

Bubble Formation After a 20-m Dive: Deep-Stop vs. Shallow-Stop Decompression Profiles

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Objectives: It is claimed that performing a “deep stop,” a stop at about half of maximal diving depth (MDD), can reduce the amount of detectable precordial bubbles after the dive and may thus diminish the risk of decompression sickness. In order to ascertain whether this reduction is caused by the deep stop or by a prolonged decompression time, we wanted to test the “deep stop” theory without increasing the total decompression time. From a modeling point of view, Haldanian theory states that this situation would increase the probability of observable bubbles, because of a longer stay at depth. Under these conditions, we examined whether a “deep-stop dive” (DSD) produces more bubbles or less than a “shallow-stop dive” (SSD).

Methods: Recreational divers performed either a DSD or a SSD. Both groups were matched biometrically. MDD was 20 msw, bottom time 40 min and total diving time 47 min. In DSD, the “deep” stop (10 msw) replaced 3 min of the 7 min stop at 4 msw of SSD.

Results : **DSD produced significantly more precordial bubbles than SSD** after knee bends (*P*-values ranging from 0.00007 to 0.038).

Discussion: Our results indicate that at least for the tested dive profile, the higher supersaturations after surfacing overruled any possible beneficial effects of the deep stop on bubble formation. The usefulness of substituting a shallow stop with a deep stop in dives up to 20 msw can be questioned; at the least, more research is needed.

References: [12 references](#)  open in new window

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