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Meeting report

FIMS Council of Delegates

The 1992 Council of Delegates meeting was held in the Pearl of the Orient, Hong Kong, under grey skies with low cloud so that business took preference to sightseeing. Indeed, travelling from the UK one was surprised at the low temperature, especially as there seemed no way of turning down the air conditioning in the Hong Kong sports institute where the meeting was held, and I have an overriding impression of delegates shivering in their overcoats. There have, of course, been enormous political changes in the world in recent years affecting the Soviet Union, East Germany and South Africa etc., and this has had a profound effect on sports medicine, with many new independent states emerging and other countries having great economic difficulties. International solidarity is required in sports medicine and this point was emphasized by Professor Hollmann, the FIMS President. At the time of reunification, on 3 October 1990, West Germany had 10300 organized sports physicians, East Germany around 1000, with 2000 others appointed to the so-called sports medical service in East Germany. In addition, East Germany had many sports medical, clinical and rehabilitation centres such as Kreischa, with its doping control laboratory. Unfortunately, many of these institutions have been taken over or dissolved and the sports medical service in Eastern Germany has been fully liquidated.

The FIMS journal – *The World of Sports Medicine* – has been published and was distributed at the meeting. It contains FIMS points of view, position statements and selected articles, and aims to be a non-scientific journal and not in competition with other national or international magazines, and is clearly expensive to produce and distribute. This copy was sponsored entirely by a single American–German pharmaceutical company, but there is clearly no funding for future journals at the present time. FIMS has been running on a shoestring for years and it seems clear that with rising costs there is little chance of improvement unless membership increases. There has therefore been a drive for individual membership to provide the necessary funding. So far the biggest response has been from Spain, and it is certainly difficult to know what benefits individual membership would have for members of the British Association of Sport Medicine.

The Scientific Commission reported that a position paper on 'Excessive physical activity in children and adolescents' had been published, and a further paper on 'Recommendations for the rehabilitation of the cardiac patient with physical training' is planned. The Inter-Federal Commission discussed gender verification, pointing out that determining sex by Barr cells was unsuitable because of previous errors. These are not always detectable on blood test, and in Albertville one woman athlete had blood tests which showed her to be male in 10 of 12 laboratories. Indeed, subsequently she had a laparoscopy to prove she had internal female organs. The commission therefore suggested physical examination before each games, but this suggestion was not considered acceptable by the Council of Delegates. The Education Commission highlighted the great disparity among educational programmes in the member countries and the degree of recognition of sports medicine.

A progress report followed on the seventh European Congress on Sports Medicine to be held between 5 and 10 October 1993 in Nicosia, and, following the ballot, Orlando was selected to host the 1998 World Congress. It was a pleasure to see several countries voted in as new members of FIMS, especially South Africa, Lithuania, Gabon and Taiwan.

The meeting finished just in time for the opening ceremony of the inaugural meeting of the South-East Asian Sports Medicine Association, a splendidly colourful ceremony followed by a reception and the opportunity to see some Chinese art and culture. The clinical meeting itself was a truly international occasion, with many keynote speakers delivering excellent papers and then three simultaneous sessions in different halls. Perhaps one of the most noticeable features of an international meeting like this is the wide variation in the quality of the papers and their length. It is clearly difficult to lecture in a foreign language, but some papers still lasted twice their allotted span. This, at least, made up for a rather large number of speakers who failed to turn up. Many of these were from China, and whether it was difficulty in obtaining visas or finance I was unable to

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determine, but it was sad to see that almost half of the poster presentations did not arrive. A splendid banquet was arranged on a floating restaurant which provided typical Cantonese food with so many courses one lost count, but each one was memorable in its own right. There followed some splendid staged entertainment, a formal presentation of mementos and then some rather informal and less skillful entertainment. Karaoke was started on this side of the world and it became apparent that each member country had to sing for its supper. Fortunately, there were a number of representatives from the UK and Ireland who performed with great gusto but little harmony.

Per Renstrom has circulated a paper entitled 'What is the role of FIMS?', and this was discussed at a separate meeting of delegates. It is important that each member country gives some input into what it requires from FIMS so that this International Federation can develop and provide a suitable service. Clearly the requirement of large wealthy countries is quite different from those of the underdeveloped world. It was clear by the end of the meeting that many of these questions still required answers and this has been left to the Regions to discuss further. Indeed, the North West chapter will be posing the same questions in their meeting in Gothenburg in May.

