Inside Tract®

CANADA'S GASTROINTESTINAL DISEASE & DISORDER NEWSLETTER

ISSUE 213 | 2020

Hunger & Appetite

The complex systems that encourage us to eat

p. 12

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Gastrointestinal Society
Canadian Society of Intestinal Research

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ABOUT US

WHO WE ARE

The GI (Gastrointestinal) Society and the Canadian Society of Intestinal Research (CSIR) are registered Canadian charities committed to improving the lives of people with GI and liver conditions, supporting research, advocating for appropriate patient access to healthcare, and promoting gastrointestinal and liver health.

THE INSIDE TRACT®

The *Inside Tract®* newsletter is our primary tool for delivering up-to-date medical information, in lay terms, to the Canadian public in English and French. Subscribe now for a low annual fee of $20 on our website www.badgut.org or complete the mail-in form on page 23.

KEY TOPICS

We've been providing information to the public since 1976 and have a very wide range of free resources, articles, and tools online and in print on:

- Aging Digestive Tract
- Biologics & Biosimilars
- Celiac Disease
- Clostridium difficile Infection
- Colorectal Cancer
- Colorectal Polyps
- Constipation
- Crohn's Disease
- Diverticular Disease
- Dysphagia
- Eosinophilic GI Disease
- Functional Dyspepsia
- Gastroparesis
- GERD (reflux & heartburn)
- Hemorrhoids
- Hepatitis B & C
- Hiatus Hernia
- Inflammatory Bowel Disease
- Intestinal Gas
- Irritable Bowel Syndrome
- Lactose Intolerance
- Medical Cannabis
- Non-Alcoholic Fatty Liver Disease
- Pancreatic Exocrine Insufficiency
- Pancreatitis
- Short Bowel Syndrome
- Ulcer Disease
- Ulcerative Colitis
- Ulcerative Proctitis

FREE PRINTED INFORMATION

Contact us today to request some specific free information, or check us out online and on our social media platforms for the latest digestive health news. Healthcare professionals can order these pamphlets in bulk online.

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President & CEO Report

Gail Attara, Gastrointestinal Society

During 2016, the GI Society hosted a survey on our English and French websites to help understand the effects of *C. Difficile* infection (CDI). I thank all of you who shared your experiences with us by participating in this survey. Your opinions are very important to us and they help shape our advocacy. In January, the journal, *Patient Preference and Adherence*, published the results. You can view the article for free at www.badgut.org/cdi-study-published/.

As part of our advocacy with the Disability Tax Fairness Alliance (www.dtfalliance.com), we have been raising awareness among elected officials and policy-makers of the importance of consistency and fairness in the administration of eligibility for the Disability Tax Credit, particularly in its appeals process. The Disability Tax Credit affects some of the most vulnerable Canadians living with severe and prolonged impairments, making it more crucial that these processes follow the intent of Parliament and interpretation of the *Income Tax Act* by the Tax Court of Canada. It's rewarding to work with a fantastic group led by my colleague and long-time patient advocate, Lembi Buchanan.

We are hosting a booth at the annual Canadian Digestive Disease Week conference in Montreal this year, where we share our information with physicians, so they can use these resources for their patients.

The changing healthcare and pharmaceutical policy world regarding originator biologics and biosimilars has become stressful for some individuals with inflammatory bowel disease (Crohn's disease and ulcerative colitis). We continue to advocate on behalf of those with GI and liver conditions and welcome any input you have regarding your experiences.

Photo: Josée Leon and Gail Attara at the Inside Affair in Toronto, 2019. Since 2011, Josée, of Transvision Plus, has been translating all of the GI Society's materials, either from English into French or vice versa.

Lyme Disease

The spread of ticks in Canada and what you should know

When you hear the term Lyme disease, the first thing that likely comes to mind is the image of a blacklegged, blood-sucking tick. Ticks themselves do not cause Lyme disease, but rather can carry certain species of bacteria that do. The primary Lyme disease causing bacteria in North America is *Borrelia burgdorferi*, while in Europe *Borrelia garinii* is the most common. Not all ticks carry the Lyme disease causing bacteria, but upward of 20% of the blacklegged tick populations in some at-risk Canadian cities have tested positive for *Borrelia* in recent years. Lyme disease occurs when *Borrelia burgdorferi* move into the blood through the site of the tick bite and attach to the inside of the blood vessels to cause an early localized infection. Without treatment, the bacteria can move to and infect other parts of the body causing further long-term complications.

Risk Areas

The risk of a tick bite is greatest during warmer months, from early spring to late fall. In milder regions of the country with little snowfall there is also a risk of tick bites throughout the winter. Ticks like to live in tall grassy or wooded areas, as well as on animals, including mammals and birds.

Between 2011 and 2017, there was a 700% increase in Lyme disease diagnoses recorded in Canada, from 266 to 2,025 cases. This increased prevalence is due to the spread of blacklegged ticks in central and eastern Canadian cities and rural areas, likely caused by warming temperatures and the tick's ability to hitch a ride on migratory birds and mammals. If you want to know more about the Lyme disease risk status in your area, please visit the website of your local health authority, or search for Lyme disease on badgut.org and you'll find the links there.

Although this increased number of cases is troubling, there are many preventative measures that we can take to protect ourselves against tickborne Lyme disease.

Dr. Ganive Bhinder
Health Researcher & Advocate
CSIR Board Member

Photo(top): Erik Karits | Pixabay

Prevention

If you enjoy spending time outdoors, but want to avoid getting tick bites and possibly exposing yourself to Lyme disease, follow these tips:

1. Cover up when in wooded or grassy areas and stick to designated trails to prevent ticks from attaching to the skin and finding a place to bite.
2. Tuck shirts into pants and pants into socks, and wear light coloured clothing so you can easily visualize and remove dark coloured ticks.
3. Treat clothing and gear with products containing permethrin and spray skin with bug repellent containing N,N-Diethyl-meta-toluamide (DEET) or icaridin to deter ticks.
4. Upon returning indoors check your entire body thoroughly for ticks and shower immediately to prevent attachment.
5. If you find a tick attached, remove it immediately with tweezers, as the probability of transfer of *Borrelia* through the tick bite is low within the first 24 hours.
6. Place worn clothing in dryer on high heat for 10 minutes to kill any remaining ticks.

With the increased presence of blacklegged ticks in eastern and central Canada, it is also important to know the signs and early symptoms of Lyme disease to prevent its progression and associated complications.

Symptoms and Diagnosis

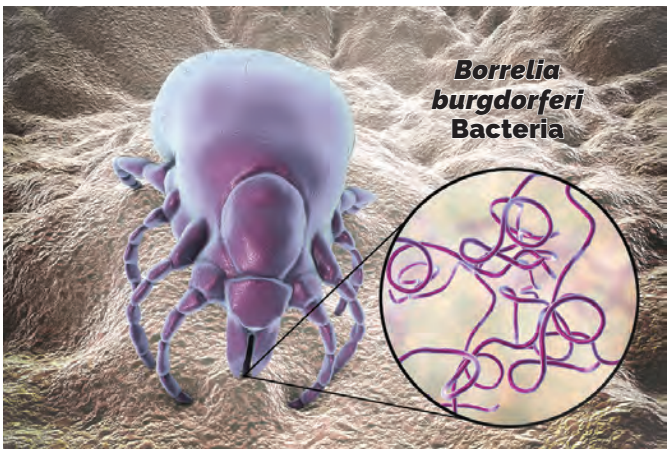
The time to onset of first symptoms can vary between individuals, presenting within days to several weeks of a tick bite. The earliest symptoms of Lyme disease can include a characteristic bullseye skin rash of migrating redness (erythema migrans), which is present in 50-80% of individuals, along with flu-like symptoms such as fever, headache, body aches, neck stiffness, and fatigue.

If left untreated, further symptoms can appear in the following weeks to months including erythema migrans on other parts of the body, arthritis manifesting as severe joint pain at one or several joints, and several neurological issues, such as numbness or weakness in the limbs, inflammation of the lining of the brain (meningitis), and temporary paralysis of one side of the face (Bell's palsy). Individuals living with chronic Lyme disease may also experience heart problems, liver and eye inflammation, and severe fatigue.

