

# Targeting Maternal Gut Microbiome to Improve Mental Health Outcomes

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## What is Perinatal Depression and Anxiety (PDA)?

Anxiety and depression that occur during pregnancy and the postpartum year is called PDA. It affects up to a quarter of women in Canada each year and can have serious consequences for the whole family.

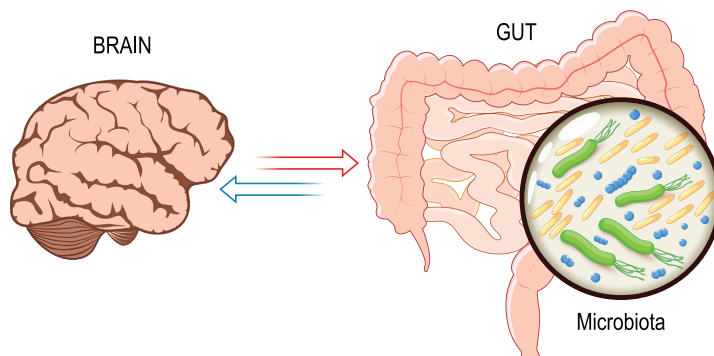
Women with a history of anxiety and/or depression, have a *much higher risk* of PDA with each pregnancy.



## What is microbiome?

Microbiome is the collection of trillions of bacteria, viruses, fungi and their genetic products that exist in all our body parts. Depending on the type of bacteria present, and the molecules they produce, the microbiome dictates how healthy or sick we feel.

## GUT-BRAIN AXIS



## What is the Gut-Brain-Axis (GBA)?

GBA is the two-way communication system between the microbiome in our gut and the emotional and cognitive centers in our brain. Our mental health influences the health of our gut microbiome, and likewise, our gut microbiome influences our mental health.

## Does that mean you can use GBA to help mental health?

The microbiome is very responsive to our diet, lifestyle, stress, supplements, and medication we take. There is growing interest in researching how to improve mental health by making our gut microbiome healthier. This is a new, but promising area in mental health research.

## Can GBA be used to prevent PDA?

There is evidence that healthy adults, have more beneficial bacterial in their gut microbiome. There are many ways to make your gut microbiome healthier.

We are interested in whether we can prevent or reduce the severity of PDA in pregnancy by improving the microbial profile. This has not been studied before.

## How will you change my microbiome?

In our study we want to explore the ways in which we can improve the microbial profile. We aim to do this by using different combinations of treatments with fish oil, probiotics, and dietary recommendations. We would like to see how each of these methods change your microbiome, and whether PDA can be prevented. Since this is the first time, we are studying this, we also want to understand how easily pregnant women can use these methods to change their microbiome.

## How will you check my microbiome?

We will need to analyze your stool to identify the type and diversity of bacteria residing in our microbiome. The stool collection, is easy, pain free, and can be done from the comfort of your home.

## What happens during this study?

You will be screened for eligibility and based on your responses you will be randomly assigned to one of four groups. Depending on which group you get assigned to, you will receive:

1. Fish oils, Probiotics & Dietary changes
2. Fish oil & Probiotics
3. Fish oil & Placebo
4. One-time dietary screening and feedback (Control Group)

- » ALL women will complete 6 study visits (One every 3 months)
  1. Two visits during 3rd trimester
  2. Four visits after delivery
- » ALL participants will complete the same questionnaires and provide stool samples.

## How long is each study visit?

Almost all study visits can be carried out virtually. You will provide the stool sample prior to or after the study visit using our take home kit.

The total expected time is 45-60 minutes per session.

## What will I receive as part of the study?

All supplements and study material are provided at no cost to you.

At the completion of each study visit, a \$20 gift card will be provided for your time. You will also receive feedback from a dietician regarding your diet, and ways you can change your food choices for healthy eating.

## Interested to learn more?

Contact our research team:

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**CCNM**

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