

### **Lessons drawn form the in-field experience**

The current incidence of diving related injuries is rather stable since more than a decade in spite of the shrinking accepted bottom time, the speed of ascent variations and the accuracy used to implement decompression algorithms or gauges.

This incidence remains around 0,04 % for the decompression illness occurrences and 0,12% (DAN Europe report 2003) for minor events; a very low incidence when compared to other diving.

Why is this situation so stable? Probably because the algorithms are not able to extrapolate human physiology which is of course inter and intra variable. The value of experimental data gathered from the field is one of the tools that can help to (hopefully) eliminate such a gap. The DAN Europe DSL program has been for this purpose. The current data contains 18546 recreational dive profiles more than 2500 of which have provided Doppler data. 7 DCI incidents were recorded during the data collection so far, with an incidence of 0,04%. Interestingly, not all these 7 decompression injuries were “deserved and expected” according to the decompression algorithm / dive computers used by the divers, but the analysis of the dive profiles showed tissue saturation levels compatible with high grade bubble formation according to our studies that will be high lighted.

So for instance it could be shown that deep stops, even when empirically introduced in a “normal” recreational dive profile are very efficient at drastically reducing the bubble production after a single or repetitive dive

The DAN DSL data are showing that the field research model is capable of providing an essential, useful and valuable data bank for the study of decompression safety and the prevention of DCI, especially when combined, like it is in the case of the DSL, with a sound scientific methodological approach, and taking into consideration the possible variables in the light of epidemiological as well as laboratory studies.