

Flourish

HEALTHY BODY, MIND, AND SPIRIT

Magnificent Magnesium

Autumn

Getting Your
Immune System
in Top Shape

New Study on Probiotics:
Does Yours Survive to
Meet Its Label Claim?

Vol. 6, No. 4 • Free
Autumn 2022

Editor's Letter



We often hear people say “family first,” but I can’t help to think “friends are the family we choose.” Good friends will celebrate your achievements, support you through difficult times, and always have your back.

I am blessed with some of the most generous, caring friends one can ask for. I had the pleasure to reconnect with many of them this summer, laughing, sharing, and simply enjoying time together. As we head into autumn, with holidays around, we hope to continue creating more wonderful memories.

So how will we do this? By staying our healthiest! I have learned to truly appreciate my “babcia’s” words of wisdom: without our health, we have nothing.

This issue contains a variety of articles to help keep you at your best. Some may inspire you, others might surprise you, but we hope they will contribute to helping you create beautiful memories this fall, so you and whoever you cherish can *Flourish* together.

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Editor-in-Chief

Flourish

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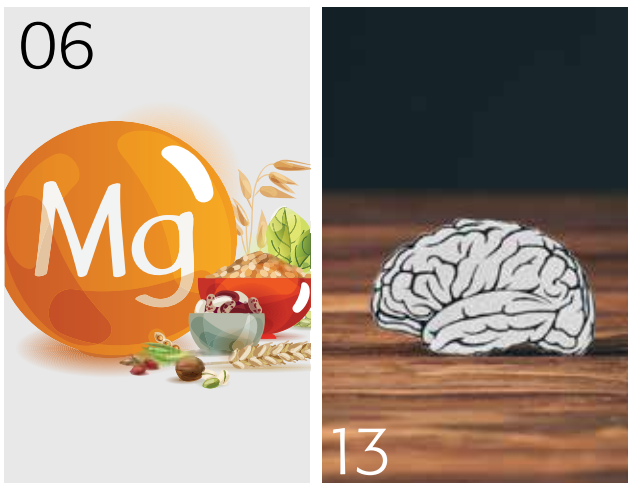


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Mg

Magnificent Magnesium

by Katie DeGroot, BSc, ND, MScN

Magnesium is a mineral that is critically essential for body functioning. It is involved in over 300 cellular reactions in the body—anything and everything such as DNA production, protein synthesis, carbohydrate metabolism, energy production, and cell signaling. It plays a role in antioxidant regeneration, makes bones strong and healthy, modulates pain perception, and helps produce neurotransmitters that keep our brains happy and healthy. In short, magnesium is needed for almost every aspect of bodily functioning, and a relative deficiency of magnesium affects almost everything as well.

Low levels of magnesium are associated with an increased risk of chronic conditions such as osteoporosis, high blood pressure, cardiovascular disease and stroke, diabetes, metabolic syndrome, and obesity. People with



lower-than-optimal magnesium levels seem to be more often affected by anxiety, depression, and headaches, especially migraine headaches, and women may experience worse PMS and menstrual cramps. Low serum magnesium also appears to be associated with worsened inflammation and increased pain sensitivity, thus making even minor injuries feel worse.

Magnesium is needed for almost every aspect of bodily functioning, and a relative deficiency of magnesium affects almost everything as well.

As stated in a recent study with an urgent call to action, subclinical magnesium deficiency is a principal driver of cardiovascular disease and should be considered a public health crisis. Studies suggest ensuring adequate magnesium intake improves one's cardiovascular health, including lowering blood pressure and reducing complications following heart attack or stroke. Magnesium supplementation also appears to improve insulin sensitivity in type 2 diabetes, thus improving glucose control and long-term outcomes.

The conditions associated with low magnesium are incredibly common: How do we know when magnesium plays a role?

It may also play a role in reducing the frequency and severity of osteoporosis (brittle bones) often associated with aging.

Mental-health conditions and sleep quality are improved, as adequate magnesium levels allow for optimal neurotransmitter production. Additionally, supplementation appears to reduce cortisol (a stress hormone) and reduce inflammation and modulating pain, thus improving overall health and wellbeing.



Improving magnesium status from one of deficiency to adequacy may also reduce the frequency and severity of asthma attacks, by opening the air passages of the lungs. Magnesium also appears to have an anticonvulsant and neuroprotective effect, and it can reduce the frequency and severity of migraine headaches.

But the conditions associated with low magnesium are incredibly common: How do we know when magnesium plays a role? Unfortunately, it is a bit of a guessing game. There is no easy or reliable test to conclusively determine someone's magnesium status. Low magnesium levels are usually asymptomatic or show up with the above nonspecific symptoms. The best way to prevent low levels is to ensure you get an adequate daily intake of magnesium. Doing so through diet alone is not an easy task, so supplementation can be the key.

So, how much magnesium do we need? It depends upon age and gender, but on average, 400 to 420 mg per day is recommended for males over the age of 14 years, and 310 to 360 mg per day for females over the age of 14, with no more than 350 mg magnesium from supplementation per day (unless prescribed otherwise by a physician or health-care practitioner).



It is estimated that 50% of the US adult population consumes insufficient amounts of dietary magnesium, and up to 30% of the general population may in fact be deficient.

Magnesium is currently considered a “shortfall micronutrient” because, despite it being available in many foods, we are simply not getting enough of it. It is estimated that 50% of the US adult population consumes insufficient amounts of dietary magnesium, and up to 30% of the general population may in fact be deficient.

To make matters worse, many common medications can also deplete magnesium levels in the body—certain types of antibiotics, antifungal medications, corticosteroids and other immunosuppressive medications, high-blood-pressure medications, oral contraceptives (especially those containing estrogen), and proton-pump inhibitors, to name a few. Furthermore, people with digestive issues or kidney diseases, as well as those who are elderly or consume alcohol regularly, are at increased risk of deficiency.

To make matters worse, many common medications can also deplete magnesium levels in the body

Food sources of magnesium typically include high-fibre foods: legumes, nuts, seeds, leafy greens, and whole grains. There are excellent resource tables available online from Health Canada and Dietitians of Canada that show the magnesium content of certain foods, yet getting enough seems easier said than done. When inadequate magnesium amounts are obtained from one's diet alone—or when health situations require more magnesium—what supplement options are out there? The first thing to note is that magnesium is a mineral, an element—it cannot be consumed on its own. It must be bound to something else—another molecule or compound—for our bodies to



When inadequate magnesium amounts are obtained from one's diet alone—or when health situations require more magnesium—what supplement options are out there?

be able to absorb it. There are a wide variety of magnesium compounds out there (also known as “chelates”), each offering different absorptive effects. Additionally, the carrier molecules have different effects in the body. In short, it is not so simple as to take some “magnesium”: You must consider the form it is in and match that form to your health concerns.

