

ORIGINAL ARTICLE

General practitioners and doping in sport: attitudes and experience

P Laure, C Binsinger, T Lecerf

Br J Sports Med 2003;**37**:335–338

See end of article for authors' affiliations

Correspondence to:
Dr Laure, DRDJS, BP 69,
54139 Saint-Max Cedex,
France;
patrick.laure@wanadoo.fr

Accepted 25 September
2002

Objectives: To examine the attitudes to, and knowledge of, doping in sport of French general practitioners (GPs), and their contact with drug taking athletes on an everyday basis.

Methods: A total of 402 GPs were randomly selected from all over France and interviewed by telephone, using a prepared script.

Results: The response rate was 50.5% (153 men and 49 women; mean (SD) age 45.6 (5.6) years). Of the respondents, 73% confirmed that they had the list of banned products, and only 34.5% stated that they were aware of the latest French law, brought into effect in March 1999, concerning the fight against doping. Some 11% had directly encountered a request for prescription of doping agents over the preceding 12 months (the requested substances were mainly anabolic steroids, stimulants, and corticosteroids), and 10% had been consulted by an athlete who was using doping drugs and was frightened of the health risks (the substances used were mainly anabolic steroids). Over half (52%) of the GPs favoured the prescription of drug substitutions to athletes who used doping agents. According to 87.5% of respondents, doping is a public health problem, and 80% stated that doping is a form of drug addiction. Most (89%) said that a GP has a role to play in doping prevention, but 77% considered themselves poorly prepared to participate in its prevention.

Conclusion: The results suggest that (a) GPs have limited knowledge of doping and (b) are confronted with doping in their daily practice, at least occasionally.

From 1998, which was a defining moment in the history of drugs in sport (particularly because of the Tour de France scandal), sport administrators, athletes, and the general public have often seen doctors as protagonists in doping. This is as true for team doctors as for other practitioners. The main accusations made are, firstly, that some are engaged in "medically assisted doping", and, secondly, that they supply athletes, even amateurs, with doping agents, either deliberately or through carelessness. This is the opinion, for instance, of 64% of respondents in a study carried out in Switzerland.¹ This opinion may moreover turn out to be well founded, as 10–20% of teenagers and up to 61% of adult amateur athletes stated that they obtained anabolic steroids and other banned drugs from a doctor.^{2–4} What is more, legal proceedings against doctors who have prescribed or delivered doping agents to high level athletes are regularly encountered, which in turn reinforces this belief.⁵

Doctors, however, do not appear to have much knowledge of the subject of doping, as underlined by a study of the Netherlands Centrum voor Dopingvraagstukken on 1000 general practitioners (GPs), according to which 85% of the respondents admitted that they were not familiar with banned drugs or their side effects.⁶ In another study involving 400 GPs in Sussex, UK, 12% of the respondents stated that a doctor has the right to prescribe anabolic steroids for non-medical reasons, which is medically and ethically wrong, and only 35% knew that the International Olympic Committee's (IOC) list of prohibited substances (table 1) appears in the British National Formulary.⁷

Nevertheless, doctors seem regularly to be confronted with doping in their everyday practice. In one of our previous studies of French GPs, 30% of the respondents stated that they had been asked to prescribe banned drugs to athletes, or to explain how to use them.⁸ The same was reported by 18% of the British GPs cited above concerning anabolic steroids.⁷ Moreover, 87% of the French GPs considered that doping is a public health problem, and 92% thought that they have a leading role

to play in doping prevention, even if most (83%) considered themselves poorly trained in this domain.⁸

Finally, a new law against doping was brought into effect in March 1999 in France, assigning precise duties to the medical profession in general.⁹ In particular, the statute plans the creation of a medical anti-doping unit in every French region

Table 1 Prohibited classes of substances and prohibited methods (Olympic movement anti-doping code)

