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ADDICTIONS  
2022

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OF ADDICTIONS  
IN THERAPEUTIC  
COMMUNITIES

# Neuropsychology of addictions in Therapeutic Communities:

*Assessing and understanding cognitive recovery through a  
residential treatment of substance use disorders*

Simon DENIEL | Neuropsychologist • PhD Student  
Caen, Normandy University

24/11/2022



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Disclosure

No conflict of interest

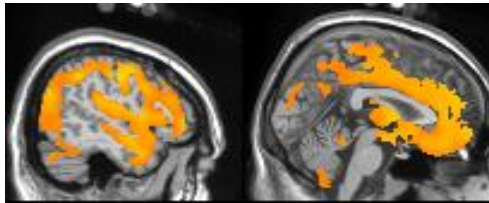


# Substance use disorder and neuropsychological impairment

## → Brain morphological and functional alterations

### ALCOHOL

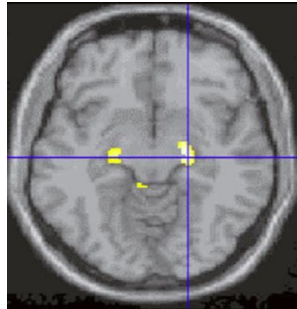
Le Berre *et al.*, 2012



Frontal lobes +++  
Medial temporal regions ++  
Cerebellum +

### CANNABIS

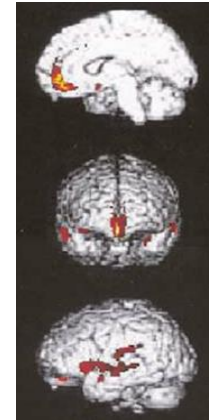
Matochik *et al.*,  
2005



Medial temporal regions +++  
Frontal lobes ++  
Cerebellum +

### COCAINE

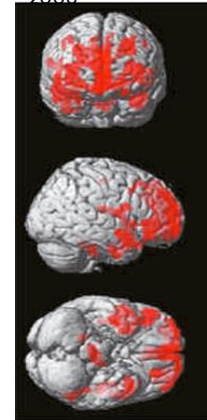
Franklin *et al.*, 2002



Frontal cortex ++  
Temporal cortex +  
Cingulate gyrus & insula +

### HEROIN

Lyo *et al.*,  
2006



Frontal cortex ++  
Temporal cortex +

# Substance use disorder and neuropsychological impairment

## → Cognitive impact



- **Executive functions** (*Ihara, Berrios et London, 2000*)

*Are cognitive disorders forever?*



- **Ataxia** (*Sullivan et al., 2000; 2003*)

# Substance use disorder and cognitive recovery

→ Prevalence of cognitive disorders in SUD

## Spontaneous cognitive recovery?

*(Bates et al., 2013; Pitel et al., 2009; Schulte et al., 2014)*

**Individual differences in recovery trajectories**

*(Petit et al., 2017)*

**Motivational boost for patients**



# Therapeutic Communities (TCs)

## Addiction residential care units still scarce in France



- For who? Residents with substance use disorder for whom outpatient or hospital treatment are irrelevant



- Aim? To support change behavior by offering a long-termed, structured and containing framework without any substance



- What particularity? Building on the relationship with others, support as a tool for change

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**BUT...**

# Observation



- Relapse rate at discharge still high ( $\approx 49\%$ )  
(Do Carmo et al., 2018)
- Low social and professional insertion ( $\approx 40\%$  of insertion)  
(Bowmann et al., 1996; Scaratti et al., 2016)

## A piece of explanation?



- Frequent neuropsychological disorders in substance use disorder  
(Harvey & Isner, 2020; Le Berre et al., 2017; Starvo et al., 2012)
- Neuropsychological impairments hinder the efficiency of addiction treatment  
(Bates et al., 2013; Cabé et al., 2016)



# Objectives

## Further investigation to describe:

- Global clinical, substance use and neuropsychological profiles of TCs residents
- Risk of cognitive impairment in residents to tailor the treatment
- Potential cognitive recovery

