

## ROIDCheck: Wave 2 Report

### About ROIDCheck

ROIDCheck is a project led by researchers at Griffith University in collaboration with Hi-Ground and CheQpoint. The project aims to develop methods to analyse the contents of performance and image enhancing drugs (PIEDs). [Find out more here](#). We thank the community for their continued support of this trial program. Without their assistance this would not have been possible.

The ROIDCheck project will stop collecting samples for 2024 on 18 October 2024. Until then, you can drop samples at CheQpoint (Gold Coast or Brisbane) during opening hours.

### Report overview

This report includes analyses from **58 samples** submitted to CheQpoint from 19 April to 16 August 2024, including those collected in our Wave 2 period (14 June - 16 August), and additional analyses of samples collected in the Wave 1 period (19 April - 7 June 2024).

#### Qualitative analysis (what's in there?)

We analysed the compounds in 46 samples. We found:

- Expected compound in 37 samples (80%)
- Unexpected compounds in 9 samples (20%)

We were unable to analyse 12 samples due to scope, resources and equipment.

#### Quantitative analysis (how much is in there?)

We analysed concentration for 36 samples (with  $\pm 5\%$  error allowance). We found

- Expected concentration in 15 samples (42%)
- Underdosing in 13 samples (36%): there was *lower concentration* than expected
- Overdosing in 4 samples (11%): there was *higher concentration* than expected.

The remaining 4 samples (11%) were unexpected compounds.

We also tested 5 samples of **raw powder compounds**. Four (80%) were within  $-5\%$  purity. However, one sample (20%), Testolone, was underdosed.

## Harm reduction advice for highlighted findings

**Some products were mislabelled, and could result in undesired effects.** For example, we found stanozolol and testosterone in samples expected to be oxandrolone, and we found testosterone cypionate instead of Sustanon. Different compounds mean different concentration and half-life, requiring adjustments to weekly dose calculations. They can also have different effects, even if they are similar in certain ways. For example, stanozolol has higher hepatic strain vs oxandrolone, and testosterone has greater androgenic effects vs oxandrolone<sup>1 2</sup> - even though they are all anabolic-androgenic steroids. Be mindful when using oxandrolone and always get it checked.

**Testosterone sometimes contains a different ester than expected,** such as testosterone cypionate instead of testosterone enanthate. This affects the half-life (e.g. cypionate has a slightly longer half-life than enanthate<sup>3</sup>), so it is important to adjust injection intervals accordingly<sup>4</sup>. Monitor haematocrit levels and blood pressure closely, especially with testosterone cypionate and enanthate, as both can elevate the percentage of red blood cells in the blood<sup>5 6</sup>.

**Oral compounds, particularly those like methandienone or oxymetholone, carry risks of liver damage** (hepatotoxicity)<sup>7 8</sup>. Make sure to regularly monitor your liver health (i.e. through liver function tests) to catch any early signs of liver damage.

**Some products were underdosed (lower concentration than expected) or overdosed (higher concentration than expected).** Avoid simply increasing or decreasing your intake: review your usage plan and recalculate your dosage to align with the actual concentration. A basic calculation would be:

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<sup>1</sup> Orr, R., & Singh, M. F. (2004). The anabolic androgenic steroid oxandrolone in the treatment of wasting and catabolic disorders: review of efficacy and safety. *Drugs*, 64, 725-750.

<sup>2</sup> Kuhn, C. M. (2002). Anabolic steroids. *Recent progress in hormone research*, 57, 411-434.

<sup>3</sup> Turza, A., Pascuta, P., Mare, L., Borodi, G., & Popescu, V. (2023). Structural insights and intermolecular energy for some medium and long-chain testosterone esters. *Molecules*, 28(7), 3097.

<sup>4</sup> Kaufman, J. M. (2004). Evolution of delivery systems for testosterone administration. *Current Sexual Health Reports*, 1(3), 109-114.

<sup>5</sup> Best, J. C., Gonzalez, D., Masterson, T. A., Blachman-Braun, R., Pai, R., & Ramasamy, R. (2021). A cross-sectional comparison of secondary polycythemia in testosterone-deficient men treated with nasal testosterone gel vs. intramuscular testosterone cypionate. *Canadian Urological Association Journal*, 15(2), E118.

