EQ / BOLDENONE

THE SCIENCE, HISTORY AND BODYBUILDING REALITY OF EQUIPOISE



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INTRODUCTION

THE SCIENCE, HISTORY AND BODYBUILDING REALITY OF EQUIPOISE

Equipoise, usually shortened to EQ, is one of the oldest anabolic steroids still regularly discussed in bodybuilding, yet it is also one of the most misunderstood.

Ask ten bodybuilders about EQ and you will probably hear ten different descriptions. One person will tell you it produces slow, high quality muscle and increases appetite. Another will tell you it destroys their appetite and gives them anxiety. Some believe it is one of the worst compounds available for increasing haematocrit, while others use it without seeing an unusual change. It is frequently said to aromatise at approximately half the rate of testosterone, yet finding convincing evidence for that precise number is considerably harder than repeating it.

There is also a historical misconception that boldenone was simply invented as a horse steroid. The story is more complicated. Boldenone undecylenate was investigated in humans and appeared under the pharmaceutical name Parenabol before Equipoise became overwhelmingly associated with veterinary medicine.

This article looks at the history rather than the mythology, what boldenone actually is, what Equipoise means, why the undecylenate ester matters, what we know about its effects on muscle, estrogen, red blood cells, kidneys and cardiovascular markers, and where bodybuilding experience goes beyond what has actually been demonstrated in controlled research.

CHAPTER 1

WHAT IS BOLDENONE?

Boldenone is an anabolic androgenic steroid closely related structurally to testosterone. It is sometimes called delta 1 testosterone because the principal structural difference is an additional double bond between carbon 1 and carbon 2 of the steroid A ring.

That apparently small alteration changes the behaviour of the molecule.

Like testosterone and other anabolic androgenic steroids, boldenone exerts its anabolic and androgenic effects primarily through activation of the androgen receptor. This signalling influences protein synthesis and the maintenance and development of androgen responsive tissues.

Boldenone should also be distinguished from Equipoise. Boldenone is the parent steroid. Equipoise is a trade name associated with boldenone undecylenate, in which the undecylenate ester is attached to the 17 beta hydroxyl group of boldenone.

The ester changes how long the drug remains available after injection. It does not turn boldenone into a fundamentally different anabolic steroid.

This distinction becomes important because bodybuilding conversations frequently use EQ and boldenone as interchangeable terms. In practice people usually mean boldenone undecylenate when they say EQ, but chemically the terms are not identical.

CHAPTER 2

THE HISTORY OF BOLDENONE

Boldenone emerged during the pharmaceutical expansion of anabolic steroids that followed the development of testosterone.

Researchers during the middle of the twentieth century were modifying the testosterone molecule in an attempt to alter its anabolic, androgenic and metabolic characteristics. Boldenone was one of many compounds to emerge from this period.

The molecule is essentially testosterone with the additional carbon 1 to carbon 2 double bond. That structural relationship explains why boldenone retains both anabolic and androgenic activity while behaving differently from testosterone in several metabolic pathways.

Historical pharmaceutical records identify boldenone and boldenone undecylenate under several names, including Parenabol, Vebonol and later Equipoise. The United States National Library of Medicine currently lists both Equipoise and Parenabol among recognised terms associated with boldenone undecylenate.

The development of anabolic steroids during this period was not exclusively about sport or bodybuilding. As Dotson and Brown described in their 2007 review of anabolic steroid development, these compounds were investigated for numerous medical applications before their non medical use became widespread.

CHAPTER 3

WAS BOLDENONE EVER A HUMAN MEDICINE?

This is where one of the most common stories about EQ starts to fall apart.

Boldenone is regularly described online as a steroid that was developed exclusively for horses and never had a place in human medicine. Historical medical literature demonstrates otherwise.

Boldenone undecylenate was investigated in humans under the name Parenabol.

Melick and Baird (1970), working through the University of Melbourne and Royal Melbourne Hospital, published a study in the Medical Journal of Australia examining Parenabol in 20 patients with osteoporosis. The chemical description given for Parenabol corresponds to boldenone undecylenate.

Patients received intramuscular Parenabol over periods ranging from two to six months. The researchers reported subjective improvement in many patients, although the treatment did not reduce urinary calcium excretion and osteoporosis progressed in one patient.

Interestingly for the later bodybuilding discussion around red blood cells, the group receiving the larger amount of Parenabol experienced an increase in haemoglobin despite having normal haemoglobin before treatment.

Another human publication by Stopczyk (1971) evaluated Parenabol as a long acting anabolic drug in paediatric patients with growth disorders.

So the statement that boldenone undecylenate was never investigated or used in humans is incorrect.

What is true is that it did not become an established modern human medicine. Its lasting pharmaceutical identity ultimately became veterinary rather than human.

CHAPTER 4

FROM BOLDENONE TO EQUIPOISE

The compound most bodybuilders know as EQ is boldenone undecylenate.

The word undecylenate refers to the ester attached to the boldenone molecule. It is a long carbon chain ester that substantially slows the release of boldenone from the intramuscular depot.

