

Flourish

HEALTHY BODY, MIND, AND SPIRIT

Botanicals Worth
Taking to Heart

Destressing
With the
Senses

Naturopathic Approaches

MCT Energy

Alternate Fuel Source

Special Promotions Inside!

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Summer 2019

Editor's Letter



Take a deep breath; summer has finally arrived, and with it comes our summer edition of *Flourish*. Since being named editor of *Flourish*, I am enjoying working with our production team and wealth of contributors. I look forward to sharing new findings from nature, to improve our health and wellbeing, and make life better.

Our summer issue features articles that span natural approaches for stress reduction as well as botanicals that benefit cardiac health, and reveal the history behind an “immortal mushroom.” Dr. Philip Rouchotas demystifies peripheral neuropathy, with a discussion of effective integrative management. We take a closer look at the wealth of benefits of medium-chain triglycerides, exploring how using them as an alternative fuel for body and mind can positively impact health.

We hope to encourage you to plan some spontaneity this summer, and partake in some activities meant to strengthen your bodies, nurture your minds, and reinforce your social fabric. Culinary corner rounds out our current issue with our contributors sharing recipes that exude energy, flavour, originality, and above all, a focus on better health.

Enjoy your summer!

Sophia Golanowski
Editor-in-Chief

Flourish

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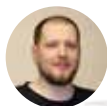
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Destressing With the *Senses*

Naturopathic Approaches

by Dr. Bianca Despotides, ND

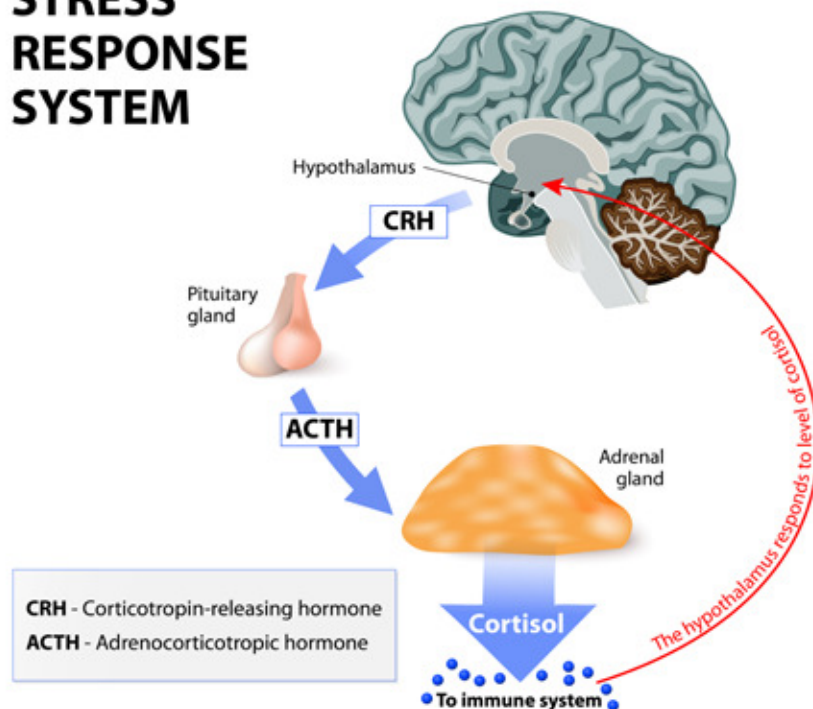
“Stress is a killer.” At some point, we have all heard this very common phrase. It is well-known that stressful things drain vitality from human beings. Financial issues, relationship issues, and workplace issues are enough to break anyone’s bubble. That’s not even touching the stresses and trauma we have been gathering and carrying since childhood. In order to truly reduce the physical/chemical/emotional stress in our lives, we must understand what stress does to our bodies and why.

While the stimuli that cause stress often come from the outside world, it is our organs and hormones which carry out their response. Our senses of sight, smell, taste, hearing, and touch pick up information every millisecond we are alive. This data enters our brain in different quantitative and qualitative forms. Quantitative data would qualify as anything that can be measured and recorded in terms of numbers. This type of information can be checked for accuracy and will never vary. Qualitative data tends to be the complete opposite. It cannot be purely logistically categorized, because we cannot measure it nor count it with numbers. It is not something that can be reproduced 100% the same by every person. This is the reason we say qualitative information cannot be accurate but is variable instead.

Millions of examples highlight sensory qualitative and quantitative experience. For the sake of simplicity, let’s imagine looking at a lake in front of us. We can measure that the lake has 47 willow trees at the edge. It is 1 km long, 0.5 km wide, with a water temperature of 27 °C. These are all quantitative descriptions we gaged with our senses. However, noticing that the emerald green reflection of the willow trees on the sapphire blue surface of the water brings joy to our soul or that the warm water melts our muscles like butter are qualitative sensory perceptions. Both these observational types warn our body about the potential dangers/threats we perceive in this world. Our brains take this information, which then can cause the release of hormones and neurotransmitters in our body.

Learning about all these molecules can take years, so we will boil it down to the two you may have heard of, cortisol and adrenaline. Both these hormones are produced in a tiny pyramid-shaped structure, one sitting atop each of your kidneys, called adrenal glands. These glands are vital to our survival. They get their orders from the hypothalamus. The hypothalamus can be likened to the command centre of our brain, conducting the function of many other organs. So, the hypothalamus sends a biochemical warning to our adrenal glands every time something stressful occurs inside or outside of the body. The adrenal glands then release cortisol, known as “the primary stress hormone.” Cortisol forces glucose (aka blood sugar) into our bloodstream. Glucose is the primary energy source the brain can use. It is needed to think on our feet and make snap decisions. Another fascinating action of cortisol is that it will suppress any body functions which are not necessary for immediate survival.

STRESS RESPONSE SYSTEM



Reproduction, digestion, and growth are all put on the backburner when cortisol floods our body. Our immune system is also changed by the release of cortisol; one of the main reasons stress truly can be a killer. Adrenaline is another hormone released by the adrenal gland. This hormone will increase our blood pressure, raise our heart rate, and increase our energy supply to deal with the stressful threat. We as humans perceive the resulting changes as being stressed out. As stated previously, there is much more to the body's stress saga that has not been described here for the sake of time and space.

Now that we have a better understanding of what stress means to the body, let's examine ways to modulate that experience. There are hundreds of millions of different ways to be stressed. In fact, it can be a little stressful just thinking about all the types of stress we experience daily! Now, we know that our senses are the receptors for those perceptions. If we focus on each sense, we can find simple and easy ways to avoid triggering the feedback loop we mentioned above.

