

# Inside Tract®

Canada's Gastrointestinal Disease & Disorder Newsletter

ISSUE 188 | 2013

## What Our GENES Reveal pg 12



Plus Information on Managing  
GERD, Children & Functional GI  
Disorders, and More.

## About Us

As the Canadian leader in providing trusted, evidence-based information on all areas of the gastrointestinal tract, the GI Society is committed to improving the lives of people with GI and liver conditions, supporting research, advocating for appropriate patient access to health care, and promoting gastrointestinal and liver health.

Our core knowledge transfer programming includes a comprehensive series of patient education pamphlets called BadGut® Basics, the BadGut® Lecture Series, online resources at [www.badgut.org](http://www.badgut.org), and the *Inside Tract*® newsletter.

The GI Society (Registered Charity Number 817065352RR0001) was established in 2008 on the foundation of its partner organization, the Canadian Society of Intestinal Research (CSIR), a registered charity since 1976, and now these two organizations collaborate on many initiatives. The GI Society (Société GI) is also carrying on the legacy of L'Association des maladies gastro-intestinales fonctionnelles (AMGIF) and providing programs and services in the French language for all diseases and disorders of the GI tract.

We have printed resources available on Celiac Disease, Colorectal Cancer, Constipation, Crohn's Disease, Diverticular Disease, Functional Dyspepsia, GERD (reflux), Hemorrhoids, Hepatitis B, Hepatitis C, Hiatus Hernia, Inflammatory Bowel Disease, Intestinal Gas, Irritable Bowel Syndrome, Non-Alcoholic Fatty Liver Disease, Ostomies, Pancreatitis, Stress Management, Ulcer Disease, Ulcerative Colitis, Ulcerative Proctitis, and even more information online.



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**ASSOCIATE DIRECTOR** Kimberly Charbonneau  
**COMMUNICATIONS COORDINATOR** Susan Mersereau  
**COMMUNICATIONS ASSISTANT** Morgan Amber  
**OFFICE ASSISTANT** Jesse-Ann Demanche

### Ontario

**EXECUTIVE DIRECTOR** Melanie Chapman  
**TOLL-FREE** 855-848-4875

### Quebec & Atlantic Canada

**EXECUTIVE DIRECTOR** Gary G. Fabian  
**TOLL-FREE** 855-600-4875

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## BadGut? Good Advice



**PHONE** 604-875-4875  
**TOLL-FREE** 866-600-4875



**FAX** 604-875-4429  
**TOLL-FREE FAX** 855-875-4429



**EMAIL** [info@badgut.org](mailto:info@badgut.org)



**WEBSITE** [www.badgut.org](http://www.badgut.org)



**MAILING ADDRESS**  
 Gastrointestinal Society  
 855 West 12th Avenue  
 Vancouver, BC V5Z 1M9



**OFFICE LOCATION**  
 700 West 10th Avenue, Room 212  
 Vancouver, BC V5Z 1L5

**FOLLOW THE GI SOCIETY ON**





## President & CEO Report

### Gail Attara

The last few months of 2013 were a flurry of activity for the GI Society. Our successful fall event line-up included the annual Golf Marathon in Vancouver, the Inside Affairs in Vancouver, Toronto, and Montreal, and the Better Living Boomer Show in Toronto. You can read more about these functions on pages 10-11, 6-8, and 18 respectively.

My roles as Chair of the Best Medicines Coalition and CEO of the GI Society have brought me to a number of other health-care events in the community. I represented patient needs as a speaker at the Walrus Foundation Health Care Leadership Dinner in Toronto; as speaker at the Canadian Pension and Benefits Institute on *Sleepless Nights of Drug Plan Management* in Vancouver; as participant and speaker at CMA's Transforming the Health Care System meeting in Toronto; and as a participant in the Canadian Health Policy Assembly in Banff. In addition, I met with various MLAs, including the Health Minister, in Edmonton and was a participant and speaker at the Creating Synergy Health Coalition of Alberta's breakfast for MLAs.

Health Canada issued an important news release in December, in which I'm quoted regarding legislation related to patient safety and prescription drugs, see page 5. Patient Commando also recognized me recently on its website as one of the "Canadian Women Changing Healthcare".

We're sad to see a faithful employee leave the GI Society. Our Communications Coordinator, Susan Mersereau, moved on to pursue interests out of the country at the end of 2013. We'll miss you Susan!



## A Word from the Chairperson

### Bruce Good

What an exciting year this has been! I had a tremendous time at the Inside Affair in Toronto. Thank you for your continued support; your donations and participation allowed the GI Society to continue to grow and expand our reach through our many events, lectures, support groups, and other activities.

If you wish to contribute a financial gift, you can mail us a cheque, call 1-866-600-4875, or donate securely online at [www.badgut.org](http://www.badgut.org). See page 23 for more giving options.

Your gift will help sustain essential programs that support millions of Canadians living with these illnesses. All donations receive a charitable tax receipt.

## GI Society **Support Groups**

### **Inflammatory Bowel Disease (IBD) – Vancouver, BC**

7:00pm, third Wednesday of each month  
Raven Song Community Health Centre  
Room 101, 2450 Ontario St

### **Irritable Bowel Syndrome (IBS) – Toronto, ON**

7:00pm, fourth Tuesday of each month  
College/Shaw Library  
Meeting Room, 766 College St

### **Irritable Bowel Syndrome (IBS) – Vancouver, BC**

7:00pm, second Wednesday of each month  
Coquitlam Library (Poirier Branch)  
Poirier Room, 575 Poirier St

**\*Please call the GI Society office to check if the support group you are interested in attending is running for the month.**




Go to **SOSCuisine.com** to find the right GI meal plan for you and part of your subscription will go toward supporting the GI Society.

# Inside Tract®

This quarterly newsletter is a primary tool of the GI (Gastrointestinal) Society for delivering up-to-date medical information, in lay terms, to the Canadian public. Readership includes a mix of patients and their family, friends, and caregivers; health care professionals; and business professionals who are interested in the wellness of their employees. To subscribe for a low annual fee of \$20 (\$30 outside Canada), please visit our website, or complete and 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 occasionally 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 health care team and we advise seeking advice from a medical professional whenever a health problem arises.

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## Contributors

**EDITOR** Gail Attara

**ASSISTANT EDITOR** Susan Mersereau

**DESIGN** Kwynn Vodnak

**MEDICAL ADVISOR** Dr. James R. Gray

Morgan Amber

Darren Bounds

Melanie Chapman

Kimberly Charbonneau

Jesse-Ann Demanche

Jason Rosso

## TRANSLATION SERVICES PROVIDED BY:

Transvision Plus

416-524-8182, transvisionplusjosee@gmail.com

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## Guts

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President & CEO Report.....	3
A Word from the Chairperson.....	3
GI Society Support Groups .....	3
New Law Protects Patients.....	5
A Fundraising Hat Trick.....	6
Friends with Health Benefits.....	9
Golf Marathon Raises \$25,000!.....	10
What our Genes Reveal.....	12
Follow the Trend .....	14
Online Support from Young IBD Patients.....	14
Tales of Triumph: Darren Bounds.....	15
Gluten Free Spicy Harissa Chicken.....	17
Better Living Boomer Show.....	18
Children & Functional GI Problems.....	19
Managing GERD with PPIs: Benefits Versus Risks.....	20
Please GIVE.....	23
Subscription/Donation Form.....	23

# New Law Protects Patients



OTTAWA - December 6, 2013, The Honourable Rona Ambrose, Minister of Health, joined by MP Terence Young, today announced from the Children's Hospital of Eastern Ontario (CHEO) that the government is introducing new patient safety legislation, known as the Protecting Canadians from Unsafe Drugs Act (Vanessa's Law) as pledged in the 2013 Speech from the Throne.

