Effects of fatigue on ankle stability and proprioception in university sportspersons

Objectives
To assess the effect of fatigue from sporting activity on ankle stability and proprioception in university sportspersons. A wide range of sporting activity was included from taekwon-do to indoor football.

Methods
Subjects were recruited from Southampton University sports facilities. They agreed to perform two dynamic tests before and after their usual sport. (1) A horizontal hop test: the subjects hopped around a hexagon marked on the ground in either a clockwise or anticlockwise direction as quickly as possible. The quickest attempt out of three was recorded.

Hexagonal hop test (n = 40)
A Student's t test was used to compare the test times with no difference in the distance hopping. This leads to the conclusion that, despite muscular fatigue, ankles appear to be more stable after exercise. Does exercise induce an increase in afferent/efferent nerve impulses to and from muscle spindles around the ankle leading to improved joint position sense?

Results
The means before and after exercise were compared using a Student's t test. Both tests were set at the 5% significance level.

Conclusions
The results show that the subjects made significant improvements in hexagonal hop test performance (n = 40). The resulting hydrostatic effects of physical exertion of the lower limbs are well documented. The working hypothesis to explain this phenomenon must be that the rhythmic swaying and swinging of the outstretched arms in a circular arc resulted in increased centripetal force of hydrostatic pressure in the distal parts of the upper limbs. This overwhelming pressure overcame the compensation mechanism of the lymphatic system to drain the hands. Axillary pressure from the straps of a small backpack carried during the whole journey may have compounded the effect, although all subjects contained a mobile telephone and a small bottle of water.

Bizarre and not always innocent diagnoses have been made in the pathogenesis of limb oedema. The resulting hydrostatic effects of physical exertion of the lower limbs are well documented. Possible reasons why this problem does not occur during ice skating are the fact that long distances without any stops are uncommon and the cold environment may provide protection through peripheral vasoconstriction.

Thus heavy roller skating is a thought to entertain a doctor's mind when confronted with a patient with acute unexplained bilateral ankle oedema.

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References

Intense training in elite female athletes: evidence of reduced growth and delayed maturation?

In their recent article Intense training in elite young female athletes, Baxter-Jones and Maffulli reviewed 18 studies and concluded "training does not appear to affect growth and maturation." We have two concerns about this conclusion. Firstly, we agree that analyses of cross sectional and cohort data in this population are confounded by sampling bias; gymnasts who are successful at an elite level are likely to be self selected by their small stature and delayed maturation. Furthermore, data from cross sectional and cohort studies are often averaged. This "group" approach provides little information about individual growth patterns. Thus, in the review by Baxter-Jones and Maffulli, and the literature at large, an important basic question has been overlooked: is there any evidence that growth and/or maturation are adversely affected in some athletes and if so, what is the frequency of this condition?

Secondly, in contrast with their findings, our analysis of over 35 clinical reports (cross sectional, historical, and prospective cohort studies) indicates that elite level gymnasts may be at risk of adverse effects on growth. We reported that the increased magnitude of the delay in skeletal maturation with training in adolescent female gymnasts was correlated with the occurrence of catch up growth during periods of reduced training or retirement, provides evidence that growth and maturation may be affected in some instances. Furthermore, in contrast with the interpretation made by Baxter-Jones and Maffulli of our data, we did report an association between reduced growth and years of gymnastic training, and that the deficits were greater at the growth rate than at the skeletal age. We also reported that gymnasts who restricted energy intakes appeared to be at greatest risk.

We agree with Baxter-Jones and Maffulli that a cause-effect relation between gymnastics training and inadequate growth of girls has not been shown; there have been no randomised controlled trials. However, this does not mean there is "no evidence for inadequate growth among female gymnasts". Rather, it is shown that the athletes are coerced by group means and ignore variability about the mean, then gymnasts who are at increased risk of reduced growth may be overlooked. We recommend that the growth of all young elite female gymnasts who falls behind in growth—that is, across two major centiles of the growth chart—be monitored regularly. Any gymnast who falls behind in growth—that is, across two major centiles of the growth chart—should undergo a complete evaluation for underlying pathology, even when height is below the fifth centile. This may be normal short stature, but the clinical criterion warrants assessment.

