

TOPIC OF THE MONTH

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Inside Out Posturing, continued . . .

Kurmasana & Supta Kurmasana

Kurmasana and Supta Kurmasana are some of the deepest core postures of primary series — meaning we have deep detoxing going on along with some intensity and heat. This deep cleansing part in the practice starts with the Marichyasana series and continues up through Baddha Konasana.

Yoga Mala says: *Kurmasana purifies the kanda, or nerve plexus in the anal region from which all 72,000 nadis grow. It also purifies the heart and lungs, and eliminates ailments caused by an imbalance in the kapha dosha (phlegm). The chest becomes broad, bad fat is dissolved, and the spinal column becomes strong. Chest pain due to over-tiredness is cured, disorders from bad food remedied, and the fat in the lower abdomen dissolved, allowing the body to become healthy.*

Three areas to address on Kurmasana and Supta Kurmasana

1. Phlegm and COPD ailments are eliminated.
2. Chest pain due to over-tiredness is cured. These poses increase the amount of oxygenated blood to the heart and is beneficial in relieving angina.
3. Supta Kurmasana purifies the **Kanda**. The kanda is an egg shaped *granthi* (means 'knot') or nerve plexus in the lower abdomen that the yogic texts say all our 72,000 nadis originate from.

A nadi can be a blood vessel, a nerve, a lymphatic vessel, etc. Anything that something flows through in the body is a nadi. Yoga pays attention to keeping everything moving always in the body. Wherever there is not blood flow, nerve flow, lymphatic flow, hormone secretions, etc. cells start to die. For example, you lose blood flow to your heart you have a heart attack, you lose blood flow to your brain you have a stroke . . . if you lose blood flow to any cell and its like you have little mini heart attacks all over your body. Lose blood flow to your big toe and mutations set it -- you end up with bunions and deformed painful feet . . . understand? **Yoga postures are designed to get nutrients in and waste out of every cell in our body.**

1. Phlegm and COPD

Accumulated phlegm leads to lung infections, and ailments like bronchitis and emphysema. To reduce your risk of infections in your lungs you want to keep phlegm and mucus from building up in your lungs and airways.

Coughing only clears phlegm from the upper airways. To loosen phlegm in the lower airways . . . guess what breathing the doctors recommend . . . tell me if this sounds familiar . . .

In researching methods to clear phlegm from the lungs breathing is highly recommended -- specifically 'the type of breath you use to steam up glasses'! In scientific terms it is coined "huffing". These types of huffs move phlegm up through the lungs.

Deep breathing in general is good for your bronchial tubes. When you take a deep breath in, your bronchial tubes open up (expand their diameter) and when you breathe out, your bronchial tubes

close back down (resume normal diameter). Thus, deep breathing provides a pumping action that gets the mucus secretions moving upward to the throat where they may be coughed out, spit out, or swallowed. This is much easier to do if your bronchial secretions are thinner -- staying well hydrated will help keep the mucus thin in your lungs. (Excerpts from <http://doctorklaper.com/answers/answers03/> This is a nice resource, good information on health and healing from both perspectives -- modern medicine and alternative medicine.)

I remember my grandmother telling me to bend over and cough as she patted me on the back to help shake loose phlegm ...

In coughing techniques taught to COPD or cystic fibrosis patients, etc. -- to help people cough productively -- meaning to clear out the airways, you are told to lean forward or bend over and cough. Then given different positions to lie in and breathe, huff (the medical term for our yogic loud breathing), and cough -- to use gravity to help clear phlegm out of the lungs. (Reference: Healthwise Staff E. Gregory Thompson, MD - Internal Medicine and Ken Y. Yoneda, MD - Pulmonology)

To the left is a picture of a position recommended to help drain phlegm from the back lungs, you are put in this position, then you are given deep breathing exercises, followed by "huffing" -- which is our loud breathing as we do in practice, followed by 2-3 coughs.



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Kurmasana and Supta kurmasana put the body in a similar position to use gravity while we use our loud breathing to help move the phlegm out. **Remember it is your breath as much as the posture in kurmasana and supta kurmasana that bring benefit to the lungs.**

Other useful tips if you have symptoms:

Chest Percussions - You lightly tap your chest and

back. The tapping loosens the mucus in your lungs.

Inhaling some steam twice a day for 15 minutes, such as deep breathing in a steamy shower, inhaling steam off a pot of boiled water, use of a vaporizer, etc. If you want to use menthol ("Vicks Vaporub," etc.) or eucalyptus oil, use only the tiniest amount.

Lifestyle recommendations to reduce COPD:

Hydrate, water helps keep your mucus thin and easier to expel.

Spicy foods like chili peppers and cayenne help to thin mucus as well.

Exercise! Movement of your body helps your body move phlegm out of your lungs.

Get plenty of sleep

Eat fresh vegetables and fruits

Even if you don't suffer from COPD type issues, you want to keep your airways clean. Smoking, of course, is a major cause, but so is city living. In 2002 or 2003 (I don't remember exactly) I went to the bodyworlds display in Philthy-delphia, they had a lung display . . . the city dwellers non-smoker lungs were similar to a smokers lungs . . .

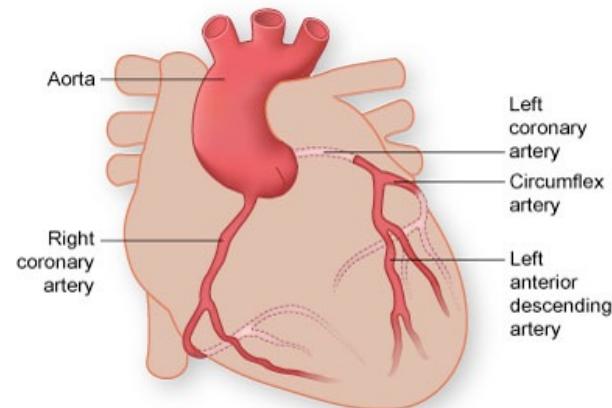
Again this is preventative medicine. So now is the time to practice kurmasana and supta kurmasana if you DONT have symptoms.

