

Linda's T'ai Chi

Weekly Hand-out March 15, 2020

This Handout should be used in conjunction with Linda's Tai Chi Video "Breathing Exercises" found at "For Students" on Linda's web page.

Like many of you I have been glued to the TV to keep up with the changing environment of the virus SARS-CoV2 and the disease it causes, COVID-19 worldwide. It is very disturbing as each day brings more positive cases and the imperative for us to isolate to avoid infection. Businesses are closing their doors, activities suspended and so far, no end in sight.

I saw my primary doctor yesterday to follow-up on my finger (healing well) and I asked her about the importance of deep breathing to thwart respiratory illness, as much as possible. She confirmed what we know about the importance of deep belly breaths to keep our lungs healthy and to ward off bugs that want to settle there.

I will start with the things we already know about keeping our lungs healthy. These are standard protocols even without a pandemic. So, I apologize to state the obvious but to be comprehensive, I include these precautions here. To prevent respiratory infections we should:

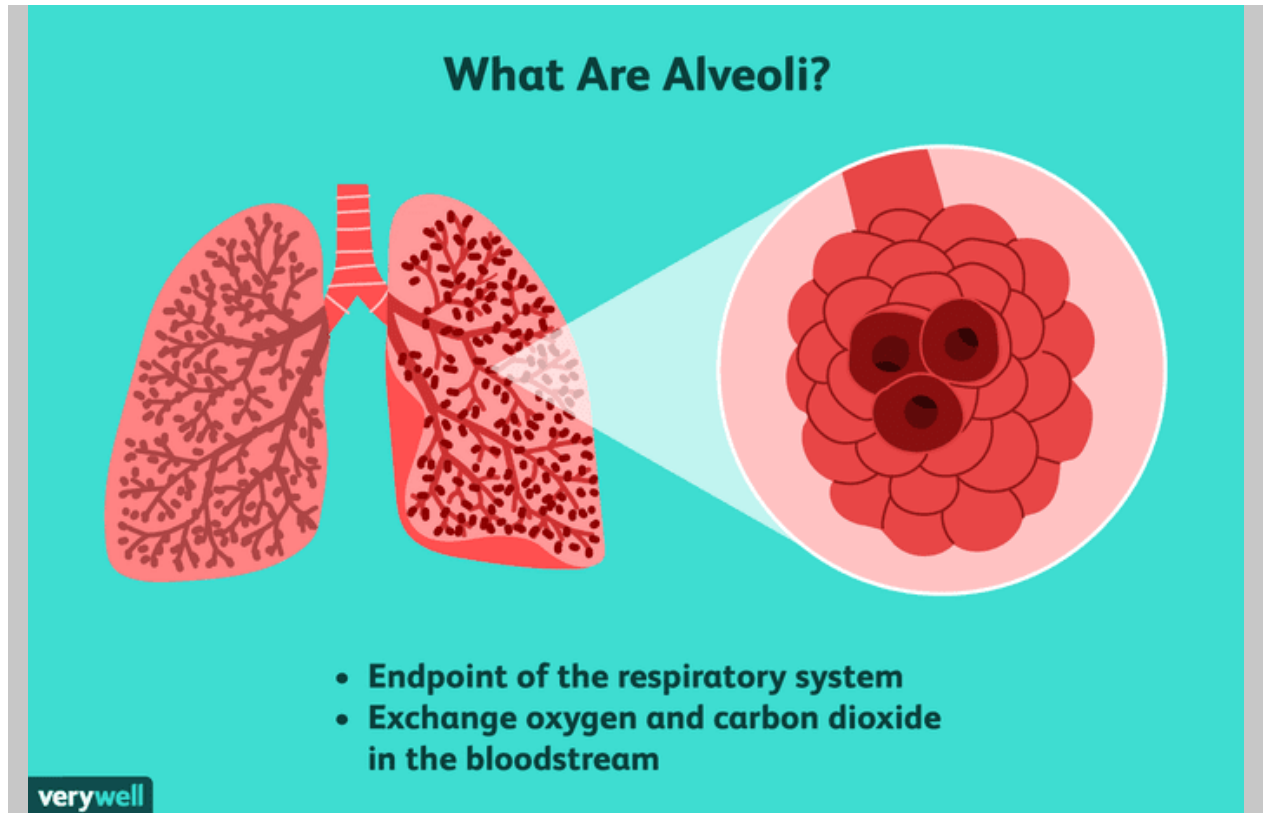
- Wash our hands often with soap and water. Alcohol-based cleaners are a good substitute if you cannot wash. (70% is best)
- Avoid crowds during the cold and flu season. Viruses spread more easily when the air is colder and dryer. But, they can spread all year round.
- Good oral hygiene can protect us from the germs in our mouth leading to infections. Brushing our teeth at least twice daily and seeing a dentist at least every six months.
- Get vaccinated every year against influenza. Talk to your healthcare provider to find out if the pneumonia vaccine is right for you.
- If sick, avoid contact with people. Stay home from work or school until feeling better. Follow the advice of your doctor about how to access care during this time of pandemic COVID-19.

