

Image and Performance Enhancing Drugs

UKAD's status report
on IPEDs in the UK



Foreword

from the Chair



Trevor Pearce CBE QPM

UKAD Chair

Welcome to this new publication from UK Anti-Doping (UKAD), which looks to give an overview of Image and Performance Enhancing Drugs (IPEDs) in the UK.

UKAD is the UK Government's mandated organisation to prevent doping in sport and deliver public confidence in clean sport. UKAD has been in existence for ten years, and in a relatively short lifetime has witnessed constant change regarding the threats to clean sport. Doping in sport has become more complex, not only from the science of what is taken and how, but because it is very clear that close partnerships with agencies in public health and law enforcement are required to bear down on this issue.

UKAD's core business will always be to test, investigate and remove from sport those who take performance enhancing substances, as well as to educate athletes and their support personnel to reduce the risk of doping occurring in the first place. It is very important to state that the use of IPEDs in sport is not the norm.

The vast majority of athletes work hard and are dedicated to competing in and promoting clean sport, and a significant part of UKAD's work is focused on recognising those athletes.

However, elite and amateur sport are vulnerable to the use of IPEDs for a variety of reasons - primarily the pressure and motivation to win but also concern over body image. It is important to understand who in elite sport are most vulnerable to IPED use, and the best way to target them in order to support, educate and inform.

In this assessment, we look to give a synopsis of the nature of IPEDs that are being used, where they come from and who takes them. The information has come from multiple sources, to offer a concise picture of IPEDs in the UK. UKAD would like to thank all the agencies and partners referenced in the report for their support and continued partnership.

Executive Summary

This report will also highlight the nexus between IPED use in elite and sub-elite sport, and the recreational and social usage that impacts upon public health.

The report in particular draws attention to the potential growing public health issue caused by IPED use and the clear links to criminality caused by the manufacture and selling of Class C substances.



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Trevor Pearce CBE QPM
UKAD Chair

UK Anti-Doping (UKAD) is an active participant in the global fight against doping in sport - and is the national body responsible for creating a UK-wide environment of confidence in clean sport.

It is UKAD's role to ensure sports bodies comply with the World Anti-Doping Code through implementation and management of the UK's National Anti-Doping Policy, via testing of athletes, education and working with partners in areas including science and intelligence.

Image and Performance Enhancing Drugs (IPEDs) have been a subject of growing concern over recent years, both in and out of the sporting environment. In order for UKAD and its partners to address the problem, it is vital to gain a deeper understanding of IPEDs - using

demographics, motivations for use, how IPEDs are obtained and any knowledge gaps which may exist.

The following report aims to explore these knowns and unknowns, bringing existing research together, while identifying further areas for exploration.

Some key points from the report can be summarised as follows:

- IPEDs, in the context of sport, are substances banned by the World Anti-Doping Agency (WADA), as per the Prohibited List.
- Anabolic steroids are the most common type of IPED.

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IPED use is a societal, not just a sport problem

- According to the 2017 IPED Survey, the most common demographic for the onset of IPED use was **20-24 year-old males**.
- A study carried out by UKAD for Clean Sport Week 2019 found **34% of the gym-goers surveyed are aware of IPED use in their gym or club**, demonstrating that IPED use is moving beyond the sporting environment.
- The Guardian newspaper reported in January 2018, that some experts believe the real figure to be **close to one million regular UK steroid users**.
- IPED use is more commonly associated with some sports than others. Of UKAD's current Anti-Doping Rule Violations (October 2019), 37% involve **rugby union players**, and 18% involve **rugby league players** – although of these rugby violations, four (12%) were non-analytical and five (15%) were for recreational drugs, including cocaine and MDMA.
- A survey published following the 2011 World Athletics Championships reported that more than 30% of the athletes surveyed admitted to using banned substances at some point in their career.
- Social media, exposure to 'body image influencers', popularity of the **'Love Island look'**, and a normalisation of injecting practices are current societal trends which have been cited as reasons behind IPED use.

Purchase and supply of IPEDs brings users into contact with criminal activity

- Steroids are a Class C Controlled Drug under the Misuse of Drugs Act 1971. Production and supply are an offence for which a maximum sentence of 14 years can be given along with an unlimited fine. **Simple possession however is not an offence**. The Advisory Council on the Misuse of Drugs has established a working group to examine IPEDs, however at the time of writing this, the group haven't issued any report or recommendations.

- There are roughly **five million doses of anabolic steroids seized per year at the border**.
- Evidence from Border Force indicates the **majority of IPEDs arriving into the UK originate in China, eastern Europe and areas of Asia, such as India**. **Singapore** is also emerging as a major source country due to products from India being moved there for distribution.

A lack of long-term research is creating a public health 'time bomb'

- People who use IPEDs put themselves at risk of **substantial harm to their health**.
- Regularly taking anabolic steroids can lead to **physical and psychological changes**, as well as potentially dangerous medical conditions.
- According to the 2016 National IPED Survey, **18% of participants** who had injected reported that they had reused their own injecting equipment, and 15% reported that they had shared a multi-dose drug vial.
- It is important to consider IPED use as both a consequence of **mental health pressure**, and as a possible contributor to exacerbating symptoms.

<https://www.wales.nhs.uk/sitesplus/documents/888/IPED%20report%202017.%20FINAL.pdf>
<https://www.theguardian.com/society/2018/jan/21/up-to-a-million-britons-use-steroids-for-looks-not-sport>



What are IPEDs?

Where do they come from?

Image and Performance Enhancing Drugs (IPEDs) is a relatively common term used to describe substances which are taken for either image-enhancing or performance-enhancing reasons, or both. These can include substances which promote weight loss, change skin colour, build muscle and allow longer, more intense training, and are normally injected, taken orally, or applied topically using a cream or gel.