2. Chest Pain due to over-tiredness is cured. Angina Pectoris is chest pain due to over-tiredness. Kurmasana and Supta Kurmasana increase blood flow to the heart relieving chest pain.

There are two types of Angina, unstable angina and chronic stable angina.

 Unstable angina (sudden sharp chest pains) requires immediate medical attention. Dial 9-1-1!
 Chronic stable angina is a form of chest discomfort that happens when your heart is working hard and needs more oxygen, such as during exercise, then the pain goes away when you rest. In chronic stable angina, the pattern of chest discomfort is consistent (thus, the term "stable") as far as how much physical exertion will trigger it. Atherosclerosis or narrowed arteries from plaque seem to be the main cause of this form of angina, although other factors can effect angina such as stress, shallow breathing, heart valve problems, anemia (because your blood does not carry enough oxygen), or people who have thickened heart muscles or coronary arteries.

To cure chronic angina all you need to do is get more blood to your heart . . . Of course the medical books and sites all want to do this with surgery (stents and angioplasty or by-pass surgery) and medications (that dilate your arteries and reduce blood pressure . . . among shorten your life span). A couple sources did list lifestyle changes . . . but they are outdated still recommending not eating saturated fat or cholesterol -- which we know will only make you unhealthier. More on lifestyle to come.



Changing your position does change how your body pumps blood, when you are standing your body has to work harder to pump de-oxygenated blood against gravity back to your heart. When you bend over, gravity helps to circulate your blood and increase oxygenated blood to your heart . . . which would relieve angina pains, but, would it over time prevent angina? I can't find any science documenting this yet.

Bikram Yoga states that a rush of blood through the arteries flushes them out, I have heard this over the years, but have been unable to find research that shows flushing the arteries with blood helps to scrape out plaque. **There is research that shows people who exercise have less plaque build up . . . could exercise increase blood flow enough to help clean out the arteries?** Until we have data to show this I guess we will have to keep the "good faith" believing that we are flushing out our coronary arteries with blood flow . . . Although new research has determined not all narrowing of the arteries is from plaque that forms in the passageway of the arteries.

Plaque and Heart Disease and what we thought we knew and what we need to know now!

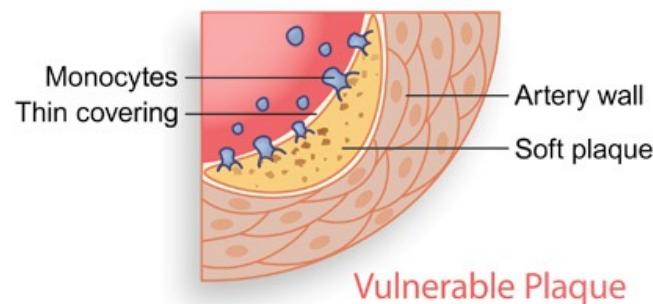
Plaque is made of LDL cholesterol, fatty compounds, calcium, and a blood clotting material called fibrin. Plaque formation happens when **white blood cells and cholesterol stream in to heal inflamed arteries.** Did you read that? Cholesterol is coming to heal ... Just lowering cholesterol with drugs will only make your condition worse, you need to figure out why the inflammation is happening that the cholesterol is coming to heal. Meaning we need to look further upstream than blaming heart disease on cholesterol formation. First on plaques:

There are two kinds of plaque, hard and soft.

36 Hard Plaque is what we are most familiar with -- it is the waxy substance that builds up inside our arteries that supply blood to our heart muscle. We now know that some heart attacks are caused by the build up of hard plaque (about 30%), but most heart attacks are caused by soft or vulnerable plaque. Much of the problem of the hard plaque accumulation in your arteries is from calcium supplements. IF YOU TAKE CALCIUM SUPPLEMENTS STOP NOW. Calcium supplements are made from crushed stones, feel like swallowing stones? Calcium supplements do not prevent osteoporosis, instead they make your bones brittle making breaking them easier. Protein is more important for stronger bones. Furthermore the medical community takes normal aging and turns it into a disease . . . 65 year old women are not supposed to have the bone density of a 20 year old woman! Furthermore we get adequate calcium from leafy greens, mineral water, and fermented foods (Vitamin K2 in fermented foods is very good for your bones. Brie and Gouda are two cheeses that are especially high in vitamin K2)

36 Soft Plaque (vulnerable plaque) is an inflamed part of an artery that can burst -- Soft plaque is buried inside the artery wall (as a result of inflammation) and may or may not make the artery wall bulge out (why heart attacks can be silent killers), if this bulge ruptures it can lead to a blood clot which leads to heart attack. It is slightly different from hard plaque in that it has even more blood clotting cell types in it. This soft plaque is formed from a harmful type of cholesterol (**HDL and LDL are both NOT harmful types of cholesterol**) called VLDL or Very Low Density Lipoprotein. **VLDL are like little bullets and lodge in your arteries — they are not problematic there until they oxidize** — which causes the thin coating over soft plaque to crack and bleed, spilling its contents into your bloodstream. Your body then sends white blood cells and cholesterol to the injury site which is now “sticky”, causing the cells to clump together and form a clot large enough to block the artery. What makes these **VLDL oxidize? SUGAR! What causes the VLDLs to form anyway? HYDROGENATED OILS.**

- o To date the best way to detect soft plaque is through a blood test that measures for C-reactive protein which is a marker in your body that is present during inflammation. Also DO NOT follow general cholesterol advice, total healthy cholesterol with the longest life





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span is total cholesterol from 200-260 mg/dl. To check for the presence of VLDL you need to request a cholesterol particle test.

