



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

Centre de Neurosciences Psychiatriques

CNP SEMINAR

ANNOUNCEMENT

Friday, March 16, 2012, 11:00

“Psychobiological mechanisms of habitual and compulsive self-administration of drugs.”

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Our increasing understanding of the psychological mechanisms involved in the transition from controlled to habitual compulsive drug use, the hallmark of drug addiction, relies on animal models in which the underlying behavioural construct reflects some of the main features of drug addiction in humans, such as foraging for the drug during extended periods of time, habitual drug seeking behaviour and drug seeking or drug taking behaviours that are maintained despite adverse consequences. We have placed great emphasis on the development of behavioural procedures whereby animals not only self-administer drugs, but pathologically seek and take drugs in a way that resembles the clinical condition in human drug addicts. Thus, over the last ten years we have developed models in rats that specifically address the development of habitual drug seeking behaviour, compulsive cocaine seeking and taking behaviour, and even addiction-like behaviour. In this lecture will be presented new insights into the neurobiological transitions occurring within the corticostriatal circuitry that are associated with the instantiation of an incentive compulsive habit. Among these neurobiological adaptations to chronic exposure to addictive drugs a large impetus will be put on the progressive shift from an accumbens core - basolateral amygdala - dorsomedial striatum network to accumbens core - dorsolateral striatum in the control over drug seeking.

Recent publications:

1. Dilleen, R., Pelloux, Y., Mar, A. C., Molander, A., Robbins, T. W., Everitt, B. J., Dalley, J. W., and Belin, D. (2012). **High anxiety is a predisposing endophenotype for loss of control over cocaine, but not heroin, self-administration in rats.** *Psychopharmacology* (Berl)
2. Badiani, A., Belin, D., Epstein, D., Calu, D., and Shaham, Y. (2011). **Opiate versus psychostimulant addiction: the differences do matter.** *Nat Rev Neurosci* 12, 685-700.
3. Belin, D., Berson, N., Balado, E., Piazza, P. V., and Deroche-Gamonet, V. (2011). **High-Novelty-Preference Rats are Predisposed to Compulsive Cocaine Self-administration.** *Neuropsychopharmacology* 36, 569-579.
4. Belin, D., and Everitt, B. J. (2010). **The Neural and Psychological Basis of a Compulsive Incentive Habit.** In *Handbook of basal ganglia structure and function*, 20, Editors Steiner, H., and Tseng, K., (Elsevier, ACADEMIC PRESS).
5. Belin, D., and Everitt, B. J. (2008). **Cocaine-Seeking Habits Depend upon Dopamine-Dependent Serial Connectivity Linking the Ventral with the Dorsal Striatum.** *Neuron* 57, 432-441.
6. Belin, D., Balado, E., Piazza, P. V., and Deroche-Gamonet, V. (2009). **Pattern of intake and drug craving predict the development of cocaine addiction-like behavior in rats.** *Biol Psychiatry* 65, 863-868.