In the context of sport, these are usually only referred to as either Performance Enhancing Drugs (PEDs) or Prohibited Substances. The latter term relates to the list of substances banned in sport globally, under the auspices of the World Anti-Doping Agency (WADA). It is UK Anti-Doping's (UKAD) role as a National Anti-Doping Organisation (NADO) to ensure sports bodies in the UK are compliant with the World Anti-Doping Code (the Code), the international framework for anti-doping policies, rules, and regulations within sport, and anti-doping organisations through implementation and management of the Government's National Anti-Doping Policy.

The most well-known type of IPEDs is anabolic steroids. IPEDs that are usually injected include human growth hormone

(HGH) and peptide hormones such as erythropoietin (EPO) and melanotan. Oral IPEDs include oestrogen control, post-IPED cycle therapy and IPEDs used as 'fat burners', such as clenbuterol and 2,4-Dinitrophenol (DNP).

The National IPED Survey 2016, conducted by Liverpool John Moores University, interviewed 684 people who had used IPEDs in the past 12 months. The study showed that 89% of those surveyed used oral IPEDs, the most common of which was methandrostenolone, an anabolic steroid sold under the brand name Dianabol.

The study also showed that 85% of those surveyed took IPEDs by injection. This suggests that the majority of IPED users are using multiple ingestion methods. The most frequently injected IPED was testosterone enanthate.

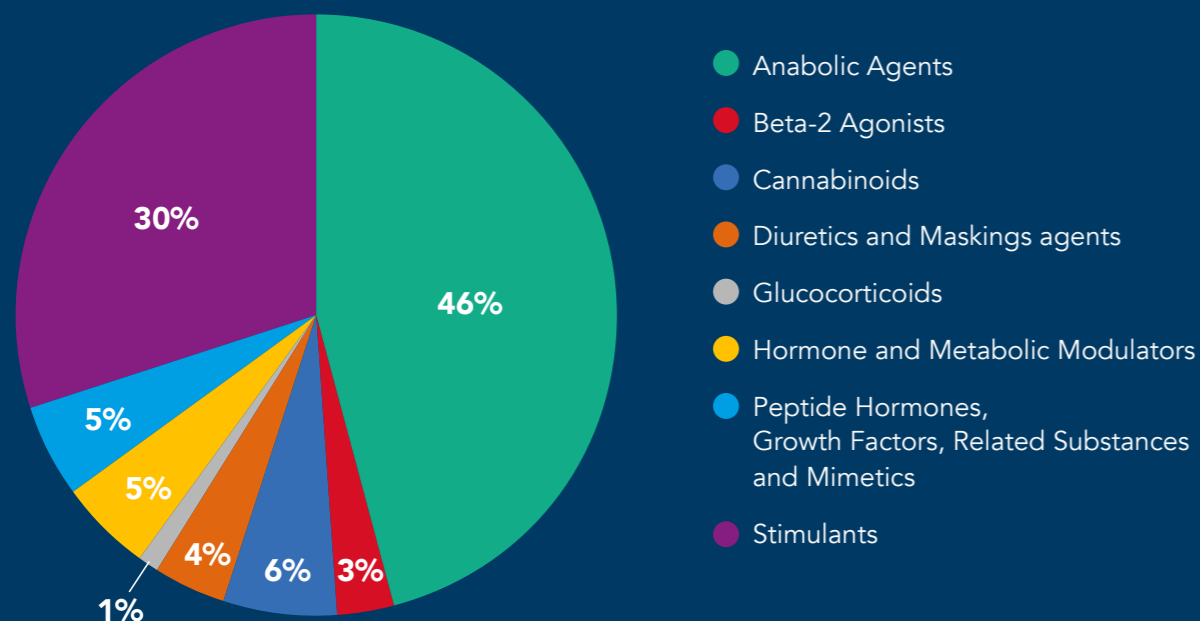
The taking of drugs to improve sporting performance, or 'doping', is not a new threat to sport but over the past 20 years the use of IPEDs, particularly anabolic steroids, has increased significantly in the UK, moving out of a narrow band of elite athletes and into amateur and recreational sport.

UKAD prosecutes athletes and any support personnel against the UK Anti-Doping Rules. Successful prosecutions are called Anti-Doping Rule Violations (ADRV). Between 2012-2017, there were 185 ADRVs issued by UKAD across 23 sports. 46% of those related to the use of anabolic agents and 30% to the use of stimulants. Other substances prohibited by WADA were under 6% each.

³Home Office, Seizures of drugs in England and Wales, financial year ending 2017, Statistical Bulletin 22/17.
Edited by: Dan Broadfield and Joe Marshall, November 2017

⁴John Moores University – Steroids and Image enhancing drugs – 2015

ADRVs by substance type 2012-2017



Historically, doping can be traced back to the ancient Olympic Games, while in the late 19th Century there are reports of French cyclists ingesting 'Vin Mariani' during events – a mixture of wine and coca leaf extract (from which cocaine is sourced), which reduced feelings of fatigue and hunger.

Doping was first prohibited in 1928 by the International Association of Athletics Federation (IAAF), but it took a further 40 years for drugs testing to be implemented at the Olympic Games. In more recent times, we have seen high-profile doping scandals involving the likes of Canadian sprinter Ben Johnson, American cyclist Lance Armstrong and systematic state-sponsored doping among Russian athletes.

The use of IPEDs in sport is cheating. Widespread and organised use of IPEDs in a team or by a country is corruption. Influential athlete support personnel (ASP) who are corrupt can wield significant influence over impressionable athletes. Vulnerable individuals who use IPEDs, particularly as part of a wider group, may be more susceptible to other forms of corruption, such as match-fixing, and blackmail. It is therefore clear that there is a nexus between the various components designed to uphold and promote good governance and integrity in sport.

