Underwater working times of traditional apnea divers in Asia

An interesting article appeared on Diving and Hyperbaric Medicine (Vol. 41 No. 1 March 2011), dealing with the results of a study carried out in August 2009 and March-April 2010 by a team of Swedish researchers in two Asian communities of traditional apnea divers: the Ama of Japan and the Bajau in the Phillipines. It starts with outlining the difference between competitive apnea diving, whose aim is one single dive of maximum duration/distance/depth, and harvest or "natural" diving, where divers strive towards limiting apnea duration to get the longest underwater working time per day.

Ama divers work on Hegura Island, a nearly deserted island whose population increases during the fishing season (limited to 3 months per year, 4 hours per day). The group comprises about 60 divers, working in relatively cold water; once upon a time, they were regarded as the most cold-resistant of humans, but the introduction of wetsuits has led to a progressive de-acclimatisation. The divers participating in the study included 14 female Ama (mean age 60 years), using a full wetsuit, mask, rubber fins, weightbelt, cotton gloves and a tool for collecting shells, working at an average water temperature of 23°C. Bajau divers live either in house boats or in stilt-house settlements.

In the late 80s, they were found to spend 50% of their working time under water, with little or no diving equipment – just handmade wooden goggles. Once upon a time, no goggles were used, and even today one can find children endowed with a superior underwater vision. Today, some Bajau use basic freediving equipment. The diving cycles of 5 male Bajau divers (mean age 38 years) were recorded; they were engaged in spearfishing at an average water temperature of 26°C, wearing goggles, swimming trunks and wooden fins. No clear gender gaps were outlined when comparing the diving performances of the Ama and Bajau: in both groups, female and male divers exist.

The difference between the greater proportion of female divers in the Ama and the majority of male divers in the Bajau is, in fact, due to tradition and socio-economic reasons. Data collection was carried out from boats and under water, measuring dive times and surface intervals, depth and time for ascent/descent. Both groups showed efficient dive patterns, with an average underwater dive time of 50% for Ama and 60% for Bajau. Daily times spent breath-holding under water were in average 2h for Ama and up to over 5 h in Bajau, differences partly attributed to water temperature. Further studies will deal with variations in diving performances according to factors such as fatigue and age.

About the author

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