

Adaptive Paddling Suggestions

Every one of us should be adaptive paddlers! Outfit your boat to fit your body. Learn to paddle with good form and technique. Proper posture while kayaking will solve and prevent many physical discomforts. Learn how to use your body correctly, how to build needed muscles, and what not to do while performing certain tasks so you don't get injured. Whether you chose to work out in a gym, or get exercises to take home, it is imperative that you keep your body as strong and limber as possible.

Below list of pain/problems with suggestions is in no way comprehensive or applicable to all paddlers or boats. For instructors, patience, compassion, ingenuity and careful attention to safety prevail.

<u>PADDLER PAIN/PROBLEMS</u>	<u>SEE SUGGESTION # BELOW</u>
BACK	1, 2, 3, 4, 7, 8, 11, 13, 14, 16, 17, 20
FOOT	1, 2, 5, 6, 11, 13, 16, 17, 18, 19
HAND or WRIST	1, 3, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18
HIP/SCIATIC NERVE	1, 2, 3, 4, 5, 6, 11, 13, 16, 17, 19, 20
SHOULDER	1, 3, 4, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18, 20
BRAIN INJURY/MEMORY	11, 12, 13, 16, 17
LACK OF TORSO STABILITY	5, 6, 7, 11, 13, 14, 16, 17, 20
KNEE	1, 2, 3, 4, 5, 6, 11, 13, 16
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SUGGESTIONS:

1) **Posture:** Assure that paddler is setting up straight or leaned slightly forward - not slouched or leaning back. Replace a hard kayak seat back with a backband or carve minicell foam to fit her back. Try a self inflating lumbar support between back and the seat back or band. Try a gardeners knee pad cut to paddlers fit and velcro to the back-band.

2) **Use under-thigh supports.** There are several on the market. Some inflate and others are made of foam. You can carve your own foam or roll up a sleeping or yoga pad and place it under your thighs. Be sure the support is easily removable or flattens down out of your way to avoid entrapment in a capsized.

3) **Engage lower body while paddling.** Push gently with one or both feet as your paddle catches the water to get leverage in your strokes, achieve better torso rotation, and use your larger muscles (glutes and quads) to help push the boat forward. Relax that foot as your paddle exits and you wind up your torso for the catch on the other side. Your forward stroke will improve and blood will flow to your lower body. It's sort of like doing isometric exercises with your quadriceps and gluteus maximus muscles. Exception: DO NOT PERFORM TORSO ROTATIONS FOR BACK PROBLEMS UNLESS YOUR PHYSICIAN AND PHYSICAL THERAPIST RECOMMEND THEM.

4) **Try raising or lowering the seat bottom.** Try a gel or foam seat pad. If you remove the stock seat you may have to make some side supports to hold the kayak's structural integrity. Carve ethafoam, line it with neoprene, ensolite or minicell foam and wedge it in at your hip area between the deck and the hull.

- 5) **Retrofit bow bulkhead** with carved minicell or ethafoam and experiment with the best angle (normally one's toes should be slightly forward).
- 6) **Cushion Bulkhead:** Use Jackson Happy-Feet or make the bow bulkhead cushioned by placing a float bag between the existing bulkhead and a new footbrace bulkhead. Wedge the ethafoam in place and duct tape secure. You can pad it with softer minicell or ensolite foam.
- 7) **Use/purchase the lightest paddle possible.** Ounces can make a difference for someone with an injury/disability and is holding the paddle over several hours.
- 8) **Try a different paddle or technique.** Try a foam core, bent-shaft style paddle. Smaller bladed paddles will carry less load and be easier to use. Try a shorter or longer paddle. Try changing the angle of your paddle shaft (more touring or power stroke angle). Try unfeathered .
- 9) **Pipe foam insulation** can be taped to the shaft for a larger grip.
- 10) **Modify strokes.** i.e.: slide the paddle blade towards you rather than a “wrist flick” to retrieve your paddle from a brace, sweep roll rather than C to C.
- 11) **Stay in the Paddler’s Box.** Always. Even out of the kayak. Keep your hands in the plane of your shoulders.
- 12) **Simple, memorable instruction:** The art of kayaking relies on kinesthetic memory. Get on the water and have the instructor help with good technique and form. Verbal instruction should be simple. Do on-land exercises that reinforce good technique. Get good technique into muscle memory. It’s like learning to eat with a fork. Once you learn to eat with a fork you don’t think about how to pick it up or use it. You just eat.
- 13) **Outfit your cockpit to fit your body.** You need supportive points of contact at the hips, lower back, thighs, and feet. Carve minicell foam to fit your body or check with a local kayak retailer to see what is available for outfitting your kayak.
- 14) **Stabilize torso:** Carve foam, use folded camping or yoga pads to wrap behind and at your sides to add torso stability. Try a neoprene back or lumbar brace/corset.
- 15) **Wear wrist braces** to keep your hands aligned with your forearm.
- 16) **Have a relaxed grip**, rather than a “death grip” on your paddle shaft.
- 17) **Perfect your forward stroke** to the best of your ability. Don’t “bicycle” with your arms. Use major muscles, leverage, and torso rotation. Take quality strokes.
- 18) **Add a simple grip:** Attach a piece of bicycle inner tube to the paddle shaft with zip ties (it will look like an inch worm) to keep hand in place. You want the paddler to be able to slip their fingers under it as they grip the shaft. Make sure it is loose enough to allow paddler to easily slip their hand out.
- 19) **Pad under heels** for cushion and support using neoprene or soft foam.
- 20) **Try a kayak with a lower deck** to drop your hands lower in your lap.
- 21) **Post Traumatic Stress (PTSD):** Long term symptoms of traumatic stress are varied and individuals cope with it in varying ways. Those affected deal with a variety of issues such as anxiety, withdrawal, depression, anger, insomnia, social withdrawal and unhealthy dependencies. Gaining confidence through patience and learning situations that may trigger

