

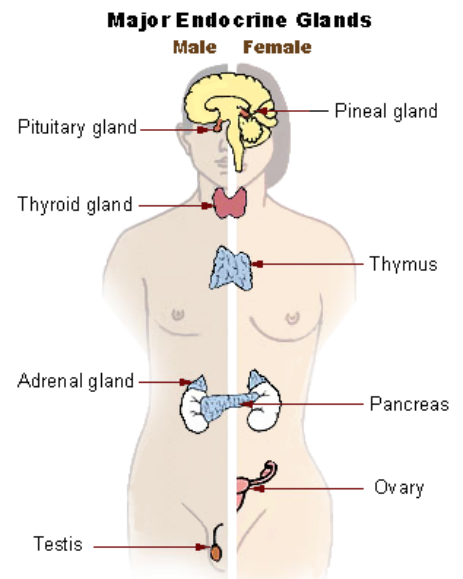
**TOPIC OF THE MONTH**  
**October 2014**

**Inside Out Posturing . . . Continued. Rolling around on your back ... Garbha Pindasana and Kukkutasana continued.**

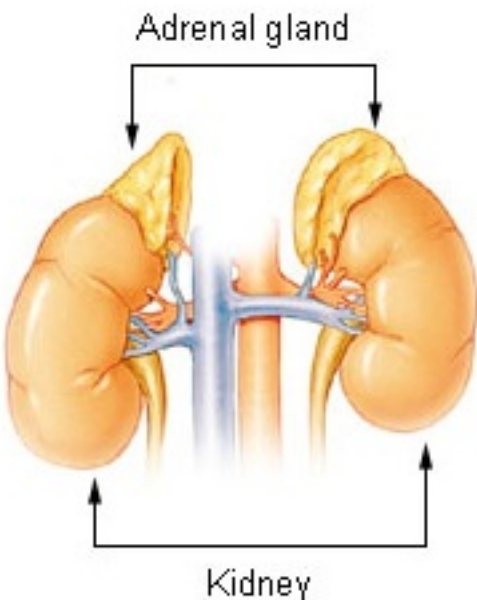
Hormones . . . Our endocrine system . . . I have been avoiding addressing the hormonal system as this area is not well documented by science! We really don't understand the endocrine system. We are just now realizing most of our organs secrete hormones -- not just the 7 glands/organs in the body we thought were responsible for our hormones.

But now is the time, I can't avoid it any longer. Garbha pindasana does effect our adrenals, as does rest pose, forward bending, backward bending, and twisting . . . So I think I will tiptoe into our endocrine system by first looking at our adrenals.

We are only just now learning about our adrenals, until recently we were treating adrenal dysfunction based on research from the 50's by Hans Selye. The father of stress ... In his time he was an innovator and won a Nobel peace prize. His research outlined 7 stages of stress leading to adrenal fatigue --however brilliant that was at the time ... stress leading to adrenal fatigue is not quite so predictable and varies with each individual. Until just recently doctors denied that "adrenal fatigue" even exists — but now more doctors are recognizing "Adrenal Dysfunction" and realizing a need to help their patients handle and reduce stress — and educate about the adrenals and stress hormones.



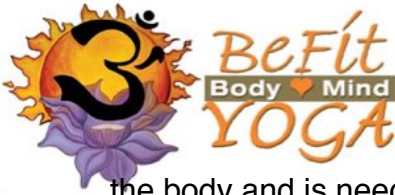
Our adrenals are small crescent shaped (or thumb shaped) glands that sit atop each kidney. Our adrenals are our main tool for stress.



They are small but mighty, they secrete over 50 hormones — or chemical messengers that communicate with your brain, immune system, metabolism — hormones affect every function, organ, and tissue in your body directly or indirectly.

The main adrenal hormones are responsible for:

- ☯ the release of adrenaline and noradrenaline (aka epinephrine and norepinephrine) both are neurotransmitters and hormones with similar characteristics —
- ☞ they vasoconstrict our blood vessels reducing blood flow to areas our body does not need for immediate survival while shunting blood to other areas of our body for action and/or protection.
- ☯ The release of the steroid hormone cortisol. Cortisol does a lot in



the body and is needed for life, cortisol helps us maintain “homeostasis”. Some of the functions of cortisol:

- o Blood sugar — raising blood sugar to get energy into our cells to prepare our body for action. This is where excess stress drives chronic high blood sugar — your adrenals will keep raising your blood sugar until the stress response is blunted.
  - o Reduces insulin so blood sugar can be circulating.
  - o Regulates Fat, Carbohydrate, and Protein metabolism to maintain blood sugar.
  - o Blunts our immune responses — largely by reducing inflammation so we can take action without being inhibited by pain and healing.
  - o Increases blood pressure, heart and blood vessel tone and contraction — narrows our arteries while adrenaline increases our heart rate making our heart pump faster and harder.
  - o Central nervous system activation
- ॐ Sex hormones known as the sex steroids. The adrenals do release small amounts of both the male and female sex hormones of estrogen and testosterone — these hormones are mostly released by the ovaries or the testes — however, the adrenals do have impact on our sex hormones.

It has been said that stress is the root of all disease .... Maybe so! It certainly exacerbates any pre existing condition we currently have or are in the process of ramping up our immunity to destroy and weakens our defenses if in excess.