Beyond sport, there is growing concern around the use of IPEDs in society and several trends have been noted, particularly around use by young men and within the gym and fitness sector. This can be seen through various studies, including that

carried out by UKAD for Clean Sport Week 2019, which found 34% of the gym-goers surveyed are aware of IPED use in their facility. The increase in use appears to have stabilised with an estimated 6% of males and 1% of females who regularly attend a gym using anabolic steroids, although further research would help confirm this.

There is also a growing culture around supplement use. Products like protein powders and pre-workout supplements (products designed to improve training performance) are increasingly popular. There is confusion around the regulation of the standards of these products and the manufacturing process, meaning they can sometimes be contaminated with prohibited substances or other unlisted ingredients.

In a 2018 YouGov study published by UKAD for Clean Sport Week, 87% of British adults polled, who exercised and took sports supplements, did not seek any advice from a healthcare professional such as a doctor, pharmacist, or dietician, before taking these supplements, while a fifth (20%) did not seek any advice at all before consuming these products.

The legal classification of IPEDs varies. For example, anabolic steroids are controlled as Class C substances under the Misuse of Drugs Act 1971. There is no possession offence for Class C drugs for personal consumption, but they are illegal to manufacture, supply, import or export, or to possess with the intent to supply. Other IPEDs are not classified as Class C substances but it is illegal to sell them for human consumption.

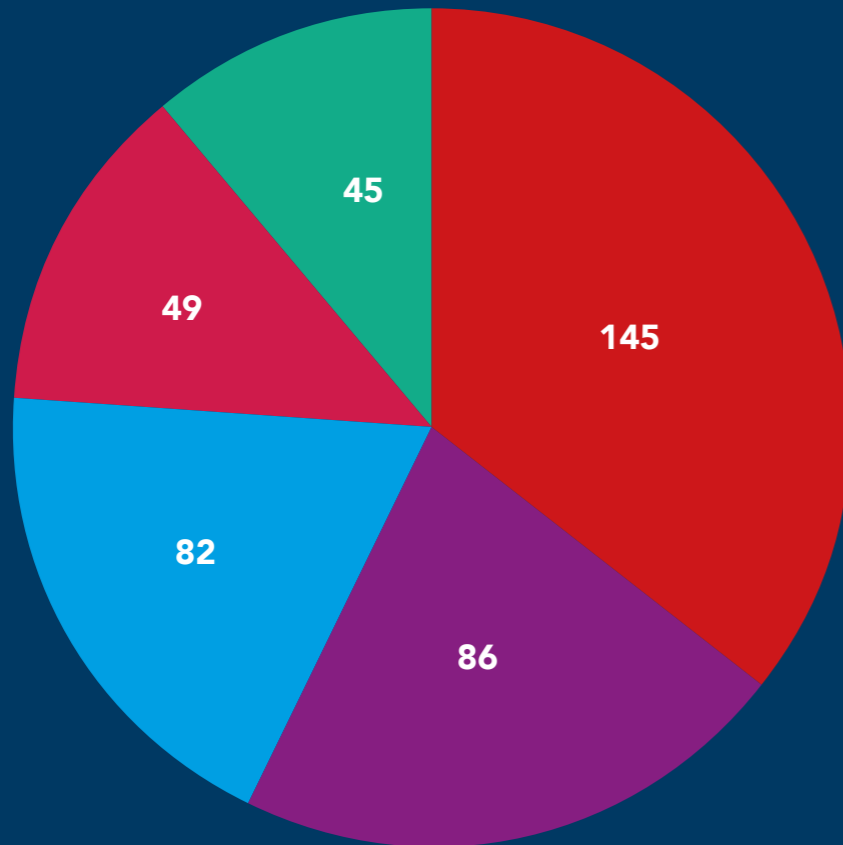
The Advisory Council on the Misuse of Drugs (ACMD) is reviewing the evidence base in relation to the abuse of anabolic steroids and other performance and image enhancing drugs (PIEDs) to see how the situation has altered since they reported on anabolic steroids in 2010. In 2017, UKAD made a submission to the ACMD, outlining its recommendations which stated that UKAD would welcome a legislative change whereby the importation and exportation of anabolic androgenic steroids would be illegal (even when carried out in person). It was further proposed that growth hormone releasing factors (GHRFs) should be controlled in the same way as human growth hormone (somatropin - Class C).

It could be argued in some cases, that the criminalisation of importation and exportation of steroids will act as a deterrent to use. However, the demands on law enforcement and the higher levels of evidence threshold could hinder successful prosecutions when compared to ADRV investigations. There is also the risk of driving production, supply and use deeper underground.

The responsibility of regulating the use of, and access to, IPEDs in the UK crosses a number of bodies including UKAD, the Food Standards Agency (FSA), the Medicines and Healthcare products Regulatory Agency (MHRA), Trading Standards, police forces, the National Crime Agency (NCA) and Border Force.

The top five Countries and that were listed as the Country of Origin on the Seizure Notification sent to UKAD in 2017

● Hong Kong ● China ● India ● United States ● Thailand



⁵<https://www.ukad.org.uk/news/ukad-secures-fitness-industry-commitment-new-education-programme-after-survey-shows-third-gym>
⁶UK Focal point – UK drug situation – 2014

34% of gym goers surveyed are aware of IPED use in their gym.

Who takes them and why?

No sport is immune from the risk of doping. However due to various factors such as: the physical demands, competition programme, prevalence of injuries, or financial incentives, some sports are at greater risk.

Historically sports such as cycling, weightlifting, athletics, boxing and rugby have a reputation for a close association with doping in their sports.

While of UKAD's current ADRVs (October 2019), the majority (55%) involve rugby union and rugby league players, the remaining violations come from a variety of sports including: boxing, motorsport, bobsleigh, athletics, football, cycling, weightlifting, ice hockey, and darts.

