



Performance and Image Enhancing Drugs (PIEDs) Research Report

Nov 2016

Contents

<u>Executive Summary</u>	Page 3
<u>Glossary</u>	Page 4
<u>Introduction Section</u>	
Introduction	Page 6
Background and Development	Page 6
Objectives	Page 8
Development	Page 9
Delivery	Page 9
<u>The Young People's Survey</u>	
Personal Information	Page 10
Performance and Image Enhancing Drugs (PIED) Use	Page 13
Side effects of PIED use	Page 18
Other drug use	Page 19
Education and prevention	Page 21
<u>The Practitioner Survey</u>	
Working background	Page 22
Practitioner experience of PIEDs	Page 22
Education and prevention	Page 27
<u>Focus Groups</u>	
Experience of PIED Use	Page 29
What are the names of PIEDs?	Page 30
Why do young people use PIEDs?	Page 30
What are the effects of PIED use?	Page 31
Reducing PIED Harm	Page 32
<u>Analysis of results</u>	
Analysis of results	Page 33
<u>Appendices</u>	
Young people's survey	Page 38
Practitioner's survey	Page 42

Executive summary

In 2016 Fast Forward surveyed Scottish young people on their experience and use of performance and image enhancing drugs (PIEDs), such as anabolic steroids. A total of 1165 young people and 76 practitioners working with young people were surveyed. A further 152 young people took part in targeted focus groups where there was an opportunity for more qualitative discussion.

Key findings:

- 6% of respondents said that they had used PIEDs at one time or another. This is higher than the most recent NHS survey which found that 3% of the adult male population uses PIEDs.
- Young PIED users were disproportionately male (63%) to female (33%). However this proportion of female users is significantly higher than previous research suggested.
- PIED users were most likely to be 23 - 24 years old.
- Synthetic testosterone (e.g. anabolic steroids) was the most popular PIED.
- The majority of users (55%) said they wanted to 'look better, more attractive.' Physical appearance rather than strength or athletic performance was the key motivating factor behind use.
- 88% of users reported that they consumed PIEDs as pills, while only 32% reported that they injected them.
- 27% of PIED users said that they knew 'lots' of young people using PIEDs, suggesting a close community of PIED users.
- 85% of users had noticed negative side effects, with mood swings (54%), aggression (44%) and trouble sleeping (40%) ranking most highly.
- The overwhelming majority of users are aware of the risks and harms, but believe that the benefits outweigh them.
- Users identified a friend as the most common source of PIEDs, suggesting an informal, casual relationship among users and suppliers.
- 79% of PIED users responded that they had also misused drugs and alcohol. This is significantly higher than average levels reported in Scotland.

Recommendations:

- PIED users form a close community. Peer education programmes can overcome this by using a community member to cascade positive health messages.
- Health messages should focus on oral ingestion as well as needle injection.
- The side-effects that users highlighted related to mental health, suggesting that prevention programmes should focus on this.
- Health education may be more effective among the general population of young people before the onset of PIED misuse. Intervening with current PIED users could prove difficult because their behaviour is deeply embedded.
- 96% of both PIED users and non-users agreed that there should be more health education available. A programme should take advantage of this enthusiasm.
- Young people and practitioners both strongly advocated the use of a social media campaign to deliver PIED health education.
- Youthworkers would benefit from improved general knowledge and confidence to raise PIED issues with young people.
- An approach that sought to effect behaviour change through descriptions of risk, damage or harm would not necessarily be successful. An alternative method that recognises that users have made an informed decision, weighing up the harm to the benefits, needs to be found.
- 90% of practitioners said that their service did not tackle PIED use. Practitioners could benefit from a 'train the trainer' approach that upskilled local youthworkers in PIED misuse.

Glossary

Amphetamine:

A synthetic, addictive, mood-altering drug, used illegally as a stimulant.

Anabolic Steroids:

Drugs that have a similar effect to testosterone, the male hormone, and help build muscle.

Blood Borne Virus:

A blood-borne disease is one that can be spread through contamination by blood and other body fluids. The most common examples are HIV, hepatitis B and viral haemorrhagic fevers.

Blood Doping:

Blood doping is the practice of boosting the number of red blood cells in the bloodstream in order to enhance athletic performance. Because such blood cells carry oxygen from the lungs to the muscles, a higher concentration in the blood can improve an athlete's aerobic capacity (VO₂ max) and endurance.

Cardiovascular:

Relating to the circulatory system, which comprises the heart and blood vessels and carries nutrients and oxygen to the tissues of the body and removes carbon dioxide and other waste from them.

Diuretics:

Help reduce the amount of water in the body.

Fat Strippers / Fat Burners:

An over-the-counter drug that burns calories by increasing the rate of the body's metabolism.

Hepatitis B:

A severe form of viral hepatitis transmitted in infected blood, causing fever, debility, and jaundice.

Hormones:

The chemical substance produced in the body that controls and regulates the activity of certain cells and organs. Hormones are essential for every activity of life, including the processes of digestion, metabolism, growth, reproduction and mood control.

Human Immunodeficiency Virus (HIV):

Acquired immunodeficiency syndrome (AIDS) is a chronic, potentially life-threatening condition caused by the human immunodeficiency virus (HIV). By damaging your immune system, HIV interferes with your body's ability to fight the organisms that cause disease.

Mephedrone:

A synthetic mood-altering drug with stimulant properties.

New Psychoactive Substances (NPS):

NPS contain one or more chemical substances which produce similar effects to illegal drugs (like cocaine, cannabis and ecstasy).

Non-Binary:

Non-Binary gender describes any gender identity which does not fit within the binary of male and female.

Peptides:

Any of various natural or synthetic compounds containing two or more amino acids linked by the carboxyl group of one amino acid and the amino group of another.

Performance and Image Enhancing Drugs (PIEDS):

Performance and image enhancing drugs (PIEDs) are substances taken by people with the intention of improving their physical appearance and to enhance their sporting performance.

Sporting Supplement:

Sporting supplements are products used to enhance athletic performance that may include vitamins, minerals, amino acids, herbs, or botanicals (plants) — or any concentration, extract, or combination of these.

Testosterone:

A steroid hormone that stimulates development of male secondary sexual characteristics, produced mainly in the testes, but also in the ovaries and adrenal cortex.

Toxicology:

Toxicology is the scientific study of adverse effects that occur in living organisms due to chemicals. It involves observing and reporting symptoms, mechanisms, detection and treatments of toxic substances, in particular relation to the poisoning of humans.

Transgender:

Transgender people are people who have a gender identity, or gender expression, that differs from their assigned sex.

Young people:

For the purpose of this report, a person between the ages of 13-24 (in Scotland).

Introduction

In May 2016 Fast Forward received funding from the Scottish Government's Small Test of Change fund to survey Scottish young people on their experience and use of performance and image enhancing drugs (PIEDs), such as anabolic steroids. For the purposes of the research Fast Forward has defined a PIED as a chemical taken to improve the effects of physical training and a person's physical appearance. Anabolic steroids, the most well-known type of PIED, is an artificially synthesised hormone that promotes muscle growth.

A total of 1165 young people and 76 practitioners working with young people were surveyed with separate questionnaires. The questionnaires can be found in the appendices.

A further 152 young people took part in targeted focus groups where there was an opportunity for more qualitative discussion. The results of the survey and subsequent analysis are presented here. Fast Forward intends to use the information and data to help determine possible next-stage health interventions with young people.

Background and Development

Performance and Image Enhancing Drug (PIED) use by young people in Scotland has become more prevalent in recent years with Glasgow needle exchange in 2015 reporting a 600% rise in PIED use since 2005. The Chief Medical Officer for Scotland, Catherine Calderwood, has highlighted the risks and harms surrounding PIED misuse and emphasised that the rise is due in part to young men taking PIEDs for cosmetic rather than sporting reasons. Health services such as Ancoats Steroids Clinic in Manchester, Arundel Street drugs project in Sheffield, the National Institute for Health and Care Excellence and the Bridge Project drug charity in Bradford have all reported a significant rise in PIED use by young men¹.

Recent research by John Moores University, Liverpool, has also found that PIEDs (and anabolic steroids in particular) are now significantly more common in places where young men gather, such as sports centres or gyms². The University's report suggests that young men are influenced by older peers who openly discuss, and appear to benefit from, PIED use. In particular young people are attracted by PIEDs' apparent ability to dramatically increase muscle mass in a short space of time, with some young people seeing it as a 'short cut' to a more muscular and powerful-looking body³.

The UK Anti-Doping agency (UKAD) looks at PIED exposure from a different angle and has identified increased sporting performance as the motivating factor behind young people's PIED use⁴. It is important to note that sporting and athletic

¹ <https://www.theguardian.com/society/2015/jun/19/anabolic-steroid-use-leaves-britain-facing-health-timebomb>

² Bate, G and McVeigh, J (2016); Image and Performance Enhancing Drugs 2015 Survey Results; Centre for Public Health, Liverpool John Moores University, Liverpool.

³ <http://www.bbc.co.uk/news/uk-england-london-31615269>

⁴ <https://www.theguardian.com/sport/2015/mar/13/uk-anti-doping-chief-worried-by-teenage-steroid-abuse-and-rugby>

performance is rarely improved by ingesting anabolic steroids or hormones that promote muscle growth but rather through techniques such as blood doping which enables the body to carry more oxygen.

Some researchers have found that this increase in PIED use can be attributed to young men, insecure in their physical appearance, wanting to look more attractive and physically impressive. The Advisory Council on the Misuse of Drugs (ACMD) makes this connection with its analysis of 11-15 year olds, stating that boys in particular “want to be in boy bands and attract girls”⁵ by building bigger bodies.

Similarly, in 2016 the Credos advertising industry think tank conducted a survey on body image among young men⁶. 49% of respondents indicated that celebrities were an influence on their appearance, while 57% of respondents said that social media was a key influence on their self-image. Respondents went on to suggest that celebrity and social media culture promotes unrealistic body types which skewed young men’s self-image and led some males to consider PIED use to achieve extreme body goals.

Recent research has also addressed the health risks of PIED use. Researchers at the University of South Wales, Sydney, have emphasised the harms in their toxicology study, indicating that early exposure to anabolic steroids could lead to cardiovascular problems as well as muscle and bone deformation in adult life⁷. In addition, they suggest that the synthetic chemistry of anabolic steroids could lead to hormonal changes in young people’s bodies, which could be damaging both mentally and physically⁸.

Much of the literature surrounding PIED use focuses on anabolic steroid use amongst young males. This neglects the use of other drugs within the PIED category such as fat burners, peptides, diuretics as well as young female use. Our survey was designed with this in mind.

⁵ <http://www.telegraph.co.uk/news/uknews/law-and-order/8015884/Children-using-steroids-to-boost-appearance.html>

⁶ Credos (2016); Picture of Health? <http://www.adassoc.org.uk/publications/picture-of-health/>

⁷ Darke et al (2014); Sudden or Unnatural Deaths Involving Anabolic-androgenic Steroids University of South Wales, Sydney

⁸ Baker, J, Graham, M, Davies, B (2006); Steroids and prescription medicine abuse in the health and fitness community: A regional study. University of Glamorgan, Pontypridd

Objectives

The questionnaire sought to gather more knowledge about young people and their experience and attitude towards PIEDs. In doing so, it sought to establish prevalence of PIED use among young people, the kinds of PIEDs used, ingestion methods, where they are purchased, rationale for PIED use and the experience of side effects. It also sought to establish young people's attitudes towards harm, danger and preventative health education. The questionnaire was therefore designed to provide an evidence and information base on which to plan future intervention and health promotion work.

