

Abstract

Population Neuroscience of the Growing Brain

In this lecture, Professor Tomas Paus will focus on developmental processes underlying the growth of the human cerebral cortex. He will begin by introducing the concept of population neuroscience as a cross-disciplinary endeavour aimed at identifying factors shaping the human from conception onwards. He will then touch briefly on his previous work on pregnancy and brain growth, followed by the genetic studies that used data obtained in large datasets to reveal molecular architecture underlying the tangential growth of cerebral cortex.

Next, Professor Paus will discuss his team's findings obtained with "virtual ontogeny" that support a neurodevelopmental model of vulnerability to mental illness whereby prenatal risk factors acting through cell-specific processes lead to deviations from typical brain development during pregnancy.

Professor Paus will conclude with the most recent work from his laboratory on the relationship between fetal growth and the tangential expansion of the human cerebral cortex in times of food scarcity and abundance.