<sup>6</sup> Weinbauer, G. F., Jackwerth, B., Yoon, Y. D., Behre, H. M., Yeung, C. H., & Nieschlag, E. (1990). Pharmacokinetics and pharmacodynamics of testosterone enanthate and dihydrotestosterone enanthate in non-human primates. *European Journal of Endocrinology*, 122(4), 432-442.

<sup>7</sup> Nesterin, M. F., Budik, V. M., Narodetskaia, R. V., Solov'eva, G. I., & Stoianova, V. G. (1980). Effect of methandrostenolone on liver morphology and enzymatic activity. *Farmakologija i Toksikologija*, 43(5), 597-601.

<sup>8</sup> Welder, A. A., Robertson, J. W., & Melchert, R. B. (1995). Toxic effects of anabolic-androgenic steroids in primary rat hepatic cell cultures. *Journal of Pharmacological and Toxicological Methods*, 33(4), 187-195.

$$\begin{aligned} & [\text{Expected mg/ml}] \div [\text{Actual mg/ml}] = \text{Adjustment Factor} \\ & \text{Adjustment Factor} \times [\text{Typical dose in ml}] = [\text{Adjusted Dose in ml}] \end{aligned}$$

Always prioritise safety and informed decision-making when adjusting your usage.

## Full results

### Notes on Wave 2 results

#### *Branding disclaimer*

Brand information is based on self-reports or packaging, but its legitimacy cannot be verified due to the possibility of counterfeits. Please consider this when reviewing brand names.

#### *Quantitative analysis*

We've been building a reference standard library, which is developing our capability to test *how much* of a substance is in a sample (concentration or purity). We were only able to do this for one sample in Wave 1, so thank you for bringing in samples that have enabled us to develop these methods!

#### *Carrier oils*

Carrier oils are not reported in the Wave 2 summary, which we did report in Wave 1. Each time we test compounds (the PIEDs themselves) and carrier oils, we are figuring out the best methods to do so. As the project has grown, we have seen increased variety in samples, including carrier oils, which takes more resources to analyse. We have prioritised developing methods to test the *drugs* and their *concentrations* over the oils. The detection of carrier oils will require further dedicated research and personnel.

## Analysed samples (n = 46)

Expected PIEDs	Expected concentration	Expected brand	PIED match?	Detected PIED/s	Concentration match?	Detected concentration
<b>WAVE 1: 19 APRIL 2024 - 7 JUNE 2024</b>						
Trestolone - 7 $\alpha$ -methyl-19-nortestosterone (MENT)	50mg/mL	Apex Anabolics	NO	Trestolone Acetate	N/A (no reference material)	-
Testosterone Propionate	100mg/mL	Platinum	YES	Testosterone Propionate	YES	96mg/mL ( $\pm$ 5% error = 91 - 101)
Nandrolone Phenylpropionate (NPP)	100mg/mL	Platinum	YES	Nandrolone Phenylpropionate	NO: underdosed	87mg/mL ( $\pm$ 5% error = 83 - 91)
Stanozolol (Winstrol)	10mg	Sparta Brand - Capsule	YES	Stanozolol	NO: underdosed	3.3mg
Testosterone Cypionate	253.65mg/mL	Chief Lab	YES	Testosterone Cypionate	NO: overdosed	434mg/mL ( $\pm$ 5% error = 412 - 456)
Trenbolone Enanthate	200mg/mL	OZPharm Labs	YES	Trenbolone Enanthate	YES	199mg/mL ( $\pm$ 5% error = 189 - 209)
Oxandrolone (Anavar)	10mg	Swiss Pharm - Capsule	NO	Stanozolol	NO: underdosed	3.3mg
Methenolone Enanthate (Primobolan)	200mg/mL	Not Provided	YES	Methenolone Enanthate	N/A (no reference material)	-
Oxandrolone (Anavar)	10mg	Not Provided	NO	Oxandrolone, Testosterone	NO: underdosed	7mg Oxandrolone, 1.6mg Testosterone
Mesterolone (Proviron)	25mg	Sealed Blister Viropace - Tablet	YES	Mesterolone	NO: underdosed	22mg
Testosterone Enanthate	400mg/mL	Eagle Laboratories	YES	Testosterone Enanthate	YES	411 ( $\pm$ 5% error = 390 - 432)
Nandrolone Decanoate (Deca)	200mg/mL	Eagle Laboratories	YES	Nandrolone Decanoate	N/A (no reference material)	-
Drostanolone Enanthate (Masteron)	200mg/mL	Eagle Laboratories	YES	Drostanolone Enanthate	NO: overdosed	215mg/mL ( $\pm$ 5% error = 204 - 226)
Testosterone Enanthate	250mg/mL	Eagle Laboratories	YES	Testosterone Enanthate	YES	238mg/mL ( $\pm$ 5% error = 226-250)
Nandrolone Phenylpropionate (NPP)	100mg/mL	HYBRID	YES	Nandrolone Phenylpropionate	NO: underdosed	93mg/mL ( $\pm$ 5% error = 88-98)
Nandrolone Phenylpropionate (NPP)	100mg/mL	HYBRID	YES	Nandrolone Phenylpropionate	NO: overdosed	116mg/mL ( $\pm$ 5% error = 110-122)