Information from UKAD's own intelligence operations reflects the consistent use of anabolic steroids and stimulants within certain sports. In 2018-19, 38% of ADRVs were intelligence-led, and where intelligence relating to anabolic steroids and stimulants use was uncovered, the majority of sports referenced were rugby union, rugby league and boxing. However, this information could paint a skewed picture of the doping landscape across sports. The act of pursuing an investigation

in itself often generates further intelligence which in turn can lead to further ADRVs within that sport. Therefore, sports which display low levels of intelligence reports for anti-doping investigators, do not necessarily have a lower doping risk. Reports of suspicious behaviors across all sports is required to develop a better understanding of the real risk.

A survey published following the 2011 World Athletics Championships reported that more than 30% of the athletes surveyed admitted to using banned substances at some point in their career . Outside of sport, determining which population groups are most at risk from IPED use is challenging and requires the cooperation and support of multiple agencies.

There are a number of measures of IPED use in the UK and estimates can vary significantly. The Home Office Crime Survey of England and Wales (CSEW) suggests that the estimated number of 16-59 year-olds who have used anabolic steroids at least once in their life, has increased from 194,000 in 2005/06 to 271,000 in 2015/16. The 2013-2014 CSEW suggested around 66,000 users took anabolic steroids in the last year.

The most common demographic of IPED users are 20-24 year-old males

⁷<https://link.springer.com/article/10.1007/s40279-017-0765-4>
⁸<https://www.wales.nhs.uk/sitesplus/documents/888/IPED%20report%202017.%20FINAL.pdf>

Public Health Wales estimates there are about 350,000 male steroid users aged 16-64 who visit needle exchanges across England, Scotland and Wales. Both surveys (CSEW and Public Health Wales) are expected to be an underestimate, as they exclude either women, older IPED users, or entire nations of the UK. The Guardian newspaper reported in January 2018, that some experts believe the real figure to be closer to one million regular UK steroid users.

According to the 2017 IPED Survey, the most common demographic for onset of IPED use was males between 20 and 24 years old. However, it was also reported that first-time IPED use ranged from 14 years to 53 years and altered depending on whether they were taken orally or injected.

The survey also reported that users took steroids for several different reasons, but predominantly for:

- **Improving body image/ cosmetic reasons - 56%**
- **Non-competitive bodybuilding - 45%**
- **Enhancing sports performance - 27%**

The largest population of IPED users is young males whose motivations could primarily lie around body image. Many of these may also be engaged within sport, so it is difficult to place individuals into separate groups, as in many instances there are overlaps.

Many media reports and experts have cited current societal trends as some of the reasons behind this desire to improve body image. These include: near universal use of social media and exposure to 'body image influencers', popularity of the 'Love Island look', and a normalisation of

injecting practices through easily accessible procedures like Botox and Melanotan.

One concern is that if children and young people view the "Love Island" look as 'normal' and desirable, when in fact it may be very difficult to achieve, there is a fear that they may be tempted to use IPEDs which risks their health and wider public health concerns from vial and needle sharing.

The broader issue of the impact of IPED use on public health is described by some experts as a 'time bomb'. Given that IPED use has only recently increased across society there has been no opportunity for the results of longitudinal studies to assess any long-term health impacts.

However, the evidence case is building. For example, in 2018, the University of Copenhagen published a survey in the Journal of Internal Medicine of over 500 men who used steroids. Over the seven years of the study, mortality rates were three times higher amongst users compared to non-users. The survey also showed that the rate of hospital admission was 125% higher amongst users.

Interestingly many users do not see themselves as drug abusers and therefore fall outside established public health interventions. This can then lead to users waiting longer for symptoms to develop before approaching health care.

Speaking to the BBC, Mike Mallet who runs an NHS needle exchange in Newport, Wales said: "My worry is that in 20 years' time, maybe less, GPs will see an increase in the number of 40 and 50-year-old guys, with a 20-year history of using steroids,

with liver, thyroid, and kidney problems, or heart conditions. But they won't approach their GP until they're symptomatic, by then the treatment is going to be much more expensive and much less likely to be effective."

The Newport needle exchange clinic was set up in 2017, specifically for steroid users after Gwent Drug Misuse Service identified a marked increase in people using steroids and other IPEDs using its services. It was the first dedicated clinic of its kind in Wales, and needle exchange centres across the UK are recognising the growing requirement to support patients who are using IPEDs.


However, the charity sector is also stepping in. Alcohol and drug charity, Open Road, received more than 1,800 visits across its five sites in Essex between January and September 2018, and distributed 100,000 needles to IPED users in 2018, as part of its needle exchange programme. The programme, while not encouraging drug use, ensures users have access to clean, safe needles, rather than re-using old equipment and being at risk of contracting blood-borne viruses.

It is believed that children, and equally vulnerable adults, are more likely to take IPEDs if they are aware of them and the information they receive focuses on the benefits and downplays the risks. It is also thought that children are likely to be made aware of IPEDs by close family members or peer groups. Vulnerable adults are likely to access information online. This increases the risk of dangerous misinformation and the normalisation of IPEDs.

The promotion of clean sport to children in sports clubs and schools is key to a successful prevention programme. UKAD operates a school education programme which starts with children as young as seven years old. The 'Get Set' programme focuses on healthy lifestyle habits and the values in sport of fair play. While this programme supports some children, it is not universal. Education and support that spans sport and society is key to a more effective control of IPEDs and especially very dangerous substances such as DNP.

In a sporting context, a 'win at all costs' attitude within a club or training environment could exacerbate a problem by encouraging athletes to make a decision to cheat.