- o Not all soft plaques rupture -- in tests done at THI (Texas Heart Institute) they discovered temperature plays a role (warmer plaques are more likely to rupture) and the more acidic (acidic vs. alkaline) the soft plaque is the more likelihood of a rupture. Sugar is acidic in the body.

LIFESTYLE AND PREVENTION ARE BETTER THAN SURGERY AND MEDICATIONS! I share information on lifestyle and prevention because it is an important part of your health — doing yoga and eating junk food and being lazy is better than eating junk food and being lazy and NOT doing yoga . . . however if you do yoga, eat fresh healthy foods, and live an active lifestyle you will benefit fully, be more healthy and progress quicker in your yoga practice.

The problem with lifestyle and prevention for heart disease is we are not exactly sure what prevents plaque formation in our arteries or how exactly to clean it out without surgery. To date this is the latest research we have available:

 **EXERCISE** is the A#1 way to prevent heart disease. It is unequivocally proven to reduce heart disease in most every study. If you feel frustrated about the food industry and what we don't even know yet . . . Then move your body and figure out the food stuff as we get it right! Which is moving closer to an individualized diet. Movement helps fluids flow through all the arteries and veins so blood, neurons, glucose, lymphatic fluid, etc. Can flow to and from cells to keep them healthy.

- o According to Jordan Metzl, a sports-medicine physician at New York City's Hospital for Special Surgery and author of The Exercise Cure: "**Exercise is the best preventive drug we have, and everybody needs to take that medicine.**" Indeed, after reviewing 40 papers published between 2006 and 2010, researchers found that exercise reduces the risk of about two dozen health conditions, ranging from **cancer and heart disease to type 2 diabetes -- optimizing insulin sensitivity, stroke, dementia, depression, to psychiatric disorders. Exercise also slows down the rate of aging itself, providing perhaps the closest example of a real life fountain of youth as we will ever find.** Other beneficial biochemical changes also occur during exercise, including alterations in more than 20 different metabolites involved in fat burning and metabolism, among many other benefits we've all heard about such as improvements in your:
 - Muscles, Lungs (improves your VO2 max), Heart, Joints, and Bone density.
- o **An important point to remember with exercise is one hour per day a couple days per week on your mat or at the gym is helpful, but it is hard to counteract 8 hours of sitting. It's a lifestyle of movement that is most beneficial.** A lifestyle of movement is more important — walk to work, ride your bike for errands, live in a two story house and use the steps, hang out your laundry, dig in the garden, etc. try not to sit for longer than 20 minutes at a time. I have been working with my eldest son as he is taking over my Dads company and suddenly his life is a bit more stressful. He has a 20 minute morning routine of a short run and some calisthenics, plus I ask him to get up from his desk every 15 minutes to do a few seconds of some calisthenics; for example a few jump squats in place, 15 minutes later maybe a few lunges, another time maybe a good old fashioned hamstring stretch propping your foot up on your desk, another time standing up and taking a back bend with a few breaths . . . Etc. Or you can just pop up into a headstand or handstand for a few breaths . . .

35 INFLAMMATION is still believed to be a major cause of CAD. Acute inflammation is good and helps your body heal from an injury, however having chronic, systemic inflammation all over your body is a marker of disease in the body. CRP (C-reactive protein) as stated above is a marker in your blood for inflammation.

- o Researchers show **OBESITY** and **DIABETES** are tied to higher levels of CRP.
- o **PROCESSED GRAINS** and **SUGARS** are tied to higher levels of obesity and diabetes.
- o **EXERCISE** has shown to lower CRP.

36 DIET and INFLAMMATION . . . Diet is still hopeful in controlling CAD. We just have to get it right. We have research that shows saturated fats are healthy for our cells and metabolism and are not related to heart disease (1,2) -- on contrary it is the reduction of these oils while increasing processed oils that some researchers now think is more problematic for CAD.

- o Hydrogenated fats and overly processed oils such as Canola, Safflower, Soy, Corn, cottonseed, and other vegetable oils are shown to damage our DNA and cause inflammation. These processed oils mess with the tricky balance between Omega-3s and Omega-6s.
 - Omega-3 and Omega-6 fatty acids are used to make substances called eicosanoids in the body (eicosanoids help our cells communicate with each other).
 - Generally speaking, eicosanoids made from Omega-6s are pro-inflammatory, while those made from Omega-3s are anti-inflammatory.
 - These different fatty acids compete with each other. The more Omega-6 you have, the more Omega-3 you need. The less Omega-6 you have, the less Omega-3 you need (3).
 - Put simply, a diet that is high in Omega-6 but low in Omega-3 contributes to inflammation. A diet that has balanced amounts of both Omega-6 and Omega-3 reduces inflammation (4).

References

1. <http://ajcn.nutrition.org/content/early/2010/01/13/ajcn.2009.27725.abstract>
2. <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD002137.pub3/abstract>
3. <http://ajcn.nutrition.org/content/83/6/S1483.abstract>
4. <http://www.ncbi.nlm.nih.gov/pubmed/19022225>

Grains are higher in Omega6s, nuts, seeds, and fish are higher in Omega3s. We have become a grain eating world due to thinking fat was bad for us — and further complicating this imbalance is when cows are fed grains instead of grass their meat then has higher levels of omega6s instead of omega3s.

