

LETTERS TO THE EDITOR

The ups and downs of high altitude mountaineering

EDITOR,—Professor Craig Sharp delighted us with a recent account of his world record ascent of Mt Kilimanjaro in the 1960s and voiced his concerns about the physiological dangers inherent in such a feat;¹ the madness and exuberance of youth! It is interesting to note that this record was established during the height of one of the most unforgettable debates in mountaineering history provoked by the initial uncertainties of Barcroft, Margaria, and Henderson, the possibility of an “oxygenless” ascent of Mt Everest. The epochal ascent without supplemental oxygen by Messner in 1978 subsequently put paid to any speculation and reinforced what T H Huxley (1825–1895) once remarked “The great tragedy of science; the slaying of a beautiful hypothesis by an ugly fact!”

The “get up and get down” philosophy of mountaineering has become an increasingly popular practice among enthusiasts who are either pitting their physical attributes against the stopwatch or, as Messner would maintain, merely limiting their time spent in the “death zone”. Perhaps the most astonishing feat of all was achieved during an Italian expedition to Mt Everest in May 1996 when Hans Kammerlander summited via the North Col in a record time of 17 hours and then descended to basecamp on skis! However, although extending the envelope of human endurance, the risks inherent in such an extreme sport simply cannot be ignored.

For example, research in our laboratory has recently indicated a pronounced increase in metabolic biomarkers of free radical and skeletal muscle damage at 5100 m due primarily to the oxidative and reductive stress imposed by physical exercise and environmental hypoxia respectively. We have also incriminated free radicals in the pathophysiology of acute mountain sickness and endothelial dysfunction at high altitude.² Thus, when one considers the average hourly ascent rates by Sharp and Kammerlander of about 611 m and about 215 m respectively compared with the more leisurely 12–30 m typically encountered during a Himalayan expedition, the potential for suffering at the hands (or more appropriately electrons!) of these ubiquitous biomolecules is all too apparent. Free radical generation may be further compounded during a rapid as opposed to a steady controlled descent because of the mechanical trauma of eccentric muscle contractions and greater increase in arterial pO₂ implicit in reoxygenation injury.

But how do these mountaineers achieve such remarkable feats and survive to tell the tale when others falter even at the slightest whiff of hypoxia? The fact that Professor Sharp was effectively a native highlander at the time of his record suggests that acclimatisation may have conferred at least some protection. Or perhaps he is one of the genetically gifted with the I allele of the ACE gene recently associated with improved performance at high altitude.³ While this remains a riddle wrapped in a mystery inside an

enigma, it would seem wise counselling to ensure that those antioxidants are packed before visiting one of nature’s wonders!

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- 1 Sharp C. Exercise at altitude. *Br J Sports Med* 2000;34:404.
- 2 Bailey DM, Davies B, Davison G, et al. Free radical damage at high-altitude; isolating the source and implications for the pathophysiology of acute mountain sickness. *Newsletter of the International Society for Mountain Medicine* 2000;10:3–13.
- 3 Montgomery HE, Marshall RM, Hemingway H, et al. Human gene for physical performance. *Nature* 1998;393:221–2.

Professionalism and injuries in rugby union

EDITOR,—Garraway *et al*¹ are to be congratulated on their meticulous investigation of the incidence of rugby injuries.

Rugby has a very high incidence of injuries. Garraway *et al* state: “An injury episode occurred in a professional team for every 59 minutes of competitive play”—that is, one serious injury among 30 professional players every 59 minutes. Of greater concern is the fact that Garraway *et al* reported two neck dislocations, one of which resulted in permanent neurological damage, in this recent paper compared with nil in the earlier one.²

The question of rugby injuries is an emotive one and I have been concerned, over the years, with the incidence of severe injuries causing tetraplegia. The fact that professional players are suffering a greater number of injuries was apparent from my own researches in 1984³ on 67 patients with tetraplegia whom I treated. I followed this up in 1992⁴ and 1994⁵ and found that there was a direct correlation between the standard of play, the fitness of the player, and the number of injuries. My findings suggested that greater skill does not provide protection, as six of the players injured were first class players and there are only about 2000 such players in England compared with a total of 400 000 players at all standards. The large number of injuries sustained on tours supports the view that the stronger and fitter the player, the greater the likelihood of an injury occurring.