To begin, we can start with the sense of sight. Different wavelengths allow our brain to perceive different colours in the spectrum of visible light. Anyone who is not colour-blind has seen tones ranging from red, orange, and yellow to the opposite end of the spectrum including green, blues, indigo, and violet. Using these colours to heal our bodies, thereby reducing stress, is known as colour therapy. Different wavelengths, which are perceived by our brain as different colours, elicit different responses in the body.

To embrace releasing stress on the quantitative visual spectrum, try to find love and beauty in everything. Make a list of what you love or find beautiful in physical/mental/emotional/spiritual reality—no holds barred, no judgement, no shame. Allow yourself to reject the notion of focusing only on what is going wrong. Celebrate what is going right! Literally open your eyes to the positive blessings you do have right in front of you.

The Perception of Colours

Red (with a wavelength of 700–635 nanometres [nm]) is very stimulating; this can help increase our energy by optimizing the function of our cardiovascular system, muscles, and blood. As prolonged exposure to red light may increase aggression, this is a case where more is not necessarily better. We should aim to only expose ourselves to a predominantly red light no more than five to ten minutes at a time.

Orange (635–590 nm) is famous for increasing our sense of warmth and relaxation; it is often used to help move the lymph in our body.

Yellow (590–560 nm) is known to improve the mood and digestion. However, people who suffer from paranoia need to exhibit great caution when using primarily yellow light. Like the red frequency, we should only expose ourselves to yellow light for a duration of five to ten minutes at a time.

Green (560–520 nm) helps promote healing in all our body's systems and is the least irritating. That is why it is often used for extended lengths of time and as part of hydrotherapy.

Cyan (light blue) (520–490 nm) is most anti-inflammatory and soothing, which greatly lessens the stress response.

Blue (including indigo/dark blue; 490–450 nm) helps us deal with matters of integrity, realization, and intuition.

Violet (450–400 nm) assists us in times of evolution and with wisdom/inspiration.

Organic Essential Oils for Aromatherapy Use



Next, the sense of olfaction (the medical term for smell) is a powerful ally in relieving stress. Humans have an intimate relationship with smell. An odour binds receptors in our nostrils, which eventually touches our brain through the first cranial nerve. “In recent years, various studies have revealed that olfactory stimulation through fragrance inhalation exerts various psychophysiological effects on human beings.” Especially tied to our memories, positive/comforting smells that are special to our story should be mindfully applied in our life. For example, my childhood home had a whole row of roses along the back wall, that my mother grew with love, loyalty, and strength. It’s no easy feat to raise thriving roses in the Arizona desert where I grew up... just like it was not easy to raise her first child ever born on American soil to become a naturopathic physician. So, while I have always adored a rose’s scent, it holds a deeper meaning for me now. When I use a rose-scented candle, lotion, perfume, massage oil, essential oil, or anything else, it steadies me. I almost immediately feel stronger, comforted, and loved. Think back through all your experiences and try to find scents that have meaning; then, begin incorporating them in your daily grind. If you are looking for new scents scientifically proven to combat stress, try rosemary, geranium, orange, cypress, bergamot, juniper, spearmint, rose, lavender, or jasmine.



In transition, we come to taste. Unfortunately, we have all had our tastes/appetites affected by stress. Whether we eat more or less as a result, emotional eating is something everyone has done at least once. In this spirit, we enact the 80/20 rule: It means that 80% of the time, we consume nutrition best for our bodies while still engaging fantastic flavour. The other 20% of the time, we plan our indulgence. Let me be clear: It is not cheating—we aren’t doing anything we are ashamed of; we have planned our indulgence to know our limits.

Fourthly, we arrive at our auditory sense. Again, this form of quantitative sensory experience is a universal treatment for stress. Ironically, we get so busy/overwhelmed that we oftentimes subconsciously forget to bring that form of healing to our hearts and homes. I encourage all my patients to always expand on their “personal sound.” Expand how often they listen, why they listen, what, where, and how—because it usually teaches them about who they are in the process. Music is vibration and has been soothing humans since humans existed. In recent years, science



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has gathered more data on its quantitative stress-relieving properties. Known as solfeggio frequencies, these tones have been proven to help our mind-body spectrum overcome emotional and chemical stress. Scientists found 396 Hertz (Hz) liberates guilt/fear, 417 Hz unravels situations and facilitates change, 528 Hz is for transformation and DNA repair, 639 Hz for relationships and connecting, 741 Hz for solutions and expressions, and 852 Hz for returning spiritually to order.



Lastly, our sense of touch may be our most powerful tool to combat stress. Even if we ignore the centuries of research on how healing physical sensation is, we cannot ignore how much better we feel after an embrace from someone we love and trust. Almost everyone on this planet has at least once felt better from being given physical affection; not everyone has to be “touchy-feely” to benefit. We have evidence of massage as a healing art to banish stress as from 2700 BCE in China, 2500 BCE in Egypt, and 1500 BCE in India. The world too often forgets that sports, games, hobbies, and the arts are all things that involve touch and imply motion. Relieving stress through your favourite forms of moving is the best thing you can do for your body, mind, and spirit. Dance, play with your kids, go fishing, play ball, hike, craft, create... do anything you desire mindfully to expel whatever negativity is bringing you down!



Bianca Despotides, ND

It is Dr. Bianca's mission to help her patients attain physical, mental, and spiritual health using natural methods. She is passionate about educating her community about the benefits of naturopathic medicine.

desertclinics.com/profiles/bianca-despotides

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Botanicals Worth Taking To Heart

by Gordon Raza, BSc

Heart disease has the dubious distinction of ranking ahead of even cancer as the number-one killer of North Americans. When you consider the fact that stroke ranks fifth, cardiovascular-related disease is something we're all too familiar with. The problem with cardiovascular disease is that it can take a lifetime to develop, usually without symptoms, yet strike a sudden, fatal blow with little warning.

The good news is that there are many ways we can take control of cardiovascular status to live longer and stronger. There are many lifestyle choices that can collectively make a difference in your quality of life. First and foremost is to lead a smoke-free life. Management of the three "Bs"—blood cholesterol, blood pressure, and blood sugar—is also critical. Eating well and leading an active lifestyle round out ways you can lead a cardiac-friendly life.

If you're ready to adopt a heart-smart eating plan, the Mediterranean diet will most certainly be a good fit. It features a plant-based diet with increased consumption of fruits, vegetables, nuts, and healthy fats such as olive oil. Cutting down on red meat in lieu of omega-3-rich seafood is another cornerstone of Mediterranean cuisine. A population study featuring over 1.5 million healthy adults illustrates the Mediterranean diet being associated with a reduced risk of cardiovascular mortality as well as overall mortality. There is also a rich history of safe and effective use of plant-sourced nutrients and extracts to benefit cardiac health.