- | | |
|---|---|
| I. Prohibited classes of substances | |
| A. | Stimulants |
| B. | Narcotics |
| C. | Anabolic agents |
| D. | Diuretics |
| E. | Peptide hormones, mimetics, and analogues |
| F. | Agents with anti-oestrogenic activity |
| F. | Masking agents |
| II. Prohibited methods | |
| A. | Enhancement of oxygen transfer |
| B. | Pharmacological, chemical and physical manipulation |
| C. | Gene doping |
| III. Classes of prohibited substances in certain sports | |
| A. | Alcohol |
| B. | Cannabinoids |
| C. | Local anaesthetics |
| D. | Glucocorticosteroids |
| E. | β blockers |

When the administration of a prohibited substance is medically justified and finds no other alternative, the athlete and his physician can request a clearance for use (i.e. insulin). The prescription of asthma medications (formoterol, salbutamol, salmeterol, terbutaline) is authorized by inhalation and with the appropriate notification and documentation. The systemic use of glucocorticosteroids is prohibited when administered orally, rectally, or by intravenous or intramuscular injection. When medically necessary, local and intra-articular injections of glucocorticosteroids are permitted. Where the rules of a responsible medical authority so provide, notification of administration may be necessary.

Table 2 Opinions of general practitioners on doping and how athletes supply themselves with drugs

	Agreed	Disagreed	Did not know
Doping is a public health problem	87.5	12.0	0.5
Doping is a form of drug addiction	80.0	18.5	1.5
Most records have been broken due to doping	83.5	11.5	5.0
Most of the great champions resort to doping	73.0	18.0	9.0
Sources of doping drugs			
From athletes' family	54.0	39.0	7.0
From team members	86.0	11.0	3.0
From doctor	75.5	23.5	1.0
From pharmacist	72.0	25.0	3.0
From supplier (dealer)	84.5	10.5	5.0

Values are percentages.

(the first one opened in Nancy, eastern France, in May 2001). They are designed to be a place for specialised consultation for drug taking athletes. Moreover, every doctor has a legal obligation to indicate any case of doping of which he or she may have knowledge to the head of the unit. However, this obligation is very controversial, mainly because doctors refuse to be what they call "informers", but also because those who refuse to meet this obligation can be disciplined.

Considering all these elements, the aim of this survey is to examine attitudes of GPs in France with regard to doping and their contact with doping on an everyday basis.

METHODS

The sample consisted of 402 randomly selected GPs from all over France. In November 2000, the selected GPs were contacted by telephone to request their participation in the survey. They received information about the study (the background of the project and project objectives, the possibility of refusing to answer specific questions, etc) and an appointment was made so that an interview could be conducted. Participation in the study was voluntary and the subjects were free to withdraw from the study without any prejudicial consequences. Confidentiality and anonymity were ensured for the respondents. The telephone calls (on average 20–45 minutes per interview) followed a scripted protocol to minimise any investigator influence, and honest answers were solicited.

The questionnaire, published elsewhere,⁸ comprised 40 items and was tested beforehand with 20 subjects. The questions, which were essentially closed, covered knowledge of doping agents, contact with doping on an everyday basis, training in and commitment to the prevention of doping, etc. The questionnaires were processed, and the data collected were analysed using the Modalisa 4.0 (Kynos, Paris, France) survey processing software. Comparisons were made by χ^2 test (sex, qualification in sports medicine) and analysis of variance (age, seniority in professional practice). The significance threshold used was $p < 0.05$.

RESULTS

Description of the sample

Just under half (49.5%) refused to respond, comparable to other recent telephone and postal surveys among doctors, where the figure is generally between 30% and 60%. Of those refusing to respond, 38% cited a lack of time, 10.5% stated that doping was not a priority, 30.5% refused on principle to respond to a survey or a telephone survey, 5.5% gave other reasons, and 15.5% gave no reason.

The 202 GPs who responded consisted of 49 women (24.5%) and 153 men (75.5%). The mean (SD) age was 45.6 (5.6) years, and the mean (SD) number of years of professional practice was 16.0 (6.2) years. A sports medicine qualification was claimed by 18% of the GPs.

Results of the survey

The non-response rate for the final number of 202 interviews was 0% for all of the questions.