More specifically, the questionnaire sought to establish:

- Young people's experiences and attitude outside the gym environment. Most studies so far have been conducted in gyms and have neglected young people in more traditional youth environments such as schools, community centres and youth clubs.
- The use of PIEDs other than anabolic steroids. There is a gap in available literature and research on the less prominent varieties of PIED such as fat strippers, peptides, diuretics and pain killers. The survey hoped to address this.
- The extent of PIED use among young women and their attitudes towards it. Again available literature rarely addresses PIED use among females and there appears to be a default assumption that only young men will misuse PIEDs.

Development

The research was developed in consultation with Professor Julien Baker at the University of West of Scotland, Mark Munroe of Scottish Athletics and Kieran Lynch of Basketball Scotland.

Initial stakeholder consultation discussed the scale of PIED use, types of PIED, user demographics, potential harms, user motivations and existing services that address PIED misuse.

This was followed by a research proposal and Fast Forward decided that a mixed methodological approach would provide the most useful information and data. Fast Forward therefore decided to survey both young people (aged 15 – 25) and adult practitioners with separate questionnaires and conduct targeted focus groups. This would allow for a practitioner perspective on youth PIED use while the focus groups could provide an informal, confidential and relaxed space for young people to discuss PIED use in broader terms.

Fast Forward would like to thank Julian Baker, Jean Rankin and Thomas Connelly from University of West of Scotland; Mark Munro from Scottish Athletics; and Keiran Lynch from Basketball Scotland for supporting this research.

Delivery

The survey took place between June and September 2016 using both hard copies and online versions of the questionnaire. They were distributed through a wide variety of contacts and youth work settings including schools, youth clubs, community centres and sports clubs.

There was a strong overall response, with 1165 young people and 76 practitioners responding. 152 young people attended 11 focus groups.

Fast Forward would like to thank all the young people, practitioners and networks that responded to the research.

Note on Results

For the sake of readability, percentages have been rounded to the nearest whole number. Due to rounding, some totals may not correspond with the sum of the separate figures. Some survey questions allowed for multiple answers which allows for response totals over 100%.

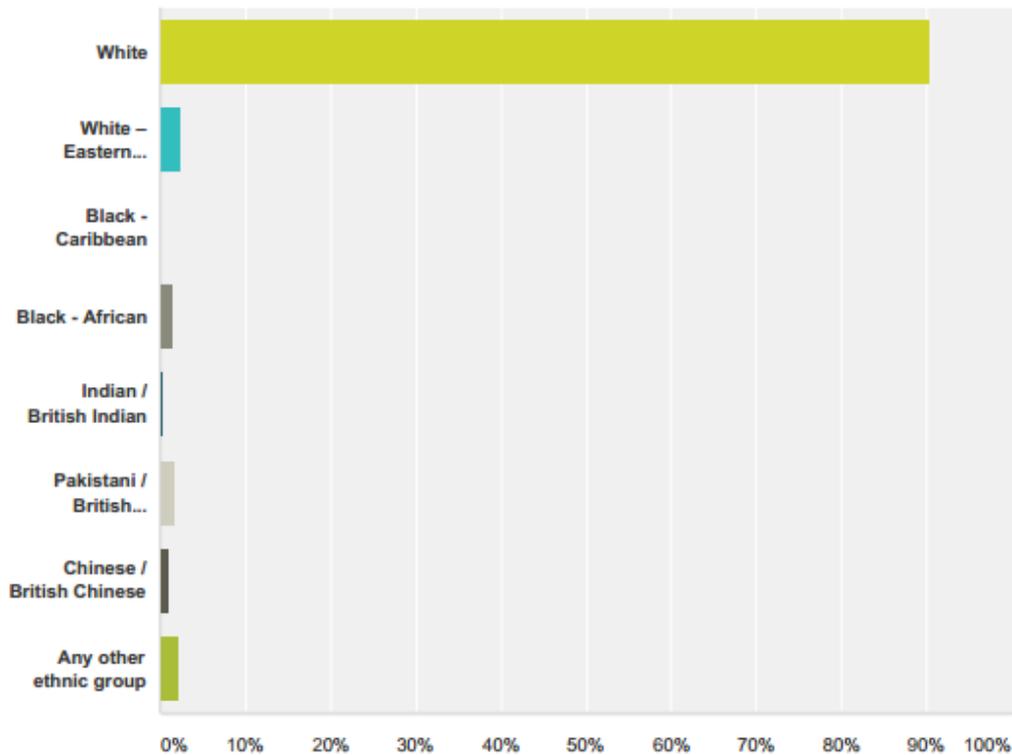
1. The Young People's Survey

Personal Information

Respondents were asked for personal details first. Of the 1165 responses to the young person's survey, 51% were male and 47% were female, 2% were either non-binary or preferred not to say, while 1% of respondents classed themselves as transgender.

Q3 Which of these groups do you consider you belong to?

Answered: 1,164 Skipped: 1



90%, of all respondents were white Scottish and the next largest ethnic group was Eastern European at 2%.

Young PIED users however were disproportionately male (63%) to female (33%).

Although the majority of PIED users were male, the survey results suggest that a significant proportion of users are female. 33% is significantly higher than most contemporary research^{9 10} has so far found. NHS Public Health Wales, for example, states on its website that “women who use anabolic steroids will often use a smaller range of drugs and at much lower doses than males¹¹”. It may be that female

⁹ Anabolic Androgenic Steroids: A Survey of 500 Users. Andrew B. Parkinson, Nick A. Evans. Med Sci Sports Exerc. 2006;38(4):644-651.

¹⁰ Am J Dis Child. 1990 Jan;144(1):99-103

¹¹ <http://www.ipedinfo.co.uk/women.html>

respondents who have used PIEDs use smaller amounts than males or use substances less associated with risk and harm.

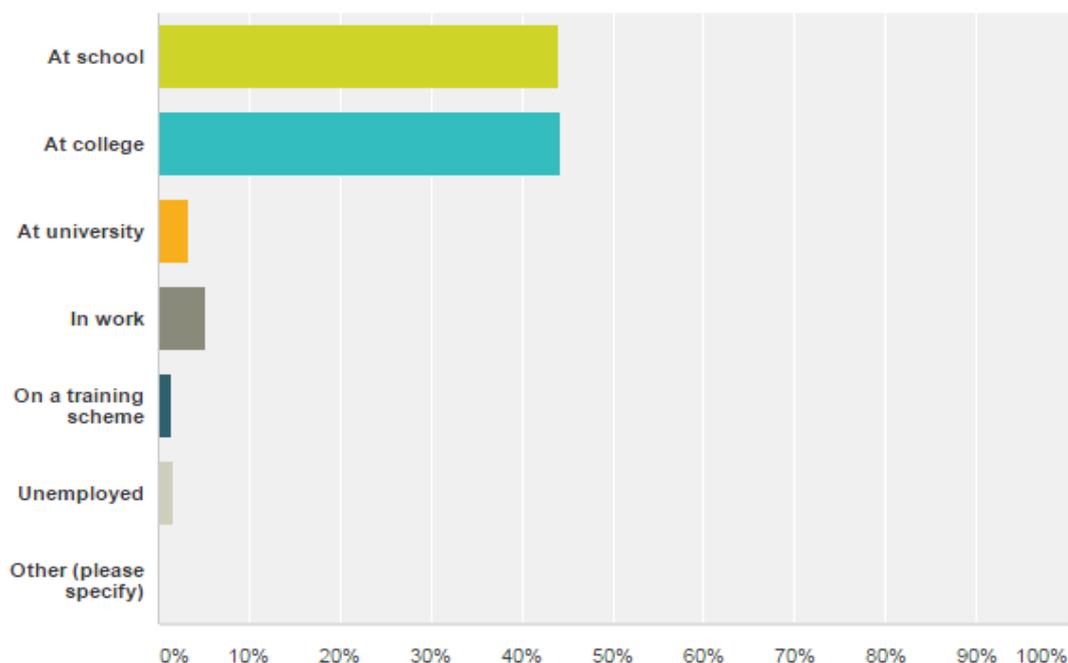
Respondents were then asked for their age. The majority of respondents (70%) were between the ages of 15-18, with the largest single age group being 17 year olds (26%), followed by 16 year olds (16%), and then by 15 year olds (16%). While, the majority of PIED users were between 16 (27%) and 17 (21%) this is because of the higher number of overall respondents at that age.

If the data is manipulated to show the percentage of PIED users at each age, it reveals that 23 and 24 year old are most likely to use PIEDs. 13% of responding 23 and 24 year olds said they had used PIEDs at some point, a significantly higher figure than previous research has revealed.

Age	Percentage of PIED users at that age
15	1%
16	10%
17	5%
18	5%
19	10%
20	9%
21	2%
22	8%
23	13%
24	13%
24 +	8%

Which best describes your situation?

Answered: 1,165 Skipped: 0



Respondents were then asked if they were in education, training or work. 92% of respondents stated that they were in some form of education. The largest single response was attending college at 44%. This was closely followed by attending school, 44%, and then in work, at 5%. PIED users were even more likely to be in college than the general surveyed population (55%).

Some previous research has suggested that PIED users tend to come from deprived backgrounds, particularly former industrial, blue-collar areas and that steroid use is an attempt to bolster working class masculinity in the face of long-term industrial decline¹². However, some research has contradicted this assertion with findings that white collar males in service sector employment are more likely to misuse PIEDs, seeking to demonstrate their masculinity despite working in a modern office environment. In a recent interview Jim McVeigh, director of the Centre for Public Health at Liverpool John Moores University explained that “men working in offices need an outlet for their aggression that their white collar existences don’t give them¹³.”

When asked which youth, sport or fitness facilities they regularly attend, 39% of respondents indicated that they went to a gym. Attending a sports club was the next most popular pastime at 26%. The rate of gym attendance was markedly higher among PIED users at 49%.

