

Flourish

HEALTHY BODY, MIND, AND SPIRIT

How Eating
Sugar Ages
Your Skin

PROBIOTICS

The Microbiome,
Our Internal Garden

Inside an ISO Lab:
N.H.P. Laboratories

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Spring 2022

Editor's Letter



Every year at this time, I stand in awe at the incredible wonder of spring. What seemed so dreary, emerges as beauty. Nature has a remarkable reset button, activated every year. Perhaps we could use a reset of our own?

What better time to refocus on what truly matters? Let's start with a look at our wellbeing and what we can improve, both physically and mentally. Eating better, moving more often, and taking that "quality time" we always promise ourselves. Tomorrow is always a day away, so start today! And while we're at it, let's start reconnecting with everyone who makes us laugh and bring us joy. We are long overdue on visiting our loving family and cherished friends... and making new friends! Someone once told me: "Every good friend was once a stranger." So let's extend some warmth and kindness to those we have not met as of yet. Smiles are given freely, but their value can be priceless.

Today more than ever, let's do what we can to care, share, and help each other *Flourish*.

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Editor-in-Chief

Flourish

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Measure What Matters

by Dr. Ludovic Brunel, ND



The most important factor when choosing any treatment is that it helps a patient in the end. In certain cases, aspects of it may be unpleasant or inconvenient, but most patients understand that some temporary discomfort and investment in time and resources are necessary in order to get better. Delivery of expected benefits and effectiveness are key; this is why the need for shelf-stable probiotics seems trivial. It is difficult to understand all the hype. After all, we all have access to a fridge, and we all use it daily. The notion of providing “shelf-stable” probiotics due to “convenience” is counterintuitive.

Probiotics Like Cold Temperatures

The research is very clear: Probiotics behave like food. Refrigeration means that more of the probiotics found in the product survives over time. **Even in studies using so-called “shelf-stable” products, the authors conclude that “higher storage temperature yielded lower stability in all strains or samples.”** *Bifidobacterium* is particularly temperature-sensitive, and long-term stability tests on bifidobacteria show that the viability of live bacteria decreases with the length of time in storage and with increases in temperature. Storage of *Bifidobacterium longum* at 20 °C (room temperature) showed significantly higher mortality than at 4 °C. Similar findings were made with *Lactobacillus casei* and *paracasei* after 39 weeks of storage at 4 °C and 22 °C. The stability of the cultures was remarkably higher when stored under refrigeration at 4 °C.

Who Benefits from “Shelf Stability”?

Here is what we know. Refrigeration is proven to help maintain the viability of all probiotics. Bacteria found in shelf-stable probiotics die off more quickly at room temperature. And the common production method for many shelf-stable probiotics is to overbuild the product to anticipate the die-off of probiotics. So one has to wonder: What are you really getting when you buy a shelf-stable probiotic twelve or even eighteen months after production?

Shelf stable probiotics serve the industry, not the consumer.

Selling a shelf-stable product decreases shipping costs and helps expand distribution into more grocery and pharmacy locations that do not have refrigerated sections dedicated to supplements. The unsuspecting customer ends up with a product composed of heat-resistant strains, chosen for their shelf properties and not for their health benefits.

Does Shelf Stability Deliver on Expectations?

Lactobacillus and *Bifidobacterium* are the most studied probiotic genera for health benefits. Not surprisingly, they are most commonly used in food products and supplements. They are fragile, yet valuable therapeutic strains of probiotics, which require refrigeration to survive storage.

***Bifidobacterium* probiotic strains—including *B. infantis*, *B. breve*, and *B. plantarum*—are among those that die off rapidly unless refrigerated.**

Yet together, they are the subject of thousands of studies showing their health benefits. *Bifidobacterium infantis* has been shown to be beneficial for those suffering from irritable bowel syndrome, ulcerative colitis, and chronic fatigue syndrome. *B. breve* has demonstrated benefits in patients with inflammatory bowel disease and may help maintain a healthy weight. *B. plantarum* is another well-researched probiotic strain with benefits for athletic performance, irritable bowel syndrome, and eczema. Omitting these strains from a multistrain formula and using more obscure and less-studied strains, simply because they are more stable at higher temperatures, seems ill-advised. Consumers' health would be much better served if manufacturers selected proven beneficial strains, produced effective probiotic formulas, and kept them refrigerated.



Dr. Ludovic Brunel, ND

Dr. Brunel has 15+ years' of experience as a naturopathic doctor and practices in Calgary. His approach has always been to improve health outcomes by relying on the best research available.

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Probiotics Have It Rough

Probiotics are living organisms with great potential, but face two major obstacles.

First, they need to withstand variations in temperature and humidity during production, transport, and storage. Then, they are thrown into a harsh, inhospitable gastrointestinal environment designed to destroy them. Therefore, it is critical to use an enteric-coated product to ensure survival through the acidity of the stomach. In studies, only enteric-coated probiotics were able to resist degradation by harsh stomach acids. The survivability of enteric-coated probiotics through the stomach was substantially greater than non-enteric-coated probiotics, which were almost completely destroyed.

The Choice Is Yours

Research shows that using a probiotic that is refrigerated and enteric-coated will help improve the viability and effectiveness of the product. **Shelf-stable probiotics may offer benefits for the industry, but can leave the consumer with a product that, unfortunately, falls regrettably short of expectations.**

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Keep On Moving

by Dr. Nathalie Godbout, Chiropractor



The last two years have been demanding on everyone in varying degrees.

The pandemic and its many impacts on our daily routines are being felt by young and old alike. **I see people coming into my office with unprecedented levels of pain, flare-ups of old conditions, or new injuries from seemingly innocuous activities.** From most of them, I will hear a variation of: “I don’t know how it happened... I just woke up like this.”

There are many causes for these acute physical events. The lockdowns have led to a sedentary lifestyle for many of us, with restricted access to gyms and organized sports. It prevented us from connecting with others while participating in both indoor or outdoor activities, hence taking away support systems and accountability partners.

The change from office-based to home-based work also decreased our amount of daily activity. The walk to and from public transport, the walk through the office parking lot and up the stairs, the getting up from one’s office to a coworker’s desk to ask a question or to go to the restroom were all part of a daily dose of activity. And don’t get me started on the lack of ergonomics within improvised home offices!

Another drawback with working or schooling from home is increased access to goodies. Most of us blame boredom or temptation for the extra snacking, but there is another explanation: The higher stress level triggers an ancient protection system in our body. When you think you are in danger, your brain wants to ensure proper fuel to the brain, muscles, and organs to maximize chances of surviving the perceived threat. This leads to craving comfort food (fat and high carbs) and, very quickly, to weight gain.



Important and sustained stress levels also have another negative impact: They activate the muscular part of the protection system. When the body wants to defend itself, it goes to fight-or-flight. We recognize the increase in heart rate and higher blood pressure, the sweaty palms, the dry mouth that comes with being in danger. The brain also activates the big flexor muscles in your body (trapezius, pectorals, biceps, hamstrings, calves) and inhibits the extensors (*erector spinae*, *quadratus lumborum*, quadriceps, rotator cuffs). It wants to protect its vital organs by curling in. This leads to unconscious changes in posture and biomechanics that is less than optimal and conducive to injury.

We therefore have three distinct mechanisms that create negative consequences for our body and mind: The inactivity that leads to muscle deconditioning, weight gain from emotional and physiological reactions, and postural changes linked to non-work-conducive home offices and our neurologically driven protection systems.

How do we break the cycle, reclaim our fitness, and prevent injuries as we do so?

First, we need to calm our brain and let our body know we are safe.

The quickest way to do that is to coregulate with someone that is doing well, someone that we feel safe with. Doing an activity with someone, or having a long hug, or sharing a meaningful conversation with another person are all ways to cope. Connection allows us to change our emotional state, which in turn changes our physiology. A physical state which is not defensive will allow for healing and appropriate response to its environment, including good muscle recruitment.



