

THE  
**Inside Tract**<sup>®</sup>

Canada's Gastrointestinal Disease & Disorder Newsletter

2010 • Issue 176

# Probiotics

Plus information on IBD, IBS, colon cancer, and more.

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## About the GI Society

The GI (Gastrointestinal) Society, built in 2008 on the foundation of its partner organization, the Canadian Society of Intestinal Research (CSIR), is the foremost organization in Canada covering a full range of gastrointestinal diseases and disorders.

With quality and integrity, we continue to be the leading provider of evidence-based patient information in the GI health field and we work to dispel myths about GI conditions. Although gastrointestinal diseases and disorders are rarely a subject of public discussion, they are highly prevalent in the Canadian population and are the most frequent reason for employee absenteeism after the common cold. *GI Society Registered Charity Number 817065352RR0001.*

## About CSIR

In 1976, the Canadian Society of Intestinal Research arose as the first registered charity in Canada to enhance public awareness by providing patient and professional information and by funding medical research on a wide array of gastrointestinal (GI) diseases and disorders. *CSIR Registered Charity Number 108090374RR0001.*

## The Inside Tract® Newsletter

This quarterly newsletter is our primary tool to deliver up-to-date medical information, in lay terms, to the Canadian public. Readership includes a mix of patients and their family, friends, and caregivers; healthcare professionals; and business professionals, who are interested in the wellness of their employees. To subscribe to our popular newsletter, for a low annual fee of \$20 (\$30 outside Canada), please visit our website or submit the form on page 23.

The GI Society does not endorse the products or services contained in this newsletter. Opinions expressed by the authors are their own and not necessarily those of the GI Society. Members of our medical advisory council or other professionals write or review all articles contained herein. In the interest of space, we usually do not publish references but will provide them upon request. We do not intend that this newsletter replace the knowledge or diagnosis of your physician or healthcare team and we advise seeking advice from a medical professional whenever a health problem arises.

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## IBD & IBS Support Groups

### Inflammatory Bowel Disease (IBD) Group (*Crohn's Disease & Ulcerative Colitis*)

#### Vancouver, BC

7:30 pm first Wednesdays  
**Feb 2, Mar 2**

Vancouver General Hospital  
Jim Pattison Pavilion  
Lauener Room (LP 2809) - *at the Sassafras Café*  
899 West 12<sup>th</sup> Avenue  
*For more info call: Doug 604-266-4833*

### Irritable Bowel Syndrome (IBS) Group

#### Port Moody, BC

7:30 pm first Tuesdays  
**Feb 1, Mar 1**

Eagle Ridge Hospital, 475 Guildford Way  
(Lower Level across from cafeteria)

*For more info call: Marilyn 604-942-6059*



# Society update

Gail Attara, President & CEO

I am happy to report that the GI Society is continuing to grow and develop, greatly increasing in activities and scope.

The national Board and staff are delighted to announce the release of our updated website. Please take some time to review all the new features of this dynamic, popular site. If you have any type of digestive disease or disorder, we know you will find great value in our Information Centre.

Part of our mission at the GI Society is to educate and promote awareness of various GI diseases. What better way to do that than to allow patients and healthcare professionals to join in on the conversation? That is why the GI Society is now on Twitter and why we've updated our activity on Facebook. Join us and share your thoughts and experiences. Together, we can help patients across the country better understand and manage their GI diseases. You'll find these links on our new website.

In the New Year, we'll have staff working in both Québec and Ontario – we'll report on this more fully in the next issue of *The Inside Tract*® newsletter.

Look for BadGut® Lectures across the country during 2011 on topics including The Aging Digestive Tract, GERD, and Inflammatory Bowel Disease, and for French language services in Québec. Check our website regularly for locations and topics.

This is an exciting time for advances in the gastrointestinal area. I urge any of you who have an interest in contributing to the work of the GI Society to come forward, as a few spots remain open on the Board, and we have room for participants on our dedicated fundraising cabinets. You can live anywhere in Canada to participate, and we are particularly looking for Atlantic representation. If working with this diverse, energetic team is something that interests you, please give me a call.

*Gail*



**badgut.org**  
BadGut? Good Advice!

## The Guts

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# Where Philanthropy Meets Business



## Humble Hair Salon Pair Raises more than \$30,700 for BadGut.org

The GI Society was thrilled to learn that Iveta Markova and Anna Mihalik, of Marine Hairstyling for Men in Vancouver, were planning to take on more than great hairstyling this past summer. When they heard that the GI Society needed support for its Crohn's disease and ulcerative colitis projects, the women claimed it as their personal mission, raising funds from their cozy, popular downtown shop. It is difficult now to know what is more inspiring: the remarkable amount of money the women raised simply by asking individual clients to make donations, or their unflinching humility at the end of it all.

When hair client Mark Taylor, of MTCS Consulting, asked his friend, Ullrich Schade, President of NextPhase Strategy Marketing, to contribute a complimentary design for a high-calibre invitation for the celebration party, to send to 180 generous clients, Ullrich did not hesitate to say yes. "I'm a big believer in giving back," he said. To enhance the invitation, he wanted a photograph of the two philanthropic women at the heart of the event, but they didn't want it to be about them – they give full credit to their clients' generosity.

Robin LaRose, a mainstream radio host from C101 Classic Rock in Vancouver, described the fundraiser as, "An incredible achievement by two incredible women who have inspired so many in such a short period of time."

Although reluctant to accept any publicity for their good deeds, the women were not shy about asking their

clients to dig deep for an important cause. From late July through September, the charismatic duo raised \$30,705! Their big-hearted clients, unable to resist such an important cause – and possibly Iveta and Anna's earnest, persuasive appeal – made individual donations. Lots of them!

Canada has the highest reported incidence of



Pictured are (L to R) Anna Mihalik, Iveta Markova (both of Marine Hairstyling) and Gail Attara (President & CEO, GI Society).

Photo: (top) © Ullrich Schade

inflammatory bowel diseases (Crohn's disease and ulcerative colitis) in the world, with upwards of 170,000 Canadians suffering with these conditions, and yet the gastrointestinal field is critically underfunded.

"As someone with a family history of colorectal complications and who has had colorectal surgery twice in the last five years, it's great to see the work badgut.org [the GI Society] is doing within the community," said Gordon P. Brown, Vice President of Operations, Intria Western Region. "I commend both Iveta and Anna. It just goes to show how a small community of people can make a big difference."

A few days after presenting the generous cheque to the GI Society, Iveta and Anna hosted the lively celebration event to thank donors and celebrate the huge success of this year's fundraiser. "In the end," Ullrich said, "I convinced them to let me drop by their hair salon to take a few photos. Five minutes after I arrived, they kicked me out, saying, 'Okay, that's it. We have to get back to work.'" The picture added focus to the welcoming invitations, and the event turnout was wonderful.

"They're more interested in doing good for the community than getting the publicity for doing it," Ullrich remarked. "Now wouldn't it be nice if all business people thought the same way?"

## Welcome New Board Member



### Lorne Heslop, BSc(Eng), MSc

Lorne has spent much of his career at the interface of government, industry, and the public. His work in developing best practices for technology transfer and intellectual property management established a solid foundation for the federal government.

Lorne has been with Agriculture and Agri-Food Canada as a research engineer in the Engineering and Statistical Research Centre working in areas of mechanization research, and in Research Branch Headquarters working with Research Centres developing new methods of technology transfer and intellectual property management. He has worked recently as a Science Policy Advisor and Deputy Director of Science Policy, and was Chairman of the Federal Partners in Technology Transfer, an interdepartmental organization with the mission to enhance the effectiveness and efficiency of technology and knowledge transfer.

## DID YOU KNOW?

Last year, we mailed more than 500,000 pamphlets across the country from our small office in Vancouver, each of them reaching the eager hands of a person who has most likely just learned that they have a life-changing gastrointestinal disease or disorder. One of those people was Sam, who contacted our office feeling confused about symptoms of pancreatitis after seeing her doctor. "Thanks so much for taking the time to provide such a kind, prompt, and thorough response," Sam wrote to us after receiving the information package we sent. "I'm very grateful that the GI Society is in operation and is helping this hidden sector of society."

In turn, we want to thank our donors for all of your past financial gifts. They make a huge difference! Our work is ongoing, so we still need your help to carry on helping Canadians with GI diseases and disorders.

We know that adjusting to a new diagnosis is hard enough without having to wade through the confusing mix of information pervading the media, or to figure out complicated medical jargon. That's why we work so hard to provide accurate information that you can trust – and for free. In the New Year, we're offering a series of interactive BadGut® Lectures throughout the Country. You can find more details on this series on page 10.