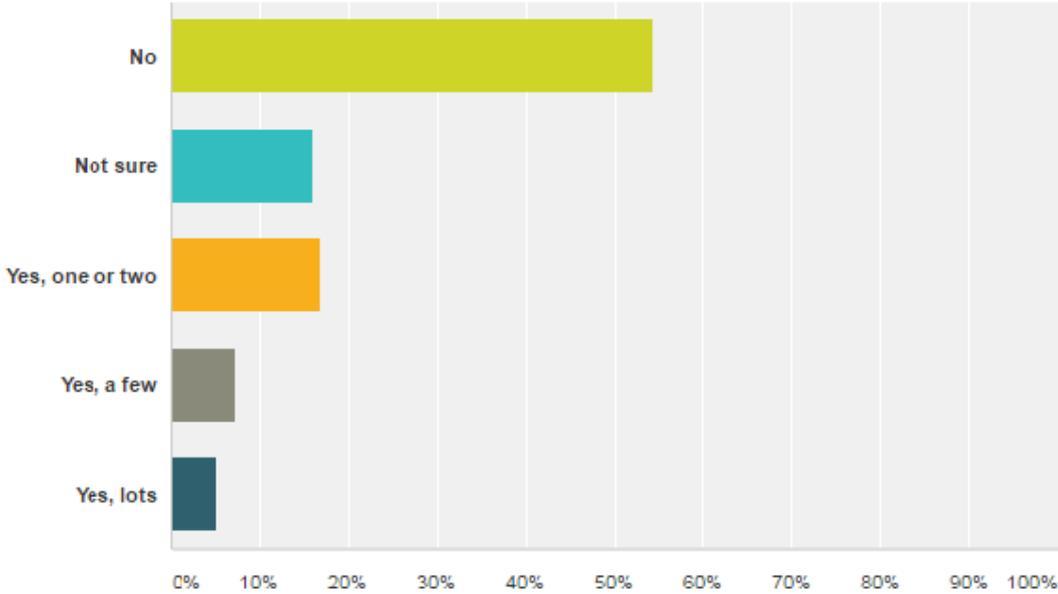
¹² Body Image: Understanding Body Dissatisfaction in Men, Women and Children, Sarah Grogan, Routledge, 2008

¹³ <http://www.menshealth.co.uk/building-muscle/big-read-britains-steroid-epidemic#!>

Performance and Image Enhancing Drugs (PIED) use

Do you know anyone who has used a Performance or Image Enhancing Drug (PIED)? (e.g. anavar, stanozol, sustanon, dianabol)

Answered: 1,165 Skipped: 0



Answer Choices	Responses
No	54.42% 634
Not sure	16.14% 188
Yes, one or two	16.91% 197
Yes, a few	7.30% 85
Yes, lots	5.24% 61
Total	1,165

29% of respondents indicated they knew at least one young person who misused PIEDs. This is an important result because it suggests that PIED use is relatively widespread among young people. However, it may be that a very small number of young people are involved in PIED misuse but their use is well-known among their peers. The respondents who know someone using PIEDs could, in fact, be referring to same small group of young people, or even the same individual. In other words, this figure does not entail that 29% of young people are using PIEDs.

Moreover, it may be that respondents have simply heard a rumour that a colleague uses PIEDs or that their colleague uses legitimate exercise and sporting supplements such as whey protein powder. 16% of respondents were unsure if they did know of someone who had used PIEDs. Rumour, hearsay and confusion surrounding

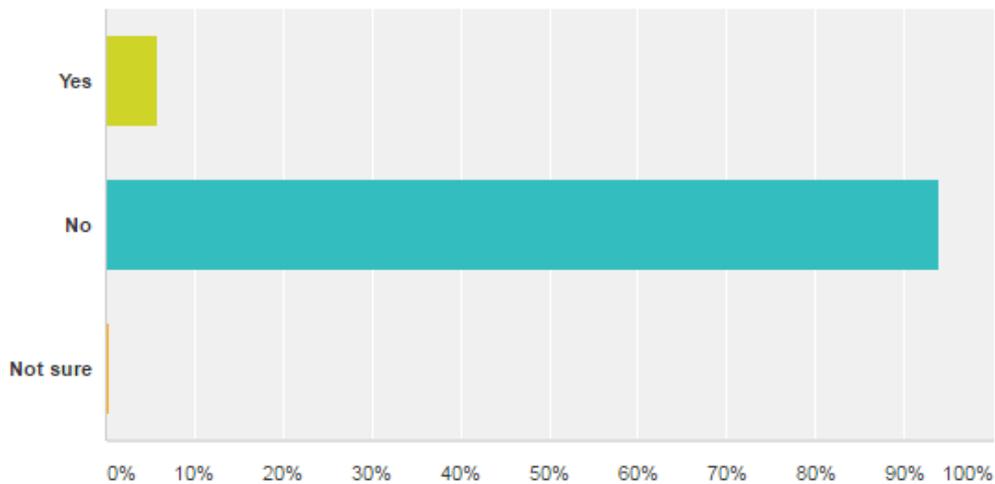
definitions are common among younger people given the plethora of legal, over-the-counter performance enhancing and muscle building products available. Fast Forward attempted to correct any misconceptions around what is and what is not a PIED by providing an easy-use glossary at the start of the survey.

Over half of respondents (54%) indicated they did not know of anyone taking PIED's. This too is a significant figure because it suggests that, for the majority of young people, PIED misuse is simply not an issue in their daily lives. Conversely, it is important to note that 46% of respondents may know a PIED user.

Among PIED users the figure was much higher. 88% of PIED users knew at least one other person who used PIEDs. 27% of PIED users said that they knew 'lots' of young people using PIEDs. This implies that users are significantly more likely to know fellow users and it could suggest a close community of PIED users. Users were also much less likely than the mainstream population to be unsure if they knew of someone using PIEDs, suggesting more certainty on their part and less confusion.

Have you ever used a Performance or Image Enhancing Drug (PIED)?

Answered: 1,165 Skipped: 0



Answer Choices	Responses
Just once	24.24% (16)
A few months	40.91% (27)
About a year	15.15% (10)
Over a year	9.09% (6)
A few years	10.61% (7)
Total	66

6% of respondents said that they had used PIEDs at one time or another. Of this figure, 40% had used them for over a few months. 24% of users had only used PIEDs once and 15% of users had used PIEDs for about a year. While this figure is low, the

survey cannot account for 'shy users' or users who felt that reporting use might bring punishment or stigma.

While the overall number of young people surveyed is low (1165), Fast Forward endeavoured to ensure that respondents were as representative of the Scottish young population as possible. The survey reached a relatively balanced cross section of the population in terms of social class, educational attainment, gender, urban / rural location and work status.

National statistics for youth PIED misuse are scarce and the most recent and comprehensive survey, undertaken by NHS Public Health Wales, found that approximately 3% of the adult male population uses PIEDs. The Scottish Crime and Justice Survey 2014/15 of adults over 16 found that only 0.3% of respondents had ever used anabolic steroids and that no respondents had used steroids in the last 6 months or year.

The most recent Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) found that 17% of 15 year olds had ever used cannabis, 5% of 15 year olds had ever taken ecstasy, 5% had ever taken any form of NPS and 4% had ever taken cocaine.

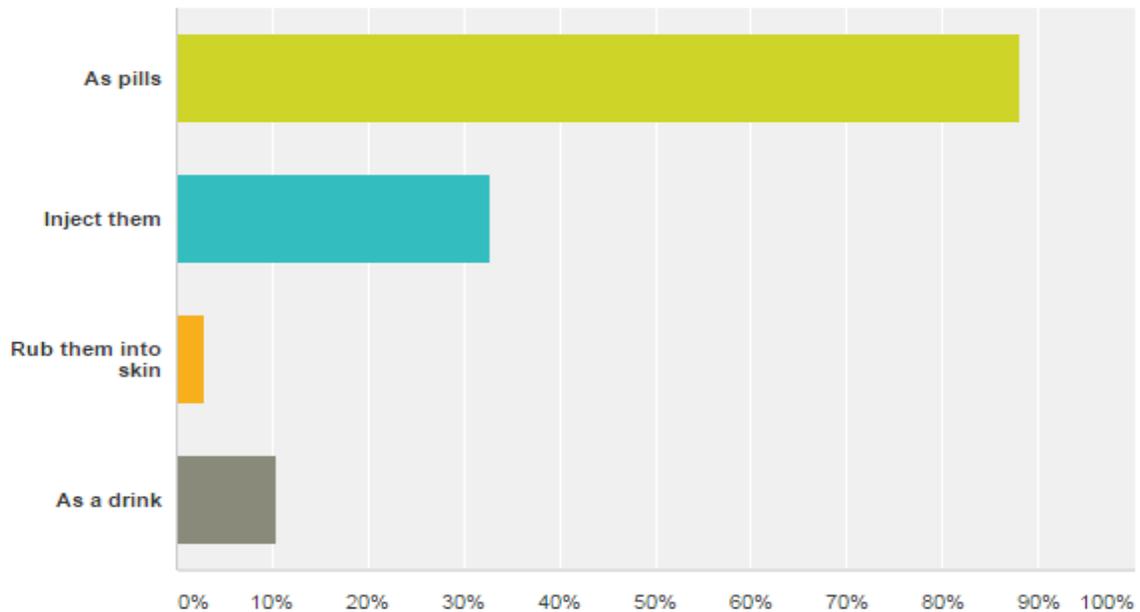
PIED users were asked which types of PIED they consumed. They reported that testosterone was the most popular (68%). Users then ranked the most commonly used types as fat strippers (44%) followed by stimulants (43%) and then peptides (4%). Diuretics were the least common at 0%. This parallels wider research that suggests that testosterone is the most commonly used performance enhancing drug^{14 15}. Anabolic steroids, a synthetic form of the male hormone, belong in this category.

¹⁴ <http://www.nhsgrampian.org/files/STEROID%20LEAFLET%20spread.pdf>

¹⁵ Steroids and Image Enhancing Drugs, 2014 Survey Results, Jim McVeigh, Geoff Bates and Martin Chandler, July 2015

If yes, how do you take them?

Answered: 67 Skipped: 1,098



88% of respondents that used PIEDs reported that they consumed PIEDs as pills while 32% reported that they injected them. This has implications for any subsequent harm reduction and health intervention work. Pills frequently put increased pressure on the liver while injecting brings risks around blood borne viruses such as Hepatitis B or HIV and infection of the injecting site. Some anecdotal evidence, such as user online forums, suggests that users perceive pills to be safer than injecting, possibly because of the lower risk of injecting site infection, blood-borne viruses or the stigma surrounding needle use.

Research published by the British Medical Journal¹⁶ has found that HIV infection rates among anabolic steroid users are 1.5%, the same rate as intravenous opiate users.

Answer Choices	Responses
Make it easier to recover	38.81% 26
Help strip away fat	38.81% 26
Help build more muscle	61.19% 41
Give you more energy to train	34.33% 23
Total Respondents: 67	

Users were then asked what the PIEDs they took achieved. The majority (61%) said they helped build muscle. Experts and health practitioners broadly agree that most users to seek build more muscle mass by using PIEDs, such as synthetic testosterone, which imitates male muscle-building hormone. Gary Beeny, a health practitioner working in Manchester’s steroid clinic has stated in interview that “the vast

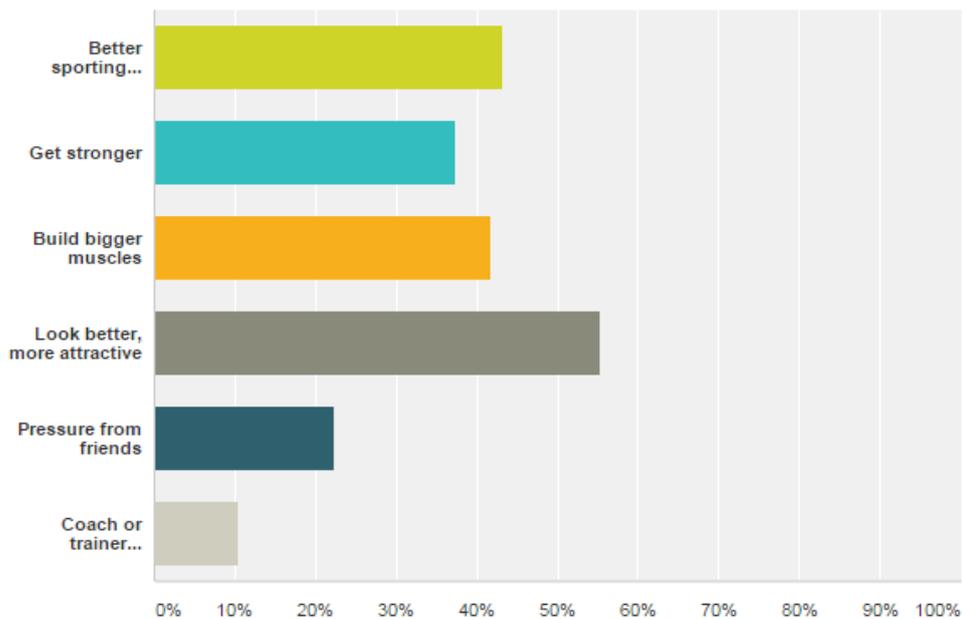
¹⁶ <http://bmjopen.bmj.com/content/3/9/e003207.full>

majority of people we see use steroids for image reasons. It's mainly to show your muscles, going out. It's all linked to images of lean physiques with big arms. That's the kind of look the young lads like."¹⁷

38% of users said that helping their recovery after a workout was a motivating factor and 38% indicated that they used PIEDs to help strip away fat from their bodies.

