LETTERS TO THE EDITOR

Water jet skiing, a dangerous sport with inadequate policing!

EDITOR,—Water jet skiing is a popular international water sport. As yet there is no strict highway code to avoid accidents. We report two severe musculoskeletal injuries associated with this sport.

A 22 year old man presented with backwards and downwards pointed locked arms following bilateral anteroinferior fracture-dislocation of the shoulder with an associated brachial plexus lesion after an injury sustained while water jet skiing. While racing, his 1100 cc engine vehicle was hit by another jet ski from behind. His trunk moved violently forwards towards the front part of the vehicle, while his hands remained holding the handle bars. The momentum of the forward trunk movement forced the shoulders to dislocate anteriorly as the arms stayed behind.

A 34 year old young man sustained right knee dislocation as his jet ski came into the shallows. As the vehicle was turning to the left, the right side came closer to the bottom of the water where the sand was firm, and the front part of the right knee came into contact with the sand. The knee was deformed, the tibial part of the joint being posteriorly displaced. There was no neurovascular injury. The joint was reduced immediately in theatre by a direct pull on the tibia. At a later stage, a complex reconstruction of the anterior and posterior cruciate ligaments and the lateral/posterolateral corner was performed by a knee specialist.

The accidents described are serious, producing devastating musculoskeletal injury. Although vehicle insurance, licensing, and speed limit are checked by the club where the sport takes place, these cases raise suspicions about the efficiency of current measures and speed control. We recommend that the European water police patrol should implement similar laws to those applied in other countries such as Australia and the United States.

ADNAN A FARAJ
H PRINCE
L NEUMANN
S BOLLEN

Kings' Mill Center, Sutton in Ashfield,
Nottinghamshire, United Kingdom
and Bradford Royal Infirmary,
West Yorkshire, United Kingdom

Electrocardiographic changes in "elite" athletes

EDITOR,—I am constantly amazed that authors of refereed articles in sports science and medicine journals get away with dictating to the reader. I refer specifically to the use of the term "elite". I think this is particularly inappropriate when used in the title of a paper, because it presupposes that the population studied is elite when in reality it is the reader who should make such a judgement.

If, in the body of the text, the author(s) wish to refer to the population in question as elite, then they should present their definition in the opening introduction. Clearly, there are

many instances where the term elite can be questioned, but I think most reasonable scientists and doctors would agree that there cannot be 1000 elite junior athletes in the United Kingdom. I refer to the paper of Sharma *et al.*¹ I do not intend to victimise one research group, as I have seen many papers that "transgress" in this way. However, I have noticed that an earlier paper of Dr Sharma's, published as the result of a presentation at the European College of Sports Medicine Conference, Manchester 1998, also used the term "elite" when referring to junior athletes. Perhaps those of us who act as reviewers are also guilty here and should take a greater stand in the future in this regard.

I recognise that what constitutes "elite" could be debated interminably. The Chambers Dictionary defines elite as "...the pick or flower of anything". There can be little debate that Olympic gold medallists are elite by this definition, but in a sporting context generally, the definition does tend to be less subject to clear distinction. By way of example, I cite the top 12 heavyweight rowers in the UK.

The British Olympic Medical Centre regularly fitness tests 70 national squad rowers, of whom these 12 are a part, in the centre's laboratory at Northwick Park Hospital in Harrow. In a recent collaboration with DeMontford University, $\dot{V}O_{2max}$ data for these 12 was "scaled". In other words, it was recalculated raising it to a power function of the body mass such that physiological data could be "normalised" or rendered dimensionless. When successfully accomplished, this mathematical technique allows data for women to be compared with men, children with adults, and so on. When done with $\dot{V}O_{2max}$ data, it allows the individuals with the highest aerobic power to be truly identified. The results of this recalculation showed that expressing body mass to the 0.67 exponent produced the most promising results in all cases, with the exception of the three Olympic gold medallists. This shows that even with 12 individuals who constitute a group that appears homogeneous (very similar ages, heights, body weights, training volume, and intensities for the last 10 years, and very similar competitive experience) there appears to be a "more elite" subpopulation. Put another way, for this population the three gold medallists are "outliers" on the normal distribution curve.

