

Syndrome de Prader Willi, parallèle avec les troubles psychiatriques

Perspective de recherche sur les cellules souches pluripotentes induites

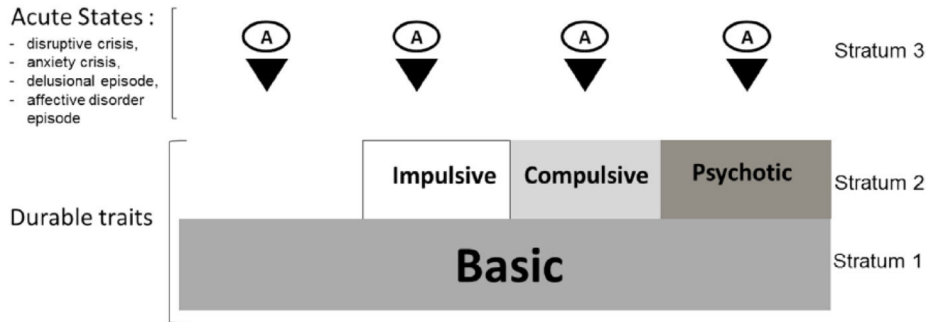
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CHU de Toulouse
Inserm, U1043, équipe 9

Syndrome de Prader Willi Et psychiatrie

Pathologie développementale complexe
Carrefour de plusieurs pathologies psychiatriques

Trouble du spectre autistique
Trouble psychotique
Trouble du comportement alimentaire
Retard mental

...

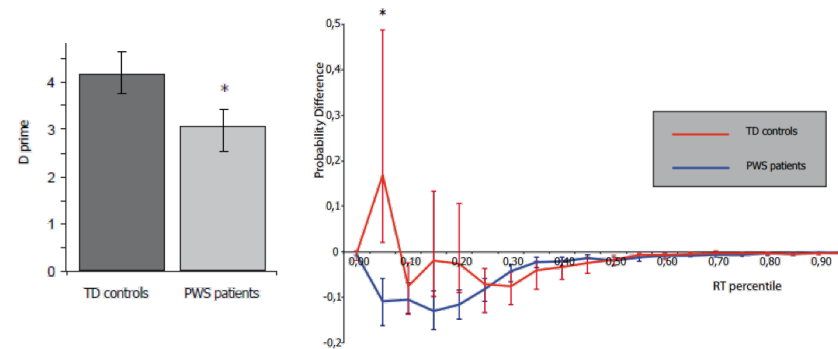


Medical genetic 2017

Prader-Willi Syndrome as a Model of Human Hyperphagia

Maithe Tauber^{a-c} • Gwenaelle Diene^{a,b} • Emmanuelle Mimoun^{a,b} •
Sophie Çabal-Berthoumieu^{a,b} • Carine Mantoulan^{a,b} •
Catherine Molinas^{a-c} • F. Muscatelli^d • Jean Pierre Salles^{a-c}

Front Hormone Res 2014



Neuropsychologia 2017

Syndrome de Prader Willi Et psychiatrie

Pathologie développementale complexe

Modèle de plusieurs pathologies psychiatriques

Le cerveau dans son environnement:

Trouble psychotique

Trouble du comportement alimentaire

Retard mental

Prader-Willi Syndrome as a Model of

Maithe Tauber^{a,c} • Gwenaëlle Diene^{a,b} • Emmanuelle Mimoun^{a,b} •
Sophie Çabal-Berthoumieu^{a,b} • Carine Mantoulan^{a,b} •
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Front Hormone Res 2014

1. Trouble des interactions sociales

Acute States :

- disruptive crisis,
- anxiety crisis,
- delusional episode,
- affective disorder episode