I am not into Demonizing any one food (such as gluten or wheat). I am only sharing the research I have been doing, and as of this day (!) I am personally convinced that processed foods, hydrogenated or processed vegetable oils, along with added sugars, and refined wheat are key players in the epidemics of chronic, Western diseases, which are currently the biggest health problems in the world.

37 STRESS increases blood clotting in our body during the fight or flight response which may lead to increased blood clotting in our arteries. When stressed your blood clots more quickly, to help reduce the risk of blood loss if we are injured fighting or fleeing. The brain cannot distinguish between a real or potential threat. It can only respond to both, by triggering the



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fight/flight response. For example research has shown that our levels of stress hormones rise when we watch a horror film even though we are not physically experiencing the stressor.

- o The fight/flight response is designed to be triggered occasionally. However modern living keeps tripping it, making it overactive and this can be a factor in causing stress related health problems. These problems are then made worse by the typical western diet, full of processed foods and sugar which can cause increased blood clotting, increased blood pressure, and can stimulate higher levels of stress hormones in the blood stream.
- o This is then complicated by the fact that we do not get enough physical exercise. Exercise can help to counter the stress response by: reducing blood clotting, boosting immune function, reducing blood pressure, relaxing muscles, increasing metabolism by using your muscles which burns up stress hormones from the fight/flight response, and makes the sympathetic nervous system (which triggers the stress response) less sensitive.
- o When the fight/flight response is triggered over 1400 different physiological and biochemical changes occur in the body. But there are also psychological effects making us more alert, aggressive, angry, fearful etc., which all motivate us when we are physically threatened, but have to be suppressed during a meeting with our boss doesn't go so well . . .

Reference for above information: <http://stresscourse.tripod.com/id11.html>

More information below on stress and the fight/flight response when we talk about the back of the heart . . .

ONE MORE LIFESTYLE CHANGE TO HELP PREVENT HEART DISEASE . . . MEDITATION! :)

From AltMD: <http://www.altmd.com/Articles/Meditation-for-Coronary-Artery-Disease>

How Does Meditation Help Reduce Coronary Artery Disease (CAD)?

Meditation usually involves a practice that calms and stills the mind's thoughts. **As the mind slows down, so do the muscles, including the muscular walls of blood vessels. This allows more blood to move through the arteries more freely, which decreases blood pressure.** When meditating, **patients also experience decreases in heart rate, respiratory rate, cortisol levels, and free-radical damage, as well as increased levels of available serotonin, a hormone that affects mood.** These effects help bring the body and mind into greater balance so they function better. This opens up the potential for the natural intelligence within the body to create a healing effect, stimulating the body to repair itself and further protect itself against disease. **The benefits of meditation tend to accumulate with regular, daily practice.**

What Forms of Meditation are Useful for Coronary Artery Disease (CAD)?

Meditation involves some form of concentration to help overcome the mind's habitual mental activity of spinning stories. Meditation is usually recommended for 20 minutes once or twice a day, but even as little as three minutes once each day can have a beneficial impact on the ability to cope with stress. **Meditation can be done lying down, sitting, standing or walking, and requires only some time and mental concentration.**

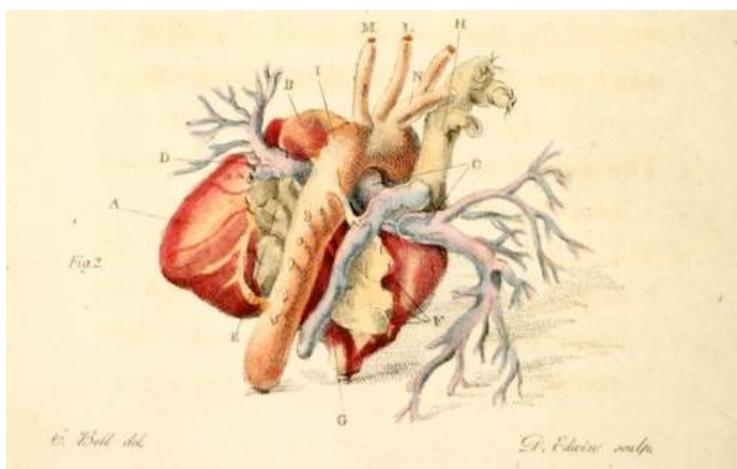
While many types of meditation are beneficial there are three that have been scientifically tested. Three types of meditation that might be useful for Coronary Artery Disease (CAD) include:

1. *Transcendental Meditation®*: Practitioners are given the mental device of a personal word or sound to silently and continually repeat while sitting in a comfortable position. When other thoughts arise in the mind, the student simply notices them and returns to the sound or word. This form of meditation has provided the most fertile ground for research into the link between stress reduction and reduced symptoms of coronary artery disease (CAD).
2. *Mindfulness or Insight Meditation -- "The Observer"*: The student is taught to become a detached observer of the stream of changing thoughts, feelings, drives and visions, watching their mind spin stories until they realize it is just a story. Practitioners initially focus on the breath and then practice a relaxed attention on feelings or perceptions as they arise through moment-to-moment awareness.
3. *Relaxation Response*: Focus on the repetition of the breath, or of a word, sound, or prayer. When other thoughts intrude, passively return to the object of focus.

Might as get your exercise and meditation at the same time and do yoga ;) And just like your breathing and your bandhas . . . Your meditative mind is very portable, take it with you where ever you go ;) Its not just for your yoga mat.

Supta Kurmasana and the Back of your Heart . . . And the SNS and fight/flight response . . .