If we don't have access to another well-balanced person, breathing exercises, gargling, chanting are also ways to stimulate vagal tone. Invigorating this regulator of our resting nervous system can shift the nervous system from a state of apathy or overstimulation to a state of balance. Cold exposure has also been studied as a means to improve vagal-nerve stimulation, which leads to a host of benefits including decreased heart rate and mood improvement.



As far as returning to physical activity, start slowly. Walking remains the easiest, safest, and most economical activity. It reaps a ton of benefits such as improved cardiovascular health and better bone density.

If you have been inactive for a long period, start on flat ground for 20–30 minutes at a time, and build your way from there, increasing by 5 minutes every few days. Integrate hills to increase the cardiovascular demand and recruit wider groups of muscles. Bring your sticks! Nordic walk is more demanding and will also stimulate cross-crawl motions, which are beneficial for the brain activity and the body's coordination. Go with a friend or join a walking group: It will feel much more engaging and supportive.



Other activities with low impact include qi gong, tai chi, yoga, or swimming. Dance classes, from cha-cha to hip hop or even square dancing, all contribute to better cardiovascular health, stimulate memory, and have the added benefit of stimulating those happy hormones we get from social interactions in our brain.

For those who have been wanting to go back to their more intense activities like martial arts or other higher-impact sport, remember that you are not starting back to your previous state of fitness. Start with basic training and technique, and let your body get used to the patterns and muscle recruitment it was used to.

At home, incorporate stretching in your daily routine. Touch your toes and reach up to the sky 5–10 times every hour. Do “superman” strengthening exercises once a day, where you lay on your stomach with your arms in front of you, lift your arms first, and then—if you feel strong—your chest and your legs. Hold the position for 2 seconds, and repeat 5–10 times.

Here’s to movement—in the right direction.



Dr. Nathalie Godbout, Chiropractor

Dr. Nathalie Godbout believes that a nervous system without interference plays a key role in our health, allowing us to adapt optimally to our changing environment. Moreover, our health behaviours (sleep, exercise, nutrition, and mental health) are essential to this balance.

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Breathing Exercise

- Breathe more slowly (aim for six breaths per minute).
- Breathe more deeply, from the belly. Think about expanding your abdomen and widening your rib cage as you inhale.
- Exhale longer than you inhale.



Nordic Walk

Adding poles as you walk activates all of the muscles of the upper body. Nordic walking typically increases your speed and your heart rate, burning more calories than regular walking. On YouTube, type in “nordic walk basic technique”; there is a great video by Sikana.

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



PROBIOTICS

The Microbiome, Our Internal Garden

by Dr. Krista Mackay, BSc, ND

Have you ever thought about your poop and what all of the bacteria inside your intestines do? Our bodies are loaded with bacteria, notably good bacteria that live in symbiotic relationship with us. We actually depend on them! But really, what do they do and why are they so important?

Our Flora is Crucial Right from the Beginning

The human microbiota is the collective of all microorganisms that live on and within us. Our microbe composition is established in the first moments of our lives, by contact with our mother's vaginal flora. **Children born vaginally receive this seedling of colonizing bacteria, which help develop their immune systems.** Many moms having C-sections are now looking to do "vaginal seeding," a process in which a swab collects vaginal fluids to transfer vaginal flora to the mouth, nose, and skin of a their newborn infant. Skin-to-skin contact is also an important way to transfer microflora from parents and caregivers to infants. **Babies who are breast-fed receive a great amount of their mom's flora versus babies who are bottle/formula-fed.** Research shows that children born by C-section have a much higher chance of developing asthma, inflammatory bowel disease, juvenile arthritis, and obesity later in life. Shocking, right? Similar consequences are seen in children who were not breast-fed or who used antibiotics frequently, predisposing them to many health concerns in the future.

Later, our microbiota depends on our diet, our stress management, our environment, our lifestyle, and on events such as infections and antibiotic use.

What You Eat Balances Your GI for Better Health

"Dysbiosis" is a term that naturopathic doctors use to describe any imbalance in the microflora. Research shows that a diet rich in fat and red meat changes the composition of bacteria, promoting the growth of certain species, whereas diets that are primarily plant-based have a predominance of other groups of bacteria. A diet high in sugars and refined carbohydrates promotes the growth of yeasts—such as *Candida*—creating another type of dysbiosis. These changes can create problems in the digestive system, which is also responsible for an important part of our immune function.

The digestive system being rich in nerves, notable effects may be observed on the nervous system following a dysbiosis, especially with our mood and how we feel.

Probiotics as supplements and fermented foods can help restore balance in the intestinal flora. Prebiotics are another way to support the microflora. They are a group of fibres that provide food for the microorganisms to grow and flourish.



Probiotics for Strong Immunity

With regards to immune function, many of the *Lactobacillus* bacteria have shown helpful actions. Some can stick to intestinal-wall cells, helping to protect this barrier from invaders. They block pathogens and help remove them along the intestinal tract. Some bacteria produce chemicals that are bactericidal, such as hydrogen peroxide, which prevent pathogen growth and keep the “local community” in check. *L. rhamnosus*, *L. reuteri*, *L. casei*, and heat-treated *L. acidophilus* were helpful at treating rotavirus and other intestinal-tract infections; and *S. boulardii* and *L. rhamnosus* improved watery- and antibiotic-associated diarrhea. Overall, a variety of bacterial strains are important because they often communicate with each other and have different roles.

There has been a lot of research on probiotics and allergies, asthma, and respiratory conditions. The *Bifidobacteria*, which are high in breast-fed infants, were shown to suppress IgE2, an immunoglobulin involved in allergies. Mixtures of *L. acidophilus*, *L. plantarum*, *B. infantis*, and *B. bifidum* have shown improvements in allergic symptoms and wheezing. The role of probiotics in modifying the immune response make them useful in vaccination, food allergies, and immune-type skin conditions such as psoriasis and eczema.

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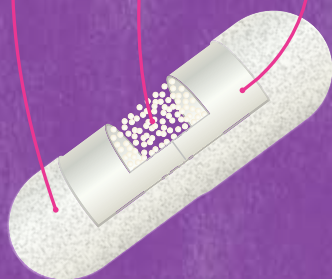


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Your Microflora Is Precious to Prevent Autoimmune Diseases

Because of these immune-modulating properties, research has branched out to autoimmune diseases. In **celiac disease**, research has found decreases in both *Lactobacillus* and *Bifidobacteria* species, showing a dysregulation. Probiotics are incredibly helpful for **inflammation**, showing improvements in many inflammatory markers such as cytokines and CRP (a blood marker for inflammation). Bacteria such as *L. casei* and *Bacillus coagulans* were helpful in conditions such as **rheumatoid arthritis** and **type 1 diabetes**. In **Crohn's disease** and **ulcerative colitis**, there seems to be a decrease in certain short-chain fatty acids (SCFAs) produced by colonic bacteria. These SCFAs play a role in the homeostasis of the colon, have anti-inflammatory effects, and help move waste along. Changes in diet can improve the bacteria colonies that produce SCFAs. Increasing certain fibres and prebiotics such as fructooligosaccharides (FOS) and galactooligosaccharides (GOS) can be helpful, but their worsening of symptoms has also been reported. Seeing a naturopathic doctor is crucial for a specific treatment plan and choosing the right probiotic and nutritional combination. Digestive and autoimmune concerns are often complex, involving not only the digestive tract but also the mental-emotional state of the person.