We are constantly updating all of our material with the most current evidence-based GI information, and in language that is easy to understand. This service, just one of the GI Society's awareness, education, and research initiatives, is only possible through the compassionate giving of people like Iveta and Anna – and you!

## WHAT YOU CAN DO

Please consider donating \$20, \$50, \$100, or any amount of your choosing. **Financial donations like yours allow us to help Sam -- and thousands of other Canadians just like her.** You can make an unrestricted donation through our secure online form at **badgut.org** or by contacting our office, toll free, at **1-866-600-4875**.

Together, we are offering help and hope to those who rely on our dependable resources. Thank you so much for your support!



# Is it really IBS?

## Or should you be tested for ovarian cancer?

### It's worth asking.

Ovarian Cancer is the fifth highest cause of cancer-related death among women. If treated early, the survival rate is very good, but obvious symptoms often do not appear until the cancer has developed into later stages. Symptoms of ovarian cancer may include unusual abdominal pain, abdominal or pelvic pressure or bloating, feeling extremely full after meals, weight gain or loss, constipation or diarrhea, nausea, flatulence, back pain, and fatigue. Sound familiar?

The symptoms of irritable bowel syndrome (IBS) are remarkably similar, which means that there is a real danger of an IBS misdiagnosis, when symptoms are actually caused by ovarian cancer. Women who experience these symptoms for three weeks or more, especially if they have a history or family history of breast, ovarian, or other cancers, should talk to their doctors about being tested for ovarian cancer.

Doctors can use a colonoscopy to detect or rule out colorectal cancer, and they may indeed order such a test, depending on your specific symptoms and history of cancer, but there is currently no similar screening test for the early detection of ovarian cancer. Instead, doctors use a number of tests, which, together, can help detect ovarian cancer. The surest way of confirming – or ruling out – an ovarian cancer diagnosis is with a biopsy obtained through surgery.

The first test a doctor is likely to perform is a bimanual recto-vaginal pelvic exam. A Pap smear, for example, will not detect ovarian cancer, which is why doctors normally perform a manual pelvic exam during a routine Pap smear procedure. Since a pelvic exam alone may not detect ovarian cancer at an early stage, your doctor may order a transvaginal ultrasound, in which a tube is inserted into the vagina and creates a sonogram picture that doctors can then examine

to detect any abnormal areas. Other detection tests can vary depending on a patient's age or particular symptoms. For example, sex cord stromal tumours normally affect women under the age of fifty, and may include additional symptoms, such as facial hair or a hoarse voice; whereas germ cell tumours, though they can affect women of any age, are far more common in women in their twenties. A blood test such as CA-125 may be ordered if a mass is detected in a previous exam, but it is not as effective for premenopausal women. If doctors detect any abnormalities, they will likely perform surgery to confirm or rule out ovarian cancer by examining a biopsy.

As with many other conditions, you know your body best, so it is important to be aware of any unusual changes, such as a different bowel movement pattern, or altered eating or sleep schedule. When you do see your doctor, describe your symptoms as clearly as you can, and always let your doctor know if you have a history of any type of cancer, gastrointestinal disease, or other medical condition, even though that information may not seem to have an obvious link to your symptoms.

For further information on the symptoms, tests, and treatment for ovarian cancer, visit [www.ovariancanada.org](http://www.ovariancanada.org), the website of Ovarian Cancer Canada.

#### Sources:

- <http://www.ovariancanada.org/KnowledgeAwareness/Detecting-Ovarian-Cancer>. Accessed December 6, 2010
- Barbara A *et al.* Frequency of Symptoms of Ovarian Cancer in Women Presenting to Primary Care Clinics. *JAMA*. [www.jama.com](http://www.jama.com) Accessed October 28, 2010.

# Colorectal Cancer Screening



*This study was funded in part by an unrestricted, competitive grant from the Canadian Society of Intestinal Research.*

The Honourable Leona Aglukkaq, federal Minister of Health recently said, “While colon cancer is highly treatable if caught early, it is still currently the second leading cause of cancer deaths in Canada. We can help change that by encouraging our friends and family over age 50 to speak to their doctors about getting screened for colon cancer.”

An estimated 6% of Canadians will develop colorectal cancer, half of whom will be asymptomatic until advanced stages of the disease emerge. It generally develops from benign adenomas, called polyps, which physicians can easily detect and remove during a colonoscopy. It could take a polyp ten to fifteen years to develop into cancer. Screening for polyps and removing them during a colonoscopy can dramatically improve patient health outcomes, because when detected in its early stages, colorectal cancer is easily treated.

A recent poll by Leger Marketing reports nearly half of Canadians 50-74 years of age are not comfortable suggesting that loved ones get checked for colon cancer because they are afraid of embarrassing them. They should not be too concerned; the poll also showed that Canadians would rather talk about getting checked for colon cancer than about relationship problems, weight loss, or money.

A study recently published in the *Canadian Medical Association Journal*, and partially funded by the **Canadian Society of Intestinal Research**, the GI Society’s partner organization, investigated the cost effectiveness of various screening test methods. The results showed that a



colonoscopy every 10 years for those over the age of 50 decreased the incidence of colorectal cancer by 81% and the rate of mortality by 83%. Those who received annual high-sensitivity fecal occult blood testing saw a drop of 65% in the incidence of colorectal cancer, and 74% less mortality. This drastic drop makes these testing methods very cost effective long-term, creating fewer hospital bills, as well as providing many individuals with years of life that are more healthy.

The researchers conclude that screening for colorectal cancer is cost effective over conventional levels of willingness to pay, and that annual high-sensitivity fecal occult blood testing, such as a fecal immunochemical test, or colonoscopy every 10 years offer the best value for the money in Canada.

Source: Telford JJ, Levy AR, Sambrook JC, Zou D, Enns RA. The cost-effectiveness of screening for colorectal cancer. *CMAJ*. 2010;182:12:1307-1313.

## Warning

### Roloids Recall

Health Canada recently reported that McNeil Consumer Healthcare (Canada) has voluntarily recalled all flavours of Roloids Ultra Strength SoftChews® and Roloids® Ultra Strength SoftChews® plus Gas Relief, after numerous reported findings of metal, wood, and other materials in the product. They are strongly recommending consumers discontinue use of these products immediately. Consumers who have experienced an adverse reaction to these or other products are encouraged to contact the Canada Vigilance Program of Health Canada, toll free, at 1-866-234-2345.

Each province and territory has its own program to support individuals who want to learn more about getting checked for colon cancer or who would like to get checked. For more information, go to [www.colonversation.com](http://www.colonversation.com)

# New Gut Research

Researchers come together to improve human health from the inside out

by Carol Moore



A united effort is underway to understand the extremely complex human gut and how it's linked to health and wellbeing.

Researchers from across Canada – who have come together and dubbed themselves GUTNet – are looking at three different aspects of how gut bacteria can influence a person's wellbeing. They call their main research areas the Fibre Node, the Alberta Node, and the McMaster Node.

## Fibre Node

At the Fibre Node, Dr. Martin Kalmokoff, a research scientist with Agriculture and Agri-Food Canada (AAFC), and his research team are looking at how different types of dietary fibre alter colonic gut bacterial communities in animal models.

They're focusing on wheat bran and how it alters gut transit time and prolongs fermentation along the entire large bowel by virtue of its structure and composition. They believe this physiological property of wheat bran fibre may prove beneficial for the entire large bowel (colon), providing a substrate for the continued production of short-chain fatty acids and for microbial growth all along its passage through the lower gut.

Short-chain fatty acids such as butyrate have a suppressive effect on cultured cancer cells. It's hoped that these effects may prove beneficial in chronic disease prevention, in addition to lowering cholesterol and blood triglyceride levels.

The Fibre Node researchers are studying how the gastrointestinal tract bacterial communities change when animal models are fed wheat bran, compared to the response with animals fed cellulose, a very poorly fermented carbohydrate polymer.

"We found drastic differences in the types of bacteria that were associated with wheat bran and cellulose," says Kalmokoff. "The wheat bran sustains microbial growth and fermentative activity along the entire colon, delivering short-chain fatty acids to the distal colon, not commonly found with rapidly fermented substrates."

## Alberta Node

The Alberta Node is interested in basic research that results in practical outcomes. Dr. Doug Inglis, a research scientist at AAFC in Lethbridge, and Prof. Brent Selinger, Department of Biological Sciences at the University of Lethbridge, are studying how the microbiome (the gut microbial population) and pathogens interact within a host, and the integration of human medicine and agriculture.

