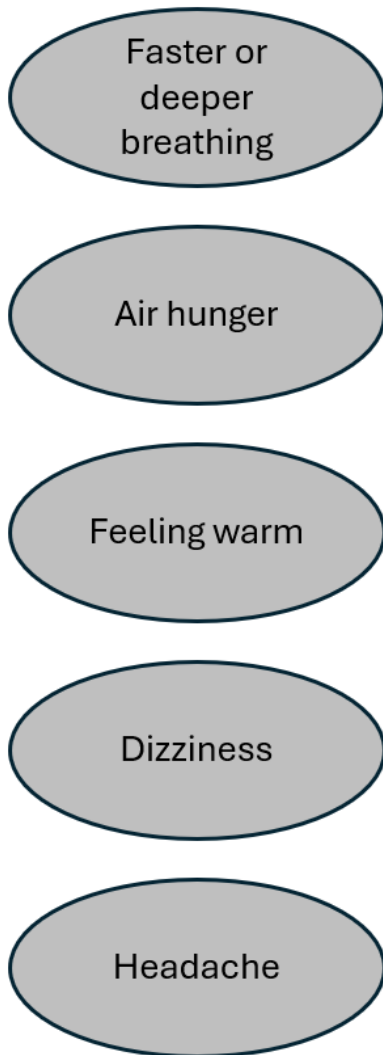


Hypercapnia symptoms in rebreather divers

You are participating in a study investigating your ability to recognize hypercapnia. This logically requires that we make you aware of the symptoms. The air we breathe is approximately 21% oxygen and 0.03% carbon dioxide. As we go about our daily lives, our bodies are constantly consuming oxygen and producing carbon dioxide. Carbon dioxide is a waste product, and we expel this when we breathe. Sometimes we produce more carbon dioxide, for example during exercise, and one of the reasons we need to breathe faster when we are exercising is to expel this excess waste product.

Common hypercapnia symptoms



Higher than normal carbon dioxide in the body is called **hypercapnia**, and can occur when breathing does not match the body's carbon dioxide production, or in cases where the available air to breathe has higher carbon dioxide content.

Hypercapnia is a well-known risk of rebreather diving. Equipment failure or human error can cause carbon dioxide levels in the breathing gas to increase above safe levels, which causes the diver to become hypercapnic. Hypercapnia is particularly dangerous to divers because it can increase the risk of oxygen toxicity, potentially causing this to occur at otherwise safe levels of oxygen breathing.

The most common symptoms of hypercapnia are: **faster or deeper breathing, a feeling of air hunger, feeling warm, dizziness, and headaches.** The diagram to the left shows these symptoms.

Although these symptoms are common, some of them can be subtle, and some divers only realise that they had these symptoms in hindsight. Because of this, it is important to become familiar with the sensations associated with hypercapnia, particularly as these can sometimes be confused with sensations that also occur while exercising.