"Canadians deserve to have confidence that the medicines they use are safe," said Minister Ambrose. "Today, we have introduced *Vanessa's Law*, a law that would protect Canadians and help ensure that no drug that is unsafe is left on store shelves."

This marks an important milestone in our government's commitment to patient safety, as announced in the 2013 Speech from the Throne.

The *Protecting Canadians from Unsafe Drugs Act (Vanessa's Law)* is named after Vanessa Young, who tragically died of a heart attack while on a prescription drug that later was deemed not safe and removed from the market. The Law would protect Canadian families and children from unsafe medicine by enabling the Government to:

- Require strong surveillance including mandatory adverse drug reaction reporting;
- Recall unsafe products;
- Impose tough new penalties for unsafe products, including jail time and new fines of up to \$5 million per day instead of the current \$5,000;
- Provide the courts with discretion to impose even stronger fines if violations were caused intentionally;
- Compel drug companies to revise labels to clearly reflect health risk information, including updates for health warnings for children; and
- Compel drug companies to do further testing on a product, including when issues are identified with certain at-risk populations such as children.

The Government of Canada consulted extensively with patients, healthcare providers, and industry on the issues addressed by this new legislation. These changes will build on our existing efforts to ensure that drug labels and safety information are easier to read and understand.

"This new legislation is a welcome arrival for our healthcare system," said Gail Attara, the Chair of the Best Medicines Coalition, a patient advocacy group. "It would give providers and hospitals better information to make the best choices when prescribing medications – which is good news for patients."

"It is difficult to overstate the impact this bill will have for Canadians who take prescription and over the counter drugs," said MP Terence Young. "It represents a quantum leap forward in protecting vulnerable patients and reducing serious adverse drug reactions. It is absolutely necessary to reduce deaths and injuries caused by adverse drug reactions, seventy percent of which are preventable, and will serve Canadians extremely well."

For more information on the *Protecting Canadians from Unsafe Drugs Act (Vanessa's Law) Amendments to the Food and Drugs Act (Bill C-17)*, please visit the Health Canada information and questions and answers web page.<sup>1</sup>

## Gail Attara's Note

When asked by the Federal Ministry of Health, it was a privilege to provide a quote for this important media announcement. I have been working with the Best Medicines Coalition on behalf of GI patients for more than a decade and specifically on this patient safety initiative. This new Act is a great step forward in ensuring safe and effective medications for patients.

## Photo:

The Honourable Rona Ambrose, Minister of Health, joined by MP Terence Young.  
© Health Canada

<sup>1</sup> <http://hc-sc.gc.ca/dhp-mps/legislation/unsafedrugs-droguesdangereuses-faq-eng.php>

## Media Release:

[http://hc-sc.gc.ca/ahc-asc/media/nr-cp/\\_2013/2013-174-eng.php](http://hc-sc.gc.ca/ahc-asc/media/nr-cp/_2013/2013-174-eng.php)

# A Fundraising Hat Trick

**WE RAISED  
\$210,000!**

**THE INSIDE AFFAIR & FÊTE GASTRONOMIQUE**



The GI Society's highly respected initiatives touch the lives of millions of Canadians affected by gastrointestinal and liver conditions. Everyone knows someone affected by a digestive disease or disorder, and yet this health area is rarely discussed and critically underfunded. The Inside Affair events in Vancouver and Toronto, and Fête GASTRONOMIQUE in Montreal this past October allowed those communities to come together and show support for this patient population, generating more than \$210,000 in essential new funds for the GI Society's charitable work.

At each event, a variety of entertainers delighted the crowds while attendees enjoyed exceptional food and refreshments. Gloria Tsang, a dietitian and founding editor at healthcastle.com, kicked things off in Vancouver as emcee at V by Earl's Restaurant in Yaletown. "I'm proud to be a friend to the GI Society," she said. "Our goals and strategies are much the same – we aim to provide simple, honest, evidence-based information that people know they can trust." All three of the other guest speakers in Vancouver were physicians: James R. Gray,

**VANCOUVER**



Vancouver Event Photos: © Mark Kinsler; Background image: © Kuzma; bigstockphoto.com; Hat Photo: © Life on White | bigstockphoto.com

gastroenterologist at the Vancouver General Hospital and Chair of our Medical Advisory Council; Riad Sherif B., President of Novartis Pharmaceuticals Canada Inc., and Treasurer of Canada's Research-Based Pharmaceutical Companies (Rx&D); and Anna Reid, family physician in Yellowknife, who is also the most recent Past President of the Canadian Medical Association. We hosted the Vancouver event along with the CSIR.

A few days later, the Fête GASTROnominique took place at le Challenger in Saint-Laurent. Denis Boucher, a partner at National PR, emceed the evening with optimism and compassion. Guest speakers included Claude Perron, Second Vice President at Rx&D, and Christiane Laberge, a family physician and media personality who introduced a premiere viewing of the GI Society's new French language video on IBD. As of this printing, it has already received thousands of views on YouTube.

Gary Fabian, the GI Society's Executive Director for Quebec and Atlantic Canada, explained that GI and liver patients are among the most vulnerable in our society. Many of these socially stigmatized diseases are invisible but have debilitating

effects on a person's life. The GI Society's vital awareness and knowledge transfer activities provide the community with hope, opportunity, and help. The GI Society is also in a unique position to bring patients' most important concerns all the way up the line, through to health care providers, industry, and government decision-makers. Sustainability of this work is crucial.

The following week, deep in Toronto's Distillery District at the Fermenting Cellar, supporters gathered once again for a very special Inside Affair evening. John Crean, Managing Partner at National PR, led the proceedings, which included talks from Janssen Inc. president, Chris Halyk, and YouTube legend Dr. Mike Evans, who introduced a viewing of the GI Society's collaboration, a video on IBD. Since its release last summer, it has garnered more than 16,000 views! The positive feedback for this awareness video has been abundant. Rosalind O'Connell, a Toronto attendee, said, "Dr. Mike Evans was an engaging speaker who is so adept at communicating complex medical concepts in a way that everyone can understand. His whiteboard videos are both educational and entertaining and he should be

# MONTREAL



Montreal Event Photos: © Pierre Girard

commended for his contributions to health care both in Canada and abroad. It was a pleasure to be part of such a well-organized and informative event!”

The GI Society’s President & CEO, Gail Attara, also spoke, explaining how all of the important activities of the organization start by putting patients first. Funds raised through these events will support the GI Society’s core knowledge transfer, awareness, and community outreach programs, including patient information pamphlets, online information and outreach, public lectures, the *Inside Tract*® newsletter, and numerous other crucial initiatives.