The researchers' goal is to understand colonization-resistance mechanisms, so they can tailor strategies to protect a host from enteric pathogens, the harmful organisms found in the gastrointestinal tract. Colonization resistance is what collectively protects organisms from infectious diseases transmitted between humans and animals (zoonotic pathogens) and antibiotic-resistant organisms. The research team is developing effective alternatives to antibiotic growth promoters that have been banned in Europe, one of Canada's biggest trading partners, but are used extensively at low levels in the Canadian livestock industry to protect animals from antibiotic resistant organisms and other pathogens.

"It's important when you develop alternatives that you know the mode of action," says Inglis. "Otherwise it's a shot in the dark on how it's going to work."

## McMaster Node

The McMaster Node is focused on gut-brain communication and how it affects human health. Profs. Elena Verdù, Stephen Collins and Premysl Bercik of the Department of Medicine are researching the communication mechanisms and the role that intestinal microbiota play in gut-brain interactions, and in depression and anxiety.

Preliminary results show that specific gut bacteria can influence the host's behaviour. Analysis showed an increase in inflammation and a change in the microbiota of the large intestine (colon), which could be responsible for the change in gastrointestinal tract function.

Collaborators for the entire project include Drs. Stephen Brooks and Kylie Scoggan, Health Canada (Fibre Node); Prof. Julia Green-Johnson, Department of Biology,

Photo: © Ron Scharf

# BadFats and GoodFats in Ulcerative Colitis

The data from a recent study published in the journal, *Gut*, shows that a high dietary intake of linoleic acid (n-6 PUFA) more than doubles a person's risk of developing ulcerative colitis.

Ulcerative colitis is a chronic inflammatory bowel disease consisting of fine ulcerations in the inner mucosal lining of the large intestine, with symptoms including pain and bloody diarrhea.



During digestion, linoleic acid undergoes transformation and then incorporates into the membranes of cells within the colon. This provides a source of pro-inflammatory molecules, which may predispose an individual to ulcerative colitis. Red meat, cooking oils (especially corn and sunflower oils), and polyunsaturated margarines are examples of foods that contain linoleic acid.

The study involved 203,193 men and women from seven regions in five European countries. All participants provided information on their diets, level of physical activity, and other lifestyle factors, such as smoking and alcohol intake. Specific nutrient counts were calculated by multiplying the frequency of consumption of the relevant food by its fatty acid content. Participants who developed ulcerative colitis during the study period had their diagnosis confirmed by a physician.



Interestingly, researchers also found that high dietary intake of another essential fatty acid, docosahexaenoic acid, (n-3 PUFA), better known as DHA, one of the three Omega 3 fatty acids, was associated with a 77% reduction in the chance of developing ulcerative colitis. This fatty acid has known anti-inflammatory properties, which may play a role in preventing colonic inflammation. Dietary sources include cold-water fish such as salmon, mackerel, rainbow trout, and light tuna, as well as flaxseed oil, walnuts, and eggs.

The researchers recognize further study is required in different populations to assess the consistency of these results.

**Source:** The IBD in EPIC Study Investigators. Linoleic acid, a dietary n-6 polyunsaturated fatty acid, and the aetiology of ulcerative colitis: a nested case-control study within a European prospective cohort study. *Gut*. 2009;58:1606-1611.

Dietitians of Canada state DHA and other Omega 3 fatty acids are an important contribution to good health. The diet of most Canadians contains less than half of the recommended intake of Omega 3s.

University of Ontario Institute of Technology (Fibre Node); Prof. Hermann Eberl, Department of Mathematics, University of Guelph (Fibre Node); Richard Uwiera, Department of Agriculture, Food and Nutritional Science, University of Alberta (Alberta Node); John Kastelic, Agriculture and Agri-Food Canada (Alberta Node); and several PhD and graduate students.

Funding for this research is provided by AFMNet,

General Mills Inc., Alberta Innovates, Agriculture and Agri-Food Canada, Health Canada, and Growing Forward.

Carol Moore, a sixth year animal science major, grew up in Sussex, New Brunswick. She is part of Students Promoting Awareness of Research Knowledge (SPARK) at the University of Guelph. SPARK's mandate is to write and broadcast research in ways that are relevant to the public.

# Got a Bad Gut?

## 2011 Free BadGut® Lectures

The GI Society presents a series of free public lectures on various digestive conditions in communities nation-wide. Healthcare professionals will answer questions in lay terms during each session. Join us at a lecture near you. Make sure you register online at [www.badgut.org](http://www.badgut.org) or by calling 1-866-600-4875.

### The Aging Digestive Tract

**Monday, February 7, 2011**

1:00-2:30 pm

**Vancouver**

South Granville Seniors Centre

**Monday, March 14, 2011**

7:00-8:30 pm

**Winnipeg**

ACCESS RiverEast

**Monday, May 2, 2011**

7:00-8:30 pm

**Vancouver** (Host Site)

Diamond Health Care Centre

**Victoria** (Videoconferenced)

University of Victoria

**Prince George** (Videoconferenced)

University of Northern British Columbia

### Inflammatory Bowel Disease

(CROHN'S DISEASE & ULCERATIVE COLITIS)

**Monday, April 18, 2011**

7:00-8:30 pm

**Vancouver**

Diamond Health Care Centre

**April 2011**

7:00-8:30 pm

**Ontario**

Venues and dates TBC

**May 2011**

7:00-8:30 pm

**Quebec**

Venues and dates TBC

### Gastroesophageal Reflux Disease (GERD)

**Wednesday, February 16, 2011**

7:00-8:30 pm

**Vancouver**

Diamond Health Care Centre

To register for these free events, go to [www.badgut.org](http://www.badgut.org). We will post full details and exact locations as they become available. If you do not have access to the internet, then call our Head Office, at 1-866-600-4875.

# Hemorrhoids Bothering You?

*Hemorrhoids are enlarged or varicose veins of the anus and rectum. They are a common health ailment, affecting nearly 5% of the population.*

Are you suffering with the pain, itching, burning, or discomfort of hemorrhoids? Then you might want to take part in the **GI Society's** survey regarding the effectiveness of **APR15® Topical Pain Relief Cream** in relieving the symptoms of external hemorrhoids.

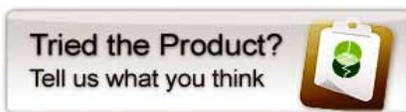
We will send you a complimentary 4oz (120ml) tube of this product and information from the manufacturer, but we ask one thing in return – that you complete our online survey within about a month after receiving the free product. Sound like a fair deal? We think so!

**APR15®** has been on the market since 2004, approved for use by Health Canada, and recommended by physicians. We now want to assess its effectiveness in relieving external hemorrhoids by receiving feedback from individuals living with hemorrhoids.

You can obtain the free product by going to our website, [www.badgut.org](http://www.badgut.org), and clicking on the button:



After using the product for about one month, share your opinions with us by going to our website and clicking on the button:



The survey should take you fewer than 10 minutes. (We might send you a friendly e-mail reminder or two until you complete the survey.)

We will keep all personal information that you provide in this survey in the strictest confidence and will report data only in an aggregate manner, safeguarding individual responses. Please note that when you complete the online



survey, we will ask for your name, and we are doing this for the sole purpose of verifying that those who complete the survey have received a sample from us.

You are welcome to share the tube with others (or send them to our site to apply for their own tube); however, anyone with whom you share the tube must indicate your name as the product source in the space provided when completing the online survey (each person should complete a separate survey).

A summary of the survey will be included in an up-coming issue of *The Inside Tract®* newsletter.

Thank you again for your participation and providing valuable feedback on this product. We hope you find relief! Should you have any questions, please contact our office.

## LAIR Centre – Clinical Trials Inflammatory Bowel Disease

### Crohn's Disease Studies, Vancouver, BC

If you have active Crohn's disease with – or without – fistula, and are over age 18, you may qualify for one of the research studies in Vancouver assessing the safety and effectiveness of investigational drugs to suppress the active inflammation of Crohn's disease.

