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**Title:** Alterations of the human vestibulo-ocular reflex in a simulated dive at 62 ATA

**Authors:** Gauthier, GM

**Keywords:** retinal  
eye  
human

**Issue Date:** 1976

**Citation:** Undersea Biomed Res. 1976 Jun;3(2):103-12.

**Abstract:** In an attempt to investigate some aspects of the high pressure nervous syndrome, the vestibulo-ocular reflex (VOR) gain was measured in two professional divers undergoing a simulated dive at 62 ATA. The aquanauts in a seated position were rotated sinusoidally around the vertical axis at a frequency of about 0.3 Hz over a 20 degrees range. Tests were performed at regular intervals prior to, during, and after the compression/decompression period. The rotations were applied either in total darkness or with a visual target rotating with the chair or with a target fixed to the chair-supporting frame. An infrared photoelectric system monitored eye movements. The results showed no spontaneous nystagmus, but two definite changes in VOR gain: (1) a slight but significant increase related to pressure increase, which may be due to an increase of the vestibular system excitability or a decrease of the cerebellar inhibition exerted upon the vestibular nuclei, and (2) an intermittently appearing increase (VOR gain between 1 and 1.3) during brief periods. The latter finding, not related to pressure, was interpreted as the expression of an underwater-adapted mode that may developed in professional divers submitted to the intensive use of magnifying diving-optical systems. \*Diving Eye Movements Human Naval Medicine \*Reflex Vestibular Nuclei/\*physiology Visual Perception/\*physiology

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

**URI:** [PMID: 951820](#)  
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**Appears in Collections:** [Undersea Biomedical Research Journal](#)

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