

From an article on Shakuichi Breathing :

Breathing is the process of moving air into and out of the lungs. Thinking of the chest cavity as a cylinder, one can increase its volume by one of three means:

1. Extending the diaphragmatic floor of the cylinder downward
2. Expanding the walls outward
3. Moving the top of the cylinder upward.

These three types of breathing are termed:

- Diaphragmatic
- Thoracic
- Clavicular

In the first your belly expands, the second your chest expands and the third raises your shoulders. Infants and small children use their diaphragms exclusively for breathing. Chest breathing cannot occur until considerably after birth, not until the bony chest matures. Diaphragmatic breathing fills the lower part of the lungs. Chest breathing fills the middle and upper portions. During normal activity clavicular breathing only comes into play when the body's oxygen demands are very great or one is agitated.

Once the lungs are filled to their capacity, how are they emptied? What results in exhalation? Relaxation! Everyone has had the experience of sighing, or letting a deep breath out in a completely relaxed passive motion. **In normal breathing no muscles contract to push the air out.** It is as if the lungs themselves are pulling the diaphragm up and chest wall in. This is in fact, what happens. The lungs are elastic, and they shrink back to their

original size once the forces which expanded them are released-- much as a balloon shrinks back to its normal size once the end is untied. In forced exhalation, the stomach muscles contract to force the diaphragm upward as it relaxes.

To get this breathing thing down, think of an imaginary ball about the size of a coconut in your midsection. All you're doing when breathing diaphragmatically is moving this ball. If you need, place your hand on your stomach, pretending you have the ball in your hand, then press it in and up--then let it come down and out. Congratulations! You've just mastered a year of Prana yoga.

Usually when someone is asked to take a deep breath they will raise their shoulders slightly, indicating clavicular breathing which, paradoxically, is the shallowest form. To experience this take a deep breath now. If your shoulders don't rise slightly then take several breaths in very rapid succession and you'll notice your shoulders moving.

The three zones of breathing:

- Upper
- Middle
- Lower.

And there are natural sounds which coincide with these zones. Correctly pronounced the mantra Om moves through the zones-- that's its purpose. AAAAUUUUMMMM. Another way to learn and appreciate this is by using distinct sounds. For our purposes we'll use the sounds of four different exclamations.

Ee as in free --When one is very thrilled or frightened.

Ah or Aw --When one is surprised or startled.

Oo as in broom --When one is suitably impressed.

Oh --When one is engaged in acceptance.

The sound Ee is the highest (Clavicular breathing), Ah or Aw--mid-range (Thoracic breathing) and Oo and Oh --the bottom (Diaphragmatic breathing). With these three it is possible to make up a breathing-language which can have startling physiological effects. **There is a direct link between vowel sounds, breathing and physiological states--thus the whole subject of mantas.**

For example:

- Oo Aw (Homa) Moves from Lower to Mid breathing.
- Oo Ah Ee (Huame) Moves from Lower to Mid to Upper breathing.
- Ee Oh Ah (Eoma) Moves from Upper to Mid to Lower breathing.

These and any number of other breathing-language words (mantras) can be created and used to direct and modify breathing, thus physiological states. Adding a consonant (H, for example) to the beginning of words makes them smoother to remember and pronounce. As does the Mm or Nn sound at the end. The core of many mantra systems, for example, is Oo and Ah. However, pronouncing OoAh is a little clumsy and disjointed. Making it Hh Oo Nn Ah creates a flow and a memorable word--Huna. It could be Buna, Cuna, Buma, Cuma, etc. Saying (and/or thinking) the word HUNA moves one's physiology from lower to mid breathing. **Chanting Om (Ah Oo Mm) is to repeatedly invoke the sound equivalent of shifting from mid to lower breathing.** The warrior mantra (who-ahh, as heard in the Marines for example) shifts from lower to mid breathing.

Exercise 1:

Practice each breathing zone until you have them well differentiated. Use of the seed sounds will speed up this process. **Since the lungs are under both involuntary and voluntary control you have a way to consciously teach the non-conscious.** Get a good kinesthetic, auditory and visual sense of each type of breathing and your resultant physiology. Which zone someone uses while breathing (and/or the vowels they tend to emphasize) tells you what their emotional (physiological) state is.

