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The Lymphatic System and Yoga: Integrating Holistic Strategies into Therapy

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- [Host] The course today is The Lymphatic System and Yoga: Integrating Holistic Strategies into Therapy. Our presenter today is Kimberly Burns. She has treated in a variety of populations and settings from early childhood through geriatrics with acute and chronic diagnoses such as developmental disorders, musculoskeletal dysfunction, orthopedic conditions, sensory integration dysfunction, lymphoedema and other conditions. Through managing short-term rehabilitation departments, Kim developed awareness for seeing the client as a whole due to the nature of screening patients and managing their therapy care. Along with extensive medical experience and training, she manages her own health with the simple techniques influenced by the lymphatic system and yoga. After earning her occupational therapy degree, lymphoedema, yoga for rehabilitation and yoga for the special child certifications were attained. In addition, Kim is part of the Holistic Chamber of Commerce Occupational Therapy Forum in Southwest Florida and published author in a local magazine writing about health and promoting awareness of improving health through self-care. Welcome Kim, so happy to have you.

- [Kimberly] Thank you and it's great to be here. This one-hour course, we're gonna look at the benefits of adjusting the lymphatic system for better health with the support of yoga as a lifestyle activity and not just an exercise. I like to think that there's a lot of talk about home exercise programs and people tend to ignore the programs, but when you make it part of their lifestyle it becomes something that they just do routinely, and they seem to enjoy it a little bit more. So after this course, you'll be able to name three yoga positions that can be integrated into a home program, you'll be able to identify two reasons to teach to clients on the importance of supporting the lymphatic system for decongestion, and describe two ways to incorporate circulation and yoga into functional activities and self-care tasks. So I was born with clubfoot and found to have as a gene HLA-B27. These genes effect the musculoskeletal system as well as your brain biology. My mom and dad passed away in their early '70s, suffering for the last

20-some years of their life. So they were my motivation to get off medicine and take control of my body and health. My mother's legs used to weep and swell. The wrappings that they did from the home care, the nurses, they never seemed to help. As a matter of fact they seemed to cause more damage, and so this is what led me to a course on lymphedema. I came to understand that once your circulatory system begins to break down, your body can become extremely susceptible to pressure, even from a regular sock or bra. Our bodies require a certain pressure gradient that allows fluid to move unrestricted from the tips of our toes and fingers back to the heart. The lymphatic system is just below the skin and can be easily damaged.

So these were my parents, and they both ended up in wheelchairs, and that was something that I was not going to allow to happen. "The doctor of the future will give no medicine "but will interest his patients in the care "of the human frame, diet "and in the cause and prevention of disease." Thomas Edison. In order to prevent and restore, we need to embed strategies that hit our core, the activities we do all the time to keep our muscles remembering structural alignment. This is step one. A natural influence is needed more these days. We need to stop trying to cover pain and fix it with medication. We, as a society, need to stop relying on products and medications to make us whole. Our body has so many ways to heal itself and some of them require hands-on assistance; and balance, equal balance, everything in moderation, but balance is not always 50-50. Our heart isn't perfectly centered. The lymphatic system collects more on the left than the right. If we look at reducing the negatives that we put in and on our body and outweighing them with the positives, our body will then be more balanced to handle fighting off invaders rather than waiting for that additional negative to tip the scales.

As you can see by the picture here, this is where the upper body is divided, and your left side will be collecting from your lower body as well as the left side. Prior to my experiences in education in the lymphatic system, I saw the body as being able to be

repaired in parts. If you have shoulder pain, you attend to that area. Massage, ice, pressure, eased in. You have a swollen hand? You perform a retrograde massage. You work from the fingers and you push it up the arm. Unfortunately, when a retrograde massage is done that way, it is not the most efficient way to move fluid. In order for the lymphatic system to clear the system efficiently, you consider five cars in a row. How can car number five get out if one still needs to move?