Magnesium Citrate

A very common form of magnesium which is widely available and middle-of-the-road in cost is magnesium citrate. It is bound to citrate, or citric acid, an organic acid, and has a dose-dependent laxative effect. This form of magnesium absorbs at a decent level—not the least and not the best. Therefore, magnesium citrate is typically used by folks affected by constipation and who want to increase their magnesium levels a bit.

Magnesium Glycinate or Bisglycinate

Another very common magnesium chelate is magnesium glycinate or bisglycinate. These two names both refer to magnesium bound to the amino acid glycine. It offers minimal digestive side effects, as the glycine molecule appears like food to the body. The primary benefit of this form is that it can be dosed higher than most other magnesium chelates, thus resulting in adequate magnesium absorption without digestive side effects.

Magnesium Orotate

Magnesium orotate is a less common magnesium chelate, with magnesium being bound to orotic acid. Orotic acid is thought to have cardiac benefits and may help deliver magnesium more specifically to the heart than other forms of magnesium. This form has started gaining popularity and is more readily available.

To summarize, a wide variety of health conditions associated with low magnesium may be improved with ensuring adequate magnesium intake. Sufficient amounts of magnesium can be difficult to obtain through diet alone, especially the standard American diet. Supplemental magnesium offers a solution to this, but there are several different forms available and each has its own additional health benefits. If you are thinking to take magnesium to supplement your diet, be sure to check with your health-care practitioner to select the type that is best for your health conditions.

To read about other kinds of chelated magnesium, including ascorbate, malate, aspartate, taurate, glycerophosphate and magnesium salts, visit our blog and read the complete article.



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Collagen

The Scaffolding Molecule

by Dr. Colleen Hartwick, ND

Collagen is the most abundant protein in the body. With over 28 different subtypes, collagen represents one of the most important tissues in the body. Think of it as the scaffolding for the human body. Due to its blend of rigidity and resistance to stretching, collagen is the perfect building block for skin, tendons, bones, ligaments, blood vessels, muscles, and an array of other tissues. Clearly, collagen is essential to the human form and function. But what is it, and where does it come from?

What is Collagen?

Collagen is a complex protein made of essential amino acids (protein building blocks) such as glycine, proline, hydroxyproline, and arginine. In addition to the amino acids that make up collagen, other nutrients like vitamin C and iron are required for the proper synthesis of collagen.

Collagen can be endogenous, meaning our bodies manufacture it, or exogenous, meaning it is obtained through an external source (like food or supplements). For the sake of being succinct, we will review the most common types of collagens, namely types I, II, III, IV and V.

Where Can We Find Collagen in the Body?

Type I Collagen

Type I collagen is, by far, the most abundant protein in humans and accounts for upward of 90% of human collagen. It assembles into fibres that form the structural and mechanical scaffolding for bones, skin, tendons, cornea, and blood-vessel walls.

Type II Collagen

Type II collagen is the predominant collagen subtype found in joint cartilage.

Type III Collagen

Type III collagen is the second most abundant collagen, making up about 5–20% of all the collagen in the human body. The skin, lungs, kidneys, liver muscle, and blood vessels are the most common locations for type III collagen. It is also found as a major structural component in hollow organs such as large blood vessels, uterus, and bowels, where it provides tensile strength to these organs, allowing them to stretch without rupturing.

Type IV Collagen

Type IV is the main collagen component of the basement membrane—the basal layer of blood-vessel walls, skin, and organs. It is a network-forming collagen that functions as a barrier between tissue compartments. It is found mostly in the skin, blood vessels, and joint space.

Type V Collagen

Collagen type V is one of the principal components of cell surfaces and placenta.

What Are the Health Benefits of Collagen?

Reducing Joint Pain

Type-I collagen might be beneficial for osteoarthritis, by reducing inflammation and increasing cartilage production.

Given it contains a lot of glucosamine and chondroitin—two anti-inflammatory sulfur-based compounds—type II collagen helps reduce joint pain and inflammation and finds its use in improving symptoms of arthritis. Additionally, type II collagen appears to reduce immunologic attack and destruction of joint cartilage in studies of its effects in knee osteoarthritis.

Skin Health

A double-blind study on 69 women between the ages of 35 and 55 analyzed if collagen could help decrease signs of aging. The participants of the study were given either 2.5 g or 5 g of collagen hydrolysate or a placebo over the course of eight weeks. The results of the study showed skin elasticity of the collagen groups were statistically improved compared to those participants who were taking a placebo.



Aiding in Healing

Other functions of type III collagen include interaction with platelets during the process of blood clotting, and it is also an important signalling molecule in wound healing.

Improving Digestion

A study was conducted on 170 patients who were dealing with inflammatory bowel disease, and researchers found that these individuals had lower levels of serum collagen. Those with low levels of collagen were more prone to gut inflammation. In animal models, supplementation with fish collagen reduced markers of inflammation and oxidative stress in the colon.

How Can I Increase My Collagen Intake?

It is clear to see, now, how important collagen is for us humans. Whether it's type I, II, III, IV, or the other 23 subtypes, the presence of collagen is pivotal for the structure and function of the human body.

Collagen production—at least collagen types I and III—appears to decrease with age. As such, increasing your collagen intake through foods and/or supplementation under the advisement of your primary health-care practitioner should be considered. You may also want to talk to your doctor about supporting your body's own production of collagen by increasing your intake of the cofactors needed for endogenous collagen production discussed above.

The main cofactor is vitamin C, but manganese, copper, and zinc are also needed for collagen production.

To up your collagen intake, you can include:

- Collagen-rich meat sources such as chicken, beef, turkey, pork, and fish
- Bone broth
- Collagen powder



Dr. Colleen Hartwick, ND

Dr. Colleen Hartwick is a licensed naturopathic physician practising on North Vancouver Island, BC, with a special interest in trauma as it plays a role in disease.

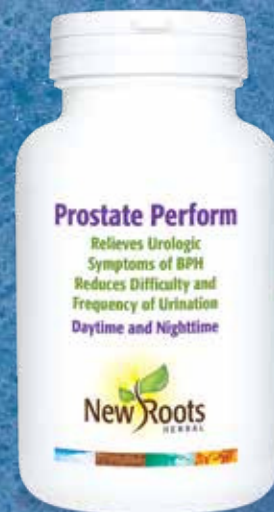
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S-Acetylglutathione in the Improvement of Alzheimer's Disease Symptoms

Interview with Mr. André Audette, Husband of Berthe



Mr. Audette contacted us hoping to share this incredible story with the world. After hearing it, we fully agreed and hope you do as well.

Who was Berthe before her diagnosis?