Stratum 3

Impulsive

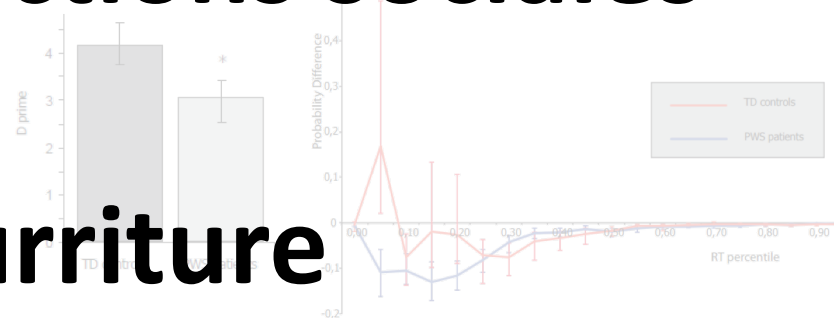
Compulsive

Psychotic

Stratum 2

During traits

2. Addiction à la nourriture

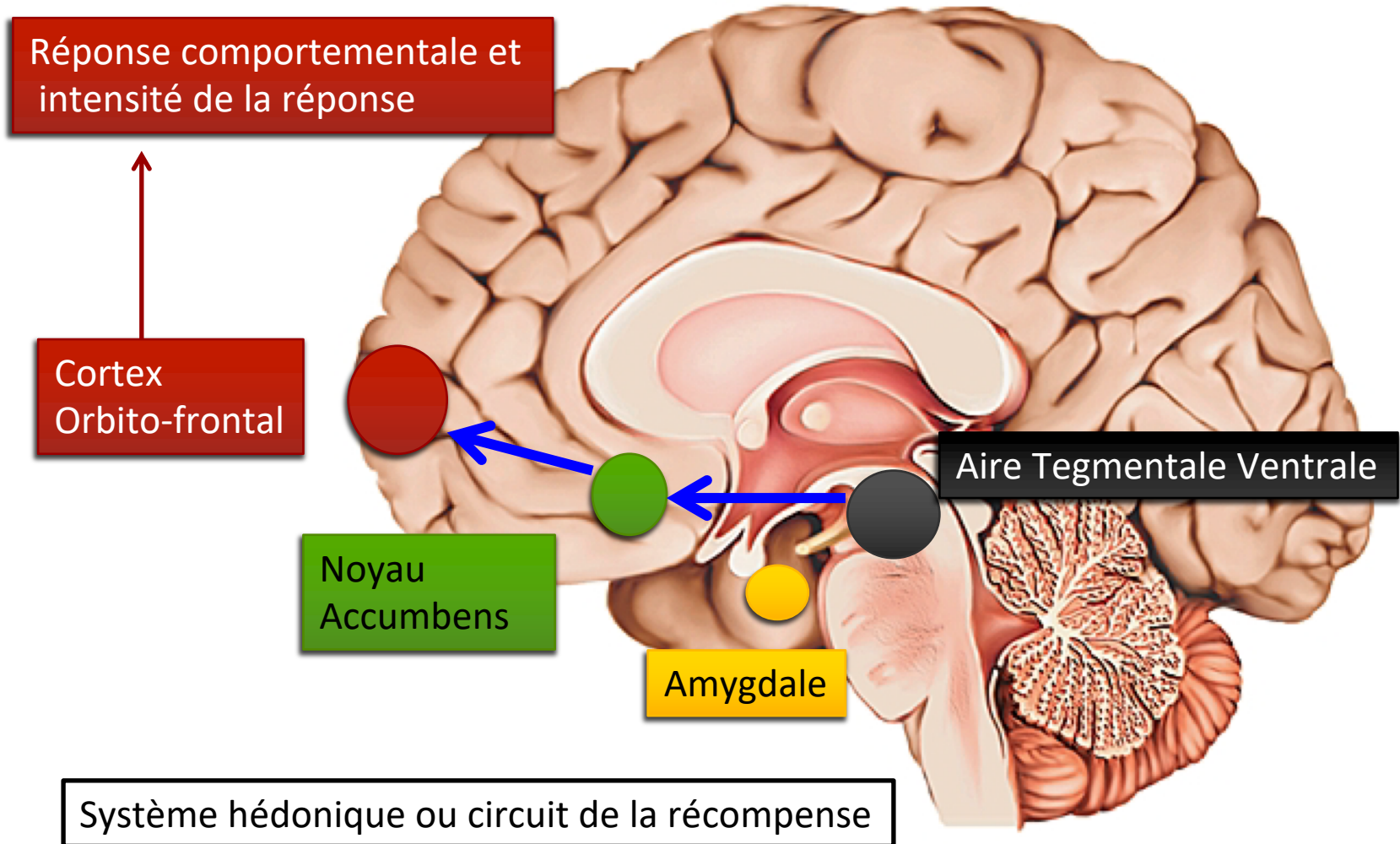


Neuropsychologia 2017

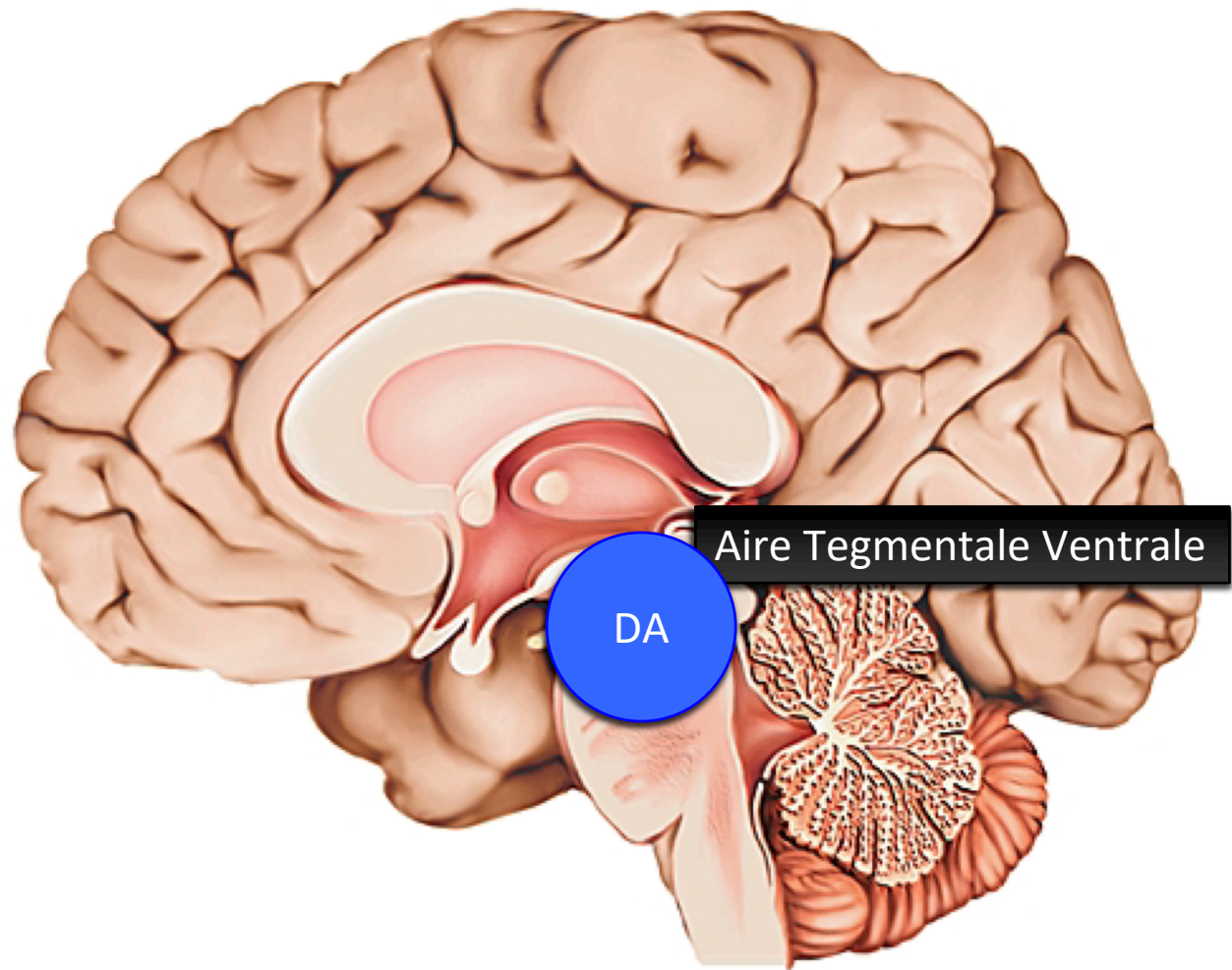
Medical genetic 2017

