Discussion

The Grand Prix racing drivers studied showed a significantly increased incidence of spinal symptoms related to their driving activities, when compared with ordinary road drivers, despite the fact that they are located in well fitting seats in what is generally considered to be a low-stress posture. Their symptoms were apparently the same whether racing or testing, the latter being times of low psychological stress. All of the drivers sampled related their symptoms to the jarring produced by the lack of suspension movement inherent in the design of the cars and furthermore stated that their symptoms had increased since the advent of high levels of aerodynamic down-force. Though their cervical symptoms may be contributed to by the lateral forces in cornering, this is unlikely to be the case with lumbar symptoms. Pedal pressures and steering forces were not considered contributory factors.

It seems possible that the increased levels of spinal symptoms in these drivers could arise from the input of unattenuated vertical compression forces to their spines. If this is the case then some concern is justified for the long-term spinal health of these competitors and also for that of others participating in sports which may involve repetitive spinal shock waves such as motorcycle and powerboat racing, water skiing, downhill skiing and the like.

Further work is in progress to relate the spinal symptoms in Grand Prix drivers to the changing characteristics of the cars, measured by accelerometers attached to the seats, and these findings will be reported in due course.

Conclusion

If it can be demonstrated that there is, indeed, a causal link between spinal shock waves and back pain in Grand Prix drivers, and others in similar sports, then the management of these patients should include devices designed to attenuate the forces concerned. The potential role of energy absorbent seat pads, made of visco-elastic polymer perhaps, should be investigated.

Yours faithfully,
A. K. BURTON

BOOK REVIEW

Title: TRAINING AND CONDITIONING OF ATHLETES
Authors: Max M. Novich, MD and Buddy Taylor, MS, ATC
Price Glossy cover. 320 pages.

Although very much American orientated, there is a mass of information in this book which will be of use to those coaches and Chartered Physiotherapists who are entering the field of sport. Whilst making some philosophical observations it strongly emphasises the ethical and legal implications of those who become involved with the training and conditioning of athletes in all age groups and whilst perhaps lightly scanning some aspects of sport and its associated medical aspects attention is drawn to a wide variety of factors.

Some of the techniques described may not be familiar in the United Kingdom and without clinical trials it would be difficult to comment on their efficacy but clearly the authors' offer their own information with confidence. Published c.v.'s indicate that Dr. Novich is widely experienced in sport from Olympic to school teams whilst Mr. Taylor has handled more Olympic Gold Medal Winners than any other trainer in the United States.

The book has a good index and a very useful glossary. It is illustrated with a mixture of line drawings and photographs, some of which are re-printed with full credit to the original publication.

It would be an advantage to the student to have this book available.

David P. Chapman