Healthy Bugs for a Happy Life

Another benefit of probiotics is supporting mental-emotional balance, calling the bacteria “psychobiotics” in this case. It’s a fascinating new area of research looking at the microbial-gut-brain axis, or how the microbiome affects **the brain**. As we know, many neurotransmitters and important messengers communicating with the nervous system are produced in abundance in the digestive tract. For instance, probiotics have shown effects on tryptophan levels and on GABA, among others. *L. plantarum*, *L. rhamnosus*, *L. casei* Shirota, and *B. bifidum* are now known to bring improvements in **depression**, **cognitive function**, **mood**, **stress**, and **anxiety**. **Sleep** was also significantly improved in a few studies on probiotics. **Autism symptoms** are closely related to dysbiosis and gastrointestinal disturbances, and probiotics play many roles in improving symptoms such as social behaviour.





Other Benefits of Probiotics: Cardiovascular Health and Weight Management

Metabolic syndrome involves a dysregulation of blood sugar, cholesterol, abdominal fat, and blood pressure, as well as an increased risk of cardiovascular diseases including type 2 diabetes. A considerable amount of research shows that probiotics have an affect on **cholesterol levels**, **blood sugar**, and especially **obesity**. *L. acidophilus*, *L. plantarum*, and *L. reuteri* were most often associated with positive changes in cholesterol. **Weight reduction** and decreases in body mass index (BMI) were benefited with *L. rhamnosus*, *L. grasseri*, as well as the beneficial yeast *S. boulardii*. Other research showed that prebiotics, such as GOS, decreased inflammatory markers and could lower the risk of **cardiovascular disease**.

Probiotics are live microorganisms that positively benefit a person. There are very low risks or side effects of supplementation, and food sources are also therapeutic. Prebiotic fibres feed and help support the growth of these probiotics and are easy and cheap to manufacture. When looking for good quality supplements of probiotics,

- multistrain formulas show better support than single-strain products;
- enteric coating should be considered to ensure bacteria make it to the intestines; and
- refrigeration is necessary for viability of most of the conventional strains, especially bifidobacteria.

Just like in nature, everything works in symbiotic relationship, and we must respect the balance. Would you have thought that probiotics could not only fortify your immune system, but could help you lose weight, protect your cardiovascular system, and support your mood and sleep? Preserving and restoring these friendly bacteria by supplementation and diet is necessary for optimal health.

Let's keep our internal garden flourishing!

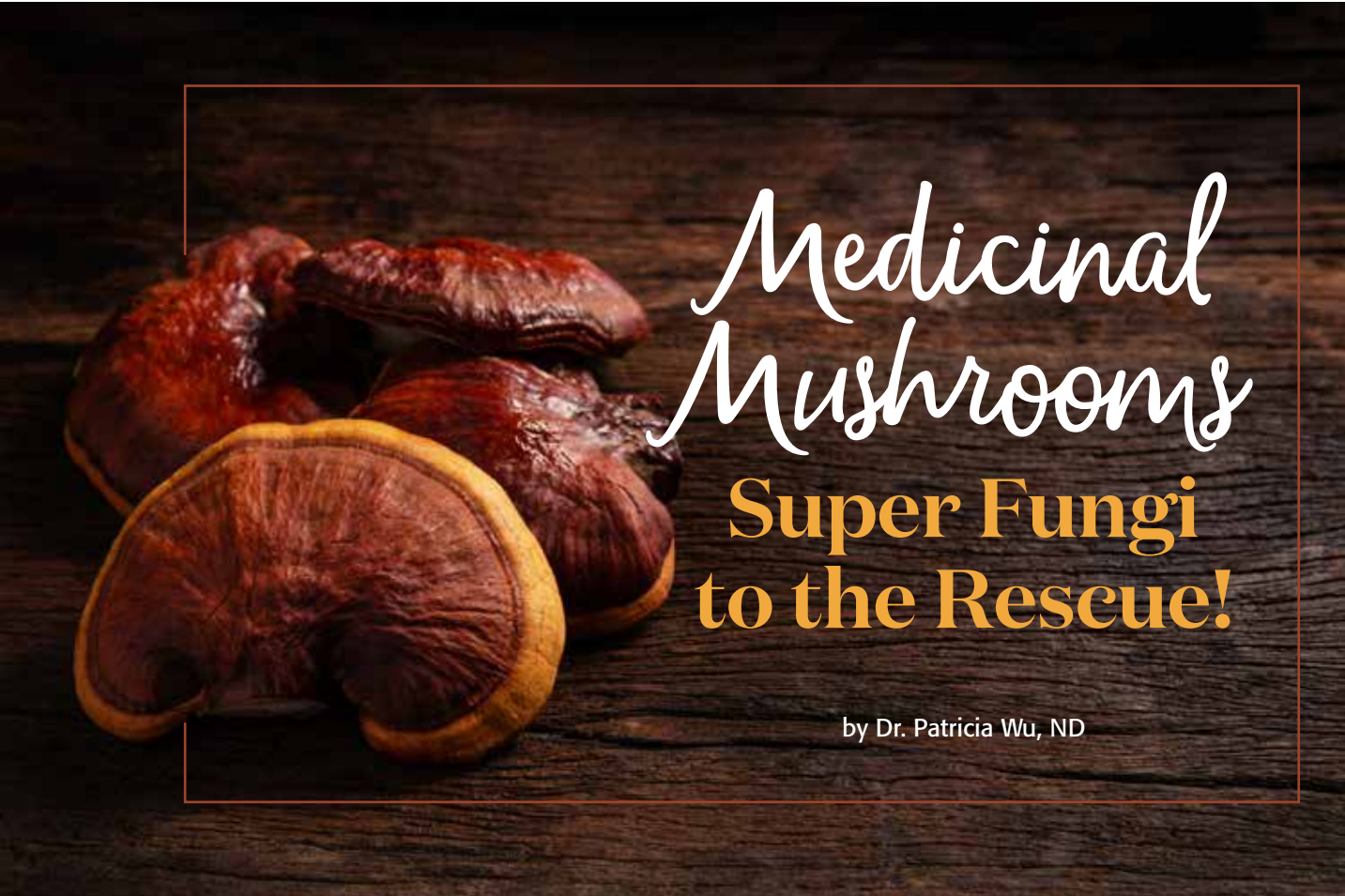


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A photograph of several medicinal mushrooms, likely Reishi, resting on a dark, textured wooden surface. One mushroom is sliced in half, revealing a lighter, porous interior. The lighting is dramatic, highlighting the rich, reddish-brown, wrinkled texture of the mushrooms' exteriors.

Medicinal Mushrooms

Super Fungi to the Rescue!

by Dr. Patricia Wu, ND

One of Mother Nature's finest creations emerges from the base of tree trunks and is buried in deep, dark soil. Mushrooms have been foraged for centuries, and have historically been found to have immunomodulating properties related to cancer and chronic diseases.

These days, the most common mushrooms seen at family-dinner tables are less than extraordinary. White and brown button mushrooms hold their weight in fibre, but less so in the heavily concentrated medicinal constituents that are packaged and placed on shelves today.

Active Constituents of Medicinal Mushrooms

So, what makes certain mushrooms medicinal? All immunomodulating substances have the same end goal: To eliminate any threat to the body's defence system. Medicinal mushrooms are no different. They contain a wide variety of constituents that serve to increase the number of NK cells, phagocytes, and B cells or T cells, so that any invader does not wreak havoc on the body. Main active constituents are antioxidant phenolic compounds (fighting free radicals), anti-inflammatory terpenoids, and **immunomodulating polysaccharides (IPS) including the popular *beta*-glucans, which stimulate the upregulation of immune cells**. Unfortunately, these polysaccharides are encased in chitin, which stops them from being absorbed by our intestinal mucous membrane.

The Immune System (An Overview)

The immune system is comprised of the innate system, which uses natural killer (NK) cells and phagocytes, and the adaptive immune system, which employs T cells and B cells. When an unknown pathogen is introduced to the body, the innate immunity activates NK cells and phagocytes to destroy the invader. The adaptive immune system, with its B and T cells, then stores the identification of the pathogen so that the next time they try to attack, the response is faster and more robust.