ADDICTION ET SOCIALIZATION

Addictions

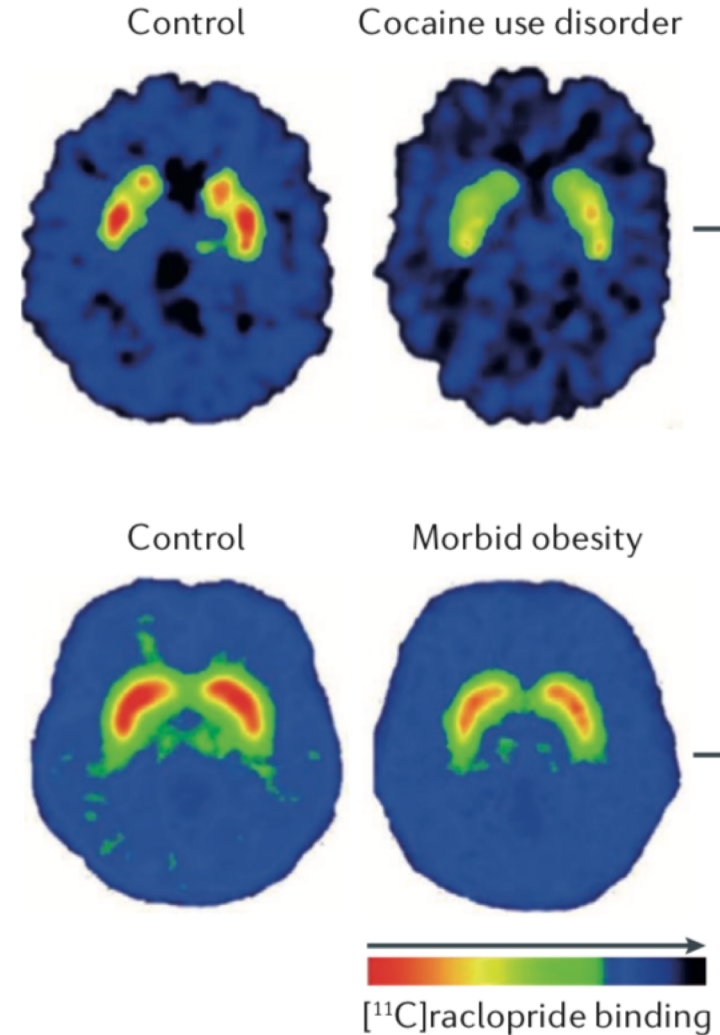
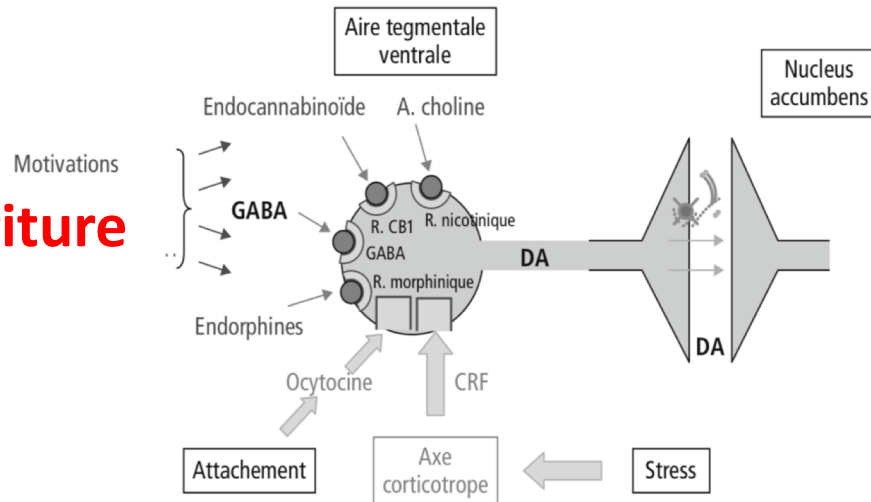


