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FINAL REPORT

SECTION 3 – DEFINITIONS AND BACKGROUND

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3.1 Background to Doping

3.1.1 History and context of doping in elite sport

Doping in elite sport has a long history; in 1928 the International Amateur Athletic Federation (IAAF) became the first International Sport Federation to ban the use of doping, then defined as stimulating substances.¹ During the 1930s many other sporting federations undertook similar measures but restrictions remained ineffective. The public death of a Danish cyclist, Knud Enemark Jensen, during competition at the Olympic Games in Rome in 1960, due to a suspected amphetamine overdose, increased the pressure for sports authorities to introduce drug tests.² Later in the same decade, the death of British cyclist, Tommy Simpson, while under the influence of amphetamines during the 1967 Tour de France, provided further impetus for the implementation of official anti-doping control systems and the banning of amphetamines in international sport. Similar high profile doping cases within elite sport such as, Ben Johnson, Dan Mitchell, and Linford Christie³ have ensured that doping within elite sport has retained a high level of importance.

Most International Federations had introduced drug testing by the 1970s, nevertheless the use of anabolic steroids was becoming widespread, especially in strength events, as at that time there was no way of detecting them.⁴ A reliable test method was finally introduced in 1974 and the International Olympic Committee (IOC) added anabolic steroids to its list of prohibited substances in 1976, which resulted in a marked increase in the number of drug disqualifications in the late 1970s, notably in strength related sports such as throwing events and weightlifting.⁵ In 1998 a large number of prohibited medical substances were found following a police raid during the Tour de France, as a result the IOC convened a 'World Conference on Doping in Sport' at Lausanne. This resulted in the Lausanne declaration which approved the development

of the World Anti-Doping Agency (WADA). It describes itself as a "unique hybrid organization that is governed and funded equally by the sports (Olympic) movement and governments".⁶ The framework for WADA's activities is provided by the World Anti-Doping Code which first came into effect in January 2004 and has the two listed purposes:

- To protect athletes' fundamental right to participate in doping free sport and thus promote health, fairness and equality for athletes worldwide
- To ensure harmonised, coordinated and effective anti-doping programs at the international and national level with regard to detection, deterrence and prevention of doping

The Code is the fundamental universal document all global anti-doping activities are based on.⁷ Amongst other things, the Code addresses: the definition of doping; sanctions; the doping list; checks; awareness-raising; research and laboratory testing. All sporting organisations are obliged to adhere to the Code, however it is not mandatory for all governments.⁸

National sports organisations are members of the corresponding international sports federation or umbrella organisation, and are expected to keep their anti-doping regulations in line with those of the international sports federation. For the majority of these federations, doping regulations issued by governments and the World Anti-Doping Agency (WADA) define policy.

This infrastructure is present in almost all countries, such as the 'Anti-Doping Danmark'⁹ in Denmark, 'Dopingautoriteit'¹⁰ in the Netherlands, and the UK Anti-Doping (UKAD)¹¹ the national body responsible for the implementation and management of the UK's anti-doping policy. UKAD is responsible for ensuring sports bodies in the UK comply with the World Anti-Doping Code. This is typical for most Member States.

Against Doping Project is grant-aided by the European Commission.
This report represents the views of the author and not of the Commission.




Despite this impressive infrastructure for anti-doping practice within elite sport, there are many critics of the current doping system. UNI Global Union recently stated that there is a paucity of publicly available statistical evidence to support current policies and practices on drug testing programmes for athletes.¹² The same report cites the lack of standardised reporting by the National Anti-Doping Authorities as one of the principle failings of the system.¹³ Researchers found only 20 of 49 European National Anti-Doping Organizations had annual reports available online despite being bound by Article 14.4 of the WADA Code to annually "publicly publish" their results. An analysis of the existing data from available reports showed some disturbing trends that challenge WADA's narratives in many areas. Out of 44,744 total reported tests by the 20 NADOS there were 445 violations - 207 of them in Belgium. These 445 violations were concentrated in five sports - Bodybuilding (121), Cycling (33), Rugby (25), Powerlifting (21), and Weightlifting (21).¹⁴

Furthermore, the UK Athletics Authority (UKA) suggests that while a "comprehensive testing programme" plays a fundamental role as a deterrent and preventative measure against doping, UKA acknowledges that further work must be undertaken to provide athletes with the information and technical advice they need to make informed and responsible choices in compliance with the UKA's (AD regulations). The need for education is especially true when attempting to promote the appropriate use of supplements.