If yes, why did you decide to take PIEDs?

Answered: 67 Skipped: 1,098



Respondents were then asked why they had decided to take PIEDs. 55% of respondents that used PIEDs said they wanted to 'look better, more attractive' and 41% indicated they wanted to build bigger muscles. 'Getting stronger' attracted fewer responses with only 31% of users stating that this was their reason. 'Pressure from friends' and 'advice from a coach or trainer' were fewer still at 22% and 10% respectively. While it is a cause for concern that users could be encouraged by professionals or coaches to ingest PIEDs, the small number of respondents makes it difficult to assume that adult trainers are driving PIED misuse. Coaches and trainers may also be recommending use of legitimate health supplements which are easily confused with PIEDs. The choices were not exclusionary and respondents could choose multiple options to give a better balance of their views. However, their choices do indicate that physical appearance rather than actual strength or athletic performance is a key factor.

¹⁷ <https://www.theguardian.com/society/2015/jun/19/anabolic-steroid-use-leaves-britain-facing-health-timebomb>

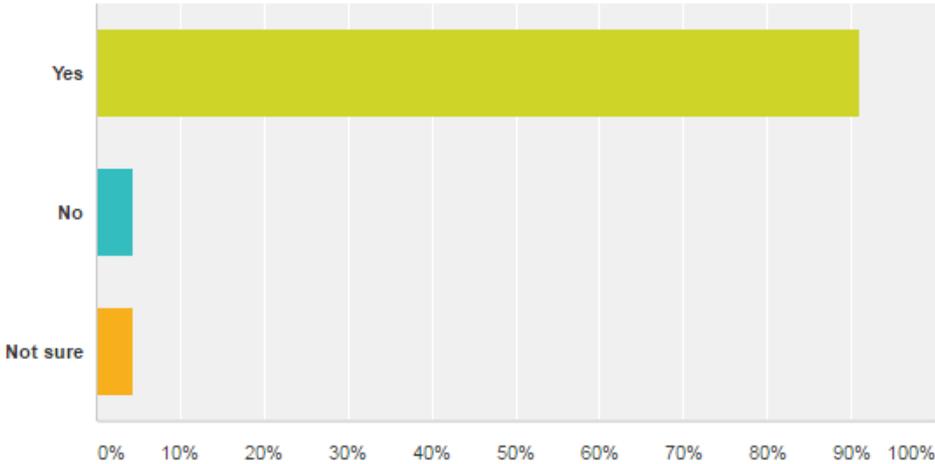
Side effects of PIED use

Answer Choices	Responses	
Aggression	44.07%	26
Mood swings	54.24%	32
Trouble sleeping	40.68%	24
Depression	20.34%	12
Acne / spots	13.56%	8
Erection problems	16.95%	10
Paranoia / anxiety	27.12%	16
Total Respondents: 59		

Users were then asked about their experience of the side effects of PIED misuse. 85% of respondents had noticed negative side effects, with mood swings (54%), aggression (44%) and trouble sleeping (40%) ranking most highly. These figures are important because they indicate that PIED users are aware of, and do experience, the adverse side effects of PIED use. This could form the basis of health intervention or prevention messages. The side-effects that users prioritised relate to mental health, suggesting an intervention approach that emphasised this aspect of PIED misuse.

If yes, do you think PIEDs are harmful?

Answered: 67 Skipped: 4

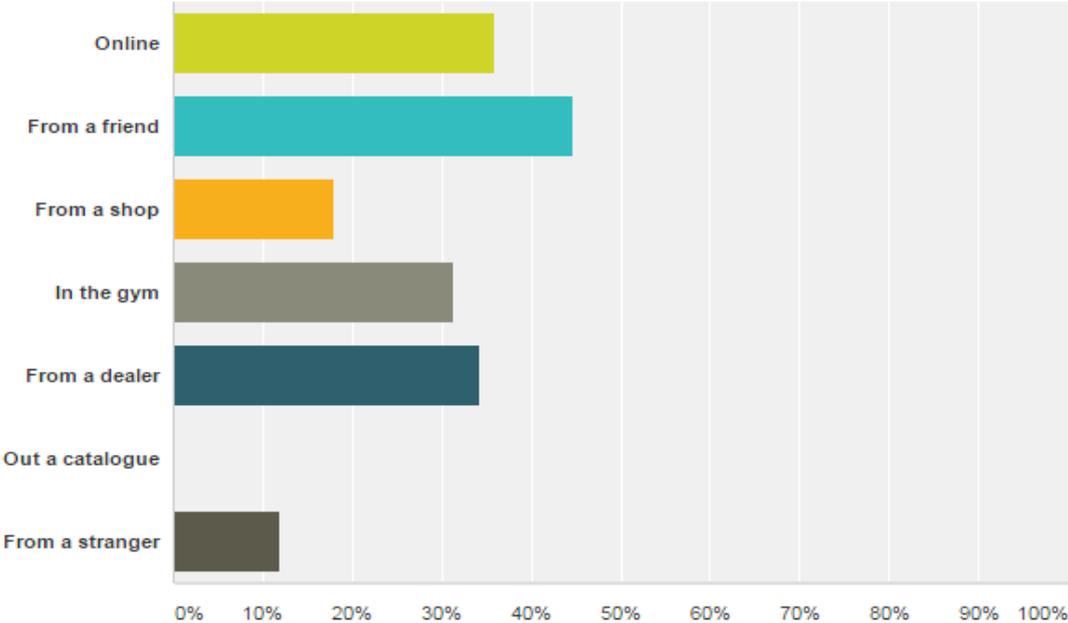


Answer Choices	Responses	
Yes	91.04%	61
No	4.48%	3
Not sure	4.48%	3
Total		67

The figures regarding side effects parallel the high percentage of respondents (91%) who thought that PIED’s were harmful. This figure suggests that the overwhelming majority of users are aware that the consumption of PIEDs comes with significant harms, but users may well believe that the benefits outweigh them. This would make an effective health education intervention difficult. In other words, intervening with current PIED users could prove difficult if their behaviour is deeply embedded. A user that is aware of the health risks and harms of PIED use, but chooses to misuse them regardless, is unlikely to have their behaviour changed through educational health messages. Health education may be more effective among the general population of young people before the onset of PIED misuse.

If yes, where did you get them from?

Answered: 67 Skipped: 1,098



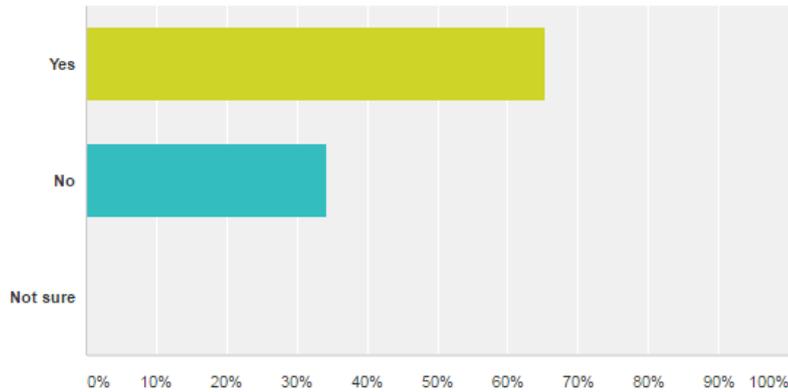
Users were then asked where they acquired their PIEDS. They indicated that a friend (44%) was the most common source, followed by buying PIEDs online (35%) and from a dealer (34%). The divisions between these sources are not clear cut given that a dealer in PIEDs may also be a friend to their customers and may also sell inside a gym. Moreover, a dealer may well have acquired the PIEDs online originally. Nonetheless, the fact that users identified a friend as the most common source of PIEDs suggests an informal, casual relationship among users and suppliers, different from users of other controlled substances. This would complement the earlier finding that PIED users are much more likely than the mainstream population to know other PIED users.

Other drug use

Respondents were asked if they had ever used any other drug. 65% of respondents disclosed that they used drugs of one kind or another. 79% of PIED users responded that they had used them. This suggests a positive correlation between PIED use and other drug use such as cannabis or alcohol.

Have you ever used any other drugs?

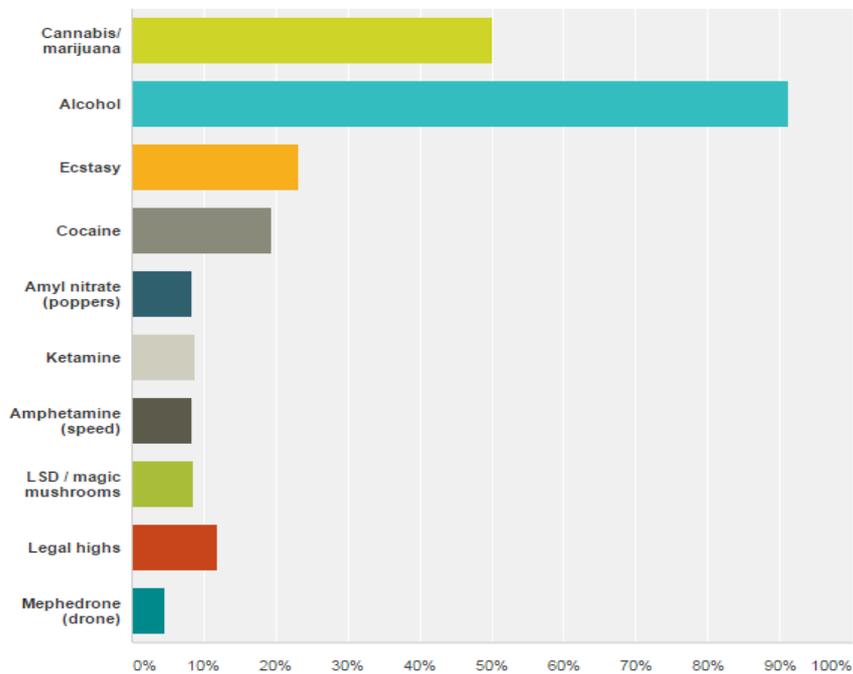
Answered: 1,163 Skipped: 2



Answer Choices	Responses
Yes	65.43% 761
No	34.31% 399
Not sure	0.26% 3
Total	1,163

What kind?