Garlic



Garlic (*Allium sativum*), a member of the lily family, is likely the most popular culinary ingredient used worldwide. It's also among the most-researched botanicals for cardiovascular health. The subject of over 90 clinical trials, it's been shown to exert positive effects on both cholesterol levels and blood pressure.

Hawthorn



Hawthorn (*Crataegus laevigata*) berries and leaves are a popular natural treatment for hypertension. A randomized clinical trial led by Dr. Walker of the University of Reading in Berkshire, England, proved promising for blood-pressure management. Patients taking hawthorn demonstrated a significant reduction in diastolic blood pressure (DBP) over the 16-week study period. DBP is the lower number in blood pressure readings and represents the resting value between beats. This is an important clinical marker of cardiac health.

Mistletoe



European mistletoe (*Viscum album*) is another popular plant for cardiovascular health. Preclinical research demonstrates it can stimulate production of nitric oxide within arterial walls, which relaxes the inner muscles of blood vessels. Animal trials have further demonstrated mistletoe to support production of high-density lipoprotein (HDL), the good cholesterol.

Motherwort



Motherwort has a long history of use for anxiety and hypertension, properties reflected with its Latin or scientific name, *Leonurus cardiaca*.

Compounds known as capsaicinoids present in Cayenne pepper (*Capsicum annuum*) have been shown to be beneficial for blood-serum cholesterol and reduction of arterial plaque formation, according to research published in *The Journal of Agricultural and Food Chemistry*. So, feel free to spice up your life.

Willow



Willow (*Salix alba*), the herbal precursor to Aspirin®, is known for its mild inhibition of clotting. This can in turn play a critical role in cardiovascular health for those at risk of heart attack.

Berries



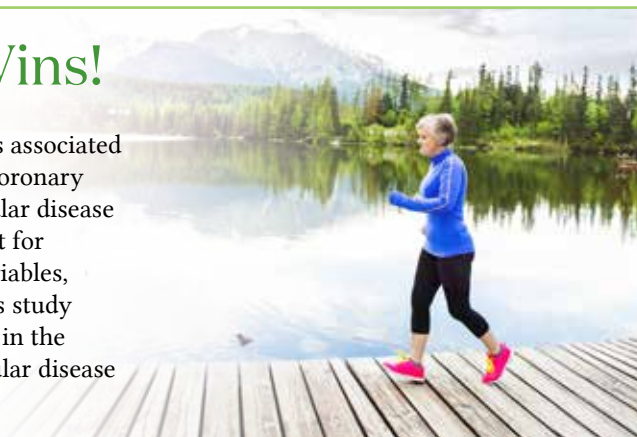
Antioxidants abundant in dark-skinned berries and fruit have long been recognized for cardiac wellbeing. Bilberries (*Vaccinium myrtillus*) are among the therapeutic powerhouses that have been shown to reduce accumulation of arterial plaque. Bilberries are closely related to the North American blueberry.

These nutrients are popular in health-food stores “à la carte” or in comprehensive formulas that—pardon the pun—are “heart to beat.”

To your health!

Slow and Steady Also Wins!

In a study of 5,861 women, light physical activity was associated with a 42% reduced risk of myocardial infarction or coronary death, and a 22% reduced risk of incident cardiovascular disease events. These reduced risks persisted after adjustment for sociodemographic, behavioural, and health status variables, as well as moderate to vigorous physical activity. This study suggests that all daily-life physical activity has a role in the prevention of coronary heart disease and cardiovascular disease in older women.





Kids grow up so fast.



They can be a handful.



But you don't want to miss a second of it.

Embrace Life. Embrace Your Roots.

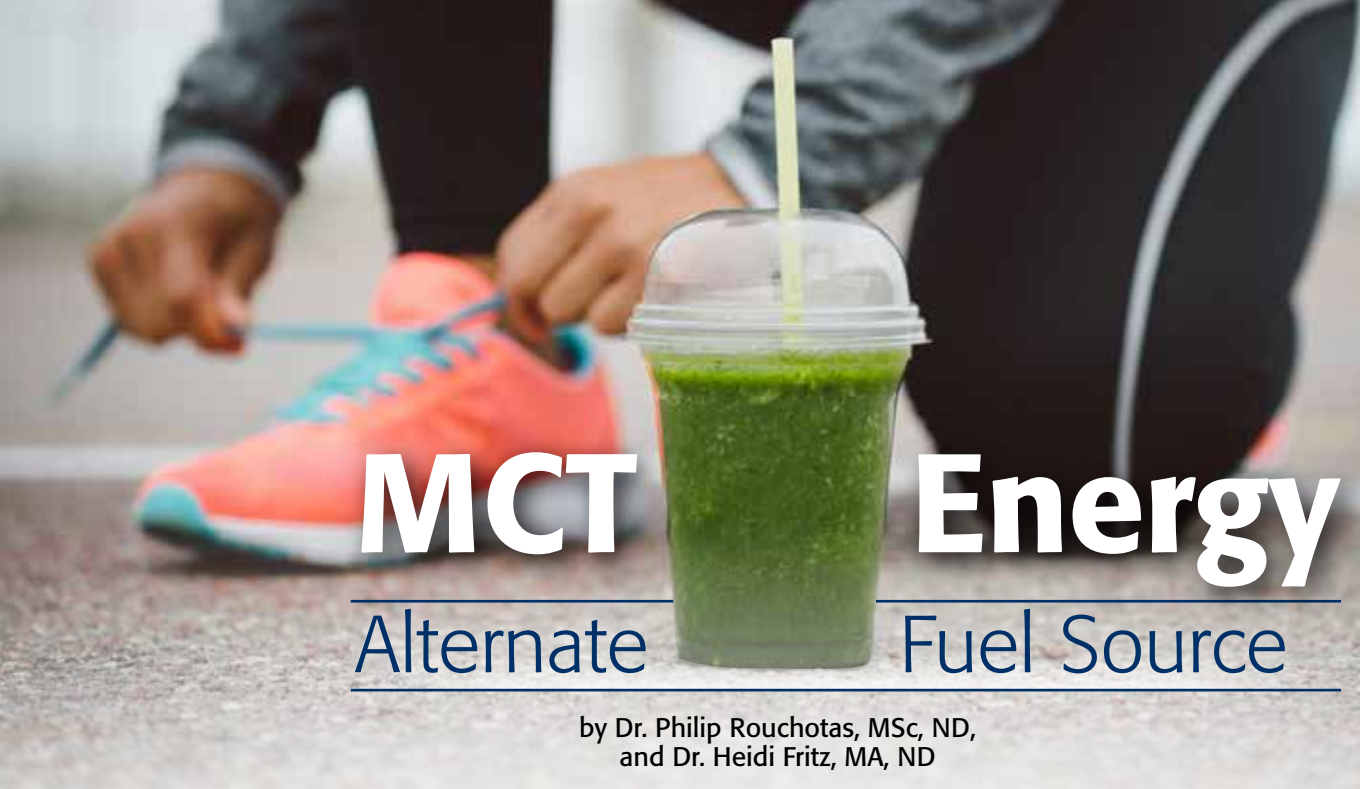
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MCT Energy