Gastrointestinal manifestations, such as lack of appetite resulting in weight loss, nausea, vomiting, diarrhea, and abdominal pain are also common in the early stages of Lyme disease. Further, liver function can be negatively affected in individuals with Lyme disease, and is more likely to occur as the bacteria move out of the blood vessels into nearby tissue. Elevations in specific liver enzymes, such as aspartate- and alanine- aminotransferases, have been reported in Lyme disease patients. With appropriate treatment, liver function can improve within three weeks.

For an extensive list of symptoms that can be associated with Lyme disease please refer to www.canlyme.com/lyme-basics/symptoms/.

A positive Lyme disease diagnosis is typically made through recognition of erythema migrans, confirmation of potential exposure to Lyme disease risk area and/or history of tick bite, and testing for specific antibodies to *Borrelia* bacteria in the blood. Antibody testing may present a limitation as they may not always be present in the blood at early stages of the disease.



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Treatment

Several antibiotics, including doxycycline, amoxicillin, and cefuroxime, have been reported as effective treatments for Lyme disease, depending on the stage and which parts of the body are affected. Early, localized Lyme disease, in the absence of neurological involvement, can be effectively treated with oral doxycycline or amoxicillin. Doxycycline is contraindicated during pregnancy or lactation and in children younger than eight years of age. Additional antibiotics, such as penicillin or ceftriaxone, delivered intravenously may be required for individuals with neurological symptoms or more advanced disease. Unfortunately, many individuals with chronic Lyme disease may experience recurrences of severe muscle and joint pain, and severe fatigue even after appropriate treatment.

Continued next page...

Protecting Your Pets Against Tick Bites and Lyme Disease

It can be difficult to know where to start when checking your furry best friend for ticks after a walk through the forest. Keeping your pets on the designated trail, especially in off-leash parks, may be difficult and complicates a major preventative measure that we ourselves can rely on heavily to prevent tick bites. Interestingly, only 5% of dogs are reported to show symptoms after a Lyme disease-transmitting tick bite, including weight loss due to a lack of appetite, lethargy, swollen joints, and in some cases, lameness resulting in a limp. Antibiotic treatment can only be given to dogs that display these symptoms and where there is evidence of exposure to a Lyme disease transmitting tick risk area. Preventing tick bites in the first place is therefore key to protecting your pets. If you suspect your pet may have Lyme disease, contact a veterinarian.

Know Where to Check Your Pets

Check by running your fingers, while applying gentle pressure, through your pet's fur to feel for bumps. Concentrate on warm, protected areas of your pet where ticks would not easily fall off such as in and around the ears and eyelids, under the collar, under the front and between the back legs, between toes, and around the tail. If you locate a tick, remove it carefully with tick tweezers, which make it easier to remove the entire tick and prevent a localized reaction, or take your pet to the veterinarian for tick removal.

Preventative Therapies

There are topical creams available that you can apply to the back and neck of your dog, which stop the tick from biting them in the first place. Topical application can be difficult for pets with longer fur and for water-loving animals as it is no longer effective after a swim in a pond or lake. Oral treatments are also available, which are effective for up to a month and work by causing the tick to fall off as soon as it tastes medicated blood. Discuss the best tick preventative products for your dog (as well as your cat, as they can be highly sensitive to many chemicals!) with a veterinarian.

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Irritable Bowel Syndrome

IBS
AWARENESS MONTH
APRIL

While we don't know for sure what causes irritable bowel syndrome (IBS), it likely involves several factors, such as the microbiome, the nervous system, and stress. Here are some of the most likely contributors to the development of IBS:


hyper-sensitive nerves in the digestive tract


imbalanced microbiome


physical and/or emotional stress


chronic alcohol abuse


poor eating patterns


use of systemic antibiotics


abnormalities in gastrointestinal secretions


bile acid malabsorption


the amount or pattern of physical exercise

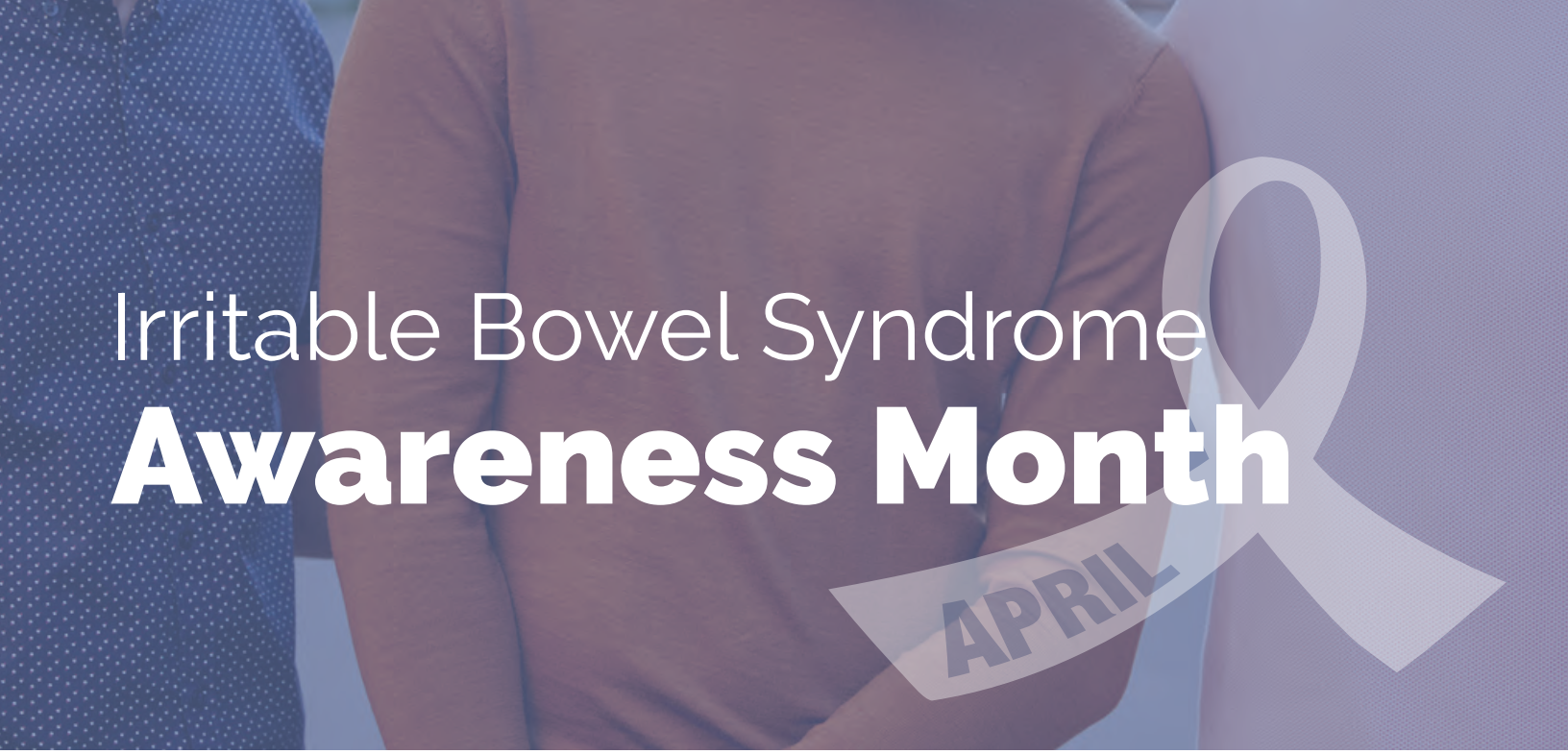

food allergies or sensitivities


improperly regulated peristalsis


menstrual cycle


gastrointestinal infection


infection of the intestine, such as traveller's diarrhea



Irritable Bowel Syndrome Awareness Month

Irritable bowel syndrome (IBS) is so common that it's likely you know at least one person affected by it. In 2003, the Canadian Society of Intestinal Research advocated to mayors in major cities across Canada and succeeded in having April declared as IBS Awareness Month by Health Canada. Read on for information on new IBS research as well as an infograph on the causes of IBS. Turn to page 18 for an update on a simpler way to do the low FODMAP diet, a common treatment for IBS. Don't forget to follow us on social media and share our posts to help spread awareness of this condition.

IBS Basics

One of the most common gastrointestinal conditions in the world, IBS affects approximately 13-20% of Canadians. It is a functional disorder, which means that, at this time, there is no measurable physical change, such as inflammation, to explain the condition. Symptoms of IBS include abdominal pain, bloating, and altered bowel habits, such as constipation and diarrhea, which can have a drastic effect on quality of life. Treatment for IBS can be complex and often involves a combination of dietary modifications and medications that target specific symptoms. For more info on IBS, ask for our pamphlet or go to www.badgut.org.

