectable	8 days
Nandrolone Phenylpropionate	Injectable	4 days
Stanozolol	Injectable	1 day
Sustanon 250	Injectable	15 days
Testosterone Cypionate	Injectable	12 days
Testosterone Enanthate	Injectable	10 days
Testosterone Propionate	Injectable	4 days
Testosterone Suspension	Injectable	1 day
Trenbolone Acetate	Injectable	3 days
Trenbolone Enanthate	Injectable	10 days
Trenbolone Hexahydrobenzylcarbonate	Injectable	10 days
Oral Steroids		
4-Chlorodehydromethyltestosterone	Oral	7 hours
Fluoxymesterone	Oral	8 hours
Methandrostenolone	Oral	6 hours
Mesterolone	Oral	12 hours
Oxandrolone	Oral	9 hours
Oxymetholone	Oral	8 hours
Stanozolol	Oral	9 hours

IMPLICATIONS OF HALF-LIFE ON USAGE PATTERNS

The differences in half-life among various AAS can lead to distinct usage patterns among people:



- * Short-acting steroids, such as Testosterone Propionate and Stanozolol, may be favoured by people seeking rapid results or those who prefer to cycle AAS frequently. However, this approach can lead to more pronounced side effects due to fluctuations in hormone levels.
- * Long-acting preparations or blends, like Testosterone Enanthate or Cypionate or Sustanon 250, allow for less frequent injections, which may be more convenient for people. These AAS tend to produce more stable blood levels, potentially reducing the risk of side effects.

CAVEATS

- * **Subcutaneous vs. Intramuscular Injections:** Some research has demonstrated subcutaneous injection of testosterone can help maintain stable blood levels due to its slower absorption compared to IM injections¹²⁻¹⁴. However, subcutaneous administration does carry risks, particularly related to infection. The quality of black-market products can further exacerbate these risks, as impurities or contaminants may lead to severe infections or adverse reactions¹⁵.

Many people obtain AAS from unregulated black market sources, which raises concerns about product purity and dosing accuracy. Contaminants and varying concentrations in these products can lead to unpredictable side effects, ineffective treatment, or serious health issues.

- * **The pharmacokinetics of AAS can vary significantly among individuals due to factors such as age, metabolism, genetic predispositions, and overall health¹⁶.** This variability can affect how the body processes these substances, influencing both efficacy and the risk of side effects. The next section attempts to give you rudimentary understanding of some of these factors.

PHARMACOKINETICS

The metabolic properties of androgens play a significant role in determining their effects, potential side effects, and therapeutic applications. Three key metabolic processes are critical in understanding how these substances interact with the body: aromatisation, 5^a-reduction, and 17^a-alkylation. Aromatisation refers to the conversion of AAS to estrogen, which can lead to estrogen-related side effects such as gynecomastia and water retention.

Conversely, 5^a-reduction transforms testosterone into more potent androgens, such as dihydrotestosterone (DHT), which is associated with increased androgenic effects but may also contribute to hair loss and prostate enlargement. Lastly, 17^a-alkylation is a modification that enhances the oral bioavailability of certain AAS but is also linked to hepatotoxicity, increasing the risk of liver damage. Understanding these characteristics is crucial for people when considering the therapeutic benefits and risks of different AAS. The following table summarises these metabolic properties for various AAS, highlighting their potential implications for use and safety.

Table 3. *Characteristics of androgen metabolism properties*

Substance	Aromatisation	5 α -reduction	17- α -alkylation (hepatotoxic)
Testosterone	x	x	
19-Nortestosterone	x	x	
Boldenone	x	x	
Dihydrotestosterone		x	
Mesterolone		x	
Methenolone		x	
Trenbolone		x	
17 α -Methyltestosterone		x	x
Fluoxymesterone		x	x
Dehydrochloromethyl-testosterone		x	
Oxandrolone		x	x
Oxymetholone			x
Stanozolol			x
Metandione	x	x	x
Drostanolone		x	

Note: This table shows the properties of various AAS in terms of three characteristics: aromatisation (conversion to estrogen), 5 α -reduction (conversion to more potent androgens), and 17 α -alkylation (linked to liver toxicity). For example, testosterone undergoes both aromatisation and 5 α -reduction but is not hepatotoxic.

Understanding the metabolic characteristics of AAS is essential for informed decision-making regarding their use, especially in the context of therapeutic applications or performance enhancement. The presence or absence of aromatisation, 5 α -reduction, and 17 α -alkylation can significantly influence the safety and efficacy of these compounds.

For instance, androgens that undergo aromatisation, such as testosterone, will increase oestradiol, and may require either:

1) finding a comfortable dose which reduces estrogen-related side effects, or

2) the use of aromatase inhibitors to mitigate estrogenic side effects.

Conversely, substances like stanozolol, which do not aromatise¹⁸, may appeal to those looking to avoid estrogen-related complications. However, the potential for 5 α -reduction must also be considered, particularly with compounds like testosterone and its derivatives¹⁹, which can lead to increased androgenic effects (e.g. hair growth and loss) and their associated risks.

READY FOR YOUR FIRST CYCLE?



Helpful Hints from Vigorous Steve

So you're ready for your first cycle?

