

Blood-Brain Barrier Study (BBB Study) - Information Form

Principal Investigator: Dr. Cynthia Calkin

What is the BBB Study?

The purpose of our research is to explore certain brain and memory changes in people who have bipolar disorder with and without insulin resistance, people who have a psychotic disorder with and without insulin resistance, people who have insulin resistance and no psychiatric illness, and healthy volunteers without insulin resistance.

Insulin resistance (IR) is associated with inflammation in the body, having a direct effect on the brain, possibly causing the blood–brain barrier (BBB) to become leaky. The BBB is a membrane that normally prevents certain chemicals and proteins from entering the brain. When the BBB is leaky, however, chemicals and proteins can enter the brain and cause inflammation within the brain. We think this may have an effect on the course of bipolar illness symptoms and memory over time, as well as interfere with the effectiveness of medicines used to treat BD. Also, there have been a number of different chemicals or proteins called biomarkers that have been associated with early and later stages of BD. No one has examined whether these biomarkers change with the development of IR in bipolar patients, and this is also something we plan to study.

Potentially, treating IR in these patients may provide a new strategy for treating bipolar patients who have developed a more chronic course of illness with cognitive difficulties, and have become less responsive to available treatments. If our hypothesis is correct, this will have an immediate impact on the treatment of bipolar patients who struggle with becoming completely well again.

What should I expect when participating?

The study procedures will take about 4 hours in total to complete which will include:

- a study assessment interview, including mood rating scales
- 2 different brain imaging procedures that will look at brain structure and brain activity related to brain function
- collection of blood samples to measure inflammatory markers, blood glucose, kidney and thyroid function, and cholesterol levels to allow us to study possible factors contributing to the course of illness, brain and memory alterations
- cognitive assessment which involve pencil and paper tasks to look at your verbal learning abilities and current working memory

What about personal expenses for participating in the study?

If you need help paying for parking or bus fare to attend study appointments, please provide us with your receipts so that we can reimburse you.

Ethical approval

This study has been reviewed by the Nova Scotia Health Authority Research Ethics Board and has received approval.

Would you like to find out more about the BBB study? If you are interested in participating, **please contact Kathleen Cairns (kathleena.cairns@nshealth.ca) or Peter Menzies (jpeter.menzies@nshealth.ca) by email or by phone: (902) 473-8040.**