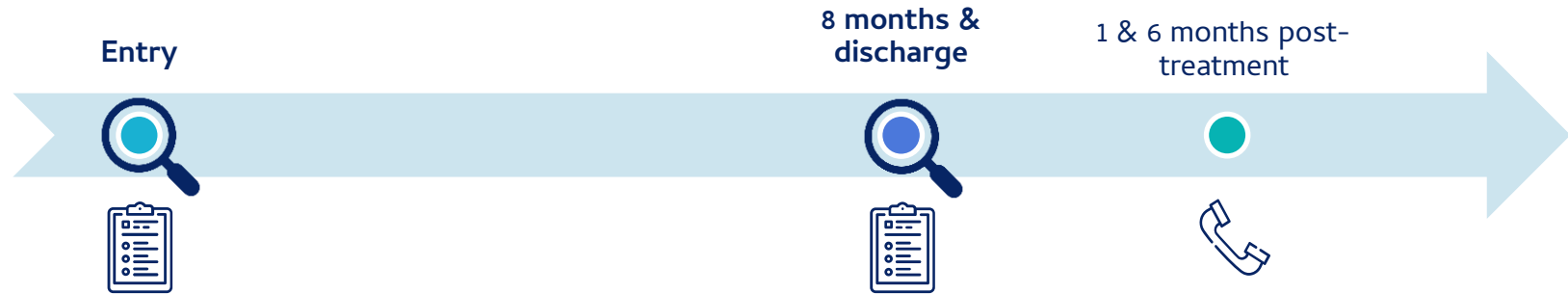


# Methods

Towards a better understanding for appropriate treatment:

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→ 3 French Therapeutic Communities



Clinical interviews and questionnaires:

- Health & psychiatric history
- Substance use



Neuropsychological screening (BEARNI; Ritz et al., 2015)

# Cognitive screening: BEARNI

What are the cognitive functions screened by BEARNI?

## Episodic memory

### MÉMOIRE VERBALE

	Liste de mots	Liste parallèle
1.	Plage	Forêt
2.	Tenaille	Truelle
3.	Blouson	Chaussettes

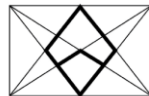
## Working memory

3/ Essai 1 : A-X-T-H (A-H-T-X)  
Essai 2 : L-G-R-U (G-L-R-U)

## Balance



## Visuospatial abilities



## Flexibility



# Methods

Towards a better understanding for appropriate treatment:

→ 3 French Therapeutic Communities

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## Inclusion criteria :

- ✓ Volunteer
- ✓ Diagnosed substance use disorder
- ✓ > 18 years old
- ✓ French speaker
- ✓  $\geq 7$  years of education

# Results

At entry



# Results - At entry



3 TCs residents

(n=56)

