



TOPIC OF THE MONTH

June 2016

What kind of CHEMISTRY Are you creating in your YOGA ? And in any other area of your life?

Asana is to keep your physical body healthy -- It not about getting flexible or strong -- THESE ARE SIDE EFFECTS :). Many of the practices of Yoga are designed to effect your nervous system -- stimulate your para-sympathetic nervous system -- this allows your practice to heal and rejuvenate. Give you Vitality. The breathing stimulates your calming nervous system, so do both uddiyana and mula bandha, those bandhas stimulate your vagus nerve and pelvic splanchnic nerve, respectively, which in turn stimulates your parasympathetic nervous system.

Some of the latest research on our nervous system points to the fact the more often we can operate in our parasympathetic nervous system the healthier we are. There are two sides to our nervous system, let's take a closer look at how each side of our nervous system effects us; most people are familiar that we have two different sides of our nervous system but most people do not understand the differences between each nervous system on our bodily functions.

1. Para-sympathetic Nervous System — this is our rest and digest cue. Our nervous system calms our body so we can digest food and absorb the nutrients, rebuild organs and connective tissues, strengthen our immunity and let our immune system operate without interruption keeping us free from colds, flus, and diseases.
 - o These processes take energy! If you are busy busy busy all the time or under the stress response from work stress or emotional stress you will not have energy for these functions. Your body will be tired, you will get sick often, and you show signs of aging.
2. Sympathetic Nervous System — this is our stress response. When our Sympathetic nervous systems kicks into gear our body releases adrenaline and cortisol -- this ramps up its blood supply to our muscles and brain so we can act quick and think quicker. During this time all our energy is diverted away from :
 1. Digestion -- no digestion = no nutrient absorption, no matter how healthy your food.
 2. Immunity, your immune system will go dormant meaning you are very susceptible to illness when operating under the stress response. If you get exposed to a virus you will not be able to combat it.



3. Rebuilding tissues and organs (especially connective tissues). Cortisol in our blood stream takes energy from our connective tissues. This is one reason the medical community can only give you so many cortisone injections. And I would not opt for a cortisone injection, personally. Cortisone injections put stress hormones in your body and divert energy away from healing making the entire process detrimental to what you are trying to heal with the injection.
4. You also won't sleep well, go to the bathroom well, or have energy for sex Under the stress response.
5. Marinating in the stress hormones will not allow you to have vitality. Vitality is what makes our eyes shine, skin glow, and hair grow.
6. Even though energy is diverted to our brain the type of energy that is sent to our brains can have similarly harmful effects on consciousness growth. It stymied by the alarmist energy -- when operating under our stress response we have about 20 seconds to make a decision. Many important decisions need a little more contemplation time than 20 seconds.

All our energy is devoted to being able to outsmart, run, keep our jobs, or to protect ourself emotionally or physically. The challenge is the body can not differentiate between stress that is in our heads and stress that is real or life threatening. To be in the stress response once or twice per day for about 20-30 seconds is healthy . . . to marinate in stress hormones all day long sets you up for health troubles.

If you feel stress, deep breathing, bandhas, and meditation can all help. But these will not stop the stress hormones from coming until you control your mind. **Rumination**. Rumination puts a lot of unnecessary stress in our bodies. **Controlling the rumination of our mind is one of the best tools to reduce stress in our lives. Meditation, yoga, exercise, and deep breathing all help us stop the ruminating.**

Here is a review of our stress response:

- 3 Stress hormones - Adrenaline and Cortisol: 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, and metabolism (hormones affect every function, organ, and tissue in your body directly or indirectly). When the fight/flight response is triggered over 1400 different physiological and biochemical changes occur in the body. They create 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 . .



- o Adrenaline (and noradrenaline, aka epinephrine and norepinephrine; neurotransmitters and hormones with similar characteristics — they vasoconstrict our blood vessels reducing blood flow to the areas our body does not need it for immediate survival) to send energy to our muscles while diverting energy from our organs. If we run and/or fight we used up the adrenaline in our system it is less damaging. If you do not it is stored in our bodies, in our muscle tissues, where it creates toxins and leads to tension and tightness. Adrenaline is created under stressful situations whether or not the threat is real or imagined, so our thoughts alone can create adrenaline! When you feel stress — physically or emotionally, your body creates adrenaline. Pushing in your practice to “succeed” or get a posture or a ‘release’ will create adrenaline. We want to use our practice to feel good, not to create more stress and tension.
 - These hormones 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.
- o Cortisol: Cortisol not only is your main stress hormone, it also is responsible for waking you up in the morning and 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 process keeping our cortisol levels high when they need to be dropping for melatonin to pick up as the evening sets in. This is why stress interferes with sleep.