Issues relating to supplements have long been handled by the World Anti-Doping Agency. In 2004 they analysed 634 products from standard retail channels in 13 different countries for the presence of steroids or pro-hormones (which the body will metabolise into steroids). Out of the 634 products analysed, 15% were found to be contaminated with steroids/pro-hormones. However, despite the efforts of the World Anti-Doping Agency, the distribution of supplements is hard to regulate due to the obvious and diverse distribution channels provided by the internet. Content and quality cannot always be easily ascertained and it seems that many are deliberately or inadvertently adulterated.

The labelling of such preparations does not always reflect their actual content and so platitudes such as "always read the label" no longer apply. For example, ginseng has been used as an energy booster and whilst ginseng roots do not contain prohibited substances, products carrying the name ginseng have tested positive for ephedrine. In one study, brands of OTC androgenic-anabolic supplements did not comply with labelling requirements, in fact one product contained 77% more steroid than the label stated and another contained 10mg undeclared testosterone.¹⁵ A separate analysis of 75 supplements purchased over the internet found that 7 contained undeclared hormones and 2 contained ephedrine and caffeine.¹⁶ The most compelling evidence is from a study commissioned by the International Olympic Committee (IOC). 94 out of 634 "legal supplements" purchased in 13 countries contained banned substances; 64 containing testosterone, 23 nandrolone and 7 steroid hormones.¹⁷ Capsules were more commonly contaminated than tablet formulations. In the same study, one batch of creatine was cross-contaminated with 7 different banned hormones.

The supplement culture in sport, and in this case for fitness, needs to be addressed and this is why the FAD research has been extended into this area. Knowledge of nutritional supplements and recommended daily allowances is generally poor. Despite the development of advanced drug testing systems, doping in sport, both deliberate and inadvertent, is on the increase in elite, amateur and school sports. Doping in sport not only contravenes the spirit of fair competition, it can be seriously detrimental to athletes' health. Whereas some take drugs to seek deliberate advantage, others feel pressurised into considering doping as the only viable option to level the playing field. Others inadvertently take prohibited substances due to a lack of awareness. A particular problem is the risk of today's supplement culture to accidental exposure and a positive drug test. An effective anti-doping program must incorporate educational components in addition to systematic and consistent testing. To date, governments have concentrated on the development of rigorous drug testing methods without also addressing the educational needs of sportsmen and women and youth cultures. There is



a relative paucity of rigorous scientific research into the extent of doping across the European fitness sector including all aspects of drug taking. Many reports rely on small-scale and localised surveys as an evidence base¹⁸, and the FAD research seeks to counteract this in order to construct a reliable evidence base for future intervention strategies.

3.1.2 Doping and public health

It is often stated that anti-doping controls, as used within elite sport, are not applicable or appropriate to fitness or other amateur sport environments. This is because whilst the anti-doping infrastructure in elite sport is designed to achieve fair play in global elite sport, doping control in a fitness environment has the objective of securing the health of the exercising population. Several sources state that doping can be seriously detrimental to health, and this is the focus of the Commission's thinking. Most anti-doping campaigns have focused on the side effects of long term anabolic steroid use, such as impotence, acne, aggressive behaviour, and damages to vital organs.¹⁹ Most studies of AAS use show a significant drop in high density lipo-proteins amongst users, which may be linked to an elevated risk of cardiovascular diseases.²⁰ AAS also carries physical side effects unique to females, such as increased facial hair, deepening of the voice, and menstrual disturbances.²¹ Studies have also identified side effects in women that are similar to those experienced by males, such as increased aggression, libido, acne, and the loss of scalp hair.²² The use of anabolic steroids has also been associated with liver damage. The potential detrimental health side effects of steroid use exist in stark contrast to the high numbers of Europeans that claim to exercise for the purposes of improving their health, in addition to the potential damage to physical appearance which contradicts the idea that doping may improve body image, another commonly cited motivation for participating in physical exercise.²³

There has also been an increase in the general use of amphetamines and growth hormones which both can have detrimental impacts on health. Growth hormones primarily affects levels of muscle mass, it lets the muscles grow indirectly, not directly,

by increasing the capacity for protein formation: this mechanism increases the amounts of insulin and anabolic steroids a person can use effectively. Use of growth hormones is associated with a risk of developing Creutzfeldt-Jacob disease (prion disease). A comparative study found higher rates of joint pain and carpal tunnel syndrome (nerve impingement) among growth hormone users. Additionally, soft tissue swelling, breast growth, insulin resistance with an increased risk of diabetes mellitus and extreme growth of hands, feet, nose and jaw have all been described as potential side effects in the study.²⁴

Use of amphetamines has also been associated with a variety of psychological and physical effects. Euphoria, hyper-alertness, emotional hypersensitivity with stress and anger also may occur. There are also influences on heart rate and pupil dilation and blood pressure changes may occur.²⁵ In rare cases, liver disorders and epileptic seizures may occur. Furthermore, amphetamine dependence may occur quickly, and is apparent in the inability to sustain normal social and professional activities. In order to experience the same feeling, increasing amounts of the substance must be used. Physically, this may lead to severe weight loss and psychologically to paranoia.