## STRESS AND OUR ADRENALS

Our bodies are meant to operate most of the time in our parasympathetic nervous system. Short times of stress are not bad, and rather needed (short-term increases in cortisol are critical for survival). **They promote coping and help us respond to life's challenges by making us more alert and able to think quick on our feet — rushing blood to our brain, heart, and muscles — and then dampening processes like digestions, immune system response, and other functions that are not needed for immediate survival.** But to marinate in stress hormones throughout most of our day is setting a chain of unfavorable events in our body beginning with over stimulation of our sympathetic nervous system — or stress response.

### Under the stress response:

- ॐ Your heart rate increases
- ॐ Your lungs take in more oxygen
- ॐ You get dry mouth and/or cold sweats, maybe a racing heart,
- ॐ Shallow breathing which slows down the digestive tract and diverts blood flow and body energy from our organs to fight or flight and stimulates the release of adrenaline.
- ॐ Parts of your immune system become temporarily suppressed, which reduces your inflammatory response to pathogens, your immune system is suppressed as your body sends energy to your muscles instead of your organs and immune system so you can run to save your life.
- ॐ When stress becomes chronic your immune system becomes less sensitive to cortisol released by your adrenals, which will heighten the inflammatory response driving inflammatory diseases. Cortisol is anti-inflammatory which is why you get injected with it when you have



pain and inflammation in various tissues— THIS IS NOT A GOOD METHOD FOR HEALING!  
**CORTISOL INJECTIONS BLOCK HEALING and important macrophages.**

The parts of your brain that shut down when stressed? The part of your brain that regulates mood, short term memory, planning, organizing, behavior, and not to mention making good judgments. You don't want to be spending most of your day in this mindset.

Stress in the moment requires swift reaction with little time for thought (for example you're driving down the highway and suddenly see a car coming at you . . .). Studies show when we are stressed we have about 20 seconds to make a decision . . . not enough time to think through an emotional matter and respond in the best way.

### **Grace under pressure — remember our vagus nerve?**

As soon as we “come down” from the stress response, our body starts rebuilding and rejuvenating — you want to come down from your stress so your body can do this.

When we are operating under the influence of our parasympathetic nervous system we are calm, rejuvenating — in our rebuild and repair body operations, have a slower breathing rate, slower heart rate, lower blood pressure, our organs function optimally, and we have time to think through a response or reaction.

Stress releases cortisol into your system to give you energy to go and fight — or whatever! When you are frequently stressed your cortisol levels can become chronically elevated. Stress does not need to be real — **imagined stress is just as dangerous as real stress.** Let me say that again in a different way — if you are listening to the dramas in your head, you will set in motion the stress response in your body even if you are not having a “real” stressful situation . . . (This is one of the reasons meditation is so effective for stress.)

Also of importance here -- choose your company wisely. Empathetic stress is real. We take on the stress of those around us, even if we don't know them, if we observe them in stress we feel it too. Even more so when it is a loved one who is stressed. This also stretches to what you watch on tv. CNN to violent/drama movies, to soap operas all effect our adrenals and stress levels. Learning to use feel good movies and books during relaxation instead of drama movies and news — and/or distance your self from family drama and friends who are drama queens will improve your own stress levels.

So before I give you the bad news about what excess stress does to you I have to pause and explain two points . . . first of all if you believe stress is not detrimental to your health it is less so ! So let's take advantage of that and explain that stress can raise our resilience and give us motivation to do what needs to be done — so there is an upside to stress and this is how you want to use your stress.

Second point, stress is not that hard to release! Ever have a bad day, feel stressed over something . . . then viola! . . . the phone rings. It's an old friend or a funny story or someone calling to make some plans for something fun . . . Suddenly your stress lifts. It does not even require someone from outside of ourselves to do this, **you can simply change what you are thinking to a happy or hopeful thought and release your stress.**



Dr. Alan Christianson, another functional medicine dr. I have listened to stated a British study (Whitehall II study: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3085201/>) that followed and observed people while monitoring their cortisol levels. Those who were healthy but stressed otherwise (high cortisol) died sooner than “chilled out” people who smoked or had other heart disease risk factors! <http://www.integrativehealthcare.com/are-you-secretly-smoking/>)

Also a note on this study from my own experiences: Europeans smoke more than Americans, however they are more likely to roll their own cigarettes — this reduces the chemical load that is traditionally found in American made cigarettes. Also of note here is the herbicide sprayed on tobacco — polonium 210 — is what is responsible for lung cancer, not the tobacco itself . . . <http://articles.mercola.com/sites/articles/archive/2014/02/10/radioactive-fertilizer.aspx> ) My guess is, if this same study was done on American smokers the results may be a little different.

## About Cortisol:

Cortisol not only is your main stress hormone, it also is responsible for waking you up in the morning and by its absence, helping you fall asleep at night (with the help of melatonin). Your cortisol levels are meant to slope throughout your day, they peak in the morning to help you wake up, and slowly drop all day so you can sleep at night. As we sleep our cortisol levels slowly rise to wake us up in the morning ....

Cortisol and melatonin work together in a rhythm. Your adrenals and cortisol work with your pineal gland and its secretion of melatonin to help us get good sleep. When cortisol peaks, melatonin plummets. When melatonin is down, cortisol is up. That's normal.

Stress will interfere with this rhythm and make it hard for you to fall asleep at night, if your cortisol levels don't drop with sunset it will disrupt this natural rhythm and mess with your sleep patterns — and you don't want your cortisol to block the release of your melatonin.

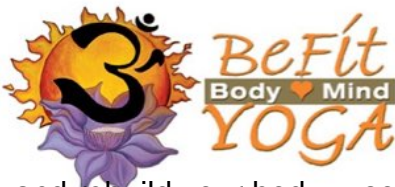
Melatonin primes your immune function and thus stimulates inflammation (for healing), while cortisol tends to dampen immunity and reduce inflammation (so you can deal with the “emergency” at hand) — so when you do not sleep well your immune system is not working throughout your body while you sleep scavenging up damaging bacteria . . .

