

## Breathing for Better Health and Energy

by Kate Montgomery, M.T., H.H.P.

Breathing. . . It sounds easy. Breathing is so natural and automatic that we take it for granted. The importance of breathing is so understated. Our very life existence depends on it. But did you know that you can make every breath you take better? You can by making one alteration: That is to breathe using your diaphragm muscle. Belly-breathing, yoga-breathing, or 3-step breathing all mean:

### Diaphragmatic Breathing

Diaphragmatic breathing consists of 3-steps. As you inhale, your diaphragm moves downward, expanding the volume in the thorax, expanding the lower lobes of the lungs, moving upward expanding the chest, where the middle lobes of the lungs and heart lay, even farther upward to the clavicular or shoulder area to the upper lobes of the lungs. Exhaling passively ready to begin again! How wonderful, a full breath of air!

Unfortunately, most people breathe from their chest. That is an inefficient way to breathe. Chest breathing takes more work to accomplish the same ventilation/perfusion ratio (air to blood mix) resulting in increased respiratory rate and increased work load on the heart. Chest breathing also gives rise to what is called the Fight or Flight syndrome. Symptoms of increased tension, anxiety, restlessness, shallow breathing, all caused by stress. We don't always realize or notice the change in our pattern of breathing during stressful situations. The balance of mind and body energy is disrupted. The mind becomes disorganized and confused, while the body becomes uncoordinated and unstable. Replacing the breathing pattern with diaphragmatic breathing creates a deeper sense of relaxation and mental calm and allows you to think more clearly. The body becomes less tense as the muscles relax.

Physiologically the results gained by diaphragmatic breathing are astounding! "The pericardium, the sac surrounding the heart is attached to the diaphragm." "As you breathe deep, the diaphragm descends,

stretching the heart downward toward the abdomen." "When the lungs are full, this gives a gentle massage to the heart." "As the diaphragm relaxes, it massages the liver and the pancreas and helps to improve functions of the spleen, stomach and small intestine." (See reference 2.)

### Diaphragmatic Breathing - Reactive and Hypertonic Muscles

A study was done by Systems D.C. in 1976 with the use of a Vitalor machine which measures maximum expiratory flow rates and vital capacity. The study suggests that the psoas muscle is reactive to the diaphragm. By correcting the hypertonic psoas the vital capacity should improve 4% to 7% as tested on the vitalor. The rib circumference on inspiration will have a gain of 3.7 cm. This increased circumference is primarily in the lower thoracic cage. For every 1 cm of increased expansion, there is an increase of 200 ml of vital capacity. (See reference 1.)

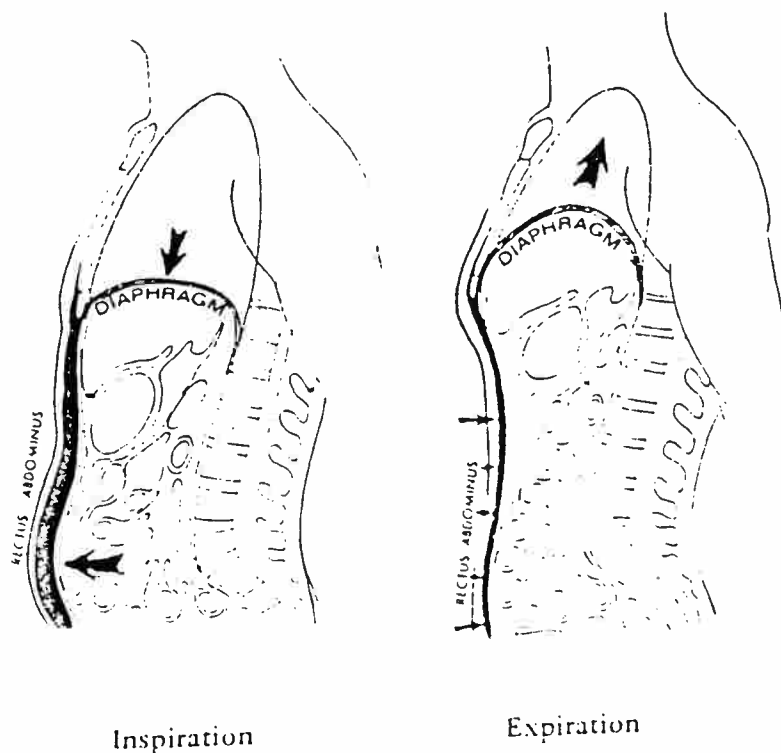
I found this to be true, as to the increased expansion of the lower thoracic cage. I would instruct my clients in Diaphragmatic Breathing, muscle test for its hypertonicity, and then use the Diaphragm Release Method to reactivate the Diaphragm muscle. Using a tape measure, I would measure the lower thoracic expansion. There was at least 200 ml. or more depending on the client. The reason for this increase is that the lower one-third of the lungs are used. The Diaphragm muscle due to its inactive state is hypertonic. Even though you diaphragmatically breathe, not all of the muscle fibers will release and become active again. In order to release these muscle fibers you perform the **Diaphragm Release Method**.