Answered: 769 Skipped: 396



When asked about the type of drug they had consumed, alcohol was the most popular choice at 91%, with cannabis at 50% and ecstasy at 23%. This use of recreational drugs is higher than the findings reported in the most recent Scottish Schools

Adolescent Lifestyle and Substance Use Survey (SALSUS) survey¹⁸. The data from the most recent SALSUS survey found that 17% of 15 year olds had used cannabis, 5% of 15 year olds had taken ecstasy, 5% had taken NPS (or ‘legal highs’) and that 4% had taken cocaine.

However, our questionnaire surveyed a wider age range (15 – 25) than SALSUS and did not ask how often or in what quantities these drugs were consumed. The responses match SALSUS data which has found that alcohol and cannabis are the most popular drugs among Scottish adolescents.

PIED users disclosed significantly higher use of controlled substances with 63% reporting use of cannabis, 50% reporting use of ecstasy and 41% reporting the use of cocaine. Again, users were not asked how often or in what quantities these drugs were consumed. The figures do suggest a positive correlation between recreational drug use and PIED use, although they cannot confirm whether recreational drug users more likely to use PIEDs, or whether PIED users more likely to take other drugs. It may be that normalisation and regular use of one illegal substance normalises the use of others.

Education and prevention

The survey also asked respondents, regardless of their experience of PIEDs, if they believed there should be more work addressing PIED use with young people. 96% of respondents believed that there should be more health education work on PIEDs. This high number indicates that young people believe it to be an important issue that health services should address. Notably, 96% of both PIED users and non-users agreed that there should be more health education available.

Answer Choices	Responses
▼ Youth workers	33.66% 383
▼ Leaflets	22.93% 261
▼ Social media campaign	48.95% 557
▼ School teachers	46.22% 526
Total Respondents: 1,138	

Young people particularly advocated the use of a social media campaign (48%) to deliver PIED health education. School teachers (46%) were also identified as a popular vessel to deliver health promotion. Youth workers and leaflets were both less popular ways of addressing the issue, at 33% and 22% respectively. PIED users agreed with non-users that a social media campaign would be the most effective approach to health intervention and prevention.

¹⁸ <http://www.gov.scot/Publications/2016/10/5514>

2. The Practitioner Survey

Fast Forward also surveyed practitioners and professionals that work with young people on their attitudes and experience of PIEDs. This allowed Fast Forward to gather opinions from adults who, by supporting young people in their daily practice, have a unique insight and perspective into youth health concerns.

Working background

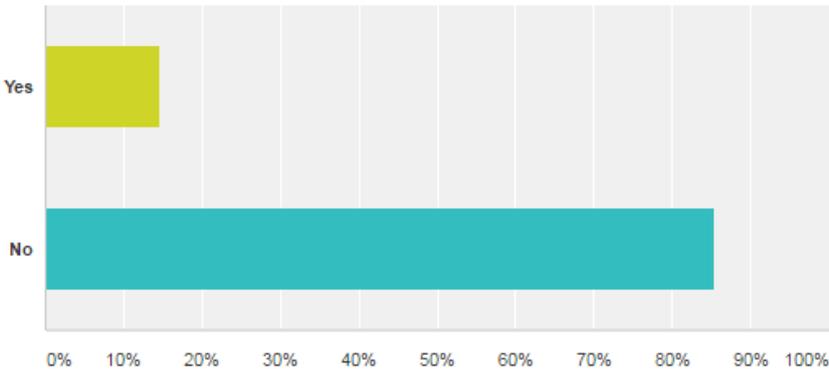
Practitioners were drawn from across the central belt of Scotland. Glasgow, North Lanarkshire and Perth were the most common locations. 31% of respondents worked for a Local Authority, the most common response, while others were drawn from the Police, employability programmes and the voluntary sector.

Practitioner experience of PIEDs

91% of practitioners reported they were aware of PIEDs. The survey then asked practitioners what names young people tended to use for PIEDs. 'Steroids', 'Roids', 'Juice' and 'Gear' were the most common responses. This is useful information for any future work which must be delivered in the language of young people.

Has it been an issue among young people attending your service?

Answered: 75 Skipped: 1



Answer Choices	Responses
Yes	14.67% 11
No	85.33% 64
Total	75

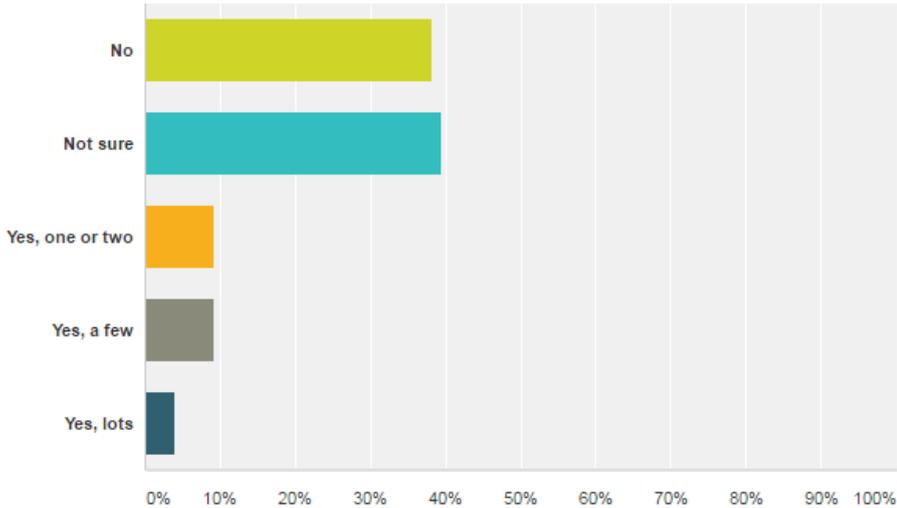
Practitioners were asked if PIED use was an issue for young people attending their service. 85% of respondents said they were not. This is an important figure because it suggests that PIED misuse is not a pressing concern or deep worry for youthwork practitioners. If it were an emerging issue that deeply affected youthwork practitioners,

in the same way the emergence of ‘legal highs’ provoked a strong response, we would expect a significantly higher response.

However, young people using PIEDs may be unlikely to disclose their use to youthworkers. Some anecdotal evidence suggests that PIED users do not consider themselves to be drug users in the common sense and disclosure would depend on the relationship between the youthworker and young person.

Do you work with any young people who has used a PIED? (this will be completely anonymous and confidential)

Answered: 76 Skipped: 0



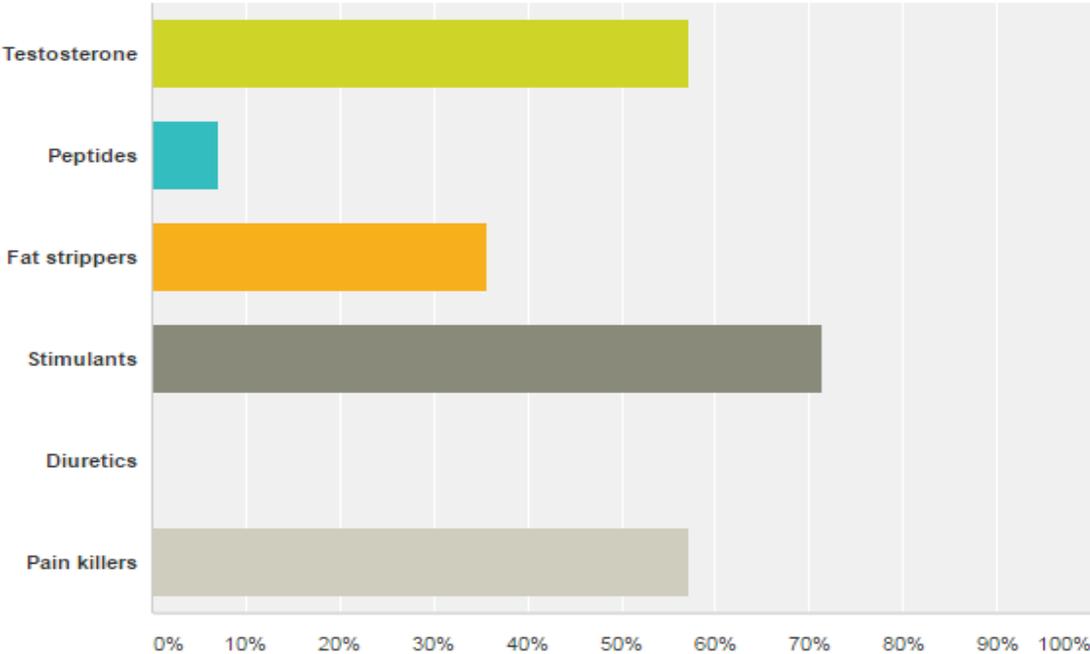
Answer Choices	Responses
▼ No	38.16% 29
▼ Not sure	39.47% 30
▼ Yes, one or two	9.21% 7
▼ Yes, a few	9.21% 7
▼ Yes, lots	3.95% 3
Total	76

22% of youthwork practitioners said that they worked with at least one young person who used PIEDs while 38% of practitioners said that they did not. Interestingly, 39% of respondents were unsure if the young people they worked with used PIEDs or not. This suggests that youthworkers may have concerns but disclosure has not taken place. From the results of the young people’s questionnaire and focus groups, young people appear more likely to discuss youth with peers in the gym. Youthworkers could benefit from improved knowledge and confidence to raise PIED issues with young people and encourage conversation and learning among youth groups. While youthworkers often report having the skills and confidence to raise and address substance misuse, tobacco or alcohol misuse, the peculiar nature of PIEDs may leave some practitioners unsure how best to tackle them.

Furthermore, anecdotal evidence suggests confusion among adult practitioners as to which products qualify as PIEDs and which are legitimate. Practitioners have mentioned that the branding, packaging and advertising of legitimate fitness and gym products seems to imitate the language of anabolic steroids with brand names including 'animal', 'ripped fuel' and 'assault'. It may be that practitioner upskilling would allow youth workers to address PIED misuse with more confidence and understand better the distinctions between health supplements and PIEDs as well as their legal status and the harms associated with PIEDs.

If yes, do you now what kind they use?

Answered: 14 Skipped: 62



22% of practitioners said they did work with young people who had used PIEDs. When they were asked which kind of PIEDs young people used, practitioners responded with stimulants (71%), pain killers (57%), testosterone (57%) and fat strippers (35%). This runs counter to the responses given by young users who clearly identified testosterone as the most commonly used PIED. However, it may be difficult for practitioners to identify properly the kind of PIEDs that young people use.

There could also be confusion among practitioners between energy drinks or whey protein powders and PIEDs. The popularity of stimulants suggests a degree of confusion regarding definitions. Caffeine and energy drinks often adopt the aggressive, masculine language of body building with names like 'Torque', 'Full Throttle', 'Mother' and 'Superman'.

Stimulants in this instance meant substances like caffeine, clenbuterol and ephedrine which are taken by users to ensure they have sufficient energy for a prolonged high intensity workout without tiring. In terms of recreational substance misuse it refers to drugs such as amphetamine or cocaine which raise the heart rate and produce

feelings of excitement, energy and euphoria. Youthworkers may have selected the stimulant option because of the confusion of terms.

Practitioners were also asked about where they thought young people acquired PIEDs. The majority of practitioners (64%) thought that young people purchased them online, while 57% said ‘from a friend’ and 35% said in the gym. This matches the responses from young PIED users who said they were most likely to acquire them from a friend or online. Online purchasing brings the risk of inadvertently buying counterfeit products, which are often cheaper but can be toxic. Websites claiming to sell anabolic steroids frequently send placebo-like products or products containing harmful chemicals which increase health risks and harm.