Hot-Water Extraction: Pure and Potent

Medicinal mushrooms are available as whole fruiting body (fresh, dehydrated, or ground into powders) that can be used in meal preparation, or as extracts in supplement form. New technology has improved on traditional methods, allowing for more potent and pure therapeutic doses of medicinal mushrooms.

The process of botanical extraction most commonly uses hot water—and sometimes alcohol—to isolate the constituent. Mushrooms contain both water-soluble and alcohol-soluble constituents. The polysaccharides, including *beta*-glucans, are highly water-soluble; on the other hand, phenolic compounds and terpenoids are best extracted in alcohol. **Since polysaccharides are tightly bound within the fungal cell walls, hot water is needed to dissolve the indigestible fibre (i.e., chitin).** This liquid extract is then dried into a potent powder, and commonly encapsulated.

Studies that use hot-water extracts demonstrate immune upregulation. In contrast, studies that use alcohol extracts show the downregulation of immune-cell activity. This is likely due to the decreased potency of the IPS in alcohol extracts. In the case of medicinal mushrooms, polysaccharides are the star constituent for immune-enhancing properties, and hot-water extraction will provide the highest possible concentration.

Mushrooms for Immunity and Longevity

Reishi (*Ganoderma lucidum*)

With over 400 active constituents, reishi boasts an impressive résumé as an immune enhancer. Used for centuries in Chinese medicine and reserved as a delicacy only for emperors, reishi has been studied for **anxiety, fatigue, and primarily anticancer effects**. Its IPS mobilize an army of NK cells, and its triterpenes decrease inflammation. Reishi also contains germanium, which oxygenates cells and neutralizes pain during the end stages of cancer. In clinical trials, six months of reishi supplementation increased antioxidant content within the body and notably decreased incidence of fatty liver disease.

What Are Reishi Spores?

Spores are germ cells that are ejected from the cap of the fungus once mature, allowing the mushroom to replicate and grow. Think of them as miniature seeds. *G. lucidum* spores contain similar active constituents as those found in the fruiting body (the mushroom itself) and provides comparable therapeutic benefits. Amazingly, over 29 triterpenes have been isolated from *G. lucidum* spores, while only a few have been found in the fruiting body. Also, more than 40% of the spore content is composed of IPS. The clinical applications of reishi spores are still being studied, but it is holding its weight in **immune-enhancing, neuroprotective, antiepileptic, anxiolytic, antitumour, and liver-optimization abilities**. Reishi spores may be the next ultimate superfood due to the higher bioavailability of active constituents.



Cordyceps (*Cordyceps militaris* and *Paecilomyces hepialid*)

Both of these cordyceps species are grown and cultivated to perform similar therapeutic applications of their wild cousin, *Cordyceps sinensis*.

Traditionally used for **fatigue and improving lung function**, cordyceps have a high IPS content. In eight weeks, supplementation with cordyceps increased NK-cell activity while also activating T cells against tumour cells. Cordyceps also increases oxygen utilization by stimulating red



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blood cell formation. After three weeks of cordyceps supplementation, maximal oxygen consumption ($\dot{V}O_2$ max) and tolerance to high-intensity interval training (HIIT) increased. These studies are promising for individuals suffering with **lung-health issues**.



Lion's Mane (*Heridium erinaceus*)

Perhaps the most luscious-looking medicinal mushroom and most easily found in nature, lion's mane enhances the **immune system** and exhibits neuroprotective effects. The IPS in *H. erinaceus* has been shown to increase the efficacy of chemotherapy agents as well as decrease oxidative damage in healthy cells.

More recently, *H. erinaceus* has emerged as a nootropic agent used to prevent **dementia**. The diterpenoids found in *H. erinaceus* promote the nerve growth factor (NGF), stimulating the growth of neurons and protecting brain cells from oxidative damage.

Conclusion

It's safe to say that medicinal mushrooms—in any form—are beneficial to long-term health. Therapeutic benefits are maximized by taking a hot-water extract with validated polysaccharide and *beta*-glucan content. When starting supplementation with a medicinal mushroom, some people can experience cleansing reactions like pimples, sore muscles, dizziness, and bowel changes. These symptoms can signify an upregulation of the immune system and detoxification, and normally disappear within a short time frame. Naturopathic doctors can help you choose proper dosing. Superfungi are extraordinary creatures, but like many botanicals, concentrated doses and duration of use will ultimately result in robust immunity and longevity.



Dr. Patricia Wu, ND

Dr. Wu is a naturopathic physician with a geriatric-focused practice in Tsawwassen (South Delta), BC. She has a special interest in heart disease, metabolic disease, and brain health (dementia/Alzheimer's prevention).

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Inside an ISO Lab: N.H.P. Laboratories

by Serge Philibert Kuate, PhD

Leading the Way in Natural Health

The initials for Canada's industry-leading analytical laboratory for natural health products come by its name honesty. Since its inception in 2005, N.H.P. Laboratories has grown organically, from one chemist to a team of 22 globally recruited scientists with one vision: To extract the best nature has to offer from a scientific perspective. Peter Wilkes, founder and owner of New Roots Herbal, was frustrated with the lack of quality-testing facilities in North America catering to the wellness industry. His solution followed a *Field of Dreams* storyline: "Build it, and they will come." N.H.P. Laboratories is equipped with a roster of analytical equipment unsurpassed in our industry and rivalling those in leading universities and pharmaceutical laboratories. Strategic positioning near Montreal's wealth of universities and colleges furthermore ensures recruitment of the brightest minds our country has to offer.

Testing Options

"Third-party tested" has become an industry "buzzword" for consumers looking for quality and safety for supplements. It sounds unbiased and official, but what does it actually mean? Put simply, an external organization has determined that a product complies with a specific standard related to safety or quality. Rarely are we told what it is actually tested for, nor to which standard. Comprehensive testing would include verification for identity (specific genus or species), purity (safety from pesticides / heavy metals / residual solvents), potency (percentage of active ingredients), as well as effective delivery (capsule integrity). In Canada, supplement manufacturers are ultimately responsible for their products and claims made, regardless of where it is tested. Companies with in-house testing facilities often hold themselves to higher standards, investing extensively in specialized equipment and an adherence to more comprehensive, stricter testing methods.

ISO Status is More Than a Symbol

ISO 17025 accreditation is the single most important standard for calibration and testing for laboratories worldwide. This ensures laboratory standards for calibration and testing are adhered to meticulously, and with the precision necessary to replicate testing protocol globally. Applying for accreditation is a complex and lengthy process, requiring extensive time and resources. Once accredited, strict annual audits are performed by the ISO-accreditation body to ensure continued compliance. N.H.P. Laboratories accreditation has been successfully renewed every year since 2014.



We Test... and Test Again

Consumers deserve the full therapeutic potential natural health products have to offer, without worrying about safety. That's why, every year, we validate over 800 different raw materials. Regardless of whether it comes from a known supplier or a new one, we test every batch. Any ingredient that does not pass strict inspection standards is flagged. In fact, every year, we expose numerous ingredients, including medicinal mushroom powders, trying to pass as extracts. We don't stop there. Finished products and formulas are tested to ensure they comply with the label they are sold under, so consumers receive exactly what they purchased.

How ISO Testing Benefits the Consumer Identity

As simple as it seems, the first thing we check is identity. For example, there are approximately nine species of echinacea, but only three of them are used as medicinal herbs, with benefits that include relieving symptoms of upper respiratory tract infections. Near-infrared spectroscopy technology identifies specific species, with detection of unique electromagnetic radiation emitted from their molecular bonds. As the consumer, you benefit from knowing you have chosen the exact species that provides the therapeutic benefits you need.

Purity

A common concern for consumers is the purity of fish oils (omega-3 supplements) sourced from deep sea-dwelling fish such as sardines and other cold-water fish. To detect the presence of contaminants, N.H.P. Laboratories employs an inductively coupled plasma-mass spectrometer (ICP-MS). This process introduces an electrical current to ionize a sample



This “excited” state differentiates trace metal contaminants such as mercury, arsenic, lead, and cadmium (found in batteries), which can then be detected down to parts per trillion—other laboratories measure and test parts per million.