This is why comparing EQ directly with unesterified boldenone can be misleading. The active steroid is still boldenone once the ester has been removed, but the undecylenate ester profoundly affects how the drug enters circulation over time.

Equipoise eventually became established as a veterinary preparation. FDA veterinary records identify Equipoise as boldenone undecylenate injection intended for intramuscular use in horses.

The official veterinary preparation contained 50 mg of boldenone undecylenate per millilitre and described the drug as a long acting injectable anabolic agent.

The name Equipoise therefore belongs primarily to the veterinary history of boldenone undecylenate, while Parenabol represents an important part of its earlier human pharmaceutical history.

CHAPTER 5

BOLDENONE UNDECYLENATE AND VETERINARY MEDICINE

Equipoise became particularly associated with horses.

Veterinary product information described boldenone undecylenate as an aid in treating debilitated horses when improvements in weight, hair coat or general physical condition were desired. Appetite and correction of weight loss were also recognised in veterinary use.

That point probably contributed significantly to EQ's later bodybuilding reputation as an appetite stimulating anabolic.

However, an effect recognised in debilitated horses cannot simply be transferred to healthy bodybuilders as though the response must be identical.

Veterinary use establishes that appetite and weight improvement were recognised effects in the intended animal population. It does not prove that every human using boldenone will experience increased hunger.

A 2023 review by Bailly Chouriberry and colleagues also noted that anabolic steroids have been used extensively in equine practice for decades, while emphasising that surprisingly little controlled pharmacodynamic research exists in horses despite their widespread historical use.

CHAPTER 6

HOW EQ ENTERED BODYBUILDING

Once anabolic steroids became established in strength sports, athletes did not restrict themselves to compounds approved for human medicine.

Veterinary preparations offered another source of anabolic drugs, and Equipoise gradually developed a bodybuilding identity separate from its veterinary use.

Its characteristics made it particularly attractive to bodybuilders looking for a longer acting injectable anabolic that did not produce the same reputation for rapid fluid associated weight gain as some testosterone based approaches.

Over subsequent decades EQ developed a reputation for gradual lean mass accumulation, increased vascularity, increased appetite and improved training capacity.

The problem is that bodybuilding history is often reconstructed from anecdotes decades later. It is easy to find claims about exactly who used EQ, when they used it and what they combined it with, but much harder to verify those claims.

The reliable part of the story is simpler. Boldenone undecylenate existed as a legitimate pharmaceutical and veterinary anabolic steroid, became available to athletes, and subsequently became a recognised bodybuilding drug.

CHAPTER 7

WHAT BOLDENONE ACTUALLY DOES

Boldenone is an androgen receptor agonist.

Its anabolic effects therefore arise primarily through androgen receptor signalling, influencing processes involved in muscle protein synthesis, nitrogen retention and the maintenance of lean tissue.

This does not mean boldenone possesses a unique muscle building pathway. It belongs to the same broad androgen signalling system as testosterone and other anabolic androgenic steroids.

Boldenone also has a particularly important relationship with erythropoiesis, the process through which red blood cells are produced.

This characteristic has become so closely associated with EQ that some bodybuilders speak as though increasing red blood cells is unique to boldenone. It is not.

Testosterone and other androgens can also stimulate erythropoiesis. The relevant question is therefore not whether EQ can contribute to increases in haemoglobin and haematocrit. It can. The more difficult question is whether boldenone produces a uniquely large effect compared with equivalent androgen exposure from other compounds.

The available human evidence is not strong enough to prove that EQ uniquely raises haematocrit more than comparable androgen exposure. However, anecdotal evidence across many bodybuilders using higher dose EQ for long periods consistently includes elevated haemoglobin and haematocrit, so the recurring real world signal should not be ignored simply because controlled comparative data are lacking.

CHAPTER 8

WHY EQ HAS A REPUTATION FOR SLOW, STEADY GAINS

EQ is rarely described as a dramatic mass gaining steroid.

Bodybuilders instead commonly describe gradual improvements in lean tissue, vascularity and training performance over extended periods.

Part of this reputation probably reflects pharmacokinetics rather than some unique type of muscle tissue.

Boldenone undecylenate is a long acting ester preparation. Blood concentrations therefore accumulate and decline much more gradually than with short acting anabolic preparations.

This can make the subjective experience of EQ very different from rapidly acting drugs.

The second factor is fluid.

A rapid increase in bodyweight during an anabolic cycle does not necessarily represent an equivalent increase in contractile muscle tissue. Changes in glycogen, intracellular water, extracellular fluid, food intake and gastrointestinal contents all influence scale weight.

EQ's bodybuilding reputation for slow gains should therefore not automatically be interpreted as meaning that it somehow creates a different quality of muscle. It more reasonably describes the way changes are commonly experienced over time.

CHAPTER 9

DOES EQ REALLY INCREASE APPETITE?

The appetite effect is one of the oldest claims surrounding Equipoise.

Interestingly, unlike many bodybuilding anecdotes, this one has at least some historical basis outside bodybuilding.