Before I tell about the **Diaphragm Release Method**, let us see how you breathe diaphragmatically. The picture at the top of the next page from Ref. 2 shows a good illustration of diaphragmatic breathing.

On inspiration, the abdominal muscles and the diaphragm muscle extend outward, the diaphragm muscle moves downward increasing the volume of the lungs, expending the lower, middle, and upper lobes of the lungs. On expiration, the abdominal muscles relax and flatten, while the diaphragm muscle fibers lengthen, decreasing the volume in the thorax. Ready to begin again.

To teach someone to breathe diaphragmatically, have them lie down in a quiet place. Have them focus on the upper abdominal area. Have them place their hands on the abdominal area. Instruct them to inhale, pushing their abdomen outward, inhaling slowly, feeling the air rise upward to the chest and then rising to the shoulder area. The breath should be fluid and relaxed. Exhaling passively. This takes practice. The exercise might feel awkward at first. With practice and concentration you can retrain yourself to breathe only diaphragmatically.

### Synergistic Effect of Rectus Abdominus Muscle and Diaphragm on Forced Expiration



### Muscle Testing for a Hypertonic Diaphragm

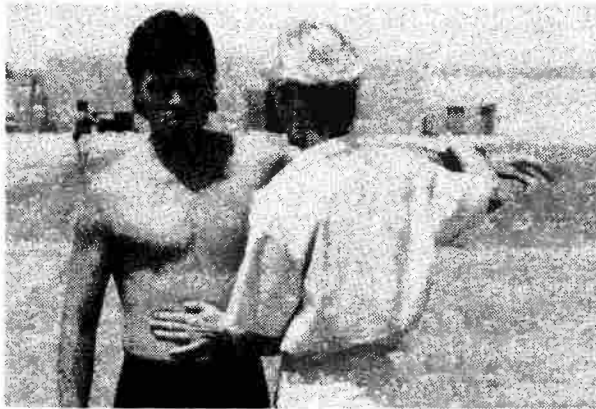
There are 4 steps to balancing and releasing the diaphragm:

1. Muscle test for a hypertonic Diaphragm.
2. Sacral Rock
3. Respiratory Spinal Extension
4. Diaphragm Release.

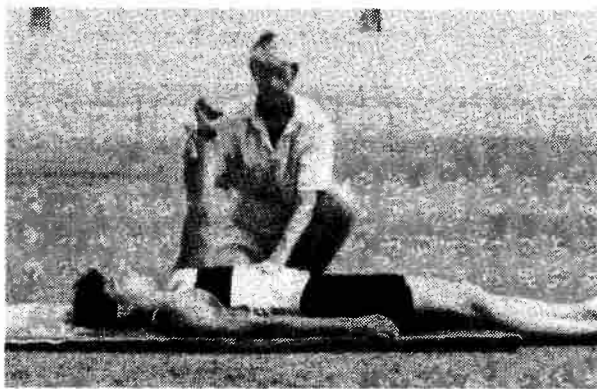
Steps 2&3 reconnect the solar plexus and sacral plexus of the autonomic nervous system.

A hypertonic Diaphragm muscle is a muscle that refuses to lengthen. When a muscle is not used, it stays in a contracted state and atrophys.