Alternate Fuel Source

by Dr. Philip Rouchotas, MSc, ND,
and Dr. Heidi Fritz, MA, ND

Medium-chain triglycerides (MCTs) refer to triglycerides (i.e. fats) composed of fatty acids 7–12 carbons in length. They are nutrients commonly obtained in the diet, especially in sources such as palm oil and coconut oil; however, they are generally present in the diet at much lower amounts compared to the more common long-chain fatty acids (LCFAs). MCTs affect cellular energy metabolism; consequently, they are often used to complement the ketogenic diet, as well as in conditions where circumventing glucose metabolism may be therapeutic. MCTs have been shown to have neuroprotective effects and may help augment weight loss. Incredibly, some data even suggests benefits to the microbiome and intestinal health.

Activity

MCTs engage in a nearly limitless number of processes at the cellular level. They have important roles in cellular signaling and have been observed to participate in cellular death and survival mechanisms. MCTs also have a direct effect on cellular metabolism. They modulate mitochondrial energy production by two mechanisms: They provide reducing equivalents to the respiratory chain and partly decrease efficacy of oxidative ATP synthesis.

Absorption and Distribution

The digestion and absorption of MCTs differs dramatically from that of LCFAs. In the intestine, LCFAs form micelles, entering circulation by diffusing into the lymphatic system and circulating to all body tissues prior to arriving at the liver as part of a chylomicron remnant. LCFAs thereby bypass the liver and are delivered directly to other tissues first. On the other hand, MCTs enter the bloodstream directly and travel directly to the liver first (the portal circulation), where they are readily metabolized.

Table 1. Examples of medium-chain fatty acids versus long-chain fatty acids

Medium-Chain Fatty Acids	Long-Chain Fatty Acids
Caproic acid (6C saturated fat) (sometimes classified as a short-chain fatty acid, sometimes as a MCFA)	Palmitic acid (16C saturated fat)
Caprylic acid (8C saturated fat)	Linoleic acid (18C <i>n</i> -6 polyunsaturated fat)
Capric acid (10C saturated fat)	<i>alpha</i> -Linolenic acid (18C <i>n</i> -3 polyunsaturated fat)
Lauric acid (12C saturated fat)	Oleic acid (18C <i>n</i> -9 monounsaturated fat)

Legend: C = carbons, *n* = omega bond

From the liver, MCTs re-enter the circulation bound to albumin or as free MCTs, and are thus taken more efficiently by the brain, muscles, and other tissues, without the requirement of LCFAs for fatty acid-binding proteins for uptake into extrahepatic tissues. The simplicity of MCT transport and metabolism may be one of the reasons why supplementation with MCT attenuates conditions associated with defects in LCFA metabolism: For instance, in studies of animals deficient in one of the fatty acid transport proteins (CD36 protein), feeding a SCFA- and MCFA-rich diet eliminated increased glucose uptake, hyperinsulinemia, and heart hypertrophy, and alleviated poor heart ischemic tolerance.

In the Liver and Mitochondria

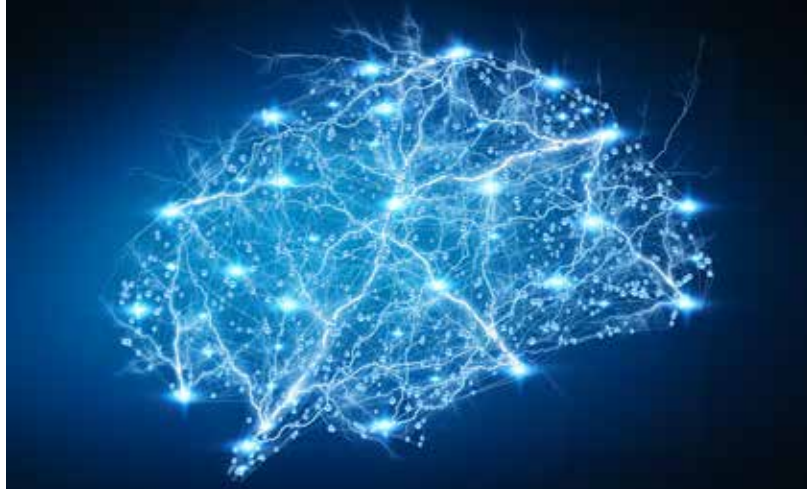
In the mitochondria, MCTs possess similarly unique features. First, MCTs bypass the requirement for the L-carnitine transporter to shuttle them into the inner mitochondrial matrix—they instead are capable of entering the inner mitochondrial matrix through diffusion, and are rapidly converted to their coenzyme A (CoA) derivatives and ready to enter *beta* oxidation more quickly. Secondly, unlike LCFAs, whose metabolism is reduced under conditions of a low-fat, high-carbohydrate diet, MCT oxidation is not affected by diet composition. Therefore, as MCTs go through *beta* oxidation in the liver, an excess of acetyl-CoA is generated, which can then be used in the production of ketones (mostly acetoacetate and β -hydroxybutyrate) to fuel other tissues. MCTs are more ketogenic than LCFAs.

Thirdly, as they are metabolized through *beta*-oxidation, MCTs also have a lower energy content than LCFAs (8.4 v. 9.2 kcal/g), thereby reducing body-fat mass and enhancing the insulin sensitivity of tissues. Finally, in the liver, MCTs such as caprylic acid have been shown to exert a pseudo-uncoupling effect, basically using up or “wasting” ATP in intramitochondrial reactions. Also in the liver, MCTs inhibit glycolysis and exert glucose-sparing activity, while other MCTs such as capric acid exhibit glycolysis-stimulating activity and release of lactate in astrocytes (brain cells). Since lactate is a fuel in the brain, this may be beneficial in a variety of neurological conditions.

Through these mechanisms—rapid delivery and cellular uptake of MCTs, rapid entry into inner mitochondrial matrix, but decreased efficacy of oxidative ATP synthesis—MCTs have a direct and well-defined effect on weight loss.

