

MAXIMIZING CORE STRENGTH AND STABILITY TRAINING FOR KAYAKERS

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Strength training is effective and necessary for kayakers who wish to establish the groundwork required for maximizing power output, reducing the risk of injury, and achieving peak sport performance.

CORE STRENGTH TRAINING FOR PERFORMANCE MAXIMIZATION

The athlete's core, as its name suggests, acts as the *foundation* for movement generation and power production (Kibler, Press, & Sciascia, 2006). Upon recognizing that power and muscular endurance are essential skills for successful kayaking, it is not difficult to understand why developing core strength through purposeful training is particularly advantageous.

With improved core conditioning and stability, an athlete is able to execute body movements more efficiently, allowing for a streamlined translation of force from the fully engaged platform to the upper and lower body regions—where sport-specific skills are executed (Kibler et al., 2006). Regardless of the amount of strength an athlete possesses in the upper and lower limbs, neglecting to strengthen the core will create a deficit that will ultimately decrease the amount of total power that can be accumulated (Fekete, 1998). In addition to mitigating power output, a muscular imbalance involving the torso places the athlete at great risk for injury.

CORE STRENGTH TRAINING FOR INJURY PREVENTION

Developing and maintaining adequate core strength is believed to be one of the most effective ways of protecting oneself from injury (Bono, 2004; Brukner & Khan, 2007). Because the core serves as the platform through which actions are initiated, a weakness in this area will increase the demands on other joints and muscles and can lead to pain and injury (Edwards, 1993). The overuse injuries associated with paddling often occur in the back, shoulders and arms (Kameyama, Shibano, Kawakita, Ogawa, & Kumamoto, 1999).

The Back

One of the most common problems observed in kayaking is associated with the unique rotational trunk movement that occurs while paddling. This movement, performed in the seated position, creates a sheering effect at the lower spine. Without a strong torso to distribute these forces and support the back, this sheering will find or create a point of weakness along the spine and result in injury. Of all the variations of abdominal exercises practiced by athletes, *those that involve rotation of the trunk are believed to be*

the least often used (Brukner & Khan, 2007). For a sport as abdominally dynamic as kayaking, it is critical that these exercises are incorporated into a program.

The Shoulders

The health and performance of the shoulders is extremely reliant on the strength, endurance, and stability of the trunk. Developing a resilient core will foster safe and effective paddling techniques. A weak core will make proper kayaking form difficult to maintain due to the disproportionate recruitment of the shoulders and arms (Kameyama et al., 1999). Over time, these and other distal structures will undergo premature compensatory fatigue which may result in chronic overuse injury.

EXERCISES FOR CORE STRENGTH AND STABILITY

Kayakers and other paddling athletes have much to gain by incorporating a safe and functional core strength training program into their workout routine. Engaging in quality exercises that are specific to the body's central stabilizing region will produce results that will permeate all other elements of training, conditioning, and performance.

Human Motion Inc, leaders in exercise prescription and sport performance for athletes of all ages and levels recommends the following drills to improve core strength for kayaking:

Download these clips from the Human Motion Video Clip Library like "iTunes" at: <http://www.humanmotion.ca/xcart/home.php?cat=17&catexp=17>, or purchase a customized core program online by emailing info@humanmotion.ca.

Drill	Prescription: Sets x Reps	Tempo
SB Elbow Digs	3 x 60 sec total, alternating sides **see videoclip and free PDF handout provided by HumanMotion.ca	Control first then add power
SB Hip Twisters	3 x 12/side, alternating sides **see videoclip and free PDF handout provided by HumanMotion.ca	Smooth, controlled reps. You are in charge of gravity!
Oly Bar Two Hand Rotations	3 x 10/side, alternating sides **see videoclip and free PDF handout provided by HumanMotion.ca	Slow load, power up with hip trigger
Squat Switches Low to High	4 x 30 sec with 30 sec rest 5-10kg med ball	Quick tempo but stay in control

	**see videoclip and free PDF handout provided by HumanMotion.ca	
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