<https://youtu.be/z9s35Rvbguc>

Step by step cycle design

<https://www.youtube.com/watch?v=JP-Nphonldo>

First cycle do's and don'ts

<https://www.youtube.com/watch?v=NCYBjBlrFms>

CYCLE DESIGN

A well-structured first cycle typically involves a single AAS, such as testosterone enanthate or cypionate, at a supraclinical dose (e.g. 150-250mg weekly) for 12-16 weeks. This will allow you to gauge your body's response.

POST-CYCLE THERAPY (PCT)

Post-cycle therapy is essential to restore natural testosterone production and mitigate suppression. Effective selective estrogen receptor modulators (SERMs) include tamoxifen (Nolvadex) or clomiphene (Clomid). Starting SERMs 2 weeks after the final AAS dose for longer esters like enanthate and cypionate is recommended. A typical PCT protocol would include tamoxifen 20mg p/day for 28 days. Following this, a further time-off equal to your cycle length is recommended.

SAFER INJECTING



INTRODUCTION

AAS are commonly administered via injections, primarily intramuscularly. Understanding the proper techniques and equipment is crucial for safe and effective usage. This guide outlines the recommended injection methods, equipment needed, and important precautions to consider during the process.

INTRAMUSCULAR INJECTIONS

Intramuscular injections involve delivering steroids suspended in oil or water directly into the muscle. This method allows for gradual release into the bloodstream, promoting stable hormone levels.

Common Injection Sites

- * **Glutes (Buttocks):** Preferred for larger volumes.
- * **Thighs (Quadriceps):** Good for various volumes, especially for those avoiding glute injections.
- * **Shoulders (Deltoids):** Suitable for smaller volumes.
- * **Latissimus Dorsi [lats] (Under the Shoulder Blade):** Occasionally used.
- * **Trapezius [traps]:** Less common but can be used.

Equipment Needed

To perform an intramuscular injection, gather the following supplies:

- * **Syringes (barrels)**
- * **Needles**
- * **Alcohol Swabs**
- * **Sharps Container (for safe disposal)**

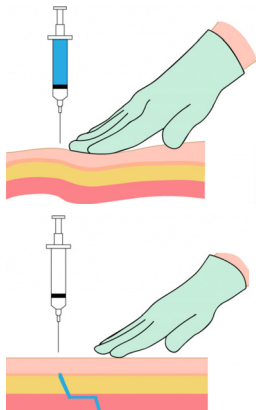
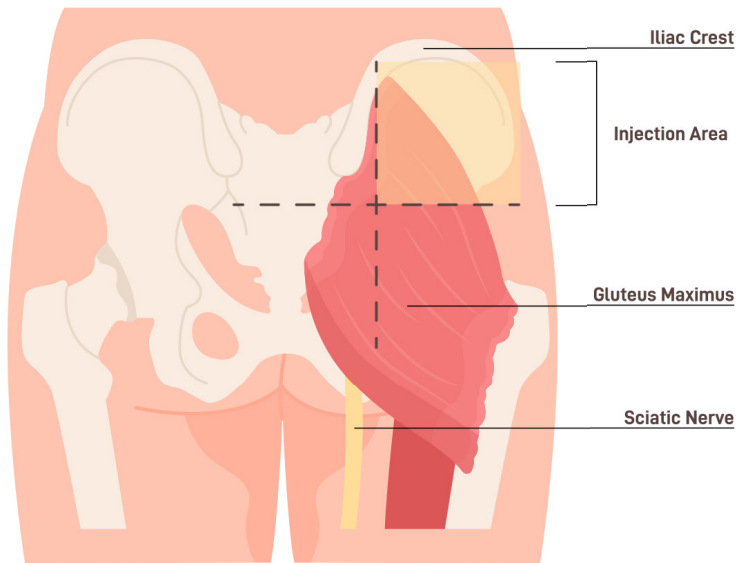
SELECTING THE CORRECT NEEDLE

Size	Use
19G 21G	Drawing up oils from vials Drawing up oils from vials (can be used for larger muscle injections)
23G	Injection into larger muscles (Glutes, Quads)
25G	Injection into larger/smaller muscles (Quads, Deltoid)
27-29G 1 mil	Subcutaneous injections (fatty tissue; or small muscles [e.g. Triceps Brachii lateral head])

PROCEDURE

Buttock:

To find the site on the glutes/buttocks, split each cheek into four sections and use the outer-upper quarter to inject into as shown above. Generally the injection is performed lying in a prone position (on your stomach). You can perform the injection standing, although it is best to keep weight off the limb into which you are injecting.



Z-track injection technique

The Z-track technique involves pulling the skin and subcutaneous tissue to the side near the site and injecting right into the muscle. Once the injection is complete and the tip is out, the skin is released to go back to the original position. This will put a bend or Z in the outlet which the needle created. This means that there should be less chance of blood or substance exiting the wound than a normal injection.