Attitudes to and knowledge of doping in sport

Of the 13 classes of prohibited substances and prohibited methods (Olympic Movement Anti-doping Code), the GPs mentioned 2.6 (2.4) which appeared on the list. Of a total of 802 responses, the three most common were stimulants (21% of all answers), corticosteroids (17%), and narcotics (13%). It is interesting to note that only 73% of GPs confirmed that they possessed the list of banned products (80.5% of men *v* 51% of women, $p < 0.001$; 92% of those qualified in sports medicine *v* 69% of the others, $p < 0.05$), although 100% of the respondents had a Vidal dictionary (equivalent to the Doctor Desk Reference or the Martindale), which has contained this list since 1986.

A good proportion (60.5%) of the doctors considered that the use of food supplements (vitamins, etc) could lead the user to take doping agents (2.5% did not know).

Only 34.5% of GPs stated that they were aware of the latest French law, brought into effect in March 1999, concerning protection of the health of athletes and the fight against doping. However, they seemed to lack knowledge of the said statute, even on points that directly concerned them—for example, 17% wrongly stated that it does not concern doctors, and 29% wrongly thought that it dictates that doctors prescribe additional examinations for athletes who take doping drugs.

According to 76% of the GPs, doping is also a concern in adolescents (13–17 years of age) who practise sport (5% of GPs did not know), and for 23% of the doctors, children (aged 6–12) are also involved in doping (6% did not know). According to the GPs, the average prevalence of doping in amateur sport is 18% (30% of GPs had no idea) and 64% in professional sport (20% of GPs did not know).

Table 2 gives the opinions of the GPs on doping and how athletes supply themselves with drugs.

GPs faced with doping

In response to the question, "Over the last 12 months, have you been directly confronted by a request for information about doping agents?", 37% of the GPs responded positively: 3% had received requests at least once a week, 9.5% at least once a month, and 24.5% less than once a month. The GPs were asked their opinion on the use of the products (including corticosteroids on 13% of occasions, and anabolic steroids on 11%), or they were asked for information on the list of prohibited substances. They provided information on anti-doping regulations (58% of responses), health risks (39%), and sport ethics (31%). (The total of the percentages is greater than the percentage of respondents as several answers were possible.)

In response to the question, "Over the last 12 months, have you been directly confronted with a request for the

prescription of doping agents?", 11% of the GPs responded positively: 1% had received requests at least once a week, 1% at least once a month, and 9% less than once a month. The requested substances were mainly anabolic steroids, stimulants, and corticosteroids.

During the same period, 14% of GPs stated that they were certain that medication that they had prescribed to a patient for treatment of a disease was really used by an athlete to improve sporting performance, and this, in at least eight cases on average per GP. The prescribed drugs were mainly stimulants (including salbutamol) and corticosteroids.

Over the same 12 month period, 10% of the GPs, significantly the older ones (48.3 v 45.3 years of age, $p < 0.02$), had been consulted by an athlete who was using doping drugs and was frightened of the health risks: 1% at least once a month and 9% less than once a month. The substances used were mainly anabolic steroids. In 45% of the cases, GPs prescribed additional examinations (mainly a laboratory examination and electrocardiogram).

Role of GPs in the prevention of doping in sport

Most of the GPs studied (82.5%) stated that the current methods of preventing doping in sport are ineffective (4% did not know).

The GPs considered that adolescents and children should be the first targets of doping prevention initiatives (55% of responses), followed by high level and professional athletes (15%), and then by other athletes (26.5%) (3.5% of GPs had no opinion).

In the opinion of the GPs, prevention initiatives should be undertaken because of the risks of doping agents to health, including dependence (81% of responses), sport ethics (12%), and for other reasons (2%), whereas 5% of GPs had no opinion.

Within the context of doping prevention, 89% of the GPs considered that they have a role to play (0.5% did not know). Most (77%), however, considered themselves poorly trained in the prevention of doping, whereas 23% considered themselves well trained, particularly those qualified in sports medicine: 43% v 18%, $p < 0.01$. Moreover, only 4% mentioned having had specific classes on this subject during their university studies (1% did not remember).

Finally, it is interesting to note that 52% of the GPs favoured the prescription of drug substitution to athletes who used doping agents—that is, narcotics, anabolic steroids, amphetamines, etc—if medically justified (6% did not know).