Calcification of your pineal gland will also disturb your circadian rhythm. Your pineal gland is what is responsible for making your melatonin. When your pineal gland is calcified your melatonin production is reduced therefore disrupting your circadian rhythm and your cortisol levels. Fluoride and Calcium are two of main culprits of pineal calcification — another reason to avoid calcium supplementation, make your own toothpaste, and don't drink tap water!

## YOUR ADRENALS AND SLEEP

There's no magic bullet to health and longevity — however sleep is close!

Sleep is an important part of our health, so important that someone once asked me in a workshop what I felt about getting up at 3am to do practice or exercise . . . My response was as long as you are getting a good 7-8 hours sleep, 3am is fine if your body likes that time. If you are getting up at 3 or 4am after six hours of sleep or less then you are creating more disharmony in your body. Sleep first, then practice. Lacking sleep day after day after day has shown to make your brain shrink! This leads to dementia types of diseases. Lacking sleep chronically also messes with your blood sugars, makes you hungry all day long, and leaves you not operating at your best. Your adrenals need rest to reboot



and rebuild your body— sometimes rest is the best thing you can do for stress induced adrenal fatigue. Your adrenals need sleep and rest.

### **Cortisol Awakening Response**

Of interest recently is the cortisol awakening response — is your cortisol upon awakening balanced? If not one of two scenarios can happen. 1) you awaken stressed and anxious this is a sign your cortisol is too high, 2) if you are very slow to awaken — you don't feel human til about 10am (this would be me!), this is a sign of a slow cortisol awakening response. There is a new saliva test by the makers of the DUTCH tests that check your cortisol awakening response and then gives you suggestions on how to balance it for optimal health.

If your CAR is high it messes with your stress levels throughout the day — leaving you feeling stressed and anxious. It will also effect your short term memory (due to effecting your hippocampus). If your CAR is low, your energy is low in the morning and it can take you some time to get going. You may also have an increased risk for auto-immune diseases, chronic fatigue, and depression.

Sleep apnea can interfere with your CAR and is something worth looking at — sleep apnea is not just for overweight males — but all persons with narrow sinuses are at potential for sleep apnea. Who has narrow sinuses? Many petite female caucasians.

Suggestions to balance your CAR mostly work around stimulation of your vagus nerve along with exposing yourself to morning sunshine as soon as you awaken.

- ☪ First thing upon awakening, step outside into the sunshine if possible and turn your face toward the sun for a moment. Take a few deep nasal breaths, chant or sing a little, or do a little breathing exercise.
- ☪ Stimulate your vagus nerve by chanting, singing, gargling, splashing cold water on your face, doing a bandha exercise, or even something like nauli (the abdominal churning exercise) will help to stimulate your vagus nerve and bring balance to your cortisol response.

Also, if you sit under fluorescent lights during your work day, fluorescent lights disrupt your pineal gland and your cortisol responses. If you are having cortisol issues check out the lighting where you spend most of your day. Better to find full spectrum lighting — or work outside!

**Cortisol is the primary adrenal stress hormone**, it is not a bad hormone, it serves many good purposes when in balance:

- ☪ Cortisol influences carbohydrate, protein, and fat metabolism - again commanding when your body needs energy to run and fight or when you can relax.
  - In chronic excess, cortisol can lead to metabolic disorder and immunosuppression.
- ☪ Cortisol increases your blood sugar level in different ways to help you cope with an emergency: It increases your liver's production of glucose to send energy to your muscles
  - Refined foods that mess with your blood sugar will also mess with your cortisol. Refined foods can make your blood sugar rise sharply, then drop quickly. When your blood sugar drops quickly your body releases cortisol to raise you blood sugars. This sets you up for a yo-yo day of energy dips and stress highs.
  - This type of induction of cortisol will actually lead to inflammation if repeated throughout your day, day after day. Remember cortisol usually reduces inflammation — but when it



becomes chronic your body does not respond as much to the anti-inflammatory message cortisol is trying to send.

- 36 Cortisol increases fatty acids in the bloodstream to be used as fuel for energy.
- 36 Cortisol is largely catabolic in nature, meaning it can break things down. Cortisol breaks down glycogen to glucose for use to run and and fight. And it will break down other tissues to use as fuel in emergencies as well. A little is necessary — too much is a problem. Cortisol will also break down your ligaments and tendons which is why it is not wise to inject cortisol into injured tissues. **Too much cortisol in your system can lead to muscle wasting and brain/neuron wasting due to its catabolic function.**
  - o The catabolic action of cortisol is why Doctors will not give you repeated shots. I personally have never gotten one as I saw some preliminary data showing cortisol shots interfere with your own bodies cortisol production. I have seen studies on cortisol level balance being the highest predictor for heart disease (whitehall II study).
- 36 Cortisol counteracts inflammation and pain so you can run and fight if necessary — which is why cortisol steroid shots are injected into inflamed and in pain tissues . . . But this is not useful in the long run because the injected cortisol is blocking what your body is trying to send for healing — things like white blood cells and macrophages.
- 36 Cortisol helps maintain energy, mood, and emotional stability during stressful situations (when in balance).
  - o Therefore cortisol helps maintain resistance to stress -- when it is balanced! Meaning high in morning and sloping down to a night low for sleep.

We need a balance of cortisol in our blood stream -- just the right amount. Too much is a problem and too little is a problem.