So we are now going to move to the video, Yoga for Circulation. Everybody take a moment and make sure your chair is safe, feet on the floor and sitting up tall. Going to begin a little lab. So let's begin. Come to the edge of your seat, sitting up straight, tucking your chin in, your shoulders are back and down. Spinal alignment, let's ground your feet, maybe lift your toes, stretch 'em out, plant them to the floor, focus your eyes in a neutral gaze, and become aware of your breath. Breathing in your nose and out of your nose. If you're unable to, exhale with a hee sound. Your breath should become audible through inhale and exhale, constricting the glottis, Ujjayi Breathing. Notice where your breath is moving to. Begin a two-part breath, really focusing on expanding at the low ribs and the chest, bracing your belly, inhaling, filling your low ribs, your chest, exhaling, tightening belly, low ribs and chest. Shoulders back and down, sealing your spine, strengthening the small muscles. Continue breathing, low ribs, chest. So take a moment to adjust yourself. And repeat after me. Om. Om. Om. Om. Om. Om. Now inhale, without moving your shoulders, and as you exhale, roll your shoulders up, back and down, sealing your spine together. Let's do that one more time, inhale, exhale, roll your shoulders back and down.

Gonna begin tapping. Start from proximal and work out distal, back to proximal again, encouraging the fluid to be removed from the venous angle. Keep your eyes neutral and moving with your head as you turn your head to the left. Take it slow. Take another breath as you inhale, exhale, turn just a little bit more. Inhale as you come back to neutral. Exhale, rotating your head to the right, keeping everything in alignment.

Inhale as you rotate back to neutral. Take a breath in, and as you exhale, lift your arms to align with your ears the best that you can without constricting that venous angle. Inhale and stretch slightly diagonally to the left, stretching up and over, allowing your arm to release to the floor. And stretch both just a little bit further. Inhale, return back to neutral. Inhale again and exhale as you raise your arms. And repeat to your right side, lifting and stretching up. Exhale, allow your arm to lower, and stretch that down towards the ground as you're stretching your left arm up the best you can. Inhale, return to neutral. Bring your arms to your back for a small backbend, gently bracing, supporting again, keeping eyes in neutral and moving your whole upper body together. Exhale, coming to neutral and going into a spinal twist, rotating to the right, exhale as you're twisting. If you need to take a breath midway, exhale again, try to go a little further, inhale back to center and move to the left, rotating altogether as one piece. Relax back to neutral.

Take a moment for a deep breath. Exhale. Extend your arms. And exhale slowly, leaning forward at the hips. Take a break if you can't make it all the way. Try again, exhale, only go as far as you're able to without rounding your back. If you need to, rest on your legs. If you're able to go fully down to the ground, allow your body to just become a ragdoll and enjoy a little inversion. When you're ready, brace your belly, take a deep breath, raise your arms to your ears if you're all the way at the ground. And exhale, raising yourself up. If you kinda half sitting, kinda gently roll up and use your thighs to help and support you.

Again, accommodate yourself, adjust your body back to comfort and alignment. Working on a little balance to get your positioning where you can lean back and move forward in the chair comfortably. Take a breath in and exhale. Lean back, legs up, arms up for boat pose. Keeping a good spinal alignment, exhale to a seated pushup. Coming back down, going back into elevation of your legs and your arms. Exhale, keeping a nice straight spine, pushing straight up. Paying attention to chin tuck,

shoulders back and down. And then as you come to a seated position, again, accommodate yourself, take a breath in exhale . And we'll begin our restoration. So lay back as best you can with a neutral spine. I rest the back of my head on the top of the chair. You can put your feet out a little and put your legs in external rotation, allowing the hip muscles to relax. Being to breath by inhaling the most you can with good alignment and imagine your spine as being sealed, so inhale, belly, low ribs, chest, inhaling as much as you can, bringing your chin tucked, your shoulders back and down, and exhaling, continuing to seal and strengthen the spine while flushing the fluid back to the heart, belly, low ribs, chest. As you inhale, allow your body just to melt, releasing all tension. Inhaling, belly, low ribs, chest, shoulders back and down, exhaling, belly, low ribs, chest. Inhaling and just allowing your body to melt into the chair or the ground, feeling no more tension. You can imagine that color of your choice as you breathe in, filling your lungs, circulating out, shoulders back and down to the body and the extremities, exhaling the old stagnant energy, squeezing and moving the toxins from the tissues.

