

## Thesis for 7th Degree

### **Biological Regeneration and Injury Incidence During Taekwon-do Contests Exemplified by Junior and Senior Polish Championships in the Years 2002-2007.**

The use of supplementation methods in training is justified only when the contestant's body cannot by itself achieve a functional condition necessary for a higher adaptation level, or when implemented loads pose a risk to the contestant's health.

Taekwon-do is a martial art where the effectiveness of sport fighting and rivalry is determined e.g. by precision of movements, ability of quick decision making in order to apply an adequate technique, and mental predispositions, rather than endurance and strength abilities.

Supplementation techniques are used to foster appropriate psychic attitudes, and to boost optimum psychophysical processes.

Biological regeneration should be used in beginner and intermediate-level groups only for the purpose of prevention against injuries, and where any signs of overloading are observed. On that stage of training, it is recommended to apply procedures that exert a multi-directional effect on the body, like hydro treatment, or sauna. Supplementation should be used only on the champion or contestant stages which imply an extreme training load, while it is not justified to supplement any earlier stages.

According to Prof. D. Poliszczuk, additional support is not necessary with one training session a day, if only proper nutrition is provided, and the training load does not cause overtraining or exhaustion.

In 1978, in his publication entitled „*Sportsmedicine Book*”, Gabe Mirkin suggested the term "RICE" to describe things that should be done after a competitor's sports injury. It is an abbreviation of the words: rest, ice, compression, and elevation of the injured limb.<sup>1</sup>

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<sup>1</sup> Barszowski P., *Wspomaganie procesu treningowego*, wyd. COS Warszawa 2000, s. 239

In my analysis of injury incidence at the Taekwon-Do Junior and Senior Polish Championships in the years 2002-2007, based on medical reports, I found that:

- the injury incidence is relatively low, and it is not higher than 10% participants on average,
- most common injuries include nasal injuries, abrasions, and contusions,
- most injuries do not have any long-lasting consequences, and they are not the reason for exclusion from practising the sport. Given that the period covered by the analysis was quite long (5 years), none of the injuries incurred by contestants was the reason for their resignation from practicing Taekwon-do, nor did it lead to a lasting motor impairment,
- statistically, a bigger number of injuries occurs in junior groups, the injuries being more serious: four knockouts occurred during the reported time as compared with only one knockout in the senior group,
- injuries result from the nature of sports competition, and are typical of Far-East martial arts. The conclusion is also confirmed by results of studies conducted by other authors dealing with those issues,
- some injuries may be caused by improper contestants' preparation for sports competition, particularly fighting competition (too early participation in contests, without necessary development of abilities to control techniques and to defend effectively),
- basing on relevant specialist publications and my own observations at sports contests I conclude that there is a group of renewal centres which significantly contribute to the restitution of participants during competition, i.e. through appropriate sports massage, cooling, active rest, sleep, proper nutrition, supplementation of liquids, electrolytes and vitamins, as well as fostering of an appropriate psychic attitude by reduction of the competitive stress.

To sum up, Taekwon-do should be considered a relatively safe sport even though it a martial art. Supplementation in training and relax is a necessity on the contestant and champion levels. Training models resulting from the specific character of the sport (martial art) include injury prevention elements such as achievement of a required training level which allows to enter sports competitions; suppleness exercises which are present in each training unit (in competition, difficult techniques are preferred that require a satisfactory level of suppleness). Contest rules promote technical solutions rather than force solution during sport fighting competition. Each training unit includes massage techniques to make muscles more flexible. The advantage of Taekwon-do is its versatility: there are no effects of loading a specific group of joints.

I concluded that most trainers do not include biological regeneration in their programming of the training process.

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