Practitioners were asked if they had noticed any side effects among young people who use PIEDs. Of those practitioners who work with young PIED users, 60% had noticed side effects.

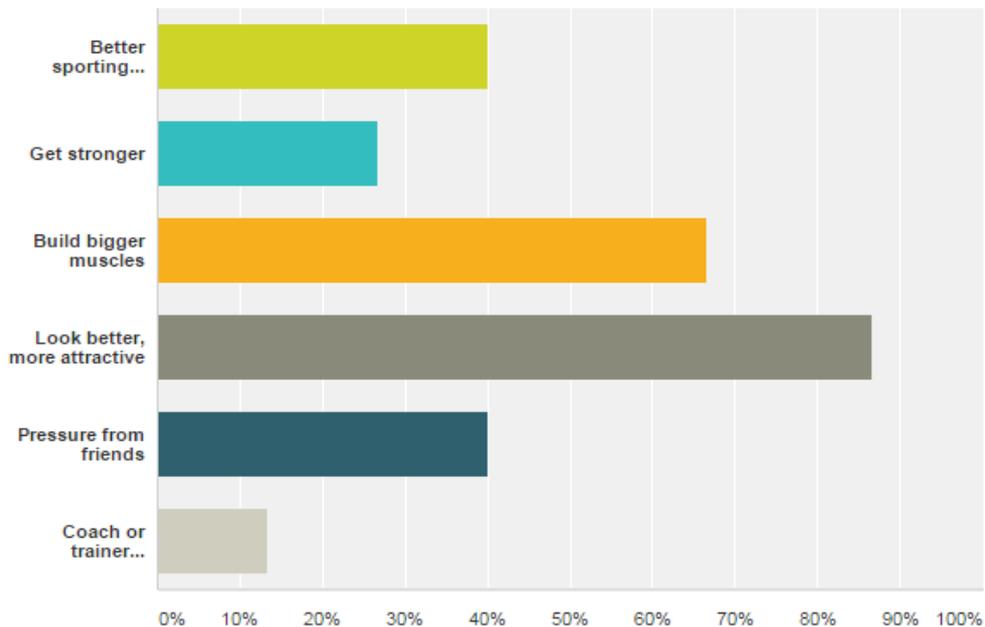
Answer Choices	Responses	
Aggression	55.56%	5
Mood swings	55.56%	5
Trouble sleeping	22.22%	2
Depression	11.11%	1
Acne / spots	44.44%	4
Erection problems	0.00%	0
Paranoia / anxiety	66.67%	6
Total Respondents: 9		

Paranoia and anxiety were the most common (67%) while mood swings and aggression were chosen by 56% of eligible respondents. This has important implications for future work and health interventions. By emphasising the dangerous side effects of PIED misuse, it may be possible to affect behaviour change among users and prevent uptake among prospective users. It is interesting that the most common side effects relate to mental health. Aggression, mood swings and paranoia suggest a volatile and unstable combination of effects.

Later practitioners were asked if they considered PIEDs to be harmful and 70% of respondents agreed that they were. This contrasts with 91% of PIED users who believed that they were “harmful and dangerous”. This has important connotations for harm prevention and early intervention work because it suggest that PIED users are already highly aware of the potential risks and harms associated with PIED misuse. An approach that sought to effect behaviour change through descriptions of side-effects, damage or harm would not be successful. An alternative method that recognises that users have made an informed decision, weighing up the harm to the benefits, needs to be found.

Why do you think young people take PIEDs?

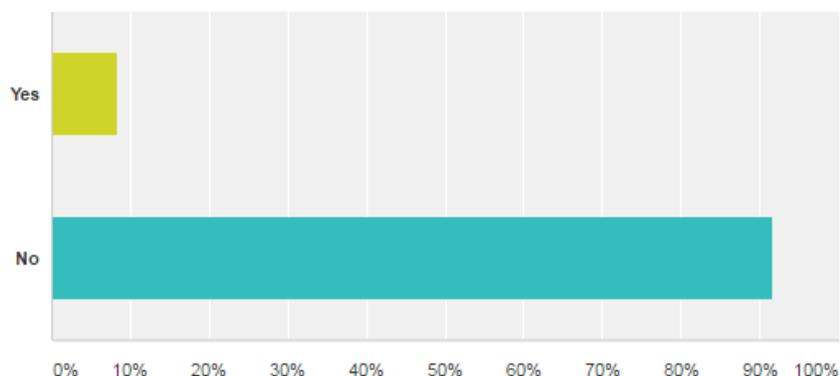
Answered: 15 Skipped: 61



Practitioners were then asked why, in their opinion, young people took PIEDs. 86% of respondents cited looking better and more attractive as the reason. The second most popular reason was building bigger muscles (66%) followed by improved sporting performance (40%) and pressure from friends (40%). This parallels young PIED user responses which prioritised looking more attractive and having bigger muscles.

Have you ever had any personal experience of PIEDs?

Answered: 71 Skipped: 5



It is important to note that a surprisingly high number of adult practitioners and youth workers reported some personal experience of PIEDs. 8% of practitioners surveyed disclosed that they had come across PIEDs in some capacity. This could be through personal use or through friends, family or professional networks. While the question does not specify the context for personal experience, it does indicate that a significant

proportion of adult youthworkers have had contact with PIEDs. This suggests that health education and intervention should focus on both practitioners and young people. Evidence from the focus groups suggests it is 18 to 24 year old young men who are most likely to misuse PIEDs. Of the practitioners who had some personal experience of PIEDs, 83% agreed they were harmful. An asset based approach could take advantage of these figures – that 8% of youthworkers have had some personal contact with PIEDs and that 83% believe they are harmful. A health intervention or prevention model could benefit from youthworkers who have some experience of PIEDs and think they can be dangerous.

Education and prevention

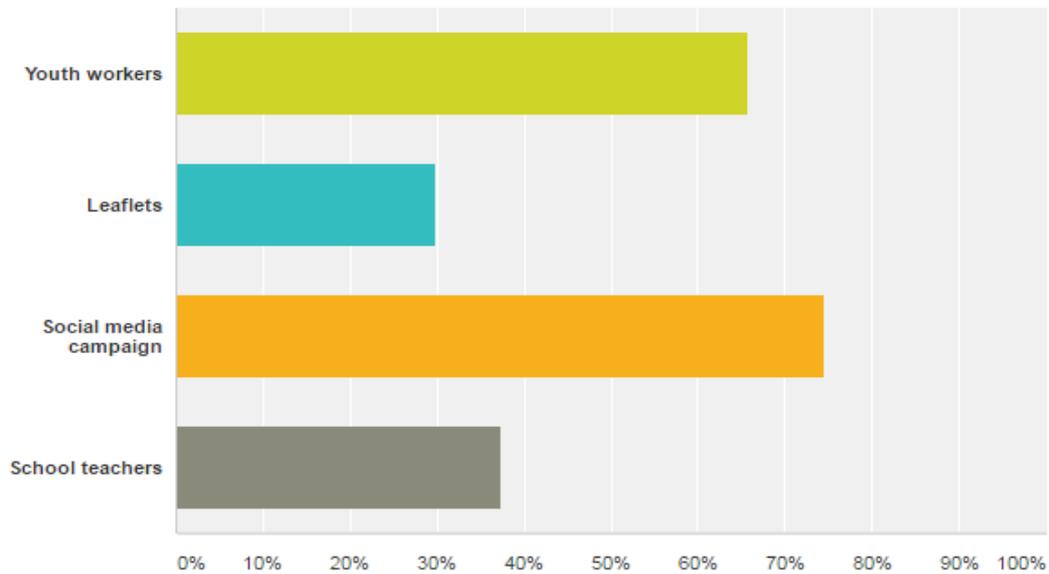
90% of the surveyed practitioners said that their service did not tackle PIED use. When practitioners were asked if there should be more education addressing PIEDs, 90% agreed. Practitioners could benefit from a ‘train the trainer’ approach that upskilled local youthworkers in PIED misuse. Training would improve their confidence and knowledge and would be more sustainable and embedded than a workshop given by an outside expert to young people.

Answer Choices	Responses	
Yes	90.28%	65
No	0.00%	0
Not sure	9.72%	7
Total		72

This strongly suggests enthusiasm and support for PIED education among youthworkers and youth services. It also suggest concern among youthworkers regarding PIED use among young people.

What would be the best way to inform people about them?

Answered: 67 Skipped: 9



When asked what type of education, 74% of practitioners thought that a social media campaign would be the best way to inform young people about PIEDs. This was followed by an approach using youth workers (65%) and then using school teachers (37%). This echoes the responses from young people who strongly agreed that a social media approach would be most effective.

3. Focus groups

Over June to August 2016 Fast Forward ran 11 focus groups to gather qualitative information about young people's experience and attitude towards PIED use. These focus groups took place in a variety of youthwork settings including schools, colleges, gyms, youth clubs, sports clubs, boxing clubs and community centres. The respondents were drawn from across Scotland and were invited to share their views and opinions in an informal, relaxed and confidential setting.

Experience of PIED use

- *"I have a few mates that take steroids. Steroids will help, but the best way to get better is to train for championships instead of taking performance enhancing drugs, in other words a quick fix. I have seen one guy banned from the gym recently, not sure if he was taking steroids. Not banned from the gym, but banned from competing (boxing). He's going to try get back into competing, but whether they get back in it or not is a different matter. I think he'll probably take steroids again to get a quick fix. When you go to a fight and notice someone taking steroids you can see by their fighting and mass. They are a lot more aggressive in their boxing, a barrage more of punches. Sometimes they could win, but sometimes they could lose as they get too aggressive so they don't think about what they're doing. The coaches don't encourage steroids use."*
- *"In my gym, there are 18 to 21 year olds who are taking them, discussing steroids openly in the gym and where they got them from."*
- *"Knew of someone that took it and stopped due to symptoms – they got the shakes and fainted. Didn't reach his goal. It was fat burners."*
- *"Round about here you hear of people going to the gym and you assume they're on steroids. You hear rumours that they're taking it and getting big."*
- *"In my gym near enough 10 out of 10 young people take them. They take them in the gym, they discuss the symptoms about erection but they discuss the effects on the body and how to get to a good shape and help you achieve your goals. These messages are coming from 19 to 20 year olds. The average age that goes to my gym is between 22 and 35. I go to the gym because I want to get big."*
- *"18 year olds are passing around steroids at my gym. You can tell by the acne and muscle definition. People have spoken to me about it in the gym and they've*

talked about the symptoms to their doctor because they got in a really terrible shape, got depressed. This was someone under the age of 25.”

- *“My friend disclosed that he was taking steroids when I was speaking to them, 16 years of age and still at the school. He’s been taking them since going to the gym since Christmas. I noticed a change, he’s got huge proper quick, wears tight tops and you see his muscles showing through. He used to be pure skinny as anything and now he’s big built. He became more aggressive in his nature. Goes to the gym every day at the leisure centre. Doesn’t do much cardio, he just does weights.”*
- *“I’ve noticed a change in a family member physically and emotionally since she’s been taking them. She’s become aggressive, but always tired when she comes in from her work. She wakes up during the night to get water a lot. Just drinks water in the night time. Her aim was to get back into the police force that’s why she’s loosing weight. Takes one a day.”*

What are the names of PIEDs?

