British Journal of Sports Medicine

Publishing Director: **Charles Fry**
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The **British Journal of Sports Medicine** is published quarterly by Butterworth-Heinemann Limited on behalf of the British Association of Sport and Medicine, Editorial Office, Butterworth-Heinemann, 59/60 Grosvenor Street, London W1X 9DA, UK. Tel: 071-493 5841 x395, Fax: 071-499 3384, Telex: 27278.
Reprints, Butterworth-Heinemann, Linacre House, Jordan Hill, Oxford OX2 6DP, UK. Tel: 0865-310366, Fax: 0865-311270, Telex: 83111 BHPOXFG.
Registered office: Butterworth & Co Limited, 88 Kingsway, London WC2 6AB, UK.

UK and Overseas subscription orders should be sent to Turpin Distribution Services Ltd, Blackhorse Road, Letchworth, Herts SG6 1HN, UK. Telephone: (0462) 672555; Telex: 825372 TURPING; Facsimile: (0462) 480947. The company is wholly owned by the Royal Society of Chemistry.

North American subscription orders should be sent to Journals Fulfillment Department, Butterworth–Heinemann US, 80 Montvale Avenue, Stoneham, MA 02180, USA. Telephone: (617) 438 8464; Telex: 880052; Facsimile: (617) 438 1479.

Annual Subscription to the **British Journal of Sports Medicine** (4 issues):
UK and Europe institution rate £77.00.
North America and rest of world institution rate £84.00.
Individual rate £35.00.

Back issues: please address enquiries to Professor H. Thomason, 112 Leicester Road, Loughborough, Leics LE11 2AQ, UK.

US mailing agents: Second class postage paid at Rahway, NJ, USA. Postmaster: Send address corrections to **British Journal of Sports Medicine,** c/o Mercury Airfreight International Ltd, 2323 Randolph Avenue, Avenel, NJ 07001, USA, for further details.

ISSN 0306-3674 CODEN: BJSMDZ

PART OF REED INTERNATIONAL BOOKS

Composition by Genesis Typesetting, Laser Quay, Rochester, Kent.
Printed by the Friary Press, Dorchester, UK, and Cambridge University Press, Cambridge, UK.

BASM news

British Association of Sport and Medicine

The following regional officers have been elected:

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Chairman:	Dr P.J.M. Milroy Brook House Farm, Mill Lane, Kingsley, Warrington, Cheshire WA6 8HH; Tel: 0928 33249
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Chairman and Postgraduate Tutor:	Dr Colin Crosby Highview, Hill and Coles Farm, Off London Road, Near Flamstead, Herts AL3 8HA; Tel: 0582 768187
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Meetings Secretary:	Miss Merlyn Fuller, MCSP The Cottage, Newbridge Hill, West Bergholt, Colchester, Essex; Tel: 0206 241066

0306-3674/92/020076-01

From the journals

Sports medicine current awareness service

Prepared by Kathryn Walter and Nancy Laurenson at the London Sports Medicine Institute (LSMI) Library

The following summaries are taken from a selection of recent journals indexed in the LSMI 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, LSMI, c/o Medical College of St. Bartholomew's Hospital, Charterhouse Square, London EC1M 6BQ, UK. (Tel: 071 251 0583).

There has been debate in the literature regarding the effect of endurance exercise training on maximal aerobic power ($\dot{V}O_{2\,max}$) in the elderly. Wendy M. Kohrt and colleagues suggest that this is due to an insufficient training stimulus, rather than the age of the participants. In the study **Effects of gender, age and fitness level on response of $\dot{V}O_{2\,max}$ to training in 60–71 year olds** (*Journal of Applied Physiology* 1991; **71**(5): 2004–11) 53 men and 57 women aged 60–71 years took part in a 9–12 month supervised exercise programme, consisting primarily of walking (including uphill treadmill walking), running on an indoor track, or training on cycle or rowing ergometers, for 3–5 sessions per week. Exercise intensity and time increased progressively so that after 6 months this involved up to 40 min day^{-1} at 80–90% of maximum heart rate. Average (s.d.) improvement in $\dot{V}O_{2\,max}$ was 24(12)%; there was no significant difference between men and women, nor were there any differences when the subjects were divided into three age groups within the larger group. The authors state that in healthy people aged 60–71 years, $\dot{V}O_{2\,max}$ adapts to endurance exercise training to the same relative extent as in young people and that this adaptation is independent of gender, age and initial level of fitness.

