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Project: Inflammation, stress and microbiota as mediators between obesity and brain functioning during adolescence.
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Summary of the project.
Obesity is a health problem with a high prevalence in industrialized societies. Previous neuroimaging and behavioral studies suggest that participants with obesity exhibit lower cortical thickness in prefrontal regions along with lower outcomes in executive functions. These differences seem to be present in children and adolescents, highlighting the need to develop preventive measures targeting those ages. However, the exact physiopathological mechanisms that underlie the relationship between obesity and behavioral and brain changes remain largely elusive. The present project is aimed at characterizing the role of the gut microbiota in obesity and in the neurobehavioral differences associated with obesity and also seeks to clarify the possible mediating role that inflammatory processes and stress might play in the relationship between obesity and changes in brain function. We will recruit 75 participants with obesity and 75 normal-weight participants (12-19 years old, 50% females). We will collect clinical data, cognitive and personality variables and biological samples for the characterization of the microbiome profile, inflammatory-related values and physiological stress-related values. We will perform multiple mediator analyses to test whether gut microbiota, inflammation and stress can act as mediating factors in the relationship between obesity and neurobehavioral changes. The results of the project will be applied in public health politics and in clinical strategies seeking to prevent negative consequences associated with obesity.

We accept **master students** (Master of Neurosciences and Master of General Health Psychology mainly) to work in our project and carry out their final thesis of master. Interest in Neuropsychology and Neuroimaging is required. There is the possibility to continue with doctoral studies in our research team.