The Prevalence of Anxiety and Depression in IBS

Research indicates that IBS is strongly associated with mental health conditions, such as anxiety and depression, with some studies reporting that as many as 50-60% of those with IBS experience these comorbidities.[1] This leaves them in a vulnerable position as they are at an increased risk of impaired social function, poor quality of life, personal suffering, decreased treatment adherence, and even increased risk of suicidal behaviour.

A recent study by a group of researchers in Iran assessed the prevalence of anxiety and depression in individuals with IBS and compared the data to that of a healthy control group. In contrast to previous studies that investigated the levels of anxiety and depression, which they stated merely shows the severity of the existing problem, they chose to investigate the prevalence of anxiety and depression, which physicians need to be aware of in order to facilitate early detection and appropriate treatment strategies.

The results were significant, indicating that individuals with IBS are much more likely to experience anxiety (39%) and depressive symptoms (29%) than those without the condition. Interestingly, another study from China showed that those with IBS often experience mental health symptoms that are more severe and more frequent than those without IBS.[2]

According to the study results from Iran, anxiety and depressive symptoms were equally prevalent in men and women.

In addition, individuals who had constipation-predominant IBS (IBS-C) were the group with the highest prevalence rate of both anxiety and depression. According to the researchers, this might be due to an imbalance of serotonin secretion. Serotonin is a neurotransmitter that has many functions in the body, but it is most well-known for its effects on mood and mental health regulation. However, it also plays a crucial role in gastrointestinal motility, and low responsiveness to

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serotonin might increase constipation. Therefore, a serotonin imbalance might lead to both gut symptoms and mental health problems.[3]

The study authors concluded that abdominal symptoms influence anxiety and depression, while psychological factors simultaneously increase the risk of IBS symptoms. They explained that the relationship between IBS and these mental health disorders reinforces the known brain-gut axis correlation, which, if dysfunctional, can lead to an irritable bowel.

Due to the negative impact IBS has on quality of life, it can also be associated with stress and work impairment, which further aggravate mental disorders. Therefore, it is vital that physicians assessing anxiety and depression also assess patients in terms of IBS. Early diagnosis and treatment of a gastrointestinal disorder might speed up the improvement of the mental health elements too. Similarly, if their mental health disorder is treated, gastrointestinal symptoms might also improve.

Work Productivity and Activity Impairment in IBS

Many IBS research studies arrive at the same conclusion: individuals with IBS tend to have a poor quality of life when compared to the general population and those with other GI conditions. This is not only due to gastrointestinal (GI) symptoms, such as abdominal pain and altered bowel habits of constipation and diarrhea, but also non-GI physical symptoms such as headache, back pain, urinary urgency, and, as noted above, psychological comorbidities such as anxiety and depression.[4]

These symptoms have a severe impact on the ability to work and can cause a type of impairment when at work (presenteeism) or the inability to attend work (absenteeism). Many with IBS report that abdominal pain is the most challenging symptom to deal with because it can make moving and lifting uncomfortable – and; therefore, physical work – difficult.[5]

A group of researchers from Sweden conducted a study on the rates of work productivity and activity impairment while at work. Using questionnaires, the researchers retrieved data from 525 individuals with IBS. They examined the percentages of several areas, including absenteeism, presenteeism, total work productivity loss (overall work impairment), and impairment in daily activities at work (activity impairment).

More than 20% of participants reported being absent from work during the previous week due to IBS, while more than 85% reported work productivity impairment during the same time frame. The researchers found an association between GI-specific anxiety and absenteeism as well as a strong association between general fatigue and presenteeism.[6] IBS symptom severity, fatigue, and GI-specific anxiety impacted overall productivity loss, and IBS symptom severity also led to activity impairment. In addition, they found that non-GI symptoms, such as depression, contributed to work impairment and productivity loss. Researchers included the Irritable Bowel Syndrome Severity Scoring System (IBS-SSS) in their study, which led them to the finding that work productivity and activity impairment in those with IBS relates directly to the severity of their symptoms.

They noted that presenteeism accounted for the majority of the overall loss of work productivity, which supports the assumption that IBS patients go to work even while they are suffering from severe symptoms. Because of this, those with IBS might find it more difficult to achieve satisfactory work results and are less likely to assume more responsibility in their workplace, thereby limiting advancement potential.

In summary, the researchers demonstrated that IBS negatively affects individuals at work, and that both GI and non-GI symptoms contribute to this impairment. Some studies reported that adequately treating IBS symptoms decreased work impairment. Particularly, certain non-pharmacological treatments, such as dietary modification, and drug treatment options, such as linaclotide (Constella®) were effective for those with IBS-C.[7] Therefore, it is vital that physicians thoroughly assess individuals with IBS and provide effective treatment strategies. The researchers recommend a multidimensional treatment approach that not only treats the IBS symptoms, but also addresses fatigue, GI-specific anxiety, and other physical symptoms.

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DIGITAL HEALTHCARE

The CMA Takes a Deep Look

The adoption of virtual care in the Canadian healthcare systems faces obstacles in implementation, with a backdrop of unpreparedness among Canadians. The Canadian Medical Association (CMA), in collaboration with Ipsos Canada, released a report in August 2019 titled *The Future of Connected Health Care: Reporting Canadians' Perspective on the Health Care System*.[1] They gathered input from Canadians on technological advancements, such as artificial intelligence (AI) and virtual care, and asked them whether these have an influential role in the trajectory of our healthcare systems.

Trust Issues

The CMA explores the concerns that hinder or promote the notion of digital healthcare. They question in their report: why are we accepting of, and increasingly adopting, technological advancements in our daily lives – such as online banking and surfing the web – but are lagging in adopting it for our healthcare practices, for which consistent access is even more valuable?

According to the Canadian Internet Registration Authority (CIRA), three quarters of Canadians spend three to four hours online per day, with at least one in ten spending eight hours daily. Interestingly, individuals 55+ years of age make up most of the population in growing internet use. In addition, the Canadian Bankers Association reports that 88% of Canadians use online banking, making it the most popular banking method.[2] If we are comfortable with online methods for our sensitive banking information, then why aren't we with our health information? For instance, the CMA reveals that more than eight in ten Canadians are concerned[3] with trust and privacy of health information, such as ownership and handling of information, access, and security of data,[4] and nine in ten want to have sole ownership, including granting authority on who gets access to their health data. At the same time, one in three feel that the sharing of anonymized health data "doesn't matter as long as it's for good".

Strengthening Communication With Technology

There is strong willingness among Canadians to have improved communication, with more than seven in ten believing that in the upcoming decade they can contribute to their medical history collaboratively with their treating physicians. When asked if technology can help communication between patients and physicians, 68% of respondents agree.[5] Meanwhile, 11% of respondents indicated that they "don't know", and while the report does not go into detail on the reasons why Canadians feel this way, we can reasonably assume that this may be due to feelings of uncertainty and impracticability due to the lack of digital tech in their physician's clinics. There are many rural communities across the country that struggle with the accessibility and affordability of high-speed internet and, for some, this is confounded by various healthcare pressures, such as staff shortages, low physician retention, and long waitlists, to name a few.

Artificial Intelligence

Six in ten predict that artificial intelligence (AI) in programs or robots will likely deliver healthcare services in the next ten years, particularly in robot assisted surgery and tools for early diagnosis. AI is the ability of a digital computer to think, generalize, and learn like a human.[6] There are myriad subfields in AI and the research is constantly evolving, with Canada being home to a few innovative hubs.

Subscribe to Access Your Health Records

There is high demand for a patient portal that allows access to personal health records 24/7, online booking, and secure consultations between users and members of their healthcare team. If such a thing were available, three quarters of Canadians indicated interest in using them and four in ten are even willing to pay a subscription fee if this enabled them unlimited access to all listed features. Many prefer increased

convenience, with eight in ten interested in using one electronic platform to streamline their health information.

Uncertainty and Prepared Unreadiness

Despite willingness to improve communication, access, and innovation, the study revealed that there is a consensus among Canadians suggesting that physicians and patients are not ready. Most (80%) believe that government budgets are unable to fund infrastructures in the system to increase access to virtual care. Additionally, nearly three quarters of respondents cited concerns on human connection, privacy, and risk to privatization of healthcare, with regard to virtual care.