I met my wife, Berthe, by pure chance in a place where I had never been! We have been together for 17 years—17 beautiful years. We have been living with Alzheimer's disease for 7 years now. Before, Berthe had a lot of vitality, she was always smiling and active. She played a lot of golf and created paintings that were to die for. A few years later, she couldn't even write her name.

How did you notice the onset of the disease in your wife?

One day, while we were golfing, I really noticed that she was having trouble walking, her breath was short, she lacked strength and balance. She had had heart surgery in the past; but I had noticed specific details that concerned me in her behaviour, reasoning, speech, and memory.



How did the conventional medical world support you?

It took a while before we could get any help for Berthe: We first had to change doctors to find an understanding doctor and get an actual diagnosis of the disease. We then went to a specialized clinic for further tests, and her stage was determined to be between 4 and 5 [out of 7, between moderate and severe on the Reisberg scale]. At present, Berthe is taking two kinds of conventional medications.

S-Acetylglutathione, combined with oleuropein (olive polyphenol) for 6 months of treatment, stabilizes or even improves all neurocognitive parameters of patients with moderate-stage Alzheimer's. This is the conclusion of a promising study published in 2022 in *Alzheimer's & Dementia*.

How did the disease develop in Berthe?

With time, we experienced more and more incontinence, she was no longer herself. Fortunately, we made the effort to always talk a lot. When there is suffering, it is time to get closer to the person you love. Dialogue is the best remedy; it keeps the brain more alert. But she slowly lost the ability to speak, she was no longer able to make sentences, she searched for words and was afraid of being laughed at. And then came time for the wheelchair, because she was losing her vitality. What most surprised me was the change in her character, with more verbal, and even physical violence. There was a lot of discouragement too: She wanted to die, but I told her "OK Berthe, you're going to die: You at 108, and me at 100"—because we're 8 years apart.

How did you come to consider naturopathy?

I have suffered from cancer and personal problems myself, and I have always complemented my treatments with natural medicines, especially with my chiropractor who is a wonderful man and clinician. I wanted to do everything I could to help Berthe, so naturally I looked for anything that would help her.

What nutraceuticals have you used to help reduce disease progression?

It was my chiropractor who told me to go to the Panier Santé, a health-food store, where they suggested she take lion's mane, a medicinal mushroom known for its benefits to the brain. When the symptoms worsened, especially her mood, I was advised to take an oligotherapy formula. She went from an angry gorilla to a docile lamb, thanks to a liquid under the tongue! Also, Berthe had a lot of pain. The same shop advised me to use magnesium. The consultant was sure that it would help, and indeed, after increasing the daily dose, she had no more pain.

How did you discover the properties of S-acetylglutathione in the treatment of Alzheimer's disease, and how long has Berthe been taking it as a supplement?

I was told about this fabulous antioxidant by the health advisor at the health-food store, in October of last year. I took two bottles immediately. By that time, Berthe had lost the use of her right arm and hand, her legs were not supporting her, and she was not doing well despite medication and nutraceuticals. Berthe started taking S-acetylglutathione to help her nervous system. We saw the difference right away—it was obvious and significant.



What improvements, both physical and mental, were observed as a result of taking S-acetylglutathione?

After two weeks, Berthe began to recover the use of her arm and her speech. One day I told her: "Hey, Berthe, do you know what you just did? You just reached for your cup of coffee." Berthe replied: "My goodness!" and I said: "You see, Berthe, you must never lose faith!" Berthe found her smile again, her *joie de vivre*. In our community, the neighbours all tell Berthe that her eyes are sparkling again. Berthe has recovered some of her speech and can once again have a meaningful conversations with people. She can write again, and her energy is coming back: She can take a walk alone without a cane down the street and back! Taking S-acetylglutathione has allowed Berthe to recover more than 40% of her abilities in just one year.



Did Berthe experience any side effects or interactions with this product?

No, not at all, and I would say it is a very safe molecule. What I find wonderful about my family doctor—who is open to traditional medicine and the use of nutraceuticals—is that she has never forbidden us to use supplements to help Berthe. On the contrary, she has always been curious and supportive. The results of the last evaluation tests, at the specialized clinic where we do the annual tests, are no longer declining: On the contrary, they are improving, whereas typically, Alzheimer's shows an ever-declining progression curve. The nurse couldn't believe it.

What message do you wish to convey through this testimony?

I call Berthe my little miracle! I believe that if conventional medicine were to talk to and learn from naturopathy, it would open up extraordinary fields of treatment. It would be better for conventional medicine to reach out rather than put up walls! Bridges must be built so that science and medicine recognize and use natural treatments such as S-acetylglutathione.



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Exotic Superstars

Oil Therapy for Your Skin

by Ky Lo, BA, BSc, ND, LAc



Exotic oils are bioactive plant oils that have been extracted from the seeds, kernels, or fatty portion of plants that—as suggested by their name—are rare or come from exotic locations. They are usually cold-pressed to extract the oil, and typically don't contain much of its aroma. Essential oil, on the other hand, is extracted via a distillation process from the most fragrant part of the plant to impart the aromatic quality of that plant or the “essence.” Both exotic plant oils and essential oils can be used alone for topical and therapeutic application; however, it is important to carefully use the essential oils, as they can sometimes be irritating when applied directly onto the skin. This is why they are, most of the times, diluted in a carrier oil—which can be any vegetable oil or exotic oil—before topical application.

The use of plant oil is perhaps one of the most ancient forms of healing, dating back to 5000–4500 BCE. All the ancient worlds—Egypt, Greece, India, Mesopotamia, and China—used essential and exotic oils as medicine. The Europeans learned of therapeutic oils from Crusaders returning from their missions. The oldest recorded use of plant oils dates back to the Huangdi Nei Jing (the Yellow Emperor) about 2600 BCE, and it is still used in current traditional Chinese medicine (TCM). Ali ibn Sana, a renowned Middle Eastern physician (980 to 1037 CE) known in the West as Avicenna, discovered the method of distilling essential oils which is still in use today.

Benefits of Exotic Oils

Exotic-oil components can include a diversity of components such as triglycerides, free fatty acids (FFAs), tocopherols, sterols, stanols, phospholipids, waxes, squalene, phenolic compounds, etc. Each of these different compounds, when topically applied, influences skin physiology

(skin barrier, inflammatory status, antioxidant response, and proliferation) differently.

Argan oil has been called “liquid gold” for its culinary and beneficial effects on our health, skin, and hair. Unrefined argan oil is used in cooking and salads very much like olive oil; however, argan oil won't clog pores like olive oil. It has an anti-inflammatory effect when applied to the skin, due to its high content in antioxidant vitamin A, sterols, and phenols, and to its high dermal absorption. Argan oil is ideal for antiaging skin treatment and wound healing.