DISCUSSION

Our findings should be interpreted with caution because the study used telephone interviews, which represent an additional source of bias over the usual face to face interview method.

Our results may be interpreted in different ways, depending on whether an optimistic or a pessimistic point of view is adopted. From an optimistic point of view, French GPs seem to have little contact with doping on an everyday basis. For example, only 11% stated that they had received requests for the prescription of doping agents over the preceding 12 months and then less than once a month. This figure seems to be lower than in other European countries⁷ and is negligible compared with the average number of consultations per GP in France (about 25–35 patients a day per doctor).

From a pessimistic point of view, which could be seen as being more realistic, our findings show that GPs are in reality confronted by doping in sports, even if only occasionally. However, our results probably underestimate the situation, particularly as GPs are not always aware of what they are being asked, or do not realise that certain prescribed medication can be misused for doping purposes. In fact, GPs fail to take account of doping in sports, as shown in other

studies.^{7 8 10} For example, in our sample only two or three classes of prohibited substances are known (and they are not the ones reported as being commonly misused, such as anabolic steroids, erythropoietin, or growth hormone). Of course, it is not necessary for GPs to know all these substances by heart: it is, however, sufficient for them to be able to consult the list of banned substances—that is, to avoid inadvertently prescribing prohibited drugs, resulting in a positive drugs test and a penalty for the athlete.¹¹ However, the said list must be readily available or, at least, GPs could try to remember, or simply be aware (for example, for the 27% who stated that they did not possess it) that the IOC's list of banned drugs is at hand in their Vidal dictionary, with which all GPs are provided. Furthermore, GPs in this study are not well informed on the extent of drug use and abuse in sports: less than one doctor in five believed that children (6–12 year olds) are affected by doping, when it has been shown that this is so in children from the age of 8 years, even though only a small percentage may be involved.^{2 12} Their limited knowledge of doping means that GPs must be adequately trained to consider doping as a real health issue (something they already admit on the scale of public health) in their everyday practice. This means, for instance: (a) implicitly identifying requests formulated by drug users; (b) systematically asking athletes about their use of performance enhancing drugs (including pain killers, doping agents, etc) and other products (extra proteins, vitamins), as is done for legal substances such as tobacco or alcohol; (c) being aware of the risks to health (physical and psychological) of doping agents and how to identify them during a clinical and/or biological examination. This is especially important for athletes who use doping drugs and have no intention of stopping their use, as well as for those who present with various side effects of their drug taking for treatment without divulging their drug use. Finally, it is disturbing to note the fact that being qualified in sports medicine does not necessarily improve knowledge of, or attitudes to, doping (except on two points: possession of the IOC's list and the GPs' feeling of being well trained in the prevention of doping). This report can be seen to seriously bring into question the quality of training of sports doctors on the subject of doping.

It is interesting to note that most of the GPs favour the prescription of drug substitution to athletes who have used doping agents that can cause dependency. Indeed, even if this attitude can be seen as legitimate in an effort to reduce risks (substitution is widely used for drug addicts), it does raise real problems where athletes are concerned. For example, how can the taking of a drug as a substitute be reconciled with anti-doping regulations which ban the use of that very same drug? As for suspending the athlete from practising sport during the treatment, this would be contrary to one of the objectives of substitution which is precisely to permit rehabilitation. What is more, the stopping of sport may, in itself, be a factor that triggers certain high level athletes to resort to these drugs, especially narcotics.¹³

Awareness of the situation does not seem to have increased since our previous study of GPs which was carried out four years ago⁸ (the principal elements—that is, the composition of the samples and the method used—being similar). However, a significantly higher proportion of GPs agreed to statements such as, "doping is a form of drug addiction", "most records have been broken due to doping", etc. In other words, their opinion of the topic of doping has been modified. According to psychosociologists, the behaviour of subjects is not determined by the objective characteristics of a situation, but rather by their personal and collective representation of the said situation.¹⁴ So this evolution, if confirmed, could perhaps lead GPs to become more informed and more vigilant about doping and therefore contribute to its prevention.

Conclusion

This study suggests that French GPs consider that doping in athletes is a real public health problem, and also that they want to participate in its prevention. However, although this observation does seem encouraging, their limited knowledge of the realities of doping should prompt the introduction of adequate training in this domain.