Sports Massage Therapist Kate Montgomery in pictures A&B, is muscle testing David Hemingway, a triathlete, for the hypertonicity of his diaphragm.



PICTURE A



PICTURE B

### Testing Procedure

- The athlete can be standing or lying down.
- The therapist asks the athlete to extend his arm (using the deltoid muscle.) straight up with the elbow locked. As in picture B.
- Therapist instructs the athlete to hold his arm in that position, while she lightly presses on the wrist to bring it toward the ground. As in pictures A&B.
- Instruct the athlete not to "strong arm" the therapist, but to let the arm fall if it feels like it.

### To Test the Diaphragm:

- The therapist places one hand on the upper abdomen of the athlete and one hand at the athletes extended arms' wrist.
- Instruct the athlete to inhale diaphragmatically, hold his breath and push his abdominal muscles outward and hold taut.
- Ask the athlete to hold his arm as you try to bring it toward the ground.

- If the arm comes down or feels shakey, the diaphragm is hypertonic.
- If it holds strong, test the sacrum to see if it is in alignment.
- Have the athlete do the **Sacral Rock & Respiratory Spinal Extension.**
- Retest the diaphragm as before.
- If it comes down or feels shakey still, the diaphragm is hypertonic.
- Perform **Diaphragm Release Method.**

### Sacral Rock



FRONT TO BACK ROCK

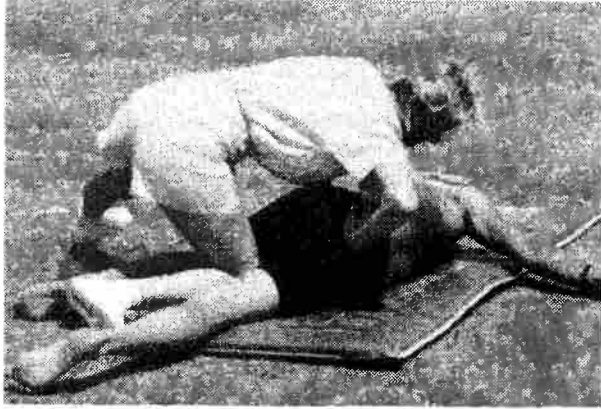


SIDE TO SIDE ROCK

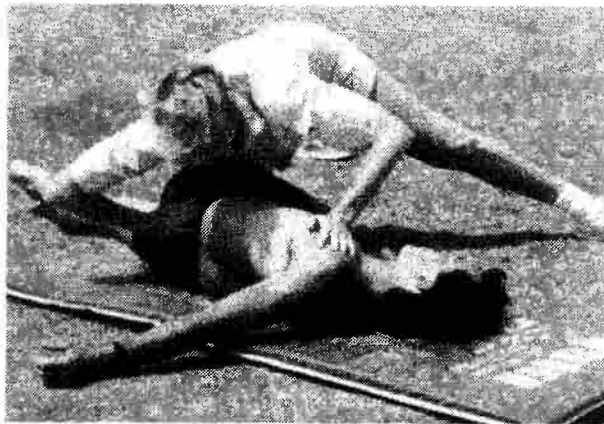
As pictured, sit on a hard padded surface with knees bent and raised. Rock front to back and side to side 3 times each direction. The Sacrum is known as the "pump" for the cerebral spinal fluid

### Respiratory Spinal Extension

The spinal extension is done to release the sacrum and stretch the whole spine. This is a gentle stretch of the spine done with the synchronizing of the breath.



PICTURE A



PICTURE B

- Therapist positions her body over the athlete for good leverage. One hand placed above the breast area near the shoulder, the other hand palm down on the sacrum.
- Instruct the athlete to inhale diaphragmatically, as he exhales, **gently** in a twisting motion, press down on the area above the breast and the sacrum, in opposite directions. Stretching the spine, as pictured above.

