

# Clearing the Air about Nitrox

*by Bob Bailey*

A couple of weeks ago I was approached by a young woman who was interested in taking a nitrox class. When I asked her why she wanted to dive nitrox she replied, "Because my boyfriend wants me to do deep dives with him, and I'd just like that extra margin of safety." I explained to her that while I'd be happy to teach her the class, that's not really what nitrox was for. As was the case with this young woman, certain misconceptions about nitrox are common. When considering whether using nitrox would be right for you, it helps to understand what value it can bring to your diving. So I'd like to take this opportunity to discuss the advantages and drawbacks of using nitrox.

Let's start by talking about what nitrox is. As you know, the air we breathe consists mainly of nitrogen (79%) and oxygen (21%). Nitrox is really just air with some extra oxygen added to it. Adding oxygen reduces the amount of nitrogen in the mix ... and the true benefit of nitrox isn't that it increases the amount of oxygen you breathe, but that it reduces the amount of nitrogen. By reducing the nitrogen in our breathing gas, we reduce the nitrogen our body absorbs, and therefore we can dive longer. Some divers also report less post-dive fatigue and post-dive headache when using nitrox.

Many people believe that nitrox will allow them to dive deeper. In reality, nitrox can increase your risks on a deep dive. Underwater both nitrogen and oxygen can cause problems for a diver ... too much nitrogen creates a decompression problem, while too much oxygen can result in an illness known as "oxygen toxicity". The higher level of oxygen in nitrox places limits on how deep you can dive because as we go deeper, the density of the gas we breathe increases proportional to our depth, meaning that we intake more oxygen with each breath. Therefore as you plan to do deeper dives, you must reduce the percentage of oxygen in your nitrox mix. And as you reduce the mix, you reduce the potential benefits of using nitrox rather than air.

You should also consider the additional costs associated with using nitrox. Your scuba tank will need to be cleaned and serviced for nitrox use. Nitrox fills are generally about twice the cost of air fills. And you will need a dive computer that accommodates nitrox use, which is generally more expensive than air-only models.

So with the extra cost and potential risk, why would someone want to dive with nitrox? Well, if you are currently doing dives that cause you to come close to your no decompression limits (NDL) it can increase the amount of time you are allowed at a given depth before reaching your NDL. If you are doing repetitive dives, it can reduce the amount of surface interval required between dives. Both of these can be particularly desirable. Or if you like to dive conservatively, breathing nitrox but using air tables or a computer set for air use will provide an additional margin of safety. For divers who are not in good physical shape, are older, or are in any higher-risk category, this can be a legitimate concern.

But by far the most benefit will be on those dive vacations where you're trying to squeeze every bit of bottom time you can into that available six or seven vacation days. Diving nitrox can make it possible to do those four or five dives a day that are offered on that liveaboard week you've been dreaming about.

Before using nitrox, you must be trained and certified in its use. You must be fully informed of the risks of oxygen toxicity and understand how to avoid it. You must know how to prepare your equipment for nitrox use, and how to use nitrox tables or a nitrox computer to keep track of your no decompression limits. And you must know how to analyze and mark your tanks so that you always know what percentage of nitrox you are breathing.

I ... or any instructor certified to teach nitrox ... can assist you in gaining this knowledge through proper nitrox training. And once trained, you may discover that using nitrox changes the way you dive.