Graham Holloway Assistant Secretary
BASM Delegate, BASM

Correspondence

The challenge of élite training

Roger Hackney FRCS, DipSportsMed
51 Main Street, Bishopstone, Aylesbury, Bucks
HP17 8SH, UK

Sir

Endurance running speeds have improved enormously over the last 50 years. The stopwatch is an unforgiving taskmaster, and performances which won Olympic games 30 years ago are now commonplace. A 4-minute mile would not win a British vest now. Synthetic surfaces have been the only technical improvement. Changes in footwear, for all the gimmicks, are insignificant. These improvements are due to progressions in the quantity and quality of training. The days of Bannister taking a brisk walk for a session are gone. It is incredibly hard to maintain the sheer volume of training required by modern athletics. It is a case of the survival of the fittest. Those who can cope with the training and the pressures go on to win championships.

I recognize in myself all the characteristics from A to G that Veale[1,2] proposed for exercise dependence. Without them I would not have been able to cope with the workload. Going running twice a day, every day, with the added psychological stress of interval sessions is tough and one has to be single-minded. The discipline demands development of these patterns of behaviour, particularly if the athlete is trying to pursue another career. The self-esteem which the authors describe and warn against is an integral part of the psychology of the élite, particularly the explosive events. If Linford Christie had a middle distance runner's introspection, then he would not be sprinting beyond club level. I would challenge the author's contention that the behaviour is pathological. The individuals who fail to respond with the mechanisms outlined, in my terms of the élite athlete, do not make the grade.

If we are going to help our élite athletes then we must recognize these behavioural patterns as a means of coping with the training loads. The difficulties in managing them arise when overtraining and tiredness set in. It is difficult for those not having experienced the behaviour described in the paper to countenance how hard it is *not* to go out training. That is when the coach/sports psychologist is needed, but please recognize that these patterns are part and parcel of being at the top of élite sport.

On a lighter note, I would also like to suggest another criterion for the table:

The meticulous maintenance of a training diary.

I kept mine for 15 years! However, even I would agree that the female marathon runner who used to carry a set of weighing scales in her handbag to measure each morsel of food she ate to write in her diary is perhaps overstepping the mark!

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deed, anecdotal reports indicate the abuse of such preparations as the H_2 antagonist ranitidine believing it to be a steroid. For such individuals the medical and psychiatric sequelae of injecting preparations presumed to be anabolic steroids may pose a greater danger than the potential effects of the steroids themselves.

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BASM news

We report two items received as we went to press. Full details will appear in the next issue in March, 1993:

Mr John B. King, FRCS was elected Chairman of BASM at the Annual General Meeting of BASM at Lilleshall on 27 September 1992.

We regret to learn of the death of our former BASM Honorary Secretary, **Mr David P. Chapman.**

mal physical exercise of boys and girls at different stages of maturity. *Eur J Appl Physiol* 1978; **39**: 229–40.
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BASM Merchandise (October 1992)

Ladies scarves	White with blue border and BASM logo – 27-inch square	£5 + £1 p&p
	Navy blue with fringe and BASM logo 54 × 9 inches (oblong)	£5 + £1 p&p
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For further details please contact: John H. Clegg JP LDS RCS Eng, National Sales Officer, Birch Lea, 67 Springfield Lane, Eccleston, St. Helens, Merseyside WA10 5HB, UK. (Tel: 0744 28198)

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Courses in Sports Medicine

We apologise for the misleading title to **Courses in Sports Medicine** in the September issue which gave the impression that the courses were run by BASM which is not the case.

1. British Association of Sport and Medicine

One week/weekend introductory and advanced courses in sports medicine for medical practitioners and physiotherapists.

Contact: Ms Nancy Laurenson, BASM Education Officer, London Sports Medicine Institute, c/o Medical College of St. Bartholomew's Hospital, Charterhouse Square, London EC1M 6BQ, UK.
Tel: 071-253 3244 and 071-251 0583;
Fax: 071-251 0774

2. London Sports Medicine Institute

Three-year part-time course in sports medicine for general practitioners.

Contact: Academic Secretary, London Sports Medicine Institute, c/o Medical College of St. Bartholomew's Hospital, Charterhouse Square, London EC1M 6BQ, UK. Tel: 071-251 0583; Fax: 071-251 0774

3. The London Hospital Medical College

One-year full-time diploma course in sports medicine for medical practitioners.

