

# Medical examinations for scuba diving

The scuba diving community is diverse, in gender, in age, in general health conditions. However, while there may not be a clear set of rules, as everyone would like, informing us of exactly how things should be, it is now standard procedure for beginning an underwater course, no matter what your level may be, to undergo a medical examination. Usually, this medical examination is considered a problem, a burden, a bother. Actually, it is an important moment, not just for one's diving life, but also as a point of reference in a person's life. It gives the doctor the chance to assess the main physiological aspects of a person, and if the doctor is a specialist in the field, they can sum up, in specific terms, to have an overview of general factors and aspects which could constitute a risk when scuba diving.

Of course, the risk is minimal. We are well aware that, even though diving accidents can sometimes be serious, they are very rare and they are often caused by non health-related causes. However, this result is also due to prophylaxis and control assisted by a medical examination.

In addition to general examinations of your health for diving and any surgical procedures, in particular your airways and hearing, it is also important to pay attention to your heart, your lungs, blood pressure, check the mobility of the tympanic membrane and undergo a brief neurological exam.

Given that it is a medical exam for sport and leisure purposes, invasive procedures or procedures with surgical instruments are unnecessary. However, obviously, if the doctor has surgical instruments which could allow a further examination without being invasive, and without creating risk to the area examined, this allows for a more detailed investigation.

One important remark about the doctor carrying out the medical examination for scuba diving: Usually, it is safe to say that a doctor's training covers a vast and comprehensive range of medical expertise, more than enough to evaluate how fit our organs are for scuba diving. However, it's also true that being an expert in the field allows an evaluation sometimes decidedly different from the usual conditions or from a specific set of conditions. Here is an example to demonstrate this. What, for a doctor specialised in diving medicine, is a normal tympanic membrane, slightly red caused by the stimulus of equalization, for an ear, nose and throat specialist who doesn't have this kind of experience in diving, could be a cause for stopping the procedure and beginning treatment.

For this reason, we consider it important to suggest that a fitness examination for scuba diving should be carried out by a doctor specialised in swimming or underwater activities, or by a doctor who is an expert in the field.

Now let's look at the detail of the examination to help the reader get rid of any doubts they may have about their own fitness, always with the aim of highlighting how important it is to have these checks made in an objective and professional manner.

There are three types of contraindication for health reasons for underwater activities: absolute contraindications, relative contraindications and temporary contraindications.

The first ones refer to those conditions which make it dangerous to go into the water. Amongst these, we would like to highlight two in particular which are more frequently subject to questions from users: epilepsy and spontaneous pneumothorax episodes.

Without going into too much detail, we can define epilepsy as a moment in which the brain goes through alterations, the nature of which is rarely considered, and these can provoke neurological symptoms, usual

just briefly. In its most typical form, it manifests itself as a serious problem, during which the individual stops breathing for a minute and experiences quite serious paroxysms. It is easy to see how if this kind of incident takes place underwater, the threat to the diver's life would be too dangerous to cope with it. The problems with this condition are most obvious in those individuals who have suffered epileptic fits in childhood, have followed the necessary treatment and after five years without a fit, they stop treatment, as it is no longer recommended. The current procedure tends to be that people with this condition are not considered fit for diving, despite the fact that really, each case should be considered separately.

For spontaneous pneumothorax, what happens is that following a sudden increase in pressure in the lung, a small, emphysematous bullae, usually congenital, bursts and the air in the pleural area causes a specific reaction. The fact that this can re-occur during a dive, and therefore make resurfacing very dangerous is justification for not allowing people with this condition to dive, even though statistically, the risk is minimal. The latest surgical techniques can eliminate emphysematous zones, identified with the necessary tests, but lung surgery is another reason why an individual would not be granted a diving fitness certificate.

The relative contraindications are represented by that series of conditions which are not themselves a cause for being declared permanently unfit for diving, but which deserve particular attention, as for example a request for more detailed medical examinations and reducing the duration of the medical certificate from three to six months instead of a year. Let's look at three examples: asthma, hypertension, diabetes.

An asthmatic person should be well informed about what an asthma attack really is, the precautions to take in case it occurs or especially what can trigger such an attack. Since it involves the bronchi the danger with an asthma attack underwater is that there is an air trap in the resurfacing phase, something which can have disastrous consequences.

High blood pressure affects a large section of the population. As far as scuba diving is concerned, the danger is in the possibility that there may be unexpected changes in blood pressure during a dive. To counter this inconvenience it's a good idea for the person, with the necessary treatment to stabilise their blood pressure levels. This also applies to people with diabetes.

The risk with diabetes is in its long term effects, especially if it is not diagnosed for a while, or for those who have sudden changes in glycaemia levels, whether too high or too low. When the person finds their own personal balance and knows their bodies well and how it reacts to different glucose levels or how to treat them, they will be able to enjoy the underwater experience and have no problems dealing with it.

In conclusion, temporary contraindications are those conditions which lead to stopping scuba diving for the time necessary to resolve the problem. For example, inflammation of primary airways, serious ear problems, but above all, pregnancy, a period in which it is absolutely forbidden to dive.

### **About the Author**

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