Veterinary Equipoise information described appetite improvement and correction of weight loss among its intended uses in debilitated horses.

That does not establish the same effect in humans.

Bodybuilding reports are surprisingly inconsistent. Some people describe a substantial increase in hunger after EQ accumulates, while others report no difference and a smaller group describe reduced appetite.

There is currently no good controlled human trial demonstrating that boldenone reliably stimulates appetite in healthy resistance trained men.

The most accurate position is therefore that increased appetite is a recognised veterinary effect and a common bodybuilding anecdote, but it should not be treated as a guaranteed pharmacological effect in humans.

CHAPTER 10

EQ AND ESTROGEN: HOW MUCH DOES BOLDENONE REALLY AROMATISE?

One of the most repeated statements about EQ is that boldenone aromatises at approximately half the rate of testosterone.

That number has become bodybuilding gospel.

The problem is that the evidence supporting the precise percentage is much weaker than the confidence with which it is repeated.

Boldenone can participate in aromatisation related steroid pathways. Describing EQ as completely non aromatising is therefore not accurate.

However, there is no convincing controlled human evidence demonstrating that injected boldenone undecylenate produces estradiol at exactly 50 percent, 58 percent or any other precise percentage of testosterone's rate.

This is an important distinction.

A commonly repeated number does not become established pharmacology simply because it has appeared in steroid books, websites and forums for decades.

Milewich et al. (1981) demonstrated that 1,4 androstadiene 3,17 dione, commonly called boldione or ADD, can participate in estrogen formation in human placental microsomes. Boldione is closely connected metabolically with boldenone, but that experiment should not be converted into a precise in vivo aromatisation percentage for injected EQ in male bodybuilders.

The bodybuilding experience is also inconsistent.

Some EQ users experience estrogenic symptoms and measurable estradiol. Others report unexpectedly low E2 despite using testosterone alongside boldenone.

This is where experienced coaching observation deserves to be acknowledged, while being labelled correctly.

Multiple coaches who work with large numbers of enhanced bodybuilders have described a recurring pattern in bloodwork where higher EQ exposure appears less predictable from an estrogen perspective than comparable testosterone and Primobolan combinations. A commonly discussed point is that this becomes more noticeable when EQ moves into higher bodybuilding ranges, particularly around or above 600 mg per week alongside testosterone.

That does not make 600 mg a scientifically established threshold. There is no controlled trial comparing 600 mg of EQ plus testosterone against the same amount of Primobolan plus testosterone in matched bodybuilders.

But repeated field observations still matter when we are honest about what they are.

Coaches and users report some bodybuilders seeing E2 fall far more than expected as EQ exposure rises, including cases where testosterone remains substantial. Other users maintain comfortable estradiol levels, while another group still experiences estrogenic problems.

The correct conclusion is therefore not that EQ is an aromatase inhibitor.

It is that boldenone appears to create a less predictable estrogen environment in some individuals, particularly at higher bodybuilding exposures, and the mechanism is not adequately established in human research.

As with Primo, the observation and the mechanism should be kept separate.

Boldenone can interact with estrogen producing pathways, but the commonly quoted exact aromatisation rate is not well established in modern controlled human research, and individual bloodwork matters more than a fixed testosterone to EQ ratio.

CHAPTER 11

BOLDENONE, ESTRONE AND THE E2 BLOOD TEST PROBLEM

The estrogen discussion becomes even more complicated when boldenone metabolites are considered.

Schänzer and Donike (1992) investigated boldenone metabolism in humans and identified numerous urinary metabolites after administration of boldenone. Their work demonstrated that human metabolism of boldenone is considerably more complex than simply converting some fixed percentage of the drug into estradiol.

Boldione, or 1,4 androstadiene 3,17 dione, is particularly interesting because it can be metabolically related to boldenone and has itself been shown to participate in estrogen formation in experimental systems.

This has produced numerous bodybuilding theories about estrone, estradiol and why some people obtain unusual E2 results while using EQ.

At present, I would be cautious about presenting any one of those theories as established fact.

There is also a separate issue concerning estradiol testing. Standard immunoassays are more vulnerable to steroid cross reactivity than highly specific liquid chromatography tandem mass spectrometry methods. That is a general limitation of steroid hormone testing and becomes particularly relevant when unusual synthetic steroids and metabolites are present.

I therefore would not build an EQ protocol around one unexplained estradiol result without considering the assay method and the rest of the clinical picture.

The science supports saying that boldenone has complex human steroid metabolism. It does not currently justify the confident internet claim that EQ always creates a particular estrone to estradiol pattern or that every unusual E2 result is simply a laboratory error.

CHAPTER 12

EQ AND TESTOSTERONE: UNDERSTANDING THE RELATIONSHIP

EQ is commonly combined with testosterone in bodybuilding.

The logic is straightforward. Exogenous boldenone suppresses endogenous reproductive hormone production, while testosterone supplies the androgen that the body normally uses as a precursor for several important physiological pathways.