Baobab seed oil is high in omega-3s, known for their anti-inflammatory effects. Using baobab oil in massages is a great way to help heal damaged skin, as it can help regenerate and repair skin cells (while having a barrier/protection effect for dry skin) and inflamed skin as in the case of acne or rosacea.



Additional benefits of baobab oil are due to its high content in vitamins A and C, which is ideal as an antioxidant to fight oxidation damage from UV radiation, ultimately helping to minimize skin wrinkles and hyperpigmentation.

Sea buckthorn is an oil that is both edible and can be applied topically. Orally, it is known for its immune-boosting effect. Due to its high proportion of palmitoleic acid (omega-7), which is also found in the fat of human skin, it is thought to speed wound healing, treat burns, and keep your skin healthy. Because of its rich nutrient content of 200 vitamins, minerals, and fatty acids (it may be the only plant in the world that contains omega-3, -6, -7, and -9 together), it is considered one of the most valuable plants for pharmacological and cosmetic use for its anti-inflammatory, antiwrinkle, and moisturizing properties.

Moringa seed oil has three forms of vitamin E (α -tocopherol, γ -tocopherol, and δ -tocopherol), more vitamin A than carrots, more vitamin C than oranges, and more potassium than bananas. This profile makes moringa oil a potent skincare ingredient for UV protection and a collagen booster. Moringa oil is lightweight and absorbs easily into the skin, without clogging pores or leaving a heavy oily residue, so it will leave a dewy glow on the skin.

Running Rumours

Many people mistakenly believe that exotic oils have comedogenic, or pore-clogging, effects. This may stem from the practice of mixing fragrant

essential oils with thick carrier oils such as avocado, evening primrose, borage, or even olive oil, which do not offer the best penetration level.

Exotic-oil molecules are so small that, when applied to the skin, they can pass through its outer layer, the stratum corneum, into the dermis, then into the bloodstream.

It is important to note that the rate of absorption depends on the warmth and the thickness of the skin.

Harvesting Practices

We are aware of the term “organic,” but what does “wildcrafted” mean? Wildcrafted plant oils come from plants that grow in the wild, in their native habitats, rather than on farms or orchards. As such, they are not sprayed with any kind of pesticide. They are harvested in a sustainable manner without the use of synthetic products. If a whole plant is taken, it is replaced with seeds to grow a new vital plant. Growing in the wild and being exposed to its natural environment can impact the complexity of the oils within, as additional phytochemicals may be produced to protect its survival. Some of these phytochemicals are highly valued for their therapeutic effects, both topically for skincare and when ingested, with benefits for health and wellness. Organic harvested plant oil is a good alternative when wildcrafted choices are not available.



Dr. Ky Lo, BA, BSc, ND, LAc

Dr. Lo is a naturopathic doctor who graduated from the Canadian College of Naturopathic Medicine (CCNM) in 2006. With over 20 years in the medical esthetics industry, she combines her knowledge with naturopathic training to offer a unique perspective on antiaging.

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New Study on Probiotics: Does Yours Survive to Meet Its Label Claim?

by Serge Philibert Kuate, PhD

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N.H.P. Laboratories performed a study: *Short-Term Viability of Probiotics in Some Commercial Products*, to investigate the impact of refrigeration on the viability of three commercial probiotics in capsule form, to better understand the efficacy of storage recommendations. Three products were selected from a reputable retail store, each with 18 months remaining before expiry. Two shelf-stable brands P15 and P30 were purchased, along with a third brand, P20, for which refrigeration was recommended.

To test product viability, the number of colony forming units (CFU) were measured on the date of purchase (DP), 18 months prior to the expiration date. The results revealed that all products evaluated contained viable probiotic bacteria; however, the levels varied considerably. P20 contained more than the claimed culture concentration; 130% of its label claim. The two “shelf-stable” probiotics fell short of their label claim; P15 contained only 77% viable CFU, and P30 contained only 73% viable CFU. Products were subsequently tested at 1, 2, 3, and 6 months following the date of purchase. The results are shown in the table below:

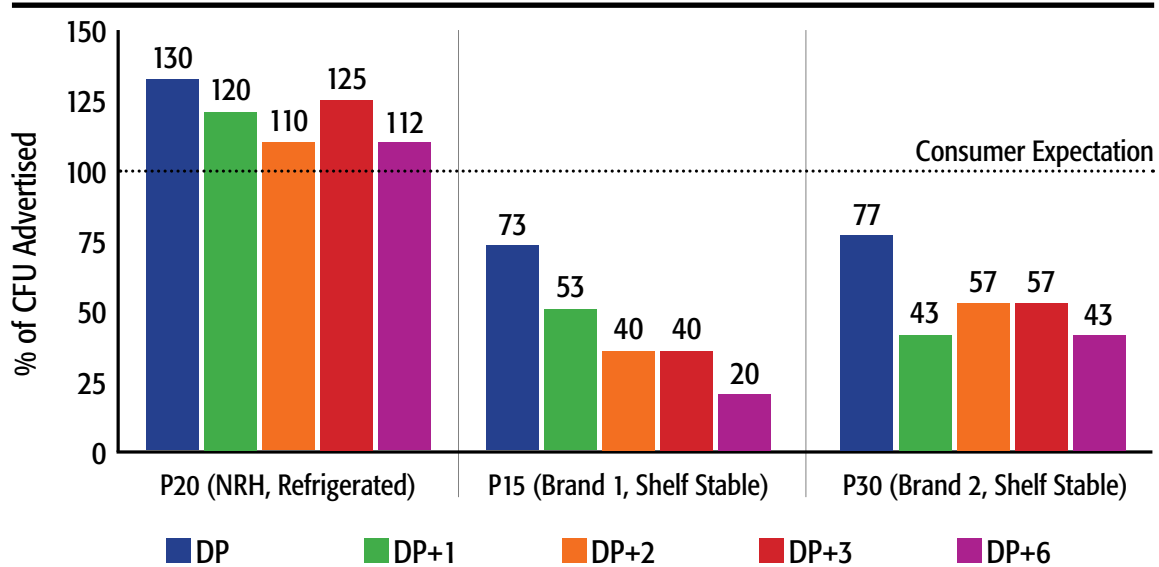
Table 1. Number of Viable Cells Over a Period of Six Months

			Probiotics (Billion / Capsule)				
ID	Manufacturer	Claim	DP	DP+1	DP+2	DP+3	DP+6
P20	New Roots Herbal	20	26	24	22	25	22
P15	Brand 1	15	11	8	6	6	3
P30	Brand 2	30	23	13	17	17	13

DP = Date of Purchase = 18 months before expiry date
DP+1 = One month later = 17 months before expiry date
DP+2 = Two months later = 16 months before expiry date
DP+3 = Three months later = 15 months before expiry date
DP+6 = Six months later = 12 months before expiry date

Given that each product is sold with different CFU potency, they are represented below as a percentage of the amount of CFU advertised to consumers on the package. The dotted line across the center represents 100% of the label claim for each.