Canoe and kayak slalom athletes tend to be extremely vulnerable to shoulder injuries, especially those caused by improper biomechanics or repeated overloading of the muscle–tendon unit. In **Shoulder anatomy, biomechanics and rehabilitation considerations for the whitewater slalom athlete: Part 1** (*National Strength and Conditioning Association Journal* 1991; **13**(5): 26–35), Kristinn Heinrichs gives a thorough examination of the training and conditioning programme, stroke technique and demands placed upon the shoulder joint. In a further review, **Controversy in anterior shoulder instability** (*Clinical Orthopaedics and Related Research* 1991, **272**: 152–61), R.J. Hawkins and N.G. Mohtadi discuss current thinking centring around issues such as acute dislocation, recurrent instability, pain and instability in the 'throwing athlete' and the role of arthroscopy.

Syncope is a fairly common but often frightening symptom, and in the physically active person may present an interesting challenge to the physician. John D. Cantwell and colleagues outline management and treatment guidelines for syncope, including three case histories, in **Cardiovascular syncope, which patients can resume exercise?** (*Physician and Sportsmedicine* 1992; **20**(1): 81–92). Cardiovascular syncope may be divided into two broad categories: reflex (vasovagal, vagovagal, orthostatic, carotid sinus); and cardiac (mechanical, that is, hypertrophic cardiomyopathy; and electrical, that is, ventricular tachyarrhythmias). Non-cardiovascular causes include neurological, metabolic and psychological factors. Treatment varies greatly depending on the cause and underlying aetiology. Usually an athlete can resume exercise after a syncopal episode, but sometimes modifications of activities are necessary.

Cardiopulmonary rehabilitation programmes have become well developed in recent years and resistive exercises designed to improve muscular strength and endurance have proved popular. However, there has been little research directed towards resistive training in cardiac populations. This begs several questions: How much weight can be lifted safely? Which patients should be allowed to participate in resistive training? How soon after a cardiac event can training be initiated? What are the safety protocols for type and progression of training? These and further questions are discussed in **Resistive exercise training in cardiac patients** (D. Verrill, E. Sharp, G. McElveen, K. Witt and D. Bergey, *Sports Medicine* 1992; **13**(3), 171–93). Following a detailed review of the literature pertaining to physiological responses and adaptations, exercise screening and contradictions, and exercise prescription, the authors conclude that appropriately prescribed resistive exercise, even at relatively high workloads, is safe for selected patients. They further state that circuit weight-training does not exacerbate heart rate and blood pressure responses beyond clinically acceptable levels; this mode of exercise improves strength, lean body mass, self efficacy, and may decrease risk factors for coronary artery disease. Important issues which should be examined further include acute effects of resistive training on patients with severely impaired left ventricular function or on those with obstructive lung diseases.

Ankle taping is widely used for the prevention of ankle sprains and protection of previous injuries, but its effectiveness has not been clearly established. The most probable explanation for the inconsistent findings is a variation in tape application procedures. An investigation by Gary Wilkerson (**Comparative biomechanical effects of the standard method of taping and a taping method designed to enhance subtalar stability** *American Journal of Sports Medicine* 1991; **19**(6): 588–95) compared the restrictive effects of a standard taping method with a method incorporating the additional component of a subtalar sling. Both ankles of 30 college football players were measured for maximal passive motion before and immediately after taping, and after a 2–3-h practice session. Downward and inward motions of the foot in the sagittal and frontal planes were induced separately and in combination to allow quantification of four ankle motions. Statistical analysis of data suggested that the incorporation of the subtalar sling greatly enhances the protective function of ankle taping but may impede performance of certain athletic skills.

A group of Swedish scientists investigated the effects of a training sojourn in Kenya at 2000 m above sea level on the sea-level exercise capacities of members of their National Team. **Aerobic and anaerobic exercise capacities of elite middle-distance runners after two weeks of training at moderate altitude** (J. Svedenhag *et al. Scandinavian Journal of Medicine and Science in Sports* 1991; **1**(4): 205–14). A control group underwent a corresponding training sojourn at sea level in Portugal. The results suggest an unchanged aerobic capacity after short-term training at moderate altitude. However, a change in the circulatory regulation during submaximal exercise was observed; furthermore, anaerobic capacity improved but bore no clear relation to lactate or ammonia metabolism.

A case study involving **Reduction of chronic post-traumatic knee oedema using interferential stimulation** after traditional methods had failed is reported by C.K. Hobler (*Athletic Training* 1991; **26**(4): 364–7). A 21-year-old male with chronic knee synovitis (duration, 33 months) was treated for 2½ weeks with biphasic interferential stimulation lasting 15 min. A sweep frequency of 2–10 beats s^{-1} was utilized, with quadripolar electrodes placed over the affected joint. Clinically significant reduction of the patient's chronic knee oedema occurred after seven treatments. Treatments to reduce oedema must be aimed at reducing the inflammatory response and increasing fluid reabsorption and venous return. A possible explanation for the efficacy of interferential stimulation in oedema reduction is that the evoked rhythmic muscle contractions may help the muscle pump mechanism to promote venous return.