Between Kurmasana and Supta Kurmasana you are stretching and expanding both the front and back of the heart. Kurmasana -- WHEN you can get your shoulders completely under your hamstrings and broaden your collarbones opens and expands the front of your chest bringing blood flow there. Supta Kuramsana opens and expands the back of your heart, bringing blood flow all around the heart <3



BACK of the heart and spine are stretched in supta kurmasana and innervated with blood. The back of the heart gets attention on more subtle levels. Behind the heart we have:

- ॐ Part of the Aorta
- ॐ Esophagus
- ॐ Brachial Plexus
- ॐ Spine

The spine and brachial plexus are what I am most concerned with behind the heart.

This is an important area to breathe into and expand while in the state of supta kurmasana -- especially to get blood flow in through the vertebrae of your spine in the back. Many Iyengar style yoga alignments cue to continuously "open your heart". Only, they focus on opening the heart from the front, which puffs out your chest, squeezes your shoulder blades together and pinches the back of the heart. This is why standing in such a way is called Military Posture; on an emotional level, the back of the heart is where we store hatred against others and ourself -- and where others hatred gets buried in us (stabbed in the back?). While we don't want to stand with stooped shoulders, we also

don't want to go too far the other way and stand with our shoulder blades pinched. An open heart requires 360° of openness around your heart.

Also of concern is the brachial plexus which lies behind of our heart.

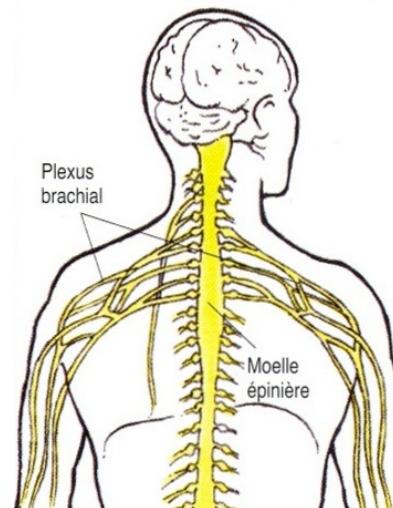
The Brachial Plexus is a network of nerves passing through our neck, behind the heart, behind the axilla (armpit) to innervate the upper arm, forearm, and hand. The Brachial Plexus also **communicates with the sympathetic nervous system (SNS)** via the Sympathetic ganglia through the cervical and first thoracic sympathetic ganglia.

(ref: <http://www.upstate.edu/cdb/education/grossanat/limbs2.shtml>)

(**Sympathetic ganglia** are the [ganglia](#) of the [sympathetic nervous system](#). They deliver information to the body about [stress](#) and impending danger, and are responsible for the familiar [fight-or-flight response](#). They contain approximately 20,000–30,000 nerve cell bodies and are located close to and on either side of the spinal cord in long chains.

(ref:http://en.wikipedia.org/wiki/Sympathetic_ganglion)

That's our Fight or Flight mechanism that produces adrenaline and cortisol – our stress hormones. Chronic shoulder elevation, neck tension, or trying to “open your heart” can compress the brachial plexus and aggravate the SNS leaving you feeling stress and anxiety.



Also, forward head position; meaning your chin juts out, puts stress on both the brachial plexus and the vagus nerve where they exit the skull. Sitting over a computer and/or a steering wheel . . . or reaching your chin too far for your legs in forward bending poses all promote this forward head posture. Learning **HEAD RETRACTION** can be useful to release stress at the base of your skull. Head retraction is like a tortoise pulling its head back in its shell ;) it lengthens the back of your neck while it removes excessive arching of the neck. If your head is far from your legs in many of the primary series postures **I would recommend practicing head retraction as you breathe** and relax into the pose.

Another way to release stress and calm the fight/flight response in your body; breathe into the back of your heart, keep the back of your neck long, heart lifted and ribs tucked down and in without pinching your shoulder blades -- let them rest in their natural anatomical position.

Supta Kurmasana and Pratyahara

The yogic purpose of pratyahara is to make the mind shut up so we can concentrate. Pratyahara means withdrawal of the senses. My first yoga teacher, Beryl Bender Birch, like to talk about pratyahara when we would get to Supta Kurmasana. Supta Kurmasana means reclining tortoise and it refers to the tortoise in its shell. When the tortoise retreats to his shell he pulls all of his five senses in — the eyes, ears, nose, mouth, and arms — withdrawing from the world while remaining aware of what is out there.

Supta Kurmasana is used as a method to practice pratyahara. Pratyahara is one of the 8 limbs of yoga -- the 5th limb; a precursor to meditation -- which is withdrawing your senses from the external world. In withdrawing it is easier to keep a steady mind — not worrying. Being present . . . so to

speak . . . means staying with what is real, what is really happening in front of you at the moment. When you can stay present with what is actually happening — not worrying or conjuring up worries that most likely will never happen — the mind becomes calm and composed and one has equanimity no matter what is swirling around us in life -- joy or sorrow.

