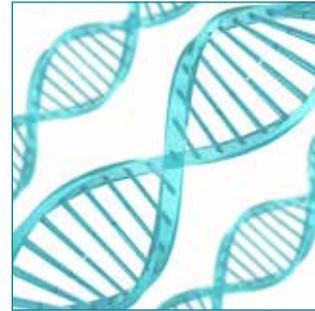


BEHIND THE SCENES – GUIDING YOUR HEALTH

By Kathryn O'Neill, CEO, Co-founder of ISM

For many of our clients, the typical ISM interaction is a conversation with one of our amazing Clinical Case Managers, Shawna Nelson and Kelly O'Neill-Reid. Each of these women has over a decade of experience working to ensure you get the consistent care and attention you need, whether you are in an acute situation, a long-term chronic condition, or simply seeking enhanced wellness. But there's a whole team of medical and scientific experts working behind the scenes to guide you on the path to better health. Let's take a closer look at ISM's Clinical team.



Dr. Chandra Martens, BSc, BEd, FRCPC
ISM Medical Advisor

Chandra is a board-certified Radiation Oncologist, who has trained at some of Canada's and North America's premier oncology institutes, including McGill University, Princess Margaret and Harvard. She is the Chair of the annual Scientific Meeting of the Canadian Association of Radiation Oncology (CARO), and an examiner with the Royal College of Physicians and Surgeons in Canada. She also holds a general family medicine license. Her clinical interests include medical resident and patient education, disease prevention, coaching and advocacy. She is actively involved in assisting patients with navigating the healthcare system to ensure their health and optimal outcomes. Dr. Martens provides ISM clients with a sensitive and caring independent, third-party medical perspective of their situation.

**Dr. Marian P. Laderoute R.T., A.R.T., B.Sc.,
Ph.D. Medical Sciences (Immunology)**
ISM Laboratory and Research Director

An Immunologist with over 25 years experience, Marian has unique clinical training with respect to the signs and symptoms of being chronically immunosuppressed. Before joining ISM, Marian was with the Blood Zoonotics Unit, Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada.



Jennifer Turner B.A, M.A. (Counseling Psychology) OACCPP

ISM Health Coach Support

Jennifer is a psychotherapist who is certified with the National Association of Professional Cancer Coaches, and Health Coaching Australia. She has facilitated numerous support and education programs including the Lance Armstrong Cancer Transitions program, support groups for Breast Cancer Action, coaching programs for the Ottawa Regional Cancer Foundation, and The Healing Journey program. Her clinical interests focus on integrative healing to support balance, meaning and flourishing, and her integrative approach empowers people to play an active role in their own well-being and healing. Jennifer's role at ISM will include individual, family, group and corporate counseling, coaching and workshops.

Adnan Tahirovic CMT

ISM Massage Therapist

A former European champion in kickboxing, Adnan obtained a diploma in Shiatsu and Swedish massage therapy in 2000. He then moved to Taiwan, where for four years he studied the art of Tui na massage – Chinese medical massage and structural alignment techniques to treat disease, stress, and injury. Currently, Adnan is completing his fourth year at the Quebec College of Osteopathy, mastering a wide range of gentle, non-invasive manual techniques such as deep tissue massage, joint articulation and manipulation. He has been a devout yoga practitioner and teacher for the past 15 years and has written a book, "Yoga

Supreme Art of Living", as well as numerous yoga articles for journals. Adnan combines his deep understanding of anatomy with carefully selected therapeutic techniques to help clients achieve better physical health.

Robert Libbey, B.Sc.(Biochemistry)

ISM Chief Operating Officer

Robert is a biochemist with 35 years of healthcare experience working with Health Canada, the Ontario Ministry of Health, and various regulators. He originated much of the early radiopharmaceutical commercial research that ultimately resulted in Canada's presence in nuclear medical science through Atomic Energy of Canada Ltd, the marketing of T3/T4 radioimmunoassays, and the establishment of Nordion's radioisotope division. For the past decade, Robert has been responsible for developing and documenting ISM medical science, protocols and formulations for more than 60 chronic and general health conditions in the disciplines of oncology, cardiovascular, gastrointestinal, metabolic and respiratory health.

As you can see, ISM's clinical experts have a vast knowledge of complementary and conventional medicine and play a vital role in caring for our clients. Each client has unique needs, including conventional and natural medical advice, special nutritional coaching, and counseling through times of crisis. Each ISM team member has unique skills that are used to meet those needs, while the team as a whole works together to ensure that all aspects of your care are coordinated and complete.



