



Département de psychiatrie
Centre de neurosciences psychiatriques
Site de Cery
CH-1008 Prilly - Lausanne

Centre de Neurosciences Psychiatriques

CNP SEMINAR

ANNOUNCEMENT

Thursday, April 6, 2017, 11:00 a.m.

“Reduced sleep spindles in schizophrenia: A treatable endophenotype that links risk genes to impaired cognition?”

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Although schizophrenia is defined by waking phenomena, abnormal sleep is a common feature. In particular, there is accumulating evidence of a sleep spindle deficit. Sleep spindles correlate with IQ and are thought to promote long-term potentiation and enhance memory consolidation. I will review evidence that reduced spindle activity in schizophrenia is an endophenotype that impairs sleep-dependent memory consolidation, contributes to symptoms and is a novel treatment biomarker. Studies showing that spindles can be pharmacologically enhanced in schizophrenia and that increasing spindles improves memory in healthy individuals suggest that treating spindle deficits in schizophrenia may improve cognition. Spindle activity is highly heritable and recent large-scale genome-wide association studies have identified schizophrenia risk genes that may contribute to spindle deficits and illuminate their mechanisms. My talk will highlight the importance of deficient sleep-dependent memory consolidation among the cognitive deficits of schizophrenia and implicate reduced sleep spindles as a potentially treatable mechanism. The ultimate goal of this research program is to forge empirical links in causal chains from risk genes to proteins and cellular functions, through to endophenotypes, cognitive impairments, symptoms and diagnosis, with the hope of advancing the mechanistic understanding and treatment of schizophrenia.

Selected publications:

1. Demanuele et al. **Coordination of Slow Waves With Sleep Spindles Predicts Sleep-Dependent Memory Consolidation in Schizophrenia.** SLEEP, Vol. 40, No. 1, 2017
2. Fabio Ferrarelli and Giulio Tononi. **What Are Sleep Spindle Deficits Telling Us About Schizophrenia?** Biological Psychiatry October 15, 2016; 80:577–578
3. Dara S. Manoach, Jen Q. Pan, Shaun M. Purcell, and Robert Stickgold. **Reduced Sleep Spindles in Schizophrenia: A Treatable Endophenotype That Links Risk Genes to Impaired Cognition?** Biological Psychiatry October 15, 2016; 80:599–608