symptoms is important. Closely monitoring facial expressions and attention span is vital to knowing when to modify the pace and method of instruction. PTSD patients often learn kayaking skills better in one-on-one or very small groups.

22) Traumatic Brain Injury (TBI): TBI can run the gamut in physical and cognitive impairment. The most common side effect is short-term memory loss. The good news is that kayaking is really dependent upon "muscle memory" rather than "remembering." The best analogy is that at one time we all had to learn how to eat with a fork but now we just do it (although many folks with TBI have had to learn this skill again). There was a time when we had to think how to hold the fork, pick up the food, and not miss our mouths on the way in. Persons with TBI take to kayaking really well. Rather than giving them a lot of instruction we get them into the kayaks with minimal hints, then fine-tune the physical process while on the water.

23) Amputee – Leg:

Leg Prosthetic: Prosthetics should NEVER be worn in the kayak as they present an escape entrapment and swimming (sinking) risk. A durable (water resistant) prosthetic should be stored in the back of the boat with airbags.

Thigh Brace Socket: Custom build a thigh-brace socket tube out of a rolled rubber trash-can lid or an emergency parking cone and lined with neoprene to cushion. The tube can be bolted to the factory thigh-brace and braced with minicell foam such that it extends the thigh-brace to fit the amputee stump. Make sure the tube is open-ended so as not to form suction on wet-exit.

Stump Protection: Additional protection can be offered to amputee by trimming a wetsuit leg to cover the stump, folding over and rubber glued to close.

Balance: Kayaks with low center of gravity work best for balance. Some sort of ballast in the cockpit to balance the weight of the missing leg may be necessary. Water bladders work well for this. You always want the ballast to stay low in the cockpit and not roll around displacing any weight balances.

24) Amputee – Arm Partial:

Fore Arm/Hand Prosthetic: There are now custom prosthetic terminals available that float and have flexible paddle grips for kayaking and canoeing. Assure that prosthetic can easily release from the paddle.

25) Amputee – Arm Full:

There are custom prosthetics available for kayaking and canoeing. Torso rotation is very important.

Kayaking: An elbow band with a ring that slides into a slot on the paddle and a perpendicular hand-grip. Releasing the hand-grip allows the elbow to disconnect from the paddle in case of capsize.

Canoeing: A shoulder harness provides a ball-and-socket joint for a canoe paddle with an angled shaft. The end of the angled shaft fits into the shoulder joint.

26) Wheelchair Access:

Have a milk crate with a padded cushion on it to use as an intermediate level access between wheelchair and kayak seat. Bring the wheelchair, milk crate and kayak as near to water as possible. The person transfers from the wheelchair to the padded milk crate and then across to the kayak. We put the legs inside first then transfer the person over.

27) Water-Comfort Test:

As part of passing Essential Eligibility Criteria a "Water Comfort Test" is the first exercise in a pool. No boat used, participant is in pool. He/She must float face down holding breath for at least 20 seconds - body horizontal and feet floating. Participant must then be able to roll over on

their own power so they are face up and their feet are up at the water surface for at least 20 seconds. This not only determines if they have fear of water, but gives idea of basic lung capacity. Most people can hold breath for at least 30 seconds. Also, if person does not have lower body strength to hold feet up for at least 20 seconds, it tells you that they would be a whitewater foot-entrapment risk.

General Notes:

1) PREVENT ENTRAPMENT: Never attach a person to a kayak or paddle. We all have to be able to fall out of the kayak and release the paddle in the event of a capsize. Never block anyone in with objects so solid that they cannot fall out. Ensure that every boat modification does not inhibit smooth wet-exit. Practice wet-exits in calm chest-high water with a competent paddler spotting you.

2) Be sure you are properly trained in the use of tools and materials before making any adaptations. You can ruin your kayak if the wrong thing is cut or drilled.

3) For more Adaptive Paddling hints purchase **Canoeing and Kayaking for Persons with Disabilities Instruction Manual** from the American Canoe Association (ACA) by Janet Zeller and Anne Worthem Weber. www.acanet.org.

Much of this document was extracted and adapted from an article by Marna Powell
<http://www.kayakzak.com/adaptive.php>