The harsh reality for the use of herbicides and other pesticides on a global scale is a concern for the purity of all living organisms. Our comprehensive panel of herbicide and pesticide testing is executed with gas chromatograph / mass spectrometer (GC/MS). This allows us to detect contaminant residue at the microscopic level.

Microbiological contaminants are also no match for N.H.P. Laboratories. Our microbiological department employs the VITEK-2 Compact automated microorganism identification system, which delivers a state-of-the-art technology platform for the detection of pathogenic bacteria including *Enterobacteriaceae*, *E. coli*, *Salmonella*, *Pseudomonas aureus*, and *Staphylococcus aeruginosa*.

We Say No to GMOs.

Polymerase chain reaction (PCR) testing has become a household word for detection of specific flu viruses. It works by rapid amplification of DNA found in raw materials to expose possible genetically modified segments that are subsequently identified and quantified. This Nobel prize-winning technology allows us to validate non-GMO status, which is among the core values for all samples tested here at N.H.P. Laboratories. We test for everything—you could say this obsession is in our DNA!



Potency

Botanical extracts with a validated amount of a critical marker compound (active compound) have emerged as the driving force for countless supplements. N.H.P. Laboratories has dedicated technology to confirm their potency. Astragalus, for example, contains therapeutic compounds called astragalosides. Their exact concentration can be determined with ultra-performance liquid chromatograph / mass spectrometer (UPLC/MS-Triple Quad). It physically separates desired compounds by evaluating their unique polarity (electrical charge), which allows the mass spectrometer to quantify them. These exact concentrations can then be expressed as a percentage for a label claim. This workhorse is also used for identification and quantification of amino acids.

Delivery

The effectiveness of natural health products also relies upon targeted delivery within the body. N.H.P. Laboratories performs disintegration testing using equipment and protocol accepted by U.S. Pharmacopoeia for tablets and capsules. A good example is the testing of GPS™ enteric-coated probiotic capsules in simulated gastric conditions. This timed exposure to acidity matching that of stomach acid ensures the integrity of enteric coating to withstand stomach acid. As a consumer, you benefit from a product which guarantees safe delivery of live, active probiotics within the intestines.

Are You a Fan of CSI?

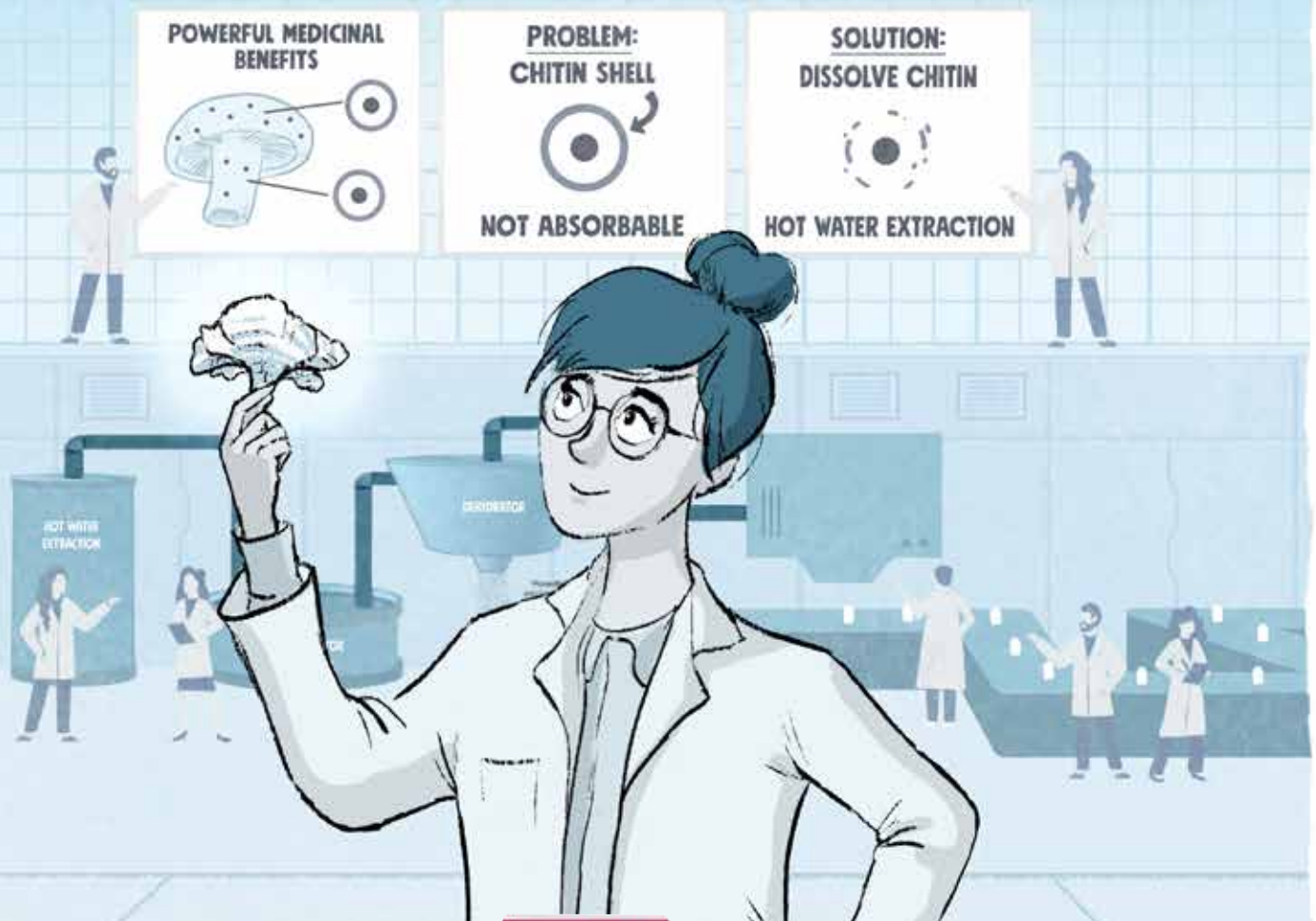
The work performed by our scientific team is unsurpassed in our industry and equivalent to that of leading biomedical research laboratories and criminal forensic teams worldwide. Think of us as your personal crime-scene investigators, ensuring your herbs are exactly what they claim to be, that your supplements are as strong as the label states, and that your probiotics can perform as you expect them. We may not be as recognizable as the stars of your favourite *CSI* television series, but our team has a passion and dedication to your health which for us is second nature!



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.

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How Eating Sugar Ages Your Skin

by Angela Wallace, MSc, RD

I think most people are aware that sun exposure has a major impact on the aging of skin. But did you know that sugar intake does, too? Advanced glycation end-products (AGEs) are a major culprit when it comes to aging skin.

What are they? They are harmful free radicals that are formed when protein and fat combine with sugars in the body. Glucose and fructose sugars link to amino acids (which are the building blocks of protein), creating AGEs. As AGEs accumulate in the body, they damage the proteins around them, which ultimately influences the aging of your skin. For example, if proteins are binding to sugars, they are not available to be used to create other things our body or skin needs, such as collagen.

Collagen and elastin, which help keep your skin looking youthful and plump, are very susceptible to damage from AGEs. In fact, research has shown increased AGEs production when sugar in the diet is high or excessive, and this is further stimulated when exposed to sun or ultraviolet light.

Bottom Line: There are factors out of our control—specifically on a genetic level—which will have influence on your skin and aging. However, two things you can aim to control are your diet—specifically sugar intake—and your level of direct and unprotected sun exposure.

