



Cathedral Village Wellness News

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“With the coming of spring, I am calm again.” – Gustav Mahler



Email Policy

Our Cathedral Wellness professionals have instituted a new clinic policy regarding email. Medical consultations can no longer be provided by email. In order to ensure privacy of your information, to provide better and more timely care to you, and to maintain balance in our own personal and professional lives, we are all opting to manage professional communications either in person or over the phone only.

Please call reception at **306-757-4325** to arrange a phone or in- person consult – either booking a 15 minute time that is convenient for you or choosing to have us call you back as the time presents itself through our day. Phone calls beyond 5 minutes will be billed as consultations at a rate of \$10 per 5 minutes up to 20 minutes. Standard visit rates apply to longer phone consultations.

If you require prescription refills please call or email the clinic at info@cathedralwellness.ca. We sincerely appreciate your understanding and look forward to continuing to work with you on a truly personal, face to face level.

In health,
Drs. Marika Geis, Laura Stark, Julie Zepp Rutledge, and Allison Ziegler

Thyroid and Fertility

Dr. Allison Ziegler, ND

Fertility is a sensitive subject for many women experiencing difficulties conceiving. There are many factors that contribute to optimal fertility, one of which is the health of the thyroid gland. In fact, low functioning thyroid (hypothyroid) is one of the leading causes of infertility; therefore, understanding the role and health of the thyroid gland is essential in the preparation for pregnancy.

The thyroid gland is a butterfly shaped gland that overlies the trachea or windpipe and is located at the base of the neck. The primary role of the thyroid gland is to use iodine from food to produce thyroxine (T4), and small amounts of triiodothyronine (T3). These hormones are released into the bloodstream to be circulated throughout the body. T3 is the active form of the thyroid hormone; therefore, once inside the target cell, T4 is converted into T3. The functions of thyroid hormones are numerous. These functions include: regulation of metabolism, stimulation of carbohydrate, fat and protein metabolism, during pregnancy, fetal growth and development is stimulated by maternal thyroid hormone, with help from the fetal thyroid hormone later in pregnancy, and is required for activity of other hormones, like growth hormone, that influences heart rate, blood pressure and proper brain function (1).

Another function of the thyroid gland is its influence on the female reproductive hormones. Thyroid hormone stimulates the proper production of follicle stimulating hormone (FSH) and luteinizing hormone (LH) from the brain. FSH and LH are required for the maturation of the egg follicle and production of estrogen and progesterone at the level of the ovary. The proper balance of FSH and LH and subsequent estrogen and progesterone production, will stimulate the release of the egg at ovulation. Research suggests that women with low functioning thyroids have decreased levels of FSH and LH (2). Consequently, ovulation can be disrupted and infertility result. The disruption in reproductive hormones as

seen in women with thyroid disorders, often have menstrual cycle abnormalities such as scant or heavy flow and irregular cycles. Although thyroid function influences reproductive hormones, reproductive hormones also influence the function of the thyroid. A high level of estrogen, estrogen dominance, reduces the thyroid function by increasing a protein called thyroid-binding globulin (TBG). TBG binds and transports T4 and T3 hormones. The catch is, once bound to the TBG, the thyroid hormones become inactive. In a normal functioning thyroid, a subsequent increase in thyroid hormone compensates for this. However, in someone with hypothyroidism, symptoms worsen, as there is less active thyroid hormone (3).

The adrenal gland is also a large player in the healthy function of the thyroid gland. The adrenal glands are located on top of the kidney and produce cortisol, adrenaline and noradrenaline in response to stress. Exposure to high levels of stress can increase the production of the stress hormones. As a result, thyroid function is affected. High levels of cortisol alter the production of thyroid hormone at the level of the thyroid gland and can prevent the conversion of T4 to active T3 at the level of the cell. Continued high levels of stress can eventually lead to 'adrenal fatigue' or 'insufficiency' whereby the stress hormones become low. This can also lead to a lower thyroid function.

