DAN Research Goes Back to Lake Lugano

After the success of the last edition, the Diving Safety Laboratory, DAN Europe's "mobile laboratory" is back in Canton Ticino for a new adventure in the name of lake diving and scientific research. This year, Planet Sea Lugano and the Società Svizzera di Salvataggio (Swiss Rescue Society) of Lugano have completed courses to become DSL Bases. Thus, with our support, they were able to manage the data collection activities in the field.

The occasion took place last June 30th, at Emozioni Subacquee – PADI Day in Ticino. The day's events included dives, update seminars, free trials in the pool, and of course, the scientific activities carried out by DAN Research. The aim was to take Doppler scans of volunteer divers, correlating data assessment with the perception of cold due to the temperature of the lake.

The data sample obtained was not large (around fifteen divers were monitored) but, as we will see, the results were significant. The general statistical data indicated an average dive depth of about 40 metres; the mean temperature of the water was about 5 degrees (minimum 2 °C, maximum about 10 °C). About 86% of the divers were male, in line with the demographics of divers in general, present in our database.

Another interesting element was that most of these divers, 71%, are DAN members. This shows careful attention on the part of DAN members toward safety issues, and their will to contribute first hand to the studies. During the dives, only 7% of the divers had problems in regards to compensation. Now, let's look at the monitoring in detail. As is well-known, dry suits are usually used for lake diving for protection against the cold; imagine that instead, 29% of the participating divers on this day in the cold waters of Lake Lugano used wetsuits!

This shouldn't surprise us too much because using drysuits requires more training, which not all the participants had, and because some divers said they handled the cold well and wanted to "feel the water on their skin." 71% of those using wetsuits thus reported that they dove in comfortable thermal conditions; the others, instead, felt cold. These are very interesting results for our research, especially considering that the average water temperature was under 10 °C.

Exposure to cold water and the consequent drop in body temperature during dives were associated with a high production of gas bubbles: 80% of divers who had not felt cold during the dives in fact had low Doppler grades (LBG – Low Bubble Grade), whilst 25% of those who had said they'd felt cold had between High Bubble Grade and High Bubble Grade+. This shows that once again our research is going in the right direction! The assessment of bubbles carried out in real life conditions, on a real life diving sample, confirms our laboratory results.

A heartfelt thank you goes out to our DSL Base in Switzerland, comprised of Planet Sea and Salvataggio Lugano, who made this event possible. Thanks also to all the participants for working together to improve diving safety!

DSL Base – Lugano

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