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Title: Failure to find residual memory deficits in monkeys after repeated HPNS

Authors: Overman, WH
Brauer, RW
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Abstract: Squirrel monkeys (n = 8) were equated on learning and memory tasks before sustaining 3 separate dives in a laboratory compression chamber. Associative memory was carefully monitored 1 wk before and 3 wk immediately after each dive. The first dive was a shallow, subseizure control dive and the subsequent 2 dives were deep, seizure-inducing dives. Half of the animals were always compressed in He-O₂ and half in He-N₂-O₂ gas, which is known to increase the depth at which tremors and seizures occur. After the control dive there was a slight (10% average) decline in memory performance, but the decline was temporary and recovery was complete by the second postdive week. There was no evidence of residual memory impairments after either of the 2 subsequent seizure-inducing dives. Although addition of nitrogen to the breathing gas significantly elevated thresholds for tremors, it had no differential effect on memory scores. These results are in agreement with studies of human divers that show either no residual impairments or transient, fully recoverable cognitive symptoms after diving.

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