Contact: Mrs Dot Blake, The Diploma Course in Sports Medicine, Department of Sports Medicine, London Hospital Medical College, 1st Floor Fielden House, Stepney Way, London E1 1BB, UK.
Tel: 071-377 7389

4. University of Nottingham Medical School

Two-year part-time MSc in sports medicine for medical practitioners and chartered physiotherapists with a first degree or equivalent.

Contact: Professor E. Idris Williams, Department of General Practice, The Medical School, Queens Medical Centre, Nottingham NG7 2UH, UK.
Tel: (0602) 709396; Fax: (0602) 709389

5. The University of Bath

A modular course in sports medicine by distance learning for medical practitioners

Contact: Mrs Sally Jeffries, Distance Learning Unit, Centre for Continuing Education, University of Bath, Claverton Down, Bath BA2 7AY, UK.
Tel: (0225) 826342; Fax: (0225) 826849

6. Association of Chartered Physiotherapists in Sports Medicine

Six-month practical course leading to certificate in sports physiotherapy and a two-year part-time academic course leading to a diploma in sports physiotherapy.

Contact: Dr Ian Roberts, Assistant Director, Crewe and Alsager College of Higher Education, Hassall Road, Alsager, Cheshire ST7 2HL, UK. Tel (0270) 882500

7. Diploma in Academic and Practical Physiotherapy for Sports

One-year part-time course in sports medicine/physiotherapy for chartered physiotherapists.

Contact: Joanne Marshall, Department of Sports Medicine, London Hospital Medical College, 1st Floor Fielden House, Stepney Way, London E1 1BB, UK.
Tel: 071-247 7636

8. Edinburgh Post-Graduate Board for Medicine

One-week introductory course in sports medicine for doctors and physiotherapists.

Contact: Dr Elizabeth McSwan, Moray House College of Education, Cramond Campus, Cramond Road North, Edinburgh EH4 6JD, UK.
Tel: 031 3126001

9. Diploma in Podiatric Sports Medicine

Two-year part-time course in sports podiatry.

Contact: Dr Ian Roberts, Assistant Director, Crewe and Alsager College of Higher Education, Hassall Road, Alsager, Cheshire ST7 2HL, UK.
Tel: (0270) 882500

From the journals

Sports medicine current awareness service

Prepared by Kathryn Walter and Nancy Laurenson at the National Sports Medicine Institute (NSMI) Library

The following summaries are taken from a selection of recent journals indexed in the NSMI database. A full listing is published monthly in *Sports Medicine Bulletin.*

Copies of the complete articles are available (price 15 pence per sheet subject to Copyright Law) from the Library, NSMI, c/o Medical College of St. Bartholomew's Hospital, Charterhouse Square, London EC1M 6BQ, UK. (Tel: 071-251 0583).

A unique characteristic of the musculoskeletal system is its good ability to adapt to different states of loading and movement. Pekka Kannus and colleagues have investigated this phenomenon in a two-part article which reviews **The effects of training, immobilization and remobilization on musculoskeletal tissue** (*Scandinavian Journal of Medicine and Science in Sports* 1992; **2**: 100–18). The effects of different types of training and immobilization on muscle tissue have been studied intensively and are well established. Initial increases in muscular performance following strength/power training can be attributed to neural and psychological adaptation. Further progress is due to gradual muscle hypertrophy. Endurance training results in an increased concentration and volume density of muscle mitochondria with corresponding biochemical adaptation which allows for greater mechanical power output aerobically and enables muscles to be activated for longer periods without becoming fatigued. Immobilization, in turn, atrophies the muscle quickly with significant losses occurring after one week. Morphological findings include reduction in fibre diameter and size, reduction in capillary density and a simultaneous increase in intramuscular connective tissue. Compared with muscle tissue, the knowledge concerning training adaptation and immobilization on tendon, ligament tissue and the musculotendinous junction or proprioceptors is scarce. The most recent research known shows that slowly progressing physical exercise may cause meaningful adaptive changes in articular cartilage. However, if training is too strenuous or biomechanically misloading, a degeneration process may begin.