So where does this leave us with respect to my criticism of the use of the term "elite"? In my view, it brings us full circle and simply reinforces the point that authors should not be using the term "elite" in the title of any paper, and should present their definition of the term "elite" should they choose to use it with reference to the population they have conducted research on.

These steps should return the power of judgement to the reader. After all, within science we are taught to criticise any scientific study and constantly assess its value in the context of the existing body of knowledge. Of course, authors' opinions are often important and valid, but should not be stated as anything other than opinion where they cannot be supported by science.

RICHARD GODFREY
Chief Physiologist,
British Olympic Medical Centre

1 Sharma S, Whyte G, Elliott P, *et al.* Electrocardiographic changes in 1000 highly trained junior elite athletes. *Br J Sports Med* 1999;33:319–24.

Author's reply

EDITOR,—Mr Godfrey has stated that "most reasonable scientists and doctors would agree that there cannot be 1000 elite junior athletes in the United Kingdom". There are a number of issues we would like to discuss in this regard:

- Mr Godfrey is correct to imply that the scientific community has failed to define the term "elite", and to this end we would agree that a definition would avoid confusion. However, the use of the term "elite" in our paper is warranted, as the athletic population employed reflects the best athletes within each sport. Indeed this satisfies Mr Godfrey's definition of "elite" as being "the pick or flower of anything".
- When one examines the sporting standard of athletes employed in some studies, we would agree that the use of the term "elite" is misguided. However, to assume that "most reasonable scientists and doctors" agree that there cannot be 1000 elite junior athletes in the UK is both presumptuous and unfounded. Indeed, to dismiss the use of the highest quality of athletes within a sport as being non-elite is as misleading as assuming that all athletes, of whatever standard, are "elite".

To highlight a further issue raised by Mr Godfrey, we would like to tackle his cited example. It would appear erroneous to assume that it is physiology, and physiology alone, that differentiates the most successful performers. Whilst physiology is related to performance, other factors such as biomechanics, psychology, skill, equipment, etc, will have a significant impact, particularly in those sports that require a high skill component. The example cited by Mr Godfrey assumes that $\dot{V}O_{2max}$ is the single determinant of rowing performance. Even if this were true, which we know is not the case, the determinants of $\dot{V}O_{2max}$ are many, and to assume that these determinants are equal, even within a homogeneous population, is highly erroneous. This point is demonstrated in the large number of studies our group has published on heart size and function in athletes.

We applaud the use of allometric scaling in comparing $\dot{V}O_{2max}$ values by Mr Godfrey and his colleagues. The use of an optimal scalar variable and method when comparing individuals is fully appreciated by our group, and I would direct Mr Godfrey to our most recent review on the subject.¹ Despite this, even following scaling, we doubt that $\dot{V}O_{2max}$ is the only determinant of rowing performance differentiating his "more elite" rowers.

In conclusion, the term "elite" cannot be solely applied to Olympic medallists, as to do so would assume that all non-medal winning Olympians are not "elite", and, further, what of those athletes competing in non-Olympic sports? We agree that the term "elite" requires a consensus definition, and may be a topic for future debate. However, we defend the use of the term in the present and past papers as being a true reflection of the level of athlete employed.

GREGORY WHYTE
Senior Physiologist,
Human Performance Centre,
University of Wolverhampton,
Gorway Road, Walsall WS1 3BD, UK

1 Batterham AM, George KP, Whyte G, *et al.* Scaling cardiac structural data by body dimensions: a review of theory, practice, and problems. *Int J Sports Med* 1999;20:495–502.

The genetics of physical fitness

EDITOR,—Any paragraph that starts with the statement “We must be cautious, however, that such research is not misused.”¹ is obviously completely ignoring the history of science in general and sport in particular. From the post hoc hand wringing of the Manhattan project scientists to the current debate about “genetically modified organisms”, it is manifestly obvious that, if there is money or fame (or both) to be made on the back of a scientific discovery, then that discovery will be used (or misused, depending on where you stand).

Unfortunately sport is one of the worst spheres of human endeavour for the misapplication of science, and the fault is not always with the “rogue” athlete and his pharmacological advisor. The cult of the “elite athlete” is one that has been promoted world wide, with one of its stated aims being to provide role models for the youth of the world. In fact, even without illegal chemical experimentation, they are nothing of the kind. With their exclusivity of selection, preparation, participation, and remuneration, they are as removed from real life as it is possible to be.