There is an equal divide among Canadians on how they feel healthcare will progress in the next ten years. They feel that it will either worsen (33%), stay the same (30%), or that it will improve (29%), especially with the transformation that technology and innovation can do for the healthcare systems.[7]

There are a seemingly countless number of questions to address when we analyze the implementation of digital care. We have yet to determine the challenges that these will present in our ethical, social, regulatory, and political systems. Furthermore, difficulties will continue to surface even if digital healthcare is standard practice. The infrastructure and integration of our multiple healthcare systems is complex, to say the least, and our health records are fragmented and onerous for most to manage and monitor. However, the burden of transformation is change and any attempts in doing so to a system rooted in old practices will generate a mixed bag of uncertainty, fears, and acceptance.

The Canadian Medical Association is a national membership of physicians working together to advocate on health concerns that are important to medical professions. To learn more, visit www.cma.ca

1 CMA and Ipsos. The Future of Connected Health Care Reporting Canadians' Perspective on the Health Care System. Canadian Medical Association. August 2019. Available at: https://www.cma.ca/sites/default/files/pdf/Media-Releases/The-Future-of-Connected-Healthcare-e.pdf. Accessed 2019-10-15.

2 Focus: How Canadians Bank. Canadian Bankers Association page. Available at: https://cba.ca/technology-and-banking. Accessed 2019-11-08.

3 This statistic represents a combined average of respondents who indicated that they are "very concerned" and "somewhat concerned."

4 While the level of concern is more prominent among baby boomers, there is an 18% average margin of difference between the former and young adults aged 18 to 34 years old.

5 Statistics reflect combined percentages of respondents who "strongly agree" and "somewhat agree." Specifically, 20% of Canadians strongly agree while a majority (48%) indicated that they somewhat agree with the aid of technology in communication between patients and physicians. On the other hand, 17% of respondents strongly agree and 46% somewhat agree that their healthcare experience is improved by technology.

6 Copeland BJ. Artificial intelligence. Encyclopaedia Brittanica page. Available at: https://www.britannica.com/technology/artificial-intelligence. Accessed 2019-10-30.

7 The remaining 8% indicated that they "don't know".

Five Fun Facts About **Fruit & the Gut**

Organic apples have a wide variety of probiotic strains living on their skins. These probiotics vary from the ones found on conventional apples and might even affect the flavour of the fruit.[1]

Bananas are easy to digest and contain lots of potassium, which make them a great food to eat when you are experiencing diarrhea.

Have you ever taken the probiotic Florastor®? It's made with a unique yeast found on the skins of ***lychees*** and ***mangosteens***.[2]

Trying to eat more fibre? ***Raspberries*** are one of the best sources available, with a whopping 8 grams per cup.

If you're constipated, try eating ***kiwi***. One study found that eating just two kiwis a day improved bowel function and frequency in people with constipation-predominant irritable bowel syndrome.[3]

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Hunger & Appetite

The complex systems that encourage us to eat

Every action in the body – whether it is the heart beating, leg muscles contracting when a person walks, the brain processing the contents of a conversation, or an arm moving to scratch a nose – requires energy. We get this energy from the calories in food, either directly after we eat or from the calories we store in our bodies as glycogen (in the liver and muscles) or as fat. Since getting enough energy, along with other nutrients, is incredibly important for our survival, our bodies send hunger messages that encourage us to eat.

Defining Hunger

There are many ways to define hunger. When policymakers or international aid groups speak of hunger, they are usually referring to the inability to eat enough food for a sustained period, typically through poor accessibility, scarcity, and/or poverty. While less common in Canada than in developing nations, there are still individuals in Canada who struggle with this type of hunger, such as those living under the poverty line and those located in remote regions with inadequate access to food.

Generally, the type of hunger we think of most often is the one that everyone is familiar with: the temporary discomfort of needing to eat, including symptoms such as a rumbling stomach, mild light-headedness, and sometimes moodiness, dizziness, and nausea, coupled with a desire to consume food. We will be focusing on this kind of hunger.

What is Hunger?

A complex system of physical and hormonal signals cause what we know as hunger. It involves many parts of the body, including the brain, nervous system, pancreas, stomach, and the rest of the intestinal tract.[1] There are two primary hormones involved in hunger signals: ghrelin and leptin.[2] When you haven't eaten for some time, the stomach (and other parts of the digestive tract, to a lesser degree) produces ghrelin, which increases appetite, gastric motility, and gastric acid secretion. Ghrelin levels are highest right before meals, when your blood sugar is low and your stomach is empty. On the other hand, when you've eaten enough, fat cells secrete leptin, which interacts with the brain to say that you have enough calories in storage, and it is therefore time to inhibit hunger signals. A wide variety of other hormones are involved in hunger and appetite signals, including insulin and cortisol.[3]

Hunger vs Appetite vs Cravings

It's a common occurrence, especially around the holidays: you feel stuffed after finishing dinner, then someone brings out the dessert and you seem to grow a second stomach. This isn't true hunger, which occurs when the body demands nutrients to function, but rather appetite.

Hunger is physiological. It occurs because of biological changes throughout the body, which signal that you need to eat to maintain energy levels. Appetite is simply the desire to eat.

Photo: © deagreez | Bigstockphoto.com

It can be a result of hunger, but often has other causes, such as emotional or environmental conditions. For example, feeling very stressed, upset, or bored, or being exposed to food that looks or smells delicious, can increase appetite even when you aren't really hungry. Being stressed, depressed, or distracted can also make you lose your appetite even when your body is hungry. Appetite can also be a learned behaviour. For instance, the desire to always eat at exactly the same time each day is often more from appetite than from hunger, or simply yielding to routine.

One test to tell if you are experiencing hunger or appetite is to consider eating a healthy food you don't hate but don't particularly enjoy. If you would eat this food, you are probably hungry, if you don't want to eat that food, but you really want that cinnamon bun from the bakery you just walked past, it's probably appetite.

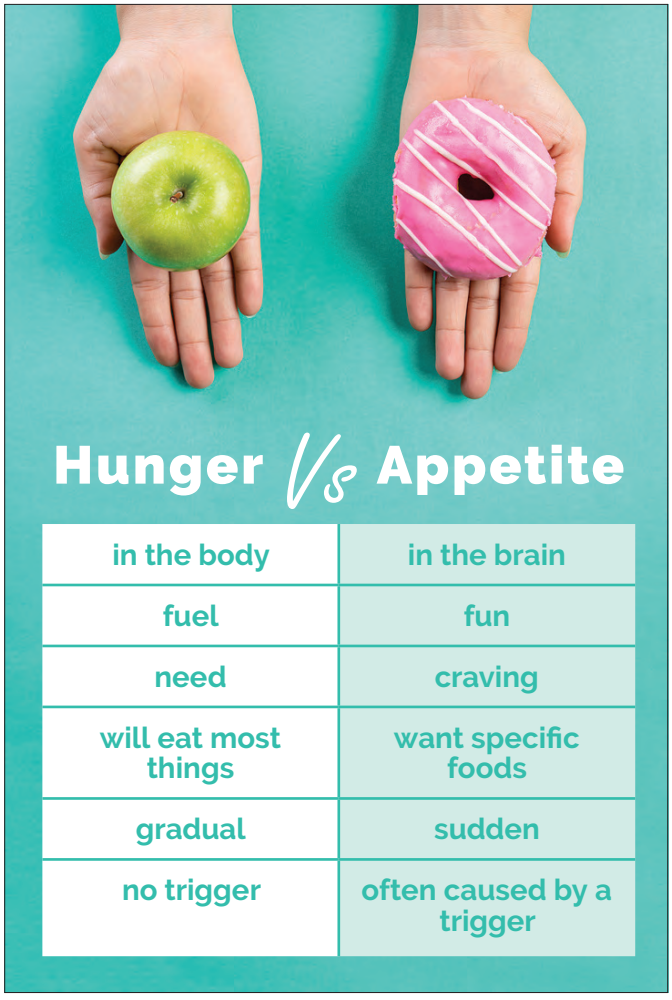


Photo: © siam.pukkato | Bigstockphoto.com

A craving is the desire to eat a specific food. Cravings increase your appetite and can occur regardless of whether or not you are hungry. While some people believe that cravings are a sign your body needs certain nutrients from the food, there isn't much research to support this belief. The type of foods individuals most often crave are rarely rich in nutrients that they might be deficient in but are often high in sugar and salt.[4] However, nutritional deficiencies might play a role in pica, a condition that causes cravings for non-nutritive foods, such as ice and dirt. While it isn't the case for everyone, many individuals with pica are deficient in minerals such as iron or zinc.[5]