Within unorganised sports, doping is not only used to improve performance, but also to obtain a slim, muscular physique particularly for men, and for women and girls it seems to be a route to faster weight loss. There is separate research on the worrying psychological and physiological disorder arising from what is sometimes referred to as the "Adonis Effect"²⁶ and which can include not only obsessive training to develop a muscular body, but also with eating disorders and taking of anabolic steroids to enhance outcomes. There are many reasons why people (and especially young men who have been the focus of current doping research and activity) turn to enhancing substances to accelerate their training outcome. These include the emulation of their favourite professional sports stars, improving personal strength and body build, gaining a competitive edge against opponents, or succumbing to peer-pressure – and making themselves more sexually desirable. But regardless

of the reason, such practices are often illegal, unethical, and most importantly can be very harmful to their health.

Dr Harrison Page²⁷ who is currently Professor of Psychiatry at Harvard Medical School, has a research focus on substance abuse, and especially with AAS use. He says that the reason why predominantly men take them is because they are highly effective and there is an increasing expectation of male muscularity.



The presentation of large, muscled men in the media, he argues, fuels body image disorders and also can affect some women. The tradition of muscularity is a Western concept and is not very prevalent in other parts of the world such as in Asia. He says that using AAS to increase muscularity is a young form of drug abuse and the oldest users are only just reaching middle age.

Dr Sara Stanford, from the Sahlgrenska University Hospital, Sweden, says that in their studies there is a 10-fold increase in the mortality rate for ASS users who are often also users of other narcotics. It has been argued that those taking AAS to increase their body size suffer from a reverse of anorexia nervosa which is also sometimes linked to body dysmorphic disorder (BDD). This is a type of mental illness, wherein the affected person is

concerned with their body image, manifested as excessive concern about and preoccupation with a perceived defect of their physical features.²⁸ The person complains of a defect in either one feature or several features of their body or vaguely complains about their general appearance, which causes psychological distress that causes clinically significant distress or impairs occupational or social functioning. Often BDD co-occurs with emotional depression and anxiety, social withdrawal or social isolation.²⁹


Extreme levels of bodybuilding have little to do with fitness and well-being activities being undertaken in most fitness centres which present a much more balanced range of products and services to help citizens to improve levels of activity and for their health.



The fitness sector is increasingly characterized by clubs which have a broad range of strength and cardiovascular training with a corresponding reduction in free-weight areas.

People using fitness centres come from a very wide range of demographics and abilities and very few seek to pursue bodybuilding alone.





On the other side, whilst the “messaging” about the harmful effects of taking doping substances is powerful, it does contradict the experiences of users who frequently cite the physiological consequences such as increased strength and muscle growth and desirability.

The commonly accepted reasons for why people take doping substances and stimulants are to:

- Increase muscle strength, and improve body shape
- Lose weight
- Improve physical condition
- Extend a period of training
- Achieve a special (sporting) goal
- Aid recovery from injury

The FAD survey has reviewed the use of banned substances, recreational (or societal drugs) and the use of food supplements which are all used singularly or in combination by some fitness consumers – and it is not a single issue of a minority taking AAS’s to improve muscle size. It is a more complex situation than control and enforcement of a single substance can achieve.

Finally, there is limited clarity over the aim of the doping intervention strategies. Much of the research and strategies into this area have previously focused on the use and prevalence of Androgenic Anabolic Steroids (AAS), defined as, *“A group of synthetic hormones that promote the storage of protein and the growth of tissue, sometimes used by athletes to increase muscle size and strength”*.³⁰ There has been limited research into the prevalence of other forms of doping such as amphetamines, ephedrine, and pseudoephedrine. Therefore, whilst within elite sports, the anti-doping infrastructure are committed to reducing the prevalence of the World Anti-Doping Agency (WADA) list of banned substances; there is no agreement of the substances to be tested within the fitness sector.

To the best of our knowledge no other amateur sport has undertaken work with the complexity and depth of this FAD research. There is practically no evidence available of the prevalence of doping in other amateur sports, even though many of these performance-based sportspeople probably use

fitness centres as part of their training. It would not be an unreasonable assumption that there are doping practices with other amateur sportspeople engaged in activities where, at a professional level, doping is being detected – such as for instance in cycling, weightlifting and rugby.

3.1.3 Doping in fitness and amateur sport

‘Unorganised’ or ‘amateur’ sport and fitness does not currently have a similar infrastructure for harmonised doping control like that which exists in elite and competitive sport. The lack of a harmonised approach is due to a number of reasons.