Authors' affiliations

P Laure, Laboratoire de Psychologie Appliquée "Stress et Société", Université de Reims, Bât 6, Moulin de La Housse, 51687 Reims Cedex 2, France

P Laure, C Binsinger, T Lecerf, Direction régionale et départementale de la Jeunesse et des Sports de Lorraine, 13, rue de Mainvaux, BP 69, 54139 Saint-Max Cedex, France

REFERENCES

- 1 **Nocelli L**, Kamber M, François Y, *et al*. Discordant public perception of doping in elite versus recreational sport in Switzerland. *Clin J Sport Med* 1998;**8**:195–200.
- 2 **Tanner SM**, Miller DW, Alongi C. Anabolic steroid use by adolescents: prevalence, motives, and knowledge of risks. *Clin J Sport Med* 1995;**2**:108–15.
- 3 **Scott DM**, Wagner JC, Barlow TW. Anabolic steroid use among adolescents in Nebraska schools. *Am J Health Syst Pharm* 1996;**53**:2068–72.
- 4 **Laure P**. Doping in sports: doctors are providing drugs. *Br J Sports Med* 1997;**3**:258–9.
- 5 **Dubin C**. *Commission of inquiry into the use of drugs and banned practices intended to increase athletic performance*. Ottawa, ON: Canadian Government Publishing Centre, 1990.
- 6 **Huisarts te weinig vertrouwd met doping**. *de Huisarts* 1998;**403**:11.
- 7 **Greenway P**, Greenway M. General practitioner knowledge of prohibited substances in sport. *Br J Sports Med* 1997;**31**:129–31.
- 8 **Laure P**. Médecins généralistes et dopage sportif: connaissances et attitudes. *Santé Publique* 1997;**9**:145–56.
- 9 Loi no 99-223 du 23 mars 1999 relative à la promotion de la santé des sportifs et à la lutte contre le dopage. *Journal Officiel de la République Française* 1999 Mar;**24**:4399–405.
- 10 **Petursson P**. Doktor infor ratta for kamp mot doping. *Nord Med* 1993;**6-7**:182–3.
- 11 **Sando BG**. Is it legal? Prescribing for the athlete. *Aust Fam Physician* 1999;**6**:549–53.
- 12 **Faigenbaum AD**, Zaichkowsky LD, Gardner DE, *et al*. Anabolic steroid use by male and female middle school students. *Pediatrics* 1998;**101**:916–17.

13 **Lowenstein W**, Arvers P, Gourarier L, *et al*. Physical and sports activities in the history of patients treated for addictions. Report 1999 of the study sponsored by the Ministry of Youth and Sports (France). *Ann Med Interne* 2000;**151**:A18–26.

14 **Abric JC**. L'étude expérimentale des représentations sociales. In: Jodelet C. *Les représentations sociales*. Paris: PUF, 1993:187–203. [AQ:1]

COMMENTARY

The programmes aimed at controlling the misuse of substances by sportsmen will most certainly fail if not supported by the community of specialists surrounding the athlete. The decision to engage in doping—that is, the intake of drugs for performance enhancing purposes—will make its way into the athlete's training regimen if supported by trusted people and professionals. Information is essential to prevent doping in sport and to provide alternatives.

The doctor no doubt plays a key role, being the one to whom the athlete should, and will, eventually turn for reliable, objective information when contemplating resorting to doping (which of course, will be referred to differently, depending on the decision then taken).

This paper highlights the need to educate health professionals, particularly doctors. According to this survey, although they view doping as a health problem, they consider themselves poorly prepared to take an active role in prevention, despite the fact that most of them have the reference list of doping substances and despite the contacts they have with athletes. In fact, some of their responses clearly reflect not only a lack of "preparation" but also what could be seen as an inappropriate approach to the prescription of drugs in this context. This information is essential for the design of an efficient intervention with health specialists.

C Ayotte

Directrice du laboratoire de contrôle du dopage, INRS-Institut Armand-Frappier, 245, boul. Hymus, Pointe-Claire, Québec H9R 1G6, Canada