A nice place to practice this is during a yoga class, albeit at times it is good to hear other people's questions and what a teacher may be saying to someone else . . . this is also an excellent time to practice pratyahara; so you may be aware of what someone else is saying in class but you are not drawn into it. You keep your moving and breathing meditation going, you tune it out (while being aware it is there) and keep with what you are doing — moving and breathing, not being pulled into the conversation. My favorite way to explain pratyahara is "**mind your own business!**"

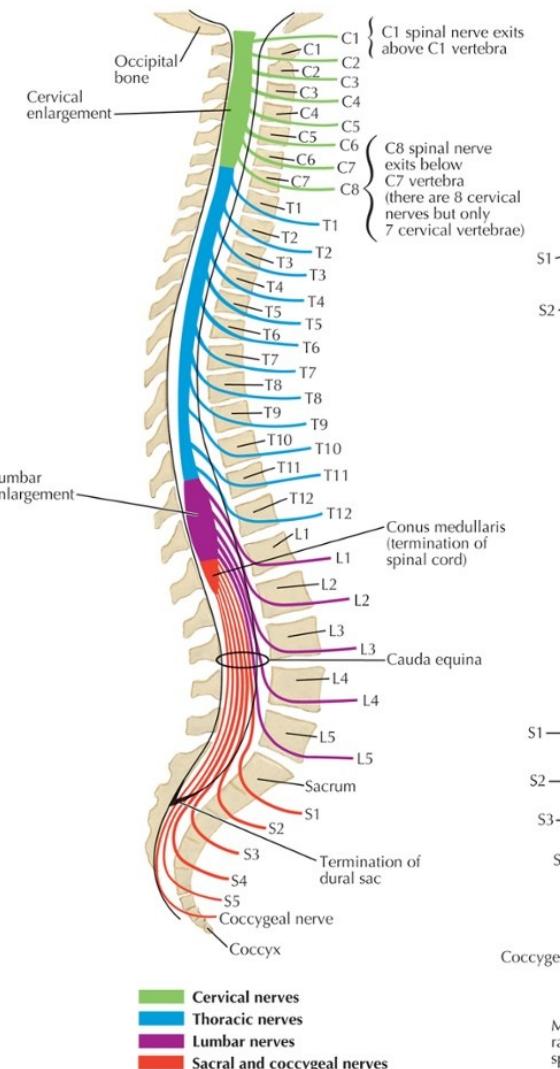
Also another good example of practicing pratyahara in your yoga class; have you ever been in a class where someone showed up who you don't particularly like . . . and it "ruined" your practice? In a perfect world we learn to rise above this, tune that person out and keep with your moving and breathing. Just learning this can be valuable — even more-so off your mat. If you are ruffled by someone walking into a public place that you have no control over, you are setting yourself up for a life of stress. There are many situations where we can not control our external environment — if you allow these situations to ruffle you — then you will constantly be faced with ups and downs that are out of your control. What you can control is your internal environment and how you respond to what is external. Next time you are anywhere in the world and you feel stress about who is there or something else in your surroundings, practice pratyahara — pull your senses in, stay focused on your objective and confident about who you are and what you are doing :)

As you manage to not be pulled into life's ups and downs you will gradually become free from anxiety, less emotional, and healthier :)

3. Supta Kurmasana purifies the Kanda. The kanda is an egg shaped *granthi* (means 'knot') or group of nerves in the lower abdomen that the yogic texts say all our 72,000 nadis originate from.

Supta kurmasana purifies this area by stretching the Kanda and its roots. The kanda is given much attention in yogic philosophy.

Before I delve into the yoga books and the science/medical books I want to get rid of the woo-woo yoga language! The kanda is not ethereal or energetic or only in the subtle body. Although it might be easier to explain it that way then to back it



up with science! The kanda is the conus medullaris in our physical, real body. The yogic texts state all 72,000 nadis originate from the kanda because **it is the junction where the peripheral nervous system meets the central nervous system.**

Our spinal cord does not exit out the bottom of the spine, it exits anywhere between T12 - L3 — varying from individual to individual. Different yogic texts have listed the kanda as being located anywhere from just above the anus to 1 angula (fingers width) above the navel. Now I understand why the discrepancy . . .

Where our spinal cord exits the spine there is a white bulbous “knot” covered by the dura mater; which exactly matches the yogic text description :) This white bulbous knot is the conus medullaris. From there the nerves continue to branch out to look like a horse’s tail — hence the scientific name of cauda equina for this group of nerves. From the cauda equina they taper down to finer strands known as the filum terminale which connect to the sheath the covers the spinal cord known as the dura mater which connects to the tailbone ligament known as the periosteum coccyx — connecting and stabilizing the entire spinal cord to the tailbone!

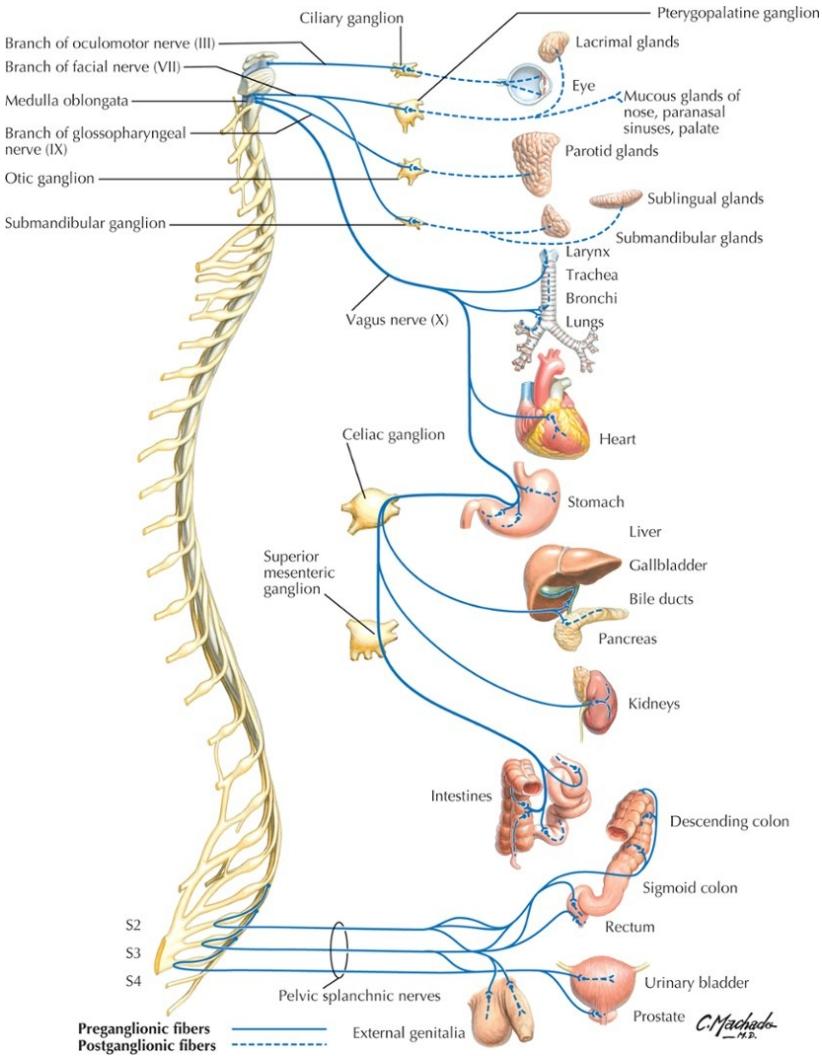
AND following it a bit further:

The tailbone ligament (a.k.a. periosteum of the coccyx) continues in a ligamentous fashion as the anococcygeal ligament and forms a bridge in the anterior direction to the external sphincter muscle of the anus.

VIOLA! Thats where your mula bandha is :) ! And one more piece . . . As the nerves taper down to the coccyx ligament the only three nerves that actually reach to the **anal sphincter are the pelvic splanchnic nerves which ONLY connect to the parasympathetic nervous system.**

The group of nerves that are anchored by the tailbone ligament are the same pelvic splanchnic nerves that we press on in Janu Sirsasana B — they are CONNECTED ONLY TO THE PARASYMPATHETIC NERVOUS SYSTEM, the part of the nervous system that removes stress and calms us down. **Thus your mula bandha stimulates the parasympathetic nervous system which is a favorable outcome.**

And another piece to the puzzle; when I was researching Janu Sirsasana B, Yoga



Mala mentioned the **perineal raphe as the shivani nadi** . . . as it turns out via the anal sphincter the perineal raphe connects to the tailbone ligament which is also called the anococcygeal raphe connecting Janu Sirsasana B to the parasympathetic nervous system as well.

Stretching this bundle of nerves where they exit our spine helps to keep the paths clear so neurons can travel freely. This bundle of nerves innervates your entire lower body including the functions of the bladder and bowel . . . nerves you don't want to lose contact with . . . And if you have back pain due to pinched nerves — it is usually one of the nerves in this bundle.

What the yogic texts say:

The “Kanda” is the Conus Medullaris

Hatha Yoga Pradipika (Bihar School of Yoga translation) defines Kanda as: a bulbous root (like an onion). In the subtle body it is the source of the nadis, twelve inches high and four inches wide, situated from mooladhara to manipura. HYP 113 states “*The kanda, situated above the anus, one hand span high and four fingers breath wide, is soft and white as if enveloped in cloth.*

HYP 107 states “*The kundalini sleeps above the kanda. This shakti is the means of liberation to the yogi; and bondage to the ignorant. One who knows this is the knower of yoga.*

The Hatha Yoga Pradipika as translated by the Bihar School of Yoga says Swami Sivananda related the kanda to the conus medullaris and the cauda equina:

Kanda is a centre of the astral body from where Yoga Nadis, subtle channels, spring and carry the Sukshma Prana (vital energy) to the different parts of the body. Corresponding to this centre, you have ‘Cauda equina’ in the gross physical body. The spinal cord extending from the brain to the end of the vertebral column tapers off into a fine silken thread. Before its termination it gives off innumerable fibres, crowded into a bunch of nerves. This bunch of nerves is ‘Cauda equina’ in the gross body.

It's location is the junction of the where the kundalini enters the spine at the root chakra when one becomes enlightened.

What Science says:

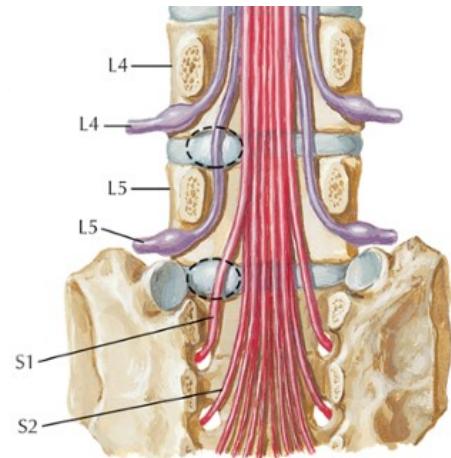
The inferior-most end of the spinal cord is conical and is termed the conus medullaris. The coccygeal nerves are attached to it.

Conus Medullaris as described by wikipedia:

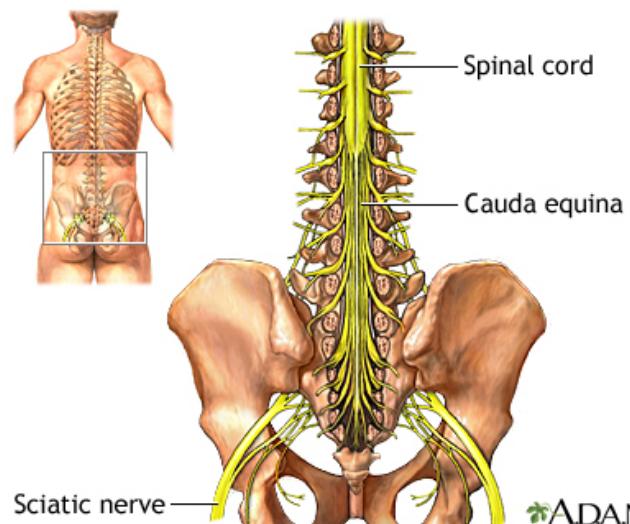
The **conus medullaris** (Latin for "medullary cone") is the tapered, lower end of the **spinal cord**. It occurs near **lumbar vertebral** levels 1 (L1) and 2 (L2) — The upper end of the conus medullaris is usually not well defined as it varies.