While I am happy that Montgomery and Woods continue their work for the best of motives, I would regretfully suggest that they end their pious wishing that their work is not misused. They can bet their bottom euro that it will be used, to distance even further the freak “elite” athletes from the rest of humanity.

EDWARD LAVIN
Gloucester Road Medical Centre, Bristol

1 Montgomery H, Woods D. The genetics of physical fitness. *Br J Sports Med* 1999;33:375.

Author's reply

EDITOR,—Perhaps surprisingly, I wholeheartedly welcome the majority of remarks by Dr Lavin. He emphasises the very points we wished to make. Far from “ignoring the history of science”, we are referring to it.

The Manhattan project was a technological triumph aimed at designing a weapon of mass destruction. It does not surprise me that many of those involved regret their participation. In the case of genetic understanding, progress made was perhaps aimed at more noble causes, but has again been technological in nature. These new technologies allow probing of gene structure and function as never before. The moral issue that we face is therefore not whether we should develop the technology (which is already here) but rather its application.

There would seem to be few ways forward. At present, we are trying to use the genetics of sport for wholly humanitarian reasons: if we can find out how and why exercise training is beneficial, then we may be able to harness this knowledge and apply it to the sick. One approach may be to try to identify rare genetic variants in “superathletes”. Such a strategy may indeed have high risk of misuse. We have chosen a different—and safer—strategy: to seek common variants of ubiquitous genes and to identify smaller associated variations in phenotype.

Our editorial was therefore not (we hope) “pious wishing”. We rather hoped to raise some of the moral dilemmas and provoke thought and reaction. We are glad that we have done so.

HUGH MONTGOMERY
UCL Centre for Cardiovascular Genetics, Rayne
Institute, London WC1E 6JJ

Performance enhancing drugs; damned if you do, and damned if you don't

EDITOR,—I recently attended the BASM Annual Conference, and was interested by the obviously conflicting views on and attitudes towards performance enhancing drugs highlighted during the discussions.

The divergence of opinion was extreme. In the blue corner was the “ban em and string em up” brigade and in the red corner the “lets forget about them and legalise them all” (well not quite so extreme).

The facts surrounding performance enhancing drugs remain.

- Athletes and recreational sportspeople use them, almost certainly, more than we imagine: as many as 2.8% of Canadian school children test positive for anabolic steroids.¹
- Unsupervised drug use increases the risks to the users immensely—for example, adverse effects, risk of infection.
- Drug testing fails to identify the users of many of these drugs, because of clever dosage regimens, known adulterating mechanisms, and probably a less than total commitment to detect high profile users.
- Harm minimisation can reduce the use of these drugs, remove the more toxic drugs from the user's repertoire, and monitor users medically to ensure that they are advised when detectable harm is observed.

There is a duty of care to these users that is clearly stated by the General Medical Council (GMC): “it is . . . unethical for a doctor to withhold treatment from any patient on the basis of a moral judgement that the patient's activities or lifestyle might have contributed to the condition for which treatment is being sought. Unethical behaviour of this kind may raise the question of serious professional misconduct.”² In the same document it is stated, “ . . . all problem drug misusers—irrespective of age, gender, race, and drug of choice—must have proper access to support from appropriate services—including primary care . . . ”

There needs to be a frank and open debate about these issues. It simply is not enough to say that this is banned so we can't address the issues.

The GMC is to include the following statement in the next edition of *Good Medical Practice, 2000*: “Doctors who prescribe, or collude in the provision of drugs or treatment, with the intention of improperly enhancing performance in sport, would be contravening GMC guidelines and such actions would usually raise a question about a doctor's continued registration.”

So “de-registered” if you do, and facing serious professional misconduct if you don't.

This knee jerk reaction to the words “sport and drugs” will undoubtedly lead to a retraction from the GMC, as surely as the lawyers would grow rich on the legal definition of the word “collude”.

The debate must move on. We must know how to monitor people using such drugs, we must be able to know how to reduce the use of the most harmful drugs, and we must recognise that even the government knows that “just say no” never works.

