

### **Bone mineral density and degenerative changes of the lumbar spine in former elite athletes**

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The aim of this study was to assess bone mineral density (BMD) and degenerative changes in the lumbar spine in male former elite athletes participating in different track and field disciplines and to determine the influence of body composition and degenerative changes on BMD. One hundred and fifty-nine former male elite athletes (40 throwers, 97 jumpers, 22 endurance athletes) were studied. Anthropometric (age, body mass index [BMI]) and sport-specific (personal best, training intensity, career duration, time since termination of competitive sports career and current sporting activity) data were collected. Degenerative changes of the lumbar spine in lateral view were evaluated using the Kellgren and Lawrence Score. Bone mineral density of

the lumbar spine was measured in an anterior-posterior view with dual energy X-ray absorptiometry (DEXA, T-score).

The authors found that: 1) throwers had a higher body mass index than jumpers and endurance athletes, 2) throwers and jumpers had higher BMD (T-LWS) than endurance athletes, 3) bivariate analysis revealed a negative correlation of BMD (T-score) with age and a positive correlation of BMD with Kellgren score ( $p < 0.05$ ), 4) even after multiple adjustments for confounders, lumbar spine BMD is significantly higher in throwers, pole vaulters, long jumpers and triple jumpers than in marathon runners, 5) different types of mechanical loading caused by sporting activities seem to influence the BMD of the lumbar spine, even if different body constitutions (i.e. BMI), age, training history, and the degenerative changes in the lumbar spine of former throwers, jumpers, and endurance athletes are taken into consideration.

### **Dynamics and tendencies in the performance development of the women's 400m hurdles at the World Championships and Olympic Games**

Filov, V.

Sport i nauka 49 (2005), 1, pp. 24-29

The object of the research was the dynamic in the development of the performances in the women's 400m hurdles in the finals of the World Championships and the Olympic Games over a period of 20 years. From analysis of the literature and the official competition results the authors drew the following conclusions: 1) the dynamics in the performance development showed a

significant increase at the beginning of the research period, followed by a period of leveling off, which reflects the typical development in all new events, 2) the development of the average performance of the finalists at the Olympic Games showed the same progression as in the World Championships, 3) the dynamics of improvement at the World Championships showed a dramatic development with two world records in 1993 and 1995, followed by a phase of gradual decline, 4) the variety in the dynamics in performance development at the Olympic Games and World Championships confirms proven principles and experience in the development all new athletics events.

### The men's 20km walk

Vallance, B.

Modern Athlete and Coach 43 (2005), 2, pp. 12-17

Since the 1996 Olympic Games in Atlanta the 20k Race Walk has been one of the best events for male Australian athletes. In each of the last five international championships an Australian race walker has been among the first eight, with Nick A'Hern placing fourth in Atlanta. The author analysed per-

formance development in the event and compared the Australian and international trends. He points out that the development of a top international race walker requires time: A'Hern was 27 when he achieved his best result even though he was below 1:21:00 already at the age of 21. He also recommends that on no account should a race walker should be encouraged, to compete in the 50k distance between the ages of 18-23. A prerequisite for moving to the longer distance should be a solid performance over 20k.

### Stress in the honorary post: Where are the limits of capacity?

Gernandt, M.

Olympisches Feuer (2005), 3, pp. 26-27

In addition to their normal professional obligations, many sport association presidents are voluntarily active on behalf of their federation for more than 200 days a year and have to perform a wide variety of tasks often associated with tremendous stress loads. This heavy load causes not

only a "potentiation" of the stress loads but is also, according to expert opinion, a health danger, especially as sports officials often forgo their holidays. The author describes the "loading-split" between professional and voluntary obligations and suggests possible solutions. In addition to changes in the structure of sport associations and more efficiency in the leading panels, he suggests reforms related specifically to the presidential level including relinquishment and transfer of areas of responsibilities and the introduction of a model of full time presidency.



Omar Brown (C) of Jamaica crosses the line to win the men's 200 metre final at the athletics of the Melbourne 2006 Commonwealth Games / Photo: © Getty Images