

LETTER TO THE EDITOR

Drug testing

EDITOR,—With the recent Salt Lake City Olympic bid scandals and the inability at the IOC conference of sports federations in Lausanne to agree on something as fundamental as the ban to be imposed on sportsmen and women found using banned drugs, it is time for a new approach to the issue of drugs in sport.

With the advent of androgenic anabolic steroids in the 1950s the issue of performance enhancing drugs entered firmly into modern sporting lore. Although the drugs were new, the issue was not.

Flaunting the Corinthian ideal, to which all athletes strive, the ancient Greeks would eat hallucinogenic mushrooms as well as sesame seeds in an effort to enhance their performance, while gladiators used stimulants to overcome fatigue in the arena.¹

By the 19th century it was the turn of strychnine, cocaine, caffeine, and alcohol. Despite anabolic steroids being apparently used during the second world war by German troops to enhance aggressiveness, it was the Russians in 1954 that were first credited with their use in sport.² However, there is anecdotal evidence to suggest that body builders were using testosterone preparations in the late 1940s after the publication of Paul de Kruif's book *The male hormone* in 1945.³ It is this group that have been at the vanguard of "testing" new performance enhancing drugs and this group that leads me to contend that harm minimisation rather than prohibition is the way forward.

The prevalence of androgenic anabolic steroid use in the United Kingdom varies, with a conservative estimate of 5.5% of gym users⁴ currently using anabolic steroids, while the Canadian Centre for Drug-free Sport estimated that some 83 000 schoolchildren in Canada between the ages of 11 and 18 had used anabolic steroids in the preceding 12 months (2.8%).⁵

If one then looks at the testing programme of the UK Sports Council,⁶ our success in catching the "cheats" comes into stark relief. We credit ourselves with one of the best testing programmes, but, in 1997/1998, of 750 tests performed in athletics, both in and out of competition, there was only one positive test for anabolic steroids (0.13%) and two positive tests for stimulants. When we consider that, at the 1988 Seoul Olympics, the

positive rate was 2% and that Tessa Sanderson and Daley Thompson have previously contended that between 60 and 80% respectively of British athletes were using drugs,⁷ how successful is our programme?

One could contend that it is the testing programme that has kept this figure low, but with the testing programme for all sports costing in excess of £1 000 000, are there really the resources to catch the cheat, even if there is the will?

In the Seoul Olympics only 10 of 13 000 athletes were disqualified, but national enquiries heard evidence that in excess of 50% of all the athletes and 25% of the Australian 1988 track and field squad had taken, or were taking, performance enhancing aids.^{8,9} This clearly leads one to suspect a failure in the testing programme, and hence a move to more out of competition testing. Unfortunately, the cheat and their "support" team will remain one step ahead.

The use of polypeptide hormones such as insulin and growth hormone and the recombinant form of the glycoprotein erythropoietin, first available in Europe in 1987, offers athletes undetectable methods of cheating. With the demonstration that erythropoietin can increase exercise time to exhaustion by 17% and maximal oxygen consumption by 8%,¹⁰ it is little wonder that endurance athletes took to this undetectable—except by customs officers—method of "blood doping".

As sports science progresses, we now have "legal" ergogenic aids of proven efficacy, such as creatine monohydrate.¹¹ In the near future we may even have the male contraceptive based on nandrolone¹² or testosterone enanthate.¹³ If this is the case, will male athletes be denied their right to use these banned substances while female athletes are permitted to use hormonal contraception.

As the sporting authorities spend ever more on testing and some athletes at the elite level persist in cheating and beating the tests, where will it all end. Surely the drug tests are providing no more than Pyrrhic victories as the profile of drug taking in sport is raised and the credibility of our sporting heroes questioned. Is it not time to accept the weight of history and to try to deal with the issue by education and abandon testing?

Prohibition as a strategy is littered with good intentions but is doomed ultimately to failure as has been shown by all efforts in the past. The way forward must be a harm minimisation strategy that allows any sports person to seek a balanced unbiased view of the risks and costs involved in the taking of performance enhancing agents. They must feel free to do so with impunity.