We thank the organizations and individuals who recognized the work of the GI Society by sponsoring the event, by purchasing tickets, or by volunteering. Our major sponsors for all three events included, in alphabetical order, Aptalis Pharma, Astra Zeneca Canada Inc., Janssen Inc., Roche Canada, Rx&D, and Takeda Canada Inc. Sponsors of individual events included Canadian Medical Association, LifeScan, A. Lassonde, Le Groupe Maurice, Optimer Pharmaceuticals Canada Inc.,

Shoppers Drug Mart Inc., Vertex Pharmaceuticals (Canada) Inc. We also thank National PR and Xerox for their in-kind sponsorships, as well as the dozens of local businesses who contributed high-calibre raffle prizes.

**Please Give**

Please consider donating to the GI Society. There are many ways to give, including a one-time donation, monthly giving, legacy gifts, and other options. Send your cheque today or make a credit card donation through our secure online portal at [www.badgut.org](http://www.badgut.org). If you are interested in including the GI Society in your will, call our office to make an appointment to talk personally with our CEO, Gail Attara. Together, we can take charge of managing GI and liver health, diminish the social stigmas around these illnesses, and improve patient access to health care in Canada.

The next Inside Affair and Fête GASTRONomique fundraisers will take place in October 2014. We will update our website with details throughout the year.

TORONTO



Toronto Event Photos: © Martin Cho



# Friends with *Health* Benefits

Most people in the developed world no longer live in homes comprised of traditional extended-family units. In fact, we often don't even live near our family members. There are fewer younger people getting married, divorce rates are increasing, and some people don't ever tie the knot. Statistics reveal that more folks than ever are living alone and the consequences of loneliness are becoming increasingly common.<sup>1</sup> This is perhaps especially relevant among those living with chronic gastrointestinal and liver conditions, as they are often highly stigmatized and feel restricted to their homes for a number of reasons (fear of public stigma, lack of public washroom access, debilitating pain or discomfort associated with their condition, and so on).

Since the 1980s, researchers have been noticing that patients who have fewer or weaker social relationships tend to die earlier, of any cause, compared to those who have large and strong social relationships.

A recent meta-analysis combined results of 148 studies from numerous regions, which included 308,849 participants, to assess how strong of a role social relationships play in our risk of mortality.<sup>1</sup> The information collected about the various participants included cause of death, initial health status, pre-existing health conditions, and social factors. Overall, they found that participants had a 50% increased chance of survival during the study period if they had strong social relationships. They found this was true across all ages, genders, initial health status, causes of death, and follow-up periods.

Some of the studies analysed simple data, such as whether a person lived alone, while other studies evaluated social interactions that were more complex. The study authors say the combined increased survival rate would likely have been much higher if more of the studies had included more complex social interaction measures.

Remarkably, social relationships affect our risk for mortality on par with other, better-known risk factors, such as physical illness, smoking, alcohol abuse, etc. The study authors say their results suggest that health providers, at minimum, must start thinking about social relationships as seriously as they do other factors that affect a patient's health outcome.

Another study that looked at the same issue from the contrasting view – focussing on social isolation – came to similar conclusions concerning the weight of this risk factor on death. In this 2013 study, published in the *American Journal of Public Health*,<sup>2</sup> researchers used a formula to determine an individual's level of social integration or isolation and compared this to other known mortality risk factors. The study included 20,050 adult participants drawn from the US community at large rather than hospitalized or institutionalized individuals, between 1988 and 1994. A poor social isolation score was associated with mortality at about the same level as smoking and at an even greater level than some other traditional mortality factors. The researchers were surprised to find that social isolation was an independent predictor of mortality, whereas obesity and high cholesterol were not.

The researchers propose a number of mechanisms that might explain why social integration has such an important impact on our health. People who are more socially integrated, they say, tend to have better access to health resources and information about healthy behaviours. Social relationships also help to protect us from emotional stress, which plays a significant role in our health. Some studies also suggest that socially isolated individuals are more likely to experience inflammation, and that they produce fewer antibodies and are less likely to resist viral infection compared to socially integrated individuals.

Mitigating this risk factor might include psychotherapy to strengthen social supports. Currently, health care providers are much less likely to ask patients about their social situation than about physical symptoms. Researchers suggest a routine, standardized list of questions about a patient's social situation might work well. This could help health care providers identify patients who have this additional social isolation risk factor and incorporate this information into an individual treatment plan.



"A friend is one that knows you as you are, understands where you have been, accepts what you have become, and still, gently allows you to grow."

**William Shakespeare**



1 Holt-Lunstad J *et al.* Social Relationships and Mortality Risk: A Meta-analytic Review. *PLoS Med.* 2010;7(7): e1000316. doi:10.1371/journal.pmed.1000316.

2 Pantell M *et al.* Social Isolation: A Predictor of Mortality Comparable to Traditional Clinical Risk Factors. *American Journal of Public Health.* 2013;103(11):2056-62.



# GI Society Golf Marathon Raises \$25,000!

**The Gastrointestinal Society's annual Golf Marathon brought the community together in Surrey to show support for the millions of Canadians affected by GI and liver conditions. It took place on Saturday, October 5, at the Northview Golf and Country Club and raised \$25,000.**

This year's 22 participating golfers included doctors, patients, community members, and other supporters who have been raising pledges all year for the essential work of the GI Society. Unlike in a traditional golf tournament, they played through many rounds, hitting the green starting at 8 a.m., with some golfers swinging right through until dusk. Collectively they played 1,508 holes – an average of four rounds per person!

GI or liver illness touches almost everyone either directly or through someone we know. This year's participants had many reasons for taking part in the Golf Marathon. We'd like to tell you about four of them:

**KATHY CHAMPION:** "I have worked with the GI Society team at different times over the years and appreciate their expertise and dedication in supporting patients suffering with GI and liver disorders. I also personally know many who suffer from GI issues and this team has been very helpful for them."

Kathy works for Sanofi Canada, a generous supporter of the Golf Marathon for the past three years. This year, Kathy and four other employees golfed all day and raised \$2,300, which Sanofi matched for a total contribution of \$4,600.

**BRETT KUSELER:** "This year has thrown a real curve ball my way. In the month of April I ended up in the hospital for 29 days. My ulcerative colitis flared up quite badly and led to other complications that required a lot of attention and I am still recovering from the ordeal. Needless to say, I learned more about living with an inflammatory bowel disease and wanted to do my part to help others who also live with this frustrating illness."

First-time participant, Brett Kuseler, was truly the hero of the day. At \$2,900, he raised the most in pledges and played an unbelievable 151 holes, for which



we rewarded him with the coveted hand-carved Golf Marathon trophy. He will keep it at his home or office for six months.

**GREG EMRY:** “My wife of 42 years, Patty, lives with GI complications. They have affected every day of her life.”

One of the Marathon’s most enthusiastic supporters and also a golfer in this year’s event was Patty Emry, a life-long GI patient who continues to defy the odds by living an incredibly active and inspiring life. We talked about her unique story in the *Inside Tract*® newsletter, Issue 186. Patty and Greg both golfed in the Marathon. In addition to raising cash donations, Patty spent much of the summer talking to many of the businesses who donated fabulous prizes we used to reward all of our participating golfers at the end of their Golf Marathon day.