## Sex Ratio

♂ 45      ♀ 11

## Age

41.51 ± 10.09 years

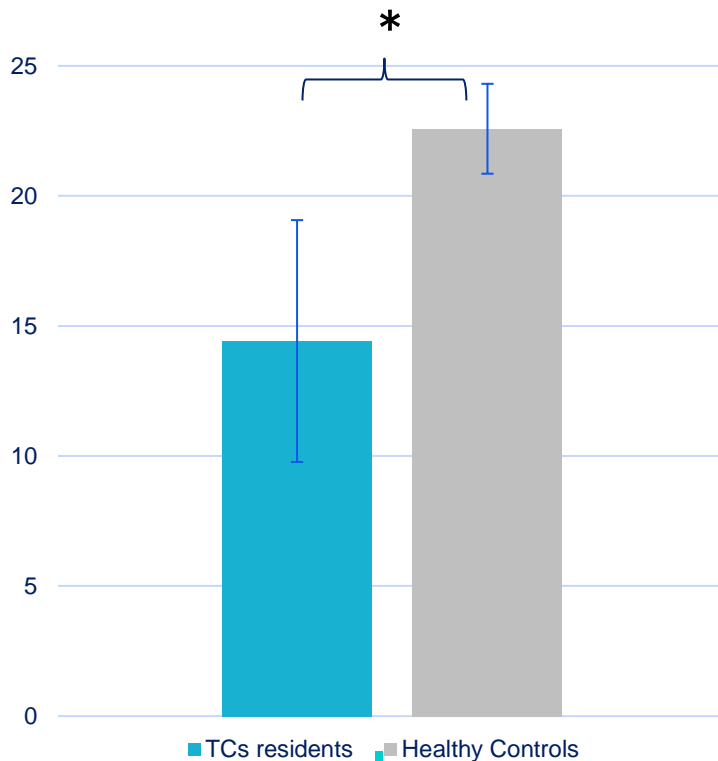
## Years of study

11.50 ± 2.15 years

## Frequent polysubstance use

83.9 %

## BEARNI Total score

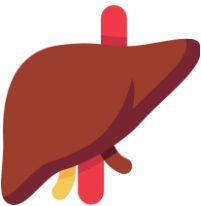
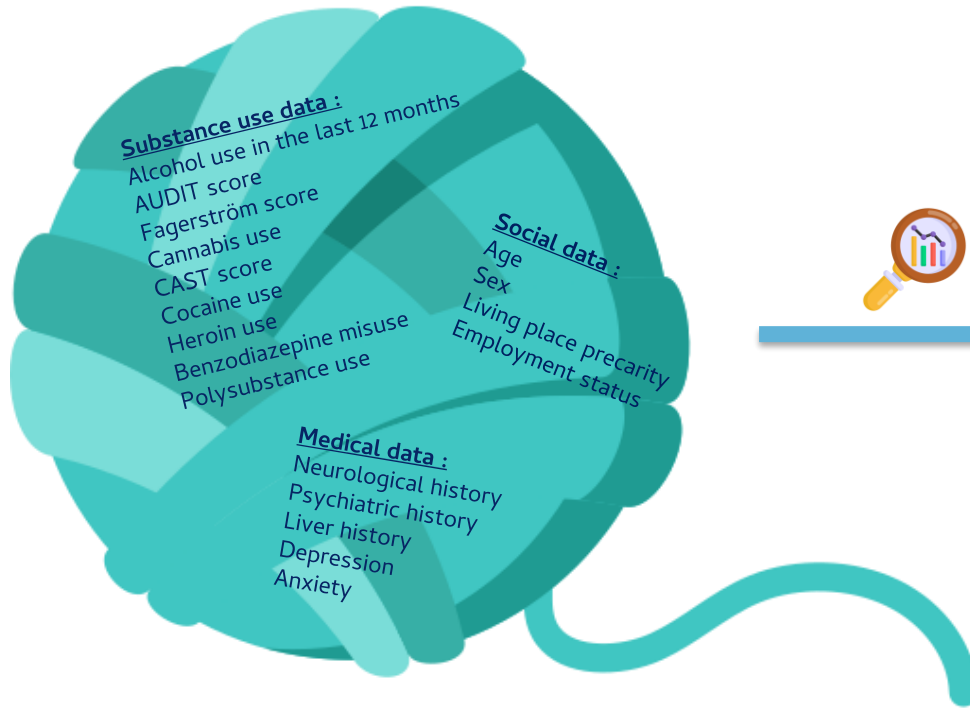