For the vast majority of people, the limited benefits of these agents can be clearly

demonstrated. Advice on diet and training in a positive manner may help to dissuade them from drug use or at least develop a relationship of trust and honesty.

We must destroy the myth that these drugs will universally enhance performance and return to the ideal that sport is about taking part, with the camaraderie that this engenders.

If sportspeople elect to continue to use drugs, then we, as physicians, must provide monitoring and advice on dosing and drug-free times to ensure that the risks to themselves and the community are minimised. We may then be able to ascertain the true cost of drug use in sport and advise accordingly.

For the elite athlete, what price a tarnished medal unless the sponsors create a climate where financial gain outweighs the individual's moral values? When this happens, surely they can no longer call themselves sportsmen and women but simply entertainers.

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BOOK REVIEWS

The clinical orthopedic assessment guide. Janice K Loudon, Stephania L Bell, Jane M Johnston. (Pp 238; £24.00.) Leeds: Human Kinetics Europe Ltd, 1998. ISBN 0-88011-507-6.

Clinical assessment is the keystone to good practice. A detailed subjective and objective assessment allows a clinician to diagnose and treat conditions effectively, and to prevent further injury or recurrence. The title of this book suggests that it is suitable for all clinicians working in orthopaedic and musculoskeletal medicine, but this is misleading. This text is in fact aimed at those practitioners trained in manual therapy and it is not a definitive guide to clinical orthopaedic assessment.

The contents are laid out in five sections: introduction to biomechanical principles including definitions and subjective assessment; head and spine; upper extremity; lower extremity; posture and gait. Each joint is discussed under the headings joint basics, arthrokinematics, neurology, surface palpation, muscle origin and insertion, muscle action and innervation, and differential diagnosis. The descriptions of anatomy, neurology, and arthrokinematics of each joint are well defined and easy to follow. The illustrations are excellent, and the accessory movements and special tests for each joint clearly described. However, there is an absence of some of the basic tests required in joint assessment, which renders the text incomplete. For example, the active range of motion tests are listed and degrees of motion noted, but, with just one exception, there is no description of the method of joint measurement. There is no mention of the importance of observation for deformity, swelling, or asymmetry, and there is much emphasis placed on the use of accessory movements, useful but not always an essential core skill. The authors have produced excellent tables summarising muscle insertions and origins, and describing the requirements to perform movements, but they have omitted to discuss the positions or procedures for muscle testing.

I was concerned at the absence of clear guidelines for precautions taken to ensure the safe application of any tests, in particular the vertebral artery test was not stressed, an essential precautionary test before any manual therapy of the cervical spine. Neural tension tests are also described but no mention made of the caution required when applying them, and indeed I found no listed contraindications to any of the tests mentioned.

Although the layout of the book is easy to follow, I found it confusing that posture and gait assessment was in a separate section. The tables for differential diagnosis pertaining to each joint were incomplete with little reference to non-orthopaedic diagnoses or other joint problems: for example, there was little reference to groin, pelvic, or sacroiliac injury in either the hip or lumbar spine sections. I was encouraged that the authors had attempted to include methods of functional testing, but only one of the scoring systems listed was referenced. Do we presume the authors have researched the validity and

accuracy of these outcome measures? I could find no references in their otherwise extensive bibliography to indicate this, and I personally would look at the reliability and reproducibility of such tests before incorporating them into my clinical practice.

In conclusion, I feel that this text should include a section on the basics of joint examination and also details of specific subjective questioning and observation relevant to the different joints. Precautionary measures and the contraindications to tests should also be clearly indicated. I would recommend this book as a reference for basic joint anatomy and as a descriptive manual of special tests but, in my view, it should be used as an adjunct to teaching core orthopaedic assessment skills and not used without such supervision. I think it is incomplete, lacking vital detail, to be of true benefit to the orthopaedic or sports medicine practitioner.