Firstly, where doping in organised (professional) sport is primarily focused on improving athletic performance, the use of doping in unorganised sports may be due to a desire to obtain a muscular and slim physique.³¹ The Dutch Health Council states that this is especially true of fitness activities, whilst several sources state that fitness and strength training are not sport in a traditional sense, but rather that the “purpose of taking part in these activities is not to compete but to train and stay fit”.³² Both of these sources demonstrate that the desired outcome of fitness activities do not often relate to gaining a competitive edge but instead relate more to personal health, and at times physical appearance. Professor Ask Vest Christiansen consistently argues that it is incorrect to integrate fitness activities and elite sport under the same umbrella, and whilst the anti-doping infrastructure in elite sport is designed to achieve sporting fair play, doping control in a fitness environment has the objective of securing the health of the exercising population.

Secondly, as a result of the unclear nature of drug use within the fitness sector and unorganised sport environments, there is no widely agreed protocol for handling the issue. In contrast with elite sports, the primary task of reducing doping use in unorganised sports lies with the government,³³ as the Commission re-stated in the January Communication, “Doping prevention and doping sanctions remain within the remit of sport organisations and Member States”. This distinction is

because national governments retain responsibility for public health services, and currently anti-doping falls into this area of duty. Although the possible use of substances such as anabolic steroids is generally regarded as a public health problem, cultural, educational and political differences mean there are many different approaches to addressing the issue. For instance, the Netherlands Anti-Doping Authority Foundation has developed an educational programme focusing specifically on athletes in fitness centres and gyms, whilst fitness entrepreneurs, gym owners and instructors are a key intermediate target group.³⁴ However, this approach is in contrast to the Danish program which has focused on controlling and policing, with fitness facilities subjecting themselves to testing in order to demonstrate their support for anti-doping practices.

It is worth emphasising that fitness is not a competitive (as in sport) activity – it is an individual pursuit of health and fitness. The activity where fitness centres are used for training for competitive sport is for body-building/weightlifting. This is not really about health-enhancing fitness but body-changing by building extreme muscle mass, density and body image. There are many in the fitness sector who say that body-building/weightlifting are nothing to do with “fitness” but for the purposes of the FAD project they have been included.

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3.1.4 Existing research and findings for doping within the fitness sector

Due to the lack of an ‘anti-doping infrastructure’ which can produce concise figures on the prevalence of doping, there was only limited data regarding the prevalence of doping in unorganised sport and in particular regarding the fitness sector. Some studies conducted in the US, Netherlands, Denmark, and the United Kingdom have indicated that Androgenic Anabolic Steroids are no longer pre-dominantly taken by elite athletes and are being used more by younger people.³⁶ The results summarised below give an indication of the prevalence of the use of androgenic anabolic steroids and the following sources are routinely quoted:

- The 1991 National Household Survey on Drug Abuse estimated that there were one million users of anabolic steroids in the USA³⁷ and by 2000 the same study estimated the figure at as many as three million.
- Other American studies state that 15-30% of community weight trainers attending gyms and health clubs regularly take AAS.³⁸
- In Britain, in 2006, the Home Office estimated that 1.1% of 16-24 year olds had used AAS.³⁹
- Also in 2006 a Channel Four documentary indicated that AAS was the third most commonly used drug among teenage boys in the UK.⁴⁰
- Also in Britain there was a 51% increase in the seizure of illegal AAS by police between 2004-05.⁴¹
- The first nationwide survey of AAS use in the UK surveyed 21 gyms throughout Britain and found that 8% of respondents admitted having taken AAS at some time, 5% of which were current users (9.1% of men and 2.3% of women).⁴² There was, however, considerable variability between gyms, ranging from no use in one gym to 46% in another.
- The British Crime Survey of 2009/2010 found that about 226,000 people aged 16 to 59 had admitted to ‘ever’ having using anabolic steroids, equivalent to around 0.7% of people in this age group. 50,000 had used AAS within the last year, with 19,000 using them within the last month.⁴³
- The Department of Health’s “Smoking, Drinking and Drug Use Survey (2010) found that AAS usage among boys aged 11-16 in the UK stood at around 0.6% in 2009, and around 0.1 for girls of the same age group. 2% of all school pupils



that age stated that they had been offered anabolic steroids, and 5% of boys aged 14-16 had been offered them.⁴⁴

