

NITROGEN NARCOSIS

Of all the physiological factors that affect us when we dive Nitrogen Narcosis is the most common but also the most widely misunderstood. Narcosis occurs as we dive deeper and becomes more severe the deeper we go. It has several side effects all of which serve to impair our ability to carry out basic tasks.

The cause of narcosis has not been definitively proven although it is widely believed to be caused by the anesthetic properties of certain gases at raised partial pressures.

Many divers incorrectly consider narcosis to be a black and white issue, either they are suffering from narcosis or they are not. Furthermore many divers claim that they have never suffered from narcosis. This shows a misunderstanding of the properties of narcosis and a lack of understanding of the symptoms.

If, as we believe, narcosis is caused by the anesthetic properties of gases at increased partial pressure, then the level of narcosis experienced should be proportional to the depth. As the diver descends the narcosis should build up gradually. Those divers which claim never to have experienced narcosis have just never noticed the effects.

There are many effects of narcosis. The two most widely known are the extreme feelings of either euphoria or panic. In many ways the diver who experiences these feelings of panic and doom is lucky in that this type of narcosis is acting as a failsafe and preventing them going deeper and experiencing more narcosis. The diver who experiences euphoria is potentially at more risk. However, these two symptoms are not the only effects of narcosis.

There is a wide range of other effects. These may not always be as obvious as a feeling of overwhelming panic. Their symptoms can be much more subtle and so are not always immediately obvious.

Divers suffering from narcosis often show a lack of judgment. They don't always make the best decisions or in some cases take an inordinate amount of time to make what should be a simple decision. I once watched a diver on a wreck penetration course take several minutes deciding which of two points to use to make a tie off. Until pointed out later they didn't realize that they had taken this long to make the decision.

Narcosis appears to affect our memory. Divers who report no other symptoms of narcosis frequently show a lack of memory of certain parts of the dive. I spoke to a diver a few years ago who had just done the same dive as me. I was on Trimix and they were on air. They confessed that despite a 20 minute bottom time they couldn't remember any specific detail of the dive.

Tasks which are easy in shallow water for some reason tend to become more difficult at depth. Loss of dexterity or motor control is a frequent symptom of narcosis. On many occasions I have seen someone send up a DSMB from 10m in just a few seconds only to have exactly the same task take several minutes at depth.

Narcosis often causes perceptual narrowing or task fixation. Divers become obsessed with completing the task they have begun, even when other tasks have obviously become a much bigger priority.

Divers suffering from narcosis often respond slower than they would in shallower water. These extra seconds can make a vital difference at depth.

It is interesting that many of these additional symptoms of narcosis are not noticeable unless a problem or emergency occurs. If everything is going well then the fact that tasks take a little longer is no problem, especially as both parties are likely to forget many of the details of the dive anyway. However, narcosis become much more of an issue if a problem occurs.

In this case the diver now has to assess the situation, make a judgment and act on it. All three of these are things that may be affected by their levels of narcosis. This means they are much less able to deal with a problem due to their level of narcosis.

Another problem with this level of intermediate narcosis is that it makes you more susceptible to other symptoms. If a problem occurs then the likelihood of experiencing that feeling of panic is increased. I have spoken to several divers who have been involved in incidents during deep dives and they have told me they were not feeling any particular symptoms of narcosis until the incident started. In one case the diver told me that he could feel that feeling of panic rising and in another the diver told me that for several seconds he was completely in a state of panic.

We are lucky that the vast majority of dives do not involve an incident of any kind. During dives that go well we can tolerate the level of narcosis that we experience. It is only when dives don't go well that that level of narcosis becomes dangerous. Unfortunately I still haven't been able to reliably identify in advance the dives when things will go well and those when an incident will occur. Until then I will remain wary of narcosis.

Divers that claim never to have experienced narcosis are focusing on the obvious symptoms and are ignoring, or forgetting, the more subtle symptoms. If you can feel that you are affected by narcosis then the symptoms probably started 10-15m shallower than when you noticed them.