Athletes that are most likely to adopt the use of IPEDs to win at all costs are those which perceive there to be greatest benefits from IPED use. These perceived benefits, which could encourage doping behaviour, should be viewed as both athletic performance; and the positives the sport can deliver with regards to wealth, status, power and influence. Most athletes currently banned for committing an ADRV are amateur, semi-professional, or do not make significant sums of money from their sport; this may be a product of anti-doping testing and education focusing on the elite level of sport. However, the drive to win at all costs can occur in any sport and can vary year-on-year, dependent on factors like major events, such as the Olympic Games or a World Cup.



Young amateur athletes who are keen to progress and be selected for an elite team, or qualify for a major competition, are at risk of using IPEDs, especially if there is a perception in their sport, such as rugby, that size, strength or bulk is a requirement to achieve success. This is where it is also important for those people working with these athletes to ensure the correct messages are being conveyed.

The use of IPEDs by young athletes with the express intention of being selected for a team is worrying. In some parts of the UK, there are limited employment options and professional sport is seen as a way to progress. Further research is needed to better understand connections between economic opportunity and IPED use.

Additionally, individual athletes may turn to IPEDs at different times in their careers, for example when attempting to return to fitness following injury, or during the latter stages of their sporting life when they may feel pressure to retain fitness and extend their career.

Amateur and masters competitors could be more likely to use IPEDs for different reasons, including: they are less likely to be tested, they will be proportionately less affected by any sanction, they are unlikely to have received anti-doping education, and they do not rely on the sport for an income.

⁹<https://www.independent.co.uk/life-style/health-and-families/love-island-young-men-steroid-use-muscles-reality-tv-beach-holiday-a7864376.html>

¹⁰<https://www.bbc.co.uk/news/uk-wales-44472132>

¹¹www.sciencedaily.com/releases/2018/11/181121073244.html

¹²<https://www.bbc.co.uk/news/uk-wales-44472132>

¹³<https://www.ukad.org.uk/news/article/thousands-of-steroid-users-facing-hiv-risk>

Motivations to use

In the previous section we identified some of the broader population groups which may be at greater risk of IPED use, and some of the specific risk factors associated with each of them. However, there are themes across all IPED users' motivations which should be explored.

Often, men and women will have different motivations for using IPEDs, reflected in their respective choice of substances; Methandrostenolone being most popular amongst men, and Oxandrolone and Melantonan in women.

Most people turn to the internet as their primary source of information on any subject, including advice on fitness and nutrition. Here there is a risk of unverified, pseudo-science, and so called '**bro-science**' (a term for misinformation circulated, usually body-building claims not backed by science and based on anecdote) being accepted as good practice and going unchallenged.

The motivations to use and supply IPEDs are varied but they broadly fall into three categories: 'win at all costs', image, and criminality. The three categories are not mutually exclusive and there may be one, two or three motivations for any person or group.

Win at all costs

The drive to 'win at all costs' is recognised in sport as a mentality within a team or individual where the values, rules or laws are abandoned, and the single act of winning is all-important.

UKAD's values-based education programme (100% me) emphasises the values of fair play and the spirit of competition. UKAD supports clean athletes who uphold these values.

The temptations of a 'win at all costs' mentality are not limited to specific sports and can be driven by the perceived acquisition of wealth, status, power and influence. These motivations are present at all levels of sport, and the huge financial rewards at the top of elite sport should not be ignored as a contributing factor to IPED use.

Image

The influence of exposure to unrealistic body images has been around for generations. These images of 'idealised' body types have long been present in advertising and media on billboards, on TV and film, or in magazines. However, advancement of mobile technology has exponentially increased the presence of this influence in daily life.

¹⁴<https://www.wales.nhs.uk/sitesplus/documents/888/IPED%20report%202017.%20FINAL.pdf>

¹⁵<https://www.sciencedirect.com/science/article/abs/pii/S1740144516300912>

¹⁶<https://www.bbc.com/future/article/20190311-how-social-media-affects-body-image>

¹⁷<https://www.bbc.co.uk/news/health-48396071>

The constant exposure to specific body types can distort the public perception of what is normal and acceptable, leading to societal pressure to look a certain way - particularly for young people who are vulnerable to peer pressure and expectations. Research into social media and body image is still in its early stages however social media use, especially image-based sites, appears to connect users with increased body image concerns.

It is important to consider IPED use as both: a consequence of mental health pressure, and as a possible contributor to exacerbating symptoms, and how this can lead to a vicious cycle of use. For example, in some circumstances, the motivation to take IPEDs can be based on a drive to improve certain aspects of appearance, which can then in turn lead to negative side effects (such as acne or "man-boobs") which cause the user to take more IPEDs in a bid to find a solution to the new issue. In many cases, image and mental health/wellbeing are very closely linked.

The role of social media influencers should also be considered. Influencers who appear on these sites can be powerful in affecting behaviour or personal moral; many demonstrate the perceived benefits of IPED or supplement use, without articulating the significant risks, and are financially incentivised to do so. Recent research suggests that "fitspiration" images, images of influencers taking part in exercise or showing off their bodies, can result in lower self-compassion.

Image-based sharing sites such as Instagram or Snapchat are popular among young people. Filters featured on these sites,

which are added to images, also add further distortion and greater ambiguity to what is real.

UKAD believes that this further enables the perpetuation of pseudo-science and normalisation of the use of supplements and IPEDs. The growing presence of nutritional supplements and IPEDs in high-street and online stores, alongside healthcare products and food, should also be recognised as a factor in their increased popularity.

In 2019, two Sheffield based scientists drew attention to the apparent contradiction in IPED use to improve looks. Named after the scientists, the Mossman-Pacey Paradox, describes how in an effort to improve their attractiveness, IPED users actually damage their fertility.

