What happens to the Human Body in Water

BRAIN

Nitrogen Narcosis

Nitrogen is a major part of the air we regularly breathe. But when divers breathe from their air supply underwater, it is much more dense, increasing the quantity of nitrogen in the body. This has an outsized effect on the nervous system, so divers' functioning can become impaired at a depth of about 100 ft.

Hypoxia

Hypoxia is a condition that occurs when your body doesn't receive enough oxygen.

High-Pressure-Nervous-Syndrome

Is a technical diving malady caused by a rapid descent to extreme depths. The central nervous system function is degraded; leading to increasing severe tremors.

EYES

Distorted Vision

The underwater perception of colors also changes, depending on the depth, due to the different wavelengths of visible light. Red disappears at 9 meters, yellow at 23 meters. Blue and green are the only colors visible below 30 meters.
According to Boyle's law, at x amount of meters underwater your eyes will start to feel great pressure. Needing technology such as diving masks.

BONES

Dysbaric Osteonecrosis

(DON) is a medical condition that occurs when the bones in the body become damaged due to repeated changes in pressure. This can happen when scuba divers make very frequent dives over long durations.

Compression Arthralgia

Is a technical diving malady caused by a rapid descent to extreme depths. Joint fluids crystallize, leading to extreme pain and reduced mobility when moving limbs, hands, and fingers.

LUNGS

Decompression Sickness

Also known as "the bends," is a serious condition that can occur when divers ascend too quickly from depth. As you dive, your body absorbs nitrogen from the air you breathe.
According to Boyle's law (P1V1= P2V2) as pressure increases on the descent, the volume must decrease, and as pressure falls on the ascent, the volume must increase. At sea level (0 meters, 0 ft), the air pressure exerts a force of 14.7 lbs/in or 1 atmosphere absolute (1 ATA).
The lungs are most adversely affected by declines in lung capacity in the first 10 meters (32.8 ft) 2 ATA with a 50% reduction. Below you will see examples of decline in lung capacity based on the depth of water.

20 m	(65.6 ft)	3 ATA	44.1 lbs	67%
30 m	(98.4 ft)	4 ATA	58.8 lbs	75%
40 m	(131.2 ft)	5 ATA	73.5 lbs	80%

Gas Embolism

A medical condition that occurs when an air bubble enters the bloodstream through a lung over-expansion injury and blocks the flow of blood to a part of the body.

IPE

Also known as Immersion Pulmonary Oedema (IPO) involves the abnormal leakage of fluid into the lungs. The exact cause of IPE is not fully understood. Divers with preexisting heart or blood pressure conditions are more vulnerable to IPE. Additionally, over-hydration before diving is believed to increase the risk of IPE.

HEART

The Dive Reflex

Is believed to aid in the conservation of oxygen stores in mammals by initiating several specific physiologic changes during aquatic immersion. When a human holds their breath and submerges in water, the face and nose become wet which in turn causes bradycardia, apnea, and increased peripheral vascular resistance; these three main physiologic changes are collectively referred to as the diving reflex.