Swabbing

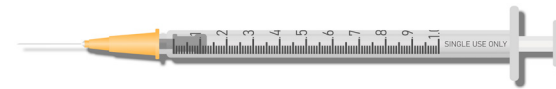
Make sure you use soap and water to wash your hands thoroughly and to also clean the site you will be injecting into before you start the process. Use a swab on the top of the vial before taking out the substance. When you have everything ready for the injection, also use a swab in one direction once on the injection site and let the alcohol dry. Once you have finished the injection, use a cotton ball or band aid to control any bleeding and manage the wound as you would a normal cut or puncture. Using a swab after injection will only encourage bleeding to continue. Make sure you watch old sites for signs of infection and see a doctor immediately if it isn't healing.

Massaging and getting blood-flow to muscle

After an intramuscular injection, especially of 2ml or more, do NOT massage. Exercising the injected muscle may also help to get the blood flowing through it, thus dispersing the fluid. For the buttock and thigh, this might include going for a run.

SUBCUTANEOUS INJECTIONS

Substances such as peptides, human growth hormone, Melanotan (Afamelanotide), and insulin are injected into the fatty tissue for immediate use. These are generally administered in the same way a diabetic uses insulin.



Commonly the tissue around the lower stomach is pulled together and the injection made with the thinnest gauge syringe (e.g. 29G 1ml syringe) below the skin into the fatty tissue – see image.

BREAKING DOWN PEPTIDES

Micrograms (mcg) are the smallest unit of measurement and there are 1000mcg in 1 milligram (mg). There are 1000 milligrams in a gram (g). Liquids are measured in millilitres (ml).

Peptides generally come as freeze-dried product in a small vial. You will usually need to add the bacteriostatic water in yourself. Do this using a separate small gauge needle than the one you inject with. Draw up the bacteriostatic water as necessary and transfer it to the peptide vial, taking care not to push the water directly onto the substance, aim for the sides of the vial, do not shake it hard, it will dissolve through by itself.

Working Example: I have a vial of Melanotan (freeze dried) as 1mg of product. The needle used for subcutaneous injecting (27-29G) will have markings up to 100 International Units (IU's) and/or 0.1-1mls. I wish to use the melanotan in 100mcg doses. If I add 1ml of bacteriostatic water, 1 ml of water is 1mg of product. Therefore, 0.1ml is equal to 100mcg of melanotan. Draw up 0.1ml, or 10IU's and inject as necessary.

HEALTH PRECAUTIONS



BLOOD-BORNE VIRUS (BBV) TRANSMISSION

When injecting, there is a risk of transmitting blood-borne viruses (e.g., HIV, Hepatitis B, and C). These viruses can remain asymptomatic, making testing vital. To minimise risks:

- * Self-inject when possible to reduce exposure.
- * Ensure all equipment is thoroughly cleaned and sterile.
- * Not sharing of vials or equipment is vital for reducing risk of transmitting BBV's

INFECTION RISKS

Injecting breaks the skin barrier, exposing you to potential infections from skin bacteria and unclean surfaces. To reduce infection risk:

- * Always use sterile injecting equipment.
- * Clean the skin and surfaces thoroughly before the injection.

TISSUE DAMAGE

Repeated injections in the same area can cause tissue damage. To prevent complications:

- * Rotate injection sites regularly, moving just an inch away from previous sites or using different muscles to allow for recovery.

HEALTH MONITORING

WHAT TO CONSIDER, IF YOU ARE GOING TO USE OR ARE USING AAS/PEDS.

There are millions of people using Anabolic/ Androgenic Steroids AAS and other PEDS. Many ask, how can steroids be that bad or dangerous, if so many people are using them? That is a great question! We know that using AAS/PEDS is a slippery-Slope and that the risks of AAS/PEDS are related to several factors:

- * How old you are when starting to use AAS/ PEDS?
- * What type of AAS/PEDS are you using?
- * How much AAS/PEDS are you using- cumulatively, for how long and understanding how and when to take breaks. Are you implementing Post Cycle Therapy PCT?
- * Are you aware of the side effects of AAS/ PEDS, from a very specific standpoint- Shutting down your natural production of testosterone (men), Affects on your mood- both on and off AAS/PEDS, Affects on your body systems- from head to toe.
- * Are you aware of the long-term consequences on your health- Mood, Skin/ Acne system, Gynecomastia potential, Fertility, Cardiovascular system, Kidney system, Liver system, Red Blood Cell/Iron system, Testicular system, Prostate System
- * Are you practicing safe use, e.g., source of AAS/PEDS, Testing your supply, NEVER sharing needles or multi-use vials, sterile injection technique, understanding when to seek medical care and working with a qualified healthcare provider to be closely monitored.

These are the tenets of sustainable AAS/PEDs utilization.

There are men and women who have been able to use AAS/PEDS for decades, with what appears to be either no or limited adverse effects to their health. Unfortunately, there have not been any long term, well done clinical studies on how “some” of these people have been able to avoid the potential damaging effects of AAS/PEDS. I happen to be one of these people. In the remainder of this communication, I will lay what I see to be the most important factors in which you can employ to minimize the adverse effects of using AAS/PEDS.

First of all and most importantly, you must understand that using AAS/PEDS, even at low doses, for short periods, will lead to consequences! I always tell young people, if any of the risks that come along with using AAS/PEDS scares you and you are not sure that it's the right thing to do- HOLD OFF for NOW. AAS/PEDS should never be used for a quick fix of just one cycle! It's going to the next stage, for those who have taken the time to train naturally, maxed out their potential and understand that this is for the long game.