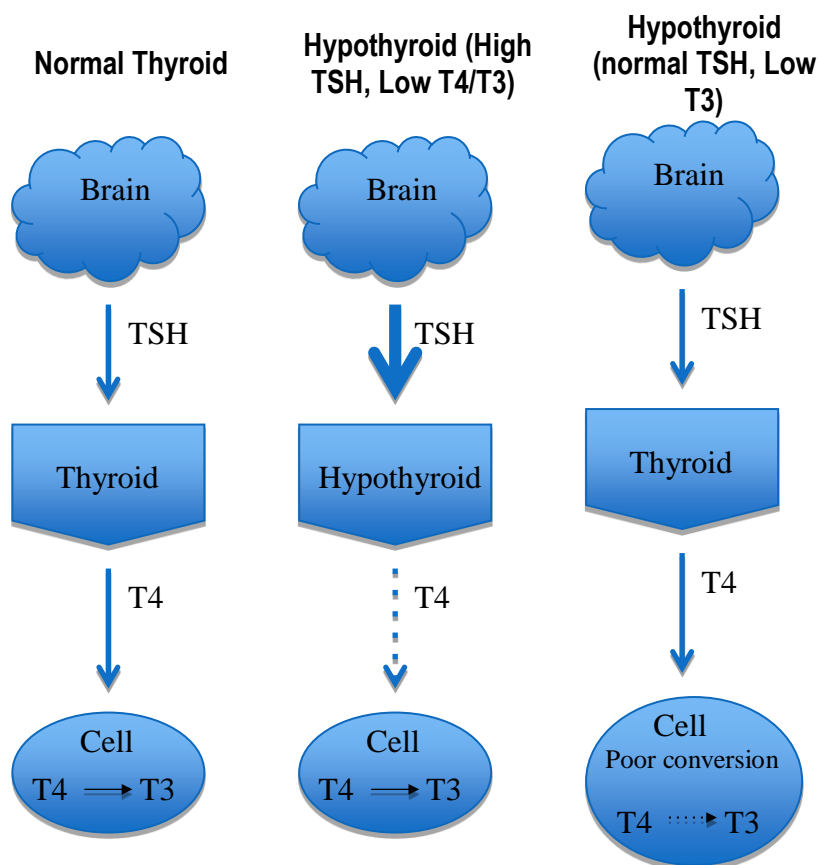
Symptoms of hypothyroidism include:

- Difficulty losing weight
- Cold intolerance
- Low body temperature
- Constipation
- Dry skin
- Hair loss
- Depression or irritability
- Insomnia
- Poor concentration
- Brittle nails
- Decreased libido
- Fatigue
- Muscle cramps
- Menstrual cycle abnormalities
- Infertility
- Swollen thyroid (goiter)
- Slow pulse



Typically, testing thyroid function is limited to measuring only thyroid stimulating hormone (TSH), which is a hormone produced by the brain to stimulate the thyroid gland to produce T4. In hypothyroidism, TSH will be high since more stimulation is required in a lower functioning gland. The problem with testing only TSH is that TSH can be within normal range while T4 and T3 are abnormal. This scenario results when there are issues converting T4 to the active T3 hormonal at the level of the cell (see figure 1). The most beneficial way to evaluate thyroid function, especially with fertility concerns, is to measure TSH, T4 and T3 levels. Among experts in the field of thyroid health, a TSH level of 0.3-3.0 mIU/L is considered normal (4). With respect to fertility, research suggests a lower TSH (2.0 or below) is optimal if trying to conceive (5).

Figure 1



Getting the thyroid into shape for pregnancy requires support of the thyroid gland itself and the adrenal gland. Providing the nutrients for optimal thyroid gland function include getting enough iodine and selenium. Iodine is required for the production of thyroid hormones. Dietary iodine requirements increase during pregnancy because there is a higher demand for T4 and T3 for fetal development. Choosing a prenatal vitamin with an iodine content of 150-200µg per day can help achieve the required amount.

Selenium is another important nutrient required in the conversion of T4 to T3. Eating foods rich in selenium, such as pumpkin seeds, Brazil nuts, and sunflower seeds, can help to prevent deficiency.