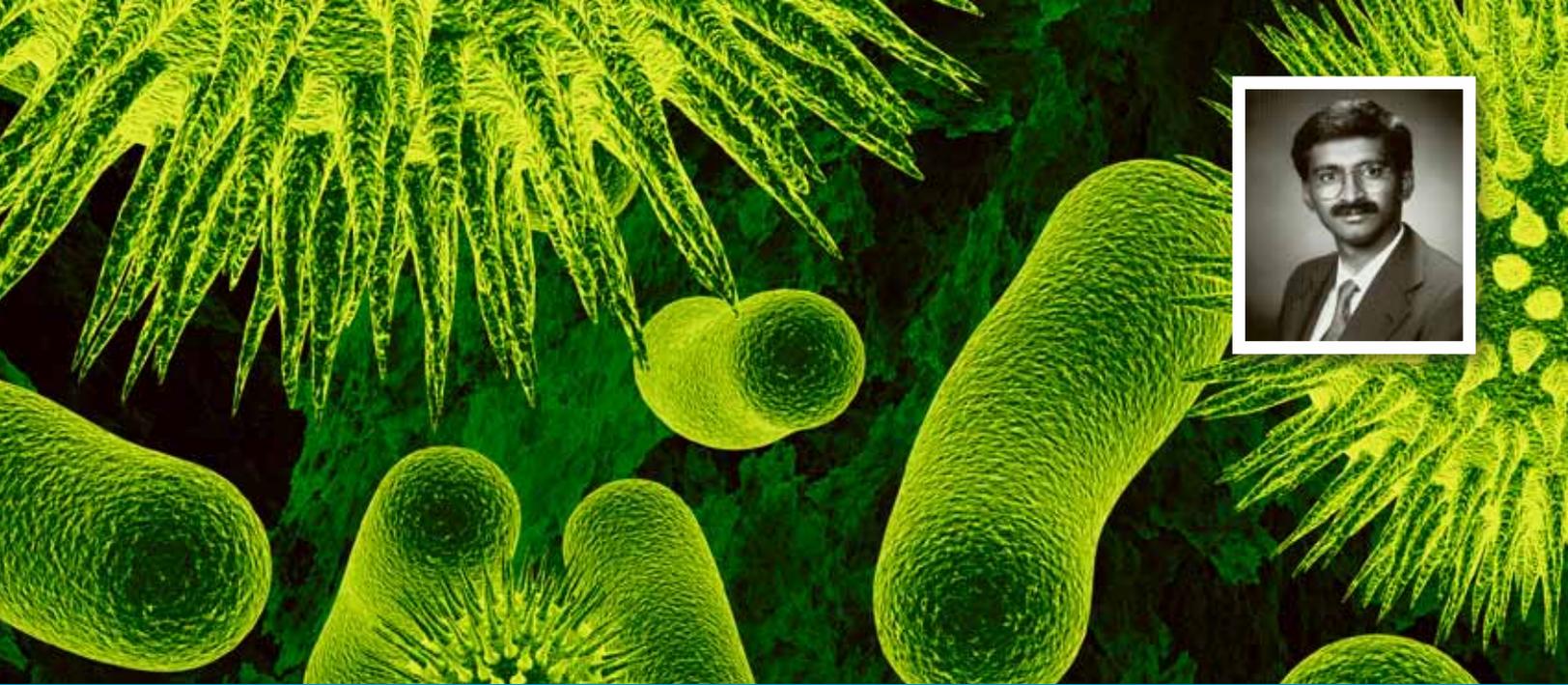
### Ulcerative Colitis Studies, Vancouver, BC

If you have ulcerative colitis and still have active disease in spite of ongoing treatment, you may be eligible for participation in clinical trials with investigational drugs.

Irene Wong

Phone: 604-876-5122 Local 2226

Email: [iwong@laircentre.com](mailto:iwong@laircentre.com)



Review

# Probiotics for Irritable Bowel Syndrome

**Subhas C Ganguli, MD, MSc, FRCPC**  
Assistant Professor,  
McMaster University, Hamilton, Ontario

In this article, we will review evidence for the use of probiotics in the treatment of irritable bowel syndrome (IBS) in adults. However, this does not replace the advice of your physician, whom you should always consult with for specific treatment recommendations.

The World Health Organization defines probiotics as “live microorganisms which when administered in adequate amounts confer a health benefit on the host.” They include bacteria as well as yeasts. Probiotics work in many possible ways, including:

- lining the surface of the gastrointestinal tract and stopping harmful organisms from reaching it (competitive exclusion),
- strengthening the tissue of the bowel wall,
- acting as antibiotics against other bacteria, and
- regulating the responses of the immune system, both at the level of the bowel wall and the body as a whole.

The only way to show the effectiveness of a new treatment, such as probiotics in IBS, is by doing trials in which researchers randomly choose patients to receive either probiotics or a placebo, and then compare the two groups with respect to outcomes (randomized controlled trial). We will only discuss probiotics with such studies in this article, as we cannot draw conclusions about probiotics

that have not undergone this type of thorough testing.

One important factor to consider is that while there are now guidelines from Health Canada concerning the quality of probiotics sold in pharmaceutical dosage forms (e.g., tablets, capsules), there are currently no regulations concerning probiotic bacteria in food. A study done in British Columbia and reported in 2004 looked at ten different over-the-counter products labelled as containing the probiotic bacteria, *Lactobacillus*. Analysis showed that only five brands contained live *Lactobacillus*, while two of them grew no organisms whatsoever. Five brands contained other species of bacteria, not listed on the label. Of the brands that actually contained *Lactobacillus*, the amount that could be cultured from the product ranged from 0.8% to 1.3% of the amount stated on the product label. With the developing Health Canada guidelines for selling probiotics, this might not be an issue in the near future.

Another important point is that bacteria come in multiple strains (usually indicated by a number after the name of the bacteria, such as *E. coli* Nissle 1917). The results of a clinical study done with a particular strain of a bacterium might not apply to a different strain of the same species of bacteria.

Photo: © iStock/Dreamstime.com

## Safety

In multiple clinical trials, researchers have assessed the safety of probiotics. The risks are minimal in outpatients with a normal immune system. About 30 cases of infection of the bloodstream by fungus have been reported: nearly all cases were with *Saccharomyces boulardii* in hospitalised patients with intravenous catheters. It was felt that the infections were the result of nurses giving probiotic pills to patients and then touching their intravenous catheters with contaminated hands.

A single case report describes a liver abscess due to *Lactobacillus rhamnosus* in a 74-year-old woman with diabetes (a disease associated with an increased risk of infection), who was taking the organism as a probiotic. In another case report, a 67-year-old man with an abnormal heart valve taking *Lactobacillus rhamnosus* developed infection of the heart (endocarditis) a few days after the removal of decayed teeth, which we know to be a risk factor for such infections. Thus, there are small but potential risks of infections from probiotics in outpatients who have specific risk factors, such as diabetes, poor dentition, or those who are on drugs that can suppress the immune system (e.g., steroids, azathioprine, infliximab, adalimumab).

## Results of Recent Studies (See Table 1)

- Three studies have looked at *Lactobacillus plantarum* 299V (Tuzen®) in IBS, involving a total of 112 patients. Not all of the studies looked at each symptom, and the results were as follows: overall symptoms improved for patients in one of two studies, pain improved in one of two studies, and gas improved in one of two studies. There was no significant improvement in constipation.
- One study looked at 40 patients using *Lactobacillus acidophilus* SDC 2012 and 2013 strains and found significant improvement in pain and straining, but no change in frequency of bowel movements. Another study looked at a different strain of *Lactobacillus acidophilus* LB strain, in 18 patients and found improvement of symptoms after 6 weeks.
- Two other studies looked at *Lactobacillus acidophilus* species in combination with other probiotics in a total of 146 patients. In one study, pain and gas improved while there was no overall difference in relief of symptoms. The second study used a combination of probiotics that also included *Streptococcus thermophilus*, *Lactobacillus bulgaricus*, and

**Table 1: Statistically Significant Outcomes in Probiotic Studies of IBS Patients**

Organism	Number of studies	Number of patients	Overall Symptoms	QOL	Pain	Gas/Bloat	Straining	Constipation	Diarrhea
<i>Lactobacillus plantarum</i> 299V	3	112	1 / 2		1 / 2	1 / 2		0 / 1	
<i>Lactobacillus acidophilus</i> SDC 2012, 2013	1	40			1 / 1		1 / 1	0 / 1	
<i>Lactobacillus acidophilus</i> LB strain	1	18	1 / 1						
<i>Lactobacillus acidophilus</i> with other probiotics	2	146	1 / 2	0 / 1	2 / 2	2 / 4		0 / 1	
<i>Lactobacillus rhamnosus</i> GG with other probiotics	2	189	2 / 2	1 / 2	2 / 2	1 / 2		0 / 1	0 / 1
<i>Bifidobacterium infantis</i> 35624	2	436	1 / 1	0 / 1	2 / 2	1 / 1	1 / 1	1 / 2	1 / 2
<i>Bifidobacterium animalis</i> DN 173010	1	274	0 / 1	0 / 1				0 / 1	
VSL 3	2	73	0 / 1		0 / 2	2 / 4			0 / 1
<i>Escherichia coli</i> DSM 17252	1	595	2 / 2		2 / 2	1 / 1		0 / 1	0 / 1
<i>Bacillus coagulans</i> GBI-30 6086	1	44			1 / 1	1 / 1			

Boxes show number of positive outcomes over total number of times outcome was assessed.

