

The IMPACT MAGAZINE GUIDE TO NATURAL HEALTH PRODUCTS

Building Optimal Health and Performance

PART 7 IN A MULTI-ISSUE EXCLUSIVE FEATURE

BRAIN HEALTH

BY KYLEY HUNT

Brain health is a complex and ever-evolving topic. New research is coming out daily with respect to how the brain works, as well as its changes in response to aging and injury. Neuroplasticity is an emerging term used to describe the changes that occur within the brain in response to environmental demands, such as mental training, as well as the response of the brain to trauma.

The brain plays a vital role in regulating actions, thoughts and hormones. Optimal brain health is critical throughout life, as it is needed for proper learning, memory and emotional health. As the mean age of our population increases, the field of neuroscience is becoming more important.

Dementia is a term that is often used when describing a variety of disorders affecting the brain. In 2010 it was determined that more than

35.6 million people were affected by dementia in the world, which is more than the population of Canada. Dementia can be caused by a variety of factors and can impair the function of the brain so severely as to impact all aspects of an individual's life.

In 2011 there were 747,000 Canadians affected by cognitive impairment, including that from dementias. Alzheimer's disease is the most common form of dementia and accounts for 64 per cent of the dementias in Canada.

Healthy lifestyle choices, including exercise and proper nutrition, have been shown to improve brain health, functioning and neuroplasticity. As new research is being done more evidence is coming out that shows the benefits of a variety of nutrients, vitamins and herbs in maintaining brain health and preventing cognitive decline.

This chapter of the IMPACT Magazine Guide to Natural Health Products is compiled with the expert assistance of Kyley Hunt, Ryan Nakama, Thara Vayali, Meaghan McCollum, Melina Roberts and Rob Roth. For this article with references, please visit impactmagazine.ca

GLUTATHIONE

What it is: Reduced glutathione, commonly known as GSH or glutathione, is a small naturally occurring antioxidant found in our cells, with the highest reserves being found in the liver. Reduced glutathione is produced inside cells from amino acids glutamine, cysteine and glycine.

What it does: As a strong antioxidant and enzyme cofactor glutathione is important for regulation of cell activity and protection from infection or damage. GSH protects the skin and eyes from radiation damage, supports the immune system, decreases inflammation and is necessary for detoxification pathways in the body. Glutathione regulates cell function and performance to improve cell survival.

Why you might need it: As low levels of glutathione are linked to cellular aging and many diseases, supplementing those at risk of having low GSH levels would have the most benefit. GSH reserves are depleted with age, extreme exercise, oxidative stress (such as illness and chemical or toxic exposure), high alcohol intake and diets that are low in the precursors and cofactors needed for synthesis.

Who shouldn't use this: Caution and proper monitoring are necessary if using supplemental GSH during cancer treatment as it may interfere with chemotherapy.

What happens if you take too much: Glutathione is naturally broken down in the body and no known toxicity has been reported.

Where to get it: Glutathione is naturally produced in our cells in the presence of

BRAIN HEALTH

the proper precursors found in our diet. Glutathione can be supplemented orally, intravenously as well as by nebulization (aerosol delivery), both administered by a healthcare practitioner.

IMPACT Expert Picks: GSH Reduced by Genestra, Glutathione by ReadiSorb, Lypo-Spheric GSH by LivOn Labs, Liposomal Glutathione by Pure Encapsulations.

ALPHA-LIPOIC ACID

What it is: Alpha-lipoic Acid (ALA) is a naturally occurring compound made in the mitochondria and is a necessary cofactor in the metabolism of mitochondrial energy.

What it does: Alpha-lipoic Acid is a well-known antioxidant that has many uses in the body based on its anti-inflammatory and energy supportive properties. ALA improves glucose balance, is neuroprotective, helps with detoxification, chelates metals and is often used to support and restore glutathione and vitamin C levels.

Why you might need it: ALA has been shown to be useful in reducing complications from diabetes, other vascular diseases, neuropathies and may prevent neurotoxicity from certain medications. It has also been shown to improve cognitive function, including memory, and so may be useful in mitigating changes associated with aging.

