



SCOTTISH RITE CHARITABLE FOUNDATION  
VALLEY LIAISON COMMITTEE



We trust all our members are aware that the Scottish Rite Charitable Foundation supports research to help “Solve the Puzzles of the Mind”, but we are not as aware of what that research might look like. Here is another one of the ways the Foundation assists.

This one involves research conducted by Dr. Ryan Van Lieshout at McMaster University in Hamilton where he is an Assistant Professor of Psychiatry and Neuroscience and the Associate Director of the Neuroscience Graduate Programme. One may wonder how the impact of maternal exercise and diet on child cognition and behaviour relates to solving the puzzles of the mind. We already know that smoking and drinking alcohol during pregnancy can have a serious negative effect on the cognitive functioning of newborns but this research goes further into examining the effects of diet and exercise on the cognitive functioning of infants. Here is Dr. Van Lieshout’s explanation of his research.

“While frank intellectual disability affects up to 3% of individuals, more subtle problems with cognition and learning can affect the school performance and health of a significant number more. In fact, difficulties with cognition, emotion, and/or behaviour affect up to 20% of Canadian children. Early onset of cognitive delays reduces school readiness and can result in poorer mental and physical health across the lifespan. Indeed, a 15 point increase in childhood IQ can reduce the likelihood of having a chronic illness in adulthood by one third.

Both genetic and environmental factors are involved in the development of intellectual ability. Micronutrient deficiencies, maternal infection during pregnancy and their interaction have been hypothesized by some to be the leading causes of intellectual disability worldwide. Since neurodevelopment may be most efficiently optimized by early intervention, it is important to identify strategies that can be applied in the prenatal period to enhance cognitive functioning.

Despite these facts, it is still not well known if helping women to optimize their diet and physical activity levels during pregnancy can improve the intellectual functioning of their offspring. Demonstrating that a maternal pregnancy nutrition + exercise intervention can improve cognitive scores in offspring could provide us with important insights into the etiology of intellectual functioning, as well as the opportunity to prevent intellectual disability or reduce its severity.

To date, no adequately powered randomized controlled trials (RCT) of maternal nutrition + exercise interventions applied during pregnancy have been examined for their effects on offspring cognition. To address this gap, we are conducting a study that is assessing the cognitive functioning of the 12 month old children born to the 400 women randomized to the treatment (nutrition + exercise intervention) and usual care groups of a study called Be Healthy In Pregnancy (BHIP) and conducted at McMaster University.”

This is just one of many researchers working to solve the puzzles of the mind which we in Scottish Rite can be proud to support. For more information on the research being carried out, check out the Foundation website at [www.srcf.ca](http://www.srcf.ca) and remember to use the blue envelope to make your donation!