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

The endorphins :) Our body releases hormones and neurotransmitters to give us energy when we move or exercise; in our practice we want to encourage the feel good chemicals without the “stress” chemicals:

Endorphins are released with physical exertion. They are capable of lowering stress and causing pleasurable sensations similar to opiates, but in a good way (aka the Yoga high or runner’s high). If your work in yoga is pleasurable you will create endorphins but NOT adrenaline. This is desirable. If your work is stressed you will create endorphins AND adrenaline — working out does not need to create both — yoga is a work-IN by the way, not a work out ;) Serotonin, melatonin, and GABA are released into our body with



exercise, meditation, deep breathing — and food.

- 35 **Serotonin** influences happy moods and behaviors; a lack of serotonin leads to depression, obesity, insomnia, headaches, pms, fibromyalgia, among other disorders. **Serotonin is actually created in our gut, not head. For many years medical science has thought serotonin is made in our brain as our brain uses it. It is our gut micro biome that supports serotonin.** This is why anti-depressants can mess with your brain chemicals leading to undesirable side effects. Exercise, sunshine and diet are the ways to boost serotonin levels.
- o **Exercise** gives us that yoga high or runners high — that is serotonin. It does seem vigorous exercise is better at producing serotonin, but in your vigorous exercise try not to make it stressful — examples being competitive or pushing yourself. Exercise without the stress hormones is the best way to boost our moods — its the difference between running for sport or a fun beach run vs. running because something's chasing or hunting you . . . This is where how you practice your yoga matters.
 - o Massage or touch also boost serotonin (and oxytocin).
 - o Sunshine boosts both serotonin and melatonin.
 - o Foods high in melatonin and tryptophan help increase our serotonin, these include **fermented foods** (most important!), cherries, bananas, NON-GMO sweet corn, rice, ginger, radishes, red wine, among a few other foods. ref: <http://www.apa.org/monitor/2012/09/gut-feeling.aspx>, <http://instituteofhealthsciences.com/maximising-your-melatonin/>
- 36 **Melatonin** is a hormone manufactured by the pineal gland (from the amino acid tryptophan). Your pineal gland is connected to your eyes. Levels of melatonin in the blood peak before bedtime to create restful sleep while your cortisol levels drop. In the mornings your cortisol is high while your melatonin is low, throughout the day your cortisol drops and your melatonin rises. Cortisol and melatonin work in a rhythm together in this way. **You want melatonin in your bloodstream!**
- o Melatonin is also a powerful anti-oxidant. Stress interferes with our melatonin production. The hormone melatonin produces a number of health benefits in terms of your immune system. **In addition to helping you fall asleep and bestowing a feeling of overall comfort and well being, melatonin has proven to have an impressive array of health benefits.**
 - It's a **powerful antioxidant and free radical scavenger that helps combat inflammation.**
 - Melatonin may even have a role in **slowing the aging of your brain.**
 - Melatonin beats cancer! It inhibits the proliferation of a wide range of cancer cell types, as well as triggering cancer cell apoptosis (self destruction). The hormone also interferes with the new blood supply tumors require for their rapid growth (angiogenesis).



- o Ways to boost melatonin production (some are similar to serotonin):
 - Get a good night's sleep
 - Bright daylight sunshine each day.
 - Diet — same foods as Serotonin— especially fermented foods.
 - Lights at night! Avoiding bright lights or blue light after sunset are key for having your melatonin levels rise for sleep. In my house i have a regular light bulb and an orange light in each room. After 9pm I switch to all orange lights in my house. And avoiding electronics or screens close to bedtime — as a rule I try to be off screens by 10pm. If I do have to work late I found a program classed flux that adjusts the light on my computer. After sunset my screen slowly turns a pinkish orange hue as the blue light is removed.

33 **GABA** (gamma amino-butyric acid) is **a messenger — a neurotransmitter, known to protect brain health by reducing anxiety, providing an overall sense of calm, and helping one to sleep well**. It is best known for stabilizing moods. Anxiety, tension, insomnia and epilepsy are related to low levels of GABA.

- o The best way to increase GABA is through foods. Once a food with GABA is ingested, it is absorbed easily and binds to GABA receptors in the peripheral nervous system leading to activation of the parasympathetic nervous system.
 - Foods to increase GABA are fermented foods :) yes again!, tea (especially oolong and green teas), noni (cactus fruit), valerian, chlorella.
 - Avoiding processed foods — especially processed foods containing MSG. Glutamate is the opposite of GABA — it is an neuro-excitatory activating the stress response. Glutamate uses the same receptors in our body as GABA so if you eat glutamate your body can not uptake GABA.

You choose how you want to practice — you can create the joy chemicals, serotonin and endorphins, by breathing deep and enjoying your practice. Or you can create adrenaline by pushing too hard for all the fun and fancy “tricks” of the practice . . .

If you feel pain or tightness or tension in a posture, don't push through it. Relax and breathe it in, invite it. This stored tension is a stored memory (the issues are in the tissues . . .) Welcome these discoveries of tightness with a mothers nurturing compassion. There is a part of you that has witnessed all these little hurts and sufferings since you were a child. Allow them to release, use your breath as a healing balm relaxing the tensions that are trapped in the tightness so those feelings can release our body and mind from their bondage and negative thoughts.