Who shouldn't use this: Those who are taking medications, especially insulin, to control diabetes and blood sugars should speak to their healthcare provider prior to using ALA.

What happens if you take too much: High doses may cause oxidative damage and may decrease levels of certain minerals such as selenium and manganese in the body. Animal studies have shown apathy and sedation at chronic high doses.

Where to get it: Alpha-lipoic Acid is found primarily in meat, especially organ meats such as the heart, kidney and liver, and smaller quantities can be found in fruits and vegetables.

IMPACT Expert Picks: Alpha Lipoic Acid by CanPrev Natural, Pro Lipoic Acid by AOR, ALA SAP by NFH.

PHOSPHATIDYLSERINE AND PHOSPHATIDYLCHOLINE



What it is:

Phosphatidylserine and phosphatidylcholine are important fats that are part of the cell membrane structure in every cell in the body.

What it does: Both act as anti-inflammatory agents for the cell and can help slow the aging process. These lipid molecules that make up the outer component of the cell are instrumental in cellular communication and creating healthy cell behaviour. These fats may improve memory and cognitive function; in athletes they have also been shown to improve performance modulating the body's response to stress.

Why you might need it: To improve memory and overall brain health.

Who shouldn't use this: Individuals on anticholinergic medications (bupropion, diphenhydramine, medications for Alzheimer's Disease, etc.).

What happens if you take too much: Gastrointestinal discomfort, diarrhea.

Where to get it: Egg yolk, soybeans, tuna, white beans.

IMPACT Expert Picks: Douglas Labs Phosphatidyl Serine, Genestra Phos Choline, Metagenics Phosphatidyl, Serine.



MELATONIN

What it is: Melatonin is a hormone secreted by the pineal gland.

What it does: It regulates circadian rhythms (sleep-wake cycles) and can be used to aid sleep. When anxiety is the result of catecholamine dominance it may facilitate in the reduction of symptoms of anxiety by increasing serotonin in the body.

Why you might need it: To promote restful sleep and help you fall asleep, reduce jetlag when travelling, reduce anxiety.

Who shouldn't use this: Melatonin should not be taken by pregnant women, children, and those on blood pressure medications, diabetes medications, immunosuppressants, birth control or CNS depressant medications. Caution should be exercised in those with a

seizure disorder.

What happens if you take too much:

Headache, drowsiness, chills, gastrointestinal discomfort.

Where to get it: Pineapples, tomatoes, red wine, olive oil.

IMPACT Expert Picks: Genestra melatonin spray, NFH melatonin, Metagenics Benesom.



TYROSINE

What it is: Tyrosine is a precursor amino acid to catecholamine hormones: dopamine, epinephrine,

norepinephrine.

What it does: Tyrosine shifts the body's balance and production of catecholamines, which are stress hormones important for a number of processes in the body including alertness in the brain.

Why you might need it: Tyrosine can help improve symptoms of ADHD, aid with alertness in the day, help create a functional stress response in the body, improve symptoms of chronic fatigue syndrome, improve libido, reduce symptoms of schizophrenia, and act as an appetite suppressant.

Who shouldn't use this: Individuals with insomnia, hyperthyroidism or Cushing's syndrome. Those on levodopa medication. Caution should be used in pregnancy and with children.

What happens if you take too much: Nausea, headache, heartburn, joint pain.

Where to get it: Seaweed, spirulina, soy protein isolate, eggs, cheese, salmon, turkey.

IMPACT Expert Picks: AOR L-Tyrosine, Douglas Labs Brain Energy, Vitazan L-Tyrosine.



5-HTP

What it is: 5-HTP (5-hydroxytryptophan) is an intermediate metabolic in the biosynthesis of serotonin

that crosses the blood brain barrier and is converted to the neurotransmitter serotonin, as well as other brain chemicals including melatonin, endorphins, dopamine and norepinephrine.

What it does: 5-HTP has been shown to

be effective for enhancing proper sleep by increasing REM (rapid eye movement) sleep and deep sleep in stages three and four without increasing total sleep time.