Addictions

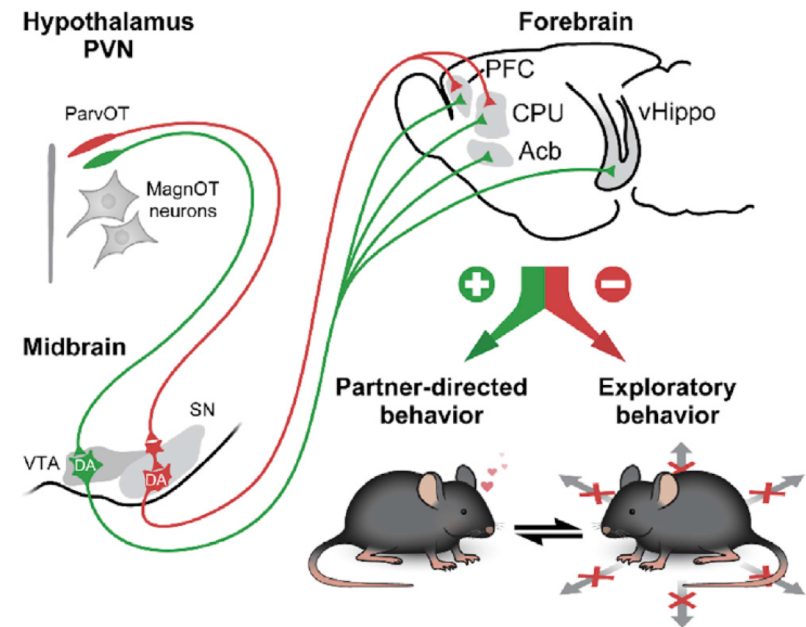
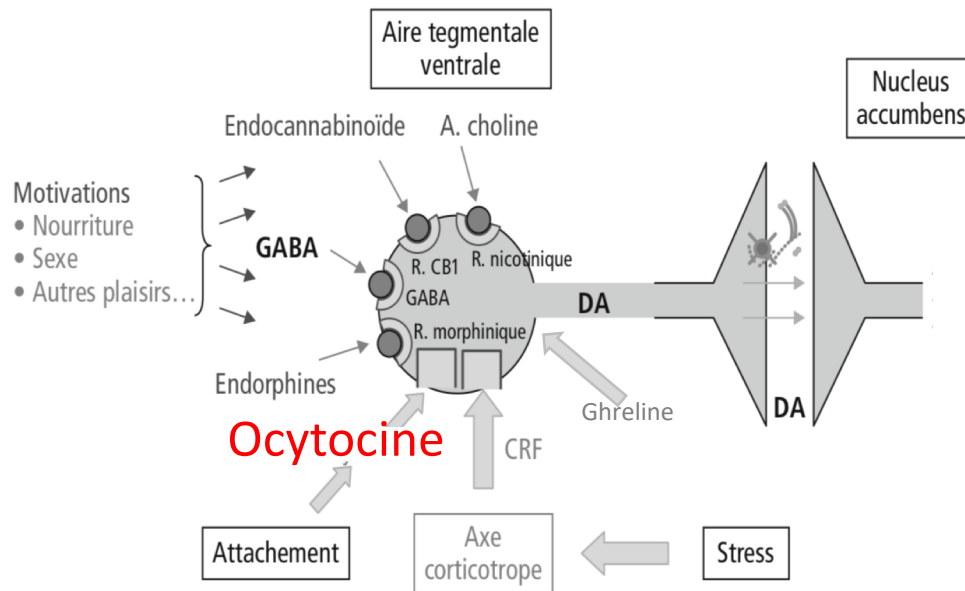


Aire tegmentale ventrale

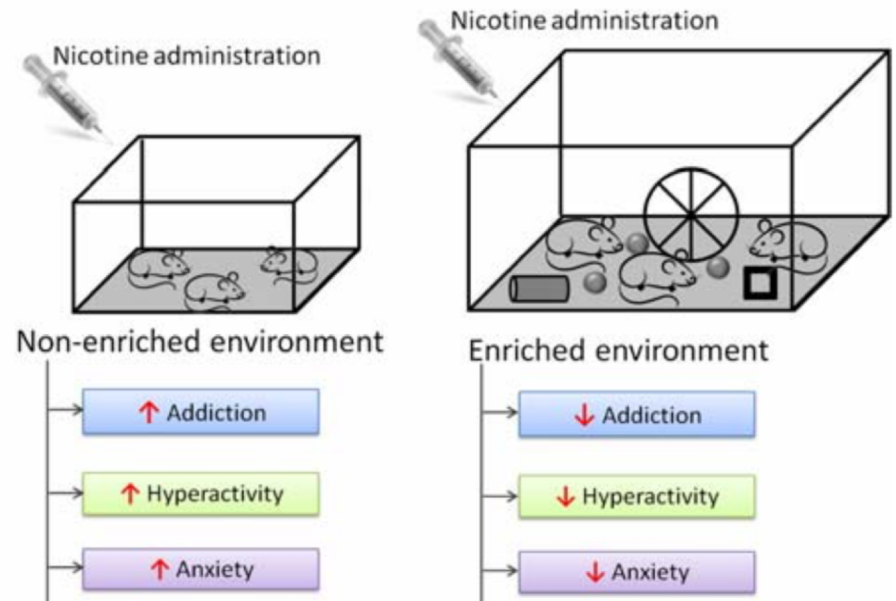
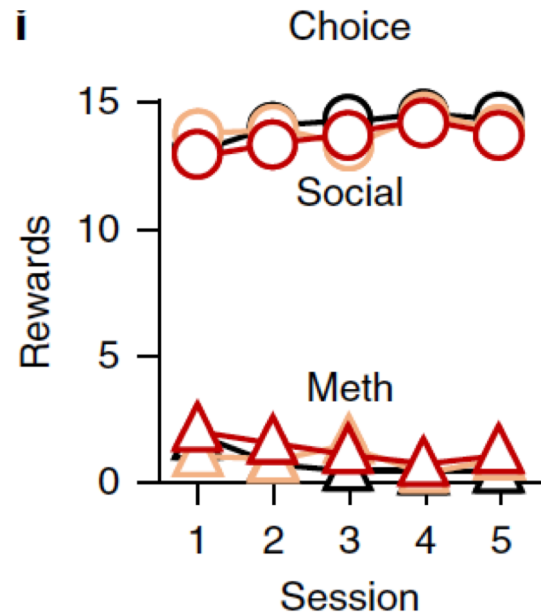
Nourriture