\*  $p < .001$



At-risk of cognitive disorders

# Aggravating factors



Liver history → 3\* risk of  
cognitive impairment

# Results

At 8 months follow-up





# Results - At 8 months



3 TCs residents  
(n=24)

## Sex Ratio

♂ 20      ♀ 4

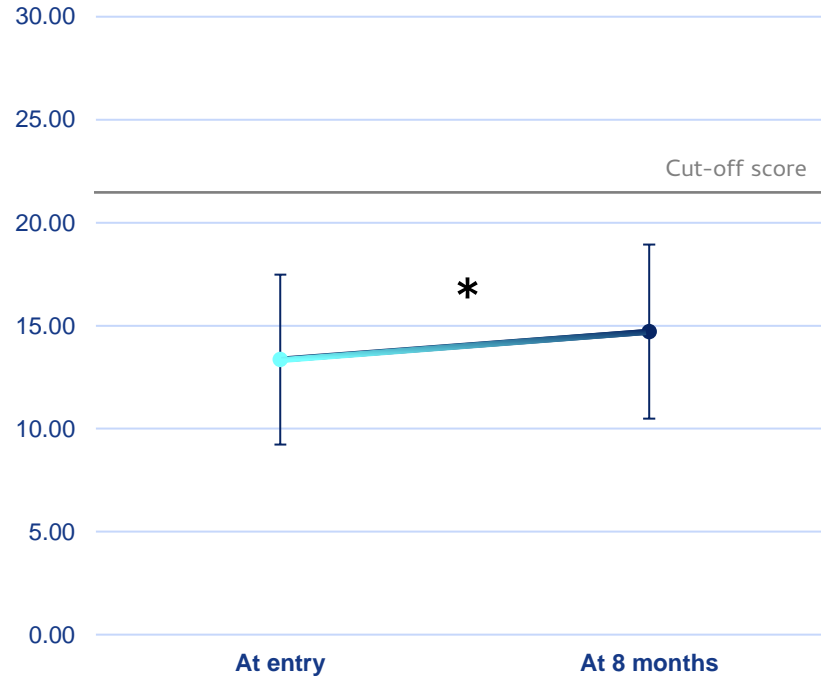
## Age

43.42 ± 11.96 years

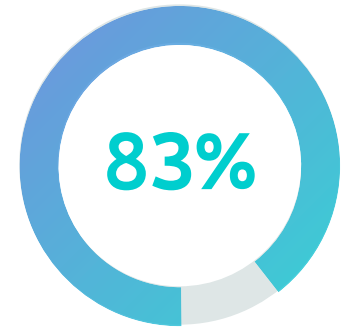
## Years of study

11 ± 1.97 years

## BEARNI total score evolution



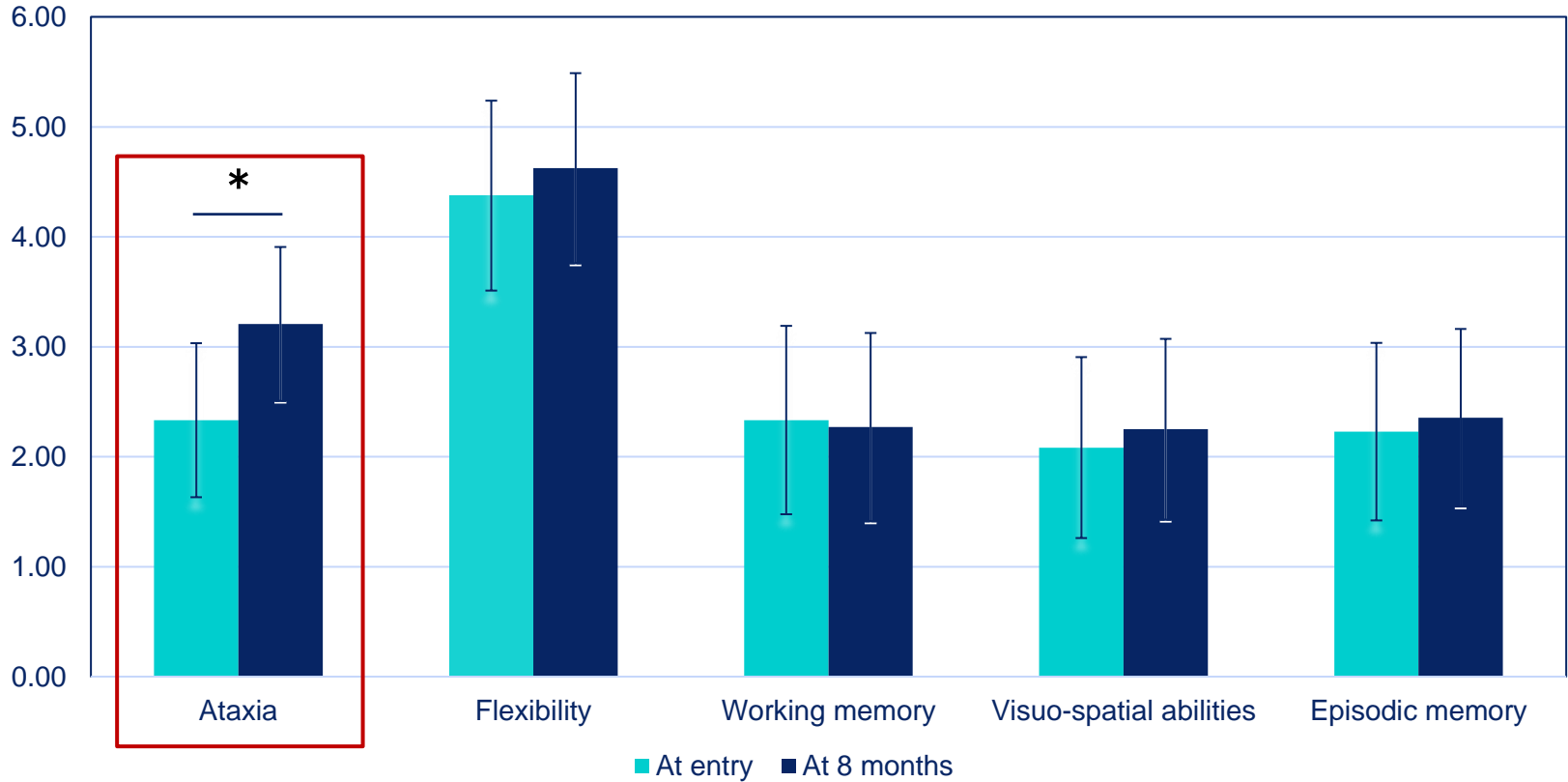
Score ≤ 21



At-risk of cognitive disorders

\* p = .048

## Results - At 8 months



# Discussion



High risk of **cognitive disorders** in TCs residents



Liver **history** as risk factor of **cognitive impairment**?