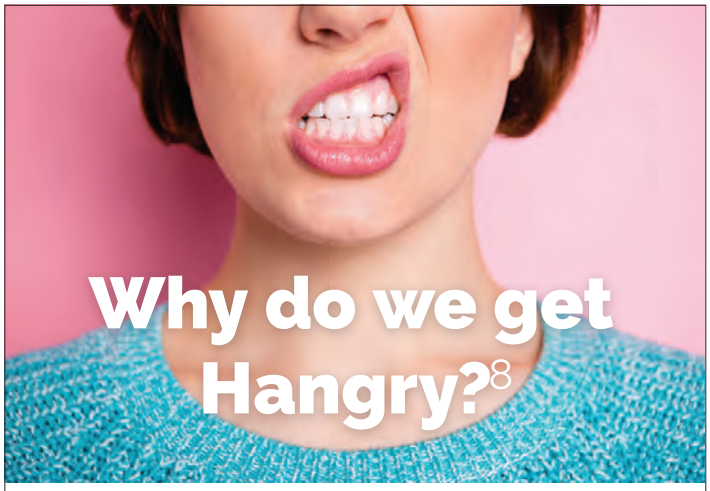
How GI Diseases and Disorders Affect Hunger and Appetite

Some digestive conditions can cause a loss of appetite. You still need to eat so that your body gets enough nutrients, but these conditions can cause a reduction in the desire to do so for a variety of reasons. Individuals who experience frequent nausea often don't have much of an appetite. It's difficult to think about eating anything when your stomach is upset. People who regularly experience severe abdominal pain, diarrhea, and/or constipation might associate the consumption of food with these symptoms and therefore want to avoid eating. One condition, gastroparesis, causes food to stay in the stomach for too long, which can affect normal hunger signals and make it difficult to eat enough.

Factors That Influence Hunger

What you eat can have a large effect on your hunger and appetite levels. Foods that contain plenty of protein, fat, fibre, and complex carbohydrates tend to be more filling. This is because they take longer to digest, keeping contents in your stomach for longer and leading to a slower release of nutrients into the blood stream. Highly processed foods, particularly those that contain lots of simple sugars, can make you feel very hungry because they lead to rapid swings in blood sugar levels. Typically, blood sugar rises quickly after eating processed foods, then drops quickly shortly after, unlike the slow sustained release of glucose from complex carbohydrates.

In addition, lifestyle factors such as exercise and stress can affect hunger and appetite. If you exercise frequently, you will likely become hungrier, as your body needs more calories and nutrients to function. However, occasional exercise might suppress appetite in some individuals.[6] Mood can have a huge influence on appetite. For example, being stressed, bored, depressed, or experiencing various strong



Why do we get Hangry?[8]

Do you know someone who can never skip a meal without getting grumpy and irritable? Maybe you are that person. The term hangry is a portmanteau of hungry and angry and describes the moodiness that sometimes accompanies hunger. But why does this occur?

There are a few possible causes, and they might vary from person to person. When you haven't eaten for some time, the level of glucose in your blood decreases, which causes hormonal changes. Your body releases adrenaline and cortisol, which can make you stressed, which can in turn make you angry. In addition, your brain takes a lot of energy – it uses 20% of the calories you need just to exist, despite making up only about 2% of your body weight.[9] When it doesn't get enough glucose (a simple sugar produced when your body breaks down complex carbohydrates), it can have a difficult time performing certain processes, such as regulating emotions. These aspects combined can lead to a seriously grumpy hungry person.

In general, being hungry doesn't usually make people angry for no reason, but rather causes an excessive response to something unpleasant. For example, hangry people might get disproportionately angry when stuck in traffic, but aren't likely to get mad while watching a good movie.

If you are someone who often gets hangry, make sure to eat foods high in fibre, such as whole grains, legumes, and vegetables, which digest slower than white grains and sugary foods. It can also be helpful to eat foods high in protein and healthy fats with carbohydrates. Eating well balanced meals and snacks regularly will help keep your blood sugar balanced between meals and let you avoid that hangry feeling.

emotions can change your appetite level. In some people, heightened emotional states can lead to an increased appetite, whereas others might find it very difficult to eat anything when they are experiencing strong emotions.

Medications can also affect appetite levels. In some cases, this occurs as a side effect, other times, your physician might prescribe a medication specifically to reduce or increase your appetite.

When Hunger Signals Go Wrong

Hunger and appetite are complex systems. While they generally work well, there is sometimes a problem with the signals. Genetic conditions, environmental influences, hormones, mental health conditions, and many other aspects can wreak havoc on normal hunger cues. The most common problem with hunger and appetite regulation in Canada is overweight and obesity, a chronic disease. There are many different causes of this disease, but obesity often involves problems with hormonal regulation of hunger and appetite.[7]

Conversely, there are people who experience a strongly reduced appetite. Individuals affected by certain diseases and disorders, such as infections, hormonal conditions, cancer, diabetes, and HIV/AIDS, can experience a reduced appetite, which can be a particularly dangerous symptom. Individuals who do not eat enough are at risk of symptoms such as fatigue, irritability, nutritional deficiencies, electrolyte imbalances, weight loss and, in prolonged cases of starvation, loss of vital tissues, refeeding syndrome, and death.

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4 Martin CK *et al*. Food Cravings: A Central Construct in Food Intake Behavior, Weight Loss, and the Neurobiology of Appetitive Behavior. *Handbook of Behavior, Food and Nutrition*. 2011.

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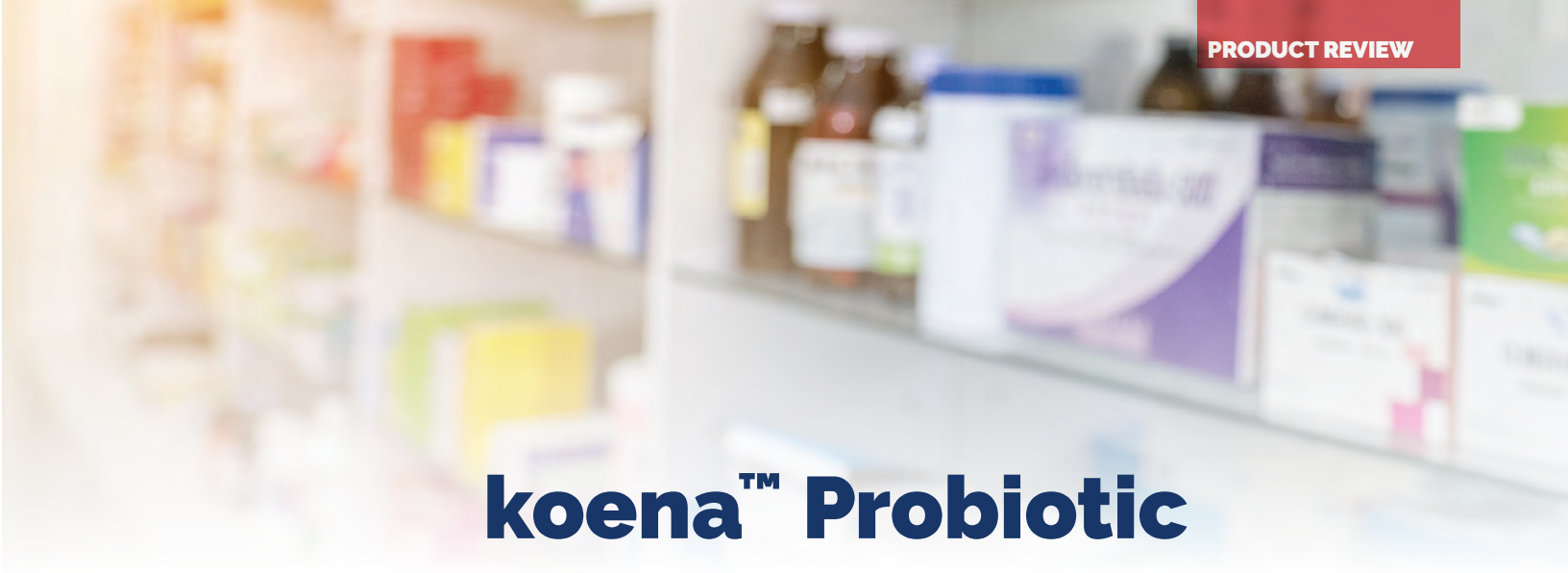
7 Mishra AK *et al*. Obesity: An overview of possible role(s) of gut hormones, lipid sensing and gut microbiota. *Metabolism*. 2016;65(1):48-65.