Take the next few moments to surrender to the calm and peaceful sensations, allowing them to tune and tone your body and mind. You will return to awareness as you leave it through sound. So let's begin to move slowly. Take another deep breath in, start to wiggle your fingers and toes, open your eyes, sit up. We're gonna take a little right nostril breathing, so exhale as fully as you can. Take your left thumb, cover your left nostril. Inhale through your right nostril, exhale through your right nostril. Take a couple breaths this way. And you should feel more awake and alert. Namaste.

So I hope everyone enjoyed that, and let's find out a little bit of what we may have just worked on. Spinal alignment, blood and lymph circulation, the relaxation response, lung capacity, oxygen circulation, relaxing the heart rate, blood pressure management, stimulating deep organs: thyroid, parathyroid, baroreceptors, parasympathetic system; moving your digestive system, trunk stabilizing and strengthening, static and dynamic

balance, weight shifting, visual tracking, gaze, bilateral coordination, crossing midline. Also did 15-minute activity tolerance, some dynamic seated activity, motor planning, safety awareness. Safety awareness a little bit, you know, thinking about, like, sitting at the edge of the chair, or did they know to not go so far or maybe not to do it in a chair with wheels, but sometimes, you know, patients, they only have wheeled kitchen chairs that they can sit in, so we have to make sure that they're aware. And dressing and bathing, when we were doing a little bit of forward bend, you know, how many times can't people reach their feet. They hold their breath trying to get down there. Getting up from a chair. Again, picking stuff up from the ground, being able to get to the ground, not holding your breath. Putting stuff away in the kitchen, maybe some overhead lifting, reaching up, you know, twisting and rotating. Driving, people have a tendency to allow their chin to go forward, they don't utilize their headrest to keep that spinal alignment. Again, overhead lifting, food prep. Again, twisting, rotating, toileting.

For toileting, it's kinda the anterior-posterior pelvic tilting that I was going for. I worked a lot with people trying to get them dressed in the morning, and constipation was big thing. So by anterior and posterior tilting, and even kinda rotating and working on the pelvic movements and muscles and teaching them how to relax helped us get out of bathroom a little bit faster. Eye exercises, we always need to be working our eyes, they're all over the place, they get visually stimulated by everything, so we have to retrain them. So as you can see, hopefully, from your experience that you really provided your body with a lot of sensations that left you feeling positive. That's what the lymphatic system did for me, it connected mind and body. The lymphatic system and the glymphatic system connect the body and the brain. We're just not individual parts. The lymphatic system clears the blood. The glymphatic clears the cerebrospinal fluid. And they all drain into the venous angle right here at the neck. System of our body work collaboratively and they influence one another. If we injure a knee, our tendency is to focus on the injured area. Yet when injury or breakdown is due to or done to someone who has a disease process like arthritis, wrist-fracture swelling can

end up being a whole extremity congestion because you're not clearing the already congested system of the body before trying to push it up into the arm. The cars right here. So here we are here, but here's car number one, so we have to clear that one, then that one, then that one, and then we get to keep going back up.

Yoga is a whole mind-body practice, which is really good for moving fluid. But I'm gonna talk about that in a moment here, and we'll go a little bit more into the glymphatic system. So it was newly discovered about four to five years ago. Until then, they only thought it really drained up into the brain, they didn't realize that there was a system that was draining our cerebrospinal fluid. So it was found that there was an alternative way for T-cells to exit the brain from the meninges that are attached to the skull. It's an efferent route, it runs along the blood vessels of the superior and sagittal and transverse sinus. So it drains, it's more extensive at the base of the brain, and it exits along the cranial nerves. It drains deep to the deep cervical nodes.