When your practice makes you feel good you WANT to practice. Practicing in a way that makes you feel good also creates positive thoughts and feelings. Positive thoughts attract positivity in your life. Pushing in your practice and creating adrenaline is a fear hormone, fear comes with negative thoughts, negative thoughts attract negativity to you.

Ashtanga yoga for a Lifetime Keep your practice in balance and perspective

To practice for a lifetime you need to practice SMART. You do NOT need to fix your body in one practice, slowly over each practice, each day you cleanse your body and mind transforming yourself one cell at a time.

#1 - DON'T PUSH in your practice -- LET IT COME TO YOU. Do your practice consistently; the lightness, the flexibility, the binds, the inversions, etc. will come to you easily. When you push for these things we get frustrated or hurt. DO NOT PUSH YOUR BODY SOMEWHERE IT DOES NOT WANT TO WILLINGLY GO. If your body is tight somewhere it could be protecting an organ or nerve, etc. from being hurt — it might not just be muscular or connective tissue tightness. Consistency in your practice is the best way to “achieve” a posture or “trick” or to change your body for the better.

- ☪ If time is a challenge in your life, shorter practice 3x per week are better than one long practice ...
- ☪ THIS IDEA OF PRACTICING TOGETHER can build community and is fun. We can create an energy together we can not create alone. But FIRST - don't let the energy of practicing together make you push yourself too hard, group energy gives you more energy . . . and workshops or even just regular yoga classes encourage some people to push harder, use the group energy to feel good not to push harder.
- ☪ INTENSE PRACTICES can be counter-productive — especially if repeated day after day after day. Your body needs time to recover from intense practices. Once in a while; if on a yoga vacation or at workshop it is ok to have an “intense” practice. However keep in mind, intensity should come from keeping the rhythm of your movement to your breath, not taking breaks, fidgeting, or stopping to think, or taking a pause-asana -- intensity from pushing yourself comes with a higher risk injury.

#2 Find the sweet spot in each posture :) Make your practice feel good — or how about “slip into your yoga like a comfortable pair of pants”. Lazy people do not do ashtanga yoga . . . we tend to work too hard! Working too hard increases your risk of injury. If you tear tissue -- either to yourself or from an assist you will cause injury, injury depletes your prana and takes time to heal.



3 PAIN . . . I have heard people talk about pain as being part of our practice . . . I am not so sure I agree with that. Pain puts stress hormones in our body. I have heard that Pattabhi Jois has said "*some pain is sometimes necessary*" — and maybe it is but there is good pain and bad pain.

- o Tearing tissue is bad pain. Acute pain is bad pain. Sharp pain is bad pain. Long term chronic pain is usually bad too. If your body shoots you a sharp pain it is trying to tell you something; you would be wise to listen.
- o Some muscle soreness = good pain. Sometimes a dull achey-ness around an area is due to the healing response, and this could be “good” pain as well. If the pain is chronic or achy-ness that lasts for more than several weeks it could be a sign from your body to pay attention.
- Some muscle pains maybe ok. Muscle tissue heals better than ligaments or tendons. Muscle tissue in medical terms is called elastic tissue. Tendons and ligaments on the other hand are called plastic tissue. Muscle tissue has good blood supply so it heals. Tendons and ligaments lose their blood supply around the age of 20; after that age they are very slow to heal -- if at all . . . Since most of the tissue around your joints is "plastic tissue" you want to protect your joints.

OPENINGS . . . There is this term I have heard in yoga circles called “openings” . . . Some people believe that if you have a pop or sprain in your practice it is an opening — I do NOT like it. If you hurt yourself in your yoga practice you are NOT having an opening. You are tearing tissue. PLEASE DO NOT HAVE ANY OPENINGS IN YOUR YOGA PRACTICE.

To practice for a lifetime, use your practice to BREATHE BETTER. Then take this breath with you through your day and wherever you go. Nice thing about your breath is it is very portable. Good deep breathing all day long lower HR and BP, reduce stress and tension in our bodies, and calms our minds and nervous system so we can relax and see the big picture. Breathing, bandhas and mind stuff are the most important part of the practice. This is what sets Ashtanga apart from other forms.

Pattabhi Jois the founder of this yoga says "asana is decoration for the breath". The breath is more important than the asana.

Working toward the posture or attempting it gets you as much benefit as being able to do the "complete" posture. It does not matter if you can bind or jump through. Sure it's fun to jump through and that is important to have fun, but it is not that important.



Bobbi Misiti
2201 Market Street
Camp Hill, PA 17011
717.443.1119 befityoga.com

I like how David Williams sums it up; first use your practice to get out of pain and to get well. Second use your practice to have fun 😊 feel good. Have vitality.

A flexible person has no advantage in yoga, an inflexible person does not have a disadvantage in yoga.

Move, breathe, detoxify, and have fun in your practices.