Table 2. Percentage of Viable Probiotic Cells Relative to the Label Claim



At DP+6—i.e. 6 months after the purchase date, or one year prior to the expiration date—the percentage of viable CFU probiotics for the refrigerated P20 was 112%—more than promised on the product label. The two “shelf-stable” probiotics fell well below what was promised on the label: P15 contained only 3 billion,

or 20%, of the 15 billion promised on the label: P30 contained 13 billion, or 43% of the 30 promised.

Researchers noted that the vast selection of probiotics currently available on the market, combined with conflicting storage recommendations, can be confusing for end users.

So, What Does All This Mean to You?

Probiotics are defined as live organisms. The study showed that **probiotics degrade over time, but do so much faster when probiotics are stored at room temperature**, thereby supporting the need to refrigerate probiotic products. When refrigerated, at retail and at home, probiotics survive for significantly longer periods of time.

But the greatest revelation is that not all probiotic products available on store shelves actually meet their label claim, even 18 months prior to their expiry date.

Refrigerated probiotics are clearly the best choice for consumers looking for viable, effective probiotic products.

To read the full study, visit newrootsherbal.com/NHP_Lab_Probiotic_Refrigeration_Study.pdf



Serge Philibert Kuate, PhD

Serge directs quality management and ISO accreditation for N.H.P. Laboratories Inc. A native of Cameroon, his body of work at international research institutions includes insect ecology, microbiology, mycology, and enzymology.

Visit our blog for the full article including references: newrootsherbal.com/en/blog

Naturopathic Doctors Comment on the *Short-Term Viability of Probiotics in Some Commercial Products* Study



Melanie Kuszniereckyj, BSc, ND

It is wonderful to see a comparative study on the viability of probiotics. Given that yoghurt and most fermented beverages require refrigeration, it would seem logical that the same would hold true for probiotic capsules.

Health Canada provides NPN-related health claims on specific probiotic strains, but leaves it up to the manufacturer to ensure stability and viability. The minimum requirement is to have 80% viability at time of expiration; however, there are no tests performed by Health Canada to verify potency following different manufacturing processes and storage conditions.

As a health-care practitioner, I suggest my clients take the best-quality probiotic, budget permitting, for their health concerns. Price point to efficacy is what determines the value in a product. I would rather suggest a probiotic that I know will work and have a greater therapeutic effect. From my experience, enteric-coated and refrigerated probiotics yield the speediest recovery in gastrointestinal-related issues. The quicker the results, the less expense in the long term.

Reading the data provided by N.H.P. Laboratories has given me insight that “shelf-stable” probiotics may not be as effective, given that not all probiotic strains are stable at room temperature. Keeping probiotics refrigerated just makes sense.

While first doing no harm is a good thing, I also want to know that they will do good!



Ludovic Brunel, ND

It is easy to take the miracle of refrigeration for granted, but it is important to understand that without it, food spoils at least ten times faster. None of us would leave food unrefrigerated unless it was to be consumed before it goes to waste.

Unfortunately, when it comes to probiotics, many of us are misguided. Past research clearly showed that to maintain potency, refrigeration is necessary. Recent studies also show that refrigeration is essential to maintain probiotic viability.

Indeed, according to this stability study by N.H.P. Laboratories, two unrefrigerated products saw a drastic drop in colony-forming units, providing only 20% and 43% of their label claim at 12 months prior to expiry—failing to meet label promise. As a comparison, the refrigerated probiotic still contained 110% of its label claim.

These results are not surprising, given the numerous studies that show probiotics do not do well in warm temperatures. There are few “sturdier” strains that have been studied at room temperature, and typically, they benefit from far less research to support their health benefits.

It’s a shame that some manufacturers continue to ignore the importance of probiotic refrigeration and it is hard to understand why anyone would spend money on non refrigerated probiotics.

This is why I always recommend refrigerated probiotics to my patients.

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Do Kids Need Supplements?

by Angela Wallace, MSc, RD

Nutrition is important at every age; however, during childhood years, it is of particular importance to help support growth, learning, and overall development.

I am often asked by parents if their child needs supplements. “What if my child is picky on food: Does he need extra supplements?” Having children myself, I can relate to some of the concerns around nutrient intake, especially when they might love vegetables one day and dislike them the next. I am happy to share some important details about supplements for children and provide some general advice as to whether they should be considered.

Reminder: It is always best to check with your own health-care practitioner or dietitian/nutrition expert if you are looking for personalized advice.

Four Important Nutrients for Children and Teens

1. Healthy Fats

Fat plays a crucial role in brain and body development. Omega-3 fatty acids (docosahexaenoic acid [DHA] and eicosapentaenoic acid [EPA]) are important for the normal development of the nervous system, retina, and brain. In fact, research has shown that improving EPA levels in youth with ADHD helps to improve cognitive symptoms.

Foods Containing Omega-3s:

- Omega-3s can be found in fatty fish like sardines, salmon, trout, mackerel, etc. They can also be found in plant-based sources such as nuts and seeds (flax seeds, chia seeds, walnuts) and plant oils (flaxseed oil, canola oil, etc.). Try working these into meals and snacks regularly.
- Consumption of low-mercury fish/seafood 1–3× per week should be encouraged to ensure adequacy. Low-mercury fish include salmon, anchovies, sardines, freshwater trout, and herring.

Canadian Kids Are not Getting Enough

A Canadian study found toddlers’ mean intake of omega-3 to be 41 mg/d in 18–24-month-olds, and only 95 mg/d in 25–36-month-olds, which is considerably below the optimal amounts of EPA/DHA per day in studies:

- 12–24 months: 100 mg/d combined EPA and DHA
- > 24 months: 250 mg/d combined EPA and DHA



Children could certainly benefit from omega-3s in supplement form, especially if they do not consume fish regularly. Ensure the supplement you choose is high in EPA and has been certified as safe from heavy metals by an ISO-accredited laboratory.

2. Vitamin D

Vitamin D plays a critical role in bone development during early childhood. It also helps to regulate the immune system and our neuromuscular systems. The main source of vitamin D is the sun, and very few foods naturally contain vitamin D. Some dairy products are fortified with vitamin D, but the amounts vary, and getting enough is not easy.

Supplementing with Vitamin D3?

If I was going to recommend any supplement for a child, it would be vitamin D. Vitamin D is synthesized under the skin based on sun exposure. Living in Canada means less sun exposure year-round, so unfortunately, your little one is likely not getting enough (and you likely aren't, either).

