

Children's winter training in Kayak: a multilateral approach

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Introduction

Children's approach to Kayak as a sport takes place at about the age of ten. The winter weather conditions of the Northern Italian valley do not usually permit training at the river for a long period of time. Additionally the weather increases the risk of the boat to turn over in case of imperfect control. For this reason we have elaborated a training scheme in which going out on the boat starts in April when the temperature (both of the water and the atmosphere) begins to raise.

Method

The winter training period lasts from October until March and it is divided in three different parts with duration of two months each. At the first one the aerobic capacity is researched. During the second, the equilibrium is mainly researched, and at the third one, which is the preparatory month for going out on the boat and the training in the river, strengthening is researched. The children are required to train three times a week.

Aerobic capacity is physiologically more developed in children, so starting from the natural capacity we researched the strengthening and development¹. During first training month (October) the training is based on a long and continuous race (about 45') integrated with training in the gym, followed by stretching in order to accomplish better kinetic coordination. During November the training sessions are comprised of running sessions of 8-10 minutes repeated 5-6 times, with an active recuperating intermission of 2 minutes. The repetitions are performed with varied speed and duration. This training mode has a double target: to stimulate the cardiovascular system more and to raise gradually the effort to the level of a future race with a duration of about 10 minutes. After the race, the athletes perform a number of free general exercises that aim at the development of the joints and the equilibrium. After the first two months of the general preparation, the time dedicated to the race is gradually diminished and fitballs and ground exercises for the development and strengthening of the heart are introduced.

During December the racing is shortened to 2-3 repetitions with a duration of 8-10 minutes. The recuperating interval is diminished to 1 minute and 30 seconds and the training sessions at the gym are focused on the development of the abdominal and dorsal muscles, with cardiac strengthening ,using fitballs for this scope. The use of this equipment permits the stimulation of the nervous system for a better equilibrium in conditions more and more unstable. The fitball exercises are gradually integrated using contemporary small weights (dumbbells of 1 kilogram) or medical balls weighting 3 kilograms. The training sessions are completed with the use of "kayak ergometer" that permits the acquaintance of the child with the rowing technique.

During the month of January the race duration is reduced, usually because of the weather conditions, leaving only 2-3 repetitions with the duration of 8-10 minutes each. The race is followed by the training with "kayak ergometer" in order to improve the technical approach of the paddling. In case of bad weather, racing is completely replaced by the use of "kayak ergometer" with the same training time (repetitions with the duration of 8-10 minutes) thus allowing the stimulation of both aerobic capacity and muscle-specific training. In this case 4 repetitions are performed with a duration of 8-10 minutes during which children are required to stretch for a duration of 15-20 seconds in order to stimulate the

muscles more (arms, legs, abdominal and dorsal). The training sessions are completed by exercises with fitball and the simultaneous use of dumbbells or exercises that include the use of the medical ball. In February, the race consists of three repetitions of 8-10 minutes, but the stretching is increased, with an aim to the greater stimulation of the cardiovascular system. The race is followed by the first exercises of force development that rely mainly on the use of the 3 kilogram medical balls which are launched and received by the athletes. The receiving exercises of the medical ball are used as plyometric exercises for the upper limbs. The child is waiting for the reception of the medical ball with outstretched arms, blocks the ball, rapidly flexes the arms at the chest and immediately makes a new launch. In this way, the muscle's elastic ability of the upper limbs is more stimulated. This fact is very important on the boat in order to properly perform the padding, controlling simultaneously the speed of execution and so the number of paddles per minutes. The strength development is also accomplished with the use of pulling and pushing exercises (bench press), at first with only the barbell and then eventually adding the weights². For the first two years of training we prefer to avoid the determination of R.M. to search for the maximal capacity, in order to avoid the potential muscle damage caused by an incorrect exercise³. So we rely, perhaps in a simple way, on the child's ability to perform 10-12 repetitions with the indicated weight. Two exercises which are safe for the spine were exclusively chosen. The exercises are always carried out under observation of the coach who closely monitors the implementation of proper athletic movement. The training session is then completed by the work out on paddle ergometer for about 4 minutes with recuperating interval of 1 minute and 30 seconds. The recovery is then gradually decreased to 1 minute. The shortening of the work out time, the increase of the amount of the effort and the shortening of recovery time, aim to improve the aerobic power of the subject.

During the month of March after adequate warming-up, the work out is performed at the Kayak ergometer. The training presents two different types of duration: repeated every 8 minutes (6-8) for improving the aerobic capacity and work out every 4 minutes (12) in order to achieve a better aerobic power. The two types of work out are both performed with stretching that lasts 30 seconds each time and paced with precision by the coach. Some of them have increased intensity, others require maximal effort. For the children is also proposed an additional work out, dedicated to weight lifting, always taking into consideration the child's safe growth and its health.

Discussion

This approach, which uses the different skills of infantile organism, permits us to reach the spring months after having stimulated, with the training plan, the different child's abilities (cardiovascular, muscular, coordinative). Then, remains only the unknown specific sensibility of every child when he embarks the kayak, and searches for the perfect mix between exerted power and balance.

¹ Faigenbaum AD, Kraemer WJ, Blimkie CJ, Jeffreys I, Micheli LJ, Nitka M, Rowland TW. [Youth resistance training: updated position statement paper from the national strength and conditioning association](#). J Strength Cond Res. 2009 Aug;23(5 Suppl):S60-79.

² Granacher U, Goesele A, Roggo K, Wischer T, Fischer S, Zuerny C, Gollhofer A, Kriemler S. [Effects and mechanisms of strength training in children](#). Int J Sports Med. 2011 May;32(5):357-64.

³ Faigenbaum AD. [Strength training for children and adolescents](#). Clin Sports Med. 2000 Oct;19(4):593-619.