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The hypothesis that permanent cardiac injury could develop in some endurance athletes despite the absence of coronary atherosclerosis and ventricular hypertrophy is explored by William J. Rowe (**Extraordinary unremitting endurance exercise and permanent injury to normal heart** *Lancet* 1992; **340**: 712–14). The author states that the cavalier attitude to the potential cardiac risk may result partly from the popular belief promulgated by Karvonen and cited in a widely circulated textbook of the heart, that there is no evidence that strenuous athletic activity in a trained individual with a normal heart increases the risk of early death or morbidity from cardiovascular disease. There are two proposed mechanisms by which injury could arise involving two physiological 'vicious cycles': (1) severe ischaemia and high catecholamines; (2) coronary vasospasm (induced by high catecholamines) and endothelial injury. The permanence of any injury might increase if there is insufficient time between endurance exercise bouts for regression of ischaemia and endothelial repair. Furthermore magnesium ion deficiency (induced by exercise) could exacerbate the vicious cycles and also contribute to catecholamine-induced thrombogenesis.

An interest in Wolff–Parkinson–White (WPW) Syndrome, and related problems caused by accessory pathways of electrical conduction in the heart, continues especially in those patients who exercise or play sport. John D. Cantwell and Aleshia Watson review two case histories as well as discuss common problems in diagnosis and management in athletes in **Does your Wolff–Parkinson–White patient need to slow down** (*Physician and Sportsmedicine* 1992; **20**: 115–29). The high incidence of tachyarrhythmias seen among individuals who have this pre-excitation syndrome makes detection essential. The risk of complications caused by these congenital accessory pathways can be determined by noninvasive (resting electrocardiogram) and, sometimes, invasive tests. When drug therapy is ineffective, electrophysiologic studies can localize the pathways, which can then be interrupted with catheter ablation using radio frequency current. This management may allow WPW patients to continue their athletic activities.

Dance or exercise to music classes, more commonly known as 'aerobics' have become increasingly popular. A number of studies have demonstrated that participation in an aerobic exercise programme provides an effective cardiorespiratory training stimulus, however, to date the effectiveness of such programmes with respect to other forms of aerobic exercise has not been well studied. Two recent articles, **Is aerobic dance an effective alternative to walk–jog exercise training?** (CE Garber *et al. Journal of Sports Medicine and Physical Fitness* 1992; **32**: 136–41) and **A comparison between two forms of aerobic dance and treadmill running** (M Berry *et al. Medicine and Science in Sports and Exercise* 1992; **24**: 946–51) have shown there are similar cardiovascular and sympathetic nervous system responses between aerobic dance exercise and running. It appears that there is a comparable linear relationship between heart rate and $\dot{V}O_2$ during low-intensity aerobic dance and running. Yet there is no evidence to support the contention that the use of overhead arms during aerobic dance exercise elicits a disproportionately greater increase in heart rate as compared with running. Thus aerobic dance is an effective method for improving cardiorespiratory fitness and may be recommended as an alternative to walk–jog or running exercise regimens.

Electrical methods have recently provided rapid and non-invasive alternatives to conventional means of measuring body fat. A study by D. A. Brodie and R. G. Eston examined body fat estimation using three methods of electrical impedance and an infrared interactance method as an alternative to hydrodensitometry. (**Body fat estimations by electrical impedance and**

infra-red interactance *International Journal of Sports Medicine* 1992; **4**: 319–25). Five groups were examined using at least one of the electrical systems and in all cases utilizing hydrodensitometry as the criterion method. Individual electrical methods differed from hydrodensitometry by a maximum of 1.1% in obese women, 21.6% in athletic adults, 6.2% in a slightly obese group, 8.1% in normal women and 56.0% in normal children. Significant mean differences between one of the impedance methods and hydrodensitometry were noted in two of the groups tested. The other three electrical methods appear to be reasonable valid alternatives to underwater weighing.

Margaret Kolka reviews research on thermoregulatory responses in women, with particular regard to the effects of changing hormone status associated with the menstrual cycle in **Temperature regulation in women** (*Medicine, Exercise, Nutrition and Health* 1992; **1**: 201–7). Most studies indicate a significant thermoregulatory change toward an upward (higher) shift in the thermoregulatory set point during the luteal phase of the cycle, which parallels and probably maintains the elevation in resting core temperature. This 'subtle' difference in resting core temperature and upward shifting of the core temperature thresholds for sweating and vasodilation is thought to be of little consequence during exercise heat stress. However, the mechanisms for these changes and the interaction of thermoregulation with other processes such as osmoregulation and fluid volume regulation may be key factors in the understanding of a range of physiologic regulatory processes.