Expected PIEDs	Expected concentration	Expected brand	PIED match?	Detected PIED/s	Concentration match?	Detected concentration
Drostanolone Enanthate (Masteron)	200mg/mL	HYBRID	YES	Drostanolone Enanthate	YES	201mg/mL (± 5% error = 191-211)
Trenbolone Enanthate	200mg/mL	ShelbyPharma Corp	YES	Trenbolone Enanthate	YES	204mg/mL (± 5% error = 194 - 214)
Testosterone Enanthate	250mg/mL	ShelbyPharma Corp	YES	Testosterone Enanthate	NO: underdosed	229mg/mL (± 5% error = 216-240)
Drostanolone Enanthate (Masteron)	200mg/mL	ShelbyPharma Corp	YES	Drostanolone Enanthate	YES	203mg/mL (± 5% error = 193 - 213)
Testosterone Enanthate	250mg/mL	Australian Genetic Pharmaceuticals	NO	Testosterone Cypionate	YES	253mg/mL (± 5% error = 240 - 267)
Trenbolone Enanthate	200mg/mL	Platinum	YES	Trenbolone Enanthate	NO: underdosed	167mg/mL (± 5% error = 159 - 175)
Trenbolone Enanthate	200mg/mL	Sparta	YES	Trenbolone Enanthate	YES	200mg/mL (± 5% error = 190-210)
<b>WAVE 2: 14 JUNE 2024 - 16 AUGUST 2024</b>						
Sustanon 250mg (Testosterone propionate 30mg/mL, Testosterone Phenylpropionate 60mg/mL, Testosterone Isocaproate 60mg/mL, Testosterone Decanoate 100mg/mL)		Molecule	NO	Testosterone Enanthate	NO: different PIED	62mg/mL (± 5% error = 59 - 65)
NOTE: Sample labelled with expiry of 2016						
Trenbolone Enanthate	200mg/mL	Russian brand? Anabolic Research Lab (ARL)	YES	Trenbolone Enanthate	NO: underdosed	34mg/mL (± 5% error = 32-36)
Tamoxifen (Nolvadex)	20mg	Alphapharm	YES	Tamoxifen	YES	20mg
Exemestane (Aromasin)	25mg	Platinum Anabolics	YES	Exemestane	NO: underdosed	15.5mg
Methandienone (Dianabol)	Not Provided	Keifei Pharma, pink pill	YES	Methandienone	N/A	8.6mg
Methandienone (Dianabol)	10mg	Keifei Pharma	NO	Oxymetholone, Methandienone	NO: different PIED	<0.1mg Methandienone
NOTE: Unable to quantify oxymetholone (no reference material). Analysis indicates oxymetholone is the major PIED in this sample. Methandienone is likely contamination.						
Oxymetholone (Anadrol)	50mg	Not Provided	NO	Methandienone, Oxymetholone	NO: different PIED	2.5mg Methandienone
NOTE: Unable to quantify oxymetholone (no reference material)						
Trenbolone Acetate	100mg/mL	Balkan Pharmaceuticals	YES	Trenbolone Acetate	NO: underdosed	45mg/mL (± 5% error = 43 - 47)