Interesting Fact: A study reviewing serum vitamin D status in pregnant mothers found significant amounts of severe vitamin D deficiency in Canada, indicating infants may be born with low vitamin D stores.



3. Multivitamins

If your child is eating a relatively well-balanced diet that includes sources of veggies, protein, fruits, carbohydrates, and healthy fats, they can get everything they need from food. But this is not always the case.

When Might You Consider a Multivitamin?

- Picky eating/not eating a well-balanced diet week-to-week
- Development of self-feeding skills and food preferences
- Several food allergies
- Growth issues/concerns

Focus on getting nutrients from whole foods first, but recognize that there is a time and place where a multivitamin is appropriate to support growth, development, and nutrient needs.

4. Probiotics

Probiotics are essentially good bacteria and yeasts that support overall health and especially the digestive system. Did you know that more than 70% of your immune system is in your gut? Taking care of your digestive system can help you stay strong and healthy.

When giving your child antibiotics, remember they kill off pathogenic bacteria, but in the process, they also kill off good bacteria. Probiotics are especially important after a course of antibiotics to help replenish your child's good gut bacteria and restore healthy gut functioning.

Should Babies and Children Be Taking Probiotics?

There is reasonable evidence to support the use of probiotics to help with preventing antibiotic-associated diarrhea, preventing



constipation, improving childhood eczema, and reducing symptoms associated with colic-like abdominal pain and discomfort.

Can Taking Probiotics Strengthen Children's Immunity?

In a Word: Yes!

Based on the current literature, there is evidence to suggest that probiotics are a feasible way to decrease incidence of respiratory tract infections in infants and children. Taking a probiotic supplement may be helpful, particularly during cold-and-flu season.

A meta-analysis involving 23 studies and over 6,000 children (newborn–18 years) found that probiotic consumption significantly reduced the number of respiratory tract infections in children. In addition, the children who supplemented with probiotics had fewer numbers of respiratory tract infections compared to the placebo groups (children who didn't supplement).

I truly believe in a foods-first approach, always! Meaning we do our best, for ourselves and our children, to get nutrients from foods first. Tracking the types of foods your child eats on a usual week will help determine if they are getting what they need or if their diet is lacking in some areas. You might decide to include some additional supplement support, such as a probiotic, multivitamin, omega-3 fatty acids, and whatever else your health-care provider might suggest. And don't forget vitamin D!

I hope this information helps you and your family stay as healthy as possible this fall and winter.

The online version of this article also addresses the fifth nutrient, iron, in children. Visit our blog.



Angela Wallace, MSc, RD

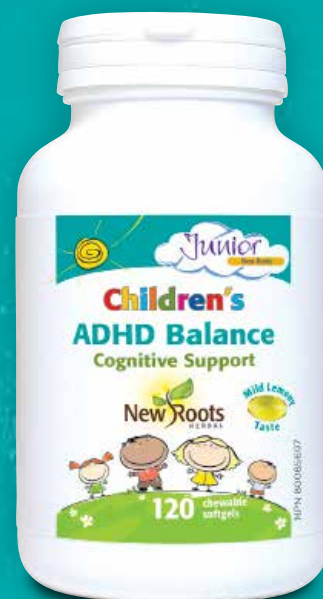
A registered dietitian with the College of Dietitians of Ontario, personal trainer, and family-food expert who specializes in women and child nutrition and fitness, she loves helping families get healthy together.

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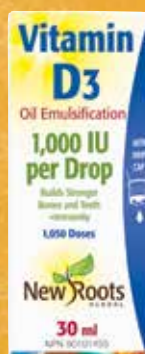
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Autumn

Getting Your Immune System in Top Shape

by Krista Mackay, BSc, ND

With the arrival of autumn come cooler temperatures, and maybe higher stress levels with the return to school and work routines. All these result in a more vulnerable phase and higher chances of infection.

From a traditional Chinese medicine (TCM) perspective, autumn is represented by the metal element and includes the lungs and large intestines. Both organs are in direct contact with the outside world, taking in air and food, and letting go of what we don't need. For this reason, they are heavily protected by our immune systems. In fact, about 70–80% of our immune system is in our digestive tract. In TCM, the large intestine is about “letting go,” the obvious passing of stool, but there is also an emotional component to this. The lungs are associated with sadness as well as opening to new ideas and clear thinking.

There are many things we can do to nourish our beings and keep our immune systems in top shape. Here are some ideas and reminders for the autumn.

Slow Down

Take self-time to reflect and adjust to the faster pace and higher intensity that September might bring. Autumn tends to be a time of introspection and a quieter time for planning. Ideas include breathing exercises, guided imagery, mindfulness, walking, spending time in nature, journaling, or sitting with a warm cup of tea. Many of these activities support the lungs and also help to calm the nervous system and discourage stress.

Eat Warming Foods

As temperatures decrease, it is important to eat warming foods and herbs to support digestive function. These include warm cooked meals rather than lots of raw summer salads. Warming spices include ginger, cinnamon, nutmeg, cloves, and pepper that can be added to soups, stews, roasted vegetables, or an apple crumble. Eating seasonally is ideal, especially all that comes during the autumn harvest. Garlic; onions; mushrooms; squashes; pumpkins; root vegetables such as carrots, potatoes, yams, parsnips, and turnips; and apples and pears as our autumn fruit: All these provide warmth to the body, move digestion, and help clear pathogens.



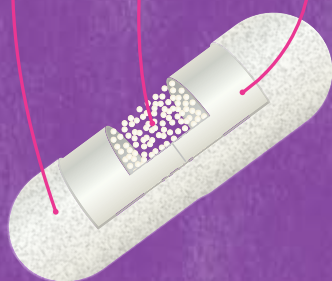


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Vital Vitamins and Minerals

Vitamin C is an all-time favourite immune support. A deficiency in this vitamin is related to an impaired immune response and higher risk of infection. Vitamin C has various effects on both the innate and adaptive immune systems. A key role is that vitamin C protects barrier function so that pathogens cannot enter. It can also increase the amount of B and T cells, supporting immune activity. Vitamin C acts as an antioxidant and supports phagocytes that not only engulf pathogens, but also clean up and resolve inflammation.

Vitamin D, our sunshine vitamin, is well known to promote a healthy immune response. It has been shown to have a positive effect on many autoimmune conditions. Many people are deficient in vitamin D, especially in Canada, hence the need for supplementation. Factors include a high use of sunscreen as well as less outdoor time and, unfortunately, our northern location doesn't help. I often recommend patients increase their supplementation from September to April, and to get levels tested if taking high doses for long periods of time.