If you didn't know this, STOP and consider! There are so many people that come CLOSE to using AAS/PEDS and or use on a very limited scale and can walk away from continuing to use. This is important to understand. These are the ones that really took care in taking time in considering the seriousness of using AAS/PEDS. I think the greatest consideration is - if you think of starting on a small dose cycle of even an Anavar cycle and you stop after say 6-8 weeks and bounce back nicely. If you enjoyed it, your chances of doing a second cycle are greater, with greater chances that you will repeat such behaviour... Once you try AAS/PEDS, you must consider that you may be forever changed.

It is very possible that you will be one of the tens of millions of people who have made the decision to use AAS/PEDS. At a certain point of use, you will be on testosterone for life or potentially “Blasting & Cruising” for the rest of your life. Read on:

Once a person has decided to use PEDS/AAS, the only way to preserve health will be focusing on knowing everything possibly about how to use AAS/PEDS “Safer”. This is never a blessing for using AAS/PEDS, it is simple a mechanism to limit health danger, AKA, Harm Reduction. IMO, AAS/PEDS should not be considered till at least 21 years of age. Any use younger, is just not ever advisable- you have to have a baseline of maturation! Additionally, learning from the old school AAS/PEDS users will be mandatory!

Back in the day, we used simple AAS regimens and compounds, like low dose Testosterone esters, as a foundation to build. Not stacking AAS until later, once significant gains were made- this can take years! This is how some of the best strength and physiques have been sustained, for a lifetime. Time off was mandatory! We used to say, “Ok, we’ve hit or 6 or 8 week cycle end- it’s time to come off” – and we did. Back in the late 80’s -90s, we didn’t have access to PCT, so we did this cold turkey! In the beginning, it wasn’t a problem, but cycle after cycle, the complications of stopping AAS, even reasonable- low dose ones, were unbearable with depression, ED, poor libido and even dangerous thoughts of suicide.

Things get bad, when your natural testosterone levels are low, you are getting weaker in the gym and you can’t get an erection. This is why it is mandatory to consider proper PCT under a health care professional’s supervision! With Testosteronology and more dedicated, non-judgmental healthcare providers coming online, all over the world, this potential catastrophe can be minimized.

The remaining aspects of how to stay safe and sustainable on AAS/PEDS comes down to lowest effective doses, some luck and employing the ABCD’S. For a full understanding of my ABCD’S and access to amenities such as, a forum for questions, live Ask The Doc meetings, an extensive video library on how AAS/PEDS will affect your health, go to www.Testosteronology.com



BLOOD WORK INTERPRETATION AND ORGAN SAFETY

Kayden Weller

Understanding Blood Tests

Whether you use PEDs or not, it's important to check your bloodwork regularly. Blood tests are one of the best ways to look "behind the curtain" and assess what's going on inside your body. This alone can help you avoid serious health issues like kidney disease, heart attacks, and more. For athletes using PEDs, bloodwork offers the added benefit of not only monitoring general health, but also allowing you or your coach to adjust protocols based on your body's response. This can lead to better performance gains and help you understand the cause of any undesirable side effects, rather than just assuming.

How Often Should You Get Bloodwork?

- * Everyone should get checked at least twice a year.
- * If you're using PEDs, aim for twice a year at a minimum, but ideally 3-4 times a year. (Consider checking at both times of highest and lowest PED exposure.)

Most athletes I work with use websites that provide referrals for private blood tests, such as www.imedical.com.au or www.roidsafe.com.au, for several reasons. iMedical allows you to build your own blood test, selecting any markers you want. In some cases, a GP might be hesitant to provide certain tests or may outright refuse and lecture you on PED use. When you use a service like iMedical or RoidSafe, they send the results directly to you, sometimes in as little as 24 hours.

This guide will give you a basic overview of what to look for when reviewing your results. However, if you suspect something is wrong, always seek help from a trained medical professional.



Finally, when reviewing blood tests, a doctor's analysis isn't necessarily wrong, but it might lack the full context. It's all about context. For example, a normal liver value close to 100 may not be a good sign for someone who hasn't used PEDs, but if that person has been using an oral PED, that liver value might be expected. Context is everything.

Key Markers to Check:

- | | |
|--|--|
| * Full Blood Count (FBC) | * CK/CPK (Creatine Kinase or Creatine Phosphokinase) |
| * Comprehensive Metabolic Panel (BioCHem) | * Oestrogen |
| * eGFR (estimated Glomerular Filtration Rate) | * Testosterone (Total and Free) |
| * Lipid Panel (Total cholesterol, HDL, LDL, & Triglycerides) | * PSA (Prostate-Specific Antigen) |
| * Thyroid Values (TSH, Free T4, Free T3) | |

We prioritise markers based on urgency, from the most critical (what could kill me today) to the less immediate (what could affect me later), with performance being last. Why not prioritise performance first? The truth is, being dead doesn't help your performance goals.

FULL BLOOD COUNT

The image below is an FBC (Full Blood Count) from an athlete’s blood test, taken after 20 weeks of exposure to a number of PEDs, including both oral and injectable compounds. Let’s call him Rowan. If we take a look at the image, the left column shows what was tested, the centre column shows Rowan’s results, and the right column shows the reference ranges—these are the values health professionals consider to be within the “healthy reference range.”