So my thoughts here is the glymphatic system, now if there is a peripheral lymphatic system failure, that leads to peripheral lymphedema. Is there glymphedema, and what does that look like? Does that look like Alzheimer's or multiple system atrophy, or corticobasal degeneration, multiple sclerosis, Parkinson's? Every chronic issue we see effects the health of the lymphatic system. We cannot live without a lymphatic circulation. It supports the cardiovascular system, and it should start by doing about 10 to 20% of the waste removal process. There's also certain proteins that will not permeate the veins for reabsorption so they must use the lymphatics to get out of the tissues. They're also using lymphatic pathways now for alternate drug absorption routes. So as you can see, cardiovascular system here. You've got the lymphatic system on top of it. They're just so similar. Yoga philosophy is an integral part of the practice. Hints of it are sometimes delivered in class, but when a person becomes a serious yoga practitioner, they begin to study it. You could begin to understand its dedication to the body as a whole and how we not only do asanas and call your

practice yoga. It wants you to accommodate yourself, ease into positions, and really care for the inner sensations of your body: self-care. No other exercise in America is woven into such healthy behavioral philosophy. Actually, American exercise is notorious for cultivating competitive and even unhealthy philosophies like no pain, no gain and push harder.

Yoga is the instrument of self-care, whose tunes you can change to accommodate yourself as you grow. I wanna be able to try and help change the perception of yoga, 'cause I feel like this is what people typically think of when they're told, "Oh, go do some yoga." There are many different styles of yoga, and all of them can be healing. You have to experiment and find the one the resonates with you. Do you need a gentle approach, or are you new to yoga? Hatha yoga would be a great choice along with Yin Yoga. Is you focus on musculoskeletal alignment and you enjoy using props. Iyengar Yoga, Integrative Yoga or Restorative may be for you. Are you healthy and athletic, needing a challenge? Vinyasa, Ashtanga, Power Yoga or Bikram Yoga maybe be for you. The lymphatic system relies on contractions, pulsations, vibrations of the body to support movement of fluid in its vessels and lymph nodes. Yoga addresses all body movements and points and positions its practice supporting the lymphatic system from every crevice. The lymphatic system moves through muscle pumping.

So why the lymphatic system and yoga? Well circulation, it's one of the most important functions of the body: delivery of oxygen, nutrients, removes waste, transport cells. Without it, digestion and elimination would suffer, toxins would accumulate. The cardiovascular system usually gets all the fame for promoting circulation: the heart, arteries, veins, capillaries. Yet the lymphatic system is called the second circulatory system, it is just lesser known. The lymphatic is the cardiovascular system's assistant and backup. When that system fails, the lymphatic system steps in. Cardiovascular system in healthy, non-stressed state removes 80 to 90% of the body's waste. The lymphatic system is the other 10 to 20. Gravity is always a stressor force on the

circulatory system. Atmospheric pressure's always challenging our body as well. When the systems of the body become disregulated, these pressures can take a toll on our circulatory system's function and ability to maintain homeostasis within the body.

So again, here we have the cardiovascular system. And then lymphatic system. And their similarities are that they both have superficial and deep organ systems. They have similar vessel structure. They contain immune cells, blood plasma, serum proteins, a common pathway to the heart. They both protect from infection and disease, and they both participate in waste removal. Their differences are is that that cardiovascular system is a closed system. Whereas the lymphatic system only drains from the extremities and returns to the heart. There is not a central pump in the lymphatic system as the heart pumps the circulatory system. Yet, we do have the diaphragm and deep breathing to help stimulate and start to move fluids from the lower body up through the thoracic duct. The lymphatic system also does not deliver nutrients. Circulation in the lymphatic system is interrupted by lymphatic nodes. The lymphatic system's main purpose is to remove damaged cells and provide protection by transporting waste and supplying immune cells. That's what the lymph-obligatory load is called.