- A Swedish study revealed that among 16-17 year old male adolescents, 3.6% and 2.8% had used AAS, respectively.⁴⁵
- A recent study in Denmark focused in particular on young males aged 15–25 years old exercising in fitness centres. 5,010 individuals aged 15–60 years were selected at random and asked to respond to a postal or web-based questionnaire. 1,703 individuals (34%) responded to the questionnaire. With 1, 5 % reporting that they currently use or have been using muscle enhancing drugs.⁴⁶
- Recent research performed by TNO examining the prevalence of doping among visitors aged 15 and older showed 8.2% of gym users – an estimated 160,000 – used doping substances in the past year.⁴⁷
- A German study of 11 fitness centres and 484 consumers found that 22% of men and 8% of women had taken performance enhancing substances during the last year.⁴⁸
- In 1993, the Canadian Centre for Drug Free Sport estimated that 83,000 children between the ages of 11 and 18 years had used anabolic steroids in the previous 12 months.⁴⁹
- In France, the incidence of deliberate doping in amateur sport is 5-15%.⁵⁰
- A Brazilian study, conducted in 13 gyms among 288 weight lifters, showed a prevalence of 11.1% for current and past use of steroids, and 5.2% for use of other hormones.⁵¹
- Research into doping use among the Dutch population between the ages of 15 and 64 revealed that 1.0% had used doping in the past year, whilst 2.1% indicated that they have used doping at some point.⁵² In 22.2% of the cases in this ‘used at some point group’, the substance in question was anabolic steroids.⁵³

These examples of research are frequently quoted in sources regarding the prevalence of doping in the fitness sector. So far however, this evidence has several failings when compared to the quality and depth of research in elite sport in this area. The research into the fitness sector has primarily been focused on AAS, and no research has developed


a standardised method across several European member states. Furthermore, most studies have focused on specialist sub groups such as high-school students, bodybuilders, elite athletes, or drug clinic patients.⁵⁴ Finally, studies employing more heterogeneous groups only included AAS users or over the counter drug users and did not report parameters related to physical fitness⁵⁵ which is useful information from which to develop intervention strategies.

A further analysis of the current situation in Europe is laid out in Work Package 3 later in this report.

3.1.5 Recreational Drug use

Despite the current lack of concise figures and data available on the prevalence of doping in amateur sports and the fitness sector, one area in which considerable research has been conducted on a regular basis is in “recreational doping”. Agencies such as the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and The United Nations Office for Drugs and Crime (UNODC) provide reliable data drawn from representative surveys on the use and misuse of a range of legal and illegal substances at national, regional and global levels, allowing for comparative analysis. The prevalence of recreational drug use across Europe may be an area of interest for the purposes of this study in order to ascertain whether cultural and national attitudes towards recreational drugs, national prevention strategies, and drug policy have an impact on the prevalence of doping in the amateur sports and fitness sectors. It will also be possible to examine how consistent national and local authorities have been in developing strategies to tackle the separate problems of recreational drug use and doping in elite and amateur sport.

The European School Survey Project on Alcohol and other Drugs (ESPAD)⁵⁶, a collaborative effort of independent research teams in Europe, forms the largest cross-national research project on adolescent substance use in the world. Trends in recreational drug use are of particular interest to this study as young people (and in particular young males) are believed to be among the most prevalent users of PIEDs, including anabolic steroids and



stimulants as well as recreational drugs. The data presented here also indicates the general prevalence of amphetamine use, which is occasionally used to enhance fitness performance despite the detrimental effect it may have on health, with psychological and physical effects such as euphoria, hyper-alertness, emotional hypersensitivity with stress and anger known to occur to users. Finally, the estimated number of intravenous drug users (IDUs) and infection rates for viruses such as HIV and Hepatitis B among intravenous drug users may be of interest as one method of taking AAS is intravenously, putting this group at substantial risk of infection.

Although data collated by the UNODC, ESPAD and the EMCDDA have led to some progress in standardised research methods relating to recreational drug use in Europe and elsewhere, issues with quality and depth of research, particularly allowing for cross-national comparison, still exist as they do for research into doping in the fitness sector. This is generally due to a lack of co-ordination between agencies, and different methods being employed in the survey process.

The below table (Table 5.3.1) from the ESPAD survey outlines the prevalence of different substances in each of the partner countries and gives a clear overview of the current state of play in terms of recreational drug use across Europe.