The Council of the British Association of Sports Medicine proposed to the GMC that it “ . . . is of the opinion that doctors found

intentionally involved in helping athletes and others to commit a doping offence, as defined by the IOC, are guilty of professional misconduct.”

This is a step on the road of a rational policy towards this problem, but sports doctors and general practitioners need to learn more about this problem, not so that we can grow fat by association with the ultimate striving for success, nor in collecting fees for this information, but simply to improve the care we give to patients.

Their obvious similarities to other drugs of abuse mean that there is a lot of information readily available and some of that is relevant to this select group of drug abusers. We do not have to invent the wheel, merely modify it.

CHARLES DEAN
Glendale Surgery, Wooler, Northumberland
NE71 6DN, United Kingdom

1 Melia P. Is sport a healthy place for children? *Relay* 1994 Oct:10-12.

2 Department of Health. *Drug misuse and dependence: guidelines on clinical management*. London: Department of Health, 1999.

NOTES AND NEWS

BJSM and JAMA

Another coup for the journal! The journal of the American Medical Association, *JAMA*, publishes a small number of abstracts taken from other journals “selected on the basis of interest to our readers”. In December 1999, *JAMA* (1999;282:2090) published an abstract of an article by Sanjay Sharma and his colleagues entitled “Electrocardiographic changes in 1000 highly trained junior elite athletes” which appeared in the *British Journal of Sports Medicine* (Sharma S, Whyte G, Elliott P, *et al.* 1999;33:319-24). Congratulations all.

Current concepts

The first advanced sports medicine meeting entitled “Current Concepts” took place recently at the National Watersport Centre at Holme Pierpoint in Nottingham. It was organised by Mark Batt, attended by 55 delegates from Great Britain and Ireland, and judged by those present to have been a great success. Speakers included Dr Mark Batt, Professor Don Detmer, Mr Graham Holloway, Mr Mike Allen, Mr Dylan Morrissey, Mr Nat Padhiar and Mr Mike Barnes, but perhaps the greatest benefits were gained from the extended interactive discussion periods. The case presentations were excellent and are likely to be extended in future programmes. The next meeting on screening of athletes, coordinated by Brian English, is scheduled for 19 May 2000 in Loughborough. A further meeting on tendonopathies, coordinated by Cathy Speed, is scheduled for 8 December in Cambridge. All details are available from Barry Hill at the National Sports Medicine Institute.

Exercise and sport: the pros and cons for health

Benefits and Hazards of Exercise is a new publication from BMJ Books. Each chapter began life as a review article published in the *British Journal of Sports Medicine* and was updated by the authors before selection for this compendium. The contents of this book attracted considerable interest when they were first published in the journal, particularly among those readers who work in primary care and exercise professionals. As a result, in a innovative collaboration between the BMJ Publishing Group and the Royal College of General Practitioners, a one day meeting on the benefits and hazards of exercise will be held on 15 June 2000 at the Chelsea Village Conference Centre. This conference will be open to health professionals and all those involved in the exercise industry, and will bring together a selection of international experts who will discuss the latest evidence on the beneficial effects of exercise and, more importantly, how these recommendations can be put into practice. For further details, please contact Jennifer Goulding at the Royal College of General Practitioners (tel: 0207 581 3232; fax: 0207 589 1428; email: jgoulding@rcp.org.uk).

Commonwealth Games Federation report

The Journal recently received details of the report of the Honorary Medical Adviser to the Commonwealth Games Federation, following the games in Kuala Lumpur. From August 31 to September 24 there were 3100 visits to the village medical centre and 17 people required hospital treatment. There were 859 physiotherapy visits. There were 1362 medical encounters at the 16 sporting venues. The greatest number of these (573) took place at Langawi, the shooting venue. Interestingly there were only 19 heat related problems overall. There were three reported cases of Dengue fever, and, of 640 athletes tested at doping control, there were three positive tests. The report of the Honorary Medical Adviser makes an interesting point in suggesting that training human resources (2175 medical personnel including physicians, nurses, physiotherapists, first aid, and administrative personnel) is an important legacy of any games in addition to the physical structures such as arenas, swimming pools, and other facilities.

