

Delayed treatment of decompression sickness: Letter and Response

LETTER TO THE EDITOR:

A recent report by Inman and co-workers describes two divers with decompression sickness (DCS) responsive to delayed treatment with hyperbaric oxygen [1]. In it they state: "Current literature questions the efficacy of delayed HBO₂ therapy longer than 24-48 hours after symptom onset." The authors suggest their cases are remarkable in demonstrating symptom resolution when treated beyond this time frame.

In fact, most recreational cases of decompression sickness in the United States are treated in a delayed fashion. According to data from the Divers Alert Network, only about one-half of cases of DCS are recompressed within the first 24 hours after symptom onset [2].

The 2020 edition of the UHMS *Hyperbaric Oxygen Therapy Indications* report states: "Available data do not convincingly demonstrate superior outcomes in rapid vs. delayed treatment. For example, in two published series, time to treatment greater than 24 or 48 hours was as effective as earlier treatment. However, most series in recreational diving lack cases with extremely short symptom to recompression latency as comparators." [3]

Cianci and Slade reported an 87% complete recovery rate in 140 divers with DCS treatment delayed an average of 93.5 hours [4]. In a report of 225 recreational diving accidents treated at our facility over one decade [5], the most common day of the week for treatment of decompression sickness was Monday. Divers were typically diving on the weekend and presented in a delayed fashion for treatment of persistent non-urgent symptoms.

While timely recompression of divers with DCS is preferred, treatment in a delayed fashion is routine among facilities regularly managing the condition.

Neil B. Hampson, MD; James R. Holm, MD

Virginia Mason Medical Center, Seattle, Washington

Correspondence: neil.hampson@gmail.com

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RESPONSE TO AUTHORS:

Thank you for highlighting the fact that many divers present and are treated for DCS in a delayed manner. Much of the existing literature recommends immediate treatment of DCS for optimal benefit [1,2].

As you mention, however, there is mounting evidence, particularly with non-emergent DCS symptoms, that suggests delayed treatment may have comparable outcomes to early treatment [3,4]. Our report contributes to this body of evidence and, moreover, demonstrates successful treatment eight days after symptom onset. This is a considerably longer delay than most studies where average time to recompression is between two to four days [3, 4].

Controversy regarding efficacy of delayed treatment in current literature is a result of many variables, including symptom severity, diagnostic uncertainty and outcome measures [5]. For these reasons, it remains unclear at which point after experiencing DCS that recompression with hyperbaric oxygen may become less efficacious.