

## Building Balance: *The Path to Power without Pain*

by Tommi Paavola (first published in *Seakayaker* magazine in 2008)

Exercise photos by Janine Paavola

At the beginning of any kayaking trip, it's important to prepare the equipment you'll need. You may, like the pilot of a plane, have a preflight procedure that you follow to make sure all the necessary equipment is working correctly and is where it belongs. The pilot checks the engine carefully and so should you—and the sophisticated engine that propels your kayak is you.

A five-minute pre-kayaking warm-up routine can make a huge difference in your kayaking performance. Would you believe that by activating the right muscle groups right before paddling, your strength and power could increase by up to 20 percent? By the same token, doing a few simple post-kayaking exercises after pulling the kayak to the shore could help prevent the nagging pain in your shoulder or the stiffness of your lower back when getting out of the tent the next morning.

### **Accentuate the Positive**

It may be hard to accept that kayaking, like any form of exercise, can have some negative effects on us. Any single motion we make works some muscles harder than it does others. Any repetitive movement, such as running, cycling or paddling, can create imbalances in our bodies that can affect our performance and health. Over time, the muscles that get used the most become stronger than the opposing muscle groups, and an imbalance sets in. Keeping the balance by stretching frequently used muscles will help you avoid posture-related problems and help your body last longer.

A few simple pre- and post-kayaking exercises will help you maintain your ability to paddle effectively and, because they'll help you maintain a posture conducive to the widest range of motion, also make it easier to develop new skills as you continue to expand your repertoire of kayaking techniques.

Think of your body as a problem-solving machine. Every physical task is a problem your body needs to find a solution to. The efficiency and the quality of the movement depend on the solution your body uses. A healthy body will usually choose the most efficient movement pattern available to execute a given task. An injured or imbalanced body will not.

Muscular imbalances will always force you to use a less optimal movement solution for the task at hand. Take lifting a heavy object from the ground. The natural way to lift a heavy object is to squat down to it with the back nearly vertical. Bending at the waist to lift can be a result of having lost flexibility in the hips and calves, a common consequence of daily routines of sitting in the office, in the car, on the couch at home. Sitting slowly drives our bodies from an upright to a stooped posture and has a profound effect on how we move.

The considerable time kayakers spend in a sitting position in a kayak also shortens and tightens the hip flexor muscles. The result is the paddler slumps forward. Time spent paddling strengthens the muscles of the chest and shoulders, but it also causes them to shorten. Those muscles then round the upper back, contributing further to a slumped posture.

Short hip flexors in turn contribute to inactivity of the gluteal muscles that oppose them anatomically. The glutes, being the biggest muscles of the human body, have a much larger role than that of a seat cushion, even for a paddler. They serve as part of the mechanical link connecting the upper and lower body. They help maintain good posture as well as transfer energy from head to toe and vice versa.

The tendency toward a rounded spine is often the main reason for discomfort in the lower back, neck and shoulder region, but the effects go beyond how well we feel to how well we can paddle. A muscle imbalance that distorts the spine may not necessarily manifest itself as pain, but will certainly result in an inability to rotate effectively during the stroke. As the ability to rotate

is diminished, so is the power produced during the stroke. Other postural imbalances caused by paddling can change the paddle's path through the water, and it is quite possible that your technique will get worse, not better, the more you paddle.

Because of the repetitive nature of paddling, even small muscular imbalances can sometimes grow into unnecessarily annoying traveling companions. Prevention of muscular imbalances is much easier and more effective than dealing with the consequences of paddling your way toward injury or chronic pain.

### Five-Minute Solutions

Recent developments in the study of anatomy and physiology have helped us devise better ways to warm up for an activity and to accelerate recovery and regeneration afterward. A pre-kayaking routine activates the nerves and muscles involved in paddling and prepares them to go to work without tightening up. A post-kayaking routine balances the effects of repetitive paddling movement and helps prevent pain and injuries.

Dedicating five minutes to your body before and after your day of paddling will provide you with noticeable benefits and changes in your paddling performance. The routine here will improve muscle recruitment. When a muscle contracts, not all of the fibers in a muscle go to work, and those that do don't activate at the same time. By using the pre-kayaking routine, you'll get more muscle fibers activating than you would otherwise and get them firing in the right order. As a result, your strokes will be more powerful and require less effort, and your endurance will improve. Heading out paddling without a routine to activate the muscles can result in poor recruitment—fewer muscle fibers do the work, and they fire out of sequence. Your muscles will fatigue faster, and the decreased strength and coordination will lead to an inconsistent and inefficient stroke.

The issue of muscle activation involves not only the interaction of fibers within a muscle but also the coordination between muscles grouped around a particular joint. During a particular motion, each muscle group has a prime mover muscle and a stabilizer muscle that needs to be “awake” and executing its specific task to control and limit the movement. Muscles that are not activated—“sleeping” if you will—will cause a loss of joint stability. Other muscles may have to work harder to compensate for the poor coordination. Overuse injuries are often suffered by muscles compensating for those that are routinely not being activated.

And finally, by eliminating muscle imbalance and the posture problems it creates, you may find it easier to learn and absorb new skills faster. Restricted movement or posture can make it difficult to execute new techniques properly. If you're working on developing your sweep stroke and your posture prevents you from properly engaging your core muscles, you are likely to end up using your shoulder muscles much more than necessary, tiring them out faster. If you've been kayaking for years but are still struggling to learn how to roll, it may well be that it's the kayaking, ironically, that has created the problem you're trying to overcome in rolling. Before you try to learn any new stroke or skill, make sure that you've first addressed muscle balance and posture.



The 1st photo shows a stooped posture; in the 2nd photo, the paddler has a straight, upright back.