So let's take a moment here and watch the video. Here we have a closeup look at the vascular system at the capillary level. This is reviewing the peripheral lymphatics, not the glymphatic system. The blood is made up of 40 to 45% red blood cells by volume. Within the blood, you may find white blood cells, platelets, water, nutrients, fats, salts, proteins, glucose. Some of these will leak out in the interstitium to become part of the extracellular matrix. You will not find red blood cells in the extracellular matrix or lymphatics. Proteins are difficult to diffuse readily and tend to stay within the blood system. Proteins that to get out, like albumen, are typically smaller. In a lesser amount, we will also find large proteins such as immunoglobulins. While the lymphatics share a common material with the blood, it also has some of its own nodes which include

bacteria and proteins derived from extracellular may-six postusing, tissue growth, cellular metabolic activities, cell death. You will also find tissue specific material in the lymph located near the different organs such as chylomicrons, which are collections of fat found near the abdominal area within the lacteals.

So how does this exchange work? Through osmosis, filtration and reabsorption. Cellular material is located through its ability to permeate cell walls and a pressure gradient. Proteins have a tendency to stay in blood circulation. Permeability depends on the tissues and microstructure. Proteins are water-loving and contribute to the pressure system of the body. Colloid osmotic pressure, or oncotic pressure, is induced by proteins. This pressure is normally 25 within the plasma and the circulatory system. Normal blood capillary pressure in the arteries is 29. This results in a passive filtration. Reabsorption is the reverse. The venous blood capillary pressure is 14, while the colloid osmotic pressure is 25, so water will be reabsorbed back in. As the water is being filtrated, it washes over the tissue cells carrying nutrients and other solutes. Fluid returning will take waste products. What's left is for the lymphatic system to remove. Not in the scope of this course is the taxing of clothing, shoes, atmosphere, positioning on the pressure regulation of the body.

If we are constantly cutting off flow, we will begin to change the way the body is supposed to work. How easily can waste be removed with all the forces and blockages against it. When the cardiovascular system becomes overloaded with excess material or venous dysfunction, blood pressure increases or leaky valves cause more filtration into the interstitium of blood contents. This increases the lymphatic load. For healthy people with functioning lymphatic system, there is a not a problem. The lymphatic system has a safety factor: the ability to increase its workload. It's different for everyone. Once the lymphatic system is unable to transport the excessive workloads, it breaks down and fluid leaks into the interstitium, and that is where it becomes lymphedema. This causes high protein edema, increased tissue pressure, congestion,

leading to hardening of the tissues, high susceptibility of infections, cellulitis among them. The lymph vessels become fibrotic when proteins in water are stagnant. Treatment for this is to use pressure through manual lymph drainage, compression, wrapping and muscle pumping through exercise, giving us the ability to manually support and move lymph to functioning nodes or vessels. This is also where yoga can support the lymphatics, as long as attention is placed on keeping the body open and posture sequence. By opening blockages and maximizing flow, we can better support circulation and go from a congested body to one that is circulating efficiently. So as you can see, yoga supports circulation, because the lymphatic system needs to be assisted in its movement as the heart does not directly pump lymph as it does blood. Here's where yoga provides all the tools necessary to tune your body and move fluid around in the deepest parts. Chanting: begins movement of fluid at the venous angle, proximal to distal, clearing to reduce congestion. Getting vibration to the core of your body. There's a chant that is ha-ri-om, which when you practice it, you can really feel how the ha is focusing on your solar plexus, your spleen, your kidneys, your liver. Ri, you're hitting your thyroid, your parathyroid, your cervical parasympathetic nervous system. The om is your brain, you've kind of hit everything.

Meditation helps you to slow your mind. We are always in motion and constant thinking that we need to do opposite, and that means to calm and slow our mind. Movement, pumping the body helps remove the fluid. Sound healing helps with vestibular stimulation, forces of gravity. Breathing, you're flushing, you're pumping, pulling fluid up from the belly. And your restoration is where your body is repairing. We need to do that on a regular basis during the day, yet at night, we need to be really focused on that as the lymphatic works at night to clear all the fluids. So your best pose is gonna be one of alignment, openness, maybe a little bit of elevation for drainage, pillows.

