

The work deals with a still not very popular but important aspect of diving physiology under the conditions of breath holding. The apnea inevitably leads to an increase of CO₂ in the lungs at the expense of oxygen exhausted during cell respiration. Unlike the case of scuba diving, however, in a diving on apnea this CO₂ is not regularly exhaled and its partial pressure quickly rises. As a result, due to the specific mechanism of action of the bicarbonate buffer system, the pH of the blood falls. Although this might not always be connected with a severe acidosis and dangerous consequences, precautions taking into account the individual features of the diver, are needed.

Keywords: scuba diving, caisson disease (decompression sickness), respiratory, breath-holding (apnea), bicarbonate buffer system, acidosis

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