Lets look at the physiology of what happens in our body when we feel stress — real or imagined — for long periods of time:

### **Excess stress leads to excess cortisol leads to ...**

- 36 **The Cortisol Steal** — Low libido results from the Cortisol Steal - when the adrenals are constantly putting out stress hormones they get depleted and they go scavenging looking for other ways to make more cortisol. Testosterone and progesterone easily turn into cortisol; your body steals the reproductive hormones testosterone and progesterone (and estrogen to a lesser degree) because they use the same substrate, cholesterol, (cholesterol is what is used to make our stress and sex hormones) as cortisol — so the body can easily make more cortisol instead of sex hormones — this is called a cortisol steal, cortisol steals your sex hormones to deal with stress. This depletes your sexual energy resulting in low libido and hormonal issues, along with PMS and perimenopause issues like Estrogen Dominance / Low progesterone..
- 36 **Increased blood sugar levels** - When stress persists the adrenals stimulate the desire for more sugar for energy — this is hard on the liver and pancreas as they have to produce more insulin to keep our blood sugars in check. This can add blood sugar issues to your problems . . . if you would run and fight as we used to have to do when stressed we would use up many of these sugars in the blood . . .
  - o This process also adds to AGES (Advanced Glycation End Products) — free radicals in our blood that make us age prematurely. AGES effect our telomeres — telomeres are



end caps on our DNA — kinda like shoestring end caps. Shorter telomeres = aging faster, while longer telomeres is associated with health and longevity (<https://consumer.healthday.com/senior-citizen-information-31/misc-aging-news-10/dna-telomere-length-tied-to-aging-death-risk-670426.html>). High blood sugars shorten your telomeres while yoga, meditation, low stress and high phytochemical (plants!) intake are associated with longer telomeres.

- 3. **Reduced ability to use protein leading to muscle wasting and heart fatigue.** Protein is a rebuilding fuel, during times of stress your body is in survival mode, not rebuilding mode so your body does not effectively use protein when you are under the stress response. **This also** effects your bones and leads to osteoporosis (protein makes your bones stronger and more flexible.)
- 3. **Thyroid issues** - when all else fails, the adrenals will try to up-regulate the thyroid to increase metabolic activity with more thyroid hormone, only to exhaust thyroid function over time.
- 3. **Neurodegenerative changes in your brain** that negatively impact short term memory -- what you want to say is just on the tip of your tongue but you can't quite remember it, forgetfulness, senior moments ...
  - o Cortisol (from excess stress) has a corrosive effect in the brain that, over time, wears down the synapses responsible for memory storage and processing. It will affect your memory by causing a gradual loss of synapses in your prefrontal cortex — your hippocampus. Remember cortisol and adrenaline effect the brain by increasing synapses in the limbic system (related to fear) which will reduce synapses other places like your hippocampus.

This is the brain region associated with short-term memory. This is being seen at younger and younger ages! To the point Drs are just saying it is age related because it is prevalent. Not because it is natural. This decline is associated with senior moments .... Difficulty falling asleep, memory problems -- Forgetting where your keys are or where you parked your car, moodiness, difficulty in learning new information.

Sapolsky, Robert M. (1992) *Stress, the Aging Brain, and the Mechanisms of Neuron Death*. Cambridge, MA: The MIT Press.

Ansell, E., Rando, K., Tuit, K., Guarnaccia, J., Sinha, R. (2012) "Cumulative Adversity and Smaller Grey Matter Volume in Medial Prefrontal, Anterior Cingulate, and Insula Regions." *Biological Psychiatry*. 72 (1): 57- 64.

Pittenger, C., Duman, R. (2008) "Stress, Depression, and Neuroplasticity: A Convergence of Mechanisms." *Neuropsychopharmacology Reviews*. 33: 88- 109.

- o Previous research has also linked chronic stress with working memory impairment. (<http://www.jneurosci.org/content/20/4/1568.full>) Other recent research suggests that stress may even act as a trigger for, or speed up the onset of Alzheimer's disease, which currently afflicts about 5.4 million Americans, including one in eight people aged 65 and over. ([http://www.alz.org/downloads/Facts\\_Figures\\_2011.pdf](http://www.alz.org/downloads/Facts_Figures_2011.pdf))
- 3. **Suppressed immune function** - You frequently get sick. Frequent infections or illnesses are a sign to check your stress levels! If we are stressed our body is preparing to put out energy to run or fight so energy does not go to immune and rebuilding functions. Hence the negative impacts on our immune system.

### **What happens when your adrenals are getting “burned out”? Low Cortisol results.**

When your cortisol levels are too low, your adrenals are not functioning well usually because they are getting burned out or fatigued from overwork. You may feel :

3. Cold all the time

3. Feel tired most of the time



- ☯ Not handle stress well
- ☯ Frequently sick
- ☯ Digestive Issues (gut brain connection via vagus nerve)
- ☯ Not sleep well
- ☯ Blood sugar issues (could be low or high blood sugar issues)
- ☯ Chronic fatigue symptoms
- ☯ Low libido
- ☯ Menopausal symptoms

- **MENOPAUSE AND YOUR ADRENALS**

Many symptoms of menopause are really stressed out adrenals. As our ovaries stop producing estrogen the adrenals try to help by secreting estrogen in addition to other hormones. If we enter the perimenopausal stage with stressed out adrenals our mood swings, fatigue, and/or depression will be intensified. Stressful living makes menopausal symptoms worse and depletes our adrenals. Sadly during this time many women turn to coffee and sugar -- as we know coffee and sugar increase adrenal secretions -- momentarily giving us energy — then our energy levels crash and we crave caffeine and sugar setting us up for a viscous cycle.