Adrenal support can be achieved through active stress relieving techniques like meditation, adequate sleep, taking time to do activities you enjoy, and avoiding processed foods and stimulants like coffee. Herbal support can help improve adrenal and thyroid function. Some herbs include Ashwagandha, Schisandra, Rhodiola, Licorice root, and Gotu Kola.

Evaluation of the thyroid function is essential for those women having difficulty conceiving. Ensuring proper nutrition through whole, nutrient dense foods, and nutrient and herbal supplements can help to balance the hormonal disruption caused by an underactive thyroid.

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Mom's to be: Don't Forget Your Probiotics!

Dr. Marika Geis, BSc, ND.

Breastmilk is widely acknowledged as being the most complete form of nutrition for infants. Beyond the perfect combination of proteins, fats, carbohydrates, and nutrition that change continuously according to the needs of a growing baby – it is responsible for several *significant* outcomes regarding immune function. In infancy these will manifest as:

- A threefold decreased risk of respiratory infection
- A three to fourfold decreased risk of diarrheal disease
- A decrease in the incidence of SIDS (Sudden Infant Death Syndrome)
- A decrease in the incidence of atopic conditions (eczema, asthma and allergies)
- Cumulatively, in developing countries, breastfeeding appears to be a critical factor in a baby's survival. Infants in Brazil are fourteen times more likely to die if not breastfed.



Later in life, the immunological benefits of breastfeeding for 6 months or more are associated with:

- Decreased incidence of food allergy/sensitivity
- Decreased incidence of ear infections
- Decreased incidence of obesity
- Decreased risk of developing autoimmune disease
- An eightfold decreased risk of developing cancer prior to the age of 15

While conventional wisdom attributed the majority of these effects to the various compounds present within human breastmilk, namely *immunoglobulins* (antibodies derived mainly from maternal gut and lungs), *lactoferrin* (inhibits growth of bacteria, viruses and fungi) and

lysozymes (directly toxic to pathogenic organisms), little thought was given as to whether or not commensal (symbiotic) or beneficial bacteria could be a factor since breastmilk was thought of as sterile. However, in 2003, a Spanish study published in the Journal of Pediatrics revealed breastmilk to be a major source of lactic acid bacteria for the infant gut. Beyond the vital exposure to commensal/beneficial bacteria that babies receive as a result of a vaginal birth (vagina/rectum/skin), it appears that babies consume as much as 100,000 to 10 million bacteria daily (based on an average consumption of 26 ounces daily). This is hardly surprising given that non-human micro-organisms greatly outnumber our own cells; three to one by some estimates.

If one were to take a cursory look at the available research on the benefits of probiotics, they would likely find a striking similarity between their supplementation and the effects observed above among *many* others. Yet while the research shows that breastfeeding and probiotics (and even probiotics during pregnancy) reduce the likelihood of developing the conditions listed above, to date, research linking the two variables is sparse. This is presumably due to the fact that up until recently, researchers had yet to explain how something residing solely on the so-called external environments of our body (gut, lungs, genitals, oral, skin), made their way to into breastmilk.

What the research suggests is something of a pathway that exists between the maternal gut and mammary glands via the immune system. Firstly, white blood cells that normally serve a 'Pac Man'-like function (engulf and destroy foreign material) alter their activity and instead 'sip' the environment of the maternal gut, take samples of the resident bacteria, travel through the bloodstream, and deposit their contents in the mammary glands. Indeed, small numbers of bacteria can reside inside these cells for several days prior to reaching their destination. Changes to maternal physiology, specifically, *weakness* in the gut wall, *increased permeability* of the gut wall, and *decreased motility* allow for this incredible process *starting in the third trimester* and continues up until the *point of weaning*. Once these bacteria reach the infant gut, there are literally no barriers to colonization. It's warm and moist with an endless supply of food- the complex sugars of the mother's breastmilk.

