

# Caisson disease

This is a state of *decompression failure* due to **Henry's law**. Since nitrogen is the most abundant gas in the atmosphere, a considerable amount of it dissolves in the body of divers (most often in body fluids, then in tissues, fats are particularly susceptible to lipids). As a result of too fast decompression (decrease in pressure), this nitrogen turns back into a gaseous state and begins to form bubbles, especially in venous blood. Joint and muscle pain, muscle paralysis and loss of consciousness occur. The most serious complication is embolism with bubbles in the lungs or coronary vessels.

Prevention of permanent malfunctions of divers is solved by overpressure chambers with gradual decompression. Caisson disease can also occur when the pressurized cabin of an aircraft is breached - if explosive decompression occurs at high altitudes, other gases are also released in bubble form.

*Note: To give an idea - a diver at sea level has about 1 l of  $N_2$  dissolved in his body, at a depth of 30 m already 4 l of  $N_2$ .*



Decompression chamber at NASA

## Literature

- TROJAN, Stanislav. *Lékařská fyziologie*. 4. edition. Praha : Grada, 2003. 772 pp. pp. 318. ISBN 80-247-0512-5.