Why you might need it: 5-HTP is beneficial for a number of conditions that are associated with low serotonin levels including sleep problems, depression, anxiety, headaches and fibromyalgia.

Who shouldn't use this: 5-HTP has been reported to cause seizures in patients with Down syndrome. Possible drug interactions with carbidopa, MAOIs, SSRIs, tricyclic and atypical antidepressants. Caution is needed when using with active peptic ulcer disease, platelet disorders and renal disease.

What happens if you take too much: Large doses can cause nausea, vomiting, diarrhea and anorexia.

Where to get it: The amino acid L-tryptophan is converted to 5-HTP. Natural source from the Griffonia simplicifolia plant. **IMPACT Expert Picks:** 5-HTP 100mg by Genestra, 5-HTP 100mg by Pure Encapsulations, 5-HTP Plus by Douglas Lab.



VITAMIN B12

What it is: Vitamin B12 is a water-soluble vitamin that is absorbed from foods, mainly meats, fish and dairy.

What it does: Vitamin B12 is needed in the body for myelin synthesis of nerves, cell production and normal growth.

Why you might need it: B12 deficiency results in megaloblastic anemia, gastrointestinal lesions and neurological damage, beginning with an inability to produce myelin and progressing to the degeneration of nerves. Intrinsic factor, secreted by cells of the stomach mucosa is required for vitamin B12 absorption; therefore B12 deficiency is often due to malabsorption. Therefore, oral administration of B12 can lack effectiveness, making sublingual and intramuscular/intravenous superior to oral, more effective and better absorbed especially in states of deficiency.

Who shouldn't use this: Oral B12 is quite safe in recommended doses. Injection by intramuscular or intravenous should only

been administered by a licensed health care practitioner with the proper training.

What happens if you take too much: Oral vitamin B12 can cause diarrhea, itching, feelings of swelling of the entire body and possibility of anaphylaxis.

Where to get it: Vitamin B12 is present in meat, fish and dairy products.

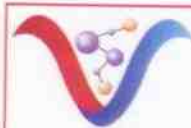
IMPACT Expert Picks: Active Chewable B12 by Genestra, Methyl B12 Plus by Douglas Lab.



OMEGA 3 FATTY ACIDS — FISH OILS

What it is: Omega 3 is a type of polyunsaturated fat found in fish, walnuts, flaxseed,

plant and nut oils and algae. We must obtain Omega 3s from our diet as we cannot synthesize them. DHA (docosahexanoic acid) and EPA (eicosapentanoic acid) are very long chain Omega 3s that are found only in fish, shellfish and algae. Humans can synthesize DHA and EPA from shorter chain Omega 3s found in nuts and plant oils. This process is not very efficient, making fish a much



Advanced
Naturopathic
Medical Centre

Canada's Comprehensive Centre
for Biological Medicine



Dr Melina Roberts
Specializing in
adrenal fatigue,
immune health,
digestive health,
hormone balancing, &
high performance athletes.

- Patient-focused & professional
- Advanced testing & therapies
- Approach health with specificity & effectiveness

Balancing your body to help you
achieve optimal results

Market Mall Professional Executive Centre
Suite 414, 4935 - 40 Ave NW, Calgary

403-247-4646
advancednaturopathic.com

Free Massages for Your Community Heros!



Mon - Friday
8:30am - 9:00pm
Sat and Sun
9:00am - 5:00pm

www.apexmassage.com

2012 - 12th Ave NW
Calgary, Alberta

403-270-7788

APEX
APEX MASSAGE
THERAPY

Celebrating 20 Years in 2014!

CONTEST DETAILS: Twenty deserving nominees will receive a \$100 gift card, as thanks for their dedication to helping make Calgary a great city. Simply nominate someone you know that is a superhero in your life or your community by emailing bookings@apexmassage.com. Provide us their name, the reason you are nominating them, your name, and contact numbers for you both. Nominations accepted until July 25th, 2014. Winners will be announced Aug. 1st, 2014.



HEADSWEATS Elite

25% off any Headsweats
purchase with code:
IMPACT25*

NEW!
THE ELITE
COLLECTION.

icefil
cooling technology:
the more you move,
the cooler you will be!



