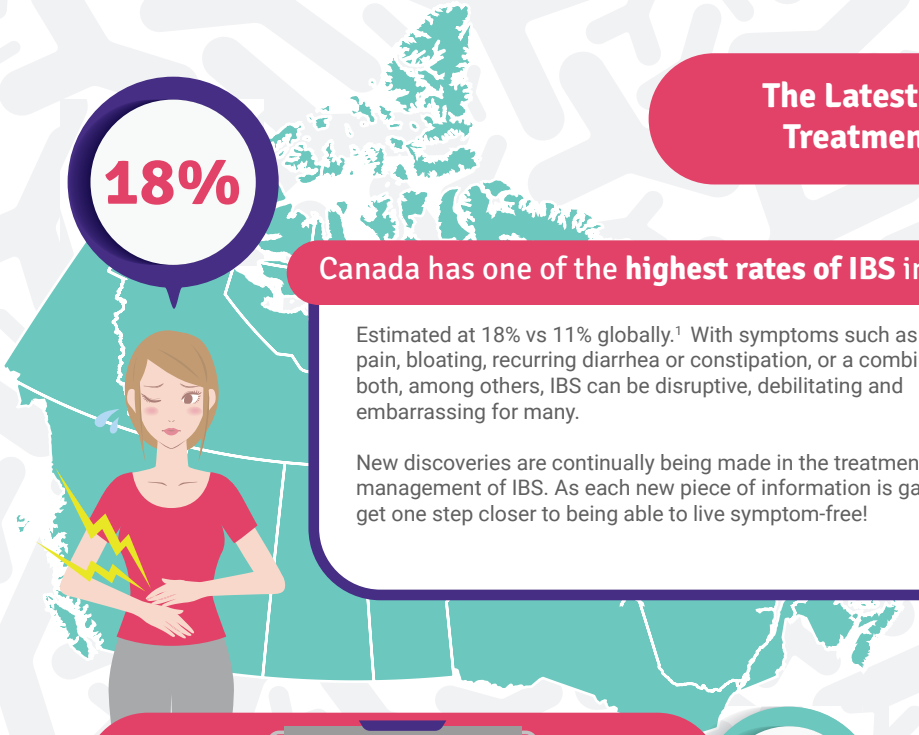
# The Latest Clinical approaches to the Treatment and Management of IBS




## Canada has one of the **highest rates of IBS** in the world

Estimated at 18% vs 11% globally.[1] With symptoms such as abdominal pain, bloating, recurring diarrhea or constipation, or a combination of both, among others, IBS can be disruptive, debilitating and embarrassing for many.

New discoveries are continually being made in the treatment and management of IBS. As each new piece of information is gathered, we get one step closer to being able to live symptom-free!

**Some of the latest headlines in IBS Include:**

1. Long Term Benefits of Cognitive Behavioral Therapy for IBS[2]
2. How a gut infection can lead to Irritable Bowel Syndrome (IBS)[5]
3. A new bacterium on the block: How *Brachyspira* may be a factor for IBS[6]

## 1 Long Term Benefits of Cognitive Behavioral Therapy for IBS[2]

**The Study:**

In 2015, the ACTIB trial led by Professor Hazel aimed to address the clinical-effectiveness and cost-effectiveness of cognitive behaviour therapy (CBT) for irritable bowel syndrome (IBS). [4]

**The Results:**

After one year, CBT tailored specifically for IBS and delivered over the telephone or through an interactive website was more effective in relieving the symptoms of IBS than current standard care (with no psychological therapy) alone!

Following up with patients 24 months after the trial they found that benefits continued two years after treatment despite patients having no further therapy after the initial CBT course. [2]

**40-60%**

**Of IBS Cases are accompanied by:**

- Depression
- Anxiety
- Post Traumatic Stress Disorder

Because **anxiety** and **depression** increase the chances of developing **IBS symptoms**, and can also be a consequence of IBS, some people are caught in a vicious cycle of worsening physical and psychological symptoms.[3]

Due to this, Cognitive Behavioural Therapy (CBT) has been tested and consistently demonstrates significant effects on IBS symptoms and quality of life.

# 2 How a gut infection can lead to Irritable Bowel Syndrome (IBS)[5]

**The Study:**

In this study from Rockefeller University, researchers conducted an experiment with mice, looking at why neurons in the gut die and how the immune system normally protects them. [5]

To understand the effects of an infection on the nervous system, Mucida and his colleagues gave mice a weakened form of *Salmonella*. They found that the *Salmonella* infection created a long-lasting reduction of neurons. The reduction was a result of neuron cells expressing two genes, Nlrp6 and Caspase 11, which can contribute to a specific type of inflammatory response. This response prompted the neuron cells to endure a form of programmed cell death. When the researchers manipulated mice to eliminate these genes in neuron cells, they saw a decrease in the number of neurons dying. [5]