State	Population (Millions)	Date of Survey	GDP (PPS)	Cannabis Prevalence	Ecstasy Prevalence	Amphetamines Prevalence	Cocaine Prevalence	Cannabis Prevalence (15-16 Years)	Ecstasy Prevalence (15-16 Years)	Amphetamine Prevalence (15-16 Years)	Cocaine Prevalence (15-16 Years)	Estimated Intravenous Drug Users (IDUs)	Intravenous Infection Rates~
BUL	7.6	2008	41	7.3% (L*), 2.7% (LY*), 1.4% (LM*)	1.7% (LY)	2.1% (LY)	1.7% (LY)	22% (L), 7% (LM)	6% (L)	6% (L)	3% (L)	20,000-30,000	2.2% (HIV), 61% (Hep B)
DEN	5.5	2008	117	38.6 (L), 5.5% (LY), 2.2% (LM)	N/A	1.2% (LY)	1.4% (LY)	25% (L), 10% (LM)	5% (L)	5% (L)	3% (L)	13,000	4% (HIV), 12.2% (Hep B)
GER	82	2007	116	23.7% (L), 5.4% (LY), 2.7% (LM)	N/A	0.7% (LY)	0.9% (LY)	20% (L), 7% (LM)	3% (L)	5% (L)	3% (L)	82,235-137,354	5% (HIV), 36% (Hep B)
HUN	10	2007	63	8.5% (L)	2.4% (LY)	1.8% (LY)	0.8% (LY)	13% (L), 5% (LM)	5% (L)	4% (L)	2% (L)	3,941	0.1% (HIV), 24% (Hep B)
NETH	16.5	2005	130	22.6% (L)	1.2% (LY)	0.3% (LY)	0.6% (LY)	28% (L), 15% (LM)	4% (L)	2% (L)	3% (L)	N/A	0.3% (HIV), 76% (Hep B)
POL	38.1	2007	56	9% (L)	0.3% (LY)	0.7% (LY)	0.2% (LY)	16% (L), 6% (LM)	4% (L)	4% (L)	2% (L)	25,000-29,000	(HIV N/A), 48% (Hep B)
PORT	10.6	2007	78	7.6 (L)	0.4% (LY)	0.2% (LY)	0.6% (LY)	13% (L), 6% (LM)	Less than 2% (L)	Less than 2% (L)	Less Than 2% (L)	20,000-25,000	29% (Hep B)
SWI	7.6	Variant	147	3.4% (LY)	0.8% (LY)	0.6% (LY)	0.2% (LY)	33% (L), 15% (LM)	N/A	N/A	N/A	23,000 (2002)***	(HIV N/A), 14% (Hep B)
UK	61.5	2009	116	31.1% (L)	****1.6% (LY)	****1.0% (LY)	****2.5% (LY)	29% (L), 11% (LM)	4% (L)	2% (L)	5% (L)	30,000-60,000	1.5% (HIV), 40% (Hep B)

***L* refers to lifetime, "LY" refers to last year, and "LM" refers to last month

** All data sourced from the The European Monitoring Centre for Drugs and Drug Addiction, The United Nations Office For Drugs and Crime, and the European School Survey Project (with the exception of data on Switzerland)

*** From Reuter, Peter and Schnoz, Demoenic "Assessing Drug Problems and Policies in Switzerland 1998-2007", Swiss Federal Office Of Public Health (2009)

**** Refers to England and Wales, no recent or reliable estimate available for the UK in its entirety.

The Swiss Government's National Drugs Policy Paper (Federal Office of Public Health, 2006)

3.2 Definitions Used in the Report

In order for the recommendations in the report to be focussed and tangible, it was essential to establish clear definitions for all of the key terms in the project. It became apparent that there needed to be clear understanding of what is being referred to in the report in order to appreciate the current situation in terms of substance use, the current prevalence of doping and what could potentially be implemented in order to continue the fight against doping.

The key terms used in the research and throughout the report which required a definite and clear definition were for:

- A Fitness Centre
- Performance Enhancing Drugs
- Recreational Drugs
- Food Supplements
- Amateur Sport and Fitness
- Organised Sport

3.2.1 Definition of a Fitness Centre

Before the field research could commence it was necessary to agree a definition of fitness – or more particularly of a fitness centre. As the sector has developed and moved away from the old-style free-weight training rooms used for bodybuilding and weight/powerlifting into the modern, complex fitness centres with a vast range of cardiovascular and strength training equipment, swimming pools, racquet sports and wellness areas there has clearly been a shift in the definition of what is now to be considered a “fitness centre”.

Whilst it was recognised that there is now a clearer distinction between hard core body-building “gyms” which are about physique development, and fitness centres, which are about physical activity and health promotion, the perception of many people is that they are still all part of the same broad sector and EHFA accepted this premise for the FAD project.

To date there has been no single, agreed definition of a “fitness centre”, but quite recently there

has been a European classification by NACE (Nomenclature des Activités Economiques). NACE codes have superseded the previous SIC and SOC coding systems and they provide a common statistical classification of economic activities in Europe through Eurostat.

