

Diving After Bone Fractures

Is There a Greater Risk of Decompression Illness?

By Dr. James Chimiak.

Q: Six months ago, during an automobile accident, I sustained multiple fractures in my left leg. The fractures did not require surgery, but I was hospitalized for five days and I wore a full-leg cast. I wore the cast for eight weeks, and I walked with a slight limp for two or three weeks after that. I experienced a little muscle fatigue and some swelling and stiffness in my ankle in the evenings, but I had no other trouble.

I did go to physical therapy briefly to learn exercises for my leg muscles and joints. Two months ago, my doctor released me, allowing me to return to my regular activities. I have even started to jog on the treadmill. I have had no difficulties, but now I want to resume diving. I have heard that, because of the damage to my bones, I may have an increased risk for decompression illness (DCI). I think I am fine now, because I am doing all of my normal activities without a problem. Can I safely return to diving?

A: Three factors can affect your decision to return to diving: the acute loss of function, residual deficits and any additional risk of decompression illness (DCI).

Pain and acute loss of function impedes your ability to dive safely. Acute pain serves an important function since it limits the use of that

limb to allow healing and prevent further injury. Thus, you should not dive with an acute fracture. Furthermore, swelling and changes in blood flow could impair the efficient release of nitrogen stored in the injured tissues, possibly increasing the risk of DCI.

Symptoms caused by the injury, such as pain and numbness, burning, itching or tingling could add diagnostic confusion if DCI is being investigated. However, after satisfactorily healing and rehabilitation and approval by the orthopedic surgeon, you can resume diving. Once complete healing has occurred, there is little or no evidence to suggest a higher risk of DCI.

If a diver experiences persistent pain, numbness or weakness, a dive physician should evaluate the diver's condition before any resumption of diving. If the diver returns to diving, the orthopaedic surgeon must carefully document the diver's neurological, vascular and functional deficits. In many chronic pain states, no further injury occurs, and many studies report that, with increasing activity, subjects show improvement of overall function and a reduction in chronic pain.

ABOUT THE AUTHOR

DAN referral physician James Chimiak, M.D. is Chief of Anaesthesiology at the Naval Hospital in Camp Lejeune, N.C., a Navy Diving Medical Officer and a Hyperbaric Medicine Adviser.