Title: Neuropsychologic effects of saturation diving

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Abstract: Neuropsychologic status of saturation divers was assessed before and after 300-500 msw dives (deep saturation diving--DSD group) and before and after 3.5 yr of ordinary saturation diving (saturation diving--SD group). Average baseline results showed the divers to be slightly superior to nondiving controls. Mild-to-moderate neuropsychologic changes (greater than 10% impairment) were found in measures of tremor, spatial memory, vigilance, and automatic reactivity in 20% of the divers after deep dives (DSD group). One year postdive no recovery was observed except for a vigilance test. In the SD group, 20% of the divers showed greater than 10% impairment after 3.5 yr of ordinary saturation diving. Significant reduction in autonomic reactivity was also found and there was a relationship between low autonomic reactivity before saturation diving and number of greater than 10% impairments. For the whole group (DSD + SD divers), negative correlations were found between saturation experience and results on memory and complex visuomotor tests. Years of diving from first to last examination was positively correlated with number of greater than 10% impairments and with reduction in autonomic reactivity. No similar correlations were found to dive variables after about 3 yr of air diving. The mild-to-moderate changes seen in some divers, therefore, seem to be the effects of saturation diving. Since one deep dive may cause an effect similar to the effect of 3.5 yr of ordinary saturation diving, there is reason to believe that repeated deep diving may lead to more

pronounced neuropsychologic impairment.

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