

## Breath techniques of Yoga in Daily Life System – ancient wisdom for the modern world

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Yoga in Daily Life System embraces the techniques of ancient knowledge of yogis and rishis. The complex approach on the field of breath exercises enables the practitioners to utilize the techniques according to their needs and purposes.

The two branches of breathing are fast and deep breathing and slow and deep breathing. The former is used to quickly recharge after a major effort. The latter is for long-term conditioning, to help tolerate an increase in tissue CO<sub>2</sub> levels. In other words, the two techniques should be used in combination to achieve the best results. It is therefore understandable why long-term capacity expansion is not the goal during intense exercise: there you have to make the best of what you have, which is O<sub>2</sub> demanding. In other words, breathing long and deep during exercise is the best way to get the best results. In the same way, breathing long and deep after a training session or race, and somewhat before, is also a good idea. Slow and deep breathing increases capacity and is months of regular work to develop. This is what conditioning is all about in any sport. If an athlete is working at a high level of demand and determination, they will make the most of their resting hypoxic state by practising prolonged and deep breathing. This can be combined with interval, high-load, hypoxic (anaerobic) training.

Prolonged (slow) and deep breathing builds structure, which has a similar result to EPO: an increase in the number of VVT (red blood cells) and thus an improvement in the supply of O<sub>2</sub> to the tissues. Even without this, breathing long and deep during exercise has a positive effect, but with a good capacity you will be more effective - hence the link between the two approaches.

Slow and deep breathing techniques promote autonomic nervous system changes, increasing heart rate variability (HRV) and respiratory sinus arrhythmia, while modifying central nervous system activity. EEG scans show an increase in alpha brain waves and a decrease in theta waves. Anatomically, an fMRI scan shows increased activity in cortical (prefrontal, motor and parietal cortex) and subcortical (bridge, thalamus, sub-parabrachial nucleus, periaqueductal gray matter, and hypothalamus) structures. Psychological and behavioural findings associated with these changes include: increased relaxation, feelings of pleasantness, increased alertness, and a reduction in symptoms of agitation, anxiety, depression, anger and confusion. Slow breathing techniques increase autonomic, brain and psychological flexibility. Reciprocal interactions can be discovered between parasympathetic activity (increased HRV and LF performance), central nervous system activity (increased EEG alpha and decreased theta waves) and the close relationship of these activities to the emotional control and psychological well-being of individuals. Two possible explanations for these associations are. 1. changes occur through voluntary regulation of internal bodily states (interoception); 2. the role of mechanoreceptors in the nasal bulb is linked to the effect of slow breathing in modulating the activity of the primary olfactory centre (bulbus olfactorius), which sets the activity of the entire cortical envelope.

In addition to fast and deep breathing and slow and deep breathing, there are also slow breathing, which belong to the other direction of regeneration. These bring the body to a state of relaxation and bring the parasympathetic nervous system to the fore, thus allowing energy to be stored and promoting anabolic, anabolic processes.

### **The concept of breathing: what works where?**

#### **Or: hypoxia-hypoxia and parasympathetic-sympathetic**

Breathing with bellows (Bhastrika pranayama) - This technique not only brings a lot of oxygen into the body (hyperoxia) but also creates sympathetic nervous excitement, as we then turn inward and the extra oxygen is not dispersed by restlessness. This is a training for the body and psyche to handle the increased vitality. (It is best to have practised the 4th pranayama of reed soda with breathing pauses thoroughly beforehand.)

Soft bhastrika or fast-paced total well-breathing - A technique to aid regeneration linked to movement. It can be practised in training and in competitions and matches. Movement-associated increased O<sub>2</sub> demand can be managed quickly and easily. If we are consciously aware of our breathing, it can be a great support even when practising monotonous sports with cyclical movements (running, swimming, cycling, etc.), if we "max out" our breathing to full capacity.

Nadi Shodhan 4th level pranayama - Purifier and strengthener of the main spiritual channels (Sushumna and Vajra Nadi). In preparation for meditation, serious practitioners tune with this for ½ to 4 hours a day for months. The technique is known to have a capacity-enhancing effect. In sport, its effect is most comparable to high altitude exercise, as it permanently increases the number of red blood cells in the blood, yet it is not considered blood doping (see next section). Breathing techniques do not simply increase CO<sub>2</sub> levels (while decreasing O<sub>2</sub> levels), but combine the process with an inner calm and purify the internal energy system.

Ujjayi or "snoring" breathing - A technique that calms the nervous system and body, it deepens a state of calm. The subtle vibrations produced through the connective tissues not only soothe and calm the body cells but also the nerve cells. Through it we can recalibrate our state of calm after a prolonged period of stress.

	Hypoxia (low O <sub>2</sub> )	normal O <sub>2</sub>	hyperoxia (high O <sub>2</sub> )
parasympathetic nervous system	ns4 - equilibrium	Ujjayi	full breathing, soft bhastrika
sympathetic nervous system		awake normal breathing	bellows breathing (bhastrika)