



Training Tip

Resource Library

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by Dr. Jacob Jordan

The following article is a direct excerpt from the book: Total MindBody Training by Dr. Jacob Jordan. Special thanks to [Turtle Press](#) for the use of this article.

We have seen that mind and body are intertwined. Just as the mind moves the body, the body can move the mind. The key aspect of physiologic control of the mind is breath control. Respiration is truly the mirror of the psycho-physiologic state. While many people have developed a proverbial "poker face" with little clues to their emotions portrayed as facial expressions, their true mental state is always reflected in their breathing pattern. Anger is characterized by rapid breaths with forced exhalations. Anxiety is demonstrated by an erratic, fitful breathing pattern with breaths taken from high in the chest. While respiration reflects your emotional and physiologic state, it can also be utilized to change the state within seconds.

In the Western world we have been taught to breathe from high in the chest. This stems from the Western ideal of proper posture characterized by a puffed out chest with the stomach sucked in. Take a moment and assume this position. Notice how much energy is expended maintaining this posture. Hold this position for any length of time and soon you will notice how much tension is present. Maintain this position for fifteen to twenty minutes and fatigue will soon follow. While the martial arts teaches us to breathe from the abdomen, with states of tension, fear and anxiety, most students soon revert back to the shallow thoracic (chest) breaths which serve only to perpetuate sub-optimal states. In order to fully comprehend proper breath control, the mechanics of respiration must be understood.

The diaphragm is the primary muscle of respiration. This is the large, flat muscle separating the abdominal from the chest cavities. The diaphragm contracts thus lengthening the chest cavity creating a vacuum which draws air into the lungs. The secondary or so called accessory muscles of respiration include the intercostal muscles (between the ribs), and to a lesser extent, the neck muscles. The accessory muscles function to increase the anterior-posterior diameter of the chest cavity as well as to lift and spread the rib cage.

With good "Western" posture we use our accessory musculature to lift the chest. Using the accessory muscles without proper use of the diaphragm serves to keep air high in the chest and does not expand the lungs to their capacity. A normal thoracic breath draws only 500 to 700 cc of air in the average adult. This results in less efficient oxygen delivery to your circulatory system and subsequently less potential for physical action. On the other hand, a deep, abdominal breath typically draws 2500cc to 3000cc of air, expanding the entire lungs for optimal oxygen delivery.

Proper Respiration

With this background we can now approach the process of proper respiration. Normal, quiet respiration uses only the diaphragm. This is what is termed abdominal breathing. The chest is kept completely still and the accessory muscles are not utilized. This is the proper way to breathe. It is the way infants normally breathe before they become conditioned and are taught "proper posture." It is the way a cat or other predatory animal breathes when stealthily stalking game.

Breathing should be accomplished by allowing the abdomen to inflate like a balloon creating the sensation of air being pulled deep into the lower body. When you have reached a maximum comfortable breath, press the air even further down towards the pelvis by tensing the abdomen slightly. Expiration is then accomplished in a gradual, controlled manner. Keeping slight tension in the abdominal muscles, the air is slowly released. The accessory muscles should come into play only when winded, contracting only after a full diaphragmatic breath has been accomplished. The accessory muscles are then utilized to expand and lift the chest to more fully inflate the very top portions of the lungs.

All breathing should be done through the nose with the exception of when vocalizing as when a martial artist performs a kiai. Nose breathing is most efficient for oxygen delivery and preserves the moisture of the airways. This becomes extremely important when involved in lengthy, dehydrating workouts.

Benefits of Proper Respiration.

Proper respiration has four major benefits for the martial artist. First, through a neuro-physiologic feedback loop, it keeps the mind calm and "grounded." Just try to become extremely angry or hysterical while taking slow, deep, abdominal breaths. It simply cannot be done. In competitive or confrontational situations, some athletes become so anxious and hyperactive that they are bouncing off the walls. This is the sympathetic nervous system in action. An activated sympathetic nervous system releases a flood of adrenaline resulting in the "fight or flight" response. The adrenaline surge is taxing on both the body and the mind wasting enormous energy reserves.

Deep, abdominal breathing with slight tension in the abdomen dampens the sympathetic response in favor of the parasympathetic nervous system. The parasympathetic nervous system fosters relaxation, lowering of the pulse, slowing of respiration and conservation of energy. You are then able to respond to a threat appropriately rather than reacting anxiously. The preservation of energy reserves with parasympathetic system dominance becomes very important in endurance activities.

Secondly, proper breathing allows superior oxygen exchange in the lungs resulting in improved muscle performance during activity requiring maximal effort. Third, keeping the breath low in the abdomen automatically keeps your center of gravity low for improved balance. The fourth and probably the most important quality of proper respiration is its ability to assist in keeping the mind focused on the present moment. This will be discussed in detail in Chapter Three.

Developing the habit of diaphragmatic breathing takes considerable practice. It has taken years to condition your breathing to your current pattern so don't expect miraculous changes overnight. It will

take time to condition your body back to the normal respiration that it knew as an infant, but it will be well worth the effort.

Summary of the Benefits of Proper Respiration

1. Calms the mind by calming the body
2. Allows superior oxygen exchange
3. Lowers the center of gravity for better balance
4. Enhances focus

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