So what are the implications of this profound relationship between mother and baby? It's important to realize that the first month of breastfeeding is a critical period for establishing the bacterial profile of the infant gut. Samples taken from eight and nine year olds show that the streptococcus and staphylococcus profiles established within the first month of life remain intact. This finding lends new insight to the negative impact that antibiotic use, modern diets, and stress have on the maternal microbiome and the potential for chronic disease in children. Given what we know of the benefits of probiotics and that breastfeeding is a principle source of beneficial bacteria for the newborn, the utmost care must be taken to protect this sensitive and diverse ecosystem. As naturopaths, we often talk about the healing power of nature. While conception, pregnancy, and birth aren't necessarily conditions that require healing, this is just one more example of how the wisdom of Mother Nature manifests to ensure that we are able to survive the environment we're born into.

Essentials Oils are Powerful Medicines (use them wisely!)

Dr. Laura Stark, ND.

Back in botanical medicine class in naturopathic med school, essential oils were not a subject covered in much depth. However, the basic *do-no-harm* principle drilled into our heads was that essential oils are not for internal consumption, they are toxic.

Well, this becomes a troubling piece of information in my head when essential oil companies are advocating taking 15 drops of frankincense multiple times a day for cancer and creating daily supplements containing essential oil blends – they can't be lying right? Recently, I was lucky enough to have a great review of current essential oil research distilled for me at a conference last month presented by Dr Judith Boice ND. (I recommend looking her up if you're interested in an affordable course teaching you how to use gentle remedies like essential oils, homeopathics and others to treat yourself and your family confidently). In this article, I'm going to share with you the highlights of what I learned.



First, we need to understand that essential oils are extremely concentrated. As an average figure, 1 drop of essential oil is the equivalent of 30 cups of tea. Because essential oils are so potent, the less-is-more rule applies fully with a number of studies confirming that low dose produces the best effect with higher doses often showing less effect and/or toxicity. We were presented a new rule of thumb for essential oil use – always choose the least invasive method of use possible to achieve your purpose. That means, diluted over straight (or neat) and in order from inhalation/smelling, topically on the skin, vaginally, rectally, then finally orally/by mouth. And as it turns out, my schooling was not incorrect in teaching me that essential oils are toxic, do not eat them. Of course, there are exceptions to this rule. There is a long history of internal use of essential oils in Europe and there are a few human studies that confirm long term safety of internally consumed oils such as peppermint. Generally though, an essential oil taken orally needs only to be taken for 2-4 days probably and should be done under the direction of a medical practitioner trained in internal essential oil use. (And I'm afraid a guidebook produced by an essential oil company does not count as advice that is properly trained).

The plant chemicals in essential oils get processed by the body through the liver and an overdose causes liver toxicity which may first show up as elevated liver enzymes or bilirubin on blood tests. Dr Boice had a personal case study to share with us of a patient who was taking a daily multivitamin that contained 500mg of an essential oil blend and was taking an additional drop of lemon and one additional drop of frankincense daily – a total of 22 drops of essential oil orally per day. This woman had had a persistently elevated bilirubin level since her cancer treatment (which happened to coincide with the start of her essential oil regime). Her bilirubin levels returned to normal within two months of stopping the essential oil supplementation. A few months later she decided to start her oils again, and once again her bilirubin levels spiked. The liver is an amazing

organ that detoxes all the insults we take in from our environment. I like to refer to it as our great compensator as it can take a huge amount of abuse from us before it starts showing any signs of tiring. (We should be thanking our livers with spring and fall cleanses every year!) Just like many drugs are “hard on your liver” and we can only take a certain dose for so long before we get side effects, essential oils are exactly the same and their therapeutic dose happens to be tiny.

Now, I'm not trying to be a debby-downer on essential oils (in fact I'm a bit of a junky who uses them everyday), but I have one more disappointing bubble to burst – the huge frankincense essential oil for cancer hype. There are human studies that show the benefit of using normal herbal preparations of frankincense in cancer. There are zero human studies using frankincense essential oil for cancer – neither safety studies or assessing therapeutic value. There are a number of petri dish studies indicating many anti-cancer effects from multiple species of frankincense “essential oil”. Unfortunately, the most impressive results in these studies do not in fact come from the essential oil, but from methanol extractions of frankincense that contain the boswellic acids that most of frankincense's medicinal benefits are attributed to.