### Diaphragm Release Method

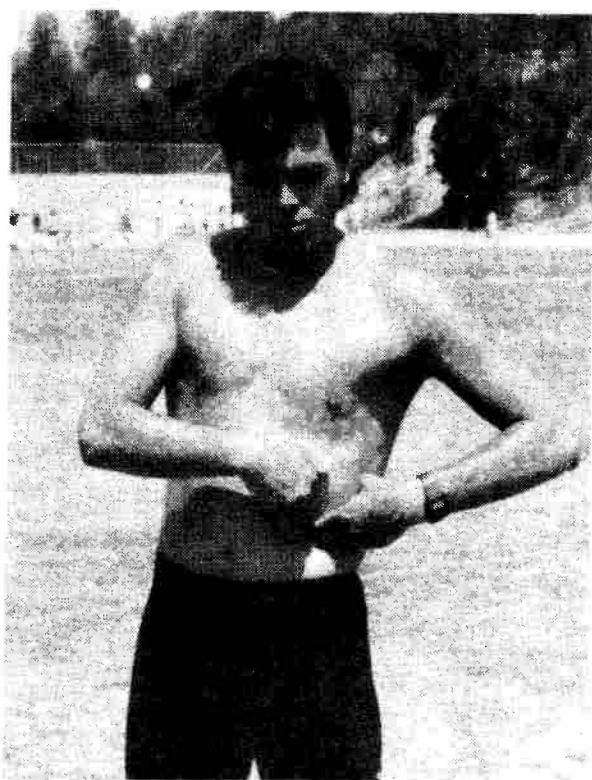
- The Therapist instructs the athlete to inhale Diaphragmatically, hold his breath and push his abdominal muscles outward and hold taut.

- The Therapist takes her/his fingers and presses in and down along the edge of the rib cage of the abdominal cavity. Avoiding the middle where the sternum and xiphoid process is. Start at the apex of the rib cage. Push in and down, moving laterally. Do this 3 times to each side. Have the athlete exhale. Retest the Diaphragm. Repeat till the arm locks and doesn't shake.

As shown in the pictures below and at the top of the next page, David Hemingway shows how you can release your own diaphragm. By holding your breath, you take out of play the accessory muscles for breathing. You are only concerned with the diaphragm muscle.



As pictured, while standing or lying down, inhale, hold your breath, contract abdomen, push your fist in and down along the edge of your rib cage. Do this 3 times.



### Autonomic Nervous System

In the autonomic nervous system, the nerves travel down along the spinal column and innervate the different organs and muscles of the body. These branches are known as plexus: The diaphragm is innervated by the solar plexus, as the branch travels farther down it reaches the the sacral plexus. If the sacrum is out of alignment and the diaphragm is inactive, the nerve pathway is disrupted. Both need to be functioning and in proper alignment to keep the body's energy from being short-circuited. This is my own theory based on numerous clients I have worked with. By teaching people how to breathe diaphragmatically, releasing a hypertonic diaphragm, rocking on the sacrum, respiratory spinal extension for stretching the spine, all these will connect your energy system once again. A graphic illustration of the spinal plexus from Ref. 2 is shown on the next page.

### The Athlete

For the athlete who needs to gain as much strength, stamina and endurance as possible, this method of diaphragmatic release is wonderful. The best thing about this technique is the athletes can do it themselves.

One major incidence that I saw totally eliminated due to the diaphragm release was the feeling of being sick or nauseated after a competition or the cramp in the side that makes you slow down. Have you ever had these symptoms? Diaphragmatic breathing and release can eliminate this.

To stress the importance of this method, I would like to tell you about a female 400m. hurdler I worked with.

