PostScript

LETTER

Does changing the configuration of a motor racing circuit make it safer?

It is with great interest that I read the article entitled "Does changing the configuration of a motor racing circuit make it safer?" by Leonard *et al.*¹ Although I am not a motor sport enthusiast, as a sports medicine specialist I very much enjoyed reading this study, which focused on the effects of a simple preventive measure applied to sport. This study poses a clear question which allows clear interpretation of a cause-effect relation: does a change in the shape of a race track, intended to slow drivers at two of the fastest areas of the track, result in a reduction of the incidence of injuries?

The authors drew their data from medical centre records for three years before and three years after the alterations were made to the race track. In table 3, the authors report a decrease in the "risk" of injury for drivers of cars and an increase in the "risk" of injury for motorcyclists. I would argue that they are actually reporting on "incidence" of injury and not risk. This, however, does not detract from the findings. On the basis of the data provided, I have calculated more appropriate measures of "attributable risk" to the racers, which are presented in table 1 and interpreted below. I have grouped "moderate" and "major" injuries (groups B and C) together for this analysis.

This analysis supports the authors' conclusions that the alteration in the race track reduced the number of moderate and major injuries in car competitors, but appears to have resulted in an increase of such injuries in the motorcyclists. More specifically, the alterations in the race track prevented 70.7% of all moderate and major injuries that would have occurred in car competitors had they been driving on the original race track. In contrast, 78.61% of the moderate and major injuries sustained by the motorcycle racers on the altered race track appear to be attributable to the very same alterations in the track.

Several pieces of information that might shed additional light on these relations are missing from this study. There were no data on the location on the race track at which the injuries occurred. One might assume that fewer car accidents occurred at the site of the

track alteration after alteration, whereas more accidents occurred at the same location for motorcyclists after alteration. Why might a race track alteration that is protective to a car driver be unfavourable to a motorcycle racer? The density of competitors on the race track for a given race may be contributing to these findings, independently of any race track alterations. For example, the number of racers per race (the number of competitors on the track at a given time) remained constant for the car competitors (20.3 versus 22.1 cars/race), but increased considerably for motorcycle racers after the track was altered (21 versus 33.5 motorcycles/race). Thus, the apparent increase in motorcycle "traffic" on the course may explain in part the increase in injuries in this group. Alternatively, alterations to the track that proved protective for car drivers may simply be hazardous to the manoeuvres of a motorcyclist. It is quite possible that a race track design that is appropriate for cars may not be appropriate for motorcycles; perhaps one might advocate different racing venues for these different racing sports.

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Reference

- 1 Leonard L, Lim A, Chesser TJS, *et al.* Does changing the configuration of a motor racing circuit make it safer? *Br J Sports Med* 2005;39:159-61.

BOOK REVIEWS

Sailing and science: an interdisciplinary perspective

Edited by Gisela Sjogaard (series editor Jens Bangsbo). Published by Blackwell Publishing, 2001, £17.99, 144 pp, softcover. ISBN 8716123506

A number of papers presented at the Annual European College of Sports Science Conference held in Copenhagen Denmark in 1997 are combined to form this book. Sailing was chosen to be the featured sport as it gathers all disciplines relevant to sports

science ranging from humanities, social and behavioural sciences, medicine, physiology, nutrition, biomechanics, and technological development. The several European authors each make worthwhile contributions to the knowledge of the scientific basis of an often overlooked sport.

The book opens with an historic survey of Scandinavian long boats and the team bonding and competitive skills of the Viking crews a millennium and more years ago.

Chapters on biomechanics and physiology stress the different requirements of the various classes of boats, from sailboards through dinghies and open keel boats to round the world racing yachts, and suggest dry and on-water training methods for improved specific performance. The contributors vary in the comprehensiveness offered, but the references provide a ready resource for further study.

The book exposes potential areas for research into a number of aspects of sailing that are within the scope of sports science. It should be acknowledged, however, that rapid sensory perception and information processing of ever changing meteorological and tactical situations, hull and sail trim, and rule imposed tactics will always contribute to success.

The book might have interest to sailors but should appeal more to coaches and sports science students.

Rating

• Presentation	12/20
• Comprehensiveness	10/20
• Readability	14/20
• Relevance	15/20
• Evidence basis	15/20
• Total	66/100

V Higgins

The biochemical basis of sports performance

Authored by Ron Maughan, Michael Gleeson. Published by Oxford University Press, 2004, £22.99, pp 257, softcover. ISBN 0199269246

The challenge is to take a topic that many have found difficult, confusing, and tedious (the biochemistry of exercise) and turn it into an entertaining, memorable, and relevant one. The authors succeed admirably. They have stripped the traditional teaching format away and used a series of athlete profiles (the weightlifter, the middle distance athlete, the games player, etc) as a method of providing a sound foundation in all aspects of the biochemistry of exercise.

Each chapter offers a very accessible format. Firstly, a handful of learning objectives are defined. This is followed by a concise introduction to the needs and energetics of

Table 1 Moderate and major injuries before and after racing track alteration

	Car drivers	Motorcyclists
Overall incidence (per 10 000)	14.86	41.79
Incidence before track alteration (per 10 000)	22.41	12.22
Incidence after track alteration (per 10 000)	6.57	57.14
Relative risk	3.41	4.68
Prevented risk	15.84	44.92
Prevented risk percentage	70.7	78.61
Prevalence of the exposure in the population	0.524	0.658
Population prevented risk	8.29	29.57
Population prevented risk percentage	55.79	70.76