The mistake is assuming that there must therefore be one perfect testosterone to EQ ratio.

There is no good clinical evidence establishing a universal bodybuilding ratio.

Individual aromatase activity, body fat, SHBG, genetics, other drugs and total androgen exposure can all influence the hormonal environment.

The uncertainty surrounding EQ and estrogen makes copying somebody else's ratio particularly questionable.

If two people use the same testosterone and boldenone relationship but produce completely different estradiol, haemoglobin, haematocrit and blood pressure responses, the ratio itself tells us very little about which individual is managing the exposure well.

Bloodwork is more informative than a formula.

CHAPTER 13

THE BIG ONE: HAEMOGLOBIN, HAEMATOCRIT AND RED BLOOD CELLS

If one health issue defines the modern bodybuilding discussion around EQ, it is haematocrit.

Boldenone has a long standing reputation for increasing red blood cell production, haemoglobin and haematocrit.

There is genuine evidence behind the association.

The human Parenabol study from 1970 already provides an example. Melick and Baird observed an increase in haemoglobin among patients receiving the larger amount of boldenone undecylenate despite normal haemoglobin levels before treatment.

But this is where the discussion needs considerably more context.

EQ IS NOT THE ONLY ANDROGEN THAT RAISES HAEMATOCRIT

Androgens as a class can stimulate erythropoiesis.

The HAARLEM prospective research is particularly useful because Smit et al. (2022) followed 100 male AAS users through real world androgen cycles. Mean haematocrit increased during androgen exposure.

That study was not an EQ trial. Participants used many different anabolic combinations.

Its importance is precisely that it demonstrates why seeing haematocrit rise during a cycle does not automatically prove that boldenone was solely responsible.

Testosterone itself is well established as a cause of erythrocytosis.

WHAT COACHES REPORT IN THE REAL WORLD

There is also a recurring observation from experienced bodybuilding coaches that deserves to be included rather than dismissed simply because it has not yet been tested in a controlled trial.

Coaches reviewing large numbers of enhanced athlete blood panels frequently report seeing haemoglobin and haematocrit rise more aggressively in some athletes using higher dose EQ with testosterone than in athletes using similar total milligram exposure from testosterone with Primobolan.

A commonly mentioned point is that the pattern becomes more noticeable when EQ is around 600 mg per week or higher.

Again, 600 mg should not be treated as a clinical cut off. We do not have a trial randomly assigning trained bodybuilders to 600 mg EQ plus testosterone versus 600 mg Primo plus testosterone and comparing haematocrit responses.

But repeated bloodwork patterns seen by experienced coaches are still useful evidence from practice, provided they are not presented as controlled science.

This is one of the reasons EQ has developed a stronger reputation for HCT management than Primo, even though all supraphysiological androgen exposure can contribute to erythrocytosis.

SLEEP APNOEA MATTERS

Obstructive sleep apnoea is another factor that should not be ignored when a bodybuilder develops elevated haemoglobin or haematocrit.

Rha et al. (2022) found that haematocrit was significantly higher in people with OSA, particularly severe OSA. The average increase was relatively modest and OSA alone usually did not produce major clinical erythrocytosis, but the relationship with haematocrit was real.

Martelli et al. (2022) similarly reported that secondary polycythaemia was more common in severe OSA and that CPAP treatment reduced both haemoglobin and haematocrit.

Nguyen and Holty (2017) found that haematocrit correlated particularly with oxygenation, with lower awake and nocturnal oxygen saturation associated with higher haematocrit.

The interaction with testosterone is particularly relevant to bodybuilding. Lundy, Parekh and Shoskes (2020) found that OSA was significantly associated with polycythaemia in men receiving testosterone therapy.

So if someone is using testosterone and EQ, has elevated HCT and also has untreated sleep apnoea or significant nocturnal hypoxia, automatically blaming everything on EQ misses part of the picture.

HYDRATION MATTERS AS WELL

Haematocrit is the proportion of blood volume occupied by red blood cells.

That means the measurement depends not only on how many red cells exist but also on plasma volume.

Dehydration reduces plasma volume and can therefore increase measured haematocrit through haemoconcentration without representing an equivalent increase in total red blood cell mass.

Jimenez et al. (1999) demonstrated substantial changes in plasma volume with alterations in hydration status.

This is why comparing a properly hydrated baseline blood test with a later sample taken after heavy sweating, fasting, cardio, sauna use or inadequate fluid intake can exaggerate the apparent change.

That does not mean high HCT should simply be dismissed as dehydration. It means hydration status should be reasonably consistent when comparing measurements.

CARDIO, BODYWEIGHT AND DIET MATTER TOO

Regular cardiovascular training, maintaining reasonable bodyweight, adequate hydration and a disciplined diet are not substitutes for monitoring bloodwork, but they form part of the overall cardiovascular environment in which EQ is being used.

A bodybuilder carrying excessive bodyweight, performing little cardiovascular exercise, sleeping poorly, using stimulants, eating a poor diet and allowing blood pressure to remain elevated is not in the same physiological situation as someone controlling those variables carefully.