Three Dietary Changes to Support Healthy Aging

Reduce/Be Mindful of Your Sugar Intake

Eating sugar is normal and needed for the body. However, it is easy to overconsume. The World Health Organization suggests that no more than 10% of total caloric intake come from added sugars. For an average adult consuming 2,000 calories a day, that equals 200 calories or approximately 25–30 g of added sugars per day. Added sugars do not include sugars found naturally in foods such as fruits.

Self-Challenge: Look at food labels for a day. How much sugar are you consuming? Based on your findings, you can adjust your sugar intake if needed. 1 tsp. of sugar = 5 g. I often like to remind my clients of that, especially when consuming sugar through beverages like coffee; it can easily add up.



Keep Hydrated

Water is necessary for many bodily functions. It specifically plays a role in the production of elastin and collagen, both of which are needed to produce youthful, glowing skin. Aim to have at least eight cups of water each day to stay hydrated and help keep your skin hydrated, too.

Tip: If you find it hard to drink enough water, try sparkling water instead, or try infusing it with some flavour (like sliced oranges, lemon, and berries... a great boost of vitamin C as well).

Eat Lots of Antioxidants

Antioxidants are your defense against the damage created by free radicals. AGEs are an example of free radicals that play a role in the aging of skin. Antioxidants will help prevent sugar molecules from attaching to protein, and therefore prevent the development of AGEs.

Antioxidants are found naturally in many different types of foods and come from vitamins and minerals. Antioxidants, such as vitamins C and E, are often added to skin-care products as well.



Selenium

Food Sources: Eggs, beef, chicken, turkey, fish, Brazil nuts, sunflower seeds, etc.

Why Is It Important? It's a mineral that is a powerful antioxidant. It works to preserve and maintain tissue elasticity, which ultimately slows down the appearance of aging. It helps protect your cells from free radical damage and reduces inflammation, making it important for overall health and disease prevention as well.



Vitamin E

Food Sources: Almonds, avocado, sunflower seeds, vegetable oils, etc.

Why Is It Important? Vitamin E helps to rebuild collagen fibres and works with vitamin C to support the natural production of collagen.

Vitamin C

Food Sources: Berries, dark leafy greens, tomatoes, citrus fruits, mangos, kiwis, bell peppers, etc.

Why Is It Important? Vitamin C is needed for both the synthesis and maintenance of collagen. Your body naturally creates collagen, but its production decreases with age; having enough vitamin C in your diet can help ensure it is produced and maintained.

Along with supporting the natural production of collagen, it aids in any form of wound healing and reduces oxidative stress—or damage from free radicals—in the body, making it a powerful antioxidant for overall health.

There is no single food that will be the “magic pill” needed to slow the signs of aging skin, but it’s rather a combination of factors that will be of influence. The best we can do is stack the deck in our favour by controlling what we can: diet, hydration, sleep, skin-care products, wearing sunscreen, exposure to sunlight, etc.

Excessive sugar intake can be detrimental to health for a variety of reasons, including increasing the risk of developing chronic diseases such as diabetes, cancer, and heart disease. It also impacts the aging of our skin.

Bottom Line: Reducing sugar intake is a good idea to support your health, regardless of aging; but if it can support our skin health as well, it’s a win-win!

Here is a glowing skin green smoothie recipe, packed with antioxidants.

Kiwi-Mango Smoothie

Ingredients

- 2 kiwi fruits, skin removed
- ½ avocado
or ½ cup frozen avocado
- ½ cup frozen mango
- ½ cup spinach
- 1 tbsp. chia seeds
- 1–2 cups water
(or more if needed)
- 2 tbsp. lime juice (optional)
- Option: Include one scoop
of vanilla protein powder

Instructions

Blend everything together
and enjoy!



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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Caring for the Caregiver

by Wendy Present, RHNC, CFMP

Are you, like me, currently taking care of a parent, partner, or other adult? Do you find it a joy, but also exhausting? This caregiving reminds me of the time when my daughter was a baby and it seemed next to impossible to maintain my own self-care. **With 25% of Canadians over the age of 15 in a caregiver role, there are 7.8 million of us in this situation!**

We may have become a family caregiver after an older adult had a traumatic event, such as a stroke or fall. Although the focus of this article will be on the caregiver of an older adult, many of the ideas also apply to caregivers of younger adults. We may be looking after someone in their home or ours, or we may be an essential caregiver for someone living in an institution. While many people find caregiving to be a positive experience, caregiver burnout lurks around the corner to trap the unwary.

There are many challenges to family caregiving, particularly during the current pandemic. The average senior has two or more chronic conditions, meaning that there may be multiple physical and psychological issues to look after. The resources that families caring for

a senior at home depended on before the pandemic, such as adult day programs or respite care, may be closed. Hiring support privately may not be available or affordable for the average family. Although provinces have mandated aging in place as a priority, funding for home care is woefully underfunded, and even people with high needs may only receive a couple of hours of medical care per week.

The challenge in maintaining our self-care while looking after a senior happens over time. A caregiver may be able to manage one night of poor sleep after waking several times to help a loved one; however, repeated nights of poor sleep will start impacting the caregiver's health. The need for 24-hour supervision of an older person may present a challenge to a caregiver who wonders: "How can I risk leaving this person alone, even for a little while, to shop for groceries or to go for a walk?"



Many of us also have jobs, homes of our own, and families to look after. Trying to juggle priorities and deciding where to focus our attention to the exclusion of other elements in our lives, including our own self-care, is hard. With all our responsibilities to consider, often, the first thing to disappear is our self-care. Coffee dates are cancelled, and the exercise, laundry, or overdue haircut we meant to do are put off for another day.



Caregiver burnout can happen when too much is expected of us, and we feel we can't meet those expectations. The signs and symptoms can be insidious and can include the following list, which is taken from the Canadian Psychological Society's Fact Sheet on Caregiver Stress:

- | | |
|---|---|
| 1. Depression, anxiety, and/or irritability | 6. Loss of interest in personal needs, desires, and pastimes |
| 2. Trouble concentrating | 7. Increased feeling of resentment towards the care recipient and/or family/friends |
| 3. Disturbed sleep | 8. Loss in satisfaction of being a caregiver |
| 4. Feeling exhausted despite adequate rest | 9. Feeling helpless, hopeless, and isolated |
| 5. A weakened immune system | |

Can we avoid burnout as caregivers, or if it is too late, can we halt it now and start feeling better? The answer is a resounding yes! Through my personal experience and years of coaching other caregivers of seniors, I have found several critical steps to maintaining your health through the caregiving journey.

Share Your Feelings and Your Needs

Choose a group (more in the resources below), a friend, a family member, or a professional to unload to. Taking care of a family member can bring up all kinds of feelings, considering your history with that person. You need to talk about those feelings. If you absolutely can't find anyone to talk to, then start a journal.

Be Sure You Sleep Well

If you can afford home care, arrange it for nighttime, especially if your loved one wakes frequently. If you can't afford help during the night, be sure you nap during the day. It's not an ideal way to get your rest, since you will have phone calls, medical appointments, and other obligations interrupting your sleep, but it will help.

Eat Well and Hydrate

What does this look like? Eat protein foods 3–4 times a day. Choose whole grains rather than refined. Prioritize healthy fats such as nuts and avocados. Eat as many vegetables and fruits as you can squeeze into the day. Drink lots of water. If you are finding that the time to shop and cook is a challenge, consider using a meal service. Nutritional supplementation can also help.

Please check with your health-care practitioner before beginning any new supplementation program. A good probiotic will aid in helping your gut produce the neurotransmitters you need to boost your mood. Essential fatty acids will help reduce the aches and pains in your body. A multivitamin will give you some basic nutrient levels as added insurance on those days you just can't manage to eat all you need.





Move Your Body

Move frequently through the day by getting up and standing, stretching, and walking around the room. While you are making tea, do some squats or push-ups against the wall. When the weather is good, take walks; perhaps the person you take care of would enjoy going with you!