### Thank YOU

The GI Society thanks all those who shared in this year’s event, starting with our golf committee Chair, Jennifer Lowther, as well as the golfers, donors, volunteers, and everyone else who supported the event in some way. All participants received lovely prizes for their efforts. We’re grateful to our generous prize donors, in alphabetical order: Accent Inns, Anton’s Pasta, Arts Club Theatre Company, BC Lions, Black Bond Books, BodyCo Fitness, Capilano Suspension Bridge Park, CIBC, Everything Wine Inc., Golf Town, H.R. MacMillan Space Centre, Jockey Ladies Clothing, Les Promotions Atlantic Inc., Mayfair Lakes Golf Course, Metropolis at Metrotown, Musqueam Golf & Learning Academy, Nicole Van Damme’s Massage Studio, Nintendo of Canada Ltd., Paddlewheeler Riverboat Tours, Patty Emry, Purdy’s Chocolates, Rivershore Estates & Golf Links, Rupert Whiting, Rx&D, Science World, Shoppers Drug Mart, Spirit Ridge Vineyard Resort and Spa, Steveston Seafood House, Stormtech Performance Apparel, The Old Spaghetti Factory Canada Ltd., The Rock Wall Climbing Gym, Vancouver Aquarium, Vancouver Art Gallery, Vancouver Maritime Museum, Vancouver Symphony Orchestra. We also want to thank Gabe Pedrosa, who volunteered his professional photography expertise to capture the day’s fun, following our golfers around the green during perfect weather.

### What’s Your Reason for Giving?

As a registered charity, fundraising events such as this one are vital to sustaining our activities. Not a golfer? You can support the essential work of the GI Society anytime by making a donation through our secure online giving portal at [www.badgut.org](http://www.badgut.org), by setting up monthly giving, or by creating a unique event in your own community. Contact us if you have any ideas to discuss ([info@badgut.org](mailto:info@badgut.org)).

Photos 1-6, 8-9 provided by Gabe Pedrosa

[www.badgut.org](http://www.badgut.org)



# What Our GENES Reveal

Scientists are continuously unlocking more and more secrets about the human genome, and the information we are gaining illustrates how our genes influence so much of our daily lives, from what we look like to how our bodies react to certain medications, and even what sort of foods we prefer. In the past, we have discussed how genetics have a huge effect on the development of many gastrointestinal (GI) disorders, such as celiac disease and inflammatory bowel disease, which both have genetic links. In this article, we will review some interesting things your genes dictate that can improve understanding in the GI and liver health field.

## PPI Effectiveness

Proton pump inhibitors (PPIs) are a class of medication used to treat gastroesophageal reflux disease (GERD), ulcer disease, and *H. pylori* infection by reducing the amount of gastric acid produced in your stomach. (See pages 20-22.) While these are typically the most effective treatment for individuals with gastric acid-related ailments, some patients find that typical doses are not very effective, or that the benefits wear off faster than they should.

Some of our genes control the manufacture of certain enzymes that

metabolize and eliminate drugs and other substances from our bodies. One such gene creates enzymes that cause a rapid breakdown of PPI medications. Individuals with this genetic marker may require more frequent PPI dosing than typically prescribed, or might need to add other types of medications. This is important information to know, since a large amount of the population (35-70%, depending on ethnicity) could have this variant, and need medications adjusted accordingly.



## Protection from Norovirus

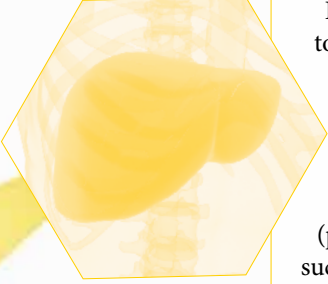
You've likely been there before, a family member, colleague, or classmate suddenly falls ill, and before you know it you and most of the people around you are suffering from vomiting, diarrhea, and abdominal pain. You may know this as its colloquially dubbed term "the stomach flu". However, it's actually an infection by a norovirus called viral gastroenteritis (vomiting is not a symptom of the flu). Maybe you also know someone (or perhaps you are the lucky one) who rarely seems afflicted with this

disease. This person is likely resistant to the most common strain of norovirus.

Your genes control whether or not you are resistant to norovirus. Currently, we know definitively that there is one genetic marker that can show if someone is resistant to norovirus. However, there may be other genes that also make someone resistant to the virus, so not having the gene does not mean that someone cannot resist that virus.




## Hepatitis C Treatment



In past newsletter articles we have told you how there are treatments available for hepatitis C that can actually cure the disease. We know that the protease inhibitors that cure hepatitis C should be combined with pegylated interferon (peginterferon) and ribavirin to be successful. We also know that some people respond very well to pegylated interferon and ribavirin, whereas other people don't seem to respond at all.

An interesting genetic discovery shows that we may be able to tell who is likely to respond to this treatment method without having to use trial and error, but simply by looking at their genes. Certain genetic markers make individuals less likely to adequately respond to these medications. Knowing how individuals respond to medications ahead of time can greatly improve treatment for patients.

## Got a Sweet Tooth?




Ever wonder why it is that some people seem to go crazy for sweet food while other people could take it or leave it? You might think it's because of how they were raised; what they were allowed to eat as children, what foods they grew up loving, that sort of thing. However, there are actually some genetic links to whether or not you develop a sweet tooth. Researchers have found certain genetic markers that are connected to

an increased consumption of sugar.

There are also genes that control how we taste bitter foods. Grapefruit and black coffee's bitter tastes result from a variety of chemical compounds. Our genes dictate how sensitive we are to these compounds. This is why some people might detest certain bitter foods, while others wonder what all the fuss is about, and find these foods enjoyable. However, enjoying bitter foods does not necessarily mean you can't taste the bitterness; some people simply like bitter foods.

## Dairy Diarrhea



While most have no problem consuming dairy products, some people can experience great intestinal distress (including diarrhea, gas, and bloating) from even relatively small amounts of these foods. The problem comes from a sugar in milk called lactose, which is broken down by an enzyme called lactase. Almost everyone is born with the ability to make lactase since lactose is a component of human breast milk. After infancy, some people lose this and become unable to digest the lactose in common dairy products; these people are lactose intolerant.

Researchers have found a genetic marker that can predict whether someone is genetically capable of producing lactase after infancy or not. This is

important because some people can become lactose intolerant by not consuming lactose for a long time, but are able to slowly incorporate dairy into their diet and regain their ability to produce lactase. In other individuals, no amount of training their bodies will help them manufacture their own lactase. These people are better off taking lactase supplements before consuming dairy or consuming dairy-free alternatives. Being able to take a quick test that lets you know if you are genetically lactose intolerant or not can help you make the right choices for your physiology.

For more information on lactose intolerance, contact our office or visit [badgut.org](http://badgut.org).



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## Follow the Trend

If one of your favourite pastimes is shopping at consignment stores, you can now support the GI Society at the same time. Trend Trunk is a Canadian-based company that facilitates the buying and selling of fashionable clothes and accessories right from the comfort of your own home. This online marketplace (trendtrunk.com) allows individuals to ‘cash in their closet’ by selling items to other shoppers. Once your item sells, you can either have the money deposited into your bank account or browse other Closets for new additions to your own wardrobe.

As a socially responsible company, Trend Trunk

created Closets & Causes, where sellers are able to select what amount (up to 100% of net proceeds) they wish to donate to a Canadian Registered-Charity or non-profit cause of their choice. Of course, by designating your contribution to the GI Society, you’ll get a tax receipt. In addition, when you’re browsing the marketplace, you can narrow your search for items that, once sold, will benefit a specific cause.