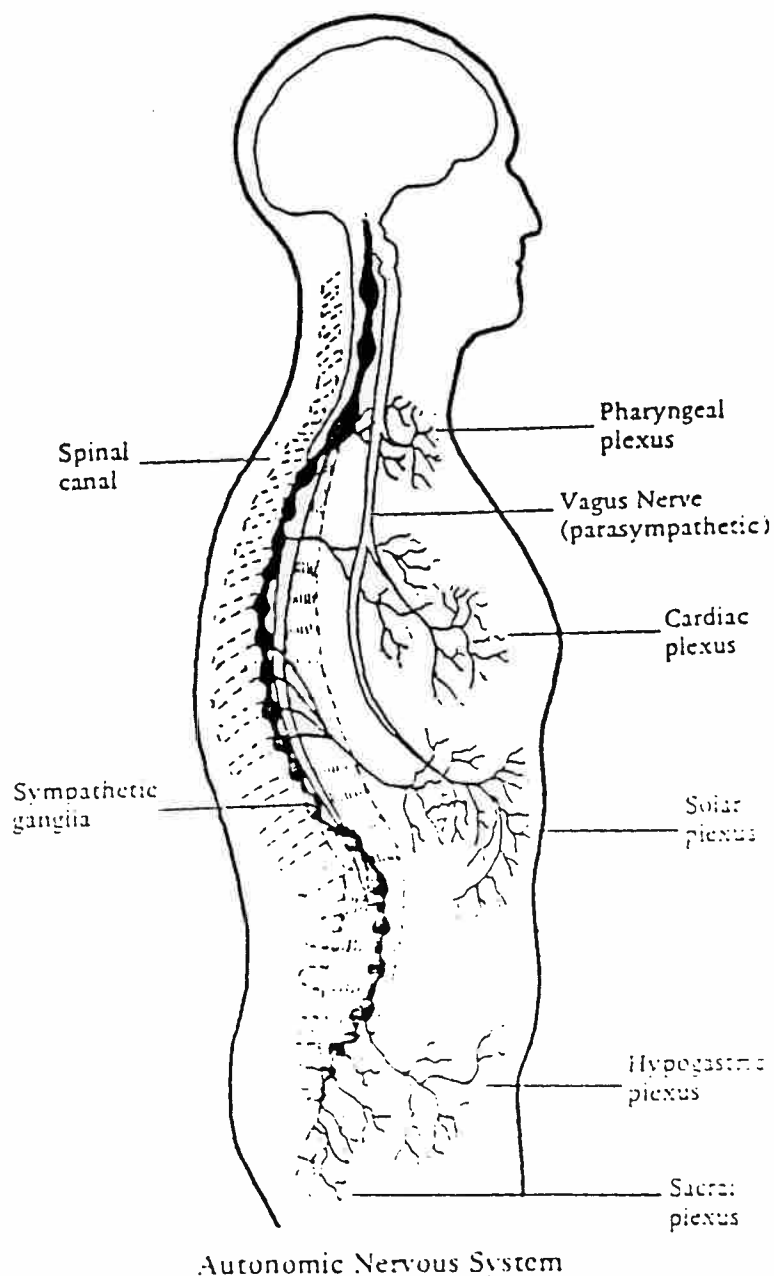
In 1987 at the Mobil Track and Field Championships in San Jose, I met LaTanya Sheffield, who just happened to be from San Diego, CA. She had a history of vomiting after every race. I was giving her a massage, and she was telling me about this. I did a brief muscle testing exam, and every muscle was weak. I noticed that she did not breathe diaphragmatically. Later that evening I explained diaphragmatic breathing and its importance in her running. I taught her how to breathe diaphragmatically, released her

diaphragm, balanced all major muscles in her pertaining to her event, and finished the evening with a light massage. She had been very fatigued up to this point and not sleeping well. Once all was balanced, LaTanya was a new lady.

The next day was the finals of the 400m. hurdles. LaTanya was flying, running faster than she ever had. At the end of the race, she wasn't tired and most of all she wasn't nauseated. She hasn't been since!

LaTanya went on to win at the Olympic Festival in North Carolina that year, took third at the Pan American Games in Indianapolis in 1987, and made the 1988 USA Olympic Team for Seoul, Korea.

By simply learning to breathe correctly and reactivating the diaphragm muscle, a whole new Breath of Fresh Air and Energy can be yours!



### References

1. *Diaphragm*, Systems D.C., 275 W. Abrienda, Pueblo, CO, 1976
2. Rama, Swami, Ballantine, Rudolph, M.D., Hymes, Alan, M.D., *Science of Breath*, The Himalayan International Institute of Yoga Science and Philosophy, Honesdale, PA, 1981.
3. Ferreri, Carl, D.C., *Breakthrough for Dyslexia and Learning Disabilities*, Florida; Exposition Press of Florida, Inc, 1984.
4. Thie, John, D.C., *Touch for Health Book*, De Vorss and Co., 1979.
5. Mahoney, Frank, *Hyperton-X*, 738 West Mariposa Ave., El Segundo, Ca. 90245