### **Pre-Kayaking Routine**

The best timing for the pre-paddling routine is right before you get in the kayak. You can easily perform it on the shore without any other equipment but your paddle. The whole routine should only take about five minutes to perform. If you already have a warm-up routine of your own, by all means continue doing it. You can certainly combine it with these four exercises developed specifically for kayaking. Anyone with a history of injuries or back/muscle problems should consult a physician or physical therapist before attempting any of the stretches.

#### **Exercise: Hip Flexor Lunge**

This lunge will improve the flexibility of hip flexors, broaden the range of motion in the shoulder joint and activate the hip musculature and front core muscles.

Start by taking a split stance position and lower yourself into a lunge position. Your back knee should almost touch the ground. Keep your front knee straight above the ankle. Now extend your arms up and back, as shown in the photo. To enhance the stretch, try to tighten the buttock of the back leg. If your hip flexors are very tight or you have trouble with the balance, lower your back knee all the way down on a soft surface.



Hip Flexor Lunge

#### **Exercise: Inchworm**

The inchworm exercise targets improved flexibility of the posterior chain of the calves, hamstrings and lower back. It also activates the abdominal wall and creates stability and mobility of the shoulder and scapulae.

Start from a push-up position and slowly walk your feet as close to the hands as possible. Keep your legs straight at all times and your heels close to the ground. When you can't bring your feet any closer, walk back out—this time with your hands—to the push-up position. Repeat four times.



Inchworm

**Exercise: Side Bend**

The side bend works on the flexibility of hip flexors, sides and back—the lat muscles (latissimus dorsi) in particular. It activates the sides of the core and increases the range of motion in the shoulder joint. Start by raising your paddle over your head and taking a split stance position. Keep your back foot on your toes (heel up). Bend sideways by letting your hips move to the opposite direction. Bend to both the left and right four times before switching and putting your other leg forward. Keep your arms straight at all times. If your hip flexors are very tight or you have trouble with the balance, lower your back knee all the way down on a soft surface.



Side Bend

**Exercise: Squat Rotation**

The squat rotation improves the mobility of the upper back, activates the abdominal wall and the muscles engaged in torso rotation and increases the range of motion in the shoulder joint.

Place the paddle horizontally across your upper back and take a squat position. Keep your back flat and abdominals engaged at all times. Keep your head still and make a smooth and controlled rotation from side to side by reaching down toward the ground with the paddle, as shown in the photo.



Squat Rotation

**Post-Kayaking Routine**

After pulling the kayak ashore at day’s end, you’re probably thinking about food and rest. I recommend you sort your equipment out and pitch your tent, then focus on your post-activation routine before sitting down by the fire for dinner or crawling into your sleeping bag. Not only will you sleep better, but your morning will be more enjoyable since you’ll have fewer aches and pains.

**Exercise: Lat Stretch**

The lat stretch creates muscle balance of the shoulder region and improves the flexibility and regeneration of the shoulder and back muscles—the prime movers of the upper body in paddling.

With your paddle vertical, hold onto the shaft at chest height. Bend from the hips and keep your arms straight. Push your chest closer to the ground while holding tight to the paddle, and keep your legs slightly bent at the knees, as shown in the photo. Hold the stretch for about 30 seconds. You can use a tree or your paddling partner for support if you’re afraid of snapping your paddle in half.



Lat Stretch

**Exercise: Kneeling Hip Stretch**

The kneeling hip stretch targets muscle balance of the hip region. By restoring the flexibility of the sitting muscles—your hip flexors—it prevents lower back discomfort and tightness.

Kneel with one knee on the ground (use a pad for comfort) and the other knee bent in a right angle, foot flat on the ground. Hold your paddle vertically in front of you, adjacent to your upward knee. Keeping your paddle stationary, hold your upper body upright and lean back with your shoulders until you feel a stretch in the front of your hip and thigh, as shown in the photo. Tighten the buttock of the back leg. Hold the position for 30 seconds before switching sides.



Kneeling Hip Stretch

**Exercise: Shoulder and Triceps**

The shoulder and triceps exercise addresses the muscle balance of the shoulder and arm muscles. It realigns your posture and improves the flexibility of the arm extensors (triceps muscle) and the range of motion in the shoulder joint.

Stand straight and place the paddle vertically behind your back. Hold the paddle with both hands, pointing one elbow upward and the other down, as shown in the photo. Use the lower hand to gently pull the paddle down to create a stretch in the upper arm. Keep your back straight and your head up. Hold this position for 30 seconds before switching hand positions.



Shoulder and Triceps

### **Exercise: Chest and Shoulder**

The chest and shoulder drill not only increases the range of motion in the shoulder joint, it also restores mobility of the upper back and the flexibility of the chest and shoulder muscles.

Start by taking a split stance. Keeping a firm grip with your front hand, grasp the paddle with your other hand palm up as if you were holding a javelin. Push the paddle backward with your front hand to create a stretch in the front of the chest, shoulder and biceps. Hold the position for 30 seconds on each side.



Chest and Shoulder

### **Finding the Balance**

As you incorporate these routines into your kayaking, you may notice that you're feeling more comfortable sitting in the kayak over longer periods of time and that your reach has improved. After your outings, you'll be less susceptible to shoulder and back pain. And finally, by eliminating posture problems and muscle imbalance, you may find it easier to learn and absorb new skills faster. The benefits of post- and pre-kayaking routines, given a chance, will speak for themselves. Spending five minutes performing each routine is a small investment that will yield great rewards.

Our bodies are truly miraculous machines that are very capable of adapting to new situations. By acknowledging the importance of conditioning our bodies with balanced and stress-free movement, we can prolong and improve the quality of our kayaking and our daily lives as well.

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