Lateral knee pain is a common complaint among runners, and is often associated with an inflammation of the iliotibial band resulting from friction between the band and the underlying lateral femoral epicondyle. This overuse condition is referred to as **Iliotibial Band Friction Syndrome** (ITBFS) and is described in a recent paper by Gregory Anderson (*Australian Journal of Science and Medicine in Sport* 1991; **23**(3): 81–3). A complete history and lower leg examination are essential for diagnosis. Training errors and mechanical or anatomical malalignment problems which create a varus malalignment at the knee are the common denominators underlying ITBFS. These factors, however, cannot account for the sudden onset of lateral knee pain reported by ITBFS patients. It is hypothesized that muscle fatigue allows the pelvis to drop toward the non-supporting leg, increasing the length and tension of the iliotibial band, in turn creating greater friction with the lateral femoral epicondyle and causing inflammation and pain. Most people respond rapidly to conservative treatment, which typically involves ice, stretching and strengthening exercises and oral anti-inflammatory drugs.

The well documented hypervolaemia that occurs with endurance exercise training is reviewed by Victor A. Convertino in **Blood volume: its adaptation to endurance training** (*Medicine and Science in Sports and Exercise* 1991; **23**(12): 1338–48). Research demonstrates that the exercise stimulus for hypervolaemia has both thermal and non-thermal components that increase total circulating plasma levels of electrolytes and proteins. The full expansion appears to be distributed equally between plasma and red cell volumes. Evidence supports the notion that chronic hypervolaemia associated with exercise represents a net expansion of total body water and solutes; this is further associated with increased water intake (influenced by thirst) and decreased urine output. The increased total blood volume thus created may provide advantages of greater body fluid for heat dissipation and thermoregulatory stability as well as larger vascular volume and filling pressure for increased stroke volume and lowered heart rates during exercise.

Blood parameters used to monitor training are discussed by Axel Urhausen and Wilfried Kindermann in **Biochemical monitoring of training** (*Clinical Journal of Sport Medicine* 1992; **2**(1): 52–61). Measurements of blood lactate and, more recently, blood ammonia levels are used for performance diagnosis as well as training control. Levels of creatine kinase are used to monitor muscle damage, and increased levels of its tissue-specific isoenzymes can be indicative of myocardial damage or liver disease. Exercise-induced increases in urea are attributed to enhanced muscle protein catabolism or reduced protein synthesis with subsequent stimulation of gluconeogenesis. Changes in the levels of hormones such as testosterone and cortisol, and, potentially, adrenaline and noradrenaline are also useful markers for monitoring training and may signal overstrain.

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Announcement

We learn with deep regret of the death of our most distinguished Editor Emeritus, Dr Henry Evans Robson. Tributes will appear in the next Journal.

BASM Education Programme

BASM's current annual programme of Sports Medicine courses includes two introductory courses following the FIMS basic course outline and six advanced courses in physiology (cardiorespiratory), physiology (musculoskeletal), injury (head, neck, back and trunk), injury (lower limb), injury (upper limb), and advanced medicine of PE and sport.

All details from: BASM Education Officer, c/o LSMI, St. Bartholomew's Medical College, Charterhouse Square, London EC1M 6BQ, UK. Tel: 071-253 3244; Fax: 071-251 0774

Current Programme for 1992

Date	*Course*	*Venue*
January 10–12	Advanced Physiology: musculoskeletal	BOAMC
February 28–March 1	Advanced Medicine of Physical Exercise and Sport	NSMI
March 27–29	Advanced Injury: Acute and Chronic Injuries to the Upper Limb	RAF Wroughton (Swindon)
April 26–May 1	BASM Introductory Sports Medicine Course	Lilleshall
September 18–20	Advanced Injury: Acute and Chronic Injuries to the Lower Limb	RAF Wroughton (Swindon)
September 27–October 2	BASM Introductory Sports Medicine Course	Lilleshall
November 16–17	Joint Annual Weekend and Meeting	Bruges, Belgium

London Sports Medicine Institute Programme

Although the LSMI was superseded by the National SMI at the end of 1991, LSMI continues to offer its weekly Open Lecture programme on Wednesday evenings, as well as its three-year part-time diploma course. Details from: Academic Secretary, LSMI, St. Bartholomew's Medical College, Charterhouse Square, London EC1M 6BQ, UK. Tel: 071-253 3244; Fax: 071-251 0774

Other Courses

Sports Medicine Course – 7–11 September 1992
(Moray House in conjunction with Edinburgh Postgraduate Board)

To be held at Moray House Institute of Education, Cramond Campus, Cramond Road North, Edinburgh, EH4 6JD, UK, for doctors – suitable for Scottish Colleges examination, with limited places for physiotherapists and coaches. Fee £240, PGEA approval for 10 sessions. Apply by 5 June 1992.

0306-3674/92/020139-01