A number of studies have demonstrated the weight loss-enhancing effect of MCTs. A 2015 meta-analysis evaluated 13 randomized controlled trials and 749 participants. Results showed that, compared with long-chain triglycerides, MCTs decreased body weight (−0.51 kg), waist circumference (−1.46 cm), hip circumference (−0.79 cm), total body fat, total subcutaneous fat, and visceral fat. Similar results were found in a meta-analysis by Bueno as well. A clinical trial of 49 overweight men and women compared the effects of consuming either 18–24 g/d of MCT oil or olive oil as part of a weight-loss program for 16 weeks. At the end of this period, subjects consuming MCT oil obtained on average 1.67 kg greater decrease in body weight compared to subjects consuming olive oil.





In the Brain

MCTs also seem to be particularly relevant for neuronal tissues as well as other high-energy tissues such as muscles, the heart, and the liver. MCTs can readily cross the blood-brain barrier, so they can act as a fuel for the brain. As described above, MCTs also convert more rapidly to ketones compared to LCFAs, and promote glycolysis and lactate fuel in the brain. Other proposed mechanisms include:

- Mitochondrial energy production;
- Increased neuronal long-term potentiation;
- Increased brain-derived neurotrophic factor (BDNF) expression;
- Increased G-protein coupled receptor (GPR) signalling;
- Attenuated oxidative stress;
- Reduced inflammation; and
- Altered protein posttranslational modifications via lysine acetylation and β -hydroxybutyrylation.

MCT oil supplementation has also been shown to improve cognitive function in the elderly. A 2017 randomized controlled trial administered one of three treatments to 38 elderly subjects with an average age of 86 years. One group received a combination of MCT oil (6 g/d), vitamin D (800 IU), and leucine amino acid (1.2 g/d). The second group received vitamin D and leucine, along with long-chain triglyceride oil, while the third group received no supplements. After three months, the MCT oil group improved in their Mini-Mental State Examination (MMSE) score by 10.6% and the Nishimura geriatric rating scale for mental status (NM scale) score by 30.6%.

By comparison, the other two groups experienced a decrease in the NM scale performance by 11.2% in the group receiving leucine and vitamin D, and by 26.1% in the control group.

Another study, a prospective trial in patients with mild-to-moderate Alzheimer's disease, found that supplementation with 20 g MCT oil daily for three months showed no results overall; however, there was an improvement in cognitive function in a subset of patients identified as those lacking the *APOE4* allele. Similar studies in mild-to-moderate Alzheimer's disease and in patients with mild cognitive impairment (MCI) found that MCTs enhanced memory function. Another study administered 40 ml of coconut oil (rich in MCTs) to cognitively impaired elderly and not only found improvements in cognition, but that these effects were greater in patients without type 2 diabetes; an interesting finding, given that some have dubbed Alzheimer's disease "type 3 diabetes."

In the Gut

A less-studied but equally intriguing area of research is the effect of MCTs on digestive function. Studies have shown that, while long-chain triglycerides had no effect on bowel transit time, administration of MCTs increased transit time. A recent review suggested that supplements of MCT may have beneficial effect of gut microbiota and beneficially modify metabolic parameters in obese individuals. In mice, supplementation with medium-chain fatty acids (MCFAs) resulted in decreasing body-weight gain, and optimizing serum lipids and liver triglyceride content. Supplementation of MCFAs impacted the expression of genes-encoding enzymes for fatty-acid degradation (increased expression) for de novo fatty acid biosynthesis (decreased expression). Finally, ingestion of MCFAs decreased the ratio of Firmicutes to Bacteroidetes, and decreased Proteobacteria content which may also promote weight loss. Another study in piglets found that MCFAs exerted modest effects on gut microbiota. More research is necessary in this area.

Conclusion

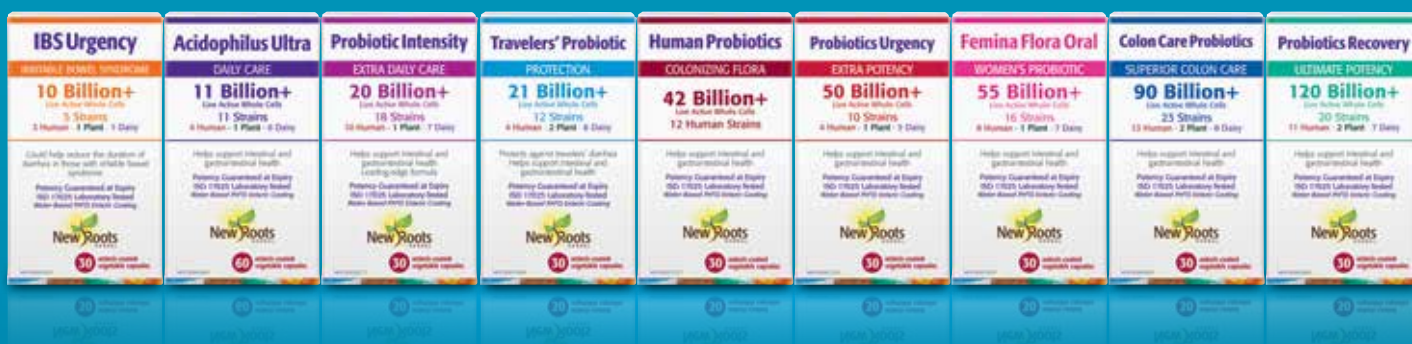
MCT oil exerts dramatic shifts in cellular metabolism and has been shown to promote modest weight loss as well as beneficially impact neurological health, especially cognitive function. Doses of MCT generally range from 10 to 30 g daily.

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One of the Most Important Relationships You'll Ever Have

by Jordan Champagne, BSc

When we hear “relationship,” our minds typically turn to our partners, parents, children, or even to our closest friend. But we’re actually referring to the crucial relationship you have with the 39 trillion bacteria in your digestive system.

You and your bacteria buddies exist in a state of codependence: You provide them with a place to live and nurture them regularly by feeding them—we hope—a balanced diet complete with dietary fibre. In return, they protect your digestive system and perform a variety of biological functions relating to cognition, immunity, and even the prevention of certain types of diseases.

Probiotics are used to further support the good bacteria in your digestive tract. Their therapeutic benefits have been well-documented. But getting the most out of these benefits is highly influenced by two factors:

Temperature: Keep Your Probiotics Cool

All probiotics slowly weaken with time, but keeping them cold extends their lifespan, while warmer temperatures can speed up deterioration.

Some of the more beneficial strains, such as *Bifidobacterium*, are particularly sensitive to warmer temperatures. A peer-reviewed study of 16 different strains of this important genus clearly demonstrated accelerated deterioration rates at higher temperatures.^[1] At room temperature (25 °C), one strain of *Bifidobacterium* in particular experienced up to a 76% mortality rate in the first 90 days.