All studies are randomised controlled trials

QOL = quality of life

*Bifidobacterium longum* in 30 subjects. The probiotic mixture was significantly more effective in improving overall IBS symptoms, pain, and gas but not bloating. Another study, which also used *Lactobacillus plantarum* LP01, showed a decrease of overall symptoms of 55% with treatment versus 14% for placebo, but did not do any statistical testing to show this was effective.

- Two studies looked at a combination of products containing two *Lactobacillus rhamnosis* strains (GG and Lc705) plus *Propionibacterium freudenreichii* (subspecies *shermanii* JS) plus a strain of *Bifidobacterium*, from a company named Valio, in a total of 172 patients. Both studies showed an improvement in IBS symptoms and pain but no change in constipation or diarrhea. Only one study showed an improvement in gas or quality of life.
- Two negative studies looked at *Lactobacillus reuteri* ATCC 55730 in 54 subjects and *Lactobacillus casei* (strain GG) in 24 subjects.
- Two studies looked at *Bifidobacterium infantis* 35624 (Align®) in 437 subjects. Both showed improvement in pain and IBS symptoms. One of two studies showed improved frequency of bowel movements. No

improvement in overall quality of life was noted.

- One study examined *Bifidobacterium animalis* DN 173010 (Activia® yogurt) in 274 patients with IBS and constipation. While the overall results were negative, when researchers confined their analysis to subjects with less than three bowel movements per week, they noted an improvement in symptoms, pain, constipation, and quality of life. However, since this analysis was done after the original study and only on a subgroup of the patients, it should not be considered conclusive.
- Two studies in 73 patients looked at a combination probiotic called VSL#3® (containing 10 strains of bacteria) in IBS patients with diarrhea and bloating. Overall results were negative.
- Two studies looked at *Escherichia coli* DSM 17252 in almost 600 subjects (in one of the studies it was combined with *Enterococcus faecalis* DSM 16440). Both studies showed an improvement in overall symptoms and pain, while one study showed an improvement in bloating and stool consistency.
- Another study looked at *Bacillus coagulans* GBI-30 6086 in 44 IBS patients with diarrhea. After treatment, abdominal pain scores were improved in 7/7 weeks in the treatment group, versus only 2/7 weeks in the placebo group. Similarly, bloating improved with treatment in 7/7 weeks versus none of 7 weeks with placebo.

## Chronic Illness Stats

- 66% of “sicker” Canadians – those with one or more of seven chronic conditions\* – say they have a regular doctor who knows their medical history and helps to coordinate care.
- 9% of “sicker” Canadians with a regular doctor who knows their history and coordinates their care experienced a medication error, compared to 17% of those who say their regular physician doesn’t know their history or doesn’t coordinate care.
- 69% of “sicker” Canadians with a regular doctor who knows their history and coordinates care are likely to have all their medications reviewed by a doctor or pharmacist, compared to only 38% whose physicians don’t know their history or coordinate care.

\*The seven chronic conditions reported on are arthritis, cancer, chronic lung problems like asthma and COPD, diabetes, heart disease, high blood pressure, and mental health problems, such as depression and anxiety.

Source: Beyond the Basics, *The Importance of Patient-Provider Interactions in Chronic Illness Care*, Health Council of Canada, April 2010.

## Summary

Although researchers have conducted multiple studies on probiotics in patients with IBS, the results are mixed. This is not surprising, since different probiotics are like different drugs. In addition, IBS is likely due to different causes in different patients. While these early results are promising, future large trials are necessary before doctors can be confident in prescribing these agents on a routine basis.

## Warning

### Safe Use of Energy Drinks

Consuming too many energy drinks, or mixing them with alcohol, can have serious health effects. Energy drinks are meant to supply mental and physical stimulation for a short period of time. They usually contain caffeine, taurine (an amino acid, one of the building blocks of protein), vitamins, and glucuronolactone (a carbohydrate).

Do not confuse energy drinks with sports drinks such as Gatorade® or Powerade®. Sports drinks rehydrate the body, provide sugars that the body burns to create energy, and replenish electrolytes.

# The Importance of Vitamin D

*The sunshine vitamin may prevent more than bone deterioration.*

Approximately one billion people worldwide are not getting enough of the highly beneficial vitamin D. We can synthesize vitamin D through our skin from exposure to sunlight, and there are small amounts of it in some foods. However, many people are still finding it difficult to obtain adequate amounts, which is why healthcare professionals recommend we take supplements to meet our nutritional needs.

In *The Inside Tract*® newsletter, issue 171, we discussed the benefits of vitamin D and how they relate to individuals with gastrointestinal diseases and disorders. We explained that individuals who have difficulty absorbing dietary fat, such as those with Crohn's disease or celiac disease, may have difficulty obtaining enough vitamin D because it is fat soluble. In addition, we talked about the reduced risk of colon cancer in individuals with adequate vitamin D intake.

Now, new research shows that vitamin D may play a much larger role in the development of Crohn's disease, as well as many other medical conditions. Canada has the highest incidence and prevalence of Crohn's disease worldwide. Crohn's disease is a chronic inflammatory bowel disease characterized by inflammation that can occur anywhere along the digestive tract, and can penetrate the full thickness of the bowel wall. Its symptoms include diarrhea, rectal bleeding, pain, and weight loss. The causes of Crohn's disease are currently unknown, although immune dysregulation may play a part in the development of this disease.

Medical professionals have long known of vitamin D's usefulness when it comes to increasing calcium absorption, and therefore aiding bone health; however, researchers have been continuing to release studies that show its efficacy in reducing the risk of many diseases, including colon cancer, multiple sclerosis, rheumatoid arthritis, and type 1 diabetes. The newest study<sup>1</sup>, published in the journal, *Genome Research*, shows just how important this humble vitamin really is. Using new technology that recognises the protein that is activated by vitamin D (the vitamin D receptor), the researchers found 2776 vitamin D binding

sites, which are places along the human genome where the vitamin bonds to the DNA, affecting the way it works. They also found that 229 specific genes worked significantly differently in response to vitamin D. The researchers found clusters of these vitamin D receptors in areas of the genome responsible for various autoimmune disorders and cancers. This explains exactly why vitamin D helps prevent diseases

like multiple sclerosis, rheumatoid arthritis, type 1 diabetes, and colon cancer. Like many other diseases that may be linked to immune regulation, this research shows that Crohn's disease contains many sites for vitamin D bonding. What this suggests is that an adequate intake of vitamin D may play a part in impeding the development of Crohn's disease, possibly preventing full development of the disease if supplemented before disease onset.

An important piece of information to take from this research is that if we ensure that pregnant women and young children receive an adequate intake of vitamin D, we could reduce the amount of autoimmune disease and cancer in these individuals when they are older. The researchers believe that with adequate supplementation, we could prevent some cases of Crohn's disease. However, it is still important for individuals who are older, and those already diagnosed with one of these diseases, to take the vitamin as well, as it is important for general health and preventing other illnesses. The researchers recommend that all people include vitamin D supplements in their diets, or get sufficient time in the sun. But, since sunscreen can interfere with vitamin D synthesis, and obtaining enough sunlight during the winter can be difficult, most healthcare practitioners recommend adults take a daily supplement that includes 1,000IU of vitamin D. Pregnant women and parents of young children should talk to their physicians about how much vitamin D they or their children should be taking.



1. Ramagopalan SV *et al.* A ChIP-seq defined genome-wide map of vitamin D receptor binding: Associations with disease and evolution. *Genome Research*. 2010;20:1352-60.

# Bad Breath? *H. pylori* and Halitosis

A new study has linked the treatment of *Helicobacter pylori* (*H. pylori*) with curing the chronic bad breath (halitosis) associated with functional dyspepsia. *H. pylori* is a bacterium that infects the stomach, and is associated with stomach cancer and ulcer disease. Typically, exposure to the bacteria occurs in childhood; although it is often present without symptoms, and many may not even know that they have an infection.

Functional dyspepsia (FD) is a chronic disorder of sensation and movement (peristalsis) in the upper digestive tract. Peristalsis is the normal downward pumping and squeezing of the esophagus, stomach, and intestine, which begins after swallowing. We call this disorder functional because there are no observable or measurable structural abnormalities found to explain persistent symptoms. The cause of functional dyspepsia is unknown; however, several hypotheses could explain this condition even though none can be consistently associated with FD. Excessive acid secretion, inflammation of the stomach or duodenum, food allergies, lifestyle and diet influences, psychological factors, medication side effects (from drugs such as non-steroidal anti-inflammatory drugs and aspirin), and *H. pylori* infection have all had their proponents.

