



Research Week 2020

Functional Connectivity of Sensory Processing Disorders

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Abstract

Approximately 95% of children with Autism Spectrum Disorder (ASD) report a sensory processing disorder, such as hypersensitivity to sound and touch. Recent work suggests that auditory hypersensitivity may be explained by connections between auditory cortices and the amygdala. Resting-state functional connectivity MRI will be used to examine these proposed connections in children with ASD and in Japanese macaques that display component behaviors of ASD. Using a novel machine learning approach, connectivity results between humans and macaques will be directly compared to ascertain whether the macaque model appropriately captures the sensory processing connectivity profile of children with ASD. Importantly, the macaque model uses maternal high-fat diet, a common prenatal risk factor of ASD, to generate symptoms of ASD in the offspring. Thus, if the machine learning comparison succeeds, it would additionally implicate maternal high-fat diet specifically in the development of sensory processing disorders in individuals with ASD.