The first things to check here are haemoglobin, red cell count, and haematocrit. These markers will tell us how much blood Rowan has and what proportion of it is solid versus liquid. High-calorie and high-protein diets, as well as AAS (anabolic-androgenic steroids), can drive these markers up, and in extreme cases, this can be lethal.

Since Rowan is an athlete, we don’t have an issue with pushing these values to the top of the reference range. This can actually enhance performance by delivering more oxygen through the body and increasing endurance. If your readings are outside the reference range, this doesn’t necessarily mean you’re in danger, but it is something that should be monitored.

FULL BLOOD EXAMINATION

Haemoglobin		157 g/L	(135–180)
Red Cell Count		5.7 x10^12/L	(4.2–6.0)
Haematocrit		0.48	(0.38–0.52)
Mean Cell Volume		84 fL	(80–98)
Mean Cell Haemoglobin		28 pg	(27–35)
Platelet Count		290 x10^9/L	(150–450)
White Cell Count		7.6 x10^9/L	(4.0–11.0)
Neutrophils	67%	5.1 x10^9/L	(2.0–7.5)
Lymphocytes	21%	1.6 x10^9/L	(1.1–4.0)
Monocytes	9%	0.7 x10^9/L	(0.2–1.0)
Eosinophils	2%	0.15 x10^9/L	(0.04–0.40)
Basophils	1%	0.08 x10^9/L	(>0.21)

How do we decrease the risk of problems?

Daily cardio and, in some cases, 100mg of aspirin per day might be recommended. By using 100mg of aspirin, we’re not trying to directly reduce the haematocrit value but rather reduce the risk of a clot forming in the blood, which can be problematic.

LIVER AND KIDNEYS

eGFR measures kidney function and can show if there is any kidney damage or even potential kidney disease. As we can see here Rowan’s reading was >90 which is the best result to hope for. If your eGFR is below 60 mL/min and persists over a period of months, it could suggest that you are at risk for chronic kidney disease (CKD). There are a number of factors that must be considered when looking at eGFR results such as hydration, diet, training intensity and even age. If your eGFR is low or concerning, it’s important to follow up with a doctor for further assessment and potential treatment.

ALT is an enzyme found in the liver that helps convert proteins into energy for the liver cells. When the liver is damaged, ALT is released into the bloodstream and levels increase. We can see the reference range is (0–45) and Rowan was found to have a reading of 136 U/L. Rowan was using two Oral steroids for an extended period of time so this reading is actually quite good when we understand the context.

AST is an enzyme that helps metabolize amino acids. Like ALT, AST is normally present in blood at low levels. An increase in AST levels may indicate liver damage, disease or muscle damage.

Urea	7.8	mmol/L	(2.5–8.0)
Creatinine	95	umol/L	(60–130)
eGFR	>90	mL/min	(over 59)
Uric Acid	0.19	mmol/L	(0.12–0.45)
+ Total Bilirubin	22	umol/L	(2–20)
+ Direct Bilirubin	11	umol/L	(0–8)
Alk. Phos.	52	U/L	(30–115)
Gamma G.T.	16	U/L	(0–70)
+++ ALT	136	U/L	(0–45)
+ AST	77	U/L	(0–41)
LD	250	U/L	(80–250)

EGFR CHEAT SHEET

Stage	eGFR		Amount of albuminuria		
			Normal	Small albumin level	Large albumin level
1	More than 90				
2	60–89				
3	30–59				
4	15–29				
5	under 15 or on dialysis				

ALT/AST CHEAT SHEET

UP TO AND INCLUDING 100
THE COST OF DOING BUSINESS

BETWEEN 100 AND 200
CONTINUE TO MONITOR
(END OF COURSE IN SIGHT)

BETWEEN 200 AND 300
YOU SHOULD BE IN THE VERY
FINAL STAGES OF THE COURSE

OVER 300
DANGER ZONE
STOP WHAT YOU ARE DOING

THYROID

TSH (Thyroid Stimulating Hormone): TSH is produced by the pituitary gland, TSH stimulates T3 and T4 production within the thyroid.

T3 (Triiodothyronine): T3 is the active thyroid hormone that regulates metabolism, energy, and growth. Low T3 indicates hypothyroidism, while high T3 suggests hyperthyroidism.

T4 (Thyroxine): The precursor hormone to T3. It's less active until converted into T3 in the body. Low T4 indicates hypothyroidism, while high T4 indicates hyperthyroidism.

Athletes will often use exogenous T3 or T4 as an effective tool for fat loss. Dosed in micrograms, high levels of T3 or T4 can quickly cause undesirable side effects, such as dizziness, insomnia, heart arrhythmias, anxiety, headaches, and heat intolerance.

Here, we can see Rowan's recent and past thyroid readings, and in both instances, his values were outside the reference range. However, Rowan has not experienced any unwanted side effects from the slight elevation, so we can keep this in mind for future PED use.

Although Rowan was not using T4, he was using Trenbolone Enanthate, which can cause an increase in thyroid production.