The ergogenic effects of supplementation with a combination of vitamin E, coenzyme Q10, cytochrome C and inosine – all of which have been investigated as individual ergogenic aids – were examined by Ian Snider and others in **Effects of coenzyme athletic performance system as an ergogenic aid on endurance performance to exhaustion** (*International Journal of Sport Nutrition* 1992; **2**: 272–86). Eleven highly trained male triathletes were given three doses daily of the supplement or placebo for two four-week periods, separated by a four-week washout period, using a double-blind cross-over design. An exhaustive performance test was conducted after each treatment period. Mean time to exhaustion, blood glucose, lactate and free fatty acid concentrations did not differ significantly between treatments, although the mean difference in time to exhaustion was 8 min longer for the supplement *versus* placebo treatment and 17 min longer than the washout period. The authors recommend further research but do not currently advocate the use of the supplement as an ergogenic aid in extending time to exhaustion.

A study of the factors associated with low back pain (LBP) in adolescents was conducted by Urho M. Kujala and others by means of a questionnaire and physical measurements of anthropometry, flexibility and strength (**Subject characteristics and low back pain in young athletes and nonathletes,** *Medicine and Science in Sports and Exercise* 1992; **24**: 627–32). Subjects comprised 100 athletes and 38 nonathletes. There was no significant difference in the occurrence of LBP between athletes and nonathletes. Among the athletes, the duration of training during the past 12 months was higher in subjects with experience of LBP during the past 12 months compared with nonsymptomatic subjects. Gender differences and differences between athletes and nonathletes were seen in measures of anthropometry, flexibility and strength. Multivariate analysis revealed the cumulative incidence of lifetime history of LBP to be associated with tightness of hip flexor muscles only. LBP during the previous year was associated only with the amount of training over the same period, suggesting that high training duration predisposes young athletes to LBP.

Partial rupture of the Achilles tendon is a relatively common injury, which causes chronic disabling pain in running athletes. This condition is often diagnosed as tendinitis and an underlying partial rupture is frequently missed. A partial tear inside a normal looking tendon may also be overlooked during surgery, giving poor postoperative results. An objective preoperative diagnostic test would thus facilitate the planning of surgery and improve its outcome. Peter Kalebo and others investigated the use of ultrasonography as such a test (**Diagnostic value of ultrasonography in partial ruptures of the Achilles tendon** *American Journal of Sports Medicine* 1992; **20**: 378–81). Surgically treated Achilles tendon disorders in 37 patients were evaluated, comparing findings of preoperative ultrasonography to findings at surgery. Discontinuity of tendon fibres, focal sonolucencies and localized tendon swelling were positive findings suggestive of partial ruptures. Ultrasonography was found to be safe and reliable, with a sensitivity of 0.94, a specificity of 1.00 and an overall accuracy of 0.95.

An article by Wayne B. Leadbetter gives a detailed account of the healing response after tendon injury (**Cell-matrix response in tendon injury,** *Clinics in Sports Medicine* 1992; **11**: 533–78). The discussion focuses on tissue events at common sites of clinical treatment, such as the rotator cuff tendon complex of the shoulder and the patella and Achilles tendons. These sites share common attributes of tendons exposed to repetitive high eccentric loads. The present understanding of inflammation, repair and degeneration in tendinopathy are reviewed. The mechanisms of acute and chronic tendon injury are contrasted and compared, and the effects of epigenic factors such as age, vascularity, load, use and rest are also considered. Some theoretical models describing tendon pathophysiology and future therapeutic opportunities are provided.

Massage has long been used as an aid to physical performance and as a modality for facilitating recovery from the effects of vigorous exercise. The scientific evidence to substantiate or dispute the widely held belief in its effectiveness is reviewed by E. Cafarelli and F. Flint in **The role of massage in preparation for and recovery from exercise** (*Sports Medicine* 1992; **14**: 1–9). The influence of massage on individual physiological parameters, physical performance and recovery and some psychological variables is reviewed. Although massage has modest effects on local blood flow, there is no evidence that these effects can be directly translated into improved performance. Likewise, the notion that recovery from exercise is enhanced by various forms of massage is not supported by the literature, although there are anecdotal reports that attest to the contribution massage makes to the feeling of well-being of participants. Although no compelling evidence that massage has any major impact on performance and recovery has been forthcoming, there are no reports that it is deleterious in any way.