That does not make a higher EQ dose safe. It explains why individual response can differ substantially even when two people report using similar amounts.

Smoking, altitude, chronic hypoxia and pulmonary disease can also contribute to secondary erythrocytosis.

The practical conclusion is therefore more accurate than simply saying EQ raises haematocrit.

Boldenone can contribute to increased haemoglobin and haematocrit, and experienced coaches often report a stronger recurring HCT signal at higher EQ exposure than with comparable Primo based combinations. But testosterone and other androgen exposure, sleep apnoea and nocturnal hypoxia, hydration and plasma volume, cardiovascular conditioning, smoking, altitude and individual physiology all influence the final number.

CHAPTER 14

BLOOD PRESSURE AND CARDIOVASCULAR HEALTH

Cardiovascular health is another area where the effect of one drug needs to be separated from the effect of an entire bodybuilding cycle.

Smit et al. (2022) prospectively observed increases in systolic and diastolic blood pressure during AAS exposure. LDL cholesterol and ApoB increased while HDL cholesterol and ApoA decreased.

These are meaningful cardiovascular changes.

But once again, this was not a controlled boldenone trial. The men were using different combinations of anabolic steroids.

Smit et al. (2020) had previously shown just how complicated this population is. In the HAARLEM cohort, participants used widely varying steroid combinations and other performance enhancing drugs, while chemical analysis found that only 47 percent of submitted illicit AAS samples contained exactly what their labels claimed.

That makes assigning every cardiovascular change to one compound extremely difficult.

With EQ specifically, haematocrit deserves attention because increasing the proportion of red cells changes blood rheology. But blood pressure is simultaneously influenced by body weight, sodium intake, kidney function, sleep apnoea, stimulants, cardiovascular conditioning, genetics, hydration and the rest of the drug protocol.

This is also where real world bodybuilding practice needs to be described accurately.

Some enhanced bodybuilders and coaches place particular emphasis on regular cardio, maintaining adequate hydration, controlling bodyweight and keeping diet strict when using EQ, especially when exposure is high. These measures are not antidotes to boldenone, but they address modifiable variables that also affect cardiovascular strain.

Some users are also prescribed or use blood pressure medications such as telmisartan, while tadalafil is sometimes used because of its vasodilatory effects and its potential influence on blood pressure and endothelial function.

These drugs should not be described as mandatory EQ ancillaries. They are medications with their own indications, contraindications and side effects, and the fact that bodybuilders use them does not establish that everybody running EQ should automatically do the same.

The more defensible way of framing it is that when genuine hypertension exists, it needs to be addressed rather than ignored. In some people that may involve clinically appropriate antihypertensive treatment in addition to managing bodyweight, cardio, sleep apnoea, hydration, sodium intake, stimulant exposure and diet.

Individual response remains the deciding factor. One bodybuilder may tolerate a relatively high EQ exposure with little movement in HCT, E2 or blood pressure, while another can see significant changes at substantially lower exposure.

The sensible approach is therefore not to declare EQ cardiovascularly harmless or uniquely toxic. It is to monitor the markers that actually change and deal with the whole cardiovascular environment rather than relying on one ancillary drug to compensate for everything else.

CHAPTER 15

KIDNEY HEALTH AND THE BOLDENONE DEBATE

Boldenone has developed a particularly negative reputation around kidney health.

Most of the evidence used to support this claim comes from animal experiments or human case reports involving multiple drugs.

Animal studies have reported structural and biochemical kidney abnormalities following boldenone exposure. These findings establish biological plausibility but cannot tell us the magnitude of risk in a healthy male bodybuilder using a completely different exposure.

Human evidence is much weaker.

Winnett, Cranfield and Almond (2011) reported a particularly interesting case involving a 37 year old male boldenone user who was referred for apparently impaired kidney function because serum creatinine was elevated and calculated eGFR was low.

Further investigation demonstrated why creatinine based kidney assessment can be misleading in muscular steroid users. The paper was titled Apparent renal disease due to elevated creatinine levels associated with the use of boldenone, emphasising the problem of interpreting creatinine without context.

A systematic review by Davani Davari et al. (2019) examined renal effects associated with anabolic steroids and growth hormone. The authors found evidence ranging from reversible biochemical abnormalities to genuine renal injury, but much of the human literature consisted of case reports involving multiple anabolic steroids, supplements and other exposures.

For example, one reported bodybuilder with acute kidney injury had used oxandrolone, boldenone undecylenate, stanozolol and trenbolone in the setting of severe cholestatic jaundice. That case cannot reasonably establish that boldenone alone caused the kidney injury.