Criminality

Many of the products and substances used as IPEDs are widely available and legally sourced. Here the concern is about the motivations and misuse of products, or contamination risk which could lead to an inadvertent ADRV. However, some substances used as IPEDs are illegal and the links from IPED use and supply to criminality are serious.

Where there is a market for illicit drugs, there are criminals willing to exploit this market. This could be as dealers, manufacturers, importers or all three. Low-cost online purchases of these substances can take place easily on the internet and the 'Dark Web'. Fuelling this criminal interest in IPEDs is the potential for very large profits to be made and a low risk of law enforcement interest.

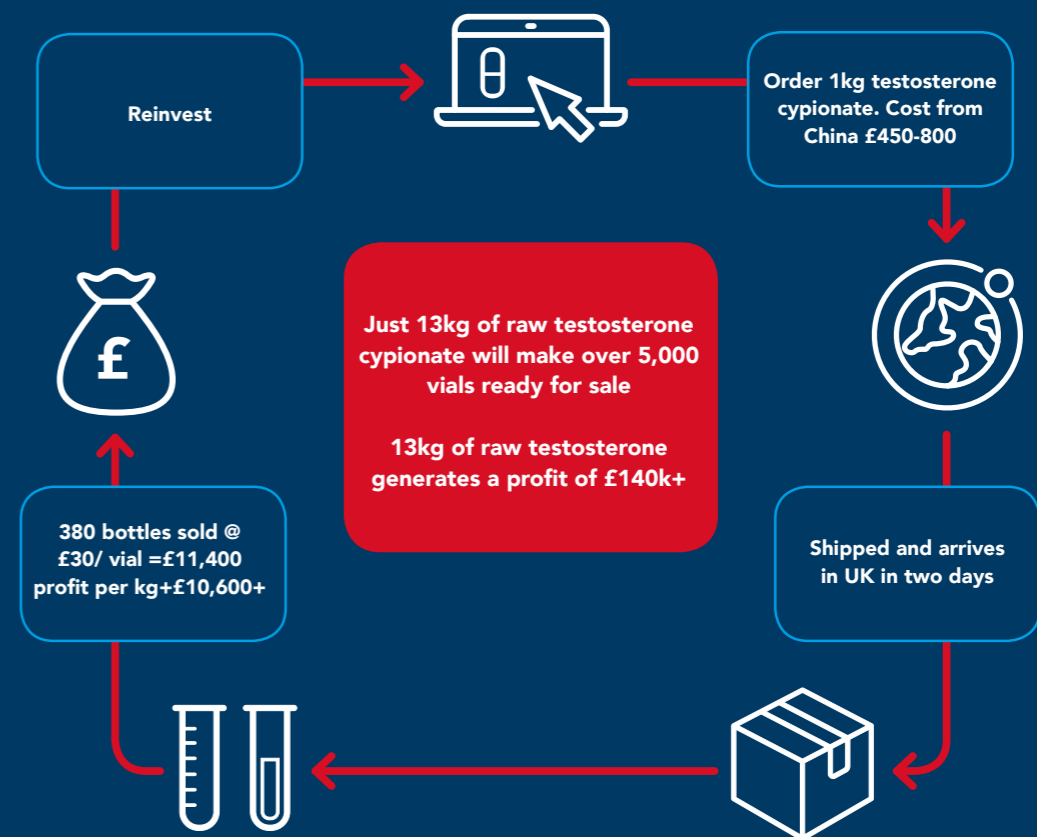
There is additional concern about the safety of the final product purchased through criminal manufacturing. Criminals look to import in bulk the precursor ingredients for anabolic steroid production, which are often made in commercial quantities, for legitimate pharmaceutical purposes in countries such as China, India and Turkey.

To further boost profits, these ingredients are then used to manufacture the final product.

In some cases the ingredients are bolstered in UK 'labs' to increase the volume of the final product. These 'bulking agents' can add further health risk, and can be as broad ranging as commercial cooking ingredients, oils, or even talc. The hygiene levels of the production process often have no regard for basic standards and carry significant risk of harm of viral and bacterial infection, with evidence pointing to contamination from dust and mouse faeces amongst other things.

Anabolic steroid production process

Figure two below shows the cycle from ordering precursor ingredients for anabolic steroids from China to making large sums of cash from selling final product to the user.



¹⁸Home Office, Seizures of drugs in England and Wales, financial year ending 2017, Statistical Bulletin 22/17. Edited by: Dan Broadfield and Joe Marshall, November 2017

To give an understanding of the scale of the opportunity for criminal activity in IPEDs, it is useful to estimate the illegal market for anabolic steroids for IPED use in the UK. There are roughly five million doses of anabolic steroids seized per year at the border. Assuming that five million doses get through the border and based on the example above where one dose will give a profit of £28, the graphic below demonstrates the scale of the money laundering required for just this small volume that makes it through the border.

Taking the Crime Survey of England and Wales data at face value regarding 66,000 active anabolic steroid users in the UK, if each user takes one dose per day that equates to 24 million doses per year. The five million doses seized is only a small proportion of that imported into the UK. The scale of the money laundering from the IPED industry in the UK is much higher than £672 million per year.

As mentioned, many IPEDs are Class C substances or medicines - both of which are illegal to manufacture and supply without a licence, and the significant profits to be made from the manufacture and supply of IPEDs have been identified. The supply of these substances makes large amounts of money for relatively little effort, low overheads and proportionately low risk. The classification of IPEDs as Class C Controlled Drug or as a medicine means that, if prosecuted, the highest sentence would be 14 years and/or an unlimited fine. However, the investigation of Class C substances is low down the current list of policing priorities, further reducing the risk to criminal gangs of prosecution.