Aire tegmentale ventrale



Socialisation et Addiction



Oxytocine et Addiction

Why social attachment and oxytocin protect against addiction and stress: Insights from the dynamics between ventral and dorsal corticostriatal systems

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^b School of Social and Behavioral Sciences, Tilburg University, Warandelaan 2, 5037 AB Tilburg, The Netherlands

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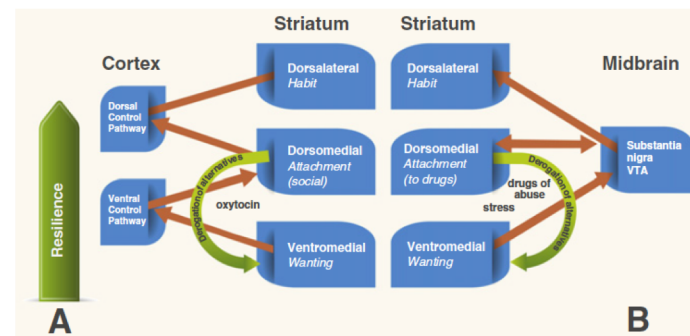
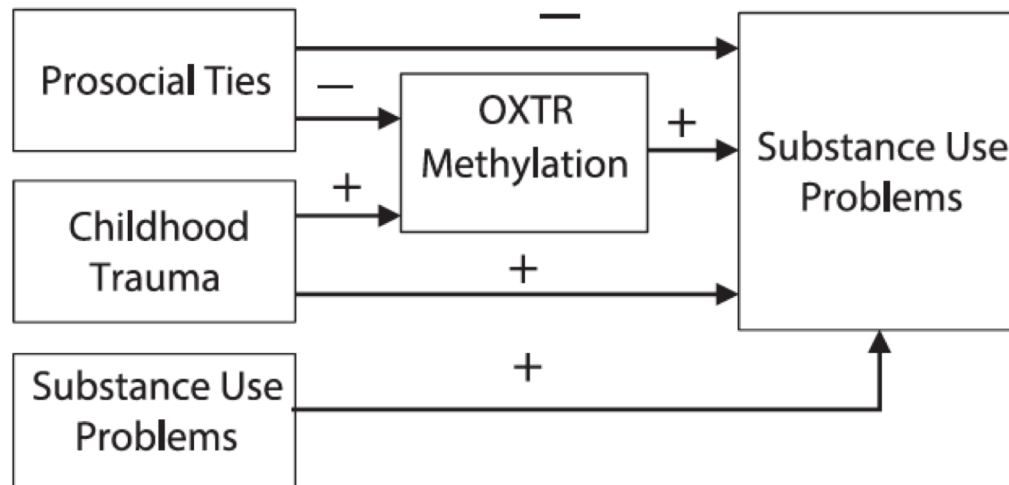