Quadriceps contusions can frustrate athletes, because the time away from athletic activity is variable and unpredictable (Aronen, JG and Chronister RD **Quadriceps Contusions – hastening the return to play** *Physician and Sportsmedicine 1992;* **20**: 130–36). The determining factor in returning the patient to play safely is whether the patient has regained 120° or more of knee flexion. Immobilization for the first 24 h in 120° of knee flexion – which preserves the needed flexion and minimizes intramuscular bleeding and spasms – accomplishes this goal quickly. Muscle stimulation and stretching also help the athlete recover quickly.

BASM Education Programme

The British Association of Sport and Medicine holds Introductory, Intermediate and Advanced Courses in Sports Medicine annually.

The Introductory Course held at Lilleshall Hall National Sports Centre, Shropshire is a one-week intensive course designed primarily for general practitioners and physiotherapists although suitable for all doctors with an interest in sports medicine. This course is generally a prerequisite for the Intermediate and Advanced Courses. PGEA approval *is* given for 5 days under the categories of 2.5 days Health Promotion and 2.5 days Disease Management.

The Intermediate Course (Sports Specific Injury Management and Normal Examination of Joints) is also one week long and held at Lilleshall Hall National Sports Centre. This course concentrates on the proper examination of normal joints with regard to the management of sport specific injuries. There is a strong focus on the coaching and training involved in each sport. PGEA approval *is* given for 5 days under the categories of 2.5 days Health Promotion and 2.5 days Disease Management.

The six Advanced Modular Courses are held at weekends at various locations throughout the country. These comprise three Injury modules which focus on the clinical examination, diagnosis and management of both acute and chronic injuries; treatment and rehabilitation programmes are also outlined. Two Exercise Physiology modules examine aspects of training and fitness assessment with respect to cardiorespiratory and musculoskeletal physiology. The final module, 'Physical Medicine of Sport and Exercise' concentrates on a range of topical issues from 'Exercise in Elderly People' and 'Osteoporosis' to 'Update on Nutrition' and 'Diabetes and Exercise'. PGEA approval is given for each module.

These courses provide the academic training necessary to sit the Society of Apothecaries Diploma in Sports Medicine as well as the Royal College of Surgeons and Physicians (Glasgow and Edinburgh) Diploma in Sports Medicine for medical practitioners.

For applications and enquiries concerning courses and membership please contact: Nancy Laurenson MSc or Sally Dixon BSc (Hons), BASM Education Officer, c/o National Sports Medicine Institute, St. Bartholomew's Medical College, Charterhouse Square, London EC1M 6BQ, UK. Tel: 071-253 3244 or 071-251 0583; Fax: 071-251 0774

Current Programme for 1993

Date	*Course*	*Venue*
January 22–24	Advanced Physiology: cardio-respiratory physiology	Bradford Royal Infirmary
March 12–14	Advanced Physiology: musculoskeletal system	Liverpool John Moores University
April 2–4	Advanced Injury: Acute and Chronic Injuries to the Upper Limb	RAF Wroughton (Swindon)
April 25–30	BASM Introductory Sports Medicine Course	Lilleshall Hall NSC (Shropshire)
September 3–5	Advanced Injury: Acute and Chronic Injuries to the Head, Neck, Spine and Pelvis	Milton Keynes General Hospital
September 26 – October 1	BASM Introductory Sports Medicine Course	Lilleshall Hall NSC (Shropshire)
October 29–31	Advanced Injury: Acute and Chronic Injuries to the Lower Limb	RAF Wroughton (Swindon)
November 19–21	BASM Congress (Eastern Region)	Cambridge

Courses planned for 1993

May	Intermediate Sports Medicine Course
June	Advanced Medicine of Physical Exercise and Sport

British Journal of sports medicine

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Subject Index

We apologise for a pagination error which caused some overlap between the June and September issues. The December issue has been correctly paginated and the index has been suitably annotated with the relevant month where necessary to avoid confusion.

Author Index

Notes for Authors

Scope

The British Journal of Sports Medicine covers all aspects of sports medicine and science – the management of sports injuries; all clinical aspects of exercise, health and sport: exercise physiology and biophysical investigation of sports performance; sports psychology; physiotherapy and rehabilitation in sport; and medical and scientific support of the sports coach.

Types of Paper

Original papers (not normally over 3000 words, full length accounts of original research)
Review articles (up to 4000 words, providing concise in-depth reviews of traditional and new areas in sports medicine)
Case reports (up to 1000 words, describing clinical case histories with a message).