So why the lymphatic system and yoga? Well breath. Everyone breathes. Everyone can do it. It doesn't cost anything. Not everyone takes the time to become aware of their

breath and how it's moving. Where is it filling, what muscle are really doing the job of moving the ribcage to inhale or exhale. It is where we can voluntarily influence our health. You begin life with inhalation and end with exhalation. You can live without food or water for days, not breath. The lymphatic system uses the breathing process, the diaphragm, to move fluid from the lower body to the upper body through a vacuum effect, as it lowers and returns stimulating thoracic duct, moving lymph to the venous angles back into the blood circulation. Even though the depth and rate of breathing are self-regulated through the nervous system to meet its purpose or functioning doesn't mean that it's doing it efficiently or without compensatory strategies to complete the job. We have the ability to influence how we breathe, to change how our body is bringing in air, how it's supplying its nutrients and immune cells, how it's removing waste and how it can heal itself. The diaphragm is also affected by metabolic states: physical movement, emotional states. It needs retraining after the stress we put it in all day, compressing it into different positions and still expecting it to function properly, providing the right amount of oxygen, stimulating the right muscles and nerves, skin receptors it's supposed to to keep the body functioning. The body compensates when needing to, and other muscles will take over the breathing process if they're left forced into awkward positions. It's up to us and our intentions and actions to keep it functioning at its best through awareness.

So how's a diaphragm to survive? Pregnancy can have a disastrous effect on the diaphragm position. Nine months of it being pushed up, compressed, kicked, knocked around. And then there's my love-hate relationship with recliners. I love they have the legs up, but the rounded back just puts your whole spine out of alignment. The diaphragm also affects pelvic floor pressure. When the diaphragm moves down, the pelvic floor's elevated through stimulation of muscles attached to both structures, the psoas; there are many people with these problems. So that's why it's important to practice basic skills, stabilizing or restabilizing the foundation. Breathing is an essential component of yoga, and there are so many varieties to practice, there is sure to be one

that resonates with everyone. You just have to understand each breathing practice and how it is taught. Breathing practice can have contraindications as well. So we have to pay attention more about what we're recommending. And we should be more knowledgeable as well of what is being taught out in the lifestyle yoga for people. Couple of these practices really have contraindications. And Kapalabhati is similar to people blowing their nose.

So let's say you have people who are glaucoma and their really, you see them blowing their nose hard. You can be telling them that, hey, pay attention, do a gentler blow. Bastrika is also another one to be careful of. Everybody who has some chronic illness should always start off slow. So these are a couple diaphragm videos that you can go out on the web at some time and check out; I thought they were interesting. So why limit breathing? The diaphragm attaches to the bottom six ribs and joins onto two or three lumbar vertebrae. These two attachments, the ribs and the lumbar vertebrae, are shared with the transverse abdominis. That's the deepest of our abdominal muscles. And the psoas, that's one of the most important hip flexors, and the one that gets short and tightened from prolonged sitting. That means with each full inhale and exhale, there is a follow-on muscular action to the abdominal muscles and the muscles of the spine and the pelvis.

So the best breathing for circulation is decongestive breathing, diaphragmatic breathing, abdominal breathing, belly breathing. The most efficient breath for the lymphatic system, flushing the abdominal area, moving the lymph from your whole lower body back to blood circulation at the venous angle. There are different ways that its taught to be performed, but if you are sitting or standing, I recommend a two-part diaphragmatic breath, which is where your abdominal bracing, and then you breathing focuses through your low ribs and your chest. If you are laying down, you can use a three-part breath where you are not engaging your abdominals. Then it would be belly, low ribs and chest. And this will protect the abdominal organs from hernias or

prolapse. A yoga breath, three-part breath, Dirga Pranayama, that is also a really good breath if somebody is looking to really have a yoga focus with their breath, to make it more lymphatic flow influenced. When they exhale, they will typically exhale chest, low ribs and belly. But for making it lymphatic flow, I exhale belly, low ribs and chest to continue that flush of fluid back to the venous angle.

