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Title: Exercise tolerance at 4 and 6 ATA

Authors: Anthonisen, NR
Utz, G
Kryger, MH
Urbanetti, JS

Keywords: human
exercise
dyspnea

Issue Date: 1976

Citation: Undersea Biomed Res. 1976 Jun;3(2):95-112.

Abstract: Seven normal male subjects performed 5-min bicycle exercise ranging from 50-100 percent maximum oxygen uptake at 4 ATA and three were also studied at 6 ATA. At all pressures, the subjects breathed 0.2 ATA O2 plus nitrogen. All subjects were able to perform maximum work at all pressures. No pressure-dependent variations in heart rate, O2 uptake, or CO2 output were noted. At both 4 and 6 ATA, ventilation was decreased at exercise levels greater than 80 percent maximum O2 uptake. The magnitude of the decrease was not great, however, and signified only minor CO2 retention. In some instances exercise ventilation closely approached the 15-S maximum breathing capacity and these subjects noted severe dyspnea, possibly due to dynamic compression of large airways. In three subjects, respiratory frequency was measured as well as minute ventilation; this relationship did not change with depth. Subjects performing heavy exercise at 6 ATA noted disturbances of consciousness, presumably due to N2 narcosis. *Adaptation, Physiological Adult Atmosphere Exposure Chambers *Atmospheric Pressure Carbon Dioxide/metabolism *Exertion Heart Rate Human Male Naval Medicine Oxygen Consumption Ventilation-Perfusion Ratio

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

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