If you experience some of the symptoms above, it may be time to **address your stress** and care for you adrenals . . .

Our normal day to day life with our daily work and family responsibilities is plenty of work for our adrenals! You want to be careful to not overwork your adrenals — its easy to do. Ways that we overwork our adrenals leading to not enough cortisol include:

- ☯ Burning the candle at both ends so to speak and not giving yourself enough sleep time.
- ☯ Rumination
- ☯ Using caffeine or sugar in your afternoon slump instead of a 15 minute rest.
- ☯ Not allowing yourself 8 hours sleep time each night.
- ☯ Over exercising — Yes this is an issue! Our society seems to go to two extremes with exercise — those who don't do enough to none and those who do too much.
- ☯ eating lots of sugar and carbs
- ☯ too low cholesterol from statins or a strict low-fat diet,
- ☯ low iron (Iron is used by your adrenals to make cortisol.)
- ☯ leaky gut syndrome (connected to many diseases!) In any disease check the gut first. This solves many diseases.
- ☯ cortisol or steroid shots . . . I saw some preliminary data showing cortisol shots tell your body you don't need to produce cortisol since it is coming in from the outside.

If you have symptoms of low cortisol levels:

- ☯ Check your iron. Your adrenals need iron to produce cortisol.
- ☯ Check your thyroid
- ☯ Get tested for inflammation (CRP levels - see if there is an underlying issue in your body).
- ☯ Eat more fats in the form of grass fed ghee and butter, coconut oil, and fats from nuts and seeds to avocados to olive oil.
- ☯ Eat more vegetables
- ☯ Eat fermented foods



When cortisol is chronically depressed, there's a particular supplement called **licorice root extract** (not the candy!), aka *Glycyrrhiza glabra* (yasti madhu in Sanskrit) that can help preserve the half-life of cortisol and help extend its activity. It doesn't affect actual cortisol production but rather helps maintain what little cortisol happens to be available and allows your body to use it more effectively.

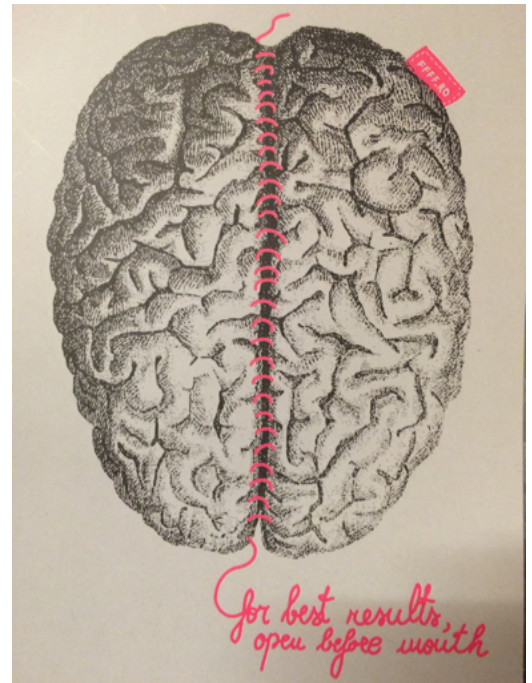
**If your cortisol levels are out of balance, your body will crave sugars and breads** — but it would be better for you to switch to a fat based diet with lots of vegetables.

### **YOUR ADRENALS AND YOUR BRAIN - This is in your control . . .**

Your brain tells your adrenals when you need cortisol and when you don't -- in other words your brain communicates to you when you are stressed and when you are not. This is why what you think becomes your reality ... If you think your stressed even if you are not in an emergency -- you are stressed ....

Your brain to some extent, controls your adrenals — instead of treating adrenal exhaustion it may be more beneficial to *treat your thinking* and the gut first. Adrenal burnout is your brain turning down the alarm button — its just sick of all the drama!

In reality it is your thoughts that control your stress, for example; you are walking down a dark street at night, you hear footsteps coming up behind you . . . this sets off your stress response — your senses heighten — you hear better, your eyes dart about, your body picks up your pace preparing to run if necessary, your mouth gets dry and your palms sweaty . . . in the next moment you hear your friends voice call out to you . . . STRESS GONE in about 10 seconds . . . your body's systems return to normal and stress symptoms are gone :) You can do this switch at will as soon as you realize you don't need to be in your stress response!



### **Preventing adrenal fatigue is easier than curing adrenal fatigue . . . WHAT YOU CAN DO ABOUT STRESS AND CORTISOL! — Preventative Methods:**

This is your go to list to protect your adrenals and stress responses.

Remember . . . stress is what you are thinking! Be careful not to walk around as if there are tigers everywhere . . . the bill in the mail is a tiger, work drama is a tiger, family can be a tiger . . . if you are finding lots of tigers in many different areas of your life it might be time to relax.

- ॐ **Exercise . . .** The interesting point here is, thankfully, you don't have to do hour long exercise sessions, just 5 minutes bursts throughout your day have the biggest effect on enhancing mood and combatting stress. (Barton, J., Pretty, J. (2010) "What is the Best Dose of Nature and Green Exercise for Improving Mental Health? A Multi-Study Analysis." *Environmental Science & Technology*. 44: 3947-55.) **It is a lifestyle . . . Find little ways all day long to get bursts of movement that elevate your heart rate briefly . . . stand and work — do a standing pose for 2 minutes while you work, park farther away and briskly walk to**



your destination (this gets you precious outside time too), run up the stairs, start a garden, get a clothesline and save on energy as well (no one in Europe has dryers!) . . .