Phase I and II clinical trials in humans have been conducted on limonene, an essential oil component found in highest concentration in grapefruit and orange essential oils. Limonene has been shown to be safe to ingest long-term in doses 4 times higher than the therapeutic dose. A therapeutic dose of 2g per day (taken as a pure limonene supplement) was given to women with breast cancer for 2-6 weeks prior to surgery. Limonene preferentially concentrated in breast tissue and reduced the expression of one cancer gene by 22%. Of the 32 people in the safety study taking limonene, one woman with breast cancer had a partial response (a 50% reduction in her tumour size) and 3 people with colorectal cancer had stabilization (less than a 50% reduction or less than 25% growth) for more than 6 months. Results like these are exciting because they indicate there is promise in a safe compound that could be fairly accessible to most people, but we need to pay attention to the fact that 1 out of 32 people had a partial response – that's it. So, as a cancer therapy, limonene may be a nice thing to add on the side, but it should not replace more effective care.

But now to the fun stuff that we do know - inhalation and topical applications of essential oils are powerful medicine! The optimal concentration is a 1-5% solution which produces only a very faint scent. To make a 1% dilution, put 1 drop of essential oil in 1 tsp of carrier oil. Essential oils are absorbed through the skin very easily and dilutions like this can be detected in the blood within 5 minutes and up to 90 minutes in the case of lavender and in exhaled breath between 20-120 minutes after application depending on the oil. There are a number of drug studies that show dramatically enhanced absorption through the skin by combining various drugs with a number of essential oils. This should caution us to mind what else is on our skin when we apply an essential oil and to think about all the other ingredients in a body care product that contains essential oils. A note should also be made that saturated oils such as coconut as a carrier oil actually block absorption. Unsaturated oils such as sunflower, almond, or sesame (cold-pressed organic, please) make the best carrier oils.

Most human studies done on essential oils use inhalation as the method of application and I was actually blown away with the results that can be achieved! For example, neroli essential oil for menopause increased sexual desire, decreased blood pressure, and improved blood levels of cortisol and estrogen. Smelling rosemary can increase the speed and accuracy of memory recall

by 60-75%. In a hospital setting essential oils simply chosen for scent by the patients were able to quite dramatically reduce anxiety, nausea and improve sleep. Full effects like these are generally achieved by inhaling a diluted essential oil once every 2-3 hours.

Now, because of all the wild information out there, this discussion is not complete without addressing how to find quality essential oils. Every detail matters in the production of an essential oil from the environment/climate the plant is grown in, the time it is harvested, using the correct part of the plant, to selecting the right extraction method for the particular plant. Changes in these variables produce essential oils with markedly different chemical profiles, so that even though two oils may both be called lavender, if one was farmed in inappropriate conditions it may not have the expected therapeutic benefit that properly prepared lavender does. A trustworthy essential oil producer should be able to share the details about the origin or the plant, how it is harvested, and how it is prepared. If the plant is farmed, you want it to be certified organic. Pesticides and herbicides are around the same molecular weight as essential oils and the distillation processes used to make essential oils will also be extracting and concentrating those herbicides and pesticides. Be wary that labels such as “therapeutic grade”, “natural”, and “organic” are simply marketing words and don’t actually mean anything about the quality of the essential oil. Authentic should mean that the oil is made from only the specified plant. Genuine should mean the oil has not been altered in any way. These are important because “essential oils” can actually be synthesized by combining the chemical parts of other oils to reproduce the scent. These are called brokered oils and is common practice when supply of a certain plant runs out at the end of a season. You do not want a brokered oil because the medicinal benefit is certainly in question and the likelihood of contamination with other solvents and chemicals is high. A good essential oil company may run out of oils until the next growing season can produce more.