The analogy with vehicle accidents is striking, whereby the forces involved and the speed of deceleration are the major factors in determining the severity of the injury. This is confirmed in the first class game where the players run faster and are bigger and heavier and impact with greater force.

Schneider⁶ made a separate study of this among American players. He found that 141 serious injuries occurred among 780 000 high school football players, 34 among 70 000 university footballers, and 14 among 4500 professional players, whereas, in Sandlot football, an unskilled form of the game (where players do not wear protective clothing!), 26 injuries occurred among 1 645 000 players. He concluded that unskilled players do not play as hard as highly skilled or professional athletes and that the greater degree of force and skill exaggerates the likelihood of injury.

Garraway *et al*¹ say “where valid comparisons can be made, it appears that professional rugby union produces higher injury rates than professional rugby league.” This is not in

accord with my earlier findings. It has been suggested that rugby league is a much safer game as the ruck and maul have been abolished. However, the incidence of injury is four players out of 26 000 with broken necks for rugby league versus five players out of 500 000 for rugby union, which does not support this claim.

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- 1 Garraway WM, Lee AJ, Hutton SJ, et al. Impact of professionalism on injuries in rugby union. *Br J Sports Med* 2000;34:348–51.
- 2 Garraway M, Macleod D. Epidemiology of rugby football injuries. *Lancet* 1995;345:1485–7.
- 3 Silver JR. Injuries of the spine sustained in rugby. *Br J Sports Med* 1984;28:37–43.
- 4 Silver JR. Injuries of the spine sustained during rugby. *Br J Sports Med* 1992;26:253–8.
- 5 Silver JR. The prevention of spinal injuries in rugby football. *Paraplegia* 1994;32:442–53.
- 6 Schneider RC. *Head and neck injuries in football: mechanisms, treatment, and prevention*. Baltimore: Williams and Wilkins, 1973.

Effectiveness of stretching to reduce injury

There appears to be a conflict of ideas in two of the leaders in the October issue of the journal. Reid and McNair¹ state on page 322 that “it is important for rowers to include hamstring stretches in their training programmes”, their argument being that stiffness of the hamstrings would prevent pelvic rotation and increase the likelihood of back pain. Shrier,² however, demonstrates that there is no evidence that stretching before exercise reduces injury.

May I suggest that these views are not necessarily incompatible. Firstly, it would seem to me that there may be a difference between stretching abnormally tight tissues into a normal range of motion as opposed to stretching normal tissues into an excessive range. Is this difference specified in the studies of the effects of stretching on injury prevention referred to by Shrier? Perhaps it is a semantic quibble, but what is stretching? Secondly, Reid and McNair illustrate the concept of the kinetic chain. Did the studies of the ineffectiveness of stretching look at stretching one link in the kinetic chain to reduce injury elsewhere or were they concerned with merely local effects?

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- 1 Reid DA, McNair PJ. Factors contributing to low back pain in rowers. *Br J Sports Med* 2000;34:321–2.
- 2 Shrier I. Stretching before exercise: an evidence based approach. *Br J Sports Med* 2000;34:324–5.

BOOK REVIEWS

Introduction to clinical neurology. 2nd ed. Douglas J Gelb. (Pp 386; £22.50.) Oxford: Butterworth-Heinemann, 2000. ISBN 07506-7202-1.

General practitioners who have long lost the art of performing and applying the findings of

a neurological examination will find this concise American text a useful addition to the practice library, as an easily understood reference source.

The book is primarily written for medical students, and achieves this aim as it is an excellent introductory text. It contains numerous practical tips for carrying out a thorough neurological examination in one excellent chapter. Fortunately, the text also contains many shortened or modified versions of aspects of the full examination, which will allow the physician or student to identify significant abnormalities, and then apply the findings appropriately. Challenges are set throughout the book, such as "Where's the lesion?", and discussion of case histories provides practical and applicable examples of application of the examination and accurate diagnosis. The format of these case histories is rather confusing initially, but a little persistence enables the reader to learn a great deal from their application.