LINDSAY THOMSON
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Imaging in musculoskeletal and sports medicine. B Halpern, SA Herring, D Altchek and R Herzog. (Pp 275; £95.00.) Oxford: Blackwell Science, 1997. ISBN 0-86542-418-7.

This is a book that bridges a deficiency in the current literature. It will be of use for all those people interested in sports medicine who wish to learn more about imaging techniques and also for the radiologist who wishes to learn more about the clinical aspects of sports medicine. It is not an in depth reference book but more an overview of common topics.

The chapter on imaging techniques is well written, although there is a substantial gap in the overall text on the use of ultrasound. As it is an American text, there is little reference to ultrasound except in chapter two. It states that the use of ultrasound may increase only because of financial considerations. Ultrasound is not only cheaper than magnetic resonance imaging (MRI) but in many instances makes the diagnosis easier and more rapid. There are only two ultrasound illustrations in the book, one is in chapter two and the only one in a specific chapter is an echocardiogram showing cardiac contusion.

I liked the common theme of the individual chapters, which meant that it is relatively easy to read and to find relevant information quickly. This is often not the case when there are multiple authors. The images are generally of high standard throughout and the quality of reproduction is also good. The diagrams are numerous, well presented, and appropriate.

MALCOLM CRONE
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Exercise benefits and prescription. SR Bird, A Smith, and K James. (Pp 336; £25.00.) Cheltenham: Stanley Thornes, 1998. ISBN 0-7487-3315-9.

I was invited to review this book on the same day that a second new restaurant was opened in my village — another fish and chip shop! I spend a considerable amount of time advising my patients to stop smoking, to eat healthily, and to become more active, but despite boundless enthusiasm I am very unsuccessful. This book may be the answer, at least until every primary care team includes an

exercise scientist, clinical psychologist, and physiotherapist.

Unlike stopping smoking and changing diet, becoming more active does rapidly result in a feeling of wellbeing. The major health benefits flow to the least active when they start moving to reduce the risks of ill health, especially vascular disease. Although I would change the title to *Activity benefits* because of the association of exercise with tracksuits and sweat, I do accept that for certain groups of people a prescriptive approach is necessary rather than the general advice just to start moving. The health service needs this book, which could be used as a resource for the primary care team, and the message is clear, activity is good for you.

I think chapter summaries with bullet points would have improved the layout, but one cannot have everything. This is a smashing book which has recharged my enthusiasm for activity and health, and the battle cry of five fruits, five vegetables, and five miles will continue to resound around North Devon!

ANDREW LATHAM
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Anatomy and human movement: structure and function. 3rd ed. N Palastanga, D Field, R Soames. (Pp 870; £45.) Oxford: Butterworth Heinemann, 1998. ISBN 0-7506-3628-2.

This is an anatomical text of the musculoskeletal system presented in terms of movement and aimed at students of physiotherapy. The usual basic sections on anatomical terminology, tissues, and development are followed by sections on muscles and joints. The sections on muscles are arranged according to their actions on a joint, rather than in the regional anatomical format of older texts. The sections on joints are extensive and include biomechanics and clinical material, with the overall emphasis on structure related to function. Sections on the cardiovascular, respiratory, digestive, and urogenital systems give important background information without unnecessary minutia. The text ends with a chapter by Nikolai Bogduk on the organisation and development of the nervous system.

Diagrams are clearly drawn and labelled with attachments of muscles, tendons, and flesh delineated by differential shading. The courses of arteries and veins are shown in relation to the underlying bony framework. The courses of nerves would have also been useful but are omitted. The ultrastructure of menisci, bony matrices of vertebrae and neck of femur, movements and biomechanics of the major joints, are also included.

The text, clearly written, gives basic anatomical explanations for the undergraduate student and provides more than enough extra detail on biomechanics, function, and development for postgraduates and clinicians. The occasional minor subediting or type setting errors are probably inevitable but they do not detract from the authors overall philosophy of providing a text relating anatomy to function.

In summary, I liked this book and could recommend it as a useful main text to students of physiotherapy. There is also enough additional material for the interested postgraduate student and clinicians involved in sports and orthopaedic medicine.

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