

Definition breathing

From a physiological perspective, breathing is the process of moving air in and out of the lungs by inhalation and exhalation, in order to enable the life sustaining exchange of oxygen and carbon dioxide in and out of the blood. Other than this physiological regulation, breathing also has an important influence on cognitive, affective and behavioral regulation. In sport, breathing techniques can be used as activation and relaxation techniques. As an activating technique, such as the Valsalva Maneuver, breathing is used to assist athletes in competition such as weightlifting. By Valsalva Maneuver a deep breath is held while lifting the weight. This creates a forced exhalation against the closed airway and leads to greater intra-abdominal and thoracic pressure, which in turn results in a decreased venous return. As a result of this activating mechanism weightlifters are able to lift more weight. As a relaxation technique, the most efficient breathing technique is slow paced breathing. Slow paced breathing is based on the coupling of breathing and heart rate, with heart rate getting faster while inhaling and slower while exhaling. During slow paced breathing, the exhalation will be slightly longer than the inhalation, in order to provoke a slowing or “brake” effect on the heart, triggering relaxation. More specifically, slow paced breathing will require following a specific pattern of inhalation/exhalation at a determined breathing pace (an average 6 cycles per minute). Following this breathing pattern brings together the effects of blood pressure and respiration on heart rate, provoking what is known as a resonance effect. At the physiological level, slow paced breathing improves gas exchange and oxygen saturation, while simultaneously positively influencing the regulation of cognition, emotion and behavior at the psychological level. Athletes can use this simple breathing technique as an efficient way to cope with pressure during competitions, helping them to stay focused and make the best decisions on the field.