Common neurological disorders are covered broadly, but not in much depth, as the title of the book suggests. There is good coverage of new drugs and therapies for multiple sclerosis and Parkinson's disease for those doctors who may have fallen behind the rapid advancement of neurological treatments.

Analysis

Presentation	15/20
Comprehensiveness	15/20
Readability	13/20
Relevance	18/20
Evidence basis	17/20
Total	78/100

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Tendinitis: its etiology and treatment.

William D Stanish, Sandra Curwin and Scott Mandell. (Pp 140; £34.95) Oxford University Press, 2000.
ISBN 0 19 263582 2.

I must say that I liked this book. In a most logical and readable fashion it set about what can be a rather dour, but yet most clinically important topic. Opening chapters on the normal tendon and the etiology of tendinitis were followed by more clinically and exercise related areas. Initial graphs and diagrams were simple and clear but some of the later clinical illustrations could have been improved by the use of photographs or colour.

The renowned authors combine well to use their obvious clinical experience to give a balanced viewpoint of both conservative and surgical treatments, with the emphasis being on rehabilitation. All treatment options are assessed and the evidence for their choice is given. Throughout, any statements are backed up by suitable references and with suggestions for further reading.

The clinical chapters cover common presentations—Achilles, jumper's knee, humeral epicondylitis—and take the reader logically through pathology, etiology, diagnosis, and treatment. The book finishes with an outline of the eccentric exercise programme used in the authors' Nova Scotia Sports Medicine Clinic and analyses its application.

At 140 pages, this book is concise and therefore easily readable. Although the title does not mention exercise or sport, throughout the book there are many references to the

athlete. All in all, this is an excellent book which will be of benefit to any sports or musculoskeletal practitioner.

Analysis

Presentation	18/20
Comprehensiveness	17/20
Readability	19/20
Relevance	18/20
Evidence basis	17/20
Total	89/100

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Chronic ankle pain in the athlete. Edited by Glenn B Pfeffer. (Pp 88; soft cover; \$38.00) Illinois, USA: American Academy of Orthopaedic Surgeons, 2000. ISBN 089203226X.

In reviewing this book, I was first struck down by the American terminologies, then bogged down by too much information in uninterrupted essay format for two chapters ("Sprains and soft tissue injuries" and "Subtalar injuries"). There was a vast amount of very relevant comprehensive information contained in these sections—for example, different x ray views to request to visualise specific problems, but sadly it was difficult to access in essay format. This was let down the book as a whole, as the last two chapters ("Arthroscopic treatment of Osteochondral lesions and soft tissue impingements" and "Nerve injuries to lateral leg and ankle") were excellently laid out with clear, helpful information for all sports physicians. They were also very well illustrated, including a flow chart for chronic ankle pain management.

I know I am a simple ex GP in sports medicine but, with limited time to read books, I like clear headings, major points highlighted, and tables to compliment the text. I also like pictures; the illustrations in the first two chapters did little, if anything, to clarify the text (reduced size, unclear, black and white anatomy specimen photographs).

Although this book, I think, is aimed at orthopaedic surgeons, it has certainly increased my knowledge and enthusiasm to see chronic ankle problems and I would recommend that anyone serious about sports medicine consider it as a reference book for those difficult ankle problems. If only the authors in the latter part had edited the first two chapters.

Analysis (chapters 1 & 2)

Presentation	6/20
Comprehensiveness	15/20
Readability	6/20
Relevance	12/20
Evidence basis	12/20
Total	51/100

Analysis (chapters 3 & 4)

Presentation	16/20
Comprehensiveness	15/20
Readability	16/20
Relevance	15/20
Evidence basis	16/20
Total	78/100

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NOTES AND NEWS

Institute of Sports Medicine masters course

The Working Party of The Institute of Sports Medicine and University College London (UCL) proposed that a new Course in Sport and Exercise Medicine be set up. After eighteen months of intensive preparation, the course started in September 2000. It is based on the Whittington campus of UCL but can draw on the combined resources of the Whittington, Middlesex, Royal Free, and University College Hospitals. The course is designed as an MSc in the Department of Surgery and concentrates on high academic standards, including training in research techniques and a solid foundation in basic science. Nevertheless, there will be a full clinical exposure to all aspects and candidates will be expected to sit for the Diploma in Sports and Exercise Medicine of the Academy of the Medical Royal Colleges.

