# Chest (Thoracic) Breathing: Effects, Tests and Solutions

Chest (or thoracic) breathing is very common in modern people. More than 50% of adults have predominantly chest breathing at rest. It is even more common for people with chronic diseases, who breathe too deeply at rest, as this Table shows.

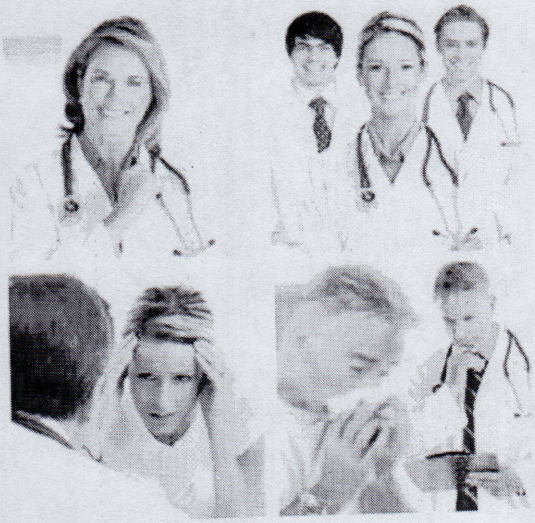
## Minute ventilation rates (chronic diseases)

More than 90% of sick people have upper chest breathing with increased minute ventilation, respiratory rates, and minute volume (i.e., automatic deep breathing at rest or taking too much air per one breath). Chest breathing causes three fundamental health effects that promote chronic diseases and lead to low body oxygen levels.

## Chest breathing reduces blood oxygenation

The textbook, *Respiratory Physiology* (West, 2000), suggests that the lower 10% of the lungs transports more than 40 ml of oxygen per minute, while the upper 10% of the lungs transports less than 6 ml of oxygen per minute. Hence, the lower parts of the lungs are about 6-7 times more effective in oxygen transport than the top of the lungs due to richer blood supply mostly caused by gravity.

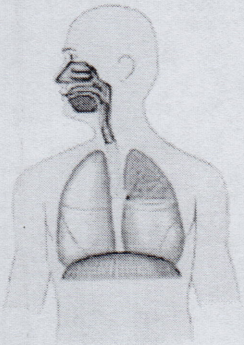
During thoracic breathing, lower layers of the lungs, which are most valuable in oxygen transport, get much less, if any, fresh air (less oxygen supply). This causes reduced oxygenation of arterial blood in the lungs and can lead to so called "ventilation-perfusion" mismatch (as in COPD or emphysema). Normal breathing is diaphragmatic, allowing homogeneous inflation of both lungs with fresh air, similar to what happens in the cylinder of a car engine due to the movement of the piston. Hence, during diaphragmatic breathing, all alveoli are homogeneously stretched vertically and get fresh air supply with higher O2 concentration for superior arterial blood oxygenation. In contrast, chest breathing creates problems with blood oxygenation. *This leads to reduced*



*cell oxygenation: the driving force of all chronic diseases.*

## Chest breathing causes lymphatic stagnation

Dr. Shields, in his study, "Lymph, lymph glands, and homeostasis" (Shields, 1992) reported that diaphragmatic breathing stimulates the cleansing work of the lymph system by creating a negative pressure pulling the lymph through the lymph system. This increases the rate of elimination of toxins from visceral organs by about 15 times. Why is this so?

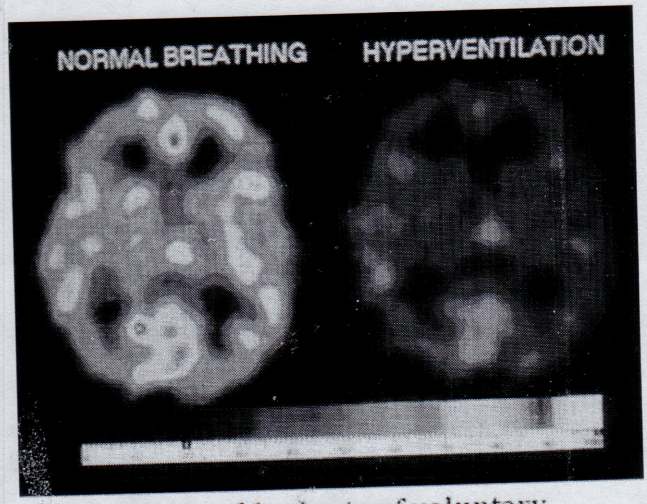


The lymph system, unlike the cardiovascular system with the heart, has no pump. Lymph nodes are located in parts of the human body that get naturally compressed (squeezing) due to movements of body parts. for example, lymph nodes are located around the neck, above arm pits and groin area. Hence, when we move, stretch or turn the head, arms and legs, these lymph nodes get mechanical stimulation to push the lymph through valves. This is how the lymphatic system works. However, the lymph nodes connected to the stomach, kidneys, liver, pancreas, spleen, large and small colons, and other vital organs are located just under the diaphragm - over 60% of all lymph nodes in total!

Hence, nature expects us to use the diaphragm in order to remove waste products from these vital organs all the time - literally with each breath, 24/7. Hence, another problem with thoracic or chest breathing is stagnation in the lymph system and accumulation of waste products in vital organs located under the diaphragm. (This effect is also mentioned in other sources, for example,http://www.amsa.org/healingthehealer/breathing.cfm ).

## Thoracic breathing means hyperventilation and low oxygen levels in cells

People who are chest breathers virtually always have deep breathing (large breaths) at rest or sleep and suffer from hyperventilation (breathing more than




Effects of 1 minute of voluntary hyperventilation on brain oxygen levels (vasoconstriction due to lack of CO2)

the norm). When we breathe more air, we get less oxygen in body cells. In fact, the slower your automatic breathing pattern at rest (down to only 3 breaths/min), the larger the amount of oxygen delivered to cells.

Keep in mind that, while healthy normal breathing is abdominal or diaphragmatic. It is very small in amount (only 500 ml of air per one breath at rest) so that healthy people usually do not feel their breath.


## Find your type of breathing at rest

Do you breathe using the diaphragm or chest at rest? Check yourself.

**Easy test.** Put one hand on your abdomen (or stomach) and another one higher, on your upper chest (see the picture on the right). Relax completely so that your breathing dynamic has little changes. Pay attention to your breathing for about 20-30 seconds with both hands in place. (You want to know more about your usual unconscious breathing and find out if you have chest or abdominal breathing.) Take 2-3 very slow and deep breaths to feel your breathing dynamics in more detail.

Now you know more about your usual breathing pattern. In order to be certain, you can ask other people to observe how you breathe when you are not aware of your breathing (e.g., during sleep, while reading, studying, etc.).