# Equaleasy – Buoyancy and equalisation

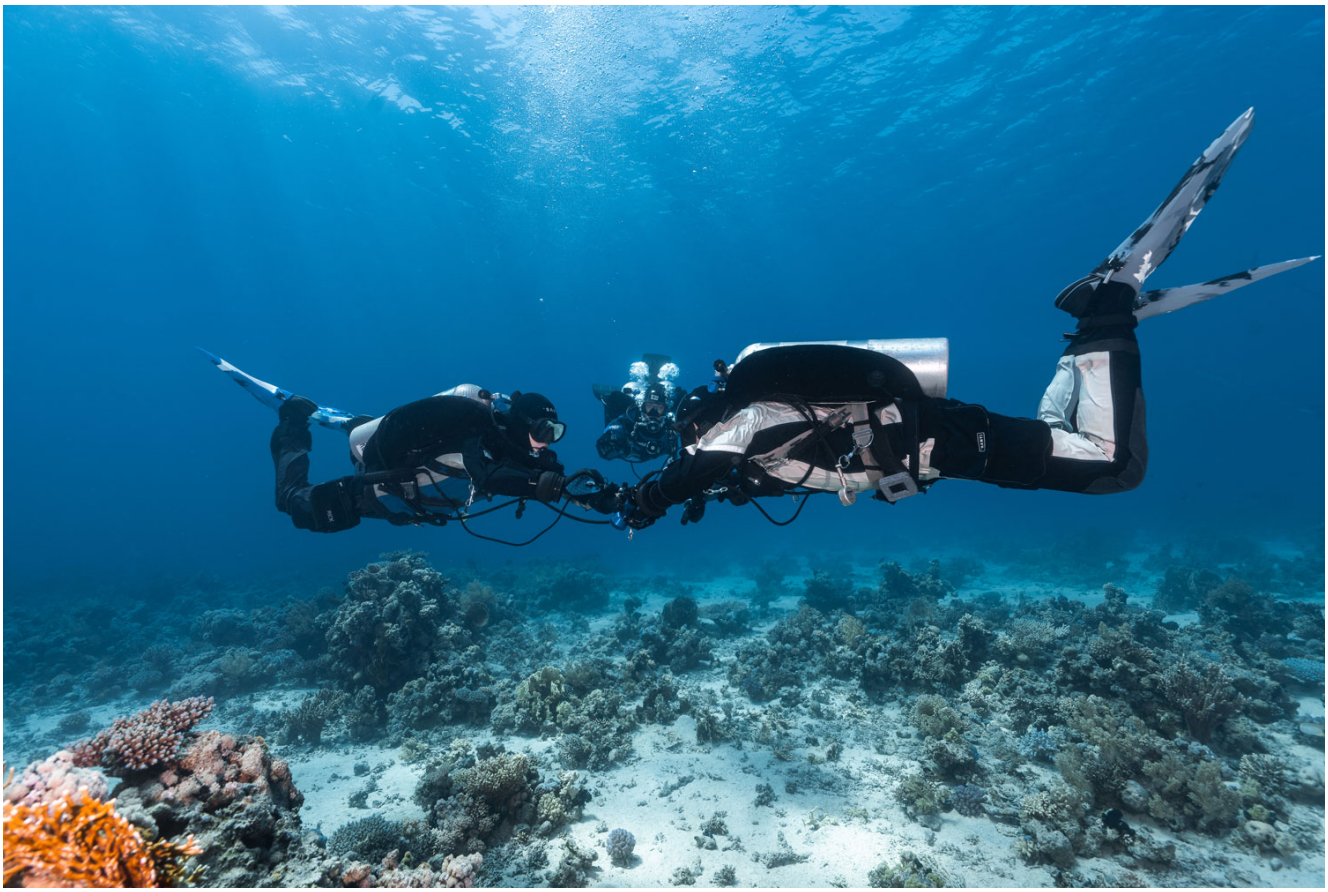
How many times have our ears warned us that we were descending?

It is often the ear, the part of our anatomy most sensitive to increasing pressure, that signals us of an unplanned descent. Not surprisingly, it is also one of the most frequent victims of poor buoyancy control.

## A fundamental technique.

Buoyancy control is essential for the comfort and the safety of the dive. We will never stop repeating that fact. Poor buoyancy control increases air consumption, but more importantly, it affects the diver's vertical speed control. This begins with weighting: A diver carrying excess weight has to put more air in their buoyancy compensation device (BCD), which amplifies the effect of pressure changes at depth. A drysuit behaves in the same way. A swift change of volume in a drysuit or BCD can lead to fast ascents or unwanted descents.

Divers who are overweighted and fail to compensate this by putting additional gas in their BCDs display a very typical trim: an upright position with fins down. In order not to sink, these divers are forced to fin continuously, putting the sea bottom at risk and possibly causing loss of visibility if they stir up the sand. On the other hand, divers who are not wearing enough weight or have too much air in their BCD are typically in a head-down trim. An inexperienced diver will find difficult to reach the dump valve on the lower back of the BCD. In a drysuit, a head-down position causes air to become trapped in the feet, necessitating emergency countermeasures.



## A common diving accident.

The most dangerous consequences of poor buoyancy control are a rapid ascent or missed decompression stop. These mistakes can take a diver straight into the hyperbaric chamber. The risk of barotrauma may seem small compared to the risk of decompression sickness (DCS). However, the numbers tell a different story. The most frequent diving injury is barotrauma, not DCS. Lack of proper buoyancy control is a major factor in many cases of barotrauma.

However, a diver doesn't need to plunge into the abyss or shoot to the surface to get hurt. Repetitive, sudden depth changes can easily damage the ears. Instructors taking students up and down during the course, often assisting them with both hands and not focusing on their own buoyancy, are an example. Instructors sometimes fail to equalise with the right frequency, which can result in barotrauma. Unfortunately, many are unfamiliar with the hands-free equalisation technique, which is described in the EqualEasy course. No matter what the cause may be, any uncontrolled descent stresses our ears.

## How to save the ears.

Let's go back to our lessons from open water training: While holding a normal breath and with an empty BCD (and a near-empty cylinder), a diver in a recreational configuration should float at eye level. It's a method that works with reasonable reliability. Beware the old saying, "better a kilo more than a kilo less." Being too generous with the extra kilos carries its own hazards.

Once underwater, divers should rely primarily on their BCD, then on regulating their lung volume during the breathing cycle to maintain proper buoyancy. In contrast, a frantic and sole use of the BCD would soon turn a diver into a yo-yo. As for dealing with equalisation, it is better to be proactive rather than reactive: if we know we are going to ascend, we should be ready to deflate the BCD. If we know we have to descend, we should avoid releasing too much gas, especially if we are already at depth. In addition, during the dive, it's good to check the position of our legs and head—their position not only shows us what is happening with our trim, but also with our buoyancy.

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**To know more:**

- Mastering Proper Trim
- Breathing & Buoyancy control: Stop, Breathe, Think, and then Act

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## About the author

DAN Member since 1997, Claudio Di Manao is a PADI and IANTD diving instructor. He's the author of a series of books and novels about diving, including Shamandura Generation, an exhilarating portrait of Sharm el Sheikh's diving community. He collaborates with magazines, radios and newspapers, talking and writing about diving safety, marine life and travels.