***Salmonella***

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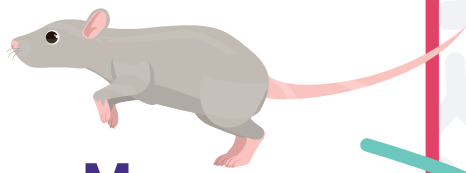
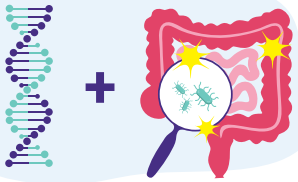
Mice recieve *salmonella*, and as a result, the Nlrp6 and Caspase 11 genes in the mice cause inflammatory response



**Mouse**



**Nlp6 & Caspase 11 genes cause an inflammatory response to the infection**

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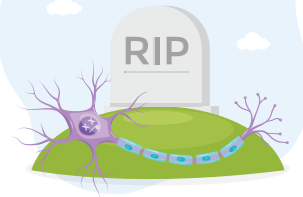
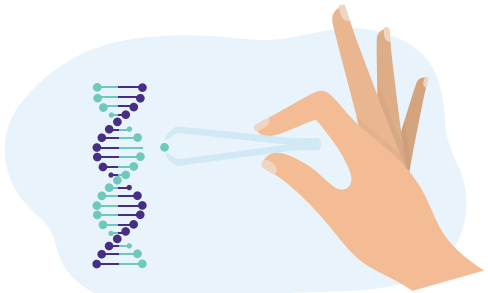



**As a result, neurons die**

**The Result:**

It's not exactly clear yet why inflammation causes neurons to die, but scientists already have clues suggesting it might be possible to interfere with the process. The key may be a specialized set of gut immune cells, known as muscularis macrophages. In their recent report, the team demonstrate how macrophages come to the neurons' rescue during an infection, improving this aspect of IBS.

Using what we learned about the macrophages, one could think about ways to disrupt the inflammatory process that kills the neurons. For example, researchers believe it might be possible to develop better treatments for IBS that work by boosting polyamine (an organic compound responsible for cell growth and survival) production, perhaps through diet, or by restoring microbes in our gut. [5]



**Eliminate Nlrp6 and Caspase 11 genes in neurons in the mice .**

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**The result is a decrease in the number of neurons dying.**

# 3 A new bacterium on the block: How *Brachyspira* may be a factor for IBS[6]

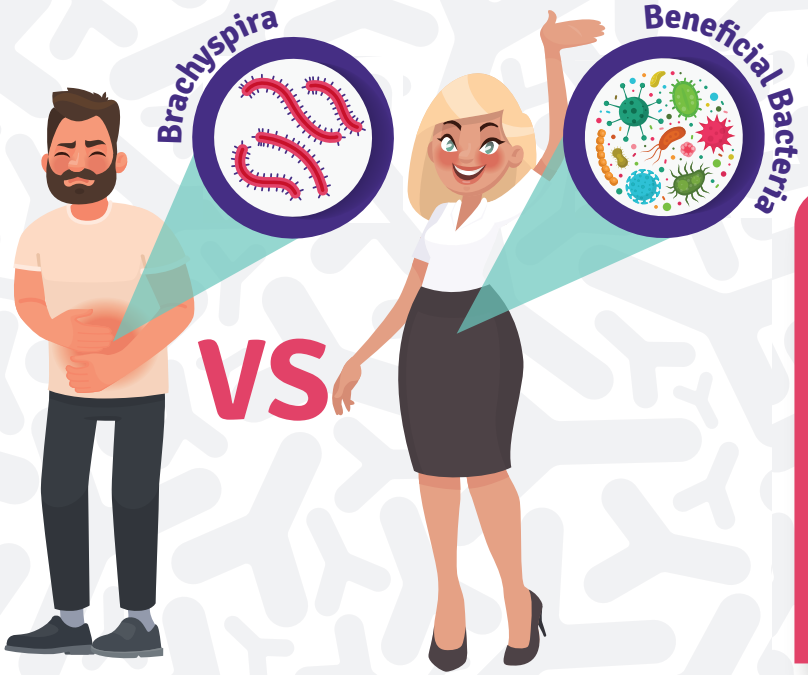
**The Study:**

The study from the University of Gothenburg was based on tissue samples taken from patients who suffered from IBS, in addition to healthy volunteers who were used as controls in the study. [6]

**The Result:**

Nearly a third of all patients with IBS were found to have *Brachyspira* in their gut. Not a single healthy volunteer (those not living with IBS) had any *Brachyspira* present.

German researchers at the University of Gothenburg stumbled across a strange type of bacteria in the intestines – bacteria not typically found in the gut. It's called *Brachyspira*, and this study has uncovered a correlation between people with IBS (especially those with diarrhea as a symptom) and the presence of this bacteria. [6]




Since *Brachyspira* is a pathogenic bacterium, treatment with antibiotics seems like an obvious solution. However, a pilot study attempting to treat IBS patients with *Brachyspira* using antibiotics was unsuccessful. This is because *Brachyspira* takes refuge inside intestinal goblet cells (cells that secrete mucous and protects the intestinal wall). As a result, any treatment that fails to permeate this layer won't work!

If more extensive studies can confirm the association between *Brachyspira* and IBS symptoms, other antibiotics and probiotics may become possible treatments in the future. Since the study shows that patients with this bacterium have gut inflammation resembling an allergic reaction, allergy medications, or dietary changes may also be other potential treatment options. [6]


**References:**

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