

# Center for Music in the Brain guest talks w.

**Linnea Karlsson, MD, PhD**

Department of Child Psychiatry FinnBrain Birth Cohort  
Study, Institute of Clinical Medicine, University of Turku

**& Hasse Karlsson, MA, MD, PhD,**

Director, Turku Brain and Mind Center



**Date: Monday, November 30th, 2015**

**Time: 10:30-12:30 AM**

**Place: Meeting room, 5<sup>th</sup> floor, building 10G,  
MIB/AUH, Nørrebrogade 44**

The Center for Music in the Brain is honored to host Dr. Linnea Karlsson and Dr. Hasse Karlsson from the Turku Brain and Mind Center, University of Turku in two talks:

## **GUT MICROBIOME – A TARGET FOR INTERVENTIONS?**

**Abstract:** Animal research has provided evidence that the composition of the gut microbiome (GM) is related to neurodevelopmental outcomes. It is also known that several environmental factors, such as stress, influence the GM composition and its developmental trajectories (Clarke et al., *Acta Paediatr* 2014;103:812-19). Existing human data is scarce, but suggest that maternal prenatal stress is related to infant GM composition (Zijlmans et al., *Psychoneuroendocrinol* 2015;53:233-245) and that infant GM composition, in turn, is related to child temperament (Christian et al., *Brain Behav Immun* 2015;45:118-27). A possibility to treat human adult depressive traits with multispecies probiotics (Steenbergen et al., *Brain Behav Immun*. 2015 Aug;48:258-64) points out the potential for intervention development targeting the GM (Slyepchenko *CNS Neurol Disord Drug Targets* 2014;13:1770-8639).

The FinnBrain Birth Cohort Study is a pregnancy cohort focusing on the effects of early life stress (ELS) on child brain development ([www.finnbrain.fi](http://www.finnbrain.fi)). In the presentation, we will introduce a Focus Cohort study investigating the associations between prenatal stress exposure and infant GM composition as well as the links between the GM composition and infant emotion regulation development (e.g. temperament, attention). The concept of gut-brain axis, the influence of stress on its functioning, and the potential for targeting GM in prevention and treatment of diseases (e.g. depression) is discussed.

## **BRAIN PLASTICITY: EFFECTS OF PRENATAL STRESS EXPOSURE AND ADULT PSYCHOLOGICAL INTERVENTIONS**

**Abstract:** Neuroplasticity, the brain's ability to reorganize itself by forming new neural connections throughout life, is a fascinating phenomenon. We have collected a large birth cohort ([www.finnbrain.fi](http://www.finnbrain.fi)) (N= over 4000 families) which focuses on the effects of prenatal stress on brain development of the offspring. In this talk I will present preliminary data from this study. Additionally I will present studies on the plastic effects of psychotherapy on brain. One of these studies measured changes in the 5HT-1A receptor densities and was performed in Turku.

### **ALL ARE WELCOME**

For more information about the guest talks,  
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