Fig. 2. Schematic depiction of the opposing neural pathways that are facilitated by attachment (and oxytocin, Section 4) versus drug abuse and stress effects. Pathway A: Stable attachment formation (and modulation by oxytocin) involves a shift from ventral striatal novelty processing towards dorsal striatal familiarity processing, involving formation of associative networks of secure internal working models that decrease emotional reactivity and provide coping resources. This shift relies on a cortical pathway in healthy individuals, a pathway that is hypoactive in drug addicts. Pathway B: Instead of accessing this cortical pathway, stress and the use of drugs of abuse may increase the midbrain DA path. This pathway does not facilitate forming secure internal working models, but instead the formation of drug-related habits. Pathways A and B tend to be mutually exclusive, in that each prevents the other through adaptations that cause derogation of alternatives (Section 4.2) (VTA = ventral tegmental area). Figure is adapted from Tops and Boksem (2012).

Marqueurs épigénétiques

Vulnérabilité aux addictions



Drug and alcohol dependence Kogan 2018

RETOUR AU SYNDROME DE PRADER-WILLI

Défaut de synthèse OT

Administration d'ocytocine:

Essais chez l'adulte: interactions sociales

Orphanet J Rare Dis. 2011

Essais chez l'enfant: succion nouveau né

Pediatrics 2017

OTBB 2, PHRC

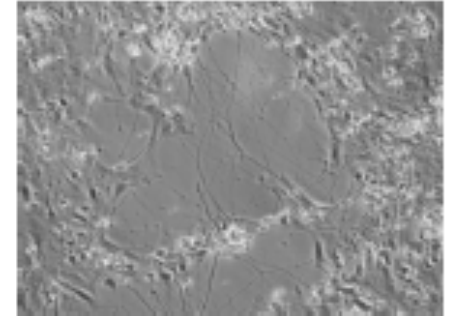
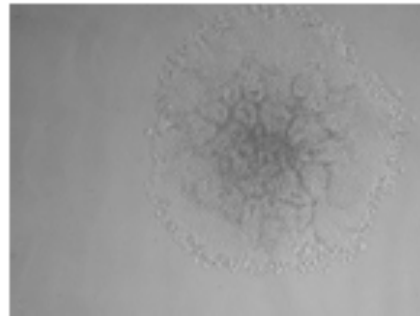
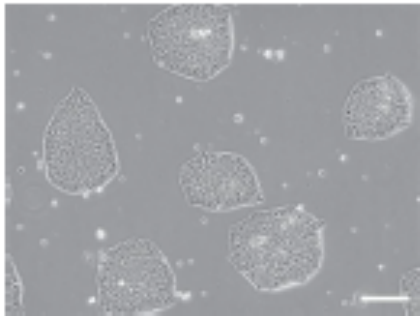
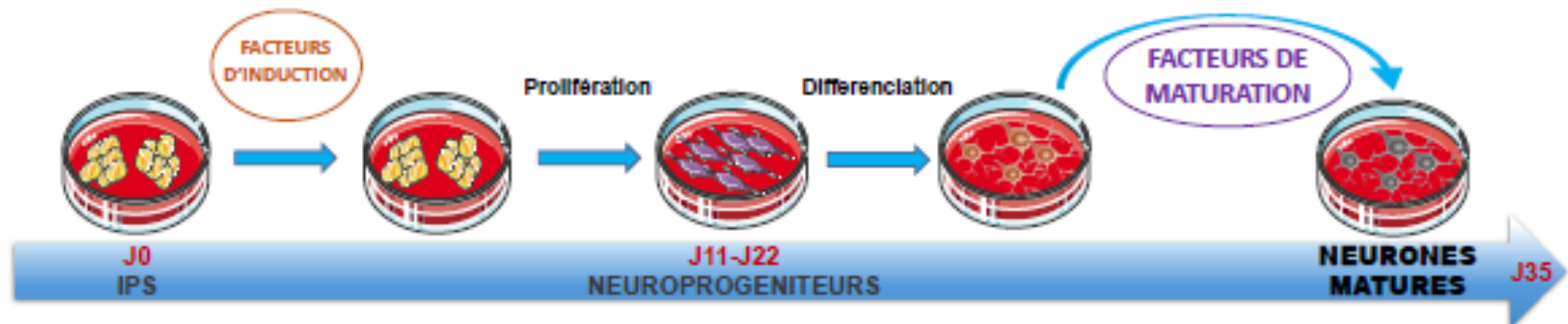
Modèles animaux: MAGEL2 (col M. Desarmenien, F. Muscatelli)

Biol Psychiatry 2015, Front Neuroanat 2015

Synthèse

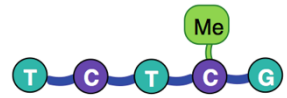
- Lien entre addiction et socialisation
- Connexion hypothalamus-circuit de la récompense
 - Circuit dopaminergique
 - Rôle de l'ocytocine
- Modification des voies de l'OT dans le PWS
- Effet du traitement à l'OT dans le PWS?
- Hypothèse de la méthylation du RC OT?