- o Movement throughout your day and exercise - Yoga / Sun Salutations: A few rounds of this simple yet profoundly effective flow of postures that alternately contract and expand the spine will help boost energy by using the body's own prana, or life force, to circulate energy rather than tapping the adrenals once again. Do standing poses while you work . . . Try not to sit for longer than 15 or 20 minutes, fidget, sit like a yogi, try to make a standing work space too.
- 36 Meditation - 5-20 minutes once or twice per day is effective brain medicine! Meditation gives our brain and ears a break — this helps us deal with our mind stuff.
  - o [Learn a meditation or stress reduction program](#) that you like and can turn to. Taking a few quiet moments to yourself each day will become like a mini vacation for you. Many people, parents especially, have no time to themselves in an average week, just taking 5-10 minutes to yourself is important.
  - o It's really about quiet time. Noise stress is huge in our lives, having some quietness reduces stress that we are sometimes not even aware of.
  - o It's ok to think. Bubbles coming up that need to release.
- 36 Deep Breathing / Pranayama - Breathe through your nose all day long. When you feel stress, take a longer exhale (about double your inhale). When you sit down to work; start by taking a few slow deep breaths as we do in Padmasana.
- 36 Get outside! Just walking outside and finding a little green space will instantly reduce your stress response.
- 36 Sunlight - At least a half hour per day. Sunlight helps your body regulate your circadian rhythm and balance your cortisol and melatonin. We are basically house plants with more complicated feelings and needs — we need sunlight and water.
- 36 Sleep — Plan your evenings to allow 8 hours of bed time — even if you are having sleep issues plan 8 hours every night of bed time.
- 36 Have a regular schedule — Think like a baby . . . if you don't have rest or food on your schedule you get cranky. Babies that are able to keep to their daily rhythms each day are less crankier! Sleep and food do best in our bodies on a schedule, but be careful not to get too rigid about that. It is ok to have one or two nights in a week where you stay up or sleep in and enjoy life a bit :)
- 36 **Rest when you feel tired!** When you feel tired in the afternoon don't have coffee for a pick me up . . . instead listen to your adrenals and take a 20 minute nap . . . pushing yourself through tiredness with caffeine and sugar is a sure fire method to set you on your way to adrenal dysfunction . . . If you do have adrenal issues you do need to be very careful with sugar and caffeine.
- 36 Hydrate.
- 36 Avoid Late Meals - There are two main thoughts on eating late, Ayurveda says : Have your last meal no later than 6pm and make it a light one (soups or cooked vegetables). Skipping supper altogether a couple times a week may also boost energy levels and is not a bad idea. If you decide to try that, make sure that you have a large, balanced and nourishing lunch that day, to get you through the night without hunger pangs. Other studies like you to fast all day and eat at night (like many Europeans). If you are in the habit of eating dinner late — try not to eat it later than 6pm. A high protein meal late at night could interfere with your sleep.



ॐ **Anti-Inflammatory Diet** - Latest research is showing our food sources are also effect a decline in your hippocampus. Higher blood sugar levels — too much sugar and carbs primarily make our brain unhealthy and inflamed — Making it more challenging for us to use our brain to control our stress.

- Processed, nutrient deficient foods, too many sugars and breads, not enough fat. Bad food is also associated with inflammation (from your body trying to recover from the bad food) of another important part of our brain that reacts to stress:
- Inflammation is a cause of degeneration of the part of our brain that sits upon our brain stem (mesencephalic midbrain), this part of your brain produces adrenaline for use by your brain and nervous system. This mid-brain part of your brain controls the amplitude or strength of your adrenal/cortisol response. Meaning, if this part of your brain is inflamed you over react to stress, make a big deal of little issues and have a hard time letting them go.

### **Our vagus nerve is our gut brain connection; what is going on in your gut effects your brain.**

- ॐ If symptoms associated with stress are chronic, conditions such as gastrointestinal infections and severe dysbiosis (gut microbiology disruption) result — or even could be at fault (which came first?). Unhealthy imbalances in your GI microbiome (gut bacteria) certainly impact the brain through the vagus nerve and the brain's capacity to manage stress, as well. What happens in the gut most decidedly influences what happens in the brain and vice versa. You can be tested for the presence of many forms of dysbiosis (i.e., imbalances of gut bacteria).
- ॐ The mid-brain — that sits on your brain stem — is directly connected to the gut through the vagus nerve, a unique information highway unique to mammals that begins at the top of your spinal cord and extends to your gut. The brain and the gut are always connected.

### **Laugh and do something fun everyday — its called Vitamin P (Pleasure).**

Foods that help your brain stay in balance and detoxify:

- ॐ Vegetables with lots of folate and B vitamins (greens, cabbage, brussel sprouts, beets, asparagus)
- ॐ Fermented foods
- ॐ Eggs (choline in the yolks)
- ॐ Magnesium - Leafy greens and Epsom salts baths are good sources of magnesium. Magnesium replaces aluminum in your body, detoxes and stimulates your parasympathetic nervous system.
- ॐ Cholesterol! 25% of the cholesterol in your body is in your brain.
- ॐ Omega3 (walnuts, chia, flax)
- ॐ Fat
- ॐ Vitamin D (Sunshine :)

Exercise, Food, and Meditation, are your best brain enhancers!