USE IT OR LOSE IT!

Researchers have estimated that we lose 1-2% of our muscle mass each year after the age of 50. Strength declines as well, at a rate of 1.5% per year after the age of 50 and 3% after 60. It is estimated that the direct health care cost attributable to sarcopenia (muscle wasting) is approximately \$1.8 billion annually in Canada, a number that represents about 1% of our country's annual health care expenditures.

Sarcopenia is just a fancy way of stating the obvious. As we get older, we lose muscle mass. We become frail and our normal daily activities are often impaired. This is a natural part of aging, and it often boils down to 'use it or lose it'. If healthy people in their 70s stay in bed for 10 days, they can lose 10 percent of their total lean leg mass. That's a tremendous muscle loss. But even active people will still experience some muscle loss. Bodybuilders who work out into their 80s will continue to look buff but they will have lower muscle mass.



Health practitioners need to put sarcopenia higher up the priority list. Many aging adults are not aware of their needs for increased protein. This is critical as we get older because as age-related muscle loss occurs, the risk of injury and loss of independence is increased. The current recommended daily intakes for protein are simply nowhere near enough. It is time that clinicians realized that consuming protein above the Recommended Dietary Intake (RDI) is necessary to ameliorate the loss of muscle protein with age. In addition to whole protein intake, specific amino acids such as the branched-chain amino acid leucine play a role in stimulating muscle growth in the elderly.

At ISM we've noticed that people are beginning to recognize the benefits of protein as it relates to a number of health benefits, including satiety and controlling appetite, body composition, sports performance, and muscle health. Now it's time to recognize its crucial impact on aging and quality of life!

ISM's Book Review: **The ADHD and AUTISM NUTRITIONAL SUPPLEMENT HANDBOOK**

By Dana Goadbout Laake and Pamela J. Compart
Fair Winds Press, Beverly, Massachusetts 2013
pp 258 ISBN: 978-1-59233-517-6

This book is a timely reference given the acknowledgement of a near-epidemic of autism in recent years. It is designed for parents of children with attention, mood and cognitive problems, which in Attention Deficit Hyperactivity Disorder (ADHD) and autism are also often linked with upsets to the gastrointestinal system. The authors have studied nutritional therapy for autism and other behavioral and development disorders for many years. ISM has also seen many clients with these conditions, hence our interest in this book. Here are a few highlights:

Depending on the age, a core initial supplement program consists of magnesium, Vitamin D, zinc, EPA, DHA, probiotics and a multi-vitamin mix. Dietary considerations include low sugar and carbohydrates but protein with each meal, and gluten-free products and other restrictions when required. For constipation, the authors recommend a full amino acid profile to help dose the amino acid taurine.

In ADHD and autism there is commonly an imbalance in the excitotoxic amino acid (glutamate) and calming transmitters (gamma-aminobutyric acid or GABA). The conversion from glutamate to GABA requires Vitamin B6. Excess glutamate occurs in additives such as MSG, and in foods containing aspartame,

as well as broths and bouillon cubes. To improve the glutamate/GABA ratio, the authors recommend GABA (which works in half of patients) and the amino acid L-theanine. It should be noted some believe GABA does not cross the blood-brain barrier.

L-theanine increases the level of GABA in the brain and does cross the blood-brain barrier. It can also enhance dopamine levels that are considered useful for ADHD. It should also be noted taurine helps balance out the glutamate to GABA ratio and helps with detoxification. With chronic inflammation in the brain and/or intestine, cysteine from which taurine is made, is instead used for making glutathione, which helps explain the taurine deficiency seen in children with ADHD and autism.

NUTRITION CORNER

A Protein Punch! - Pineapple Yogurt

Maximize your protein with this healthy breakfast.

- 3/4 cup** Greek yogurt
- 1/2 cup** fresh pineapple
- 1 tsp** stevia
- 1 tsp** coconut extract
- 1 tblsp** sliced almonds
- 1 or 2 scoops** of ISM custom therapeutic, as recommended

Mix and enjoy!



THE “SKINNY” ON DIETARY FAT

By Sophie Smith

Sophie, an ISM client, is an Ottawa-based fitness consultant. She specializes in holistic nutrition, exercise programs and fat loss, via one-on-one coaching as well as Transformation Challenges. Her clients come from all walks of life, from athlete to weekend warrior to post-partum mama looking to reclaim her body. Sophie practices what she preaches as a competitive natural bodybuilder and power-lifter. You can learn more by visiting her website: www.sophiefitness.ca

Certainly by now everyone has heard that dietary fat is good for you, and in fact, ISM provides oils in all ISM Aminomics protocols. But why? Here are some of the basics that will help you gain a better understanding of this complex topic.