MSc programmes in Sport and Exercise Medicine

Two new MSc programmes in Sport and Exercise Medicine, and Sport, Exercise and Society, were announced recently by University College London. The MSc in Sport and Exercise Medicine is directed at physicians interested in a career in sports medicine. It will provide an introduction to best clinical practice and the underlying science and will cover the syllabus of the Intercollegiate Academic Board in Sport and Exercise Medicine. The course organiser is Mr Panos Thomas, Consultant Orthopaedic Surgeon at the Whittington Hospital. The MSc in Sport, Exercise, and Society will cover sociological and psychological perspectives on sport and health. The course director is Dr Graham Scambler, Dept of Psychiatry and Behavioural Sciences, University College London. Both programmes are modular and may be

undertaken full time or part time. Further information is available from Lori Coletti, Dept of Physiology, University College London, Gower Street, London WC1E 6BT (tel: 0207 419 3230; fax: 0207 383 7005; email: l.coletti@ucl.ac.uk).

Marathon Medicine 2000

The Royal Society of Medicine will host a conference entitled Marathon Medicine 2000 on 13–15 April 2000. This major conference will address the most important aspects of endurance sport and the programme brings together many of the most renowned experts across the globe. Among those speaking are Sir Roger Bannister, Professor Claude Bouchard, Dr Randy Eichner, Dr Lawrence Folinsbee, Professor William Morgan, Dr Bente Pederson, Professor Peter Raven, Dr William Roberts, Professor Bengt Saltin, and many other UK experts in the field. Details of registration are available from Emma Bryce, Academic Conference Department, The Royal Society of Medicine, 1 Wimpole Street, London W1M 8AE (fax: 0207 290 2977; email: emma.bryce@roysocmed.ac.uk).

BASEM annual conference

Aircast are continuing their support of the BASEM Annual Congress. They will be sponsoring one of the major speakers, Professor Norbert Baachl, and presenting the annual Aircast prize. Researchers are advised to begin thinking about their projects for submission for the 2000 Aircast prize which was awarded to Nick Peirce 1998 and to Nicola Mafulli in 1999. This is a very valuable travelling fellowship which will allow the winner to visit a research centre of their choice. Attention is also drawn to other opportunities for international travel. The Sports Council offer bursaries for members to attend sports medicine events abroad and, in the past, members have been funded to attend the American College Sports Medicine meeting and other European events. If there are more applications than bursaries, the grants will be allocated on merit and applicants who present papers or posters at conferences or who can demonstrate a particular benefit to the association will be given preference.

BASEM education

A major meeting of BASEM education took place on 29 February to discuss plans to develop the education programme. With increasing interest in sport and exercise medicine these courses have become very popular and are often oversubscribed. Barry Hill is updating the list of tutors for BASEM courses. If you wish to volunteer to become involved in BASEM education or you have heard a lecturer whom you would like to nominate, please contact Barry Hill at NSMI.

BASEM Scotland

BASEM Scotland has been busy over the last few months with a number of important events. As part of their continuing medical education programme there were two outstanding evening meetings. The first was presented by Professor Susan Ward, Director of the Centre for Exercise, Sports Medicine And Science (CESAME) on respiratory physiology, and the second by Dr John Shaw Dunn of the Anatomy Dept at Glasgow Uni-

versity, with the intriguing title "Smelling the formulin". The third lecture in the series was on imaging in sport with Dr Paul Duffy. One of the highlights of the Scottish Calendar is the weekend course at Glenmore Lodge near Aviemore from 5–8 May which is a must for those with an interest in adventure sports and evening entertainment! Further details are published elsewhere in the journal. Collaboration is the secret of BASEM success in Scotland and the re launch of newsletter, in partnership with the Association of Chartered Physiotherapists in Sports Medicine and Sport Scotland, is a further example. The annual researchers day, a partnership with the British Association of Sport and Exercise Science and Sport Scotland, is the major focus for sports medicine and sports science students in Scotland. BASEM Scotland also supports the audit of the Sports Injury Clinic network by Gordon Turner, a physiotherapist, on behalf of Sport Scotland. Faith Gardner, the current chairperson of BASEM Scotland recently completed her term of office and Jim Inglis, who is currently Vice Chair, takes over shortly. Further information on BASEM Scotland activities is available from the Secretary, Mrs Lindsay Thomson, at FSAC, Centre for Sport and Exercise, University of Edinburgh, 46 Pleasance, Edinburgh, EH8 9TJ (tel: 0131 650 2578).