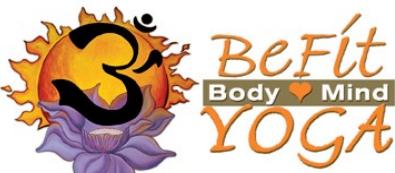
After the spinal cord tapers out, the spinal nerves continue to branch out diagonally, forming the **cauda equina**.

The **dura mater** that surrounds the spinal cord, however, projects directly downward, forming a slender filament called the **filum terminale**, which
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Lumbar disc protrusion (dashed ovals) does not usually affect nerve exiting above disc. Lateral protrusion at disc level L4–5 affects L5 spinal nerve, not L4 spinal nerve. Protrusion at disc level L5–S1 affects S1 spinal nerve, not L5 spinal nerve.





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connects the conus medullaris to the back of the [coccyx](#). The tension that the filum terminale provides between the conus medullaris and the coccyx stabilizes the entire spinal cord.^[1]

Cauda Equina as described by wikipedia: The **cauda equina** (Latin for "horse's tail") is a bundle of [spinal nerves](#) and spinal nerve roots, consisting of the second through fifth [lumbar nerve](#) pairs, the first through fifth [sacral nerve](#) pairs, and the [coccygeal nerve](#), all of which originate in the [conus medullaris](#) of the [spinal cord](#). The nerves that compose the cauda equina innervate the [pelvic organs](#) and [lower limbs](#) to include motor innervation of the [hips](#), [knees](#), [ankles](#), [feet](#), [internal anal sphincter](#) and [external anal sphincter](#). In addition, the cauda equina extends to sensory innervation of the [perineum](#) and, partially, [parasympathetic](#) innervation of the [bladder](#).^[1]

The American Association of Neurological Surgeons (AANS) website describes these nerves as:

Conus medullaris is the cone-shaped end of the spinal cord. It is normally located between the end of the thoracic vertebrae (T-12) and the beginning of the lumbar vertebrae (L-1), though sometimes the conus medullaris is found between L-1 and L-2 or L3. Nerves that pass through the conus medullaris control the legs, genitals, bladder, and bowel.

The conus medullaris is the technical name for the lower end of the spinal cord. Originating at the base of the brain, this thick bundle of nerve tissue passes through the center of the spinal column, penetrating the vertebrae, which protect it from damage. At its terminal end, at the lumbar spine in the lower back, the spinal cord tapers into a cone shape and then into a narrow bundle of fibrous tissue called the filum terminale, which means "terminal thread." This fibrous tissue helps support the spinal cord.

Surrounding the filum terminale is the cauda equina, a group of nerve roots that dangles from the conus medullaris. These nerve roots are referred to collectively as the cauda equina because they dangle much like a horse's tail. From the nerve roots of the cauda equina spring nerves that control the lower body, including the bladder, genitals, legs and feet, making the cauda equina the link between the central nervous system of the brain and spinal cord and the peripheral nervous system of the lower body.

The lower part, or filum terminale externum, closely adheres to the dura mater. It extends downward from the apex of the tubular sheath and is attached to the back of the first segment of the coccyx in a structure sometimes referred to as the coccygeal ligament.

Supta Kurmasana benefits your Kanda — a.k.a. your Conus Medullaris

Supta Kurmasana by stretching and purifying the kanda or this group of nerves greatly influences our entire nervous system. The yogic texts give a lot of clout to the kanda as the origination of all the nadis — and therefore the pranic life flow in our body. (Some yogic texts refer to the nadis as only the nerves as is the case here. However just for the record nadi actually refers to any tube in our body that something moves through. For example the pulse technique we learn in ayurveda, in sanskrit is called nadi vigyan — which means pulse diagnosis . . . the pulse is in our artery meaning the artery is the nadi we are diagnosing, therefore nadi is not just referring to the nerves.)

In Closing

Kurmasana and Supta Kurmasana are in the hottest part of primary series where we are doing some of our deepest “work” and cleansing. Kurmasana and Supta Kurmasana are postures that put our body in a position to:

- ॐ Clear phlegm out of our lungs along with the loud breathing we learn to do with the practice to prevent bronchitis, among other COPD diseases
- ॐ Encourages an increase of blood flow to the heart helping to flush out the coronary arteries and circulate more oxygenated blood to our tissues
- ॐ Helps to induce the meditative state in which we operate with a healthier attitude
- ॐ Supta Kurmasana stretches the back of the heart where our brachial plexus is. Since the brachial plexus is attached to our SNS (sympathetic Nervous System) tension behind the heart, and/or between or above your shoulder blades stimulates stress hormones to be released into your bloodstream. Keeping this area relaxed would calm this response.

3 Purifies the nervous system by stretching the Kanda or conus medullaris and the nerves that branch out where the spinal cord exits the spine helping neurons to flow better improving communication between our peripheral and central nervous systems.

Again this is preventative medicine. So now is the time to practice kurmasana and supta kurmasana BEFORE you have lung or heart disease!

A diagram of the dermatomes (A **dermatome** is an area of skin that is mainly supplied by a single spinal nerve.) from Netters Anatomy, just for fun :)14