Halitosis comes with a significant social stigma and can have a serious impact on a person's ability to function normally in society. It is classified into three distinct groups:

- **genuine halitosis**, which can be difficult for a person to even be aware of,
- **pseudo-halitosis**, in which a person believes they are emitting oral malodour but are not, and
- **halitophobia**, which occurs after successful treatment of genuine halitosis or pseudo-halitosis and involves a person continuing to believe that they have it.

In 80-90% of cases, the source of halitosis is the mouth (caused by decomposing food particles, cells, blood, or chemical components of saliva) and effective treatment is usually in the form of tooth brushing or special rinses.

Published in the journal, *Medical Principles and Practice*, a study analyzed 18 patients (10 men and 8 women) who all had functional dyspepsia, halitosis, and confirmed *H. pylori* infections. Very recent research has shown that *H. pylori* can sometimes be present in the mouth as well as the stomach, although the researchers of this study admit that they did not specifically test for *H. pylori* in the mouth.



For this study, the participating patients' relatives verified the genuine halitosis. Researchers specifically excluded anyone who was on antibiotics, proton pump inhibitors (PPIs), histamine-2 receptor antagonists (H<sub>2</sub>RAs), NSAIDs, or antihistaminic drugs.

After evaluating the subjects' halitosis and other dyspepsia-related symptoms, researchers prescribed multiple drug therapies to eradicate the *H. pylori* infections. They then re-evaluated subjects' symptoms 4-6 weeks after eradication and found that 16 patients no longer exhibited halitosis. Further, the multiple drug therapies resulted in a significant reduction in most other functional dyspepsia symptoms as well, such as epigastric pain, nausea, and the early feeling of fullness during meals (though not bloating).

This study supports previous research showing a link between *Helicobacter pylori* and halitosis; however, it will be up to future research to determine exactly how *H. pylori* contributes to bad breath, and whether the source is from *H. pylori* infection in the mouth and/or the stomach.

Source: Katsinelos P *et al.* Eradication Therapy in *Helicobacter pylori*-Positive Patients with Halitosis: Long-Term Outcome. *Med Princ Pract.* 2007;16:119-123. Doi:10.1159/000098364.

# Grey Matter Changes in IBS

*Ever been told your IBS symptoms are all in your head?  
They might be, but in a much more literal way.*

Irritable bowel syndrome (IBS) is a disorder defined by abdominal pain and bloating, as well as constipation and/or diarrhea. It affects 13-20% of Canadians, with more women than men diagnosed. IBS is regarded as a functional disorder because the symptoms arise from the way the digestive system works, rather than detectable structural abnormalities, as is the case with inflammatory bowel disease, where the intestines become notably inflamed.

However, new research<sup>1</sup> shows that there could be a physiological aspect to IBS, but it lies in the brain, not the gut. The study, published recently in the journal, *Gastroenterology*, set out to discover whether there are any differences between the brains of individuals with IBS and those without it. Researchers have conducted similar studies on individuals with other functional disorders where persistent pain is one of the main symptoms, including fibromyalgia, chronic lower back pain, headaches and migraines, and chronic pain in the vulva. Most of the evidence they collected from these studies pointed to structural abnormalities in regions within the brain that may be important in regulating pain. Since IBS is similar to these disorders, the researchers hypothesized that IBS patients could have similar brain abnormalities.

This small study consisted of 55 females with IBS and 48 female controls. The researchers found that the women with IBS had abnormal changes in gray matter density when compared to the controls. Gray matter is found in regions of the brain that involve a number of neurological processes, including our perception of senses, as well as our muscle control, memory, emotions, and speech.<sup>2</sup> After analyzing images of the women's brains, the researchers found differences (increases or decreases) in gray matter density in areas involved in regulation of attention and emotions, and in areas responsible for regulating pain perception.

These differences in gray matter density may cause IBS patients to feel more pain than individuals without the

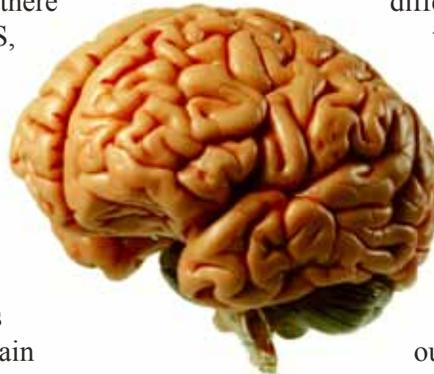
disease, and may contribute to problems with suppressing pain. The changes in gray matter were only in specific locations; the IBS patients had the same overall gray matter density as the controls, but it was distributed differently. They found these changes in patients who described their main symptom as pain, although it didn't matter whether they had diarrhea, constipation, or both.

Even though their results showed distinct differences between the patients with IBS and the control group, the researchers are not sure whether the changes in gray matter could have led to IBS, are a result of IBS, or have no bearing. Since this study was small, more research is needed to answer these questions, as well as to test if these differences are also present in men. In addition, the researchers believe it is important to find out if the changes are genetic, and therefore present in relatives without symptoms of IBS.

Nevertheless, the results of this study are of interest for individuals suffering with IBS, as they shine a new light on our currently limited knowledge of this disorder, and may help medical professionals devise more efficient treatment plans for IBS patients in the future.

## References

1. Seminowicz DA *et al.* Regional Gray Matter Density Changes in Brains of Patients With Irritable Bowel Syndrome. *Gastroenterology*. 2010;139:48-57.
2. [http://www.brainexplorer.org/brain\\_atlas/Brainatlas\\_index.shtml](http://www.brainexplorer.org/brain_atlas/Brainatlas_index.shtml).



# Get Keen for Quinoa!

Quinoa, pronounced keen-wah, is an annual herb native to the Andean region of South America that is quickly gaining popularity in North America. The stalks of the plant grow three to six feet high, with clusters of seeds near the top. Both the leaves and the seeds of the plant are edible, but the seeds are more widely available for purchase in Canada.

A bitter resin called saponin forms a coating on the seeds, providing the plant with protection from birds and insects. A thorough rinsing or soaking of the seeds before cooking removes the resin, and some stores carry processed seeds that already have the resin removed. The main producers of quinoa include Columbia, Ecuador, Peru, Bolivia, Chile, and Argentina.

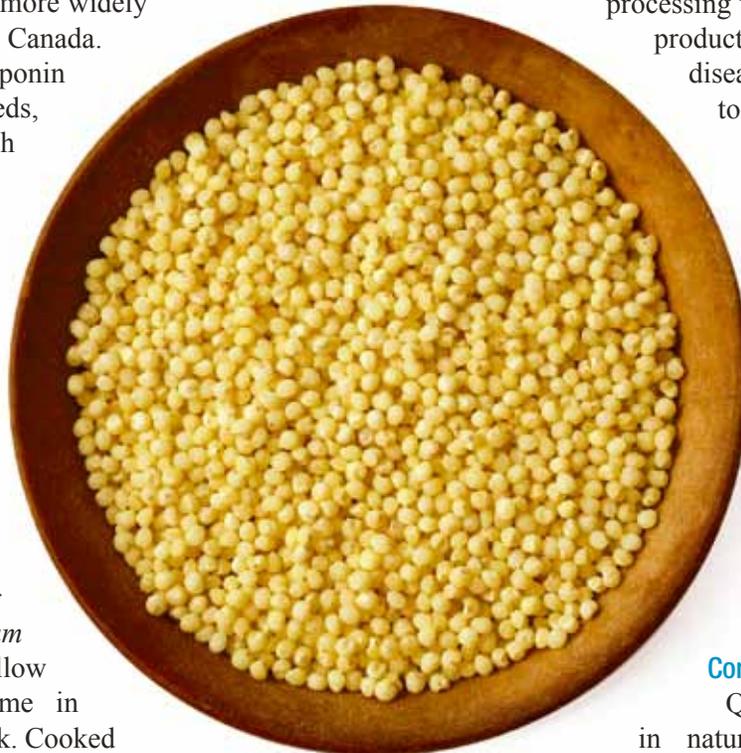
While the most popular type of quinoa, *Chenopodium quinoa*, is a transparent yellow colour, other varieties come in orange, red, purple, and black. Cooked quinoa has a fluffy, slightly crunchy texture with a subtle nutty flavour. Quinoa seeds can enhance many dishes: you can add some seeds to salads such as tabouli, substitute quinoa in recipes requiring rice or couscous, or top some with fruits and nuts as an alternative to porridge. Quinoa flour works well as a wheat flour substitute in muffins or cookies.