Local and regional police forces have a range of competing priorities for their

limited resources as illustrated by 96% of the anabolic steroids seized in 2016-17 attributable to Border Force, with other law enforcement agencies such as local or regional police forces only accounting for the remaining 4% of seizures. However, UKAD continues to work successfully with some police units to disrupt supply. For example, in 2018 UKAD supported the Eastern Region Serious Organised Crime Unit (ERSOU) on an operation, which saw more than £30,000 worth of steroids seized.

In 2016, Operation Underground - a global operation investigating the production of IPEDs led by WADA and US Law Enforcement - saw UKAD work with the likes of West Midlands Police, Greater Manchester Police and North Wales Police to dismantle underground drug laboratories, make arrests and seize large quantities of cash, steroids and associated equipment. Worldwide, the Operation led to the closure of 19 underground steroid labs and the arrest of at least 99 individuals.

In November 2019, four men were sentenced to a combined total of more than 18 years in prison for conspiring to manufacture and conspiring to import anabolic steroids, following a five-year investigation by the National Crime Agency (NCA), supported by UKAD.

There is increasing evidence that the consequences of steroid abuse manifest in other forms of criminality; such as domestic violence, anti-social behaviour and other violent crime. It has been suggested that in two 2017 terror attacks in London, the offenders had taken steroids in the lead up to committing those atrocities.

Access and Availability

With the speed and range of technological advances globally, it has become increasingly easy and common to purchase goods online, and this includes IPEDs.

The internet age has also made it easier and quicker to buy goods from an overseas market. For example, goods can be ordered and shipped from China to the UK in as little as two days (not including customs clearance). It is also relatively easy to access some IPEDs legally over the counter in certain countries, such as Thailand, Turkey and Greece.

Evidence from Border Force indicates the majority of IPEDs arriving into the UK originate in China, eastern Europe and areas of Asia such as India and Thailand, and this is supported by reports from other countries, including Australia.

Singapore is also emerging as a major source country due to products from India being moved there for distribution. Singapore also offers 'free trade zones' which allow companies free storage facilities and a less restrictive clearance process, making it an attractive option for suppliers wishing to transport substances to different countries.

Evidence from Border Force indicates the majority of IPEDs arriving into the UK originate in China, eastern Europe and areas of Asia.

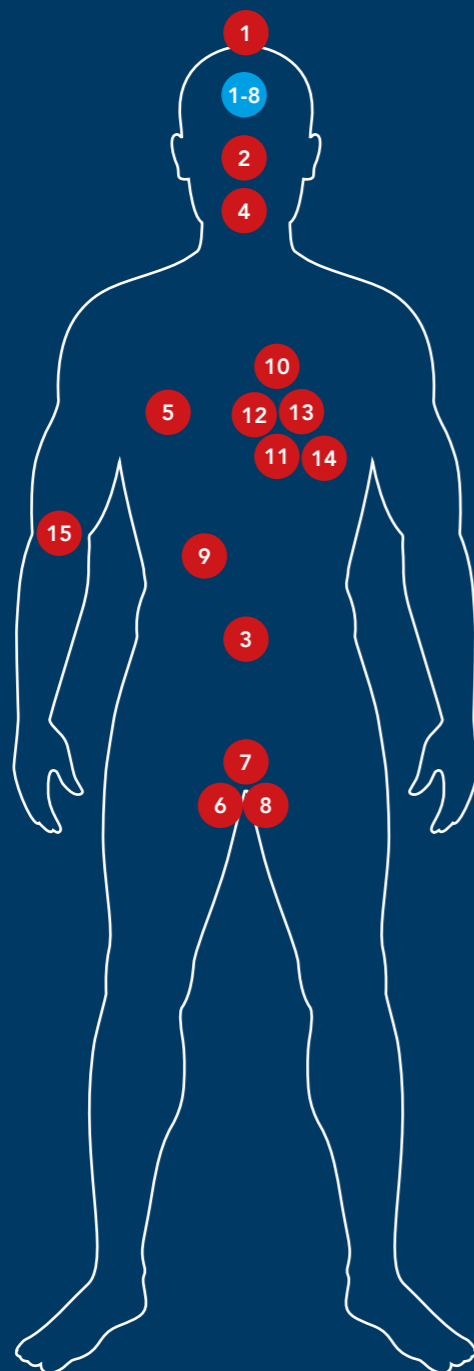
¹⁹<https://www.theguardian.com/uk-news/2018/feb/09/london-bridge-attack-trio-had-taken-large-quantities-of-steroids-inquest>

²⁰<https://www.theguardian.com/society/2018/jan/21/steroids-quest-perfection-performance-enhancing-drugs>

²¹https://acic.govcms.gov.au/sites/g/files/net1491/f/2017/06/illicit_drug_data_report_201516_full_report.pdf?v=1498019727

²²<https://www.steroidal.com/steroids-news/illicit-steroid-business-increasing-singapore/>

Side effects and consequences



PHYSIOLOGICAL

- 1 Male pattern baldness
- 2 Acne
- 3 Excess body hair
- 4 Growth of facial hair on females
- 5 Gynaecomastia (man-boobs)
- 6 Genitourinary (shrinking of testicles)
- 7 Erectile dysfunction
- 8 Infertility
- 9 Liver disfunction and jaundice
- 10 Hypertension
- 11 Cardiac arrhythmias
- 12 Heart attack
- 13 Stroke
- 14 Cardiac hypertrophy
- 15 Blood-borne virus risk (e.g. HIV, hepatitis B, hepatitis C) as a result of injecting

PSYCHOLOGICAL

- 1 Dependence / addiction
- 2 Depression
- 3 Aggression and violence
- 4 Decreased libido
- 5 Mood changes
- 6 Paranoia
- 7 Social consequences
- 8 Euphoria

People who use IPEDs put themselves at risk of substantial harm to their health, including significant cardiovascular problems, which are potentially life-threatening. There can also be extensive and permanent disruption of normal sexual function as a result of long-term or heavy use. Some IPED users will take only one substance, however users often take several different drugs simultaneously ('stacking') in complex, high-dose regimens. These additional drugs, such as Tamoxifen, are often taken as they are believed to counter some of the side effects of steroid use.