Keep a cool head.

www.headsweats.com

*some restrictions may apply

superior source of these important long chain Omega 3s.

What it does: DHA is essential for the growth and development of the brain in children and the normal functioning of the brain in adults. EPA is involved in regulating mood and behaviour. Both have been extensively studied for these effects as well as their role in modulating inflammation, immune function and cardiovascular health.

Why you might need it: Modern diets typically have very low amounts of Omega 3 fats and higher amounts of Omega 6 fats. Many dietary sources of Omega 3 such as fish are increasingly unsafe to eat in high doses due to the presence of toxins, such as mercury, accumulating in these fish. Fish oil supplements have been processed to remove these toxins.

Who shouldn't use this: Those taking blood thinning medications such as warfarin should be cautious. Those with allergy to fish or shellfish.

What happens if you take too much: Dose above 3g/day can thin the blood and should only be taken at these doses under supervision. In general fish oils are very safe as a supplement.

Where to get it: Fish, algae, nuts, seeds, shellfish and fish oil supplements such as cod liver oil, salmon oil, fish oil blends, krill oil.

IMPACT Expert Picks: Nutrasea, GNC.



VITAMIN D3

What it is: Vitamin D3 is steroid-type molecule that is required for normal development and function

by the human body. Most tissues in the body have vitamin D receptors including the brain.

What it does: It regulates body levels of calcium and phosphorus, modulates immune function, is important in maintaining bone health, and muscle function. Vitamin D is also involved in mood. Low blood levels of vitamin D are associated with depressive symptoms and cognitive impairment suggesting vitamin D's role in treating these conditions.

Why you might need it: If you live in Canada or other northern areas, if you have osteoporosis, osteopenia.

Who shouldn't use this: Those with kidney disease, sarcoidosis, high blood phosphorus or calcium. Or those with vitamin D levels increased out of lab reference ranges.

What happens if you take too much:

Vitamin D toxicity is extremely rare and requires taking very high doses in excess of 10,000 IU/day for several months or years. If you do take too much, urine and blood calcium levels can rise above normal, which can lead to calcification of the kidneys.

Where to get it: Sunlight (but you can't rely on sun exposure to get vitamin D in more northern latitudes), artificial UVB light, vitamin D supplementation and dairy foods, which are mandatorily fortified with vitamin D in Canada to prevent rickets.

IMPACT Expert Picks: Vitamin D3 is a more effective form of vitamin D in increasing levels in the body. Look for supplements that contain vitamin D3 instead of D2.

HERBALS

CENTELLA ASIATICA (GOTU KOLA)



What it is: Leafy green plant, with a historical use in Ayurvedic and

Chinese medicine. Its leaves are shaped liked sand dollars. Also referred to as Indian Pennywort. Originally *C. asiatica* was used for connective tissue disturbances, particularly in leprosy.

What it does: *C. asiatica* has been noted to mitigate cognitive decline in middle aged and elderly patients, decrease the degradation of acetylcholine and act as an antioxidant in the brain. Stimulates GABA (gamma-aminobutyric acid) production in vitro. *C. asiatica* upregulates alanine and proline in fibroblasts and normalizes connective tissue repair.

Why you might need it: Anxiety, muscle tension, connective tissue tears, prevention of cognitive decline.

Who shouldn't use this: Pregnant women and those with nausea or digestive dysfunction.

What happens if you take too much: Although in Ayurvedic and traditional Chinese medicine systems, *C. asiatica* has been used to enhance cognitive function, biological data and pharmacokinetics is still limited and needs further research.

Where to get it: Herbal tincture.



GINKGO BILOBA (GINKGO)

What it is: A tree native to China, with no living relatives. Considered the

oldest tree species alive. The leaves are harvested in spring and fall.

What it does: It is preventative and protective against hypoxia/ischemia-induced damage of cerebral and cardiovascular tissue. Ginkgo is an effective vasodilator and reduces blood viscosity.

Why you might need it: To improve concentration and memory.

Who shouldn't use this: Before and after surgery, while using blood thinners (including Aspirin), epilepsy, pregnancy and breastfeeding.