TSH	2.6	2.2	mIU/L (0.50–4.00)
free T4	21	24	pmol/L (10–20)
free T3	4.6	4.8	pmol/L (2.8–6.8)

SEX HORMONES

Here we have Rowan's sex hormone results which is what PED users find the most exciting to look at because we want to see that what we are using is doing what we want it to.

Oestrogen is a typically associated with females and men often look at it as a bad thing that needs to be reduced. It helps regulate bone health, mood, and cardiovascular function. For muscle building and strength, oestrogen supports recovery by reducing muscle damage and inflammation, enhances protein synthesis, and aids in maintaining joint health, which is crucial for strength training. In the past Rowan has had his Oestrogen as high as 300 pmol/L with little to no

undesired effects. This time Rowan was having a problem with sex drive and ED so he started to reduce his Oestrogen back to the reference range with little to no change, after looking at this blood test we could see that his problem was likely coming from somewhere else. The fasted way to reduce Oestrogen is with the use of an Aromatise Inhibitor (Anastrozole, Exemestane and Letrozole) or reduce the PED that is increasing the Oestrogen levels.

Prolactin is a hormone primarily involved in reproductive functions, lactation, and metabolism. In men, its role in muscle building and strength is less direct but potentially significant. Prolactin influences testosterone production and may affect recovery and growth through its impact on immune response and tissue repair. Often we see Prolactin increase in people using Trenbolone or Nandrolone, while these compounds don't directly increase Prolactin they can lead to elevated progesterone-related activity which can raise prolactin levels. - Rowan was using both Trenbolone and Nandrolone which turned out to be the cause of his sexual dysfunction as well as performance anxiety.

+ Prolactin	377	mIU/L	(< 300)
- Luteinizing Hormone	< 1	IU/L	(1-10)
- Follicle Stimulating Hormone	< 1	IU/L	(1-10)
+ Oestradiol	159	pmol/L	< 150)
+++ Testosterone	52	nmol/L	(10.0-33.0)
+++ free Testosterone (calc)	2005	pmol/L	(150-700)
-- Sex Hormone Binding Globulin	5	nmol/L	(13-71)

TESTOSTERONE

Total testosterone is the overall amount of testosterone in the blood, including both bound (to proteins like SHBG and albumin) and unbound testosterone. We can see that Rowan is using exogenous testosterone from his reading, which is outside of the reference range.

Free testosterone is the small portion (1-2%) of testosterone that is not bound to proteins and is biologically active, directly affecting tissues and functions like muscle growth, libido, and energy. To estimate how much testosterone Rowan is using, we take the value from his result (2005) and divide it by 4, which gives us 501.25, or 501.25mg per week.

Sometimes, Nandrolone can be mistaken for testosterone, which I can confirm is the case here. Rowan was using 300mg of testosterone enanthate per week, along with 200mg of Nandrolone per week. (This final value can be off by as much as 200mg higher or lower, as it depends on individual response and the quality of the product.)

BLOOD PRESSURE

Blood pressure is the pressure of blood pushing against the walls of your arteries. Arteries carry blood from your heart to other parts of your body. Your blood pressure normally rises and falls throughout the day. Because blood pressure monitors are so cheap and widely available, it's good practice to test weekly or, at a minimum, test monthly.

- * Don't drink anything caffeinated for 30 minutes before your blood pressure testing.
 - * Empty your bladder before your reading.
 - * Sit in a comfortable chair with your back supported for at least 5 minutes before your reading.
 - * Put both feet flat on the ground and keep your legs uncrossed.
- * Rest your arm with the cuff on a table at chest height.
 - * Make sure the blood pressure cuff is snug but not too tight.
 - * The cuff should be against your bare skin, not over clothing.
 - * Do not talk while your blood pressure is being measured.

BLOOD PRESURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 - 120	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130 - 139	or	80-89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 or HIGHER
HYPERTENSIVE CRISIS (Consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

AUSTRALIA'S STEROID MARKET

Alison Craven

WHAT DOES THE ILLEGAL STEROID MARKET LOOK LIKE IN AUSTRALIA?

The steroid market in Australia has changed significantly since the 1980s. As many old-time bodybuilders and powerlifters will tell you, illegal steroids in Australia were usually redirected veterinary supplies. As such, they were low dose, pharmaceutical quality, and bought directly in person. This made risks significantly lower than they are now.

Today, there is no such thing as illegal steroids that are the same quality as pharmaceutical made products – all illegal steroids in Australia are poor quality, made underground, by people who source the raw materials (steroid concentrates) from Asia (predominantly China).

Some brands have packaging and snap-vials identical to legit pharmacy brands, but are actually poor quality copies.

It is currently very easy for anyone to buy steroid raw materials via the internet and get them imported into Australia to make their own products, which results in a huge number of small brands in circulation. A large proportion of these raw materials are either a scam, or extremely poor quality. It is also common for the raw concentrates from China to be swapped, mislabelled, or even sometimes cut.

There is minimal to no quality control in the Chinese factories that make the concentrates, and no quality control done by the people who make up the finished product in Australia. Some brands will send an occasional batch off to an overseas laboratory to be analysed, but it is not time or cost effective to send off a sample of every batch of every type of product – so the vast majority of steroids on the market have not had any form of quality checks.