At the same time, the bodybuilding history deserves more attention than a simple statement that human evidence is weak. Numerous competitive bodybuilders from the 1990s and 2000s later developed significant kidney problems during an era when boldenone was a common choice for long gaining phases and was often used for extended periods alongside substantial testosterone and other drugs. That historical pattern has contributed heavily to EQ's kidney reputation. It cannot prove that boldenone itself caused those renal problems because the athletes were rarely using EQ in isolation and other major variables included very high bodyweight, hypertension, dehydration, diuretics, stimulants, oral steroids, growth hormone, insulin and years of cumulative PED exposure. Even so, when the same concern repeatedly appears across generations of bodybuilders, alongside coaches reporting less favourable renal markers in some higher dose EQ users, it deserves to be acknowledged as a recurring bodybuilding signal rather than dismissed because a

clean controlled trial does not exist.

There are several reasons these blood panels are difficult to interpret. High muscle mass can increase creatinine generation. Hard training can affect creatinine and other laboratory values. Dehydration can reduce plasma volume and make renal markers look worse. High blood pressure, sleep apnoea, stimulant use and other drugs can also contribute to genuine renal stress.

This is also why cardiovascular management matters when discussing kidneys. Persistent hypertension is a renal risk in its own right. Regular cardiovascular training, adequate hydration, controlled bodyweight and a disciplined diet all matter, while clinically appropriate blood pressure treatment may be necessary when hypertension exists.

Some bodybuilders use telmisartan because it is an angiotensin receptor blocker prescribed clinically for hypertension, and some use tadalafil as part of a broader blood pressure or vascular strategy. Again, those practices should be described as real world bodybuilding behaviour rather than automatic recommendations for anyone using EQ.

The evidence therefore supports monitoring kidney health during AAS exposure. It does not currently establish that EQ possesses a uniquely destructive direct effect on human kidneys compared with every other anabolic steroid.

The most sensible position is to take changes seriously, repeat questionable results under consistent hydration and training conditions where appropriate, consider the limitations of creatinine based eGFR in muscular individuals, and assess blood pressure and the wider cardiovascular picture rather than attributing every change to one compound by default.

CHAPTER 16

ANXIETY, MOOD AND THE EQ ANXIETY PHENOMENON

Among experienced bodybuilders, EQ anxiety is a remarkably persistent phenomenon.

Some users describe anxiety, restlessness, insomnia, racing thoughts or a general feeling of being mentally uncomfortable after boldenone accumulates.

Others report exactly the opposite and feel completely normal.

This is an excellent example of where bodybuilding experience is interesting but the scientific evidence remains incomplete.

There are no good controlled human trials demonstrating that boldenone specifically causes an anxiety syndrome in bodybuilders.

The HAARLEM study did observe psychological and behavioural effects during general AAS exposure. Smit et al. (2021) reported agitation among users during their cycles, but participants were using numerous different anabolic combinations, so this cannot be converted into evidence for an EQ specific mechanism.

Bodybuilding forums nevertheless contain reports of EQ related anxiety going back many years, including users who say the effect recurs when they use boldenone and disappears when they stop.

That pattern is worth acknowledging without inventing a mechanism.

Claims involving GABA, estrogen or specific neurotransmitter changes are frequently offered as explanations, but at present the evidence is not strong enough to present any of them as established human boldenone pharmacology.

The accurate conclusion is simply that anxiety is a repeatedly reported bodybuilding experience with EQ, appears highly individual, and currently lacks a well demonstrated human mechanism.

CHAPTER 17

OTHER SIDE EFFECTS AND HEALTH CONSIDERATIONS

Boldenone remains an anabolic androgenic steroid and therefore retains the broader physiological consequences of supraphysiological androgen exposure.

Endogenous testosterone production and gonadotropins can be suppressed.

Fertility can be affected during prolonged exogenous androgen exposure.

Androgenic effects such as acne, increased body hair and accelerated androgenetic hair loss can occur in genetically susceptible individuals.

Lipids may deteriorate as part of overall AAS exposure, although assigning a precise lipid effect specifically to boldenone is difficult because most bodybuilders do not use it in isolation.

The same principle applies to liver enzymes. Injectable boldenone undecylenate is not a conventional 17 alpha alkylated oral anabolic steroid, so it should not automatically be placed in the same hepatotoxic category as drugs such as stanozolol or oxymetholone.

Nevertheless, AST and ALT can change for numerous reasons during bodybuilding, including resistance training, other drugs, alcohol, supplements and actual liver injury. GGT, bilirubin, ALP and the broader clinical picture therefore matter when interpreting liver bloodwork.

The recurring theme is context.

A drug can contribute to risk without being responsible for every abnormal marker observed while it happens to be present in a multi compound cycle.

CHAPTER 18

WHY EQ TAKES SO LONG TO BUILD UP AND CLEAR

One of the defining features of Equipoise is the undecylenate ester.

The long ester creates a prolonged intramuscular depot from which boldenone is gradually released.

Soma et al. (2007) studied boldenone pharmacokinetics in horses and reported a median elimination half life of approximately 123 hours following intramuscular administration in their experimental conditions.

That is useful pharmacokinetic evidence, but it is a horse study, not a controlled human pharmacokinetic study, so that number should not simply be declared the exact half life of EQ in a bodybuilder.

Other equine research has detected boldenone in serum for weeks and urinary markers for considerably longer following administration.