What happens if you take too much: Ginkgo Biloba is considered to be safe and side effects are rare, but gastrointestinal upset, headaches and dizziness have been reported.

Where to get it: Tea or tincture.



**OCIMUM TENUIFLORUM
(HOLY BASIL/TULSI)**

What it is: A plant species from India, in the same family as lavender and

mint. Traditionally used in India for diabetes, stress, ulcers and inflammation.

What it does: Reduces blood sugar levels, anti-inflammatory, antioxidant, blunts stress response.

Why you might need it: Overstimulation.

Who shouldn't use this: Pregnant women.

What happens if you take too much:

Unknown, few studies on effectiveness or side effects.

Where to get it: Tea.

IMPACT Expert Picks: Organic India Tulsi Tea.



**HYPERICUM
PERFORATUM (ST.
JOHN'S WORT)**

What it is: St. John's Wort (SJW) is a flowering plant

native to Europe, Asia and North Africa. The aerial parts are used in medicine.

What it does: SJW acts as an antidepressant and nervous system tonic. It appears to block the re-uptake of serotonin at postsynaptic receptors. Topically, it also has anti-inflammatory and antimicrobial effects.

Why you might need it: Beneficial in mild to moderate depression, including seasonal affective disorder. Especially if accompanied with anxiety, restlessness, or nervousness. May also be useful in enhancing mood in

physically stressed individuals/athletes.

Who shouldn't use this: SJW is not suited to treating severe depression with suicidal or psychotic ideations. SJW affects liver enzymes, which metabolize many other drugs and numerous cautions exist. Caution advised with the following drugs: warfarin, digoxin, and cyclosporine, idinavir and other anti-HIV drugs. SJW may decrease the efficacy of oral contraceptive birth control. Avoid in pregnancy. This list is not exhaustive. Inform your doctor before initiating St. John's Wort therapy if you are on any other medications.

What happens if you take too much: Photosensitivity can occur at higher doses and in susceptible individuals. Avoid excessive exposure to sunlight if taking higher doses.

Where to get it: Available as alcohol extract in liquid tincture or tablet form. Infused oil used topically.

IMPACT Expert Picks: St. John's Wort Plus (Genestra), St. John's Wort (MediHerb), Nevaton (MediHerb).



**PASSIFLORA INCARNATA
(PASSION FLOWER)**

What it is: Passionflower is a flowering herb native to the southeastern United

States. Specific active ingredients have yet to be identified.

What it does: Passionflower is a relaxing nervine that can help to relieve nervous agitation, anxiety, and insomnia.

Why you might need it: This herb is helpful in cases of anxiety, restlessness, irritability. It is particularly indicated in insomnia due to the previously mentioned issues.

Who shouldn't use this: Passionflower can potentiate the effects of sedative drugs. This includes sleeping medications, antihistamines, etc. and caution is advised, especially if the sedative effect is not desired.

What happens if you take too much: This herb is generally safe when taken within the recommended dosage range. Side effects or signs of excess intake may include dizziness, drowsiness and confusion.

Where to get it: Available as alcohol extract in liquid tincture and capsule form. The raw herb can be infused and taken as a tea.

IMPACT Expert Picks: Passionflower tincture/phytocaps (Botanica), Pascoflair (Pascoe), Passionflower tea (eg. Traditional Medicinals). ■



Canadian School of Natural Nutrition
TEACHING THE MEDICINE OF THE FUTURE™

CANADA'S LEADING HOLISTIC NUTRITION SCHOOL



**Natural Nutrition Program
R.H.N.™ Designation**

Offering both day & evening classes in a one year program.

Guide others to a healthier lifestyle, empower others with personalized nutrition & lifestyle plans.

Create positive change!

New Location - CSNN Edmonton
Now Open & Accepting Registrations
#200, 9413 - 45 Avenue
Edmonton, AB. T6E 6B9
780.473.3993
info@csnnedm.ca

CSNN Calgary
1415 28th St. NE
Calgary, AB. T2A 2P6
403.276.1551
info@csnnca.ca



Register today!
www.csnn.ca