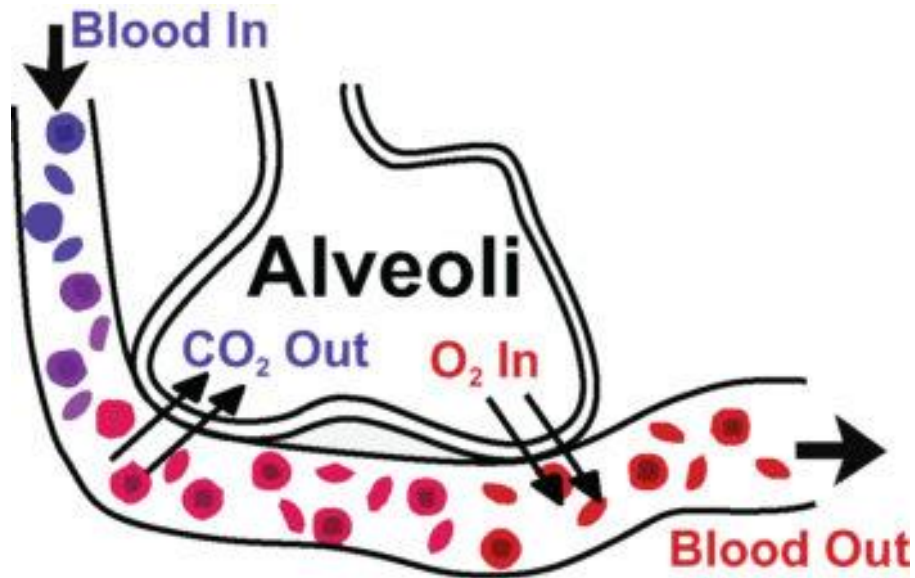
Getting to the Point of the Story

The main point of this narrative is maintaining healthy lungs and how our breathing is essential to this. More specifically, I am writing about one part of the lung, **the alveoli**. The lungs are comprised of many parts- the pleura, the cilia, mucus, bronchioles, capillaries, and finally, the ALVEOLI. Lungs are self-cleaning but we have to pay attention to our lungs to maintain their health.

The alveoli are the very small air sacs at the end of the bronchioles. The alveoli are where the exchange of oxygen and carbon dioxide occur. **Alveoli** are an important part of the respiratory system whose **function** it is to exchange oxygen and carbon dioxide molecules to and from the

bloodstream. These tiny, balloon-shaped air sacs sit at the very end of the respiratory tree and are arranged in clusters throughout the **lungs**.





Deep Breathing keeps our lungs healthy

This is the T'ai Chi Breathing

The act of breathing engages the diaphragm, a strong sheet of muscle that divides the chest from the abdomen. As you breathe in, the diaphragm drops downward, pulling your lungs with it and pressing against abdominal organs to make room for your lungs to expand as they fill with air. As you breathe out, the diaphragm presses back upward against your lungs, helping to expel carbon dioxide

Shallow breathing hobbles the diaphragm's range of motion. The lowest portion of the lungs — which is where many small blood vessels instrumental in carrying oxygen to cells reside — never gets a full share of oxygenated air. That can make you feel short of breath and anxious.

Deep abdominal breathing encourages full oxygen exchange — that is, the beneficial trade of incoming oxygen for outgoing carbon dioxide. Not surprisingly, this type of breathing slows the heartbeat and can lower or stabilize blood pressure.

Lungs have no muscles. They expand to draw in air and contract to expel air with the help of your diaphragm, a strong wall of muscle that separates your chest cavity from the abdominal cavity. Your ribs are bones that support and protect your chest cavity. They move slightly to help your lungs expand and contract. So, your lungs, muscles and bones work together as you breathe. This is an important concept in T'ai Chi- the coordination of our muscles, our bones and our breath.

This next part is really important

As we age, changes in our body affect our lung tissue, muscles and bones, which all impact our breathing. There are several body changes that happen as we age that may cause a decline in lung capacity:

- Alveoli can lose their shape and become baggy.
- The diaphragm can, over time, become weaker, decreasing the ability to inhale and exhale. This change will only be significant when exercising.
- Ribcage bones become thinner and change shape, altering the ribcage so that it is less able to expand and contract with breathing.
- Nerves in airways that trigger coughing become less sensitive to foreign particles. When particles build up in the lungs, they can damage the lung tissue.
- As we age, our immune system may weaken, leaving us more vulnerable to infections like influenza (the flu), the new COVID-19 and pneumonia.

These changes can result in symptoms such as tiredness and shortness of breath. These changes can also leave you at increased risk of respiratory infections like pneumonia and other viruses that are out and about.

8 Steps to improving breathing

1. Use your diaphragm- big, deep belly breaths. As we concentrate lowering the diaphragm, our breaths become deep and cleansing. Avoid short rapid breaths and do not let your shoulders rise and fall. Shoulders DO not breathe.
2. Breathe deeply. Deep breathing can help us get closer to reaching our lungs' full capacity. Allow the ribs to expand and to float open like wings. Let the chest expand. But, remember, keep the shoulders low. Shoulders do not breathe. Think OUT and not UP. .
3. Long Exhale: Our exhale should be slow and even and **twice as long as the inhale**. This engages the parasympathetic nervous system (the calming nervous system) and the immune system. Don't strain. This should be natural and easy. We breathed like this when we were babies and children. It is natural. We just forgot how as we got older.
4. Maintain a healthy tall posture. Since the lungs are soft structures, they only take up the room that you make for them. Sit or stand tall from the waist.
5. Stay hydrated. The lungs need water to remain healthy as does our entire system.
6. Laughing is a great exercise to work the abdominal muscles and increase lung capacity. It also clears out your lungs by forcing enough stale air out that it allows fresh air to enter into more areas of the lung."
7. Stay active. Keep moving, walking, and practicing T'ai Chi. Engage in NEAT (non exercise activity) These will keep your lungs and heart healthy and improve our mood.

Moral of the Story

Learn to exhale, activate your diaphragm, breathe deeply, and work on fixing your posture. Simply thinking about better breathing will trigger positive immune responses. When we slow our breathing and reset our bad breathing habits we send signals to our body that all is well.

The End

Stay well

Peace,

Linda