And here's just a little video to really see a three-part breath. belly, the ribs, chest. back. It's all about protection, gentle. So I like Ujjayi Breathing, I Ujjayi breath all the time. Nobody knows I'm doing it. I do it louder when nobody's around. It just provides so many benefits, so many things at once. You're contracting your glottis, you're producing a light snoring sound. Vibrations in the glottis affect the thyroid, the parathyroid, the cervical baroreceptors, the cervical area, parasympathetic system, even your lower body parasympathetic system, if we're leaving, the breath will be connecting the psoas and the pelvic floor. Exhaling on exertion. The transverse abdominis is used during forced exhalation, increased intraabdominal pressure for additional support for the lower spine. Think about tennis players, when they take that swing, you hear their exertion. So nostril breathing is an easy thing to be able to teach somebody. Alternates back and forth, you're gonna be balancing your right nostril and your left nostril. If you're focused on just the right nostril, you're stimulating your sympathetic nervous system for alertness. You wanna be a little calmer? You wanna teach people a little more calmness? You try some just left nostril breathing, stimulating your parasympathetic nervous system.

So here's some other yoga breathing exercises that I use and always paying attention and caution, again, the Kapalabhati, blowing your nose, inhaling through both nostrils and exhaling rapidly flapping the abdominal. I don't do that part, that's a little much, but bracing the abdominal and maybe some low-belly, low-diaphragm breaths. Again, you've got the Bastriak bellow's breath: inhale and exhale quickly and forcefully without straining. You can see how that would be difficult, but that's what's being

taught out there to people. So breath of fire, it's kind of like a Dragon's Breath, and I like to teach that to kids when they're trying to brush their tongue, right, you get the gag reflex. So doing some Dragon's Breath kinda helps get that tongue scrubbed right away. Improper breathing can cause all sorts of problems. Deep diaphragmatic breathing, without abdominal contraction should only be done really supine, maybe even with knees bent. Maybe I'm a little bit too protective, but I have good reason. Yoga's practice of breathing techniques can be quite difficult, as you saw from the last slide.

So the Valsalva Maneuver is where you're inhaling, holding your breath simultaneously, contracting abdominals. This is what contributes to a great deal of prolapse bladder and hernia. In the Valsalva technique, the pelvic floor contracts even more, adding more intraabdominal pressure. Used by weightlifters and patients alike. An inability to inhibit actions has been linked to a large range of neurological and neuropsychiatric disorders. If we can learn to control our breath, inhibit heart from racing, we can control the amount of anxiety we feel over a situation and change the outcome by thinking more clearly and making better decisions. It's very good saying. Why the lymphatic system and yoga? Spinal alignment. 90% of the stimulation and nutrition to the brain is generated by the movement of the spine. Nobel Prize winner, Robert Sperry. Only 10% has to do with thinking, metabolism and healing. When your spine is out of alignment, your brain will take energy from your thinking, metabolism and immune function to deal with abnormal gravity postural relationships and processing. We all know how important our spine is, yet we don't always pay attention as closely as we should. It's another one of those body processes that are taken for granted to just work. We have to maximize what we can do to support the body's core systems. The lymphatic system can move best when there is no obstructions like pressure from clothing, sitting, crossing legs, excessive overhead movements, tense muscles, fascia. Your thoracic duct lines the spine. Imagine the pressure, literally and figuratively, it is under to move all that fluid from the lower body. It can be obstructed by misaligned

vertebrae, pushed into by osteophytes, bone scars, muscle knots, tumors. As I was searching this, I found a chylothorax is the accumulation of chyle in the pleural cavity and represents a rare clinical identity. It occurs due to disruption of the thoracic duct with etiologies that are primarily non-traumatic. So this is aging, generally. So what should you be doing for the, ear over our shoulder, over hip, knee over ankle. You can go to Posture Zone. The app is free actually to download, so you don't need it, but it is helpful 'cause you get to move the little circles exactly and line things up. But if you don't wanna do that, you can take a side picture and crop yourself. Flexibility is key to health. You're only as young as your spine is flexible. I see that quote going around a lot. If the spine is not moving, maintaining fresh movement of water and nutrients to the spinal muscles and disks, fibrosis can occur. That's why we need to keep our spines strengthened and flexible so it can pump the fluids.