There are three types of fatty acids – omega-3, omega-6, and omega-9. All three fatty acids are important to our health – but not all are “essential”. (Essential in this context means the body needs it, but is not able to produce it, so it must be consumed in the diet.)

Omega-3

Omega-3 is an essential fatty acid, composed of EPA, DHA, and ALA.

(A) EPA: eicosapentaenoic acid

EPA (along with DHA) originates in algae, which is the base of the food chain for fish. Fish consume algae and thus concentrate high amounts of the beneficial fats. The ultimate goal of using omega-3 fatty acids is the reduction of cellular inflammation. It protects us from heart attacks, sudden cardiac death, strokes, diabetes and even cancer. EPA acts to lower the triglyceride levels in the blood. This decrease in



triglyceride levels means that there is potential for decrease in cholesterol formation which is important because high cholesterol levels are related to plaque build-up in the body which can result in stroke and heart disease. EPA fatty acids are instrumental in retinal development, are particularly beneficial in areas of brain development, and are linked to encouraging a fully developed nervous system. However, unlike DHA, EPA is not stored in significant levels in the brain and retina and is not considered a significant structural part of the body.

(B) DHA: docosahexaenoic acid

DHA accounts for up to 97% of the omega-3 fatty acids in the brain and 93% of the omega-3 fatty acids in the retina, making

it the most abundant omega-3 in the brain and retina. It also plays a key role in the anti-inflammatory process, is a key component of the heart, and is naturally found in breast milk which may explain why babies who breast feed often have higher IQs than babies who don't. DHA may also help prevent Alzheimer's disease and some cancers. DHA deficiency is known to lead to cognitive impairment. DHA fatty acid is one of the essential fatty acids that help the liver and kidneys make L-carnitine, an amino acid your body needs in order to produce energy from food. Nearly all the cells of your body contain L-carnitine, but the skeletal and cardiac muscles contain the highest concentrations. For this reason, DHA can improve your heart health and overall muscular function.

(C) ALA: alpha-linolenic acid

ALA is a naturally occurring antioxidant that is made in the body. Antioxidants protect against damage to the body's cells. It serves vital functions at the cellular level, such as energy production. As long as you're healthy, the body can produce all the ALA it needs for these purposes. ALA, the vegetarian form of omega-3 fats, can be found in flax seeds and flax seed oil. It is also found in food sources such as yeast, organ meats like liver and heart, and spinach, broccoli, and potatoes.

How The Essential Fats Help

Cells in the human body have a fatty cell membrane, known as the lipid bilayer. This membrane is semi-permeable: It regulates what gets into the cell and what goes out of it. The fluidity of cell membrane depends on the fatty acid composition of the diet.

If the fatty membranes surrounding brain cells are relatively fluid, as they are with plenty of omega-3s, then messages from neurochemicals such as serotonin can be transmitted more easily. On the other hand, if people eat too many saturated fats (which are solid at room temperature), without enough omega-3s, then these membranes become more rigid.

Cells also require these good fats for repair and regeneration. With plenty of omega-3s, muscle cells become more sensitive to insulin, while fat cells decrease. This may mean that the body can divert more nutrients to muscle tissue.

Finally, DHA and EPA can increase metabolism by increasing levels of enzymes that boost calorie-burning ability. Drinking plenty of water during the day ensures the cells are well hydrated to facilitate the process and flush out those fat cells.

Omega-6

Omega-6 fatty acids are also considered essential fatty acids – they are necessary for human health but the body can't make them. Most sources of omega-6 fatty acids can be found in the food you eat in your daily diet and rarely require supplementation. Omega-6 fatty acids are a type of unsaturated fat found in vegetable oils, nuts, seeds, and eggs. Omega-6 fatty acids lower LDL cholesterol (the "bad" cholesterol) and reduce inflammation, and they are protective against heart disease.

Omega-9

While it has not received quite the same attention as omega-3 and omega-6, a true conversation about fats cannot exclude omega-9. Unlike omega-3 fatty



acids and omega-6 fatty acid, omega-9 fatty acids are not classed as essential fatty acids because they can be created by the human body from unsaturated fat. The richest sources of omega-9 fatty acids are macadamia nut oil, avocado and olives. Olive oil should be used cold because once it is heated above 300F it begins to oxidize. Macadamia nut oil is ideal for all your cooking needs, as it can be heated to 425F without oxidizing.