## Nutritional Value

Often referred to as a *superfood*, quinoa has an excellent nutritional profile. In general, proteins derived from plant sources tend to be low in essential amino acids, but not quinoa! It is a complete protein, meaning it provides an adequate proportion of all of the essential amino acids required by humans, making it a favourite food of many vegetarians. It is high in fibre, providing 2.6g in just half a cup of cooked quinoa, and it is a very good source of several minerals, including iron, magnesium, phosphorus, and zinc.

## Gluten-Free

Gluten is a type of protein found in grains such as wheat, rye, barley, and triticale, but its presence is not limited to grain products. You can also find gluten in many other products, because manufacturers add it during processing to help bind and stabilize food products. Individuals who have celiac disease have an adverse gut reaction to gluten; ingestion of even the tiniest amount (a single molecule) causes damage to the absorptive surface of the small intestine. The only treatment for celiac disease is a strict gluten-free diet. Quinoa in its various forms (seeds, flakes, flour) does not contain gluten, so it is safe for people with celiac disease or for individuals who have a gluten intolerance or allergy.



## Considering Quinoa?

Quinoa has long been available in natural food stores, but more mainstream grocery stores are also starting to stock it. It is generally available for sale in pre-packaged containers or in bulk bins. Some things to keep in mind when purchasing quinoa:

- When buying in bulk, make sure the containers are covered and that the store has good product turnover to ensure freshness.
- Check that the bulk bin or the package is free of moisture.
- When deciding how much to buy or to prepare, take into account that quinoa expands considerably during cooking.
- Store in an airtight container.

*Check out the recipe for Breakfast Quinoa on the next page.*

# COLIC Helped by Probiotics

Follow-up to *Babies and Bacteria from The Inside Tract*® Issue 175

Colic is quite common among babies, affecting approximately 3-28% of newborns. Colic is defined by excessive crying for no apparent reason, for at least three hours a day, on a minimum of three days per week, over a period of three or more weeks.

Recent studies show that certain bad bacteria, such as *Escherichia coli* (*E. Coli*), are more abundant in the intestinal tract of infants with colic, suggesting that these bacteria may be causing intestinal discomfort. This excess of bad bacteria led researchers to believe that supplementing beneficial bacteria, such as *Lactobacillus reuteri* (*L. reuteri*), would balance the gut flora in these infants, reducing pain, and therefore crying, in babies with colic.

In a study published in the journal *Pediatrics*, the parents of 50 babies with colic gave their child either *L. reuteri* or a placebo, once a day prior to feeding. Before the study began, the children were crying an average of 5-6 hours daily. After 21 days, the infants from the placebo group were crying for an average of 90 minutes per day, whereas the infants in the group receiving the probiotic were crying an average of 35 minutes per day. Researchers also found higher levels of *L. reuteri* and reduced levels of *E. coli* in the stool of the infants who received probiotic supplementation.

BioGaia®, a Swedish biotechnology company, develops and sells products containing the probiotic bacteria *L. reuteri*. Ferring Pharmaceuticals currently distributes two of their products in Canada, BioGaia® Probiotic Drops and BioGaia® Probiotic Chewable Tablets.



For younger children and infants, the probiotic drops are easy to administer by adding them to any food or drink or by giving them on a spoon. The drops do not affect breast-feeding or the taste of food and have been clinically proven to reduce colic in infants, improve digestive health and function, and boost immunity. The chewable tablets are safe for children over two years of age (adults can also take them) to help restore and maintain a healthy microbial balance in the digestive tract.

Both products are available behind the counter (because they require refrigeration) at most Canadian pharmacies. If it is not in their regular product supply, ask your pharmacist to order it in for you. For more information on BioGaia®, visit their website at [www.biogaia.com](http://www.biogaia.com).

Source: Savino F *et al.* *Lactobacillus reuteri* DSM 17938 in Infantile Colic: A Randomized, Double-Blind, Placebo-Controlled Trial. *Pediatrics*. 2010;126:3:e526-e533.

## Breakfast Quinoa

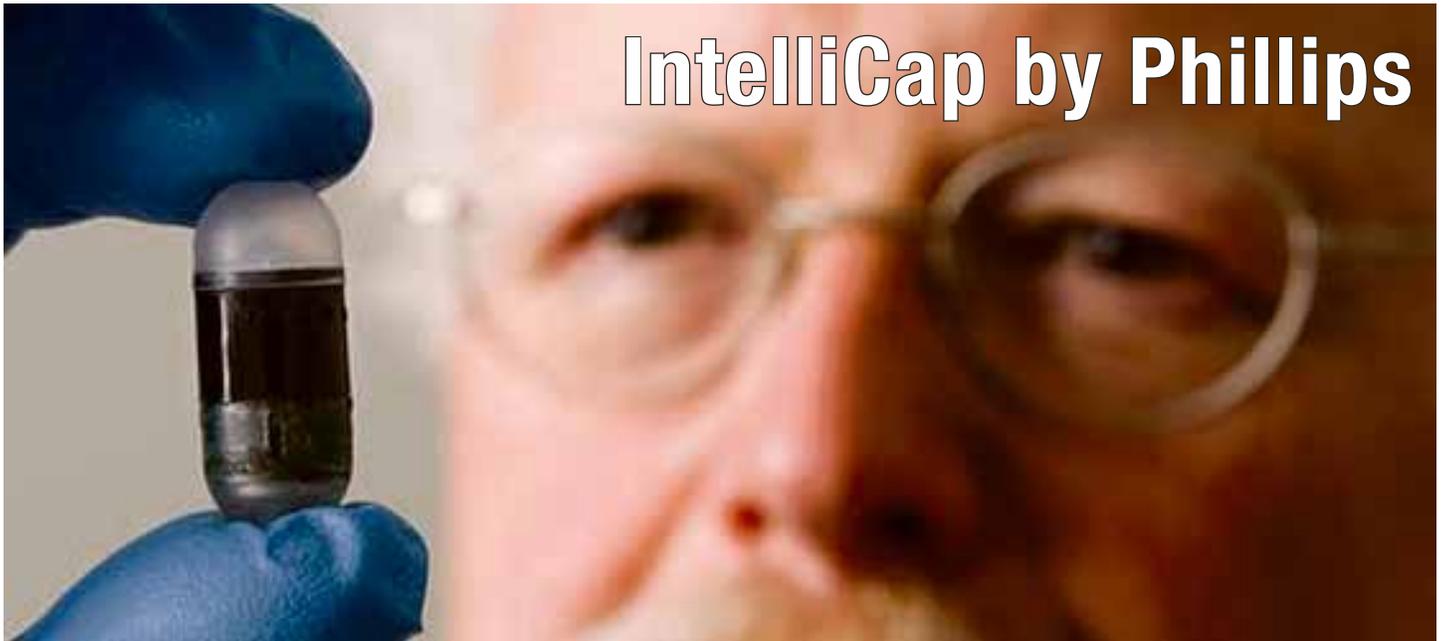
With its high nutrient content and versatility, quinoa is a great alternative to other hot or cold breakfast cereals. Try this quick and easy recipe to energize your body in the mornings. Serves 2-4.

### Ingredients:

- 1 cup quinoa seeds, preferably a pale colour (dry)
- 2 cups water
- 3 Tbs almond butter or sliced raw almonds
- 2 Tbs honey
- 1 cup fresh berries of your choice
- Cinnamon, to taste
- Salt, to taste
- Milk or milk alternative, to taste

### Method:

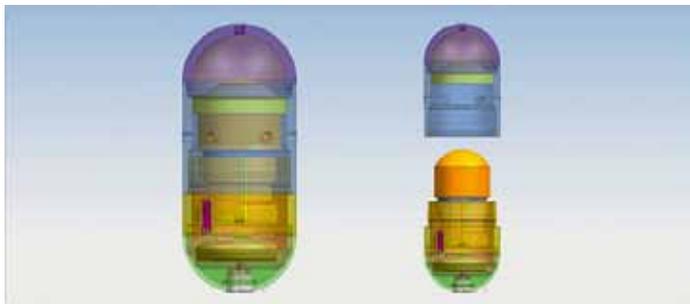
1. Rinse quinoa under running tap water, thoroughly straining out the liquid.
2. Add quinoa, 2 cups of water, and a dash of salt to a small pot, and bring to a boil. Once it has been boiling for a few seconds, reduce the heat to low and cover with a tight-fitting lid. Allow it to cook for about 15 minutes, until the water is absorbed, then remove the lid and stir it. Mix in the honey, almond butter, and cinnamon.
3. Serve quinoa warm or cold (make ahead the night before and refrigerate till morning) with fresh berries and milk or milk alternative, as desired.