At any time there are over 100 “brands” of illegal steroids available in Australia, selling more than 30 types of steroid products. Most of these can be bought from online stores, or through chat apps and social media, or in person from suppliers. Brands often change names, leave the market and then return, or rebrand to distance themselves from poor reviews / law enforcement.

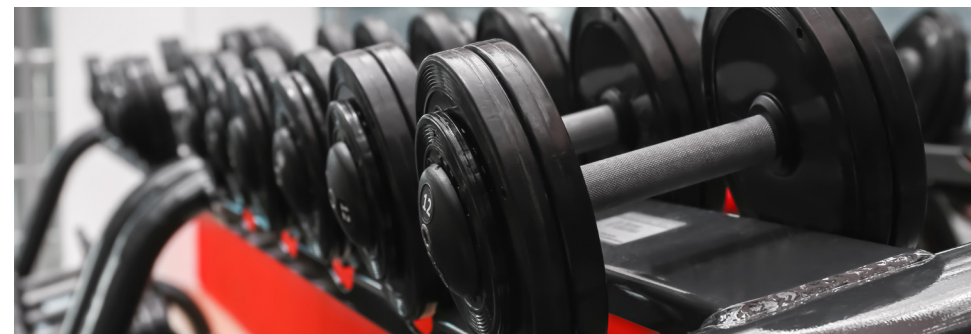
The demand for steroid products often outstrips supply, especially with commonly used forms such as Testosterone Enanthate and “Anavar”. This entices suppliers to relabel other compounds in order to keep customers while they wait for stock. Other products such as “Primobolan” Enanthate are very expensive to source, and are commonly swapped or diluted with cheaper compounds in order to make more money.

Trying to find an online source of steroids is a challenge, as there are such a large number of scam sites – most of which start out selling decent products and then turn to scamming over time. Some sell products with minimal or no active ingredients, others take money and deliver no product at all.

WHAT POTENTIAL HARMS ARE THERE?

There are several types of potential harms that illegal steroid users can experience:

- * **Physical harms** – these range from immediate harms such as injection infections to longer term side effects. Polypharma (using multiple types of drugs at the same time) increases the risks.
- * **Mental harms** – these can be exacerbation of existing mental health issues, body dysmorphia, and mental health side effects not previously experienced such as insomnia, anxiety and depression;
- * **Financial harms** – the risk of being financially scammed by steroid suppliers is very high. Almost all steroid users have lost money to scammers – whether by receiving products containing no active ingredient, or receiving no product at all.





WHAT KINDS OF TESTING ARE AVAILABLE IN AUSTRALIA?

As pill testing of other illegal drugs has shown, people will often change their usage of an illegal drug when given information about the actual content of it.

You can tell people over and over that illegal steroids and other drugs are of poor quality and may not contain what they think it does – but testing it themselves has more of an impact and influence on their decision whether to then use that product.

Testing in one form or another, is essential for people to be able to make informed decisions, become educated on scams and risks, and to prevent many of the potential harms that steroid users are exposed to.

THERE ARE CURRENTLY SEVERAL OPTIONS FOR AUSTRALIANS TO TEST STEROIDS:

- * **Overseas Laboratory Analysis** - There is currently no commercial laboratory in Australia that will accept a steroid sample from the public. However there are several international ones that will. Janoshik in the Czech Republic is the one most commonly used. Lab analysis costs approximately USD150 per sample, plus shipping, and takes approximately 3 weeks to get a result.

Laboratory analysis will only tell you the steroid compounds present – provided they make up over 5% of the sample. Heavy metals require a separate analysis. Microbial contaminants such as bacteria and viruses will not be detected.

- * **Pill Testing Services** – there are currently two pill testing services in Australia; CANTest in the ACT and CheQpoint in QLD. CANTest cannot analyse oil-based steroids but can identify some oral steroids (tablets and capsules). As part of the World's first steroid checking trial, partnership between QulVVA, QulHN, and The Loop Australia has meant that AAS checking has been available in 2024 and 2025. Samples are eligible to be accepted through CheQpoint Bowen Hills and Gold Coast for secondary analysis in Dr Piatkowski's research program.

Both of these services require you to present a sample in person and cannot take mailed samples.

Testing services also give steroid users the opportunity to do needle-exchanges, get help with infections and injection techniques, and referrals to other health services.

- * **Home Testing Kits – PED Test** Australia manufactures at-home test kits for the presumptive identification of steroids. For those unable to get to a testing centre, these are the next best option.

Although test kits will never be as accurate as lab analysis, they are an important and cost-effective option for screening and monitoring quality changes in substances. Used in conjunction with periodic laboratory analysis they can be a great way to monitor quality of brands over time by both users and suppliers.

HEALTH ENHANCEMENT AND HARM REDUCTION IN AN UNREGULATED MARKET

Please see here for our Steroid Checking Trial results which will give you an idea and indication of the current state of the steroid market in Queensland, Australia.

<https://hi-ground.org/resources/steroid-checking-project-results/>

We include some harm reduction information and advice here which accompanies these results but is also good general knowledge.

<https://hi-ground.org/app/uploads/2024/06/ROIDCheck-Wave-2-Extra-Harm-Reduction.pdf>



WOMEN'S SECTION

AAS cycles for women are designed to minimise androgenic side effects, focusing on compounds with lower virilisation risks, such as Anavar (oxandrolone) or Primobolan (methenolone).

