RUBICON
FOUNDATION

Search Rubicon
Go
Advanced Search

Home

Browse
Communities & Collections
Titles
Authors
By Date

Sign on to:
Receive email updates
My Rubicon
authorized users
Edit Profile

Help

Please use this identifier to cite or link to this item:
http://archive.rubicon-foundation.org/2194

Title: Diving at altitude: a review of decompression strategies

Authors: Egi, SM
Brubakk, AO

Keywords: decompression
decompression
model
altitude

Issue Date: 1995

Abstract: Diving at altitude requires different tables from those at sea level due to the reduction in surface ambient pressure. Several algorithms extrapolating sea-level diving experimental data have been proposed to construct altitude diving tables. The rationale for these algorithms is reviewed together with the conservatism of the resulting tables and decompression computer outputs. All algorithms are based on the adaptation of critical tissue tensions to altitude. These are linear extrapolation (LEM), constant ratio translation (CRT), and constant ratio extrapolation (CRE) of maximum permissible tissue tensions (M values). Either new tables using the altitude-adapted M values were put forward or sea-level tables are to be used through an operation called correction. In this review it is shown that for a given set of M values, CRT and CRE give the same result for no-decompression-stop dives; they always yield more conservative results than LEM. When decompression stops are used, CRT is more conservative than CRE. When applied to different sets of M values, the conservatism becomes a function of bottom time, depth, and altitude. The analysis shows that the tables derived using CRT of U.S. Navy (USN) schedules and CRE Boni et al. tables give more conservative results than LEM Buhlmann tables for higher altitude, longer bottom time, and deeper dives. Aviation altitude exposure decompression sickness (DCS) data are also addressed to compare different model outputs. When applied to USN and Royal Navy tables, LEM

yields an altitude DCS limit of 8,581 and 8,977 m, respectively. On the other hand, the altitude limit calculated using CRE applied to USN M values and LEM Buhlmann tables is found to be below 6,000 m.

Description: Undersea and Hyperbaric Medical Society, Inc. (http://www.uhms.org)

URI: PMID: 7580768
http://archive.rubicon-foundation.org/2194

Appears in Collections: Undersea and Hyperbaric Medicine Journal

Files in This Item:

File	Size	Format	
7580768.pdf	3093Kb	Adobe PDF	View/Open

Show full item record

All items in DSpace are protected by copyright, with all rights reserved.