Omega-3 to Omega-6 ratio

We can't make omega-3 and omega-6 fatty acids in our bodies so we need to get them from our diets. As you can see, it's easy for us to get omega-6 fatty acids. These are found in plant oils, for instance, and factory-raised animals (which are fed a lot of corn and soy) will usually have a lot of omega-6. As a result modern Western diets typically have ratios of omega-6 to omega-3 in excess of 10 to 1, some as high as 30 to 1. We eat a lot more processed foods and a lot less wild game and plants than our ancestors did. We rely heavily now on omega-6 vegetable oils. Because omega-3s and omega-6s compete with each other for space in cell membranes and the attention of enzymes, the ratio matters more than the absolute amount consumed of either fat.

Basically, omega-3 fatty acids are anti-inflammatory, and omega-6 fatty acids are

pro-inflammatory – they promote inflammation. Chronic excessive production of omega-6 eicosanoids is associated with arthritis, inflammation, and cancer. Many of the medications used to treat and manage these conditions work by blocking the effects of the potent omega-6 fat, arachidonic acid. Given how plentiful omega-6 fats are in our society it would seem our widespread chronic illness issue could partially be because we consume so much of our fat in the form of omega-6 fatty acids. So, striving toward health is not about decreasing our fat intake, but rather increasing the healthy fat intake – shifting our ratio.

The "Skinny"

The bottom line when considering our fat intake is there is only so much space inside a cell and therefore quality counts. Ensure your diet is high in quality omega-3 sources. The most widely available dietary source of EPA and DHA is cold water oily fish, such as salmon, herring, mackerel, anchovies, and sardines. Oils from these fish have a profile of around seven times as much omega-3 as omega-6. Flax seeds and walnuts are excellent non-fish food sources of omega-3 fatty acids. Be aware of how much omega-6 you're ingesting, and ensure you're consuming a much higher ratio of omega-3. Live better, live longer, and in a body that functions as it is intended.

Bill-ISM

“ In healthcare today there is a disconnect between what we know and what we do ”

~ Bill O'Neill, 2007

IN PRAISE OF HONEY

By Liam O'Neill, B.A.

Many of us enjoy a hot beverage of some kind first thing in the morning, and periodically throughout the day. Coffee or tea is the usual choice. A number of us (including me) like to add a bit of something extra to sweeten the deal. This something extra is table sugar (granulated sugar) more often than not.

Table sugar is derived from the sugar cane or sugar beet plant, two plants that contain high levels of the sugar sucrose. Unfortunately table sugar's rigorous refinement process separates the sucrose from the rest of the plant material, including any fiber, vitamins and minerals. The end result is pure sucrose, a good source of energy but with absolutely no nutritional value (other than quickly used sugar energy). In our coffee or tea it serves one purpose: the improvement of taste.

The current conventional wisdom of most health professionals, pertaining to natural sweeteners, is that all sugars, whether they are naturally occurring in a food or added, have the same nutritional value⁽¹⁾. Health Canada's Nutritional Facts table labels honey, brown sugar, golden sugar, raw sugar, molasses, evaporated cane juice and table sugar all as insignificant sources of vitamins and minerals. This dietary advice is somewhat misleading, as nearly all of the alternatives to table sugar do contain trace amounts of nutrients.



Let's consider the case of honey, a natural sweetener made of the concentrated nectar of flowers, readily available in your kitchen cupboard, and your local coffee shop. Honey is composed of the sugars fructose, glucose, maltose and sucrose in that order. The USDA's National Nutritional Database lists honey as a source of 8 vitamins, 10 minerals, and 16 amino acids (including all 8 essential amino acids). Honey also contains various phenol acids, flavonoids, and enzymes that act as antioxidants⁽²⁾.

Canadians consumed 90 litres of coffee and 65 litres of tea per person in 2009⁽³⁾. Perhaps a little nutritional value in our coffee or tea, in the form of the trace nutrients found in honey, would make a significant impact on our health in the long run. Of course the healthiest choice of sweetener is no sweetener at all, and I am not arguing that honey is a good source of nutrients. Unlike table sugar, however, it does contain some nutrients. I think that is a significant enough difference to make a change.

• <http://www.eatrightontario.ca/en/Articles/Carbohydrate/The-Truth-about-Sugar-FAQs.aspx#.UjsSzb3Bdg>
 • (Belitz et al., 2009; Kakoniene et al., 2009; Ouchemoukh et al., 2007).
 • <http://www.statcan.gc.ca/pub/21-020-x/21-020-x2009001-eng.pdf>