The Institute have provided an annual bursary to defray the tuition fees of one candidate, and in this millennial year have also awarded a special Millennial Bursary.

Annual awards ceremony

The Institute of Sport's Annual Awards Ceremony was this year held at The Royal Institution, chaired by Sir David Money-Coutts KCVO. The Guest of Honour was Professor Christopher Llewellyn Smith FRS, the Provost of UCL, who commented in his address that the presence of The Institute physically within the Department of Surgery was an excellent example of the symbiosis between the College and its many guest organisations, each contributing to the good of the others. Three fellowships were awarded by the Institute to Dr Richard Budgett, Director of Medical Services, British Olympic Association and Chairman, BOA Medical Committee (*in absentia*), Mr Graham Holloway, Consultant in Orthopaedic Surgery and Sports Injuries, Ridgeway and BUPA Cambridge Lea Hospitals, and to Dr Patrick Milroy, Regional Medical Officer to the British Athletics Federation, who gave an entertaining and informative lecture on pitfalls and dilemmas that he had encountered. The Sir Robert Atkins Award was presented to Dr Peter Wilmshurst for services to Diving Medicine, and the recipient of the Millennial Bursary Award, Dr Amir Ali Narvani, was congratulated by the Provost.

Annual symposium

The Institute's Annual Symposium on "Current Dilemmas, a journey through Sports Medicine, Ethics and the Law" was held jointly with the Section of Sports & Exercise Medicine of the Royal Society of Medicine on 8 November 2000. A total of 10 speakers of international repute presented papers to a packed Barnes Hall at the Royal Society of Medicine. Details of further such meetings can be obtained by contacting the RSM.

BASEM Congress 2001

The BASEM Congress 2001 is to be held at the Vale of Glamorgan Hotel, Golf and Country Club, Wales, from 25–28 October 2001. Hosted by BASEM Wales, various topics will be covered from the use of padding in Rugby Union to exercise in extremes of temperature. There will be a free afternoon for sporting pursuits and European Club Rugby Union matches are scheduled for that particular weekend. Further details are available from Mrs Sue Roberts, BASEM Company Office, 12 Greenside Avenue, Frodsham, Cheshire WA6 7SA. Tel/fax: 01928 732 961; email: basemoffice@compuserve.com.

CALL FOR ABSTRACTS

The BASEM 2001 congress committee invite submissions of abstracts for the presentation of short papers and posters. All abstracts will be peer reviewed externally and anonymously

and those selected may be published in *BjSM*. Awards will be presented including the BASEM Young Researchers Award, presented to the best paper from an author less than 10 years qualified. Those not selected for oral presentation will be invited to present a poster, or poster only presentations may also be submitted. There will be a poster award presented. Enquiries and submissions should be directed to: Dr Tim Jenkinson, Royal National Hospital for Rheumatic Diseases, Upper Borough Walls, Bath BA1 1RL. Tel: 01225 473428; fax: 01225 473 437; email: Tim.Jenkinson@rnhrd-tr.swest.nhs.uk.

AIRCRAFT TRAVELLING FELLOWSHIP 2001

This fellowship, funded by Aircast Limited Partnership is open to medical practitioners under the age of 40 years, for unpublished work relevant to sport and exercise medicine.

It will allow the holder to spend two weeks in a medical centre of excellence in the United States. Receipted expenses, including the airfare, will be awarded to a maximum of £2000.

The work should include a structured abstract of approximately 250 words and body text of a standard format (introduction, methods, results, discussion, conclusion, references and an acknowledgement of support received) of approximately 5000 words. The closing date for submission is 1 August 2001, and the holder will be expected to give a 20 minute presentation of his or her work at the BASEM Annual Congress. For further information, please contact the BASEM office.

If you have any notices of forthcoming events or items of news that would be of interest to readers of the journal, please forward them to the editor at the address on the inside front cover.

CORRECTION

We regret that figure 2 was omitted from a recent article (*BjSM* 2001;35:34–7). The figure is reproduced here and we apologise to the authors and readers for this error.