**More on Meditation** is tool that shows immediate improvement in your brain. And the good news is — you don't even need to be a good meditator! Just sitting and breathing everyday for as little as 5 minutes shows big benefits :) (<http://lifspa.com/nobel-prize-winner-studies-meditation/>)



[utm\\_source=article&utm\\_medium=email&utm\\_campaign=nobelprize&inf\\_contact\\_key=54b9e2c9b10af69c3a83ab12cb870d9702bac36b9facb4e518b874151a6d4e43](https://www.befitbodymind.org/learn-and-thrive/meditations/))

Here is a link to a tool I've devised to help you with your meditation practices:  
<https://www.befitbodymind.org/learn-and-thrive/meditations/> . The first link gives you a brief overview of how to meditate and how truly simple it is.



**Deep NASAL breathing with a slow exhale is the best therapy in this case.** Taking in a little CO2 in this process seems to be helpful. This is because stress makes us over breathe, hyperventilate, and/or breathe through our mouth which increases the stress response even further.

o **Stress tends to depress GABA** production (gamma aminobutyric acid — a neurotransmitter released into our body with meditation and deep breathing.) GABA is best known for stabilizing mood disorders. It is our aaaaah~ hormone. GABA is akin to red wine ;) Anxiety, tension, insomnia and epilepsy are related to low levels of GABA. <http://www.ncbi.nlm.nih.gov/>

[pubmed/20722471](https://pubmed/20722471)

To keep our GABA production balanced

- ॐ Meditation
- ॐ Deep breathing
- ॐ Exercise throughout the day
- ॐ Eat fermented foods and probiotics
- ॐ Earthing will improve the damage done by inflammation to this part of your brain and improve your GABA levels.

### Adrenal Recovery Time

If you got this message a little late ... Recovery for adrenal fatigue can take a little while. After all, it took months, maybe years to wear out your adrenals; so it takes a little time to build up their strength again. For full adrenal recovery you can expect it to take:

- 6-9 months for minor adrenal fatigue
- 12-18 months for moderate fatigue
- Up to 24 months for severe adrenal fatigue

The best approach is to make solid changes to your lifestyle for lasting results. If you aim for a balanced lifestyle with a healthy level of sleep, exercise, fun, and positive environment, then you are most likely to keep your adrenal system going strong!

**Herbal support and Adaptogenic herbs** — if you do need some help recovering your adrenals: There are also some herbs that can help with stress, many of these herbs are called “adaptogenic herbs”, adaptogenic herbs are herbs with intelligence. For example, ginseng can lower blood pressure in someone with high blood pressure, and it will increase blood pressure for someone with low blood pressure. Ashwagandha, a very popular ayurvedic adaptogenic herb, can influence your thyroid — if you are hypOthyroid it will raise your thyroid hormones, if you are hypERthyroid it will

reduce your thyroid hormones, the herb communicates with your body. Adaptogenic herbs also do this for your adrenals, they help regulate your cortisol.

A new study that came out this year showed that plants actually exude "nanoparticles" called *exosomes*, that contain within them regulatory RNAs — RNAs talk to DNAs (my own way of explaining this) — RNAs are nucleic acids found in every cell, they are non-coding, meaning they don't produce proteins. But they are information-containing sequences that modulate the DNA within those who consume them. Take ginger for example, you eat it and the RNA's go into our body and actually start to modulate the expression of our DNA. That's almost like the plant is talking to our body — or your body is talking to the plant — telling it what it needs so the plant can enable our body to come back into balance.

Some herbs to help balance our adrenals:



- ॐ Ashwagandha (means the strength of 100 horses) has the amazing property of supporting energy production during the day and safeguarding a deep sleep at night — it is one of the most well-researched adaptogens in the world.
- ॐ Shatavari (translates to Woman with 1000 husbands) is a female tonic herb that balances the cortisol making function of the adrenals, and provides steroid saponins that are the precursors to progesterone further helping to balance estrogen and progesterone.
- ॐ Brahmi or Gotu Kola - This herb has been long understood as the premier brain tonic in Ayurveda, supporting healthy memory, clarity, mood, sleep and longevity. And recent studies are beginning to explain *why* this herb has been so effective: *it has been shown to support the optimal health of the skin of the intestinal tract. Supporting our gut-brain connection.*
- ॐ Shilajit - In Ayurveda there is an herb called *Shilajit*, which is widely known in India as the "Destroyer of Weakness." It is rich in rare constituents called fulvic and humic acids that the mitochondria use to make energy. *Shilajit replenishes the deep energy-making centers of the body, the mitochondria.* In one study, Shilajit was able to help the mitochondria convert fat and sugar in the body's main energy source, ATP. (9)
  - Historically, Shilajit was used by Himalayan mountain climbers to store the energy needed for climbing at heights above 20,000 feet. Local sherpas to this day take Shilajit before each climb and sell it to climbers to help oxygenate at high altitudes.
- ॐ Like Coffee a little too much? or black teas? Then cardamom is your friend! Cardamom is an Indian spice in the ginger family that helps with digestion among many other benefits — it also reduces the overstimulation of caffeine allowing you to get some of the benefits of caffeine with less detriment. Cardamom also helps your body reduce the acids from acidic foods like coffee, tea, and spicy foods. One of the best ways to use cardamom if you drink coffee is to grind some right with and into your coffee beans. It adds a nice flavor as well. Or you could put a



pinch of cardamom powder in your coffee or tea. I brew the cardamom seeds right in with my teas.