Zinc has numerous effects on the immune system as well. First off, it protects the skin and epithelial cells from pathogens entering. The function of immune cells and their normal development in the thymus and bone marrow is very dependent on zinc. Macrophages, key white blood cells that eat up pathogens and send signals for other immune cells to come, cannot do their job without zinc. Natural killer cells, neutrophils, and B and T lymphocytes also use zinc for proper functioning. Bottom line: When zinc is deficient, immune activity is impaired.



Boost with Botanicals

Astragalus is a Chinese root used to strengthen the immune system and tonify the lungs. It is also helpful as an "adaptogen" to protect against the negative effects of stress. Astragaloside IV is a notable compound extracted from this root, which regulates the immune system, protects cell membranes, and is an antioxidant and anti-inflammatory. Astragalus can be taken in capsules, liquid tinctures, or by boiling the root. A nice autumn recipe with astragalus is change-of-season tea (see recipe section).

Andrographis also has immune-modulating ability and is commonly used to ward off colds, flus, and other typical bacterial and viral infections. In a study on healthy people, andrographis was shown to increase lymphocytes and modify cytokine production, all benefiting immune function.

Codonopsis, another Chinese root known to have immune benefits, is used to tonify lung qi and warm the body in TCM. That sounds perfect for autumn support.



Fight Off with Fungi

Mushrooms are superfoods used primarily for immune modulation. β -Glucans are polysaccharides from mushrooms with immune-enhancing abilities that have been substantially researched. Hot-water extraction is the best way to access these β -glucans, so eating mushrooms in cooking is an easy at-home immune support. Other medicinal mushrooms, such as reishi, chaga, or turkey tail, can be found dried or in powders to simmer in hot liquids, and of course change-of-season soup (see recipe on page 36). They all come in capsules as well, as nutraceuticals with therapeutic potential.

Bacterial Barrier

Knowing that a huge part of our immune system is in the gut, adding probiotics is a no-brainer. There has been a lot of research on specific strains of these friendly bacteria. Of note are *Lactobacillus rhamnosus*, *L. helveticus*, *L. reuteri*, *L. casei*, *Bifido infantis*, and *B. bifidum*, all helping immune function. The overall finding is that they work better together. Colds, flus, wheezing, asthma, intestinal infections, and allergies have all seen benefit with probiotic mixtures. Look for a multistrain supplement and keep them in the fridge. Equally important is to buy enteric-coated capsules so they can arrive alive in your intestine where they deliver their magic!



Dr. Krista Mackay, BSc, ND

Krista practices both in Montreal, Quebec, and Montevideo, Uruguay. A busy mom of two boys, she focuses on naturopathic general/family medicine, helping to find a reasonable balance to optimal wellbeing and stress management, including nutrition, herbal medicine, and mind-body work.

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Eating Better Through Mindfulness

by Joseph Emet



Hunger is the voice of our biology. But biology can be deceiving and sometimes, we can't depend on our feeling of fullness to stop eating. Our levels of leptin—the satiety hormone—depend on several factors, one of which can be genetics; but remarkably, these levels don't change immediately after eating.

In 2019, 40% of the adult population aged 18 to 74 in Quebec had a waist circumference that was considered by the World Health Organization as being at risk in terms of heart disease, hypertension, or type 2 diabetes. An incredible 2.3 million adults were subject to abdominal obesity, which is twice as many as in 1990. Without intervention, the life expectancy of these individuals will be reduced by several years. But we cannot presume that so many people have poor judgment. This situation may be due to the eccentric behaviour of our

signaling system, which can give us the impression that our stomach is a bottomless pit. Eating too quickly is another way to exacerbate this issue, as we are more likely to eat excessively before we start feeling full. Overeating is yet another problem, as the stomach extends and as a result, the body will need more food before the feeling of satiety can be perceived.



As you can deduce, we should not wait until we actually feel full to stop eating. We have the ability to determine which meals we should consume, and in what quantities, before we even sit down at the table. And we should stick to our decision. This voluntary approach will not only allow us to eat the appropriate amount, but also to eat a balanced meal.



For several years now, I have been giving mindfulness training courses. As far as I am concerned, mealtime is an integral part of practicing mindfulness, just as any other moment of the day. Mindfulness also requires knowledge. In this case, it is necessary to know that leptin, the satiety hormone, needs time to come into play. It is therefore essential to rely upon your planned meal and to base your decision to eat based on sensible reasoning rather than sensorial indicators. Be cautious when your stomach is speaking to you. Often, during meals, my stomach tells me: “Eat more; I’m hungry”, until the moment when it suddenly changes its tune and says: “Oh, you’re stuffing yourself, it is too much!” The stomach is not used to communicating “I am pleasantly full now, you can stop.” It’s the voice of mindfulness which tells me that. Thankfully, our inner voice is powerful and it can drive our will to maintain a healthy weight. It can contribute to the comfortable sensation we feel when we have eaten well, and eaten enough, instead of feeling heavy after a meal.

Furthermore, mindfulness is also necessary when shopping for groceries. We must find our own way to overcome unhealthy habits, as well as self-serving commercial interests promoting unhealthy food choices. Today, an average supermarket carries an astonishing range of more than 40,000 items; so, more than ever, it is essential to be smart when we are selecting our food. Unlike the ancient tribal societies, where everybody had the same basic diet, our dietary choices have become extremely vast. We need more than basic knowledge to navigate through supermarket aisles, which are full of temptations, carefully stacked upon each other. Doing the groceries conscientiously involves careful reading of product labels and ingredient lists. Whereas the front of the product packaging contains the advertising messages, the back contains all the crucial details for your health, which are often in fine print. These are worth some extra attention—perhaps even some research—to better understand how these ingredients impact our health.

Doing the groceries conscientiously also means prioritizing seasonal, locally grown, and organic products. At local markets, you can find products that are less processed and generally have a better nutritional profile. By shopping there, you are also contributing to the welfare of your local community and promoting sustainable farming.

Lastly, we need to be mindful of nutritional shortages and a need for supplementation. I learned this the hard way, having to endure 3 painful gum surgeries before realizing that coenzyme Q10 supplementation is helpful in maintaining healthy gums. I have been taking it now for 15 years and don’t suffer with gum issues anymore. CoQ10 is one of the half-dozen supplements that I take regularly, including omega 3, vitamin C, and during the winter season, vitamin D. Taking supplements is necessary for several reasons: The lack of sunlight during winter, agricultural practices which deplete the soil—and therefore crops—of their nutritional value, as well as the changing needs of our bodies, amongst others.

Whether it is at your dinner table or while shopping in stores, mindfulness is a simple tool to help you eat and live better.



Joseph Emet

Joseph teaches meditation and mindfulness. He has written two books published by Le Jour: *En Pyjama avec Bouddha* prefaced by Thich Nhat Hanh, and *Sourire comme Bouddha*.