- Clenbuterol: *“30 tablets for £5 per grouping” “ten a penny”*
- Phentermine: *“30 tablets for £35 per grouping”*
- T-5’s: *“tablets for £10 per grouping”*
- Anadrol: *“injection, easy to buy” “tablet form £45 but is more dangerous, liquid form £65”*
- Testosterone – “test” “t”
- Testosterone – Propionate *“prop” “injection”*
- Testosterone – Cypionate *“injection”*
- Testosterone - Enanthate *“injection”*

Why do young people use PIEDs?

- *“Size matters with the females. Body mass leads to more female attention”*
- *“Lots of young people look at magazines and telly and see what girls like. It has an influence on their thinking”*
- *“Impatience, to develop muscle at a quicker rate.”*
- *“It’s impossible to reach your full potential without using them.”*
- *“It’s that extra boost, to look better, feel better. It’s like females needing makeup to look better. It becomes an obsession.”*

- *“You think: Look, I don’t look good, so why would anyone want to be with me?”*

What are the effects of PIED use?

- *“If you abuse it, it could go wrong.”*
- *“Orally they’re harmful to your liver and are toxic.”*
- *“If you use it ‘properly’, keep it on a cycle and take it as prescribed it will be ok.”*
- *“Addiction. Body dysmorphia. I tried to get them off them. But you get addicted to the gains you see. You think steroids are helping you, but it’s a placebo effect.”*
- *“Clenbuterol use means your temperature increases at night. It’s called night sweats. It affects your sleeping pattern, you need to drink water and you’re constantly needing the toilet. It makes you shake like Michael J Fox.”*
- *“It gives you mood swings. It affected my relationship with my girlfriend ... I spent increased time in gym... my insecurity was heightened ... I’m still not noticing the difference.”*
- *“Muscle-dysmorphia. It changes your brain chemistry, it takes years and years to get it back to sync.”*
- *“If you start a cycle when you’re at a low weight, if you don’t have the foundation to build on, it’s more damaging. This can led to death and liver problems for young people, like alcoholism.”*
- *“Doctors are not open minded. Their way of thinking is to come off it straight away. But depending on where you are on your cycle i.e. 3rd out of 8th week, you can dive bomb. Then the side effects kick in and it’s more dangerous.”*
- *“It affects your confidence. Your muscles never feel big enough. You become more insecure in how you look.”*
- *“They (users) have got rashes on back of their shoulders during workouts.”*
- *“The needle marks aren’t visible after the initial injection.”*
- *“It give you visible bruising and needle marks. Sometimes they bleed in the glute where they injected.”*
- *“They’re dangerous. It feels like you’re cheating. It makes you alone. It makes you radge.’*
- *“If you’re already a prick and you take steroids then you’re going to become a bigger prick”*

Reducing PIED harm

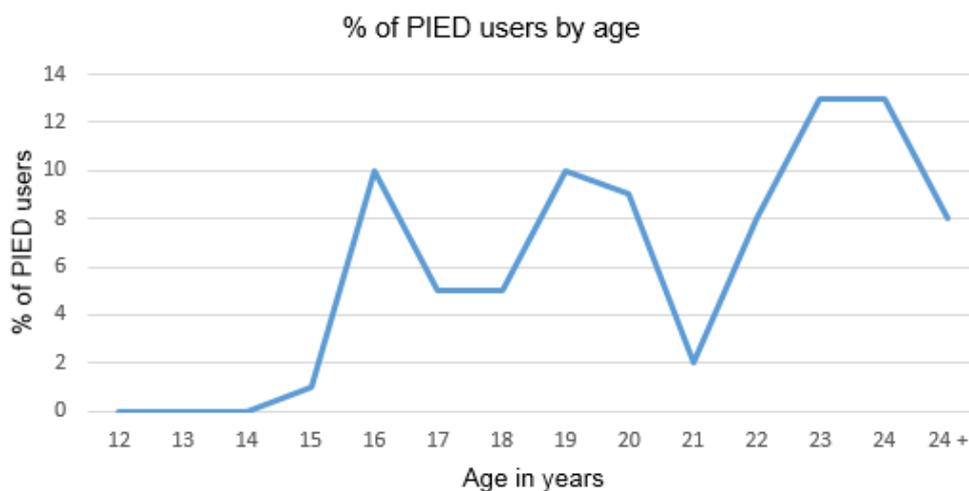
- *“Young people will probably think ‘Aw, that won’t happen to me’ so they won’t pay attention.”*
- *“Showing the side effects in gym, how it ruins your life.”*
- *“Show the drugs to youth group.”*
- *“Make literature more relatable for young people. Tell it from a good and a bad perspective. An ex-user to inform this would be helpful.”*
- *“Show effects to the individual and how it can affect the family.”*
- *“Get an ex-user to speak to young people.”*
- *“Videos scare tactics - before and after.”*
- *“Educational workshops for parents, just the same as for young people.”*
- *“Educate tutors and practitioners working with young people on product information, support services, correct and dangerous ways to cycle. Make sure that they have an open approach to steroids.”*
- *“Take young people into a bodybuilder gym.”*
- *“Advise them on the types of steroids and side effects and the way and how people take them.”*
- *“Pro’s and con’s – ask their opinions of the pro’s and con’s.”*

4. Analysis of results

The survey findings imply that PIED use is more widespread than existing literature and research would suggest. For example, the National Steroid Survey by NHS Public Health Wales found that there are up to one million adult male PIED users across Britain, or 3% of the male population¹⁹. However, nationwide figures regarding steroid use are scarce and most contemporary literature uses evidence from local drug services or Home Office statistics on PIED seizures. Our young people's survey reported significant levels of PIED misuse (6%) compared to previous estimates. This parallels the views of adult practitioners of whom 22% said they worked with young people misusing PIEDs. However, the overall sample of Scottish young people (1156) is not large enough to draw conclusive results.

It should be noted that young users may have been reluctant to disclose their PIED misuse and that young people are sometimes unclear on the definitions of a PIED. Their confusion is exacerbated by sensational product names for energy drinks, protein powders and health supplements such as 'monster', 'ripped', 'hardcore' and 'xplode'. With the rapid growth of the male beauty and fitness industry and the rise of body conscious culture, a range of products now imitate the language and style of PIEDS, particularly anabolic steroids. Even innocuous vitamin and mineral supplements use language that promise 'massive gains', 'rapid growth' or 'animal' results.

It should also be noted that previous research has generally focussed on an older age range, typically 18 - 30. This survey deliberately targeted a younger age range of 13 – 24 year olds, in keeping with Fast Forward's organisational mission. Previous surveys^{20 21} have typically found that PIED misuse is most common among young people aged between 21 and 25. This survey drew similar results with 23 and 24 year olds being significantly more likely to report PIED misuse. 13% of 23 and 24 year old reported some PIED use. Again caution must be exercised given the relatively small number of respondents.



¹⁹ <http://www.ipedinfo.co.uk/resources/downloads/2015%20National%20IPED%20Info%20Survey%20report.pdf>

²⁰ <http://www.cph.org.uk/wp-content/uploads/2015/07/SIEDs-report-GB-JL-10-7-15-Final.pdf>

²¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/119132/anabolic-steroids.pdf

The survey also revealed not only that 6% of respondents have used PIEDs but also that 46% of young people know a colleague that is misusing PIEDs. This suggests that even among younger teenagers (16-17) there is a risk of harm. 10% of 16 year olds surveyed said they had used PIEDs at some point, the second highest group after 23-24 year olds. The side effects noticed by young people, which emphasised aggression, paranoia and mood swings, are also a particular cause for concern. Health intervention and prevention messages that emphasised the mental health aspects of PIED misuse may be more effective than messages that emphasis the physical harms, such as liver damage, which are already well-publicised.

Both the survey findings and focus groups emphasised that poor body image and low self-esteem are key motivations behind PIED misuse. 61% of users identified helping to build more muscle as the key motivation behind their use while 55% of users identified looking better and more attractive. Male users were particularly keen to look physically attractive.

“Size matters with the females. Body mass leads to more female attention.”

Previous research on youth mental health and self-image such as the Health Behaviour in School-aged Children study by St Andrews University²² has revealed an increasing desire among young people to look attractive and to gain social acceptance by attaining a certain image. Reports indicate this has been exacerbated by social media and online applications like instagram or tumblr. This has paralleled a dramatic increase in mental health issues and low self-esteem among young people reporting by NHS Child and Adolescent Mental Health Services (CAMHS).

The Scottish Children’s Commissioner and Scottish Youth Parliament have described this dramatic rise in mental health problems, anxiety and depression as ‘our generation’s epidemic’. Their research and subsequent report into youth mental health²³ posited that a pervasive celebrity and social media-driven culture of unrealistic body shapes and sizes has significantly impacted young people’s self-esteem and self-image.

The focus groups ironically revealed that PIED misuse can exacerbate poor mental health and body image, leading to depression, anxiety and paranoia. 85% of users had noticed unpleasant side effects and 91% of users said PIEDs were “harmful and dangerous”. Some PIED users reported that they never felt large or muscular enough and that they became obsessed with their size and muscularity, a dysmorphic condition that is sometimes termed ‘bigorexia’.

The majority of PIED users, 49%, attended gyms and said that this was where they used PIEDs. A smaller percentage of users attended sports or youth clubs. Some mental health research²⁴ has suggested that participation in youth clubs or sports

²² http://www.cahru.org/content/03-publications/04-reports/hbsc_nr14_interactive_final.pdf

²³ http://www.syp.org.uk/our_generation_s_epidemic

²⁴

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/416279/A_review_of_the_Social_Impacts_of_Culture_and_Sport.pdf

activities shields young people from low self-esteem which would reduce the likelihood of PIED misuse. PIED users were also significantly more likely than non-users to have taken recreational drugs including cocaine and ecstasy.

Comments from participants in the focus groups empathised the connection between gym attendance and PIED misuse. The focus groups also suggested that the gym represented a community and pool of knowledge for PIED users. 88% of young PIED users knew a colleague who also used them. Many PIED users indicated that this is where they went for advice, information and support.

“In my gym, there are 18-21 year olds who are taking them, discussing steroids openly in the gym and where they got it from.”

“My friend disclosed taking steroids when I was speaking to them. They’re 16 years of age and still at the school. They’ve been taking them since going to the gym since Christmas.”

The survey also revealed that synthetic testosterone was the most popular form of PIED. This corresponds with literature and anecdotal evidence that suggested that testosterone-based drugs (such as anabolic steroids) are the most commonly used PIED. Indeed, evidence suggests that anabolic steroids are practically synonymous with PIEDs. Despite the wide range of PIEDs, the public imagination tends to conflate anabolic steroids with other PIEDs regardless of ingestion method or result. Given that anabolic steroids, used in conjunction with high intensity workouts and increased protein and calorie intake, work to increase muscle mass, this is understandable.

The focus groups revealed that users are well aware of the benefits and risks of anabolic steroid use. This would make a traditional health education intervention problematic. Users believe they have made a rational decision to use PIEDs, having weighed the dangers with the benefits. Users may have a well-informed and even expert understanding of PIEDs which would make interventions that explain the health risks or suggest diversionary activity ineffectual. Comments during focus group discussion suggested this:

“In my gym near enough 10 out of 10 young people take them. They take them in the gym, they discuss the symptoms about erection but they discuss the effects on the body and how to get to a good shape and help you achieve your goals. These messages are coming from 19 to 20 year olds. The average age that goes to my gym is between 22 and 35. I go to the gym because I want to get big.”