There is now the category of:

“93.13 Fitness Facilities:
Fitness and bodybuilding clubs and facilities”

With the “identification” of fitness facilities at a European level through the NACE Code of 93.13, EHFA then applied some other aspects, products, services and characteristics to be used in the definition for the project research. It was agreed that for a fitness centre to be included within the FAD research it should meet these characteristics:

- It will have a name or title of health club, fitness centre, fitness club, wellness centre or gym, or will use one of these as the description of its principle business activity
- It is a place where physical activity and exercise takes place (i.e. not just a sauna or spa)
- It will have a workout area with equipment-based strength training, and most often also cardiovascular training equipment/machines and frequently also group fitness training in specific rooms or in a studio
- It will be open to the public
- It will have a minimum of six pieces of equipment and/or machines
- Exercise and physical activity can be undertaken on an individual or group basis
- The services are delivered in a safe and controlled environment

For additional clarification, two additional points were considered in selecting fitness centres to be part of the FAD research:

- Exercises and physical activity are supervised by qualified exercise professionals (in person or virtually).
- It may be stand alone, or be part of a larger sporting complex, with other activities such as swimming, sports halls, and racquet sports.

It should be noted that bodybuilding and weightlifting activities and centres are included within this definition even though these activities are not strictly speaking part of fitness training – they are entirely based on strength training. EHFA expects that, over time, the NACE definition will change. As weightlifting and bodybuilding are different “sports” there should be a separation with fitness training.

3.2.2 Definition of a Performance Enhancing Drug

For the purposes of the Fitness Against Doping project, the reference to performance enhancing drugs was restricted to the World Anti-Doping Agency’s Prohibited List. The Prohibited List (List) was first published in 1963 under the leadership of the International Olympic Committee. Since 2004, as mandated by the World Anti-Doping Code (Code), WADA is responsible for the preparation and publication of the List. The List is an International Standard identifying substances and methods prohibited in-competition, out-of-competition and in particular sports. The substances and methods on the list are classified by categories (e.g., steroids, stimulants, gene doping). It should be noted that the use of any prohibited substance by an athlete for medical reasons is possible by virtue of a Therapeutic Use Exemption (TUE).



The full list can be found on the Wada list and is approved and updated on a yearly basis.⁵⁷

Performance Enhancing Drugs include:

- Anabolic Steroids – a group of synthetic hormones that promotes the storage of protein and the growth of tissue, sometimes used by

athletes to increase muscle size

- Stimulants – a chemical agent that temporarily arouses or accelerates physiological or organic activity, such as Ephedrine, pseudoephedrine, amphetamines, and growth hormones

The majority of research into the substance abuse within both elite sport and recreational activities, including fitness, has focused on the use of Androgenic Anabolic Steroids although the scope of the Fitness Against Doping has been wider than this.

3.2.3 Definition of a Recreational Drug

For the purposes of the project, recreational drugs were termed as any substance used with the intention of creating or enhancing recreational experience, these typically included cocaine, ecstasy, and marijuana. These drugs are not a performance or image enhancing drug in a sport or fitness sense.

It should be noted that there has been very little investigation into high profile cases of recreational substance abuse within an elite or ‘unorganised sport environment’.

3.2.4 Definition of a Food Supplement

Throughout the project and the research it became evident that a clear distinction should be made between the uses of banned doping products on the WADA Prohibited List and the use of dietary supplements to compliment training or sport.

Dietary supplements are defined as products that contain substances like vitamins, mineral, foods, botanicals, amino acids and are intended to supplement the usual intake of these substances. Examples include testosterone boosters, weight loss products, creatine, and protein powders.

Supplements may also include Vitamin C, Multi-vitamins, Magnesium, and skimmed milk products. Contamination identified in these examples is typically due to inadvertent cross- contamination within the manufacturing process, but also can be deliberately adapted to include otherwise banned substances.

3.2.5 Definition of Amateur Sport and Fitness

Amateur sport and fitness refers to sport or fitness activities which do not take place within an elite or structurally competitive environment. This includes all levels of sport or activities within a fitness centre which are not subject to mandatory in and out of competition drug tests as adopted by NADO's.

3.2.6 Definition of Organised Sport

Organised sport is generally governed by an international federation which administers its sport at a world level, most often crafting rules, promoting the sport to prospective spectators and fans, developing prospective players, and organizing world or continental championships. Many organised sports have regional and national governing bodies as well as at an international level.

Elite sport, which is essentially high-level competitive sport, is subject to the World Anti-Doping Agency's in and out of competition doping tests and any of the performance or image enhancing drugs which are on WADA's Prohibited List cannot be used.

There has been significant research undertaken on the prevalence of doping within organised sport. The desk research summarised in this report outlines the history and current state of play in anti-doping within organised sport. Although there has been a paucity of evidence into doping within fitness and amateur sport which has led to this project, the recommendations formed in this report will have used the existing research into organised sport as a basis despite the clear distinctions with amateur sport and fitness.

