DR. JASON PIROZZOLO

# A Sports Medicine View of Boat Back Pain: What Matters Most?

Back pain from boat work is often a loading or unloading problem from repeated hard hits, twisting, or bracing off balance, not just one lift or a long day. A 2024 review of five studies involving 804 high-speed boat operators found that the lower back accounted for 26 percent of reported injuries.

Jason Pirozzolo, DO, a sports medicine physician, gives a simple rule first. "I tell people to control speed, trim, seating, and the time spent taking repeated hits." He also keeps the focus on body position. "Use a supported, forward-facing posture instead of riding sideways or twisted when you can."

## What is usually happening in your back

Most boat-related back pain is a strain, meaning irritated muscles and supporting tissues, or pain from the small joints in the low back after repeated compression and jarring. In plain terms, your back gets overloaded by force that keeps coming, especially when your trunk stays tight and off center to absorb it.

Research on former military boat operators found that many injuries were linked to sideways or forward impacts. Guidance from Britain's Maritime and Coastguard Agency also notes that vertical movement is often greater forward on a small vessel, while the driver may feel much less of it. That helps explain why a charter mate closer to the bow can finish a run more sore than the person at the wheel.

The figures cannot be directly applied to local fishing boats because most subjects were military or professional operators, not racers or charter captains. Still, the pattern is useful because the loads on the spine come from the same basic motions.

## The injuries this work causes most often

The common problem is a low back strain after many impacts, twisting, or long periods of bracing. Some people also get pain from the small joints of the spine after the same pounding. A smaller group has a spinal fracture, meaning a broken bone in the spine, after one hard landing.

A 2023 study from French hospitals described 79 patients with 90 spinal fractures after recreational motorboat trips. Many were seated near the bow when an unexpected wave lifted the boat and threw them against the seat or deck. Some incidents occurred in relatively calm water.

What you probably have is a strain when the pain built over time, stays across the low back, and gets worse with more hours on the boat. Dr. Pirozzolo brings the same point back to prevention. "Judge speed by the roughest occupied seat, not by comfort at the wheel."

## How to sort out strain from a harder injury

A strain usually hurts across the low back and ties closely to repeated hits, twisting, and time spent bracing. It often feels worse after more exposure and settles some once the loading stops. A fracture is more concerning after one hard landing, especially when the pain starts right away and stays sharply focused.

Seat position matters here. Guidance from Britain's Maritime and Coastguard Agency says the motion can be greater farther forward, and a Human Factors study of military crews found that suspension seats cut the peak force of impacts in rough water by 57 percent compared with forces measured at the deck. Studies say the benefit of a suspension seat depends on the seat, proper adjustment and the conditions.

Dr. Pirozzolo keeps his advice practical. "Keep your feet planted and use handholds you can reach easily." "Let crew members change position during safe, slower sections instead of taking the same hits the whole trip."

"Most boat back pain comes from repeated hard landings and a bad position, so that is the first thing I would fix," Dr. Pirozzolo says. The next step is simple. Cut down repeated hard hits, stop riding twisted, and pay attention to where on the boat the pain starts after work.

If your back pain keeps returning after boat work, or one hard landing changed it in a way that does not settle, have it checked. To be seen, contact Key West Concierge Orthopedics.

## Questions About Boat Back Pain

### Does back pain from boat work usually come from lifting?

Often it is more about repeated impact, twisting, and bracing than one lift. The pattern of pain over the day usually helps sort that out.

### Why can one seat feel much worse than another?

The forward part of a small boat can move more sharply than the driver's position. That means one crew member can take harder hits even when the driver feels less motion.

### Can a better seat solve the problem by itself?

Not by itself. Seat design can help, but speed, trim, posture, and how long you keep taking hits still matter.

## Sources


- Ullman J, Hengst D, Rolfson O, Myers S, Robinson Y. Systematic review of injuries and chronic musculoskeletal pain among high-speed boat operators. Military Medicine. 2024;189(3-4):e573-e580. DOI: 10.1093/milmed/usad377
- Ullman J, Hengst D, Carpenter R, Robinson Y. Does military high-speed boat slamming cause severe injuries and disability? Clinical Orthopedics and Related Research. 2022;480(11):2163-2173. DOI: 10.1097/CORR.0000000000002420
- UK Maritime and Coastguard Agency. MGN 436 (M+F), Amendment 5: Whole Body

Vibration - Guidance on Mitigating Against the Effects of Shocks and Impacts on Small Vessels. Published August 22, 2025. Official government guidance

- May AT, Bailly N, Sellier A, et al. Spinal fractures during touristic motorboat sea cruises: An underestimated and avoidable phenomenon. Journal of Clinical Medicine. 2023;12(4):1426. DOI: 10.3390/jcm12041426
- Myers SD, Dobbins TD, King S, et al. Effectiveness of suspension seats in maintaining performance following military high-speed boat transits. Human Factors. 2012;54(2):264-276. DOI: 10.1177/0018720811436201

**Medically reviewed by**

Jason Pirozzolo, DO
Fellowship Trained and Board Certified in Sports Medicine

Last medically reviewed: November 5, 2026