One company I whole-heartedly respect for their ethics and high quality is Living Libations. Check out their “about” page to understand their practices and the “health & beauty articles” provide great level-headed information about essential oil use. You can find a link to the Living Libations website on my own website at www.LauraStarkND.com/fundraising. You’ll see that this is an affiliate link that if you make a purchase from Living Libations through this link, 8% of your purchase will come back to the cancer centre dream fund.

The Gut Brain Connection



Dr. Julie Zepp Rutledge, ND

The other day I was in consultation with a patient who presented to me with the chief concern of insomnia. He typically slept 3 to 4 fitful hours per night and he reported that it had been years since his last good night’s sleep. It was apparent that he was a quintessential “type A” personality and very driven. Raised in a no-nonsense family he learned to work hard from childhood, and believing that rest was equivalent to laziness. Couple

that with a 20+ year history in a very high stress job and intense self-imposed pressure on himself, essentially he was literally unable to “turn off” his “fight or flight” nervous system (called the *sympathetic nervous system*) in order to activate the other branch of the nervous system known as the *parasympathetic nervous system*.

Our treatment program focused initially on herbs to balance the nervous system and supplements to nourish his over-taxed adrenal (stress) glands to improve his circadian rhythm function (sleep-wake cycles). We also discussed stress reduction techniques and mindfulness practices to retrain his body to relax. This created a marked improvement in his sleep patterns and he slept 6-7 hours a night several times between our visits. This was wonderful however we wanted to ensure his results were more consistent and sustained. Upon further consultation it was revealed that decades of travel to countries all over the world had resulted in frequent and severe bouts of almost every kind of gastrointestinal bug you could imagine. On average he had experienced some form of gastroenteritis once every 18 months since the age of 18 (he is in his late 50s). He had been treated with countless antibiotics, anthelmintics, and other anti-microbials. This came up rather incidentally in our conversations, which is why I always tell my patients “spare no detail! You never know what symptom or experience you have or have had might be incredibly important to me for your case!” Like many of us, he had no clue how intricately connected his gut and his brain actually are, and how the imbalance of bacteria in his gut and potential damage caused by the frequent infections might actually be contributing to his inability to relax and to fall asleep at night.

The **gut microbiome** is a term that is gaining some popularity in not only the “alternative” health fields as we have talked of this topic for centuries, but is also seeing much discussion in the conventional medical communities and is very much the focus of emerging research showing the connection between gut health and emotional and psychological well-being. If you google “Scientific American and Microbiome” you get an incredible number of article titles from this well-regarded publication that show many aspects to the link between our gut and our health.

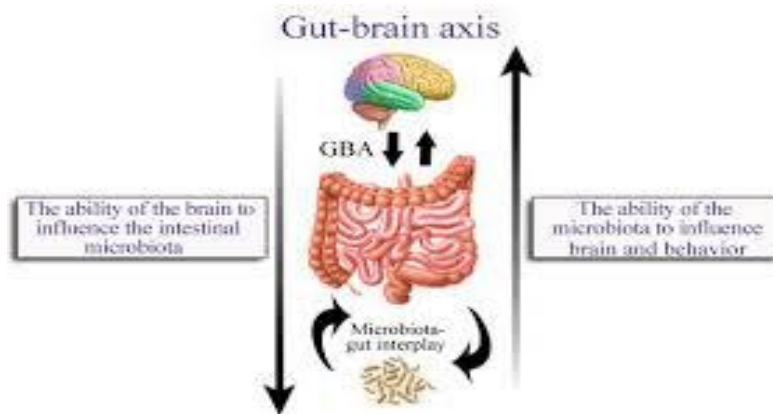
The gut microbiome refers to the microorganisms (also called microflora), predominately bacteria (somewhere on the order of 10 to 100 trillion) but also beneficial yeast, living within the human gut. Many of these microorganisms are in fact essential for good health. When the balance of beneficial bacteria in the gut is disrupted, disease can occur. We are far more familiar with the concept that imbalance of the gut bacteria (termed “dysbiosis”) can result in chronic diarrhea. In fact many mainstream medical physicians and pharmacists have started recommending that patients take a probiotic (or “acidophilus” which is really just a common strain of “good bacteria” that is commercially available) when they are put on a course of antibiotics. Seldom do we realize the greater reaching impact, beyond the gut, that dysbiosis has on our health. Immune system problems (low immunity or auto-immunity) have long been shown to be a result of dysbiosis and now studies are showing profound differences in the microflora in the gut in people with anxiety and depression.