3.3 Countries

The research team undertook a pan European research study of the prevalence of doping in order to identify areas where the fitness sector and other stakeholders could contribute to the eradication of the practice of doping. The project management group made the decision that the research team should undertake the field research in 9 partner countries:

Bulgaria

- Population (million): 7.6
- Fitness Clubs (Public): n/a
- Fitness Clubs (Commercial): 20
- Members (million): 0.004
- Average members per club: 200
- Penetration rate: 0.1%
- Estimated total employees: n/a

Denmark

- Population (million): 5.4
- Fitness Clubs (Public): 307
- Fitness Clubs (Commercial): 380
- Members (million): 0.48
- Average members per club: 699
- Penetration rate: 8.89%
- Estimated total employees: 7,400

Germany

- Population (million): 82.6
- Fitness Clubs (Public): 500
- Fitness Clubs (Commercial): 5,574
- Members (million): 5.9
- Average members per club: 975
- Penetration rate: 7.14%
- Estimated total employees: 70,000

Hungary

- Population (million): 10
- Fitness Clubs (Public): n/a
- Fitness Clubs (Commercial): 270
- Members (million): 0.2
- Average members per club: 741
- Penetration rate: 2.0%
- Estimated total employees: 4,000

Netherlands

- Population (million): 16.5
- Fitness Clubs (Public): 100
- Fitness Clubs (Commercial): 1,930
- Members (million): 2.4
- Average members per club: 1,429

- Penetration rate: 14.55%
- Estimated total employees: 26,300

Poland

- Population (million): 38.1
- Fitness Clubs (Public): n/a
- Fitness Clubs (Commercial): 800
- Members (million): 0.25
- Average members per club: 313
- Penetration rate: 0.66%
- Estimated total employees: 10,000

Portugal

- Population (million): 10.6
- Fitness Clubs (Public): n/a
- Fitness Clubs (Commercial): 1,400
- Members (million): 0.6
- Average members per club: 429
- Penetration rate: 5.66%
- Estimated total employees: 16,000

Switzerland

- Population (million): 7.6
- Fitness Clubs (Public): n/a
- Fitness Clubs (Commercial): 675
- Members (million): 0.55
- Average members per club: 815
- Penetration rate: 7.24%
- Estimated total employees: 11,000

United Kingdom

- Population (million): 60.7
- Fitness Clubs (Total): 5,755
- Members (million): 7.2
- Average members per club: 1,251
- Penetration rate: 11.86%
- Estimated total employees: n/a

These nine countries were selected in part in recognition of the national expertise of the project partners. Furthermore, it was essential to have a balance between countries where the fitness sectors had mature infrastructure and those which were more in the development phase. The desk based research identified Denmark, the United Kingdom and Germany as having the most developed anti-

doping strategies over the last decade.

As the above demonstrates the participation in fitness centres ranged from 0.1% of the population in Bulgaria to 14.5% in the Netherlands. Therefore, it can be shown that there is a representative sample of countries selected which will help to ensure that the recommendations in this report can be implemented across not only in these 9 countries but also across the whole of Europe.

In order to get a clear context for the findings of the field research, it was important to get an indicative picture from each country on the current anti-doping infrastructure, any work undertaken in this area on a national level, the general prevalence of recreational drug use and the drug enforcement legislation currently in place, as well as the existence and sophistication of anti-doping policies within the national fitness associations.

In addition, the project makes a clear distinction between organised sport, and amateur sport and fitness. It was therefore felt of use to ask which sports were most played in each of the partner countries and ask whether the national governing bodies of those sports had any implemented strategies to identify doping prevalence and eradicate the use of substances.

The responses from each of the partners are listed as an appendix to the main report and give a useful indication as to the state of play in each partner country. The breadth of responses also demonstrates how the sample of countries in the study is representative of diversity of the European health and fitness sector.

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The Project Partners:

AGAP - Portugal (Portuguese Fitness Associação)
www.agap.pt

BAHF - Bulgaria (Bulgarian Association of Health and Fitness)
www.bahf.bg

DFHO - Denmark (Danish Fitness and Health Organisation)
www.dfho.dk

DSSV - Germany (German Fitness Association)
www.dssv.de

DADR - Poland (Department of Anti-Doping Research of Institute of Sport)
www.insp.waw.pl

FIA - UK (Fitness Industry Association)
www.fia.org.uk

FitIvak - Netherlands (Dutch Fitness Association)
www.fitvak.com

HCA & ICCE - Hungary (Hungarian Coaching Association and International Council for Coach Education)
www.magyaredzo.hu & www.icce.ws

ISCA - Denmark (International Sport and Culture Association)
www.isca-web.org

QualiCert - Switzerland (Swiss Quality Assurance Company)
www.qualicert.ch