

sider it in the same way as any other health problem. This would mean taking into account the factors that encourage it as well as the clinical symptoms, desired effects, immediate or delayed complications, therapeutic acceptance, and social implications. In other words, doctors must change their attitude to doping in order not to limit this subject merely to a question of a list of banned substances. Moreover, doping should form an integral and specialised part of the studies undertaken by every medical student. This is urgently required considering the fact that doping agents such as anabolic steroids, human growth hormones, and stimulants are also used by people not taking part in sports.

PATRICK LAURE
Centre de Sociopharmacologie
BP 87, F-54132 Saint-Max CEDEX
France

- 1 Laure P. Médecins généralistes et dopage sportif: connaissances et attitudes. *Santé Publique*. In press.
- 2 Salva PS, Bacon GE. Anabolic steroids: interest among parents and nonathletes. *South Med J* 1991;5:552-6.
- 3 Fessler B. Arzneimitteltherapie bei Leistungssportlern. Doping wider Willen. *Deutscher Apotheker Zeitung* 1992;31:1629.

Use of insulin as an anabolic agent

EDITOR,—We are writing to alert you to a problem that we are seeing in our drugs in sport clinic—namely, the increasing use of insulin as an anabolic agent.

The potential for widespread use of insulin was brought to our attention in July/August of 1996 when discussions of its use were published in two bodybuilding magazines,^{1,2} leading us to ask our patients about this.

It is difficult to estimate the current usage but at the present time six of our 200 clients have admitted to its use. Worryingly, inquiries about insulin are increasing weekly and we believe this will be a major problem in the coming months.

We have noted two different regimens of administration—namely, 10 IU of short acting insulin twice daily and, more commonly, the use of 2–15 IU of short acting insulin 20 to 40 minutes after training. With each regimen the body builder increases the intake of carbohydrate and protein with the injection.

If the insulin has not been provided on prescription it can be purchased from a pharmacist, if the pharmacist feels that the patient is indeed diabetic. The price for an "Actrapid 3 ml pen" is £9.78 including tax. This can then retail for £60 to a body builder on the "black market". In view of this potential profit we advocate maintained vigilance on

repeat prescriptions of insulin and pharmaceutical products purchased.

One of our patients was informed that he could recoup some of this outlay by selling on the unused portion of this pen. Although there will be little risk with the pen delivery system if clean needles are used, it does raise obvious concerns about the risk of hepatitis B, C, and HIV if multidose phials are used without access to a needle exchange.

Our clients have apparently little knowledge about the types of insulin and the variable rates of absorption from different injection sites. This leads to our major concern of the potential for unexpected hypoglycaemic episodes, particularly in those using anabolic steroids.³

We would like to alert all practitioners to this possibility if faced with collapsed, confused, or aggressive patients who may in fact be hypoglycaemic and require glucose or glucagon. This may be of some importance at the scene of road traffic accidents if the episode has taken the patient unawares.

R T DAWSON
Responsible Medical Officer
Drugs in sport clinic and users support (DISCUS)
Chester le Street Health Centre
Newcastle Road
Chester le Street
County Durham, DH3 3UR

M W HARRISON
Needle Exchange Coordinator

- 1 Phillips B. Uncensored questions and answers. *Muscle Media* 2000. 1996; No 51:32-3.
- 2 Kneller B. The impact of exogenous insulin on body building. *MuscleMag International*. 1996; No 171: 24-34.
- 3 Reynolds JEF, ed. *Martindale: The extra pharmacopoeia*. 31st ed. London: The Pharmaceutical Press, year:353.

General practitioner knowledge of prohibited substances in sport

EDITOR,—May I draw your attention to an error in the article on prohibited substances in sport¹ by Drs Greenway published in this journal—namely, that non-steroidal anti-inflammatory drugs are cited as being banned via the intramuscular route. Firstly, non-steroidal anti-inflammatory drugs are not listed in the International Olympic Committee's list of prohibited substances in the current document dated 31 January 1997 and to my knowledge never have been, therefore doctors can feel free to prescribe this group of drugs without fear of the recipient being in breach of the IOC's regulations.

Secondly, in the most recent IOC list published on the 31 January 1997 dextropropoxyphene has been removed together with propoxyphene and ethylmorphine. It is there-

fore quite in order for an athlete to take co-proxamol.

This merely highlights the difficulty that general practitioners face when dealing with athletes liable to be dope tested and the need for doctors to check regularly each year the IOC's current listing.

PETER THOMAS
Reading Clinic
10 Eldon Road
Reading
Dorset

- 1 Greenway P, Greenway M. General practitioner knowledge of prohibited substances in sport. *Br J Sports Med* 1997;31:129-31.

EDITOR,—I can empathise with the findings of Drs Greenway¹ about general practitioner knowledge of prohibited substances in sport having recently found two athletes at a national championship who had been unknowingly prescribed banned medicines.

The Modahl case has highlighted the potential for litigation after positive dope tests. It is likely that at some time a competitor will test positive having been prescribed a drug by a medical practitioner. As the number of professional sportsmen and women increases it will become more likely that this error will result in a claim for compensation that might be considerable. Ignorance is not usually an adequate defence in law and it would be interesting to know the medical defence societies' views on this hypothetical situation.

The authors point out that there is a one page summary included in the *British National Formulary* of doping classes, but only one third of respondents were aware of this. Possibly, a better solution would be to use a symbol system, similar to that used for gluten-free items, to bring it to the attention of general practitioners that the drug may be a prohibited substance. This would refer the general practitioner to a more complete explanation of the list of banned substances for situations during and out of competition. The Sports Council Drug Advisory Service should be contacted if in any doubt. I do not think we should wait for the first "test case" of this scenario, but the British Association of Sport and Medicine should act as a responsible body and promote awareness of the potential problems.

A D J WEBBORN
1 Rosebery Avenue
Eastbourne
East Sussex BN22 9PY

- 1 Greenway P, Greenway M. General practitioner knowledge of prohibited substances in sport. *Br J Sports Med* 1997;31:129-31.