CPD in sport and exercise medicine

Dr Nick Webborn, medical director of NSMI, who has a particular interest in medical education recently circulated a paper addressing the issue of continuing professional development (CPD) in sport and exercise medicine. Emphasising the importance of CPD across all medical specialties, he suggested that CPD in sport and exercise medicine is inevitable. While the Intercollegiate Academic Board of Sport and Exercise Medicine is responsible for establishing CPD, a nominated college or intercollegiate CPD office can take individual responsibility. Although higher specialist training programmes may take some time to establish, sport and exercise medicine practitioners should, in the meantime, be able to display their continuing professional development to ensure good medical practice. At present the NSMI–BASEM educational partnership is the major provider in sport medicine education in the UK and will be pivotal in all future developments.

BASEM and the Sports Council for Northern Ireland

The Northern Ireland region of BASEM is working very closely with the Sports Council for Northern Ireland (SCNI) to develop a strategy for sports medicine which will be integrated into future SCNI policy. The main working group has representatives from all aspects of sport and medical provision including the Department of Health and the Health Promotion Agency for Northern Ireland, and is chaired by Eamon McCartan, the chief executive of SCNI. There are three main subgroups dealing with research and education, clinical services within the NHS and in the private sector, and medical care of the elite athlete. It is proposed to develop a Commission for Sport and Exercise Medicine within the region to help integrate developments across the province.

Doctors and doping

The General Medical Council have responded to the request by BASEM for clarification of their recent statement on doctors and doping, after the issue was raised by the British Olympic Association at the BASEM annual general meeting. The full statement is published below. Members of BASEM are opposed to drug abuse in sport and the GMC statement endorses the position of the medical profession with regard to the deliberate use of prohibited performance enhancing drugs.

GMC STATEMENT

"Doctors who prescribe or collude in the provision of drugs or treatment with the intention of improperly enhancing an individual's performance in sport would be contravening the GMC's guidance, and such actions would usually raise a question of a doctor's continued registration. This does not preclude the provision of any care or treatment where the doctor's intention is to protect or improve the patient's health."

Sport and Exercise Medicine and Science Council

The National Sports Medicine Institute, in their newly reconstituted format, arranged a meeting of their Sport and Exercise Medicine and Science Council on 1 March at the European Fitness Convention at Olympia. The meeting was addressed by Professor Angus Wallace, chairman of NSMI, who outlined the future direction of NSMI, and proposed an annual UK Congress for Sports and Exercise Medicine and Science in 2003. It is also proposed to have a major sport and exercise medicine conference at the Commonwealth Games in 2002.

CALENDAR OF EVENTS

British Association of Sport and Medicine Scotland: The upper limb and beyond

5-7 May 2000; Aviemore, Scotland

- Topics include:
- Upper limb imaging
 - Orthopaedic management and rehabilitation of hand and wrist injuries
 - Pool based training

Further details: Miss Nicky Walker. Tel: 0131 650 2578. Email: nicky.walker@ed.ac.uk

Pre-Hospital Emergency Care course

5-7 May 2000; Preston, UK

19-21 June 2000; Cambridge, UK
Run jointly by BASICS and the Royal College of Surgeons, this course is open to anyone who may have to deal with emergency situations. The course leads to a certificate in Pre-Hospital Care.

Further details: Basics Education Ltd, 7 Black Horse Lane, Ipswich IP1 2EF. Tel: 01473 218 407. Fax: 01473 280585. Email: educ@basics.org.uk

3rd International sports sciences congress

11-13 May 2000; Istanbul, Turkey

The main topics will include:

- Teaching physical education and sports
- Training and movement
- Sports health
- Sport management
- Psychosocial areas in sport.