Safe Passage: Choose Enteric-Coated Probiotics

Before probiotics can do their job, they must survive the journey past your destructive stomach acids, to make it down to your intestines where they can do their work. Survival is highly dependent on the composition of the capsules protecting them. An in vitro study demonstrated enteric-coated capsules protect probiotics in these conditions, keeping them fully viable and 100% effective.^[2]



Keep your special someone warm,
your probiotics cool in the fridge,
and both off the shelf!

1. Simpson, P.J., et al. “Intrinsic tolerance of *Bifidobacterium* species to heat and oxygen and survival following spray drying and storage.” *Journal of Applied Microbiology*, Vol. 99, No. 3 (2005): 493–501

2. Kuate, S., et al. “In vitro comparative study of the survival of probiotic capsules in a simulated gastric environment.” NHP Laboratories Inc. (2017) [internal publication].

Red Reishi

A History of Benefits

by Guillaume Landry, MSc, Naturopath



Once upon a time, 4,750 years ago, there lived a legendary pioneer of agriculture and herbalogical studies of the Chinese Empire named Shennong. He compiled his knowledge in what is now the most ancient Chinese literary work on plant, animal, and mineral “medicines”: the *Shennong Ben Cao Jing*. He was renowned for having discovered the healing properties of tea; however for Shennong, the most precious of the natural discoveries was none other than the *Lingzhi* or red reishi (*Ganoderma lucidum*).

Ever since, this rare medicinal mushroom has been administered to many emperors—Chinese or not—for its multitude of benefits. Revered in Japan as the “immortal mushroom,” reishi is a symbol of vitality and longevity; a fitting image, as so many scientific studies show its extraordinary capacities to procure real therapeutic benefits.

Today, red reishi is cultivated in ideal conditions, allowing for optimal development of its active ingredients, notably polysaccharides and triterpenes. These can only be extracted from its indigestible chitin shell—which can be irritating and an allergen—using hot water according to the ancestral decoction method.

This fungi panacea is mainly known to:

- Help reduce mental and physical stress symptoms (adaptogen)
- Modulate the immune system
- Support cardiovascular health
- Improve prostate health
- Be used alongside cancer treatments

And it can also benefit the following ailments:

- Inflammation
- Pain
- Muscle stiffness
- Viral infections
- Allergies
- Liver weakness
- Cholesterol
- Hypertension
- Diabetes
- Chronic fatigue

Using 2 g per day of red reishi standardized to 40% polysaccharides provides a “medium” therapeutic dose.

For those who love a good herbal tea—and maybe prefer one with added health benefits—you may choose to make an infusion using slices of the reishi’s fruiting body.

Much like lavender or ginseng, red reishi is part of the panacea family: extraordinary natural remedies which you always want to have close at hand.



You've got a hint of a cold?



You've got the in-laws coming over?



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Peripheral Neuropathy

Effective Integrative Management

by Dr. Philip Rouchotas, MSc, ND,
and Dr. Heidi Fritz, MA, ND

Peripheral neuropathy, typically abbreviated to neuropathy, is a disease of nerves other than the spine or brain. The most common presentation of neuropathy is numbness and/or tingling, typically in the hands and feet. It can be described as the feeling when your hand or foot “goes to sleep,” yet it is typically persistent and ongoing. The severity of neuropathy can vary from annoyance over the sensation to extreme, debilitating pain in its severe forms.

The Mayo Clinic lists symptoms commonly associated with neuropathy as follows:

- Gradual onset of numbness, prickling, or tingling in your feet or hands, which can spread upward into your legs and arms
- Sharp, jabbing, throbbing, freezing, or burning pain
- Extreme sensitivity to touch
- Lack of coordination and falling
- Muscle weakness or paralysis if motor nerves are affected

There can be many causes of neuropathy, yet some of the most common are physical trauma, metabolic disease (diabetes), multiple sclerosis, chemotherapy, certain antibiotics, and excessive alcohol consumption. In diabetes, chronically elevated blood glucose damages the very small nerves supporting our fingers and toes. The autoimmune destruction of myelin sheaths that characterizes the disease process of multiple sclerosis commonly induces neuropathy. Neuropathy is a common side effect of modern chemotherapeutic medications and some antibiotics.

In our practice, diabetes and multiple sclerosis are common causes of neuropathy of mild to moderate severity, while chemotherapy usually induces a very severe neuropathy that may lead to treatment needing to be discontinued until the neuropathy subsides. Needless to say, effective strategies for relieving neuropathy are very important in a broad array of settings.

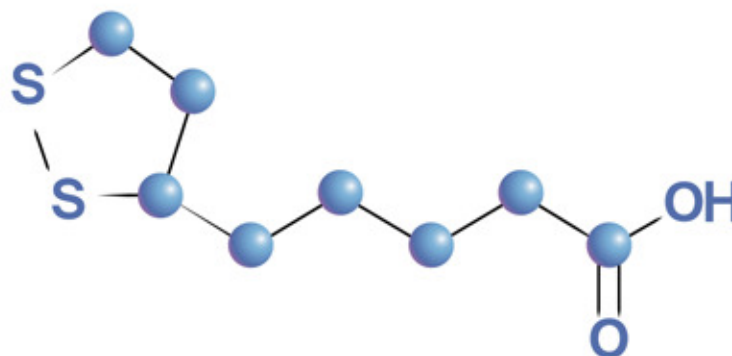
Three key options emerge regarding natural health products that can positively impact neuropathy: *alpha*-lipoic acid (ALA), acetyl-L-carnitine (ALC), and benfotiamine. All three have important human evidence that they help relieve symptoms associated with neuropathy. The most well-researched of the three is *alpha*-lipoic acid. In our practice, for mild to moderate neuropathy, our first-line treatment is to administer

ALA at 150–300 mg, twice per day (300–600 mg per day total). We find this to be an extremely effective strategy, and relief is usually delivered within days of initiating the supplement.

Dr. Jill Shainhouse, ND, pioneered a strategy for the very severe neuropathy that is a common side effect of chemotherapy treatment. She implements a strategy where all three natural health products—*alpha*-lipoic acid, acetyl-L-carnitine, and benfotiamine—are administered in combination. This combination of natural health products has proven effective for improving/managing severe neuropathy pain in a significant subset of individuals.

alpha-Lipoic Acid

A very large number of human studies have reproducibly shown that treatment with *alpha*-lipoic acid is very effective for peripheral neuropathy. It is typically studied for neuropathy associated with diabetes, yet some studies have also evaluated ALA for neuropathy associated with multiple sclerosis. Most studies administer the ALA via intravenous (IV), yet oral administration likewise delivers a very important impact.