Dosages are kept at a clinical or supraclinical level (e.g., 2.5-10mg daily for Anavar) and a first cycle is typically recommended to last 4-6 weeks.

Due to hormonal differences, PCT is unique for women. One option is to stop using the compound and take an equal amount of time off from your cycle. Another option is to 'taper', gradually titrating your dose.

A TAPER FROM A LOW-DOSE ANAVAR CYCLE MAY LOOK LIKE:

- * Week 1: 2.5mg p/day
- * Week 2: 5mg p/day
- * Week 3: 5mg p/day
- * Week 4: 2.5mg p/day
- * Week 5-8: Off.

TERESA'S NARRATIVE

My journey with body image and self-acceptance has been challenging.

In 2001, at 114kg, I struggled with depression, overeating, and self-hatred. I began my path to change in 2003, but the next decade was marked by relentless dieting and exercise. As a single mother living in poverty, I developed an eating disorder, prioritizing my children's nutrition over my own while battling body dysmorphia—no matter how little I ate or how much I exercised, I remained trapped in the same self-image.

I competed in my first bodybuilding show in 2013, weighing just 49kg, but my mission to achieve external acceptance led me to use steroids by 2015. My intense training and poor diet resulted in a health crisis, landing me in the hospital due to kidney failure.

Despite achieving success in powerlifting, I faced severe health repercussions, including a diagnosis of an autoimmune condition and depression.

I continued using steroids but eventually stopped post-2018, entering early menopause and recognising the need to heal.

Letting go of substances that I believed gave me strength was frightening; I feared reverting to my former self. I sought therapy to reconcile my inner self with my outward image.

Up to this point I have not given the darker side of anabolic steroids that I experienced, these being:

- * **Weight fluctuations**
- * **Holding fluid**
- * **Hormonal changes**
- * **Increased haemoglobin**
- * **Hair loss and growth**
- * **Vocal changes**
- * **Mood swings**
- * **Acne – which hurt my skin**

The steroids I have used include:

- | | |
|--------------------------------|-------------------------------|
| * Anavar | * Sustanon 250 |
| * Stanozolol | * Testosterone E and A |
| * Equipoise (Boldenone) | * Nandrolone |
| * Trenbolone enanthate | * HGH |
| | * Peptides |

I remain a work in progress, still addressing body dysmorphia and the search for strength. However, I've learned that true power comes from within, not from external validation or substances. This journey has deepened my understanding of strength, leading me to find empowerment in self-acceptance and inner growth.



REAL TALK

Sonya Weith

THE TRUE COST OF STEROID USE: MORE THAN JUST THE DRUGS

When considering steroid use, many people focus only on the cost of the drugs. However, there's a lot more to it. Here's what you need to know:

- * **Additional Costs to Consider:**
- * **Post-cycle therapy (PCT)**
- * **Health supplements**
- * **Sports supplements**
- * **Proper nutrition**
- * **Coaching**
- * **Gym membership**
- * **Medical check-ups (blood work)**

The type of steroids, how you take them (pills or injections), and where you get them can greatly affect the price. A full cycle could cost up to \$2000 for the drugs alone. If you're using steroids for competitions, don't forget about:

- * **Entry fees**
- * **Travel expenses**
- * **Special outfits or equipment for competing**

Coaching is crucial. A good coach who understands steroid use can help you get the best results safely. Expect to pay upwards of between \$1000 to \$3000 for 12 weeks of coaching.

REMEMBER, YOU OFTEN GET WHAT YOU PAY FOR.

Medical care is a must. Seeing a specialist like an endocrinologist will have a cost attached. Regular check-ups with your doctor are also important. Yes, it's expensive, but your health is worth it. Don't skimp on vitamins and supplements. They can help protect your body during and after steroid use. Budget about \$300 to \$800 per cycle for these.



Nutrition is the absolute key to achieving results. All the steroids in the world won't help if you're not eating right. Plan for about \$300 per week on food, which adds up to \$3600 over 12 weeks.

Adding it all up, a properly supported steroid cycle could cost up to \$9000, this is a base estimate only and is dependent on cycle time, chosen PIED's, coaching costs, gym fees, nutrition, supplements, and reason for using steroids if using for sporting (competition) events will also incur further monetary investment. Remember: Cutting corners to save money can be dangerous. Steroids can have lifelong effects on your health, so it's crucial to do things as safely as possible.

If you need help budgeting for a steroid cycle, consider talking to a financial advisor or check out moneysmart.gov.au for budgeting and financial planning tips.

OUR SERVICES

PEER QNECT

Steroid QNECT is a part of Peer QNECT, QuIVAA's peer-led harm reduction service. If you are seeking assistance with your use of AAS/PEDs please call:

1800 175 889

and ask for our steroid peer educator, who can help you.

www.quivaa.org.au

Contributors - Additional Information

If you would like to engage with our contributors for further insights or professional supervision, their expertise spans diverse areas including harm reduction, clinical practice, and community education in this field. They welcome inquiries regarding their services or collaborations. For further details, please reach out directly via the provided contact information or visit their professional platforms.

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