Expected PIEDs	Expected concentration	Expected brand	PIED match?	Detected PIED/s	Concentration match?	Detected concentration
Nandrolone Decanoate (Deca)	300mg/mL	Shelby Pharma Corp	YES	Nandrolone Decanoate	N/A (no reference material)	-
Sustanon 300mg/ml (TestPP 70mg/mL, Test Isoc 70mg/mL, Test Prop 60mg/mL, Test Deca 100mg/mL)		King 300 Labs	NO	Testosterone Cypionate	NO: different PIED	165mg/mL (± 5% error = 157 - 173)
Testosterone Enanthate	250mg/mL	Not Provided	YES	Testosterone Enanthate	NO: underdosed	160mg/mL (± 5% error = 152 - 168)
Testosterone Enanthate	250mg/mL	Green Dispensary Pharmacy	YES	Testosterone Enanthate	YES	249mg/mL (± 5% error = 237 - 261)
Anastrozole (Arimidex)	2mg	Not Provided	YES	Anastrozole	N/A (no reference material)	-
MK-677 (Ibutamoren)	Not Provided	Not Provided	YES	MK677	N/A	2mg
MK2866 (Ostarine) and MK677 (Ibutamoren)	Not Provided	Not Provided	YES	MK2866, MK677	N/A	5.1mg MK2688 and 0.1mg MK677
Methenolone Enanthate (Primobolan)	100mg/mL	Chief Labs	YES	Methenolone Enanthate	N/A (no reference material)	-
Drostanolone Enanthate (Masteron)	200mg/mL	Polar	YES	Drostanolone Enanthate	NO: overdosed	257mg/mL (± 5% error = 244 - 270)
Methenolone Enanthate (Primobolan)	200mg/mL	Polar	YES	Methenolone Enanthate	N/A (no reference material)	-
Tamoxifen (Nolvadex) [Raw powder]	Pure	Not Provided	YES	Tamoxifen	YES	99% purity
Oxandrolone (Anavar) [Raw powder]	Pure	Not Provided	YES	Oxandrolone	YES	97% purity
Exemestane (Aromasin) [Raw powder]	Pure	Not Provided	YES	Exemestane	YES	95% purity
Unknown peptide [Raw powder]	Pure	Not Provided	YES	LGD4033	YES	99% purity
Unknown peptide [Raw powder]	Pure	Not Provided	YES	RAD140	NO: underdosed	77% purity

## Unable to analyse (n = 12)

We did not complete analyses for 12 compounds due to limitations of current resources and equipment.

Expected PIEDs	Expected concentration	Expected brand	Notes
<b>WAVE 1: 19 APRIL 2024 - 7 JUNE 2024</b>			
Oxymetholone (Anadrol)	20mg	Eagle1 - Capsule	No reference material
HGH	Not Provided	Genesis	Outside Scope
HGH	Not Provided	Genesis	Outside Scope
HGH	Not Provided	Genesis	Outside Scope
HGH	Not Provided	Genesis	Outside Scope
HGH	Not Provided	Genesis	Outside Scope
HGH	Not Provided	Genesis	Outside Scope
HGH	Not Provided	Genesis	Outside Scope
HGH	Not Provided	Not Provided	Outside Scope
<b>WAVE 2: 14 JUNE 2024 - 16 AUGUST 2024</b>			
RADI40 (Testolone)	Not Provided	Not Provided	Confirmatory analysis not completed due to PEG [Polyethylene glycol] carrier, future investigation required.
Clenbuterol	125µg/mL	Azelique	Confirmatory analysis not completed due to PEG [Polyethylene glycol] carrier, future investigation required.
Unknown [peptide?]	Not Provided	Not Provided	Outside scope