Title: O2 pressures between 0.12 and 2.5 atm abs, circulatory function, and N2 elimination

Authors: Anderson, D
Nagasawa, GK
Norfleet, W
Olszowka, A
Lundgren, CEG

Keywords: rebreather
decompression
nitrogen elimination
hypoxia
oxygen

Issue Date: 1991

Citation: Undersea Biomed Res. 1991 Jul;18(4):279-92.

Abstract: To study the effects of inhaled oxygen pressures on N2 elimination, 72, 2-h washouts were performed in 6 subjects at oxygen pressures of 0.12, 0.2, 1.0, 2.0, and 2.5 atm abs using a closed circuit system that supplied an O2-argon mixture and collected the N2 off-gassed. Hypoxia induced a significant (9.4%, P less than 0.05) increase in nitrogen eliminated as compared to normoxia. Pure oxygen breathing induced a small, insignificant (3.5%) decrease in nitrogen yields, but further increases in oxygen pressure induced significant decreases in nitrogen yields (-8.9% and -16.9% for 2.0 and 2.5 atm abs, respectively). Heart rate, cardiac output, skin perfusion and leg blood flow decreased, whereas mean arterial pressure increased with increasing oxygen pressure. We conclude, therefore, that perfusion-dependent N2 elimination decreases secondary to vasoconstriction induced by increasing oxygen pressures. Changes in inhaled oxygen pressures during different phases of compression-decompression may induce alterations in the rate of inert gas uptake and elimination. Although not currently quantifiable, such alterations would imply added uncertainties in the computation of decompression schedules. Oxygen breathing during decompression should be performed at the lowest possible ambient

pressure compatible with freedom from pathogenic bubble formation.

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

URI: PMID: 1887516
http://archive.rubicon-foundation.org/2572

Appears in Collections: Undersea Biomedical Research Journal

Files in This Item:

| File | Size | Format | |
|---|---|---|---|
| 1887516.pdf | 2208Kb | Adobe PDF | View/Open |

Show full item record