

A Shrink Studies SCUBA



Bonaire dive buddy Andy Owens on the Wild Side of Bonaire David Colvard

When I wrote two weeks ago that I would “report the survey results on decompression symptoms and their relationship to obesity, an area of some question in the dive literature,” I had no idea what a firestorm that would set off.

My Bonaire dive buddy Andy Owens, who has already lost a great deal of weight and is trying to lose more, let me know what he thought of it:

“What you don’t get, because you are skinny, is that the reason there are a lot of big divers is that it is a sport that they can do, so let’s be careful not to take that away, too. I used to be 380 and I could dive better than 90% of everyone I ever dove with when I was at that weight. If you are morbidly obese, then a little extra DCS (decompression sickness, “The Bends” to the layman) risk is the least of your concerns. The highest risk for DCS is bad dive technique. I think that if big divers are properly trained, then the risk you might see in the numbers could be reduced.”

When I sent my survey data chart of DCS symptoms versus BMI sorted by gender (Table 1) over to friends at Divers Alert Network, I got this response from Vice President of Research Richard (Dick) Vann, Ph.D.:

“This is interesting, David, and consistent with the literature of the past 50 years or so (see Bove’s *Diving Medicine 3rd edition* page 156 and Bennett & Elliott’s *The Physiology and Medicine of Diving 4th edition* page 383). For fat animals and for fat humans in the early days of diving (probably before the 1956 USN tables), there was an unambiguous correlation between weight/obesity and DCS risk. A number of published studies indicate that this is no longer true for humans although it is still true for animals.”

“Why might this be? My supposition is

that human dive procedures have become much safer than they used to be (before the USN tables) both in the overall DCS incidence and DCS severity. Further, I suppose that obesity is a risk factor for serious DCS but not for mild DCS. I can’t prove this right now, but we are working on methods that may allow us to estimate separate probabilities for mild and serious DCS while controlling for the dive profile. This might be helpful. So, you can see from your own data why data are so important and why received wisdom (in this case increased DCS risk with increased BMI) needs to be questioned rather accepted without thought.”

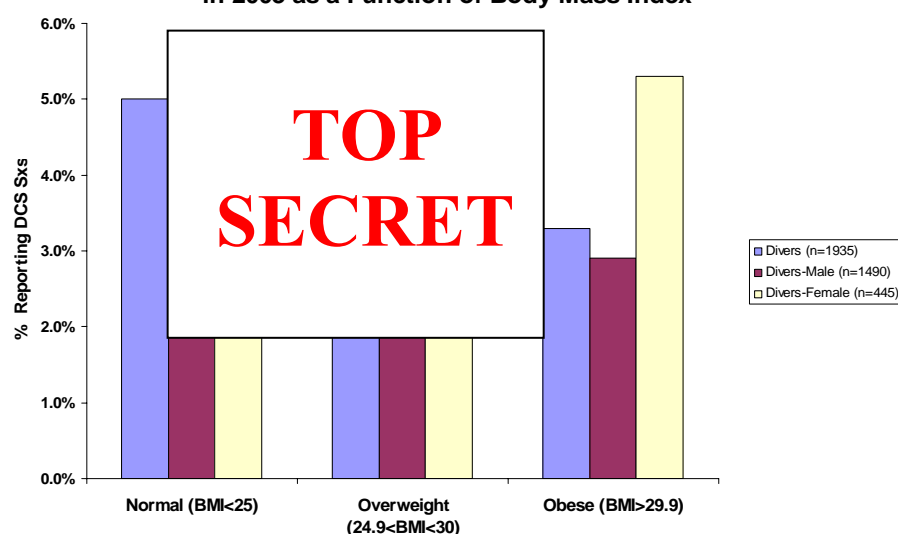
I also heard from Neal W. Pollock, Ph.D., Research Associate, Center for Hyperbaric Medicine and Environmental Physiology at Duke University Medical Center: “I am quite uncomfortable with your association of BMI and DCS. Most importantly, BMI does not provide a measure of body composition. As you have observed previ-

ously, high BMI values can also indicate relatively high muscle mass. While elevated body fat may be more common, the data are confounded by not knowing what type of tissue is responsible for the high values. More direct estimates of body composition such as those relying on skin-fold thickness or hydrostatic weight are necessary to talk about obesity. Using BMI is just stirring up muddy waters with a very muddy stick. There is enough ambiguity in the fatness/DCS argument to not want to add to it. I encourage you to postpone the discussion until you get more relevant data.”

If you still want to know what I found and promise not to ever tell anybody, then please feel free to email me at david@divepsych.com and I’ll check your security clearance.

Next week Andy and I will focus on helping overweight people dive more safely. □ David F. Colvard, M.D

Table 1. Scuba Divers Reporting Decompression Symptoms in 2003 as a Function of Body Mass Index



David F. Colvard, M.D., is a private psychiatrist and clinical investigator in Raleigh NC, and a divemaster. He hosts the website www.DivePsych.com which provides evidence-based information for divers on psychological and stress factors in scuba divers. □

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