The broader bodybuilding observation is nevertheless consistent with the ester chemistry: boldenone undecylenate accumulates and clears slowly.

This is why people often describe EQ as taking a long time before its full effects become apparent and why unwanted effects may not disappear immediately after the final injection.

It also explains why internet claims giving one exact EQ half life should be treated cautiously. Absorption from an oil depot, injection site, formulation, individual physiology and species all influence measured pharmacokinetics.

CHAPTER 19

BOLDENONE UNDECYLENATE VS OTHER BOLDENONE ESTERS

Underground laboratories have attached several different esters to boldenone, including cypionate and acetate.

The principle is the same as with testosterone esters.

Changing the ester primarily changes release characteristics and the proportion of the esterified molecule represented by active boldenone. Once the ester is removed, the active parent steroid is boldenone.

Boldenone cypionate is therefore not a completely different anabolic hormone from boldenone undecylenate.

What changes is how the drug is delivered.

Shorter esters can theoretically produce faster changes in circulating concentrations and faster clearance after discontinuation, while longer esters produce a more prolonged depot.

Equipoise specifically refers to the undecylenate preparation and should not automatically be used as a name for every possible boldenone ester.

CHAPTER 20

EQ VS PRIMOBOLAN

EQ and Primobolan are often considered by bodybuilders looking for relatively gradual lean tissue accumulation rather than dramatic scale weight changes.

But they are pharmacologically different.

Methenolone does not aromatise. Boldenone can participate in aromatisation related pathways.

Both activate the androgen receptor.

Both can contribute to suppression of endogenous testosterone production.

Both can affect cardiovascular markers as part of supraphysiological androgen exposure.

EQ has a much stronger bodybuilding reputation for increasing haemoglobin and haematocrit. Experienced coaches also frequently report seeing that pattern more aggressively in higher dose EQ plus testosterone combinations than in comparable testosterone plus Primo combinations, especially once EQ exposure becomes relatively high.

That observation is useful but should not be mistaken for a controlled head to head trial.

Primo has developed a reputation for greater predictability around estrogen because the parent steroid does not aromatise, although bodybuilders frequently report that Primo itself can alter measured E2 in ways that are not completely understood.

EQ appears to introduce greater uncertainty around estrogen response, HCT and, for some users, anxiety.

Primo is also generally more expensive and has experienced significant supply problems.

EQ is usually easier and cheaper to manufacture but introduces its own monitoring considerations.

Neither compound can therefore be labelled universally better.

They solve different problems and create different variables.

CHAPTER 21

EQ VS DECA

EQ and Deca are both classic long acting anabolic steroids associated with gaining phases, but their pharmacology differs considerably.

Deca contains nandrolone decanoate, while EQ contains boldenone undecylenate.

Boldenone is structurally closely related to testosterone. Nandrolone is a 19 nor androgen with different metabolism and progestogenic activity.

Both can support lean tissue accumulation through androgen receptor signalling.

Both suppress endogenous reproductive function.

Both can influence estrogenic physiology, although through different metabolic environments.

Nandrolone also has a unique bodybuilding reputation around joint comfort and sexual side effects, while EQ is much more closely associated with appetite, vascularity, haematocrit and anxiety discussions.

Again, much of the bodybuilding comparison is experiential rather than the result of head to head controlled trials.

There is no good human study in trained bodybuilders directly comparing equivalent anabolic exposure from boldenone undecylenate and nandrolone decanoate.

So claims that one definitively builds more muscle or is universally safer should be treated as bodybuilding opinion rather than established science.

CHAPTER 22

BLOODWORK: BEFORE, DURING AND AFTER EQ

Bloodwork becomes particularly important with EQ because several of its most discussed effects cannot be assessed reliably by how somebody feels.

BEFORE EXPOSURE

A useful baseline includes Full Blood Count with haemoglobin, haematocrit, red blood cell count, white blood cells and platelets.

The cardiovascular panel should include total cholesterol, LDL C, HDL C, triglycerides, non HDL cholesterol, ApoB and ApoA1.

Liver assessment should include ALT, AST, GGT, ALP, bilirubin and albumin.

Renal assessment should include creatinine, eGFR, urea and electrolytes, interpreted with the understanding that creatinine based eGFR has limitations in highly muscular individuals.

Hormonal testing can include total testosterone, free testosterone, SHBG, estradiol, LH, FSH and prolactin where relevant.

Fasting glucose and HbA1c provide useful metabolic baselines.

Blood pressure should be measured repeatedly under rested conditions rather than relying on one reading after caffeine, training or rushing into the clinic.

DURING EXPOSURE

Full Blood Count deserves particular attention because haemoglobin and haematocrit can change progressively.

But a high reading should be interpreted properly.

Compare it with baseline.

Consider hydration.

Consider testosterone and the rest of the androgen exposure.

Consider smoking.

Consider altitude.

Consider cardiovascular conditioning, bodyweight and diet.

And importantly, consider sleep apnoea and nocturnal hypoxia, particularly if haematocrit is unexpectedly high or continues rising despite changes elsewhere.