Regularly taking anabolic steroids can lead to physical and psychological changes in both men and women, as well as potentially dangerous medical conditions.

The use of anabolic agents is also likely to be more damaging to a young person, who is still growing, than a mature adult. It is possible that the younger a person starts to use steroids, the longer they are likely to take them.

As we have already detailed, IPEDs are often manufactured in unhygienic conditions, especially in 'underground labs' with a disregard to procedures and standards, which can also lead to contaminated products. Liverpool John Moores University's National IPED Survey of 2016, showed that poor needle safety practice was not uncommon amongst IPED users. 18% of participants who had injected reported that they had reused their own injecting equipment, and 15% reported that they had shared a multi-dose

drug vial. This raises significant public health concerns about IPED use and the dangers associated with injecting, including the contraction of blood-borne viruses such as HIV and hepatitis B.

The way that effects and deaths related to IPEDs are recorded means it is very hard to establish, without commissioning specific studies, the total impact of IPEDs on health. Frequently, where IPEDs have been used and affected the health of an individual or contributed to or caused the death of an individual, the IPED used is not always recorded or referenced. Medics or family may not be aware of IPED use and the IPED may not have been the primary cause of death.

A 2019 report by the Office of National Statistics showed there were 4,359 deaths from drug poisoning in England and Wales in 2018, the highest number since records began in 1993. This shows the overall context is an increasing number of drug-related deaths.



**15% of IPED users
shared needles**

²³Pope HG Jr, Wood RI, Rogol A, Nyberg F, Bowers L and Bhasin S. Adverse health consequences of performance enhancing drugs: an Endocrine Society scientific statement. *Endocr Rev* 2014 Jun; 35(3):341-75, doi: 10.1210/er.2013-1058

²⁴Pope HG Jr, Wood RI, Rogol A, Nyberg F, Bowers L and Bhasin S. Adverse health consequences of performance enhancing drugs: an Endocrine Society scientific statement. *Endocr Rev* 2014 Jun; 35(3):341-75, doi: 10.1210/er.2013-1058

²⁵<https://news.sky.com/story/drug-deaths-at-highest-level-since-records-began-ons-11785697>

Our Partners

It is clear from our emerging understand that the use of IPEDs extends beyond cheating in sport. It is a public health issue and impacts on a range of criminality. The response to the threat from IPED use therefore sits with a range of organisations and there is an imperative to ensure better information sharing, and coordination of activity.

landscape around IPED use, to combat IPED trafficking and use within the UK, and to educate others around the dangers of IPED use.

Our view is that structural arrangements to establish cross agency working is needed.

These partners include:

UKAD works with a number of organisations in its work to understand the current



National Governing Bodies of Sport (NGBs)

Advisory Council on the Misuse of Drugs (ACMD)

In 2018, there were more than 4,300 deaths from drug poisoning in England and Wales

Education

Education and knowledge are fundamental to anti-doping and clean sport. Proactive, inclusive and positive education is a vital tool for promoting clean sport and should be expanded further in an attempt to reduce the use of IPEDs in wider society. UKAD's prevention programme includes education strategies and compliance support for NGBs. It is extensive throughout sport, and UKAD is now looking to reach those not directly involved in sport, such as users of gyms and the fitness industry, through partnerships with ukactive and the Chartered Institute for the Management of Sport and Physical Activity (CIMSPA).

Knowledge gaps

While research into the area of IPEDs is improving, knowledge gaps still exist in a number of areas.

The nature of being a regulator means that UKAD is constantly seeking to bridge the gap between technological and medical development and advancement in sports medicine, nutrition and health and clean sport. It is not possible to test for every prohibited substance and those that science can test for have a time and sensitivity window. Quantity, timing and delivery of drugs (such as micro-dosing for example) can circumvent testing, while new medicines are being developed which may have unintended performance enhancing benefits.

Whilst there are good relationships with pharmaceutical and medical bodies in the UK, there are unscrupulous, illegal and unregulated developments in doping which need to be addressed.

More research also needs to be carried out into criminality, in terms of the scale, methods and implications both on society and sport.

There is also a need to fill knowledge gaps around motivation of young people for taking IPEDs, and whether the biggest drivers are image or sports-based. While there is some research in existence and further assumptions made, motivations can change, particularly with societal trends and fashions. It is important to ensure these knowledge gaps are consistently addressed in order to inform the best course of action at any given point in time.

If anyone has any information regarding doping in sport, it can be reported through numerous channels: Call UKAD's Protect Your Sport line anonymously on 08000 32 23 32; message @ukantidoping via Twitter; submit an online form via protectyoursport.co.uk; email intelligence@ukad.org.uk; or send us a WhatsApp message on +44 (0)7587 634711.

Conclusion

The research and information throughout this report is not intended to be exhaustive, and highlights the knowledge gaps which must be addressed in order to gain a thorough understanding of those who use IPEDs, their motivations, how they access them and the implications for both sport and wider society.

IPEDs and their use cannot be seen as simply a problem for sport and more specifically the anti-doping authorities. The research outlined through the report demonstrates a growing public health issue. The reasons for this are multi-faceted and complex, be it media outlets (social media in particular), geographical, socioeconomic or criminality for example.

In order to address this increasing problem, it is crucial that a multi-agency, strategic approach is adopted to tackle the various influences on IPED use. Governments, anti-doping agencies, law enforcement, public health bodies, educational institutions and sports organisations and beyond must be proactive and work collaboratively to address the issue.

This assessment also provides the context for a new imperative to galvanise all those organisations with an interest in this area to come together to ensure concerted action is taken.



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