Nourish Your Spirit

What fills you with joy and awe? Look for areas outside of caregiving. Consider joining spiritual practices, doing art, volunteering, and spending time in nature. Activities like these will help you feel more centred, bring back the joy of caregiving, and help you to feel less stressed.

Here are some resources that can help support you as a caregiver to recognize, prevent, and address burnout:

Senior Care at Home—This is a free group I host on Facebook. Anyone caring for their senior loved one at home is welcome to join: facebook.com/groups/938000489975541

A free guidebook about dementia from McGill University: mcgill.ca/medsimcentre/community-outreach/dementia/dementia-your-companion-guide

Canadian Alzheimer's Society tips for looking after the caregiver: alzheimer.ca/en/help-support/im-caring-person-living-dementia/looking-after-yourself/reducing-caregiver-stress



Wendy Presant, RHNC, CFMP

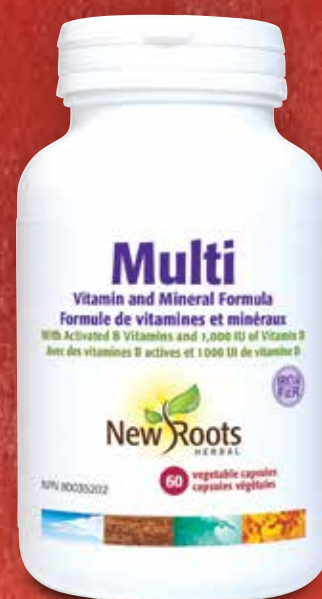
With a background in nursing, naturopathic, and functional medicine, Wendy Presant is currently registered as a health-and-nutrition counselor. She provides virtual coaching services to individuals looking to optimize their health.

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Healthy Liver, Healthy You

by Dr. Katie DeGroot, BSc, ND, MScN

What Is the Liver?

The liver is a large, half-moon-shaped organ that weighs about 1.4 kg (3 lb) and is located in the upper-right abdomen, just under the diaphragm and below the rib cage. The liver is an essential organ—we cannot live without one—but it is unique in that liver cells can regenerate and heal themselves very well, quite unlike any other organ, except perhaps our skin.

Another unique feature of the liver is that it has two incoming blood vessels; most organs have just one. One blood vessel comes from the lungs (the hepatic artery, filled with oxygen), and the other is from the digestive system (the portal vein, filled with nutrients). This dual blood supply allows the liver to process what is already circulating in the body as well as what is coming in “fresh” from the digestive system.

What Does the Liver Do?

The liver provides over 500 individual functions in the body, which can be broadly grouped into four categories: digestion, detoxification/filtration, production, and storage.

Digestion

After consuming a meal, food is broken down by the digestive system into its component compounds: fatty acids, simple sugars, amino acids, vitamins, and minerals. These base nutrients, as well as other consumed nonfood molecules—such as medications, food additives, and contaminating chemicals—are absorbed through the digestive-tract lining and enter the blood stream, heading to the liver for processing via the portal vein.

This is often referred to as “first-pass” metabolism; it is the first time orally consumed items pass through the liver. Once in the liver, the incoming compounds from the digestive system are processed: Proteins are synthesized, some compounds are stored in the liver for release later while others are allowed to pass through and enter the body unaffected, and incoming toxins are processed and detoxified.

Detoxification

One of the most critical, life-sustaining functions of the liver is its capacity to detoxify foreign compounds that have entered the body from the environment. As blood flows through the liver, it processes and modifies foreign chemicals by physically changing their molecular structure and binding them to other compounds. This typically makes these foreign compounds less toxic and more easily excreted from the body—typically through urine or stool.



It is at this point that most orally consumed medications are either activated or deactivated by the liver's detoxification processes. Similarly, alcohol, caffeine, and other nonnutritive compounds are detoxified by the liver.

However, the liver cannot detoxify compounds on its own—it needs specific dietary nutrients and antioxidant compounds to function optimally. Three specific compounds that are utilized in this process are vitamin C (a water-soluble vitamin), vitamin E (a fat-soluble vitamin), and glutathione (a tripeptide made from the amino acids cysteine, glycine, and glutamic acid).

Vitamins C and E are relatively easily obtained from food—citrus fruits and peppers are especially high in vitamin C, while oily nuts and seeds tend to have high levels of vitamin E—but glutathione is not; it is often broken down and digested before it reaches the liver. Therefore, a diet high in the compounds needed by the liver itself to manufacture glutathione is important to maintain adequate glutathione levels: the amino acids cysteine, glycine, and glutamic acid—found in high-protein foods such as meat and beans—as well as the cofactors of B vitamins and *alpha*-lipoic acid. Both B vitamins and *alpha*-lipoic acid are found in a wide variety of foods or can be obtained in much higher doses in supplemental form. Cruciferous vegetables—broccoli, cabbage, kale, radishes, turnips, etc.—also contain compounds that help support glutathione production.

In addition to processing and assisting in the removal of foreign compounds, the liver also filters and detoxifies a number of compounds the body itself produces: hormones, hemoglobin, bilirubin, ammonia, and cholesterol, to name a few. The liver processes these compounds very similarly to foreign compounds, making them more easily excretable by the kidneys (urine) or digestive system (stool).

Production

The liver is a production powerhouse, creating life-critical compounds. It is involved in the synthesis and production of hormones, insulin-like growth factor, proteins—especially clotting factors and immune-system

proteins—and angiotensin, a compound that regulates blood pressure.

The liver also processes excess cholesterol and bilirubin into bile, producing an estimated 800 to 1,000 ml per day! This is then stored in the gallbladder and released into the digestive system after eating, to aid in the breakdown and digestion of fats and to release fat-soluble vitamins.

Storage

Finally, the liver is the primary storage location in the body for several vitamins and minerals. Through the process of digesting and processing nutrient-rich blood from the digestive system, certain vitamins and minerals are stored in the liver for release later, as needed.

The liver stores vitamins A, D, E, K, and B₁₂, as well as the minerals iron and copper. However, the liver cannot easily regulate how much vitamin A, D, E, K, iron, or copper it stores. Therefore, it is important to not oversupply it with supplements containing these items; the liver can become overloaded and damaged if too much comes in supraphysiological amounts.

The liver also moderates blood-sugar levels by absorbing and storing excess blood sugar when levels are high, and releasing glucose when levels are low. When blood sugar levels are high—such as after a meal—the liver absorbs excess sugar and converts it into a storage compound called glycogen. Then, when blood-sugar levels begin to decline—typically 4 to 6 hours after a meal—the liver begins to convert glycogen back into glucose to keep blood sugar levels up.

But if someone regularly consumes more calories than what their body needs, glycogen levels can increase in the liver and build up, eventually leading to a collection of conditions commonly called “fatty liver disease.” This is a very common coexisting condition in people affected by obesity and type 2 diabetes. The best way to prevent fatty liver disease is to consume a healthy diet with adequate calories to meet—but not exceed—your body’s needs. Many online calculators are available to help estimate your body’s daily caloric needs based upon life stage and exercise, and many easy-to-use meal/nutrient analyzer programs to determine how many calories you’re consuming per day. Reading labels and nutritional information for purchased products can also assist.



Conclusion

For long-term liver health, it is important to minimize intake of toxic substances—including alcohol—avoid excessive supplementation of fat-soluble vitamins and certain minerals (copper and iron, especially), eat a broad and varied diet to obtain nutrients required by the liver to function optimally, take liver-support supplements as needed upon the recommendation of your health-care provider, and consume a healthy, well-balanced diet that does not contain excessive amounts of calories.



