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**Title:** Does the evoked response measure inert gas narcosis?

**Authors:** Fowler, B  
Ackles, KN

**Keywords:** argon  
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**Issue Date:** 1977

**Abstract:** The purpose of this review is to examine the validity of change in the cortical evoked response as a measure of inert gas narcosis in humans. Three criteria are defined which must all be met if a nonbehavioral measure is to be accepted as an indicator of narcosis. The evoked response is assessed in terms of these criteria. Two classes of experiments which have used the evoked response in hyperbaric conditions are identified. The first class allows the evoked response to be assessed against more than one of these criteria. The outcome of every experiment in this class supports the view that the evoked response is not a valid measure of narcosis. The second class of experiment assumed that the evoked response is a measure of narcosis and were not designed to assess validity appropriately. Arguments by Kinney and associates in support of the assumption of validity are shown to be unsound. Possible explanations for inability to demonstrate validity are discussed and it is suggested that factors other than narcotic potency of the breathing gas mixture determine or at least play a major role in determining amplitude of the evoked response. Acoustic Stimulation Argon Behavior/physiology Electroencephalography \*Evoked Potentials Helium Human Inert Gas Narcosis/\*physiopathology Neon Nitrogen Oxygen Photic Stimulation Research Design

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

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