One meta-analysis combined data from 15 human studies. ALA at 300–600 mg per day (typically administered by IV) proved very effective at managing neuropathy pain among individuals with diabetes. Individuals receiving ALA were 400% more likely to report significant improvement relative to people not receiving ALA.

In another meta-analysis of 13 studies, ALA added to a common prescription for neuropathy was significantly superior to the prescription alone.

Interestingly, ALA not only helps neuropathy in diabetes, but recent evidence has shown it also has important metabolic impact in diabetes itself. A meta-analysis of 24 studies in people with diabetes showed ALA lowered fasting blood glucose, HbA_{1C}, circulating insulin, triglycerides, and LDL-cholesterol.

Acetyl-L-Carnitine

ALC likewise has evidence from human studies of an important role in improving symptoms associated with neuropathy of many causes. The typical dose of ALC is 1000 mg, twice per day (2000 mg per day total). There are many uses of L-carnitine, including but not limited to improving heart function, neurodegenerative disease, and male fertility, as well as enhancing fat metabolism; our focus will remain on neuropathy.

ALC has been shown to improve symptoms of neuropathy in settings of diabetes, chemotherapy treatment, and sciatic pain caused by disk herniation.

What Is a Meta-Analysis?

A meta-analysis is an important and powerful tool when evaluating published scientific papers. It is a paper that gathers all published studies on a particular topic (for example, gather every human study that has administered fish oil to treat ADD in children).

The paper then uses statistical models to combine the data from all the studies into one very large data set.





Benfotiamine

Benfotiamine is an S-acyl derivative of thiamine (vitamin B₁). It possesses a 3.6-fold increase in bioavailability relative to common thiamine salts, and achieves 5-fold greater blood levels of the vitamin. Dosing of benfotiamine ranges from 150 to 600 mg per day.

Several studies have attempted to evaluate the impact of benfotiamine on neuropathy in various settings, and some of these studies fail to show a significant impact. Nonetheless, we identified four human studies showing significant impact of benfotiamine on neuropathy. While our bias is to prefer to use ALA as the first-line treatment for neuropathy, benfotiamine certainly has a role to play, and combining the natural health products discussed in this article is often required to obtain relief from severe forms of neuropathy.

Of further interest, alcohol powerfully impairs thiamine absorption, and long-term alcoholism has reproducibly been shown to be accompanied by thiamine deficiency. This deficiency then directly contributes to depression and other mental health challenges among alcohol-dependent individuals. Due to its superior bioavailability over standard thiamine preparations, interest has surfaced in utilizing benfotiamine among alcohol-dependent individuals.

Among 85 adult men recently attempting to abstain from alcohol, investigators concluded that benfotiamine (600 mg per day) appears to reduce psychiatric distress and may facilitate recovery in severely affected males with a lifetime alcohol use disorder and should be considered for adjuvant therapy in alcohol rehabilitation. In a study of non-treatment seeking, actively drinking men and women, benfotiamine supplementation achieved significant reductions in alcohol intake among women, but not men, over a 24-week treatment period.

Discussion

Neuropathy is a fairly common complaint, with a wide array of potential causes. In its mild form, people find it a nuisance and commonly seek treatment for it. In its severe form, it is capable of delivering debilitating pain. In patients undergoing chemotherapy, this can mean delaying potentially life-saving/extending treatment. In other settings, this can mean living with constant, severe pain. ALA is our first choice for treating neuropathy, often delivering the desired outcome, and does so very quickly for most people. For more severe forms of neuropathy, a combination of ALA, ALC, and benfotiamine should be strongly considered.

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Taking Time to *Make Memories!*

by Gordon Raza, BSc

Summer is upon us, and what could be more perfect than a family hike punctuated by a picnic near a babbling brook. Nice in theory, but good luck juggling everyone's schedules! Please don't judge me, but I was inspired by an advertisement on network television. The theme was "Bring Back Wildhood," a slogan coined by the Canadian Recreational

Vehicle Association, featuring adults and children alike, acting wild, crazy, and spontaneous. It gave me goosebumps, but from my experience, I've learned that locking down these "minutes to memories" takes planning.

Before all your recreational time is engulfed by the same old summer routine, get together with family or friends to plan an adventure or two. With a little research, you can unearth hiking trails—that are closer than you thought—which can suit a wide variety of fitness levels. Hiking is full of discovery, and you'll be surprised how many times you'll stop and call over your fellow hikers to say: "Look what I found!"

A scavenger hunt can also be both fun to plan and participate in, along with discovering how clever your friends and family can be. The beauty of these activities is they are well-suited to rural settings, but can also be a way to discover some hidden pockets of wilderness within a city setting that may be a bus ride or subway stop from home.

Getting a group together for a bike trip can also be fun; set a modest goal for distance, and you'll be amazed at the sense of accomplishment everyone will experience. The same goes for kayaks, canoes, and stand-up boards; a day trip or several-day adventure also could prove priceless. You'll be amazed at how many participation-oriented walks, runs, biathlons, and triathlons are held every weekend. They're well-organized and do a great job accommodating "hardcore athletes" while welcoming casual newcomers with open arms.





The goal is to get folks together, develop a sense of community, and maybe even venture out of our comfort zones a little. Among the common denominators for group activities—along with creating a sense of event—is keeping the troops fed, fueled, and hydrated. We feature a couple of energy-laden, delicious snack foods loaded with healthy fats and plant-based protein, equally suited for a white glove dinner or a trail-side refuelling. Check out our culinary corner for well-researched, nutritious recipes including cinnamon pumpkin protein energy balls and coconut crunchy bark for energy without the sugar crash of many snack bars. Medium-chain triglycerides (MCTs), in either liquid or powdered form, are a great addition to ice coffee, tea, or homemade lemonade. A loot bag of original snacks and beverages is always appreciated.



Come day's end, it's fun to chill out, share some pics, and perhaps enjoy a potluck barbecue with everyone sharing their own personal culinary creation. On a rainy day, you could relive your memories making a scrapbook at home. You can also use one of the many photobook apps to a custom scrapbook, captions and all, to arrive by mail within weeks.

Here's to summer!

Adventure-Essentials Checklist

Here are a few useful items you might want to bring during your hikes or excursions that take you a bit further away from home:

- Swiss-army knife
- Water
- Mixed nuts or energy bars
- Lavender essential oil (great as a bug repellent)
- Compass
- Whistle
- Extra pair of socks
- Windbreaker
- Some cash



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Grilled Portobello with Fermented Turmeric Wild Rice

Flourish Original Recipe

This vegetarian dish is deep in flavour, rich in plant-based protein and fibre, then blessed with the anti-inflammatory action of fermented turmeric.