Epigénétique des neurones dopaminergiques



Etude de la méthylation

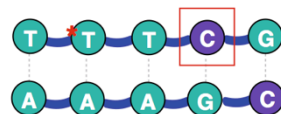
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Bisulfite
conversion



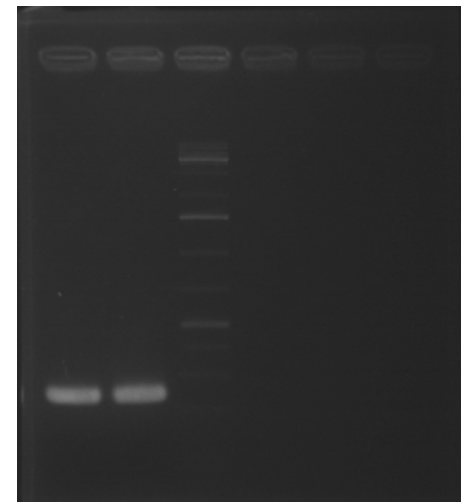
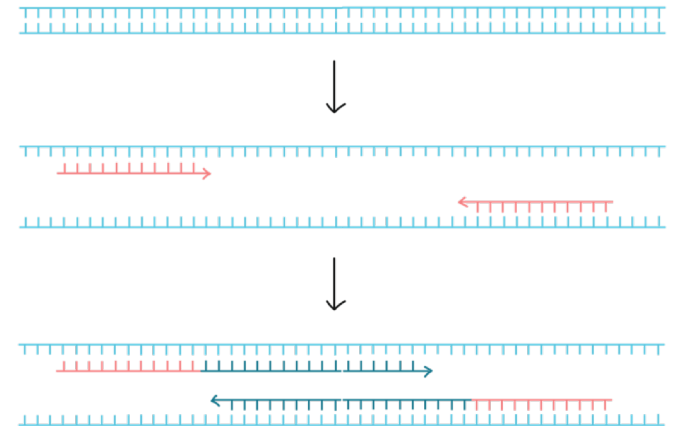
RT-PCR



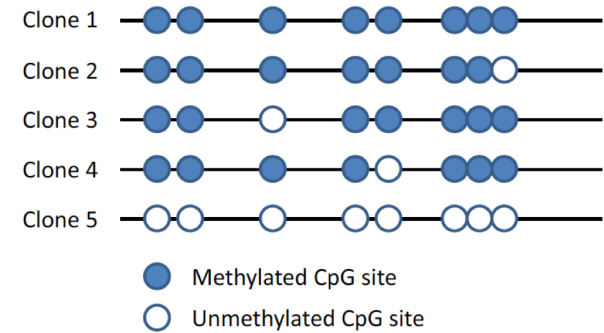
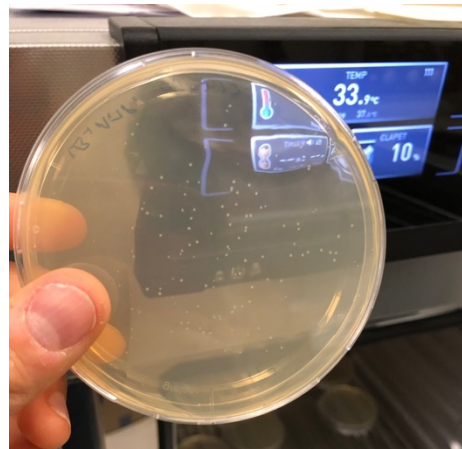
Template
DNA

Primers bind
to template

Tag polymerase
extends primers



Etude de la méthylation



Etapes à venir

- Etude de la méthylation sur les neurones dopaminergiques
- Etude de l'influence de l'administration d'OT sur la maturation