Exercise 2:

Develop a set of breathing-language words for your own use. They will serve as meta-anchors--directing your physiology in the direction you desire. When used quietly or sub-vocally your 'breath' words can automatically shift your breathing hence your physiology hence your mood and resourcefulness. You can now create your very own 'power' words!

Now let's directly explore the subject of breathing with the intention of playing woodwinds. First off, most people's voluntary and involuntary breathing focusses on the abdominal muscles--that's the thing we've got to change. Most people's breathing focusses on the OUT breath instead of the IN breath. As noted earlier, by and large, the OUT breath takes care of itself. For the flute player, the whole trick to proper breathing centers entirely on the IN breath. It's all about the diaphragm (which is a muscle). So breathing is muscular--flute breathing is about switching from

abdominal to diaphragm. Forget the abdominal muscles, they should remain relaxed during flute play. When people get tense one of the first muscle groups to tighten is the abdominal. Relax the belly!

So what's the deal with the diaphragm? As seen in the graphic below, diaphragmatic breathing is just about contracting and relaxing this single muscle. It's a muscle sheet which lies beneath and supports the lungs. In its relaxed state the diaphragm arches upward forming a semi-dome. Remember again, the OUT breath takes care of itself, naturally. It's the IN breath which requires attention. This is when the diaphragm constricts. Its length shortens and as a consequence the lungs fill. When the diaphragm constricts the volume of the lungs increases. It's counter-intuitive, but that's the way it works. In the schematic below, blue signifies lung cavity and red is intestinal cavity.

There are a couple of good ways to get in touch with your diaphragm and strengthen it. The first, is to lift weights. Remember that set of weights you got for your New Year's resolution, the one in the garage? Well, round up some of the flat weights (or something like them), lie flat on your back and pile up a stack on your belly. Now push them upward, as far as you can, full extension. A-one and a-two ... Now notice something and go over it until it sticks in your brain. You pushed the weights upward by taking an IN breath. **You pushed the weights upward by contracting your diaphragm. There's no other way to do it.** An IN breath pushed the weights upward. Even if you think you know how breathing works actually do this exercise, actually lie down

and pump some iron on your belly. Doing this single exercise for less than a minute will clear up any misconception you have about breathing. If you want to strengthen your diaphragm then pump some belly iron on a daily basis. Keep increasing the load.

Let's be doubly clear. You lifted the weights by contracting your diaphragm and that muscle alone. Constricting your abdominals will interfere with lifting the weights. Go over it until it's really clear--the learning part of this exercise is kind of like learning to ride a bike, do it until you 'get' it.

The second exercise is a little stranger. Go to the hardware store and get 5-6 feet of clear, flexible tubing, somewhere around 1/4" ID. Place a bowl of water on the floor. With an IN breath draw water up the tubing as far as you can. You should be able to do at least 3 feet, call it a meter. Practice until you can draw water at least 4 feet (1.22m). This exercise is a very good way to measure the strength of your diaphragm. A standing column of water generates about 1/2 psi per foot, so 4 feet is equivalent to about 2 psi. Your diaphragm should have a rating of 2 psi (or higher) to handle the shakuhachi with ease. The strength training? Draw a column of water 4 feet or more, maybe 50 times a day. In a certain sense this is the preferred exercise: less equipment and measurable feedback.

Let's do a little math. 2 psi, that's two pounds per square inch. So a square of about 7.07 inches on your belly would be around 50 square inches, at 2 pounds each means you should be able to belly press 100 pounds without much difficulty. Or to make it simple, place a thick book on the floor, lie on it belly down and press yourself --same difference.

To play a shakahachi well you'll need to be able to breathe well. If you'll give as much attention to your breath as you do to your shak, things will improve rapidly. So, if you want to be a power breather you'll need to focus only on the IN breath and give your diaphragm some strength training. The diaphragm is a muscle like any other and will respond to resistance training.

The other part of flute breathing? Relax the belly--it'll do its thing naturally.