Further details: Kongre Sekreterliği, Marmara Üniversitesi, Beden Eğitimi ve Spor Yükseltilmesi, Cuma Yolu Cad 81616 Anadoluhisari, Istanbul, Turkey. Tel: +90 (216) 308 56 61/62/63. Fax: +90 (216) 332 16 20. Email: kongre2000@marun.edu.tr

Healthcare workers: their health risks and how to minimise them

25-26 May 2000; London, UK

Further details: Rosamund Snow, External Relations Department, Royal Society of Medicine, 1 Wimpole St, London W1M 8AE. Fax: 0171 290 2904. Email: rosamund.snow@roysocmed.ac.uk

International conference on sport technology: challenges for the 21st century

4-6 June 2000; Calgary, Canada

Further details: The Sport Technology Research Centre, Faculty of Kinesiology, University of Calgary, 2500 University Drive NW, Calgary AB, T2N 1N4, Canada. Tel: (403) 220 3377. Email: istconf@ucalgary.ca

Exercise and sport: the pros and cons for health

15 June 2000; London, UK

Further details: Jennifer Goulding, Courses and Conferences Organiser, Royal College of General Practitioners, 14 Princes Gate, Hyde Park, London SW7 1PU. Tel: 0207 581 3232. Fax: 0207 589 1428

National Athletic Trainers'

Association 51st Annual Meeting

28 June-2 July 2000; Nashville, Tennessee, USA

Further details: NATA, PO Box 911758, Dallas, TX 75391-1578, USA. Tel: (301) 694 5243. Fax: (301) 694 5124. Website: www.nata.org

Rehabilitation and rheumatology 2000: unlocking the door of disability

29 June-1 July 2000; Bath, UK

Topics will include:

- Paediatric rheumatology and rehabilitation
- Pain management
- Spinal injuries
- Neuro-rehabilitation.

Further details: Janet Crompton. Tel: 01453 549929. Fax: 01453 548919. Email: janetcrompton@compuserve.com

5th Annual congress of the European College of Sport Science

19-23 July 2000; Jyväskylä, Finland

Details from: ECSS, University of Jyväskylä, PO Box 35, FIN-40351, Jyväskylä, Finland. Tel: +358 14 603160. Fax: +358 14 603161. Email: ecss@palo.jyu.fi
Website: www.dshs-koeln.de/ecss

1st Latin American meeting in orthopaedic sports medicine

26-29 July 2000; Santiago, Chile

Details from: Chilean Soc Sp Med, Av. Las Condes 9792 Oficina, 206 Santiago, Chile. Email: info@sochmedep.cl Website: www.sochmedep.cl

British Association of Sport and Exercise Sciences Annual Conference

29 August-1 September 2000; Liverpool, UK

Further details: BASES 2000, Event Management Services, Egerton Court, 2 Rodney St, Liverpool L3 5UX. Tel: 0151 231 3585. Fax: 0151 709 5057. Email: ems@livjm.ac.uk

2000 Pre-olympic scientific congress

7-13 September 2000; Brisbane, Australia

Themes running through the programme include:

- Role of the Olympic Games in promoting health for all
- Impact of elite athlete sports medicine on the general community

Deadline for abstracts August 1999.

Further details: Congress Manager, Sports Medicine Australia, PO Box 897, Belconnen Act 2616, Australia. Tel: +61 2 6251 6944. Fax: +61 2 6253 1489. Email: smanat@sma.org.au

19th congress of sports medicine

13-14 October 2000; Bruges, Belgium

Topics include:

- Sports physiotherapy
- Children and sports

Further details: Dr Michel D'Hooghe, President Brusport, Hospital AZ Sint-Jan AV, Ruddershove 10, B-8000 Brugge, Belgium. Tel: +32 50 452230. Fax: +32 50 452231. Email: brusport@azbrugge.be
Website: <http://user.online.be/brusport/index.htm>

1st Moscow International Forum: Sport medicine science and practice on the eve of the 21st century

20-25 October 2000; Moscow

Further details: Organising Committee of the Forum, Yachshuk AM, Zemlyanoi Val 53, Moscow. Tel: +7 928 29 92

British Association of Sport and Exercise Medicine congress

3-5 November 2000; Tewkesbury, UK

Lectures include:

- Muscular conditioning during space station MIR flight
- Health enhancing physical activity—an upgrowing challenge for sports medicine

Further details: Dr Clive Monkley, Ridgeway House, Ridgeway Cross, Cradley, Worcestershire WR13 5JJ. Tel/fax: 01886 880158

Multiple choice questions—answers

p 93: Pescatello S, VanHeest JL, Physical activity mediates a healthier body weight in the presence of obesity

1 (b); 2 (e); 3 (e); 4 (c); 5 (b).