In recent years there has been much debate about whether repeated diving over years exerts chronic adverse effects on the CNS. Previous studies have shown neurologic and neuropsychological long-term effects on divers, suggesting spinal and cerebral dysfunction. Most of these studies were performed on divers with a history of neurologic decompression illness (DCI). Furthermore, an increased prevalence of hyperintense cerebral lesions in divers without neurologic DCI has been reported, suggesting a higher risk for accumulating these abnormalities during repeated diving. However, the question of long-term effects on divers without neurologic DCI remains controversial as controlled data regarding neuropsychometric test results or abnormal neurologic findings were found. There was no correlation between test results, diving experience, and number and size of cerebral MRI lesions. Prevalence of cerebral lesions was not increased in divers. These results suggest that there are no long-term CNS sequelae in military divers if diving is performed under controlled conditions.


Methods. Study groups. Professional German Navy divers (n = 24) and 24 nondiving Navy employees were matched with respect to age and smoking habits. Subjects had no history of neurologic DCI, head trauma, cerebrovascular or cardiovascular disease, diabetes, or regular drug consumption.

Diving history. Mean diving experience was 1407 ± 675.7 hours (mean ± SD); range 500 to 2777 hours) with a mean of 1652 ± 694 dives (range 591 to 3170 dives) and 17.3 ± 5.5 diving years (range 8 to 29 years). The majority (84%) of all dives were performed in the diving depth range of 0 to 20 m.

Neuropsychometric evaluation. The test battery for the assessment of attention included the following subtasks: phasic/tonic alertness, divided attention, go/no-go test, incompatibility, and change of reaction. Memory performance was evaluated with the Wechsler Adult Intelligence Scale–Revised (WAIS-R) (Digit Span), the Corsi Block-Tapping Test, and the Wechsler Memory Scale–Revised (WMS-R) (Verbal Paired Associates). General intellectual functions were tested using the WAIS-R (Information, Similarities, Picture Completion, Block Design). Premorbid level of intellectual abilities was assessed using the German Multiple Choice Vocabulary Test (MWB-B), which is the functional equivalent of the National Adult Reading Test (NART). Verbal fluency (letter/category) of spontaneous speech was evaluated with the Word Fluency Test in the Neurosensory Center Comprehensive Examination for Aphasia (NCCEA). The state of mood was assessed with the Beck Depression Inventory and with a self-rating mood

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