The GI Society is pleased to participate in such a creative fundraising initiative and we hope our fashion-forward supporters will take this push to start their spring-cleaning early!

TREND TRUNK

## Online Support from Young IBD Patients

Inflammatory bowel disease (IBD), which mainly includes Crohn’s disease and ulcerative colitis, can affect many aspects of a patient’s life, including body image, romantic relationships, education, and employment. Researchers in the UK recently studied activities within an online support group for IBD patients between 16 and 29 years of age.<sup>1</sup>

More than two thirds of the 1,500 analyzed messages in this study consisted of personal stories, which members shared to provide context for questions about their disease or in response to other members’ queries. Previous research has documented the therapeutic benefit of writing about personal disease experiences.

Two key advantages to participating in an online support group are that members can access online support at any time and there is no need to travel away from home, factors that are particularly helpful if an individual is not feeling well.

The Internet also offers an extra barrier of anonymity. In this case study, members had to login to the group with a password, but remained anonymous to each other. Researchers found that, likely because of this process, negative or antagonistic messages were rare and the researchers found no obvious examples of misinformation. The study authors found that it

was rare for any two persons to share information solely between each other. Instead, several members would jump into a discussion to add elements of their own stories or context knowledge, which could have safeguarded somewhat against negative and inaccurate information.

The main limitation of this study was that the subjects were unaware that researchers were analyzing their messages, which meant that they could not collect data regarding any perceived or real benefits from individual members who used the site. The study authors recommend further investigations into this and other varieties of online support.

1 Malik S *et al.* The Therapeutic Potential of the Internet. *Gastroenterology Nursing*. 2011;34(6):439-48.



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LAST SUMMER, WE ASKED CANADIANS TO SHARE THEIR STORIES OF LIVING WITH INFLAMMATORY BOWEL DISEASE. WE THANK EVERYONE WHO SUBMITTED A STORY, POEM, OR VIDEO. WE WISH WE COULD PUBLISH EVERYTHING YOU SUBMITTED, BUT WE HOPE YOU WILL ENJOY THE FOUR PIECES WE SELECTED. WE WILL PUBLISH THESE TALES OF TRIUMPH, SPACE PERMITTING, OVER THE NEXT FOUR ISSUES. CONGRATULATIONS TO THE LUCKY THREE SUBMITTERS WHOSE NAMES WE SELECTED THROUGH A RANDOM DRAW TO WIN A BRAND NEW IPAD AIR: DARREN BOUNDS, ERIN STEVENHAAGEN, AND JENNIFER R.



# Tales of Triumph

## It's Inevitable

### Discussing Crohn's Disease

**DARREN BOUNDS**



The biggest challenge I've faced with Crohn's disease is talking about it with friends, family, and coworkers. They all know something is wrong and they want to show support, yet it's the last thing I want to discuss. They ask me, "You look so thin; is everything okay? Why don't you come out for dinner? You can't drink beer – are you on some kind of a cleanse?" Like many patients with other diseases, I feel tired and unwell. All I want is for it to go away. None of the Crohn's disease-related symptoms are pretty or pleasant to chat about.

To communicate with others, I make analogies to something that they can relate to – "I have Crohn's disease. It's like having the flu. You feel exhausted, antisocial, and unwell." Or, "It's like having food poisoning for weeks on end, multiple times a year. Your body rejects any food or drink that you ingest – even water sometimes! After a few days of having a flare, you begin to feel fatigued and grumpy." Once my friends and family understand more about what it is I am facing, then I can spend less energy on explaining it and more energy on coping with the disease.

#### The Emotional Impact of Crohn's Disease

Lately I've begun to realize the emotional wear and tear Crohn's disease has on me. The physical effects are pretty clear: significant weight loss, exhaustion, fatigue, horrible cramps, flu-like achiness, dehydration – the list goes on. But it's the emotional effects

that creep up and begin to have a strong impact on my life: lack of desire to socialize or go out for some exercise, moodiness, worrying about going on a vacation and having access to a washroom within minutes. That two-hour bus ride to the Mexican ruins doesn't sound too appealing if your stomach is rumbling. Or how about being excited for days about a beautiful forecast for the weekend and how it will make for a great day at the beach, only to wake up on Saturday feeling physically horrible and having to stay home all day? That's not exactly the way you want to relax and rejuvenate on the weekend.

#### How I Cope

I'm learning to slow down and rest more. I am also constantly finding new ways to keep my energy and interest levels up. I've become more flexible with planning my time and I've found new interests. If I can't go out for lunch with a friend, then I catch up with them by phone on a day when I feel energized. If I can't go for a workout, then there's no need to sweat it; I make sure there's a great book to dig into. If I know I can't have an ice cream sundae for dessert, then I find something I like and can eat, like applesauce with cinnamon. Lately I've been making applesauce with different types of apples and devouring gallons of it. Yum! ☺ You can find joy in life, no matter how tough it gets. Your lifestyle will change because of this disease, but your passion for life doesn't have to.

#### Thank you!

The GI Society thanks Janssen Inc. for sponsoring our Tales of Triumph Campaign.







# Spicy Harissa Chicken

by Jason Rosso

- 1 boneless, skinless chicken breast
- 4 tsp Harissa marinade, divided
- 3 tbsp shredded Fontina cheese
- ¾ cup cooked quinoa
- 1 cup small carrots and green beans (or other seasonal vegetables)
- 3 tbsp lemon mint yogurt\*
- Optional red pepper (julienne) and radish sprouts for garnish

1. Pound the chicken breast and grill until cooked.
2. While the chicken is cooking, prepare the quinoa, following the instructions on the package.
3. Once cooked, brush the chicken breast evenly on both sides with 3 teaspoons of the Harissa marinade.
4. Broil in a preheated oven for about one minute.
5. Slice the chicken breast in half to achieve two equal-sized pieces. Lay the chicken breast pieces on top of each other with the Fontina cheese in the center. Set aside.
6. Sauté or steam the seasonal vegetables.
7. Place the quinoa in the center and the vegetables around, as shown in the image.
8. Drizzle the plate with the remaining teaspoon of the Harissa marinade.
9. Place the Harissa chicken stack on top of the quinoa.
10. Garnish chicken with a dollop of lemon mint yogurt, followed by julienne red pepper and radish sprouts.

\* 3 tablespoons of plain yogurt, with the juice of half a small lemon and 4-5 mint leaves thinly chopped

## Harissa Marinade

- 1 tbsp crushed red chilli flakes
- 1-2 whole garlic cloves
- 1 tsp coarse salt
- ½ cup olive oil
- ½ tbsp cumin
- ½ tbsp coriander
- ½ tbsp lime juice
- ½ tbsp ancho chilli powder

1. In a blender, add the crushed chili flakes, garlic, salt and oil, and puree until smooth and consistent in colour.
2. Add the remaining ingredients and blend for 2 minutes to ensure even consistency.

This recipe makes enough marinade for 6 servings of Spicy Harissa Chicken!

Refrigerate the leftover marinade immediately in an airtight container for up to 2 weeks.