“My friend disclosed that he was taking steroids when I was speaking to them, 16 years of age and still at the school. He’s been taking them since going to the gym since Christmas. I noticed a change, he’s got huge proper quick, wears tight tops and you see his muscles showing through. He used to be pure skinny as anything and now he’s big built. He became more aggressive in his nature. Goes to the gym every day at the leisure centre. Doesn’t do much cardio, he just does weights.”

“18 year olds are passing around steroids at my gym. You can tell by the acne and muscle definition. People have spoken to me about it in the gym and they’ve talked

about the symptoms to their doctor because they got in a really terrible shape, got depressed. This was someone under the age of 25.”

These comments suggest that PIED users share information, knowledge and advice in the gym. It may be possible to adopt an asset-based approach that uses PIED users as peer-to-peer educators to spread harm reduction messages, accurate facts and safety tips. This approach could mitigate some of the negative consequences of incorrect and harmful information being shared among users. Anecdotal evidence suggests that young men are keen to exchange stories and advice regarding PIED use, supplements and muscle building techniques. However, the accuracy of this information varies markedly and amateur experts are sometimes characterised as ‘gym-bro’s’ to be best avoided. Nonetheless, the fact that there exists a community of PIED users in certain gyms is important could provide the basis for intervention work.

The research and survey results did suggest that PIED misuse also occurs among young women. Approximately 33% of users were female which runs counter to the prevailing view that PIED use is almost exclusively a male phenomenon. Female users indicated a preference for fat strippers and stimulants and indicated that losing weight to become more attractive was their key motivation. As with young men, this suggests that self-image and confidence underpin PIED misuse. The results complement recent research that has found a link between poor mental health among young women, frequent social media use, and an unrealistic body culture²⁵.

Female users were less likely than male users to have used PIEDs for a year or more (26% of males users compared to 20% of female users). Moreover, female users (30%) were more likely than males (23%) to have used them just once.

They were more likely than males to have ingested PIEDs in pill form than through injection. 86% of male users injected while only 37% ingested pills. This compares to 14% of female users using needles and 95% choosing to use pills.

This may be because muscle building PIEDs such as anabolic steroids tend to require injection to be most effective. Furthermore, all female users considered PIEDs to be harmful compared to 86% of male users. This would correspond with anecdotal evidence that female users are more wary of the risks and harms associated with PIED use than males.

Male and female PIED users were both most likely to be between 23 and 24 and attend a gym regularly. They were both more likely to be attending college and both groups were significantly more likely than the mainstream population to know other PIED users. However female users were much less likely to use testosterone (33% for female, 88% for male) and more likely to use fat-strippers (75% for female, 28% for male).

Similarly, young women were much more likely to use PIEDs that helped them lose weight (71% female compared to 21% male) and less likely than young men to want to build muscle (29% female compared to 79% male).

²⁵ <https://parentzone.org.uk/article/report-perfect-generation-internet-undermining-young-people%E2%80%99s-mental-health>

Among male users, 44% obtained PIEDs from a drug dealer and 42% from a contact at their gym. However, only 10% of female users obtained PIEDs from a drug dealer and 14% from a contact at the gym. Young women may be less likely to acquire their PIEDs from a dealer because drug dealers are more strongly associated with prohibited anabolic steroids. Instead young women were significantly more likely to purchase PIEDs from a friend (52%).

Likewise, young women using PIEDs were more likely to notice mood swings and have trouble sleeping. Young men reported higher incidences of aggression, often associated with testosterone misuse.

Fast Forward would like to expand the research to address gaps in current health knowledge, including:

- The use of PIEDs such as diuretics, stimulants and peptides.
- uncovering the reasons behind young people's PIED misuse and providing a relaxed and informal forum to hear young people's voices.
- the relationship between PIED misuse, body image and mental health.
- PIED misuse and inequalities, particularly among young men not in education, employment or training or young people living in areas of multiple deprivation.
- where PIED misuse is most common (gyms, sports clubs, etc.) which could inform where health interventions should take place.



Steroids and Performance Enhancing Drugs Survey

Young People

All the information you give will be entirely confidential.

If you prefer you can fill this in online instead by visiting:

www.surveymonkey.com/r/anabolicsteroids

Thanks for taking a few minutes to help us and tell us what you think!

1. Do you consider yourself ...?

Male	Female	Non-binary	Prefer not to say
------	--------	------------	-------------------

2. Do you consider yourself to be transgender?

Yes	No
-----	----

3. Which of these groups do you consider you belong to?

White	White – Eastern European	Black - Caribbean	Black - African	Indian / British Indian
Pakistani / British Pakistani	Chinese / British Chinese	Any other ethnic group		

4. What age are you?

12	13	14	15	16	17	18	19	20	21	22	23	24	over 24

5. Which area do you live in:

East Lothian	Edinburgh	Midlothian	West Lothian	Other
--------------	-----------	------------	--------------	-------

WORD BOX:

ANABOLIC STEROIDS: drugs that have a similar effect to testosterone, the male hormone, and help build muscle

PERFORMANCE AND IMAGE ENHANCING DRUGS (PIEDS): any drug taken to boost someone's self-image or improve their sporting performance.

6. Which best describes your situation:

At school	At college	At university	In work
On a training scheme	Unemployed	Other (please describe)	

7. Do you regularly go to

A gym	A sports club	A youth club
-------	---------------	--------------

8. Do you know anyone who has used a Performance or Image Enhancing Drug (PIED)? (e.g. anavar, stanozol, sustanon, dianabol.)

No	Not sure	Yes, one or two	Yes, a few	Yes, lots
----	----------	-----------------	------------	-----------

9. Have you ever used a Performance or Image Enhancing Drug (PIED)?

Yes	No	Not sure
-----	----	----------

If no, please go to Question 19.

10. If yes, how long have you been using them?

Just once	A few months	About a year	Over a year	A few years
-----------	--------------	--------------	-------------	-------------

11. If yes, what kind do you use?

Testosterone	Peptides	Fat strippers	Stimulants	Diuretics	Pain killers
--------------	----------	---------------	------------	-----------	--------------

Other kinds (please list)

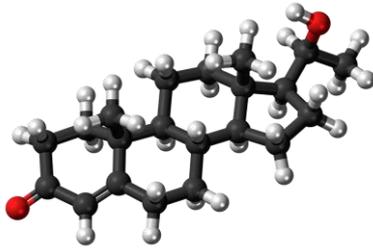
--

12. If yes, how do you take them?

As pills	Inject them	Rub them into skin
----------	-------------	--------------------

Other methods (please list)

--



13. If yes, what do they do?

Make it easier to recover	Help strip away fat	Help build more muscle	
Give you more energy to train			

Other effects (please list)

14. If yes, where did you get them from?

Online	From a friend	From a shop	In the gym
From a dealer	Out a catalogue	From a stranger	

Other source (please list)

15. If yes, have you noticed any side effects?

Yes	Maybe	No	Don't know
-----	-------	----	------------

16. What kinds of side effects?

Aggression	Mood swings	Trouble sleeping	Depression	Acne / spots	Erection problems	Paranoia / anxiety
------------	-------------	------------------	------------	--------------	-------------------	--------------------

Other side effects (please list)



17. If yes, why did you decide to take PIEDs?

Better sporting performance	Get stronger	Build bigger muscles	Look better, more attractive	
Pressure from friends	Coach or trainer recommended it			

18. If yes, do you think PIEDs are harmful?

Yes	No	Not sure	
-----	----	----------	--

19. Have you ever used any other drugs?

Yes	No	Not sure	
-----	----	----------	--

20. What kind?

Alcohol	Cannabis/marijuana	Ecstasy	Cocaine
Amyl nitrate (poppers)	Ketamine	LSD / magic mushrooms	Amphetamine (speed)
Legal highs	Mephedrone (drone)		

21. Do you think there should be more education about PIEDs?

Yes	No	
-----	----	--

22. What would be the best way to inform people about them?

Youth workers	Leaflets	Social media campaign	School teachers
---------------	----------	-----------------------	-----------------

Many thanks for taking a bit of time to help us with these questions. Once you've finished, please give this survey back to a staff member.



Steroids and Performance Enhancing Drugs Survey

Practitioners

All the information you give will be entirely confidential.

If you prefer you can fill this in online instead by visiting:

www.surveymonkey.com/r/anabolicsteroids

Thanks for taking a few minutes to help us and tell us what you think!

WORD BOX:

ANABOLIC STEROIDS: drugs that have a similar effect to testosterone, the male hormone, and help build muscle

PERFORMANCE AND IMAGE ENHANCING DRUGS (PIEDS): any drug taken to boost someone's self-image or improve their sporting performance.

1. Which region do you work in:

East Lothian	Edinburgh	Midlothian	West Lothian	Other
--------------	-----------	------------	--------------	-------

2. Do you work in a:

A gym	A sports club	A youth club	Community centre	Local authority	Health service
-------	---------------	--------------	------------------	-----------------	----------------

3. Have you heard of 'performance and image enhancing drugs' (PIEDs), like anabolic steroids, before?

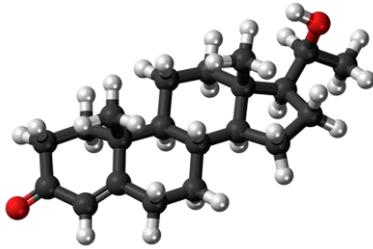
Yes	No
-----	----

4. In your experience what are they usually called?

--

5. Has it been an issue among young people attending your service?

Yes	No
-----	----



6. Do you work with any young people who has used a PIED? (this will be completely anonymous and confidential)

No	Not sure	Yes, one or two	Yes, a few	Yes, lots
----	----------	-----------------	------------	-----------

7. If yes, do you know what kind they use?

Testosterone	Peptides	Fat strippers	Stimulants	Diuretics	Pain killers
--------------	----------	---------------	------------	-----------	--------------

Other kinds (please list)

8. If yes, do you know where they got them from?

Online	From a friend	From a shop	In the gym
From a dealer	Out a catalogue	From a stranger	

Other source (please list)

9. If yes, have you noticed any side effects?

Yes	Maybe	No	Don't know
-----	-------	----	------------

10. What kinds of side effects?

Aggression	Mood swings	Trouble sleeping	Depression	Acne / spots	Erection problems	Paranoia / anxiety
------------	-------------	------------------	------------	--------------	-------------------	--------------------

Other side effects (please list)



11. Why do you think young people take PIEDs?

Better sporting performance	Get stronger	Build bigger muscles	Look better, more attractive	
Pressure from friends	Coach or trainer recommended it			

12. In your opinion, do young people think PIEDs are harmful?

Yes	No	Not sure
-----	----	----------

13. Have you ever had any personal experience of PIEDs?

Yes	No
-----	----

14. Is your organisation currently doing any work on the topic?

Yes	No
-----	----

15. Do you think there should be more education about PIEDs?

Yes	No
-----	----

16. What would be the best way to inform people about them?

Youth workers	Leaflets	Social media campaign	School teachers
---------------	----------	-----------------------	-----------------

Many thanks for taking a bit of time to help us with these questions.

Once you've finished, please give this survey back to a staff member, or you can post it to:

**Fast Forward
4 Bernard Street
Edinburgh
EH6 6PP**