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Change-of-Season Tea Recipe

Ingredients

- ¼ cup dried astragalus root (≈ 4 sticks)
- ¼ cup dried dioscorea (wild yam) root (≈ 3–4 sticks)
- ¼ cup dried codonopsis root (≈ 3 sticks)
- ¼ cup dried goji berries (≈ 3–4 tbsp.)
- 2–4 L water

Instructions

Bring to a boil and simmer for about 1–2 hours. Remove roots and store in glass jar in fridge. Can be reheated as needed.

Drink 1 cup per day during the change of season (e.g., 1–2 weeks on either side of the equinox).

Drink as a tea or use as a base for soups and stews.



Change-of-Season Super Soup

Follow the above recipe.
Optional add-ins to simmer with root herbs:

- Onions, peeled and halved
- Garlic, peeled and halved
- Mushrooms (cremini or portobello from the grocery store, or a few pieces of New Roots Herbal's dried Chaga or Reishi)
- Celery stalks
- Carrots

Instructions

Throw everything in a large pot, with the dried roots and mushrooms. Add water, bring to a boil, and simmer 2 hours. Alternatively, you can thinly slice and sauté onions, garlic, carrots, fresh mushrooms, etc. You might need more water depending on how much you throw in.

Once cooled, strain broth or just remove the tough roots (astragalus, cordyceps, and dioscorea), and store in glass Mason jars in the fridge.

Warm up a cup a day, and add ½ tsp. of your favourite mushroom powder.



Krista Mackay, BSc, ND

Krista practices both in Montreal, Quebec, and Montevideo, Uruguay. A busy mom of two boys, she focuses on naturopathic general/family medicine, helping to find a reasonable balance to optimal wellbeing and stress management, including nutrition, herbal medicine, and mind-body work.

kristamackay.ca

Pesto Yam Stack

If you are someone that can put pesto on just about everything, then here is another one for you. Full of fibre, healthy fats, and delicious flavour, this yam stack is a creative way to avoid refined carbohydrates and include more nutrient-dense foods in your diet.

Ingredients

- 1 chicken breast
- 1 medium-sized yam or sweet potato
- 1 small red onion
- 1 avocado
- 2-4 tbsp. pesto
- 1 tsp. avocado oil
- 1 tsp. Cajun spice
- 1 tsp. Italian spice
- ¼ tsp. garlic powder
- Salt and pepper to taste

Instructions

Preheat oven 375 °F (190 °C). Begin peeling the yam or sweet potato and cut it into long thick slices, then place them in a bowl and add Cajun spices, pepper, and salt. Place them in a greased or parchment-lined oven-safe dish and put in the oven for 35-40 minutes.

In a separate bowl, marinate the chicken breast with Italian spices, garlic powder, pepper, and salt. Place it in the same dish as the yams when they have 20-25 minutes left to cook.

Slice up onions and place in a small pan over medium heat with avocado oil and begin to sauté until translucent or fully cooked.

Once the yams and chicken breast are done, begin the stack in this order: yam, avocado, chicken, pesto, onions, yam. Slicing the avocado and chicken into thin pieces to fit on top of each other makes for a much easier stack, and loading up on the pesto helps stick everything better together.

Serves 2.



Megan Luder, CNP

A certified nutritional practitioner who is passionate about creating and educating on the health benefits of nutrient-dense whole food.

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Veggie-Infused Meatballs

Perfect for the entire family! The added veggies give these meatballs extra flavour, nutrition, and moisture. You can serve them with your family's favourite sauce or a tomato sauce and pasta.

Ingredients

- 1 lb ground turkey (or meat of choice, could be beef)
- 2 eggs
- ½ cup parmesan cheese
- ½ cup breadcrumbs of choice
- ¼ cup carrot, sliced
- ¼ cup celery, sliced
- ¼ cup zucchini, grated and drained (see directions below)
- ¼ cup onion, sliced
- ¼ cup milk of choice
- ¼ cup parsley
- Salt and black pepper to taste

Instructions

Preheat oven to 350 °F (190 °C). Line a baking sheet with parchment paper and lightly grease with some olive oil.

Grate zucchini (¼ cup worth). Place grated zucchini in paper towel or a cloth and squeeze to remove any excess water—this is very important to ensure the meatballs don't become too moist or watery.

Place the sliced carrot, onion, and celery in the food processor. Blend until they become a grated consistency. Scrape down the sides as needed.

Add all remaining ingredients and blend together until there is a smooth texture.

Take 1–2 tablespoons worth (depending on your desire for size), roll between the palms of your hands into a ball, and place on your greased parchment paper.

Bake for 20–25 minutes or until golden brown.

Serve with warm tomato sauce and enjoy!

Some Considerations

- Make sure you blend the veggies, so they are really broken down and all the same size.
- If serving with sauce, simmer in the sauce for a few minutes before serving.
- Can be frozen in an airtight container for up to 3 months (makes for a great make-ahead meal).



Angela Wallace, MSc, RD

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.

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AskGord



My sister is going through chemotherapy and it's taking a toll on her. I've read that medicinal mushrooms can help. Which one works best?

Medicinal mushrooms provide good immune support, with some species offering additional benefits such as improved cognition, stress reduction, and energy improvement. The reishi mushroom has been used for centuries to increase energy and improve overall health.

This old-world wisdom is now being confirmed by modern science. Recent studies have pushed further, examining the effects of reishi spores, the equivalent of mushroom seeds. A study involving 48 breast-cancer patients showed statistically significant improvements in physical wellbeing and a reduction in fatigue when taking reishi spores over a 4-week period. Patients also reported a lower incidence of anxiety and depression.

Look for reishi spores to help her improve energy levels during these exhausting treatments. Just be sure to buy a reputable brand so you get actual spores, and not ground-up mushrooms.

I have recurring nausea, bloating, and diarrhea, and a friend suggested I try probiotics, but told me to find one containing only "Bifidobacteria." I thought the more variety, the better. Can you explain?

There are actually many varieties of *Bifidobacteria* strains, such as *B. infantis*, *B. bifidum*, *B. longum*, and *B. breve*. They are among the first to colonize your gut when you are a baby, helping to build up your immune system foundation. Over the years, these precious strains decline due to antibiotic use, stress, environmental toxins, and aging.

If you have **SIBO**, your friend's advice is in line with many naturopathic doctors, who recommend avoiding *Lactobacillus* strains in this particular situation. You should get a proper diagnosis, and counselling for a probiotic with strains clinically proven to help with your condition.

These products may not be right for you. Always read and follow the label.
Content provided is for informational purposes only, and does not intend to substitute professional medical advice, diagnosis, or treatment.

You have a question you would like answered about your health and supplements? Gord would be happy to answer them! We could even feature them in this page if others could benefit from the information.

Reach out to him at facebook.com/newrootsherbal or call 1 800 268-9486 ext. 237

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