OSA is not simply a theoretical addition to that list. Martelli et al. (2022) found increased polycythaemia prevalence in severe OSA and demonstrated reductions in haemoglobin and haematocrit following CPAP therapy, while Lundy et al. (2020) found a significant association between OSA and polycythaemia among men receiving testosterone.

Lipids, ApoB, liver markers, renal markers, estradiol and blood pressure should also be reassessed.

LATER MONITORING

Long acting EQ creates another practical issue because discontinuing the drug does not instantly remove boldenone exposure.

Follow up testing therefore matters after the final injection as well.

The objective is not simply to keep every number inside a laboratory reference range. It is to compare the direction and magnitude of change from the individual's own baseline.

CHAPTER 23

WHY HAS BOLDENONE BECOME MORE CONTROVERSIAL?

EQ remains widely used, but attitudes toward it have changed.

A growing number of bodybuilding coaches and experienced users now question whether the advantages of EQ justify dealing with its long clearance time, unpredictable estrogen response, possible anxiety, haematocrit management and the recurring concern around renal markers in long term high dose users.

Those are legitimate practical concerns. At the same time, EQ has also become noticeably more popular again in bodybuilding over roughly the past two years. One practical reason discussed within the community is the reduced availability and higher cost of Primobolan and Masteron, which has pushed some athletes and coaches back toward boldenone as a more accessible long acting anabolic option. This should be described as a current bodybuilding market observation rather than a formally documented pharmaceutical trend, but it helps explain why EQ is being discussed more frequently again despite the concerns surrounding it.

The recurring bloodwork observation reported by coaches is part of that shift. Higher dose EQ, particularly when paired with substantial testosterone exposure, is repeatedly described as producing more troublesome HCT and E2 patterns in some athletes than comparable Primo based approaches.

That is not proof that EQ becomes uniquely toxic above a particular weekly amount. It is a repeated practical observation that deserves to sit alongside the formal evidence rather than being confused with it.

There is good evidence that AAS exposure can increase haematocrit, worsen lipid markers and increase blood pressure.

There is historical human evidence that boldenone undecylenate can increase haemoglobin.

There is extensive bodybuilding anecdote around anxiety and unusual estrogen responses.

What we do not have is a modern controlled trial comparing pharmaceutical EQ against testosterone, Primo, nandrolone and other anabolic steroids in trained male bodybuilders while controlling dose, diet, hydration, sleep, cardio, bodyweight, alcohol, recreational drugs and every other PED.

That makes claims such as EQ is the worst steroid for your blood, EQ destroys kidneys, or EQ always causes anxiety stronger than the evidence allows.

It is completely reasonable for an individual or coach to decide that they do not like EQ.

That is different from demonstrating that the drug possesses a particular unique toxicity.

CHAPTER 24

FINAL THOUGHTS: WHERE EQ FITS

Boldenone is considerably more interesting than the simple description of horse steroid suggests.

Boldenone undecylenate had a genuine period of human investigation under the name Parenabol before Equipoise became established primarily as a veterinary anabolic.

Its pharmacology is closely related to testosterone but altered by the additional double bond in the A ring and, in the case of EQ, the very long acting undecylenate ester.

Its bodybuilding reputation for gradual gains, appetite stimulation, vascularity and increased red blood cell production has existed for decades.

Some of those observations have scientific or historical support.

Others remain largely anecdotal.

The most important example is haematocrit.

EQ can contribute to increased haemoglobin and haematocrit, and this should not be dismissed. Experienced coaches also repeatedly report that the effect appears more troublesome in some higher dose EQ plus testosterone users than in comparable Primo based combinations.

But testosterone and other androgens can do the same, while sleep apnoea, nocturnal hypoxia, smoking, altitude, cardiovascular conditioning, bodyweight and hydration status can substantially influence how the final blood result should be interpreted.

The same balanced approach applies to kidneys, estrogen and anxiety.

There are enough signals to justify monitoring these areas.

There is not enough evidence to turn every bodybuilding story into established boldenone pharmacology.

That is ultimately where EQ sits for me: an effective anabolic steroid with a fascinating pharmaceutical history, a very long pharmacokinetic profile, legitimate monitoring considerations and considerably more individual variability than its old school reputation suggests.

stay strong. stay brown.

stay strong. stay brown.

CHAPTER 25

WANT TO TALK ABOUT YOUR OWN SITUATION?

PED use should not be approached simply as choosing compounds from a list because goals, age, training history, previous PED exposure, cardiovascular risk, blood pressure, bloodwork, fertility considerations and individual response all matter.

Two people can use the same compounds and experience completely different changes in bloodwork, side effects and results, which is why I prefer looking at the full picture rather than discussing an isolated drug or cycle without context.

KG Physique offers individual consultations covering PED bloodwork review, cycle review and discussion, interpretation of health markers relevant to PED use and contest preparation considerations.

Instagram: @kg.physique

YouTube: @kg.physique

CHAPTER 26

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