### More Herbs, Teas, and Oils to help with stress:

Teas:

- ☪ Chamomile
- ☪ Rose buds or rose petals (organic only)
- ☪ Lemon Balm aka Melissa
- ☪ Motherwort
- ☪ Catnip
- ☪ Valerian
- ☪ Passion Flower

Tinctures to help with stress:

- ☪ Linden Flower
- ☪ Milky Oats Tincture

Food for your nervous system:

- ☪ [Oatmeal](#)

Essential Oils to reduce stress - Contact [Bobbi](#) for more information on what method of application to use for the oils and how to use them.

- ☪ Lavender
- ☪ Orange
- ☪ Neroli
- ☪ Clary Sage
- ☪ Palo Santo
- ☪ Bergamot
- ☪ Frankincense
- ☪ Ylang Ylang

### When all else fails here are two tricks to get ahold of your stress response:

☪ **BANDHAS!** When you can't get your brain to cooperate . . . try your bandhas, or better yet . breathe with bandhas :)

- Both Mula and Uddiyana bandha are scientifically designed to put pressure on specific nerves — the pelvic splanchnic nerve and the vagus nerve in our gut — they are connected to our parasympathetic nervous system. This helps us to switch from our stress response to our rest and rebuild response.

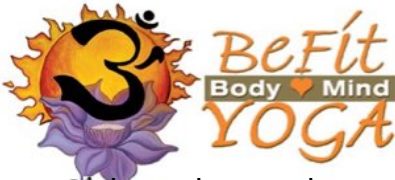
☪ **Rock Yourself** .. and say SHHH - Another point on your body that stimulates your parasympathetic nervous system is your lips, touch your finger to your lips as if you were going “shhhh”. **And gently rock** . . . suddenly you feel more relaxed. Try it!

### YOGA AND YOUR ADRENALS

Massaging the adrenals everyday with yoga asanas will recharge and balance them. Garbha Pindasana directly massages the adrenals, but most of our practice restores the adrenals:

**REST POSE :) is for the adrenals ....**

- ☪ standing poses stimulate them



- ॐ inversions recharge them
- ॐ twisting postures, back bends, and rocking and rolling on your back all wring them out improving their function and aiding in their release of hormones
- ॐ forward bends soothe them.
- ॐ However **the best pose for the adrenals is rest pose**, a nice long supported rest pose is important. It is even more important if you are juggling a full time job, kids, household chores, aging parents, etc.

And it is important to relax in the poses! Do your “exercise” in the sun salutes, standing poses, vinyasas, arm balances, jumps, etc. But don’t let this be all your practice is. RELAX in the poses — don’t try to push or pull your body anywhere it is not easily going.

Remember in your practice to keep it in perspective. Don't let your ashtanga practice add to your stress load. Your practice each day should make you feel good; doing intense full practices 6 days per week may add to your adrenal overland, it's ok to have half practices, gentle practices, or shorter practices some days.

And remember your bandhas to help keep you in your parasympathetic nervous system. You can choose if you want your practice or exercise to destress you or stress you out. If you are pushing and pulling and working too hard you are creating cortisol and adrenaline in your practice. If you relax, breathe deep, and pull away from your thinking mind you will create more GABA, and the feel good endorphins that naturally come with exercise. Make every practice feel good.

### **On the Emotional side of stress:**

To Minimize Stress, Remember the big picture . . . what is really important? Two of my favorite quotes:

What other people think of you is none of your business.

Mind your own business (Actually one of the best stress strategies!)

Avoid negative people and negative self talk, your *environment* is one of the most important components. Be kind to yourself. Try to avoid saying negative things about yourself and others. It is important to choose to be around positive people and stay positive about yourself as well.

Adrenal fatigue or burn out is a sign you are not taking care of yourself. Self care is the best Health Care, learn some daily rituals that support your health. Every night is spa night at my house :)

If you find yourself stressed chances are you are just over-worrying — and most likely worrying about situations that are never going to happen. This creates anxiety.

Even if you are truly faced with a stressful time — remember you have support. You have loved ones to lean on, you have your own survival skills which you have honed over your life. Your gut instinct is strong and it will tell you when you need to take care of — or even protect yourself. Try to listen to your gut signals more so than your brain signals. Your body is present, your brain is not usually ...

Make a list

ॐ On one side list all the things that you feel stress from

ॐ On the other side list all the things you enjoy doing in your life



Plan your life in a way to do more of the things you enjoy each week while seeing if you can lower the stress load.

All this rocking and rolling on your back is important for the organs on the back of your body, let me remind you this: Taking care of your kidneys is very important . . . if you have heart disease doctors have figured out how to work with that plumbing, you have liver issues . . . the liver regenerates . . . you have kidney issues . . . get your affairs in order! **Or better yet, live your life so your affairs are always in order :)**

References for above herbs: Changes in Thyroid Hormone w Ashwagandha 5. Bhattari JP. Journal of Ethnopharmacology 75. 2001 1-4. 6,7,8. Alternative Medicine Review. Vol. 12. Number 1. 2007. Monograph Centella asiatica 9. Environ Sci Technology. 2009 Feb 1;43(3):878-83

References:

"Rethinking fatigue, what your adrenals are really telling you and what you Can do about it." by Nora Gedgaudas

John Douillard "Freedom from Fatigue" [www.lifespaspa.com](http://www.lifespaspa.com)

[GreenMedInfo.com](http://GreenMedInfo.com)

Joseph Mercola ([mercola.com](http://mercola.com))

Dr. Josh Axe ([draxe.com](http://draxe.com))

Dr. Alan Christianson ([www.integrativehealthcare.com](http://www.integrativehealthcare.com))

Dr. Kelly Brogan ([kellybroganmd.com](http://kellybroganmd.com))