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References
Spoilsports (understanding and preventing sexual exploitation in sport)


The book is targeted at everyone involved in sport: coaches, doctors, scientists, administrators, parents, and participants. Celia Brackenridge is internationally acclaimed for her work in uncovering the story of sexual exploitation in sport and offering explanations about why it occurs. She is uniquely qualified by her professional expertise in the sociology of sport and by her own experience as coach and athlete at elite level in the sport of lacrosse. It is very brave to pursue a line of research that almost always creates immediate resistance from the audience (“...that can’t be happening in our sport/profession”). It is also personally harrowing to investigate this issue with the victims and to find support to cope with what is heard. The production of this book is therefore a culmination of several years of difficult research. It is clear to me that all of us involved in sport must read this book and be aware of the issues. Those of us in higher education must also put this book on the reading list for “ethical issues” topics in curricula for all sport related degrees.

The title is great. Sport should be fun and run within a set of rules that are clear to all. But sexual exploitation within sport is a breach of rules and most certainly will spoil sport (and lives) for many (and who knows how many) individuals. The first two parts of the book provide evidence for the complex issue of sexual exploitation in sport and reasoning about why it may occur. If anyone reads this and continues to think that sexual exploitation cannot be happening in their sport or profession because there are no specific examples, then they must think again. Evidence suggests that exploitation will be happening in all areas of sport, and Brackenridge challenges us to become aware of that and then to take steps to prevent it. The third and fourth parts of the book offer a challenge to change the way sport is managed (and how researchers can assist in this change) in order that sexual exploitation is dealt with. This book is a brilliant example of “building bridges between theory and practice” (page 236) and utilises the feminist perspective of “praxis”. (A definition of feminist praxis is “the coming together of theory and practice in action, and in the reflecting upon these processes to generate new ideas and ways of working”). The major message is that gender/power relations need to be examined in sport, and an empowerment based approach to sports leadership promoted.

Reference
Further details BASICS Education Ltd; tel: +44 (0) 870 165 4999; fax: +44 (0) 870 165 4949; email: educ@basics.org.uk
Web site: www.basics.org.uk

The 5th Asian Federation of Sports Medicine Congress
24-27 October 2002, Seoul, South Korea
Further details: AFSMC 2002 Seoul Secretariat, HNAM Travel Service Co Ltd, (c/o Young CHANG) Marine Center New Bldg 5th Fl, #51, Sogong-dong, Chung-gu, Seoul 100-770, South Korea; tel: +822 726 5555; fax: +822 778 2514; email: ychang@kaltour.com
Web site: http://www.afsmc2002.or.kr

Australian College of Sports Physicians (ACSP) 2002 Conference in conjunction with the New Zealand Sports Medicine Conference
30 October-3 November 2002, Christchurch, NZ
Key note speaker will be Assistant Professor Karim Khan from Vancouver, Canada.
Further details: Rob Campbell; email: rcampbell@sportsmed-nz.co.nz
Web site: www.acsp.com.au

Skills Course in Musculoskeletal Ultrasound
6-8 January 2003, Oxford, UK
Further details: Alison Davies, Department of Radiology, Nuffield Orthopaedic Centre, Headington, Oxford, OX3 7LD, UK; tel: +44 (0) 1865 227765; fax: +44 (0) 1865 227347; email: alison.davies@noc.anglox.nhs.uk

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2nd World Congress of Science and Medicine in Cricket
4-7 February 2003, University of Port Elizabeth, South Africa
Further details: Dr Richard Stretch, University of Port Elizabeth, PO Box 1600, Port Elizabeth 6000, South Africa; tel: +27 41 504 2584; fax: +27 41 583 2605; email: ychang@kaltour.com

3rd Québec International Symposium on Cardiopulmonary Rehabilitation Evidence Based Interventions: Science to the Art of Cardiopulmonary Rehabilitation
11-13 May 2003, Québec City Convention Centre, Québec, Canada
Call for abstracts deadline is 1 November 2002. The abstract submission form and complete programme can be printed from the web site.
Further details: email: Jean Jobin@med.ulaval.ca
Web site: www.ulaval.ca/symp-rehab

The 6th STMS World Congress on Medicine and Science in Tennis in conjunction with the LTA 2004 Sports Science, Sports Medicine and Performance Coaching Conference
19-20 June 2004, London, UK
Keynote speakers include Professor Per Renstrom (SWE), Professor Peter Joki (USA), Professor Savio Woo (USA), Dr Carol Otis (USA), Dr Mark Safran (USA), Dr Ben Kilber (USA), Prof Bruce Elliott (AUS), and Professor Ron Maugham (UK).
Further details: Dr Michael Turner, The Lawn Tennis Association, The Queen's Club, London W14 9EG, United Kingdom; email: michael.turner@LTA.org.uk

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