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 the trend of the sport. (1) A horizontal hop test starting and finishing on the same foot. The best distance from three attempts was recorded. (2) A hexagonal 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.

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

Hexagonal hop test (n = 40)
A Student's t test was used to compare the best time for the hexagonal hop test before and after exercise. The t value was 3.95, indicating a significant improvement in hop time after exercise.

Horizontal hop test (n = 25)
At the 5% level, the data are insignificant, with a t value of 0.1107. A general trend of increased distance after exercise (fatigue) was observed (mean of 1.746m before against 1.775m after).

Conclusions
The results show that the subjects made significant improvements in hexagonal hop times with no difference in the distance hopped. This leads to the conclusion that, despite muscular fatigue, ankles appear to be more stable after exercise. Does exercise induce an increase in afferent/effferent nerve impulses to and from muscle spindles around the ankle leading to improved joint position sense?

S. Brown
Department of Emergency Medicine, N. Bay
Dekalb, Ga.
www.bjsportmed.com

References

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

In their recent article Intensive 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 of Baxter-Jones and Maffulli, and the literature at large, an important basic question has been overlooked: is there any evidence that growth and/mor 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, coupled 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 spurt than at the growth spurt following. Also reported that gymnasts who restricted energy intakes appeared to be at greatest risk.

We agree with Baxter-Jones and Maffulli that the 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.” Indeed, the conclusions 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 should 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 not below the fifth centile. This may be normal short stature, but the clinical criterion warrants assessment.

S. Bass
Department of Physical Education, Health and Recreation, Western Washington University, Bellingham, WA, USA

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 as a scholar 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 live 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.
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