

## Low back pain and Kayak: a short report

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### Introduction

During the winter Kayak training remarkable weights are frequently used in the gym, suitable for the preparation, the structure, but mainly the goals of the individual.

Our athlete (M.R. born in 1991, kg 82 m1,82), who took the 2nd place at 500 meters in the European junior championship of 2008, the 4<sup>th</sup> place at 500 meters in the World championship of 2008 decided to be specialized in the 200 meters distance and to reach the Bench Press 1 RM up to kg 122 and the Bench Press up 1 RM up to kg 115

The race is completed in about 34 seconds with paddling frequency of 130-150 per minute. With such a short time of competition, it is absolutely necessary that everything is perfect: the departure, a number of paddles adequately high to ensure a rapid attainment of the maximum velocity, the paddle in the water always achieved with the maximum force, an optimal lactic acid tolerance, the final rush.

M.R. is characterized by a higher number of paddles during the courses in comparison with the other athletes, but with a reduced amplitude, with inverted lumbar curve and an increase of the dorsal kyphosis angle.<sup>1 2</sup>

During a training in October 2010 at Pulley Machine, loaded at 90%, an exercise performed improperly provoked an increased pressure at intervertebral discs at the level of L4-L5 and L5-S1 with a violent and immediate lower back pain.

The athlete was stopped, examined and a Magnetic Resonance Imaging was performed on him. The only finding in the MRI examination was a protrusion of the intervertebral discs L4-L5 and L5-S1.

### Results

The winter preparation was immediately suspended and it was decided that a recovery procedure should be started in order to decrease the pressure at the intervertebral discs and increase the muscle stretching of posterior muscles of the thigh. The workout -stretching, postural recovery- was elaborated by the coach and executed with continuous supervision of the technician. The result was an improvement of the postural in both orthostasis and during the session in kayak.

After two months dedicated exclusively at the muscle recovery, the preparation started again in order to empower the athlete, keeping always the stretching exercises of the posterior thigh muscles. Currently (present time) the athlete is capable to maintain even during the maximum muscle workout a correct postural that is characterized by the normal curves of the spine. This type of workout permitted also an increase in the width of the paddle that lead into an improvement of the kinetic chain during paddling, which lead into improved course time.

At the moment R.M. despite the delay of his preparation, took the seventh place in the B final of 200 meters of the European champions under 23 (July 2011).He became again a steady member of the Italian national team, with the prospective of participating in 2016 Olympic games.

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<sup>1</sup> Ackland TR, Ong KB, Kerr DA, Ridge B. Morphological characteristics of Olympic sprint canoe and kayak paddlers. *J Sci Med Sport*. 2003 Sep;6(3):285-94.

<sup>2</sup> McKean MR, Burkett B. The relationship between joint range of motion, muscular strength, and race time for sub-elite flat water kayakers. *J Sci Med Sport*. 2010 Sep;13(5):537-42.