So your thoracic duct here, where the yellow arrow is. This is how your body move fluid from the lymphatic system, starting from the feet going to the groin, the abdominal area, up the thoracic duct and back to recirculation. So why the lymphatic system and yoga? Restoration, restorative pose. A good yoga practice will always include an end shavasana, a place to teach the body how to calm down for the stimulations. If you stimulate the mind and body, you need to rest it. You need to maximize the drainage after the muscle pumping. You need to allow the muscles and the mind to rest for that balance. Meditation, when you relax your mind, you're gonna increase dopamine. The breathing, the parasympathetic relaxation response. Your eyes closed, you're limiting your visual stimulation coming in. There's couple places where I found that. This is my legs up the chair. Or legs up your bed, or you can do legs up the desk as well. Some contraindications for decongestive techniques. You're gonna make sure they don't have malignant disease, including tumor recurrence, metastases, unless you're doing things for comfort. Do make sure you're checking with the doctor. You don't want acute inflammation, infection, thrombosis, you don't wanna be pushing in anything around. You don't want cardiac decompensation. You don't wanna be pushing stuff

back up the heart if your heart can't take it. Some warnings, you know, you wanna be aware: low blood pressure, thyroid disorder. You don't wanna be moving the hyperthyroid medication around too slow, too fast. Bronchial asthma, pregnancy, infection, cancer treatment, you know. Don't wanna be pushing those cancer meds back into the blood too fast. If you have a toothache, it could be infected, you might be pushing down the neck right directly to the heart, an infection.

So let's look at a couple interventions here. So somebody in the morning, you can do some Ujjayi Breathing, added during bed mobility and transfers. You do your right nostril breathing for energy. In the shower, backbend, think about your backbend as you're rinsing your hair off. Modified hand to toe for shaving. That just means using a better posture, bringing your leg up, using the wall. You can apply lotion or dry the body, starting proximal to distal. Using the lymphatic sequence. Gazing tracking, practice that during clothing retrieval. Toileting, we talked about doing some interior-posterior pelvic tilting; make 'em think about the boat, tell them moving the boat around. Measure ankles, this is something you can do that's not a yoga, but this is also related to managing the decongestion and swelling. Dragon Breath with kids during tongue brushing. At night you can do all of the same things there in reverse. Any time, you can do Ujjayi breathe, you can exhale on exertion, elevate your legs, you can do the progressive muscle relaxation, humming and singing, carrying groceries. Make sure you're evenly strengthening each side. Make sure you're using alignment as you're doing it.

So poses that support activities: forward bend, putting your shoes on, make sure you're exhaling, getting rid of all that air so you can move further; tucking your chin while you're driving, while your sitting; chanting when you're anxious. Movement disorders really need that. Boat poses, again, toileting; tip-toe pose, plantar fasciitis, really good for that; restorative pose, as much as you can; spinal twist, paying attention how your rotating, picking up things off the end tables. Too tired? Do some nostril

breathing. Not paying attention? Left nostril. Holding your breath, make 'em count, make 'em exhale on exertion. Can't get to their feet, practice that forward bend. Some other strategies for congestion: compression stockings, you can monitor heart rate, blood pressure, you can check for tight clothing, cool off after showers, and pay attention to the food and ingredients. Some resources here. I have at the bottom, this one here is another person who is doing lymphatic yoga. She's had some good studies. And this is where I got my rehab certification for yoga, and then yoga for the special needs. And I did not put Norton is where I took my lymphatic course. So there's my references here. And if you would like to get in contact or follow me or check me out, here's all the information for you. And thank you and have a great day.

- [Host] Thank you, Kimberly, for a great talk. I hope everyone enjoyed it, and I hope you can join us again on Continued and occupationaltherapy.com. Thank you.