Photos: © Milestones



# Better Living Boomer Show

**Melanie Chapman**, Executive Director, Ontario  
Gastrointestinal Society



Last November, the GI Society supported the 3-day Boomer conference in Toronto, where we collaborated with the Colorectal Cancer Association of Canada and the Crohn's and Colitis Foundation of Canada on a presentation of the interactive Giant Colon exhibit. It took place at the International Centre in Mississauga at the Better Living Boomer portion of the International Home Show.

Approximately 4,000 people journeyed through the forty-foot long, eight-foot high inflatable colon on an educational tour of the pathologies that can form inside the human colon, including colorectal cancer, IBD, diverticular disease, and others. We received a warm reception from the crowd as our three organizations came together to convey a united message of improved GI health and wellness for all. What better way to get the conversation started than with a giant inflatable colon?

The GI Society was there all four days with copies of the *Inside Tract*® newsletter, BadGut® Basics pamphlets, and other knowledge transfer materials, all of which were a huge hit. I met many individuals who were extremely thankful for the information we provide. Many wanted to know more about us, and how we can help them along their personal journeys with

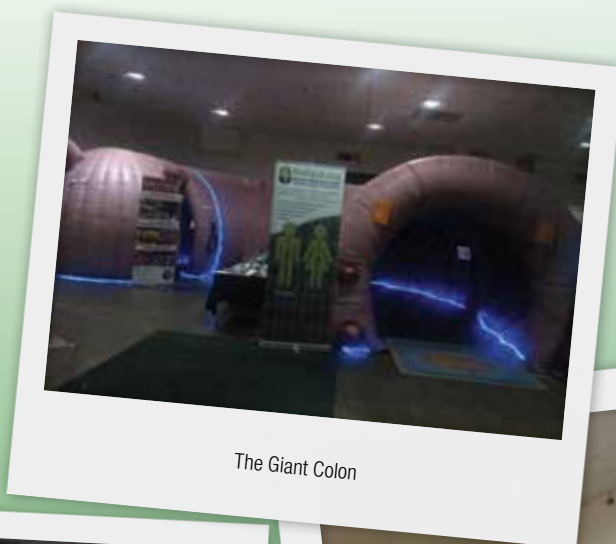
GI and liver illness. I was also encouraged by stories of triumph and perseverance as I met some delightful new friends. It was a wonderfully educational experience for everyone involved.

Paul Lafrance, host of HGTV's *Decked Out Decks* and *Deck Wars*, walked through the colon calling it "quite the experience" and one he "will never forget." He also mentioned the importance of what we were doing to the crowd that gathered to hear his seminar that same day, urging them to stop by the Giant Colon and chat with us. Bryan Baeumler from HGTV's *Disaster DIY*, *Leave it to Bryan*, and *House of Bryan* also stopped by with his family to walk through the colon and take some of the GI Society's information after a quick chat with me. It was exciting to have these local celebrities get behind the cause and truly appreciate what we are trying to accomplish.

The Giant Colon provided us with a new platform from which to reach more Canadians so we can offer our knowledge transfer materials while informing them on the importance of colorectal cancer screening. We were proud to be a part of such an educational exhibit and we look forward to collaborating on similar demonstrations in the future.



... with Laurie Middleton-Crump from  
our Ontario Fundraising Cabinet




The Giant Colon



... with Paul Lafrance (HGTV)



... with Bryan Baeumler (HGTV) discussing  
the GI Society's services



# Children & Functional GI Problems

Most gastrointestinal (GI) conditions fall into two categories: organic diseases and functional syndromes. Organic diseases have measurable physiological changes, such as the villi damage caused by gluten in celiac disease and the intestinal inflammation found in Crohn's disease. Functional GI disorders, such as irritable bowel syndrome (IBS), functional dyspepsia, and functional abdominal pain, can cause symptoms that are often debilitating, but they are not currently associated with any physical damage. These functional symptoms can be especially stressful for children since they are less able to cope with the challenges of GI illness, as well as challenging for their parents when physicians cannot identify an organic cause for their child's discomfort or pain.

## IBS Prevalence in Children

Researchers estimate 13-20% of Canadians have IBS and studies suggest that it might be just as prevalent in children as it is in adults. One study involving 345 children found that 22.6% of them had IBS according to the ROME III diagnostic criteria. These children were more likely to suffer from constipation-predominant IBS and to have parents with IBS or mothers who suffer from depression. They also found that more than 80% of the children who met the criteria for IBS also met the criteria for functional dyspepsia.<sup>1</sup>

## Functional Abdominal Pain and Mental Health

Children with functional GI problems can also suffer from mental health problems, such as anxiety and depression. Although it is often unclear which develops first, it might be a self-propelling cycle. A painful bowel movement can increase an already tense child's anxiety, leading to bathroom avoidance, leading to increased episodes of constipation and abdominal pain, leading to more fear and avoidance, and so on.

In a 2013 study published in the journal *Pediatrics*,<sup>2</sup> researchers tracked 332 children with functional abdominal pain (FAP) and 147 children as control subjects until early adulthood. At follow-up, 41% of the children who had FAP at the start of the study met the standard criteria for functional GI disorders (IBS and functional dyspepsia) as adults. About 62% of these participants had an anxiety disorder

at some point during the study, compared to 43% of participants who had FAP in childhood but who did not have a functional GI disorder at follow-up, and only 20% of those who were in the control group. The study suggests there might be a related cause of childhood anxiety and functional abdominal pain and that anxiety that begins in childhood along with FAP often continues into adulthood, even if the abdominal pain resolves.

Another study (conducted through phone interviews with the parents of 105 children) found that 40% of children with anxiety issues had symptoms of a functional GI disorder, compared with just 6% of the control group.<sup>3</sup>

## Treatments

Treatment for functional GI issues might include symptom management and counselling. It is important to stress that although there is no underlying organic disease in functional GI conditions, the pain these children experience is real.

One recent study of 78 children with IBS found that trimebutine maleate, a smooth muscle relaxant used in adult IBS, is also effective for youths, and has approval for patients over the age of 12.<sup>4</sup>

Further research is required into the potential benefit of psychological therapies for GI problems, not because they are "all in your head" but because current evidence shows anxiety and depression might have a physical effect on the gut. One recent study showed that cognitive behavioural therapy, which helps children with anxiety issues to view neutral situations as not threatening and reduce fear by encouraging healthy situations (e.g., school, socializing, or going to the bathroom) also reduces functional abdominal pain.<sup>4</sup> Researchers are optimistic this therapy might also help anxious children who have functional constipation.

Treatment of functional GI conditions with antidepressant medications is helpful for some adults. However, experts do not recommend these therapies for children because they are at an increased risk for side effects, such as suicidal thoughts.<sup>5</sup>

See your family physician if your child complains of frequent abdominal pain and watch for signs of anxiety and depression.

- 1 Karabulut GS *et al.* The Incidence of Irritable Bowel Syndrome in Children Using the Rome III Criteria and the Effect of Trimebutine Treatment. *Journal of Neurogastroenterology and Motility.* 2013;19(1):90-93.
- 2 Shelby GD *et al.* Functional Abdominal Pain in Childhood and Long-term Vulnerability to Anxiety Disorders. *Pediatrics.* 2013;132:475-482.
- 3 Waters AM *et al.* Functional Gastrointestinal Symptoms in Children with Anxiety Disorders. *Journal of Abnormal Child Psychology.* 2013;41:151-163.
- 4 Levy RL *et al.* Cognitive-Behavioral Therapy for Children With Functional Abdominal Pain and Their Parents Decreases Pain and Other Symptoms. *American Journal of Gastroenterology* 2010;105:946-956.
- 5 Tan E *et al.* Antidepressants for functional gastrointestinal disorders in children. *Canadian Family Physician.* 2013;59:263-4.

