

Prevention of injuries in canoe-kayak athletes

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Canoe-kayak is a sport activity that officially appeared in 1936 as an Olympic sport. Since then it has shown noteworthy progress and improvement both with respect to performance and with respect to the use of modern and efficient material and technical infrastructure and training techniques. In the year 2000 canoe-kayak paddlers numbered about 2,000,000 members in England alone (Mallabon L., Tailor B., Paddlesport 2000). These included chiefly the athletes-paddlers in the river canoeing/kayaking (86 percent), the sea, lakes, and special venues. Due to the manner and locations of the sport, the canoe-kayak paddlers suffer a number of injuries, both acute and chronic. Among the range of injuries, it appears that a significant proportion – approximately 40 percent – occurs during training or recreation, while the rest occur during competitions (Krupnick J., Cox R., Summers R. 1998).

The most common injuries affect the upper extremities (limbs), namely the shoulder, elbow and wrist, although injuries to the spine are also not uncommon (Kameyama O, Shibano K, Ogawa R, Kumamoto M. 1999). The type of injuries also varies widely, the more frequent being sprains, with a frequency of 32 percent, tendonitis with 20 percent, chronic muscular pain with 14 percent and dislocations with 5 percent, followed by other injuries such as

localized inflammations, bruises, cranial concussions, fractures, burns, etc., at smaller percentages.

The acute injuries usually result from direct bruising of the body, resulting in cuts, sprains, fractures, muscle injuries, and facial or head injuries, which of course are serious for the injured athletes condition and quality of life (Schoen R, Stano M. 2000).

The chronic injuries are usually overuse syndromes, such as tendinitis, for example, which mainly affects the shoulder and wrist, as well as recurring chronic pain in the lower back, given that these athletes submit their lower spine to intensive repetitive rotational and shear forces.

Both the duration of daily training, and the force of the applied loads exercise such loads that the biological material of the spine slowly weakens and presents dysfunctions (Toit P, Sole G, Bowerbank P, Noakes T. 1999).

The causes of the high incidence of injuries among canoe-kayak athletes can be separated into endogenous (internal) and exogenous (external), so as to facilitate their investigation and determination. It should be taken into consideration that paddling in a narrow and rather unstable craft requires increased balancing abilities, strength, endurance, precision in the exercise of the movements, and, of course, adequacy in technique and experience.

The **endogenous causes** of injuries, therefore, can be described as follows:

- Insufficiency of muscular strength and endurance.
- Insufficient flexibility of muscles and elasticity of joints.
- Asymmetry and imbalance of strength and flexibility among pairs of cooperating muscle groups.
- Limited balancing and coordinating ability.
- Limited idioplectic and stereoscopic ability and perception.
- Deficient or improper rehabilitation of previous injuries.
- Insufficient warm-up, but also treatment-rehabilitation and warm-down.
- Low biological profile of the athletes (aerobic and anaerobic adaptations).
- The myoskeletal particularities or dysfunctions of each athlete.

- The lack of responsibility and assessment of the abilities of the athletes, but also of the possible risks that exist.

The **exogenous causes**, in turn, can be described as follows:

- Improper or inadequate equipment, in other words the craft (type, dimensions, etc.), the paddle (technical characteristics), carry-on gear (clothing, footwear, life jackets, helmets, specifications, etc.), and adaptation to the athlete's body type.
- Insufficient technical training in the execution of the movements.
- Lack of adequate experience and knowledge both on the part of the trainer in correctly directing the length and type of training, and by the athlete in correspondingly taking advantage of the training imposed on him (volume and type of training).
- Insufficient or inadequate intake of liquids by the athlete, particularly during the summer period.
- Insufficient protection of the athlete, resulting in the appearance of phenomena of hypothermia (chiefly in the winter) or heat stroke (chiefly in the summer).
- Overload both of the athlete's biological systems and psychological overload ahead of competitions and competitive situations in general.
- Lack of capable and adequate security personnel and corresponding materials for emergency situations (medical and paramedical personnel), life-saving or resuscitation abilities when required.
- Insufficient or inadequate organisation of the training venue, both on land and in the water.
- Inappropriate organisational or administrative arrangements, for example distribution of competitions and competitive official and informal athletic activities.
- Lack of briefing on the geographical and morphological particularities of each course.

Canoeing-kayaking is a pleasant, beneficial and spectacular sport, but entails a high incidence of injuries. The goal of the coach/trainer should be, first of all, the physical wellbeing of the athlete, and then his distinction. The athletes must have the appropriate equipment, be informed of the possible hazards, and must also be aware of at least the basic elements of self-protection in case of danger.

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