# IntelliCap by Phillips

*An intelligent medication delivery technology may soon become available to treat intestinal disorders at the source of the problem.*

Philips, a leading company in technological advances, has released a prototype for IntelliCap, a new intelligent pill-shaped medication capsule. This is good news for individuals who have inflammatory bowel disease (IBD), as the main purpose of this mechanical pill is to deliver medicine or functional food directly to specific regions of the gastrointestinal tract.



The IntelliCap is a mechanical pill that cues to the varying pH levels throughout an individual's intestinal tract to activate. It contains a microprocessor, battery, pH sensor, temperature sensor, RF wireless transceiver, fluid

pump, and a drug reservoir in its tiny 11x26mm capsule design. A technician can program the IntelliCap to release the medicine at a specific place in the gut (based on pH level) to ensure the most efficient drug delivery. Possible delivery methods include a burst of medication in one spot, progressive release to a specific patch of intestine, or multi-location dosing.

Most individuals with IBD take medications to reduce inflammation. The challenging part of dosing these medications is that some portion might not reach the diseased area. This leads to doses that are higher than technically needed, thereby increasing the medication's side effect profile.

A more direct administration program, like that found in IntelliCap, could reduce the need for excess medication, potentially reducing side effects.

The IntelliCap is currently in its prototype stage; however, Philips claims that it is suitable for serial manufacturing in the not too distant future, when human testing will take place.

# Coping With Fatigue

Lori Lee Walston, RN



Everyone complains now and then of being tired. Perhaps you were up all night cramming for a final exam, caring for an ill family member, or maybe you just could not fall asleep. We experience many situations that result in decreased energy levels, but a night or two of good sleep usually puts us back on track. But what if you woke up every morning feeling as if you never got a moment of rest? What if you could not function at work, at home, or socially because you were just too tired? That is what most healthcare practitioners would consider chronic fatigue.

Chronic fatigue can be peripheral or central. Peripheral is muscle or physical fatigue, whereas central fatigue comes from the central nervous system, and is associated with difficulty in performing physical and mental activities that require self-motivation. Whether physical or mental, it is difficult to cope while in a constant state of fatigue.

Fatigue is a symptom commonly described by people with liver disease (hepatitis), regardless of whether the hepatitis is caused by a virus, excessive alcohol consumption, fatty infiltration of the liver, or an inherited disease. The associated fatigue may be intermittent or constant, mild or debilitating. There is no relationship between the severity of liver disease and the severity of the fatigue. Those with minimal liver disease may experience total exhaustion while those with severe liver disease may not feel tired at all, or vice versa.

Since fatigue can be caused by a variety of other health problems, such as anemia, depression, sleep disorders, poor diet, dehydration, or lack of exercise, it may be difficult to determine whether it is caused by the liver disease, secondary conditions, or a combination of both.

There is no magic medication, vitamin, or dietary change that will alleviate fatigue completely. Unfortunately, for most who suffer from chronic hepatitis, it is something with which they must learn to cope. That being said, there are certain strategies that may make the fatigue more bearable:

- Management (or treatment, if possible) of the cause of hepatitis, if it is present. This depends greatly on the type of hepatitis, which we reviewed in *The Inside Tract*® newsletter, issue #175.

- Treatment of secondary conditions such as anemia, sleep disorders, thyroid dysfunction, and depression. When properly monitored by a physician, these conditions will not contribute to the level of fatigue.
- Ask for help from family and friends. Activities such as housework, laundry, and shopping can be divided up easily and spread throughout the week.
- Alternative therapies, such as acupuncture, relaxation, meditation, and massage, may help alleviate pain and diminish fatigue.
- Get adequate sleep. Wind down before bed; avoid caffeine, alcohol, and tobacco in the evening; and maintain a regular routine (i.e., go to bed every night at the same time and get up each morning at the same time).
- Eat a well-balanced diet that includes fruit, vegetables, whole grains, and protein. Avoid foods that are high in fat, sugar, and salt (sodium).
- Ensure an adequate water intake by drinking fluids throughout the day. Avoid caffeinated beverages, such as pop, tea, and coffee, as they deplete the body of required fluids.
- Regular exercise done more than 2 hours before bed promotes better quality sleep. Try different kinds of exercise, such as walking, biking, dancing, gardening, swimming, Tai Chi, or yoga.
- A positive attitude can be a very powerful ally when it comes to managing fatigue. It may help you cope more easily with the daily grind of life and the many obstacles that can often occur in life.

## Outlook

Fatigue is not something any of us would choose to experience on a daily basis. Unfortunately, we do not always get the option. Learning to manage fatigue, and not letting it rule your life, will allow you to enjoy the activities of everyday life.

# Want to communicate better?

## Listen to your gut!



**Claire Maisonneuve**, Registered Clinical Counsellor  
Director of the Alpine Anxiety & Stress Relief Clinic

How well you listen to others depends on how well you listen to your gut. Your gut sends you regular physical signals that represent your emotional state. When you are listening to someone with understanding, empathy, and confidence, you will find that your gut is calm, settled, and relaxed. On the contrary, when you feel defensive, afraid, anxious, or worried, your gut may feel tight, constricted, or like it's churning inside. Rather than focusing on trying to understand and listen, you may be preparing to defend your position or correct the other person. Choosing to engage in these unproductive forms of communication might increase the discomfort in your gut.

If you want to be a better communicator, learn to listen to your gut. Pay attention to the connection between your body's signals and your particular situation. The key to listening is staying connected to your internal body reactions, such as your throat tightening, your stomach turning, or your body becoming warmer. These reactions inform us that we are feeling angry, afraid, or hurt. They alert us to the fact that we need to manage our emotions to keep the dialogue going. If we don't respond to them, these emotions can interfere with our ability to stay open-minded and in listening mode.

When you notice discomfort, take a breath, feel your feet on the ground, and focus on being mindful. The ability to self-regulate – to be in charge of your emotions, rather than letting your emotions control you – is the hallmark of a good listener. Listening without feeling that we have to fix or change the situation is an art that requires self-awareness, mindfulness, and self-discipline.

### How good a listener are you?

Below is a list of behaviours we engage in when we're unable to regulate our own internal anxieties and fears, along with some examples. With which areas might you struggle when listening to others?

- **Advising:** I think you should. Why didn't you? Did you try? Look at it this way.
- **One-Upping:** That's nothing. Wait until you hear what happened to me.
- **Educating:** This could be a blessing in disguise. You need to make the best of this. What lesson do you need to learn from this?

- **Consoling:** It wasn't your fault. You did the best you could. They are the ones who are at fault.
- **Story-telling:** That reminds me of a time when—. Did I ever tell you about—? Do you know what happened to Larry?
- **Minimizing:** Cheer up. Don't feel so bad. Think of others who are much worse off than you are. Move on. It's over now. Get on with it.
- **Rationalizing:** Hey, it could be worse. There's no reason to feel this way.
- **Sympathizing:** You poor thing! I know exactly how you feel. I went through the same experience.
- **Interrogating:** When did this start happening? What exactly happened? Then what did he say?
- **Defending:** I would have called but I was tied up. I can't help it. Yes, but—.
- **Correcting:** That's not exactly how it happened. Aren't you forgetting an important detail? What about what you did?
- **Judging:** I think it's time you pulled yourself together. You need to let this go. It's just going to hurt you.
- **Fixing:** Let me tell you what you have to do here. What needs to happen is this.
- **Denying:** Oh, come on, that's impossible. How do you know that, anyway? Just forget about it.
- **Reprimanding:** You shouldn't feel that way. What's the problem this time?
- **Ridiculing:** Don't be such a cry baby.
- **Rejecting:** I don't want to hear about this again.

### Summary

Learning to be comfortable with your own emotions and staying in the present moment (not in the past or future) are two of the best ways you can begin to become a truly effective listener and communicator.

After all, how can we ask others to listen and hear us if we don't do the same for them? If we wish others to listen to us, then the best thing we can do is first learn to listen and to understand ourselves.

Claire Maisonneuve, a Registered Clinical Counsellor and long-time director of the Alpine Anxiety & Stress Relief Clinic, generously gives her time and skills to *The Inside Tract*® newsletter. 604-732-3930  
[www.AnxietyAndStressRelief.com](http://www.AnxietyAndStressRelief.com)

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