# MANAGING GERD WITH PPIs



# BENEFITS VS RISKS

Gastroesophageal reflux disease (GERD) occurs when the upper portion of the digestive tract is not functioning properly, causing stomach contents to flow back into the esophagus. Recurring heartburn is the most common symptom; others include the sensation of food or liquid coming up into the throat and a sour taste, as well as several less common symptoms. Recurring symptoms affect up to 29% of Canadians.

Proton pump inhibitors (PPIs) are a class of medications that have emerged as the most effective therapy for relieving symptoms, improving quality of life, and healing and preventing damage to the esophagus. Physicians also prescribe them for ulcer disease and functional dyspepsia. PPIs work by blocking an enzyme in the lining of the stomach that is necessary for acid secretion. Side effects that some patients report include headache, diarrhea, constipation, abdominal pain, and nausea. They usually resolve on their own and patients can usually carry on taking their PPI medication.<sup>1</sup>

With an increasing number of individuals in Canada taking PPI medications, sometimes on a long-term basis, studies have been focussing on potential risks associated with short- and long-term PPI use.<sup>1,2</sup> Researchers have identified a range of potential issues that can arise over time, including bone fractures, vitamin B12 deficiency, low magnesium levels (hypomagnesemia), cardiovascular events, and *C. difficile* infection. While research is ongoing, this article will focus on the more common issues that you might have heard something about.

Despite some alarming headlines, what most of the current research shows is that there are some statistically significant associations between PPI use and several health issues but the full importance of these associations is not yet well understood. Experts consider PPI medications to be generally safe, even for long-term use. They recommend that physicians use rigorous procedures to ensure accurate diagnosing of GERD, prescribe the lowest effective dose, and monitor patients regularly, especially if they have risk

factors for other health problems or are receiving treatment for other medical conditions (comorbidities). As with all prescribing decisions, physician and patient must discuss how the benefits of PPI therapy might or might not outweigh the potential risks.

## Osteoporosis and Fractures

In 2013, at Health Canada's request, PPI manufacturers added a warning to their product monographs regarding an association between PPI use and fracture risk.<sup>3</sup> Current research suggests a small increased risk for fractures of the hip, wrist, or spine in patients on PPI therapy. The risk is slightly higher for patients taking multiple daily doses of PPIs and those using PPI therapy for a year or longer.

One frequently-cited study that included 1,211 postmenopausal women showed omeprazole, a type of PPI, to be an independent factor in increased spinal (vertebral) fractures.<sup>4</sup> Many other studies have also found an association between some PPI medications and osteoporosis-related fractures (osteoporosis is a disease that causes weakening of the bones, often resulting in fractures) as well as non-osteoporosis-related fractures. However, results are inconsistent, the associations are not strong, some of the studies are of low quality, and researchers don't yet know exactly how PPI medications could cause bone problems, although impaired intestinal absorption of calcium, folate, vitamin B12, and other nutrients is suspected.<sup>1</sup> Some studies show a dose-related association, others show a duration-related association, and yet others show no association with PPI dose or duration and fracture risk. The evidence is conflicting.

The authors of a recent literature review, published in the *Journal of Clinical Gastroenterology*,<sup>1</sup> say that most studies showing an association between PPIs and fractures are observational studies, which cannot alone indicate that PPIs are the cause. An observational study looks at available data (e.g., hospital

## PPIs Available in Canada

- Dexilant® (dexlansoprazole)
- Losec® (omeprazole)
- Nexium® (esomeprazole)
- Pantoloc® (pantoprazole sodium)
- Pariet® (rabeprazole)
- Prevacid® (lansoprazole)
- Tecta® (pantoprazole magnesium)



Photos (top down): © Christy Thompson | dreamstime.com, © Stacy Barnett | Fotolia.com

admissions, diagnoses, prescriptions) and attempts to account for certain associations seen in that data. The review authors say that researchers might confuse patients' risk factors with other known risk factors for fractures in some of the observational studies.<sup>1</sup> For example, if a study is missing some important data that could create a more complete picture of a patient's health (e.g., timing of PPI therapy or presence of other risk factors for fractures, such as smoking, age, family history), they might mistakenly put more emphasis on PPI use as a cause. The review authors suggest that nutritional deficiency, rather than PPI use, could be the real cause of these associated fractures in many cases.<sup>1</sup>

Experts don't currently recommend that physicians monitor individuals on PPIs for bone mineral density or suggest they take calcium supplements. Continuing research will likely provide additional clarity.

### Vitamin B12 Deficiency

A 2013 study, published in the *Journal of the American Medical Association*,<sup>5</sup> compared 25,956 patients with a diagnosis of vitamin B12 deficiency to 184,199 patients without the deficiency. All subjects were patients of the Kaiser Permanente Medical Clinic in Northern California between 1997 and 2011. Patients who took PPIs for more than two years were 65% more likely to have a vitamin B12 deficiency. The risk was strongest for individuals on long-term PPI therapy, those taking stronger doses, and among women. The study authors say their results don't suggest any other risk factors to account

for the association. However, the risk is fairly low.... if 67 individuals take PPIs for two years, then 1 of them will have vitamin B12 deficiency.

A recent literature review describes several previous studies with comparable results,<sup>2</sup> but this

most recent study is the largest to date and the first study based on a broad community population rather than focussing on elderly individuals. Symptoms of vitamin B12 deficiency might include numbness or tingling in the hands, legs, or feet; balance problems; anemia; jaundice; cognitive difficulties, such as memory loss, paranoia, or hallucinations; and weakness or fatigue. If left untreated, some of these symptoms and complications can be irreversible. Treatment might include a simple B12 supplement.

### Hypomagnesemia

Current scientific literature on this issue consists of several single case reports and a small case series.<sup>1,2</sup> A number of these studies show that PPI-related hypomagnesemia is unlikely to occur until at least one year of PPI therapy and most studies show no

dosing-related factors. The elderly and those on diuretic and/or digoxin therapy are at a further increased risk. The causal mechanism might have to do with impaired intestinal absorption. Physicians don't routinely check for low magnesium in PPI users and some researchers think PPI-related hypomagnesemia could occur more often than is documented.

Symptoms of hypomagnesemia include loss of appetite, vomiting, tiredness, weakness, a change in personality, involuntary muscle contractions (tetany), or tremors. There are numerous conditions associated with hypomagnesemia, such as malnutrition, parathyroid gland disorders, alcoholism, diabetes, and others. Experts advise health care providers be aware of potential hypomagnesemia and take note of any presentations, especially among individuals with other risk factors.