Dr. Katie DeGroot, BSc, ND, MScN

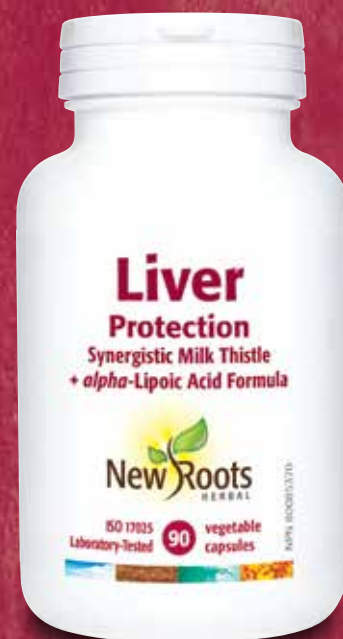
Dr. DeGroot is an Alberta-registered naturopathic doctor who also holds a Master of Science in Nutrition. She offers nutritionally focused care and has a special interest in digestive issues and supportive mental health-care.

drkatiedegroot.ca

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Collagen Sweet Potato Brownie Bites

Ingredients

- 1 cup sweet potato purée (1 medium-large sweet potato)
- 1 large egg
- ¾ cup of chocolate chips, carob chips, or nuts of choice (optional)
- ¾ cup (45 tsp.) New Roots Herbal's Multi 5 Collagen with Cocoa Powder
- ½ cup sugar
- ¼ cup cocoa powder
- ¼ cup flour of your choice (all-purpose works well, as does oat flour)
- 1 tsp. baking powder
- 1 tsp. vanilla

Oven Sweet Potato Purée Instructions

Preheat oven to 205 °C (400 °F). Pierce sweet potatoes with a fork and bake on a parchment-lined baking sheet for 45 minutes or until tender. Let cool before peeling, and scoop the flesh into a bowl. Beat with an electric mixer until smooth.

Microwave Sweet Potato Purée Instructions

Pierce sweet potato with a fork and place on microwave safe dish. Microwave on high for 6 minutes, turning halfway, or until tender. Let cool before peeling, and scoop the flesh into a bowl. Beat with an electric mixer until smooth.

Brownie Bites Instructions

Preheat oven to 175 °C (350 °F) and prepare a muffin tray with 9 liners.

Mix sweet potato purée with sugar and vanilla extract until combined. Add in egg and mix well.

In a separate bowl, combine cocoa, collagen, flour, and baking powder. Mix dry ingredients into the sweet potato mixture. It will appear very dry at first, but just keep mixing. Add optional chocolate chips or nuts. Evenly divide the mix between the 9 muffin liners.

Bake for 18–25 minutes, or until a toothpick inserted into the centre of a brownie bite comes out clean. Let cool completely before serving and store in the fridge (the texture is better when they have had a chance to chill).



Dr. Kaitlyn Richardson, ND, HbSc

A naturopathic doctor in Milton, Ontario, with a clinical focus in sports and performance medicine. She believes in using individualized, holistic, and evidence-based strategies to help active individuals feel and perform their best.

drkaitlynrichardson.com





Very Berry Salad

Enjoy this elderberry-infused dressing and increase your immunity with it's medicinal constituents, such as flavonoids, vitamins A and C, anthocyanosides, tannins, pectin, and more. Elderberry is specific for dealing with colds, headaches, rhinitis, asthma, and hay fever, making it a great supplement to blend into your diet as the outside environment shifts into spring!

Dressing Ingredients

- 2-3 cloves organic garlic
- 2 tbsp. organic balsamic vinegar
- ½ organic squeezed lemon
- ¼ tsp. elderberry powder
- 4 tbsp. New Roots Herbal's Heart Smart Olive Oil
- ¼ tsp. sea salt
- ¼ tsp. black pepper

Salad Ingredients

- Spring Mix salad
- 1 tsp. organic ground flax seed
- ½ cup organic blueberries
- 1 tsp. organic hemp hearts
- 2 tsp. organic shaved almonds
- Organic crumbled goat feta

Instructions

In a large mixing bowl, gather your spring mix and wash thoroughly.

In a small bowl, add your elderberry powder first with the balsamic vinegar, and begin to whisk together.

Add the mixed blend into a small Mason jar and begin to add all other dressing ingredients.

Shake your Mason jar to balance out the flavours and adjust taste if needed before applying to salad.

Add your salad dressing into the spring mix and plate your salad with all your toppings!



Megan Luder, CNP

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

libertynourished.com

Cedar-Planked Salmon

with Fermented Turmeric Pesto

Flourish Original Recipe

Don't let your friends know how easy this elegant dish is to prepare. It pairs the rich flavour of fermented turmeric with pumpkin seed and subtle notes of cedar. Goes great with beet chips and basmati rice, as seen in the photo. Salmon never tasted so good!

Ingredients

- 1 lb salmon filet
- 1 lb beets
- Juice of a couple of mandarins (optional)
- ½ cup pumpkin seeds, roasted and hulled
- 1 tbsp. butter
- 1 tsp. New Roots Herbal Fermented Turmeric, cayenne, paprika, and sea salt to taste
- A few splashes of New Roots Herbal Heart Smart Sunflower Oil
- Salt and pepper to taste

Instructions

Thinly slice beets, toss with sunflower oil, salt and pepper to taste, and convection bake at 230 °C (450 °F) for approximately 30 minutes until crispy.

Soak plank in water for an hour or so. Place salmon skin side down on cedar plank (or parchment paper-lined tray if you don't have a cedar plank). Pulse pumpkin seeds, add spices then butter, and mix until uniform yet not a paste. Apply to salmon, then bake to your liking.

Serve with basmati rice and peas. Freshly squeezed mandarins add a subtle complexity to the rice.

Bon appétit!



Big Thanks from Action Against Hunger

New Roots Herbal is passionate about the tireless efforts of the many charitable organizations they support through their Choose to Care program.

Action Against Hunger is among them; their work helps bring food, water, and health-care to those who have very limited to no access to them.

The last couple of years have exposed the vulnerability of society as a whole. We're excited to support organizations with a "boots on the ground" presence that effects change for the better.



THANK YOU

From

**ACTION
AGAINST
HUNGER**



**ACTION
CONTRE
LA FAIM**

DEAR PETER AND NEW ROOTS STAFF,

WE APPRECIATE YOUR MANY YEARS OF GENEROUS SUPPORT. YOU HAVE HELPED US SAVE THE LIVES OF MALNOURISHED CHILDREN. AND ENSURE COMMUNITY MEMBERS CAN ACCESS CLEAN WATER, FOOD, AND HEALTHCARE. THANK YOU.

WITH GRATITUDE,
ONOME AKO, CEO
ACTION AGAINST HUNGER CANADA

AskGord



I purchased probiotics from my local health-food store, and there was no advice regarding timing for dosage. Should I take with food or on an empty stomach?

Some practitioners recommend probiotics be taken on an empty stomach, the rationale being to minimize time spent exposed to harsh stomach acid. The alternative—to take with food—may reduce some acidity but prolongs digestion, and thus exposure to gastric acid, which will erode capsules, leaving probiotics at the mercy of harsh stomach acid.

What can help is choosing probiotics with enteric-coated capsules for safe intestinal delivery, so you cash in on all their benefits for immune support, digestion, and many other critical functions. Enteric-coated capsules give you the freedom and convenience to choose when you take your probiotics, and the peace of mind you'll benefit from your investment.

I suffer from airborne allergies, especially hay fever, in late summer to mid-autumn. Can you suggest any natural alternatives to antihistamines and steroids?

Several botanically sourced nutraceuticals can help; cold-pressed oil from black cumin (*Nigella sativa*) seed is among my favourites. It's available in softgel or liquid form. Look for a potency-validated amount of its main active ingredient, thymoquinone. Between two and three percent will deliver a therapeutic dose. Other constituents—such as linoleic acid—present in black cumin seed oil help stabilize cell membranes. This interferes with the histamine response, which causes symptoms including runny nose, watery eyes, and sneezing.

The antioxidant action of quercetin and spirulina deserve honourable mention for helping tame symptoms associated with airborne allergens. Here's to getting the most of the great outdoors!

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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