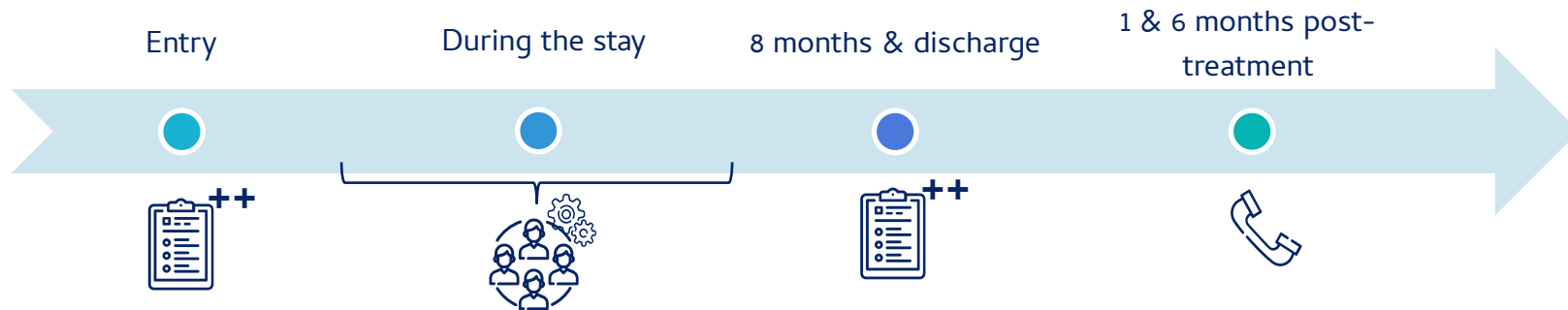
Limited **recovery** at 8 months follow-up



→ Promotes a complete cognitive assessment and remediation program

# Prospects

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# The NeuroAddiCT team



**Hélène BEAUNIEUX**  
Neuropsychology professor



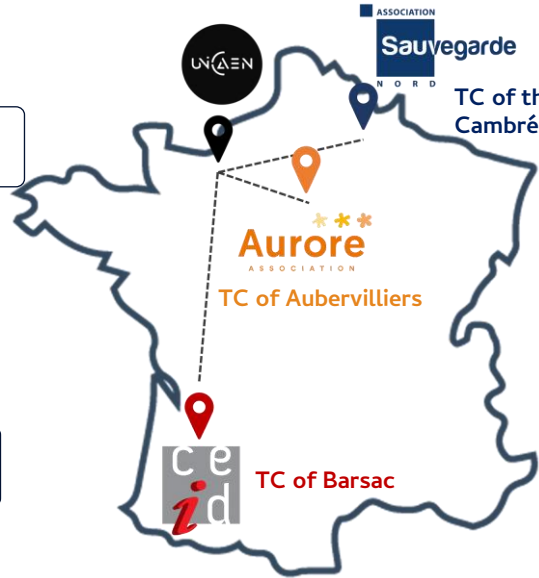
**Ludivine RITZ**  
Neuropsychology lecturer



**Simon DENIEL**  
Neuropsychologist | PhD Student



**Marion DELARUE**  
Neuropsychologist | Study engineer



**Louise QUÉTELARD**  
Neuropsychologist



**Stéphane LOZÉ**  
Director of establishment



**Héloïse JAUNET**  
Neuropsychologist



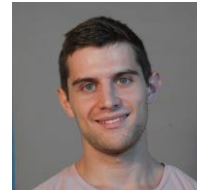
**Susie LONGBOTTOM | Nicolas KENENS**  
Department heads



**Mailys MIQUEL**  
Neuropsychologist



**Christophe RIMBAUD | Nicolas BOURGUIGNON**  
Director of establishment



**Jonathan RAYNEAU**  
Project manager



**Marine GAUBERT**  
Head of pole

# Thanks !

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LPCN – Caen, Normandy University  
Simon Deniel  
[simon.deniel@unicaen.fr](mailto:simon.deniel@unicaen.fr)





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