Refereeing

All contributions are studied by referees whose names are not normally disclosed to authors. On acceptance for publication papers are subject to editorial amendment. If rejected, papers and illustrations will not be returned. Authors are solely responsible for the factual accuracy of their papers.

Manuscripts

Authors are urged to write as concisely as possible. Three copies should be submitted, typed on only one side of the paper (quarto or A4) in double spacing with a margin of 30 mm at the top and bottom and on both sides. Papers should be arranged in the following order of presentation: title of paper; names and qualifications of the authors; address of the place at which the work was carried out; an abstract of the paper (100–200 words in length); 4–6 keywords; the text; acknowledgements (if any); references; tables; abbreviated title for use as a running headline; captions to figures (on separate sheet of paper).

Illustrations

Drawings and graphs should be on heavy white paper/card or blue-lined coordinate paper using black ink. Label axes appropriately and clearly. Please use a selection of the following symbols: +, ×, □, ○, △, ▽, ■, ●, ▲, ▼. Photographs should be of fine quality, large glossy prints suitable for reproduction and the top should be indicated. Negatives, transparencies or x-ray films should not be supplied, any such material should be submitted in the form of photographic prints. Authors are asked where possible to draw diagrams to one of the following widths, including lettering, 168 mm, 354 mm. During photographic reproduction, the diagrams are reduced to ½ their size. The maximum depth at drawn size is 500 mm. Authors are asked to use the minimum amount of descriptive matter on graphs and drawings but rather to refer to curves, points etc. by symbols and place the descriptive matter in the caption. Three copies of each illustration are required and these should be numbered in a consecutive series of figures using Arabic numerals. Legends should be typed in double spacing on a separate page but grouped together. Each figure should be identified on the back – figure number and name of the author. Figures which have been published elsewhere should be accompanied by a form of permission to reproduce, obtained from the original publisher.

References

These should be indicated in the text by superscript Arabic numerals which run consecutively through the paper. The references should be grouped in a section at the end of the text in numerical order and should take the form: author's names and initials; title of article; abbreviated journal title; year of publication; volume number; page numbers. If in doubt authors should always write the journal title in full. References to a book should take the form: author's surname, followed by initials; title of book in single quotes; editors (if any); volume number/edition (if any); name of publishers; place of publication; year of publication and page numbers. Where a paper is cited more than once in the text, the same superior numeral should be used on each occasion. e.g.

21 Sperryn PN. *Sport and Medicine.* London: Butterworths, 1983.
22 Ellitsgaard N and Warburg F. Movements causing ankle fractures in parachuting. *Br J Sports Med* 1989; **23**: 27–9.

Tables

Tables should be typed on separate sheets together with a suitable caption at the top of each table. Column headings should be kept as brief as possible, and indicate units of measurement in parenthesis. Tables should not duplicate information summarized in illustrations.

Footnotes

Footnotes should be used sparingly. They should be indicated by asterisks (*), daggers (†), and double daggers (‡), in that order. In the manuscript, a footnote should be placed at the bottom of the page on which it is referred to and separated from the main text by a horizontal line above the footnote. Footnotes to tables should be placed at the bottom of the table to which they refer.

Drugs, Abbreviations and Units

Drugs should be referred to by their approved, not proprietary, names, and the source of any new or experimental materials should be given. If abbreviations are used these should be given in full the first time they are mentioned in the text. Scientific measurements should be given in SI units, but blood pressure should continue to be expressed in mmHg.

Proofs

Authors are responsible for ensuring that all manuscripts (whether original or revised) are accurately typed before final submission. Two sets of proofs will be sent to the author before publication, one of which should be returned promptly (by Express Air Mail if outside UK). The publishers reserve the right to charge for any changes made at the proof stage (other than printers errors) since the insertion or deletion of a single word may necessitate the resetting of whole paragraphs.

Submission

Four copies of the complete manuscript and illustrations should be sent to Dr P. N. Sperryn, The Editor, British Journal of Sports Medicine, Butterworth-Heinemann Ltd., 59/60 Grosvenor Street, London W1X 9DA, UK.
All material submitted for publication is assumed to be submitted exclusively to the British Journal of Sports Medicine. All contributing authors must sign a letter of consent to publication. The editor retains the customary right to style and if necessary shorten material accepted for publication. Manuscripts will be acknowledged on receipt. Authors should keep one copy of their manuscript for reference. Authors should include their names and initials and not more than one degree each.