Neurocognitive impact of diet-induced obesity during adolescence

In addition to metabolic and cardiovascular disorders, obesity is associated with cognitive disorders in humans. Its growing prevalence in adolescents is particularly alarming since this is a period of ongoing maturation for brain structures (such as the hippocampus and the amygdala) required for cognitive processing. Using animal models, we demonstrated that high-fat diet (HFD)-induced obesity during adolescence has more detrimental impact on memory and plasticity than HFD intake at adulthood. Surprisingly, we found that adolescent obesity affects both memory and plasticity in a bidirectional way, impairing hippocampal function but enhancing amygdala function. As mechanisms involved, we revealed that deregulation of glucocorticoid (HPA axis) and endocannabinoid systems as well as changes in amygdala-hippocampal connectivity are central in these memory alterations. These results suggest that adolescence represents a period of increased vulnerability to the effects of diet-induced obesity that may promote maladaptive cognitive processing later in life.

Jeudi 11 janvier 2018 à 11h

Amphithéâtre Fisher, Local TR-54,
Pavillon CHUL du CRCHU de Québec - Université Laval