Treatment is individualized. In many patients, a simple magnesium supplement will correct the problem.<sup>6</sup> Discontinuing PPI therapy and switching to histamine-2 receptor antagonists (H2RAs) for GERD treatment can be helpful for some patients,<sup>7</sup> but not if the reason the patient was on PPI therapy was to protect against ulcer-related bleeding (such as those taking NSAIDs), as H2RA medications do not provide the same protection.<sup>1</sup>

### Cardiovascular Effects Related to Clopidogrel

Plavix® (clopidogrel) is a prescription blood thinner medication that helps prevent blood clots in individuals with a history of stroke or heart attack (cardiovascular illness). Many studies have emerged showing an increased risk of cardiovascular events in patients taking some PPI medications (specifically omeprazole) along with clopidogrel.<sup>1</sup> The concern is that PPIs might make clopidogrel less effective, resulting in increased risk of cardiovascular events in already-vulnerable patients.<sup>1</sup> In 2011, Health Canada advised physicians to avoid prescribing omeprazole and some other PPIs to patients taking clopidogrel. Previously, Health Canada had discouraged any PPI use with clopidogrel, but narrowed the recommendation to include only those PPIs for which there is significant evidence.<sup>8</sup> It is likely these recommendations will continue to evolve with future research findings.

A recent randomized control trial (the most reliable type of study), which included 3,873 patients, showed no increase in adverse cardiovascular events with omeprazole and



clopidogrel co-therapy.<sup>9</sup> Unfortunately, the researchers had to halt this study before completion due to lack of funding. The study authors had intended to follow up with participants for two years or until 143 cardiovascular events occurred (whichever came first), much longer than the 180 days and 106 cardiovascular events covered in the final study. If they had been able to complete the study, they would have had additional cardiovascular events to consider in their analysis.

According to one recent literature review, the available studies are inconsistent, with some studies showing a weak association for only some PPIs.<sup>1</sup> Further, research does not yet show a convincing cause/effect relationship. While researchers agree that it is theoretically possible for PPIs to interfere with clopidogrel, research thus far has failed to show such an interaction with any convincing evidence.<sup>1</sup> Other studies have shown an increase in cardiovascular events associated with PPI use even without the use of clopidogrel. The review authors suggest that other cardiovascular risk factors that PPI users tend to have more often than the average person are what likely puts them at a high risk of cardiovascular events and not the PPI medication itself.<sup>2</sup>

Additional, high-quality research is required in this area. Overall, experts recommend that patients with a history of cardiovascular problems, or risk factors for such events, should continue to receive PPI medications if they need them, at the lowest effective dose, and only for as long as needed.<sup>1,2</sup>

### C. difficile Infection

In 2013, Health Canada released an advisory of a possible association between the use of PPIs and an increased risk of *Clostridium difficile* infection (CDI).<sup>10</sup> *C. difficile* is a bacterium that can cause diarrhea and may lead to more serious intestinal conditions. Factors known to increase the risk of infection include advanced age, severe underlying illness, hospitalization, and antibiotic use.

A number of studies have suggested a possible link

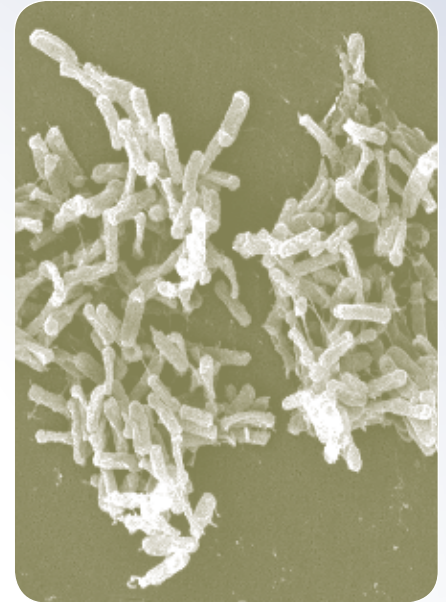
between PPIs and an increased risk of CDI, particularly in vulnerable patients and those taking higher doses.<sup>2,11</sup> PPIs increase gastric pH, which allows any *C. difficile* that is present to proliferate. In a meta-analysis of 30 trials including 202,965 patients, CDI was significantly greater in patients who had received PPI therapy.<sup>2</sup>

Health Canada continues to monitor this issue, evaluating the scientific evidence as it emerges. Symptoms of CDI include severe watery or bloody diarrhea (at least three bowel movements per day for two or more days), fever, loss of appetite, nausea, and abdominal pain or tenderness. Persons taking a PPI who develop diarrhea that does not improve should speak to a health care professional immediately.

### Conclusion

A growing body of research shows associations between PPI therapy and a number of health issues. While researchers are developing and testing theories, most studies do not yet demonstrate an obvious causal relationship with PPI medications and many do not account for all possible risk factors. Another challenge is that not all PPI medications have the same level of potential risk. Additional, high-quality research will expand our understanding of the associations researchers are observing.

Physicians must be prudent in their prescription decisions, especially among vulnerable patients. If you require a PPI to control GERD symptoms, and the benefits outweigh the potential risks, you should continue to take your medication as prescribed. If you notice any abnormal symptoms, such as those described in this article, then make an appointment to discuss them with your physician.



1 Chen J *et al.* Recent Safety Concerns with Proton Pump Inhibitors. *Journal of Clinical Gastroenterology*. 2012;46(2):93-114.

2 Wilhelm SM *et al.* Perils and pitfalls of long-term effects of proton pump inhibitors. *Expert Review of Clinical Pharmacology*. 2013;6(4):443.

3 Health Canada. Media Release. *Proton pump inhibitors: risk of bone fractures*. 2013-04-04. Available at <http://www.healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2013/26523a-eng.php>. Accessed 2013-12-15.

4 Roux C *et al.* Increase in vertebral fracture risk in postmenopausal women using omeprazole. *Calcified Tissue International*. 2009;84(1):13-9.

5 Lam JR *et al.* Proton Pump Inhibitor and Histamine 2 Receptor Antagonist Use and Vitamin B12 Deficiency. *Journal of the American Medical Association*. 2013; 310(22):2435-42.

6 Culpepper BL *et al.* Long-Term Consequences of Chronic Proton Pump Inhibitor Use. *US Pharmacist*. 2013;38(12):38-42.

7 Health Canada. Proton pump inhibitors: hypomagnesemia accompanied by hypocalcemia and hypokalemia. *Canadian Adverse Reaction Newsletter*. 2011;21(3). Available at [http://www.hc-sc.gc.ca/dhp-mps/medeff/bulletin/carn-bcei\\_v21n3-eng.php](http://www.hc-sc.gc.ca/dhp-mps/medeff/bulletin/carn-bcei_v21n3-eng.php). Accessed 2013-12-15.

8 Health Canada. Media Release. *Plavix (blood*

*thinner): New recommendations for use with proton pump inhibitors (antacids)*. 2011-09-22. Available at <http://www.healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2011/13545a-eng.php>. Accessed 2013-12-15.

9 Bhatt DL *et al.* Clopidogrel with or without Omeprazole in Coronary Artery Disease. *New England Journal of Medicine*. 2010;363(20):1909-17.

10 Health Canada. Media Release. *Proton pump inhibitors (antacids): possible risk of Clostridium difficile-associated diarrhea*. 2012-02-16.

11 Howell MD *et al.* Iatrogenic gastric acid suppression and the risk of nosocomial *Clostridium difficile* infection. *Archives of Internal Medicine*. 2010;170(9):784-90.

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\_\_\_\_\_  
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](http://www.badgut.org).

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