8 MacCormack JK et al. Feeling Hangry? When Hunger Is Conceptualized as Emotion. American Psychological Association. 2019;19(2):301–319.

9 Raichle ME *et al*. Appraising the brain's energy budget. *Proceedings of the National Academy of Sciences of the United States of America*. 2002;99(16):10237-9.



koena™ Probiotic

Photo: © Tong Patong | Bigstockphoto.com

Pronounced *koh-eh-na*, which means 'balance' in Hawaiian, this multi-strain probiotic is designed to support gastrointestinal health in adults and adolescents 14 years of age and older. It consists of 15 different probiotic strains and has 300 billion colony-forming units (CFU) per sachet. It is a unique probiotic supplement with its combination of a multi-strain formulation and a high number of live cells.[1]

The product contains both beneficial bacteria (probiotics), in the form of several coded strains of lactobacilli and bifidobacteria, and prebiotics, in the form of xylooligosaccharides (XOS) and inulin, a fructooligosaccharide (FOS). Strains of the *Lactobacillus* and *Bifidobacterium* bacterial genera are widely used in humans to promote a strong gut microbiome. XOS is a prebiotic fibre naturally occurring in plants such as wheat bran, barley hulls, almond shells, bamboo, and corn cob.[2] Inulin is a starchy product from a variety of plants, including whole grains, bananas, leeks, artichokes, asparagus, and onions. Probiotics consume prebiotics, allowing them to reproduce and take over a higher proportion of your microbiome than harmful bacteria.

Several studies have shown the effectiveness of multi-strain probiotics in improving symptoms from digestive conditions.[3,4] All of the bacterial strains in this product have been evaluated for their safety. Having a high number of live cells with different probiotic strains increases the product's ability to be effective and adaptive to our inherent microbiome differences, and it also ensures that more cells will successfully pass through the stomach and reach the intestine intact and active.

Since the bacteria are freeze-dried, it is safe to store the product at room temperature, unlike the many other probiotics that require refrigeration. However, you should avoid exposing it to excessive heat and moisture. It is also accessible and portable in individual sachets and you can dissolve the powder in cold water or any non-carbonated drink. Once it is dissolved, you must consume it immediately. If you are on any antibiotics, take the probiotic at least 2-3 hours before or after taking the antibiotics.

koena™ probiotic is allergy-friendly and suitable for individuals with food intolerances and restrictions. It is vegan, non-GMO, dairy-free, gluten-free, soy-free, and contains no dyes or artificial flavours.

The koena™ Adult Acute Care does not have an approved treatment indication at this time; therefore, it is for general gastrointestinal wellness and not to treat a specific digestive disease or disorder. The manufacturers hope to conduct future clinical studies to demonstrate effectiveness of these probiotics for specific digestive conditions.

This probiotic supplement can be found in a variety of stores and pharmacies and online. We recommend you discuss probiotic use with your physician, as those with a weakened immune system from diseases and long-term use of certain medicines should always avoid probiotic treatment unless specifically prescribed by a physician.

Note: The GI Society has received no remuneration from koena™ or its affiliates for this review.

1 Adult Acute Care. Koena™ Probiotic page. Available at: https://koena.com/en/products/acute-care/adult-acute-care/. Accessed 2020-02-20.
2 Belorkar SA, Gupta AK. Oligosaccharides: a boon from nature's desk. *AMB Expr.* 2016;6:82.
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4 Firouzi S *et al.* Effect of multi-strain probiotics (multi-strain microbial cell preparation) on glycemic control and other diabetes-related outcomes in people with type 2 diabetes: a randomized controlled trial. *Eur J Nutr.* 2017;56(4):1535-1550.

Probiotics & Prebiotics

Future Treatment for NAFLD and NASH?

The gut microbiota is a vast and diverse reservoir of microorganisms, including bacteria, fungi, and viruses, which live in relative balance within healthy individuals. There are at least 1,000 different species of bacteria that live in the human digestive tract. A number of studies show that individuals with non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) have compositional differences in their intestinal microbiota when compared to healthy individuals. As a result, some researchers wonder whether the gut microbiota can be a therapeutic area to target for NAFLD and NASH, with the use of probiotics and prebiotics.[1] They conducted a literary search for the use of prebiotics, probiotics, or products that contain a mixture of the two (synbiotics) on NAFLD and NASH and their effect on gut microbiota, to gain an in-depth understanding of the remaining challenges in research and to further explore the opportunities these treatments may have for management of the diseases.

NAFLD occurs when a large amount of fat, not associated with heavy alcohol use, accumulates in the liver (5-10% by weight). Canada has a high prevalence of NAFLD, with North America having a rate of 20-30% in total. NAFLD is mostly benign, presenting with few (if any) symptoms and complications. However, when left unaddressed, it can develop into NASH. This disease state is much more harmful because it involves inflammation of the liver. While there are a variety of treatments available for NAFLD, such as medications, vitamins, and supplements, they do not present sufficient evidence to justify widespread use as treatment. On the other hand, research shows diet and exercise are effective treatments.

The authors of the study also considered other treatments, such as antibiotics, fecal microbiota transplantation (FMT), and bariatric surgery. However, they argue that these therapeutic options have varying limitations on safety and effectiveness. For instance, while antibiotics can treat bacterial infections, they can also inadvertently eliminate beneficial bacteria in the gut. FMT, on the other hand, is safe but has some adverse effects and studies are ongoing to observe its applicability for NAFLD and NASH. After getting past the "ick" factor, the burdensome aspect of the process is in acquiring samples from appropriate donors. Therapy is rapidly changing in that it has been an invasive procedure requiring the use of a nasogastric tube to insert the fecal samples into patients. However, the non-profit company, OpenBiome, a stool bank expanding safe access to fecal transplants and catalyzing research on the human microbiome, has developed oral capsules for administering FMT, primarily for other indications so far. Lastly, bariatric surgery, which has a positive effect on NAFLD, has been associated with several risks, including the development of small intestinal bacterial overgrowth (SIBO) and surgical complications.

In assessing the effectiveness of prebiotics and probiotics for NAFLD and NASH, the researchers found that available

studies are limited and showed design challenges. In fact, most literature available only includes animal studies. This presents a critical evidence gap since not only do humans and mice have different gut microbiota compositions, but they also develop NAFLD differently. Accordingly, translating the use of probiotics and prebiotics in humans may produce significantly distinctly different results than in mice. However, the evidence gap is not the only limitation inhibiting probiotic and prebiotic use for NAFLD and NASH. Current studies (in both animals and humans) only show association rather than causality in the benefit of using probiotics and prebiotics. These are also exploratory studies intended for identifying areas that need further analysis and definition, and not for achieving a final and/or conclusive answer. Furthermore, monitoring efficacy is difficult with no standardized formulation of probiotics and prebiotics. A confounding factor is that researchers suspect other species of intestinal microbiota remain unidentified.

Scientists also need to analyze what, if any, long-term outcomes this treatment would have on the gut microbiota, including the duration of its effectiveness on NAFLD and NASH, whether certain strains are more beneficial than others, and the unintended consequences on other areas of health. Changes may result due to innate differences between humans, such as genetics, our interaction with our diets, and environmental factors. The authors suggest that understanding the interactions between individual gut microbiomes with probiotics and prebiotics can lead to personalized medicine based on the characteristics of our intestinal microbiota, diet, and more. Studying the gut microbiota might also lead to the development of early diagnosing tools, such as ways to identify individuals who may be at risk of NAFLD progression.

While probiotics and prebiotics have considerable benefits as a treatment option, such as accessibility, it is still too early to tell whether their use would be safe and effective for NAFLD and NASH. To address some of its limitations and challenges, the authors advise that the next step should be to look into conducting large, randomized human clinical trials with a control group. They also state that addressing these evidence gaps is urgent because of the lack of effective treatment and the projected increase of NAFLD and NASH diagnoses around the world.