Much of the research being done on the gut microbiome stems from acknowledging the link between anti-depressants and anti-anxiety medications and gut health. It has been established that side effects of these types of medications can include gastrointestinal upset. The most common of these medications belong to the class of pharmaceuticals known as “SSRI”s (selective serotonin re-uptake inhibitors). Since it is estimated that upwards of 90% of our

serotonin (our “feel good” hormone) is actually made *in our guts* by a cell type called an *enterochromaffin cell (EC cell)* as well as certain nerve and immune cells, and only roughly 10% in our brains, when we take an SSRI it leads to serotonin basically hanging around longer in our gut tissues and creating irritation which can result in gas, bloating, diarrhea and/ or constipation, food intolerances, overgrowth of “bad” bacteria/ yeast. Because of this connection we can see that poor digestive function can also result in mood disorders. If something in our bodies is causing the serotonin producing cells of the gut to either over- or under-produce serotonin we can end up with issues with relaxation, mood, sleep and even our ability to handle stress. EC cells are dependent on good bacteria in the gut to make their serotonin.

Stress alters the flora in the gut and altered flora in the gut can cause stress. It is a “chicken or the egg”-thing resulting in a potentially vicious cycle. As a Naturopathic Doctor I love that our approach to working with our patients involves looking at a case from every possible angle and being able to address all potential causes of their presenting issues. In the case of the patient I described, it is possible that the significant disruption to his gut flora and the irritation of his gut lining has affected the “enteric nerve plexus” (the fancy name of the nervous system tissue that lies within the gut walls, often referred to as ‘the second brain’) and that his gut’s ability to produce important neurotransmitters like serotonin, were impaired, resulting in it being more difficult for him to actually enter into a state of relaxation.

So what can be done? Gut health depends on addressing a key number of elements: 1) foods incoming, 2) balance of “good” and “bad” microflora, 3) health of the vagus nerve (cranial nerve #10 that comes from the brain – contains parasympathetic (ie. “rest & digest”) fibers that signals digestion signals (enzymes, proper peristalsis – aka muscular contractions of the gut), 4) health of the enteric nervous system (our “gut brain”), 5) strong intestinal lining and adequate antibodies on the surface of the gut.



Steps to take to “heal and seal” the gut lining:

- Remove processed and refined foods, including breads, baked goods and flour based products (whether or not these are gluten free!), caffeine, alcohol and pop and commercial dairy products;
- Minimal nuts and seeds taken raw (2-4 Tbsp/ day) and avoidance of roasted/ salted nuts and seeds;

- Moderate (vs. excess) consumption of excessive grain intake (this includes wheat, rice, oats, quinoa);
- Moderate consumption of good quality meats, poultry, eggs and fish;
- Focus on high vegetable, moderate fruit, moderate good fat (eg. olive, flax, hemp oil, avocados), consuming organic whenever possible;
- Add fermented foods to your diet (kombucha beverage, kimchi, sauerkraut);
- Supplementation with essential fatty acids, cod liver oil, high potency probiotics and digestive enzymes or apple cider vinegar*;
- Consider a cleanse for parasites or yeast that may be living in the gut due to years of insufficient good bacterial load*;
- *Seek consultation with a health care practitioner to create more individualized programs for you to address your unique needs;
- Hydrate well with clean water and herbal teas;
- Get lots of rest and sleep;
- Incorporate meditation, journaling, visualization or other stress reducing strategies into your life;
- Learn to deep breathe to activate the diaphragm, massage your inner organs and activate the parasympathetic (“rest and digest”) nervous system.

Read more: www.caltech.edu, www.scientificamerican.com, www.psychologytoday.com (search microbes/ microbiome/ serotonin and gut). ♥

