Guest editorial

Sports science

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The Beijing Olympic Games kick off on 8 August 2008 and once again the organisers promise that the Games will be bigger and better than the previous one. This may still prove to be true; however, currently it seems that the Beijing Olympics may be remembered for a number of controversies and debates.

Even before the Olympic flame had been lit, demonstrations began against China's controversial human rights record and the growing concern that freedom of the press during these Games will be non-existent. Then came the news that Speedo's 'Supersuit', the LZR Racer, may be responsible for the avalanche of world records in swimming seen in the run-up to the Olympic Games. Although heavily protested against by various parties, most notably by rival swimsuit companies, swimming's governing body, FINA, has approved the LZR Racer. Then there is the continuous debate over the possible effects of high pollution levels in China, combined with high temperatures and humidity, on the performances of athletes. The International Olympic Committee even stated that some events may be postponed or moved to alternative venues if pollution levels are not under control. Finally, there is the lengthy saga of Oscar Pistorius's efforts to be allowed to participate against able-bodied athletes. The debate over whether Oscar's running blades indeed improve his efficiency by 30%, or whether the disadvantage he has at the start of the race because of a lack of balance and co-ordination overrides any possible benefit he may have later in a race, will no doubt continue for some time.

Controversy is not necessarily bad – not only does it encourage public debate, albeit mostly on an emotional level, it also stimulates research in sports science and healthy discussions among scientists. Much of the research in sports science focuses on strategies to enhance sport performance. However, as is evident from this issue of *CME*, sports science is not limited to high-performance sport.

If you thought you knew everything about carbo-loading for endurance events, then it is time to learn about fat loading. Julia Goedecke and Lize Havemann explain the mechanisms behind the adaptations to a high-fat diet, as well as the potential ergogenic effects of fat loading. But beware, this is not something for the back-of-the-pack runner!

Currently, one of the hottest topics in sports science is the issue of optimal recovery after training sessions, games or events. A number of strategies can be followed, i.e. active recovery that involves low-intensity, short-duration exercise, massage, water immersion or the application of non-steroidal anti-inflammatory drugs (NSAIDs). While the jury is still out on which of these modalities are most beneficial and effective, Ranel Venter argues that more attention should be paid to sleep as a recovery modality and that athletes should be taught how to optimise their sleeping, particularly when travelling. Carine Smith explains that if NSAIDs are used for too long (i.e. more than 3 days) after acute muscle injury, they may actually have more detrimental effects and lead to prolonged recovery time.

Sports psychologist Ben Steyn reviews the power of perceptions and how this can either boost or block optimal performance in sport. Not only will the physical readiness of athletes during the Olympics determine their success, but also their psychological readiness – especially in light of the known challenges that await them in Beijing.

For every nation it is important to identify potential athletes at a young age and to develop these talents in the hope that they will do their country proud in the international arena. Rosa du Randt is very much involved in talent identification programmes in South Africa. She discusses the possibility of and risks involved in gene mapping in an effort to refine talent identification programmes.

Athletes participating in the Paralympic Games will all be classified before competition according to their disabilities (or perhaps their abilities?) to ensure that there is fair competition between athletes in a certain event. Liz Bressan sheds some light on how the classification system works and the role of sports scientists to determine its validity and reliability.

On a more wellness-related note, Kathy Myburgh and Petro de Brutro discuss the role of exercise in the treatment of muscle-wasting diseases, such as HIV/AIDS. They argue that exercise is a safe and cost-effective strategy to improve the quality of life of individuals with HIV/AIDS, as well as increasing muscle mass.

The variety of articles in this issue is a fair reflection of the broad scope of sports science research and practice. While the world is arguing over swimsuits and differently abled Oscar Pistorius, we can only wish Team South Africa the very best for the Beijing Olympic Games.

Let the Games begin!