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The Simplified Low FODMAP Diet

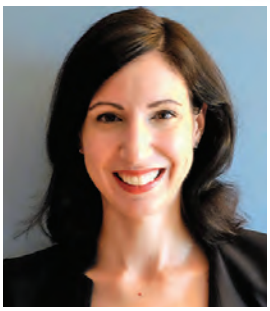
Did you know that there is more than one way to do the low FODMAP diet? The low FODMAP diet involves removing certain fermentable carbohydrates (oligosaccharides, disaccharides, monosaccharides, and polyols) from the diet for several weeks and then slowly reintroducing these foods to tolerable levels. It has shown great success in treating many individuals with irritable bowel syndrome (IBS), but can be very difficult to follow because it typically involves removing many dietary staples, including some wheat products, beans, milk, apples, pears, onions, garlic, and cauliflower. However, the simplified low FODMAP diet is another way to approach the diet that involves minimizing the number of foods that you need to restrict short-term. I wanted to bring attention to this approach because it isn't as well known as the full low FODMAP elimination diet, and yet it can also be effective in controlling gut symptoms, such as bloating and abdominal pain, for people with IBS.

I learned about this method last year when I completed online training for the low FODMAP diet by Monash University in Australia,[1] which is where gastroenterologist, Peter Gibson, and dietitian, Sue Shepherd, created this diet. The low FODMAP diet should be adapted to suit different people based on each individual's lifestyle, nutritional status, and symptom severity. Not everyone can or needs to do the full elimination diet, and I get that, it may just not be the right time for you now and that's OK. This article will focus on exactly what the simplified low FODMAP diet is, who it's for, and what it looks like.

Low FODMAP diet

As an example, Thomas has been experiencing a lot of bloating, abdominal pain, and diarrhea after meals over the past year. He goes to see a gastroenterologist who diagnoses him with IBS and recommends that he try the low FODMAP diet. What does that mean? It means strictly avoiding all high FODMAP foods for two to six weeks, and then monitoring to see if his gut symptoms improve. If symptoms improve, he can move on to the reintroduction phase, and if they don't, then he should consider other diet and lifestyle strategies. The long list of foods to avoid with this diet is overwhelming for Thomas at first glance, especially because he isn't sure what to substitute or replace for his usual and favourite foods.

It is well known that the low FODMAP elimination diet is associated with an improvement in gut symptoms in up to 80% of people with IBS.[2,3,4] FODMAPs can trigger gut symptoms in people with IBS, but not all types of FODMAPs cause symptoms in those who are affected. The goal is to figure out



Anne-Marie Stelluti, RD
www.modernguthealth.com

Anne-Marie Stelluti is a registered dietitian in Vancouver and business owner of Modern Gut Health, a private practice with special focus on digestive health nutrition.

which particular FODMAP groups are triggering symptoms, and then work on liberalizing the diet as much as possible, while keeping gut symptoms under control. I have never met anyone who has to avoid all high FODMAP groups long-term, and the chance of this happening is very unlikely. For someone in Thomas' situation, this is good news.

Simplified Low FODMAP diet

The simplified low FODMAP diet involves fewer dietary restrictions than the full elimination diet. It is appropriate for people with mild symptoms of IBS who may be eating a lot of high FODMAP foods or for people who are unable or unlikely to comply with a strict elimination diet. It may also be appropriate for people at higher risk of malnutrition, such as older adults and children.

In the simplified approach, you only need to avoid frequently consumed high FODMAP foods that you suspect to be major triggers. For example, if you eat a large quantity of beans (high FODMAP) at lunch every day, and experience a lot of bloating and abdominal pain, then you could focus on simply cutting out beans for two to six weeks and monitor to see if your gut symptoms improve. If there is an improvement in gut symptoms, then you could reintroduce beans and include small and controlled amounts back into your diet to figure out what portion you can tolerate, and how often you can enjoy them (e.g., ½ cup every second day instead of 1 cup every day). Let's look at two scenarios to put this into practice.

Scenario 1

Walter has decided to eat more plant-based foods this year and has started to eat vegetarian meals more often. He is now regularly snacking on pistachios, experimenting with vegan cashew 'cheese' sauces, and is making vegetarian chili with chickpeas and soups with lentils every week. Unfortunately, he has noticed that he is often uncomfortable after meals, experiencing more bloating and abdominal pain than he ever remembered having before. He books an appointment to see a dietitian, who suggests a simplified low FODMAP diet for two to six weeks. The dietitian advises him to snack on walnuts instead of pistachios, to enjoy peanut sauce instead of cashew sauce, to use crumbled extra-firm tofu to replace chickpeas in his chili, and to use edamame instead of lentils in his soup. Rather than cut out all high FODMAP foods, his simplified low FODMAP diet for the short-term would involve just removing beans, cashews, and pistachios.

After two weeks, Walter has noticed that he's feeling a lot better. He experiences only mild bloating once a week and the abdominal pain is gone. He works with the dietitian to re-challenge these foods back into his diet and learns that he can tolerate ¼ cup cashews per serving and enjoy ½ cup of chickpeas or lentils every second day. This is enough to keep his symptoms under control and he can continue to enjoy a plant-based diet.

Scenario 2

Lisa has decided to eat less white sugar this year and has begun to eat sugar-free yogurt and put honey in her tea three times a day. Instead of snacking on treats in the office, she is eating dried mangoes from home and chewing xylitol-sweetened gum throughout the day. After making these changes, she starts to notice that her bowel movements are getting loose and she now experiences moderate bloating and diarrhea a few times a week. She goes to see the dietitian who recognizes that she is eating a lot of high FODMAP foods (honey, mangoes, sugar-free yogurt, xylitol-sweetened gum). The dietitian recommends the simplified low FODMAP diet approach for two to six weeks, which Lisa is keen to try. Lisa starts to feel better after she stops chewing gum, replaces the dried mango with an orange, and replaces the honey in her tea with 100% maple syrup. Lisa's simplified low FODMAP diet for the short term would involve temporarily removing just mangoes, honey, yogurt, and xylitol from her diet.

Conclusion

The full low FODMAP elimination diet isn't for everybody, and there is a simplified approach to the diet that is endorsed by the creators of the low FODMAP diet at Monash University. If you have IBS, particularly if you have mild symptoms, and you don't feel that you can or want to do the full elimination diet, then this approach may work very well for you. A dietitian with expertise in this area can help you figure out what the simplified low FODMAP diet would look like for you after completing a full nutrition assessment and diet history. When it comes to the low FODMAP diet, I've seen it help many individuals get their gut symptoms under control, and this is just one more way to do it!

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Buckwheat Breakfast Cookies

Don't be deceived by the name *cookies* here, all of these ingredients can be part of a healthy breakfast. They're packed with tons of fibre, so be sure to drink an extra one to two glasses of water. If you don't have buckwheat flour, don't worry, just add more oats or use a gluten-free flour like quinoa instead.

Prep Time: 10 minutes | Cook Time: 12-15 minutes

Ingredients

¾ cup oats, large flakes
½ cup chia seeds, white or brown
1 tsp cinnamon, ground
¼ cup 100% buckwheat flour (or sub gluten-free flour like quinoa flour)
¼ cup almond butter (or sub peanut butter)
⅓ cup maple syrup
1 tsp vanilla extract

Ingredient Benefits

Almond butter: healthy fats, vitamin E, protein, magnesium, and calcium

Buckwheat: fibre + protein. More iron, copper, and magnesium than wheat flour

Cinnamon: helps your body absorb sugar

Chia seeds: omega-3 fats (anti-inflammatory), calcium, protein

Oats: soluble fibre that decreases gut transit time and lowers blood sugar

Instructions

1. Preheat oven to 350˚F. Line one baking sheet with parchment paper.
2. In a blender, blend together the oats, chia seeds, and cinnamon until they form a flour. This only takes a minute or two.
3. In a medium sized bowl, mix together the oat mixture above with the buckwheat flour.
4. Add in the almond butter, maple syrup, and vanilla and mix well with a wooden spoon. This is not your typical cookie recipe, it will seem very dry at first, but it will mix and start to get sticky, I promise!
5. Use your hands to roll the dough into small balls, about the size of a golf ball.
6. Place on your baking sheet and flatten each cookie with a fork.
7. Bake for 12-15 minutes or until lightly golden brown along the sides and bottom. Let cool and enjoy!