Ingredients

- 4 large portobello caps, drizzled with olive oil, salt, and pepper
- Small onion, diced
- 1¾ cups of water
- 1 cup of wild rice blend
- 1 cup of kale, diced
- ½ cup roasted pumpkin seeds
- 2 tbsp. red palm fruit oil
- 1 tbsp. fermented turmeric
- 1 tbsp. Hungarian paprika
- 1 tsp. sea salt
- ½ tsp. black pepper, freshly ground

Instructions

Sauté onions in red palm fruit oil for a few minutes. Stir in the wild rice and add the water, kale, fermented turmeric, paprika, sea salt, and black pepper. Bring to a boil, then simmer until ready (approximately 40 minutes). Mix in roasted pumpkin seeds before serving to retain crunch.

Lightly rub portobello with olive oil and season with salt and pepper. Grill to a light char. Slice and serve with wild rice. Enjoy!

Serves 4.





Cinnamon Pumpkin Protein Energy Balls

I love nothing more than a healthy snack that also satisfies that sweet craving. These energy balls are loaded with fibre, healthy fats, and plant-based protein, all of which help promote satiety postmeal.

Enjoy 1–2 of these as a sweet treat midday. I promise they do not disappoint!

Ingredients

- 1 cup dates, pitted
- ½ cup rolled oats
- ¼ cup shredded coconut
- 5 tbsp. pumpkin seed protein powder
- ½ cup crunchy peanut butter (or any nut/seed butter)
- 1 tbsp. cinnamon
- ½ cup dark chocolate chips (optional)

Instructions

Place all ingredients (except for the chocolate chips) in a food processor. Blend together well.

Fold in dark chocolate chips.

Take 1–2 tbsp. dough and form into balls, rolling between your hands.

Place balls in an airtight container and store in your fridge for up to one week, or in your freezer for 2–3 months.

Enjoy!



Angela Wallace

A registered dietitian with the College of Dietitians of Ontario, personal trainer, and family-food expert who specializes in women and child nutrition and fitness, she loves helping families get healthy together.

eatrightfeelright.ca



Coconut Crunchy Bark

Raw, Vegan, Paleo, Dairy-Free, Gluten-Free, and Refined Sugar-Free

If you think that a sugar-free plan can't include some amazing treats, guess again! I'm certain you'll love this bark as much as I do. I keep a stash in the fridge and nibble on it when I need "a little something."

Dry Ingredients

- ½ cup toasted coconut flakes*
- ⅓ cup shredded coconut
- ⅓ cup hemp, sunflower, or sesame seeds (or a blend)
- ¼ cup pumpkin seeds

Liquid Ingredients

- ¼ cup melted coconut butter
- 2 tbsp. melted coconut oil
- 1 tbsp. tahini
- 2 tbsp. powdered xylitol† or 5 drops of stevia

Instructions

Toss all dry ingredients together in a bowl. Whisk the liquid ingredients together in a separate bowl, then stir in the dry mixture. Spread in a thin layer on a parchment paper-lined tray. Set in the freezer for about 20 minutes until firm, and then break into pieces. Can be kept for up to 6 weeks in the fridge.

* Place coconut flakes (I like to do 1–2 cups to have extra for smoothies or snacks) in a thin layer on a baking sheet. Bake at 350 °F (175 °C) for 5–6 minutes, until golden and fragrant. Make sure to use toasted, as it makes the coconut flakes really crunchy and more flavourful.

† Xylitol is birch sugar. It doesn't have any impact on blood-sugar levels, making it acceptable for sugar-free diets, but you can leave it out if you want. If you can't find it powdered, grind some in a coffee grinder.



Heather Pace

A classically trained chef turned raw-dessert chef, she is a travel bug, a chocoholic, and a certified yoga instructor.

sweetlyraw.com



Raw Kale and Avocado Salad

Raw, Vegan, Dairy-Free, Gluten-Free, Refined Oil-Free, Sugar-Free, Paleo, and Keto-Friendly

Here's a version of a kale salad we've been making in our family for years. An important trick when working with fresh kale is to "cook" it by massaging it with your hands in the oil (in this case, olive oil combined with fresh avocado) and acid (lemon juice or vinegar), squeezing the kale as you do so. This process not only helps to make the kale softer, but also improves its taste—a fun method that most people have never heard of. It can take you back to your days of finger-painting in school. Kids will love this process too, and it's a great way to turn them on to eating this incredibly nutritious food. I used to think that kale was boring and didn't taste very good. It was this recipe and method that changed my mind forever, and it's been a great transformer for many others as well. Avocado-massaged kale = YUM!

Ingredients

- 4 cups chopped baby or destemmed kale
- 1 cup diced tomatoes
- $\frac{1}{3}$ – $\frac{1}{2}$ cup chopped chives
- $\frac{1}{2}$ –1 red bell pepper, thinly sliced
- 1 avocado, chopped in small pieces
- juice from 1 lemon, or 2–4 tbsp. apple cider vinegar, to taste
- 1 tbsp. extra-virgin olive oil
- 1 tbsp. nutritional yeast
- Himalayan salt and black pepper, to taste
- chopped chives (optional garnish)
- edible flowers (optional garnish)

Instructions

Toss together the kale, chives, tomato, and red bell pepper, then add and massage with the avocado, lemon juice or vinegar, olive oil, nutritional yeast, salt, and black pepper. Serve immediately, with the garnish of your choice.

THERESA'S TIP: I know these directions sound weird. But as you massage in all these ingredients, you are, in effect, creating the dressing for the salad. The tomatoes break down and blend with the avocado and other items, resulting in an amazingly delicious creation.

Serves 2–3.



Theresa Nicassio, PhD, Psychologist

Theresa is a wellness educator, radio host, and the award-winning author of *YUM: Plant-Based Recipes for a Gluten-Free Diet*.

TheresaNicassio.com

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Polycystic Ovary Syndrome and Non-Alcoholic Fatty Liver Disease—Exploring the Link

Dr. Sarah Zadeh explores the link between Polycystic Ovarian Syndrome (PCOS) and Non-Alcoholic Fatty Liver Disease (NAFLD). She unravels the association between insulin sensitivity, hormonal imbalance, female fertility and NAFLD leading to a discussion [. . .]



Vanilla Coconut Ice Cream

Looking for a gluten-free, cane sugar-free, gum-free, and—best of all—guilt-free home-made vegan vanilla coconut ice cream? Theresa Nicassio shares her easy-to-make, low-glycemic-rated recipe that's destined to become a family favourite.



Going Against the Grain

We'll introduce you to some amazing new grains—well, not exactly new; many of these have been around for hundreds of years.

But they can help with a fresh take on eating better and feeling great. It's easier than you think.

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