Recipe and photo by Anne-Marie Stelluti, RD

Our Impact is Your Impact

In 2019, your support helped us continue to serve Canadians from coast-to-coast in providing them with free, accessible, and trusted information on all areas of the gastrointestinal tract. For instance, we:

- updated information in our selection of more than 30 patient information pamphlets and distributed hundreds of thousands to hospitals, clinics, workplace wellness centres, other healthcare professionals, and individuals located in urban and rural areas across the country; and
- held 10 BadGut® Lectures in cities across Canada, discussing Crohn's disease and ulcerative colitis, irritable bowel syndrome (IBS), and medical cannabis.

We also partnered with local groups and organizations and met with all levels of government, working toward system-wide improvements in care and treatment for people with GI and liver diseases and disorders.

For 2020, we need your help to keep doing what we do best: serving communities far and wide across the country to promote informed digestive and liver health. We'd also like to do more to address growing needs and new relevant topics.

However, we know that resources are always limited. That's why we've come up with a variety of low-cost ways that you can support the meaningful work we do. Check them out below.

Create Your Own Fundraiser

Whether it is your birthday or you're feeling charitable, you can host a fundraiser for us. You can easily do it through our Facebook page by clicking "Create a Fundraiser," typing in GI Society, and filling in the details of how much you want to raise and how long you want your fundraiser to run. Then spread the word and share what we do with your family, friends, and colleagues.

Make Your Donation go Twice as Far!

This is an easy way to double the impact of your gift and it is an increasingly common charitable method employers use. Go to www.badgut.org/double-the-donation to learn more and find out if your employer will match your donation.

Workplace Giving

Some workplaces pool donations for charitable giving, with organizations usually chosen by staff. Consider CSIR or the GI Society as one of your company's beneficiaries. If you need any promotional literature and/or speakers to help you make this happen, please don't hesitate to contact us!

Partner With Us

Your business can collaborate with us on special projects or ongoing activities and receive recognition through a variety of avenues. Contact us for more info, we've got plenty of ideas on how we can work with communities!

Volunteer

We are always recruiting volunteers to help broaden our reach and impact, and with our ambitious plans for 2020, we will need your help more than ever. To learn more, go to www.badgut.org/events/volunteer/.

Lastly, you can find other ways to give on the last page of this newsletter or at www.badgut.org/donate/.

Does Your Child Have a Severe GI Condition?

Make-A-Wish® Canada Wants to Make Their Wish Come True

Make-A-Wish Canada's Mission

Together, we create life-changing wishes for children with critical illnesses.

Along with the national office, eight regional chapters grant transformative wishes to children in need from coast-to-coast. Make-A-Wish Canada is an affiliate of Make-A-Wish® International, the largest wish-granting organization in the world, making dreams and wishes come true for more than 480,000 children since 1980.

On October 1, 2019, Children's Wish Foundation of Canada and Make-A-Wish Foundation® of Canada joined forces, with the goal of granting the wish of every eligible child across the country. United as Make-A-Wish Canada, our mission is to provide children with life-threatening illnesses the opportunity to realize their most heartfelt wish, giving them the strength to endure their treatments and build resilience.

The Impact of a Wish

When children are battling a critical illness, so much of normal childhood is taken away from them, and it is exhausting, both emotionally and physically. A wish is something that gives kids the opportunity to look outside their illness – it restores a sense of childhood back to the child and normalcy back to the family.

Who Can Refer a Child to Make-A-Wish?

- referrals are accepted from medical professionals,[1] parents, or guardians, or a potential child directly
- any other sources should ask the family to contact Make-A-Wish directly
- the family will always be contacted once the referral is made before continuing the wish granting process

1 Medical professionals could include a doctor, nurse, social worker or child-life specialist with detailed knowledge of the child's current medical condition.

Eligibility Criteria:

- the child is between the ages of 3 and 17
- the child has a critical illness that is currently in the life-threatening stage
- the child has not received a prior wish from any wish-granting organization

Does Your Child's GI Condition Qualify?

The following GI conditions usually qualify for a wish:

- bowel/intestinal transplant
- chronic progressive liver disease with decompensation
- hepatopulmonary syndrome
- inflammatory bowel disease resulting in short gut disease with:
  - » prolonged parenteral support
  - » complications resulting from immunosuppressive therapy or surgery
- liver failure
- liver transplantation (within one year of transplant)
- malignancy or inherited pre-malignant conditions
- portal hypertension
- short bowel syndrome or intestinal failure requiring prolonged parenteral (TPN) support
- status post liver transplant (with ongoing life-threatening complications)

Many other conditions might be eligible, including, but not limited to:

- atresia of bile ducts
- complications from immunosuppressive therapy
- Crohn's disease
- Hirschsprung's disease
- pancreatitis
- ulcerative colitis

Images: © Make-A-Wish® Canada

To refer a child, visit **makeawish.ca/referachild**

SUPPORT US

WAYS TO DONATE

We need your ongoing support to continue to help the millions of Canadians who live with gastrointestinal and liver diseases and disorders, and for those who want to maintain a healthy digestive tract.

The GI Society guards donor dollars rigorously, ensuring maximum yield. We are frugal and efficient, spending far less than the national charitable average on governance and administration. Your donations help to support:

- high-quality, up-to-date printed information and educational materials for patients and their families, and for healthcare professionals
- BadGut® Lectures throughout Canada
- advocacy to encourage governments to put digestive health on the agenda and implement policies that will improve quality of life

DONATING NOW

Visit our secure website www.badgut.org and complete your payment online or send a gift by filling in the form on this page and sending it to our office.

GIVING IN HONOUR OR IN MEMORY

For gifts in honour of a special occasion or in memory of a person, provide us with your name and address, as well as that of the honouree or bereaved and decedent, so we can send a card advising of your gift on his or her behalf. We don't share the amount of your gift unless you ask us to do so.

BEQUESTS

Naming the GI (Gastrointestinal) Society or CSIR as a beneficiary in your will ensures your funds continue to support this important work.

SPONSORSHIP

Your business can collaborate with the GI Society on special projects or ongoing activities and receive recognition through a variety of avenues. Contact our CEO at the head office for details.

WORKPLACE GIVING

Does your place of work pool donations for charitable giving? Why not select the GI Society as the beneficiary? Sometimes all it takes is someone to suggest us. We'd be happy to send you some promotional literature to assist you in this task and, in many cases, can offer speakers.

DOUBLE THE DONATION

Want to make your donation go twice as far? An easy way to double your contribution is through the Double the Donation employee match program. Go to www.badgut.org/double-the-donation to learn more and find out if your employer will match your donation.

GI SOCIETY REGISTERED CHARITY 817065352RR0001
CSIR REGISTERED CHARITY 108090374RR0001

SUBSCRIPTION & DONATION FORM

Subscribe now! Your annual subscription fee of only $20 supports the GI Society's activities and includes quarterly issues of the *Inside Tract®* newsletter that we mail to you.

Please sign up online at www.badgut.org or fill in and submit this form by mail to:

GI Society | 231-3665 Kingsway | Vancouver, BC V5R 5W2.

PURCHASE INFORMATION

☐ I enclose a donation of $ _____(eligible for a tax receipt).
☐ I enclose a $20 annual subscription fee ($30 outside Canada)
Total $_____

PERSONAL INFORMATION

_____
Name (Mr./Mrs./Ms./Dr.)

_____
Company Name (Optional)

_____
Street Address

_____
City, Province, Postal Code

_____
Phone Number(s)

_____
Email(s)

☐ Patient ☐ Friend/Family Member ☐ Professional

Diagnosis/Area of Interest:
(This optional information helps us to determine which topics might be of interest to you and is kept confidential.)

_____

Would you like more information? Please list your topics:

_____

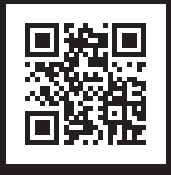
☐ Check this box if you would like to volunteer

PAYMENT METHOD

- Cheque (payable to GI Society)
- Credit Card and bank debit purchase is available on our secure website www.badgut.org.

The GI (Gastrointestinal) Society respects your privacy. We never sell, trade, or loan your information to any other organization. We will use your information only for follow-up contact, statistical purposes, evaluation of our services, and to process and recognize your contributions. We disclose your information only to our own employees and agents and only to accomplish these purposes. If at any time you no longer wish to be contacted by the GI Society, please call 604-873-4876 (Toll Free 1-866-600-4875) or email info@badgut.org and we will promptly remove you from our list.

badgut.org
Gastrointestinal Society
Canadian Society of Intestinal Research



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