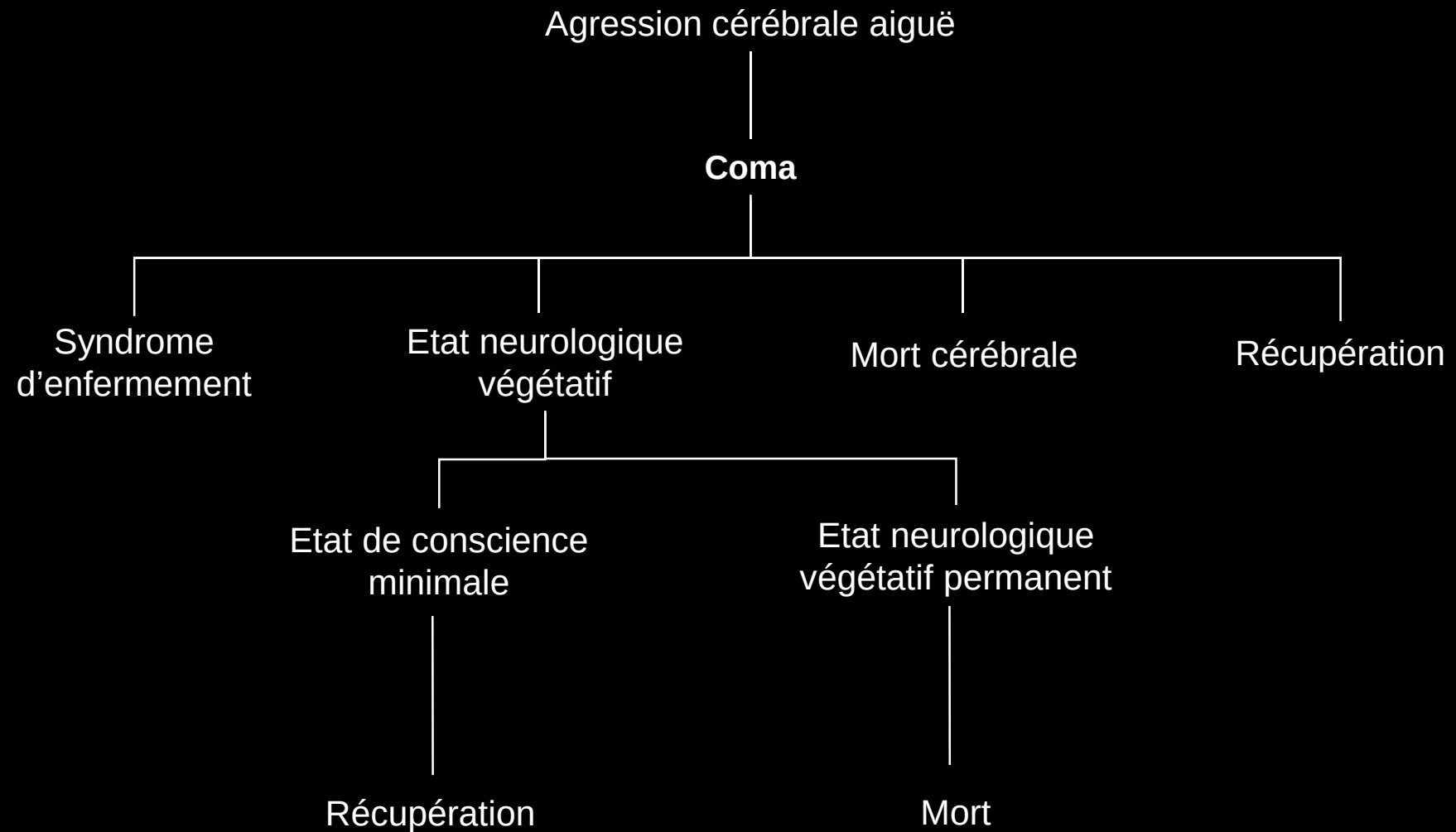


Imagerie cérébrale au décours du coma

Prédire le retour à la conscience

Stein SILVA





Pouvons-nous nous fier à une approche *exclusivement* comportementale?

Trauma

- Score de GCS: prediction 6 mois (AUC = 0.65).
- Score FOUR: prediction 6 mois (AUC = 0.68).
- Fixation oculaire J0: prediction 6 mois (AUC = 0.81)

Anoxie

- Score de GCS: prediction 6 mois (AUC = 0.55).
- Réactivité pupillaire J0: prediction 3 mois (AUC = 0.72)

Quelle la place de la *TDM cérébrale*?

Trauma

- Citernes de la base
- Déplacement de la ligne médiane
- HSA traumatique
- Inondation ventriculaire
- Effet de masse
- Hématomes (extra vs sous-dural)

→ Prediction 6 mois AUC = 0.65

Anoxie

- Souvent normal
- Signes spécifiques

→ Pas de calcul.

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	Facteur pronostique	Faux positifs (IC 95%)
Sans hypothermie	Myoclonies (24h à 48 h)	0 - 3 %
	Abolition réactivité pupillaire à 72 h	0 - 8 %
	Abolition bilatérale N20 à 72h	0 - 12 %
	EEG voltage < 20µv à 72h	0 - 8 %
	NSE > 80 µg/l à 72 h	0 - 3 %
Hypothermie	Abolition réactivité pupillaire à 72 h + Réponse motrice < 2	0 - 8 %
	Abolition bilatérale N20 à 72h	0 - 2 %
	EEG non réactif en normothermie	0 - 3 %

Oddo, *Lancet Neurol*, 2016

Greer, *Nature Rev Neurol*, 2015

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Facteur pronostique

Statistiques

**Examen cliniques,
biomarqueurs et
électrophysiologie**

Abolition bilatérale des N20 entre 3 -7 jour

AUC = 66 % (1 mois)

NSE à 0 - 3 jours

AUC = 70 % (3 mois)

Glasgow Coma Score (score moteur)

AUC = 63 % (6 mois)

Full Outline of Unresponsiveness

AUC = 65 % (6 mois)

**Analyse combinée
des données du
TDM cérébral à
l'admission**

- Citernes de la base
- Déplacement de la ligne médiane
- HSA traumatique
- Inondation ventriculaire
- Effet de masse
- Hématomes (extra vs sous-dural)

AUC = 77 % (6 mois)

Weijer, *Brain*, 2016

Stevens, *Crit Care Med*, 2013

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Early prognosis in traumatic brain injury: from prophecies to predictions

www.thelancet.com/neurology Vol 9 May 2010

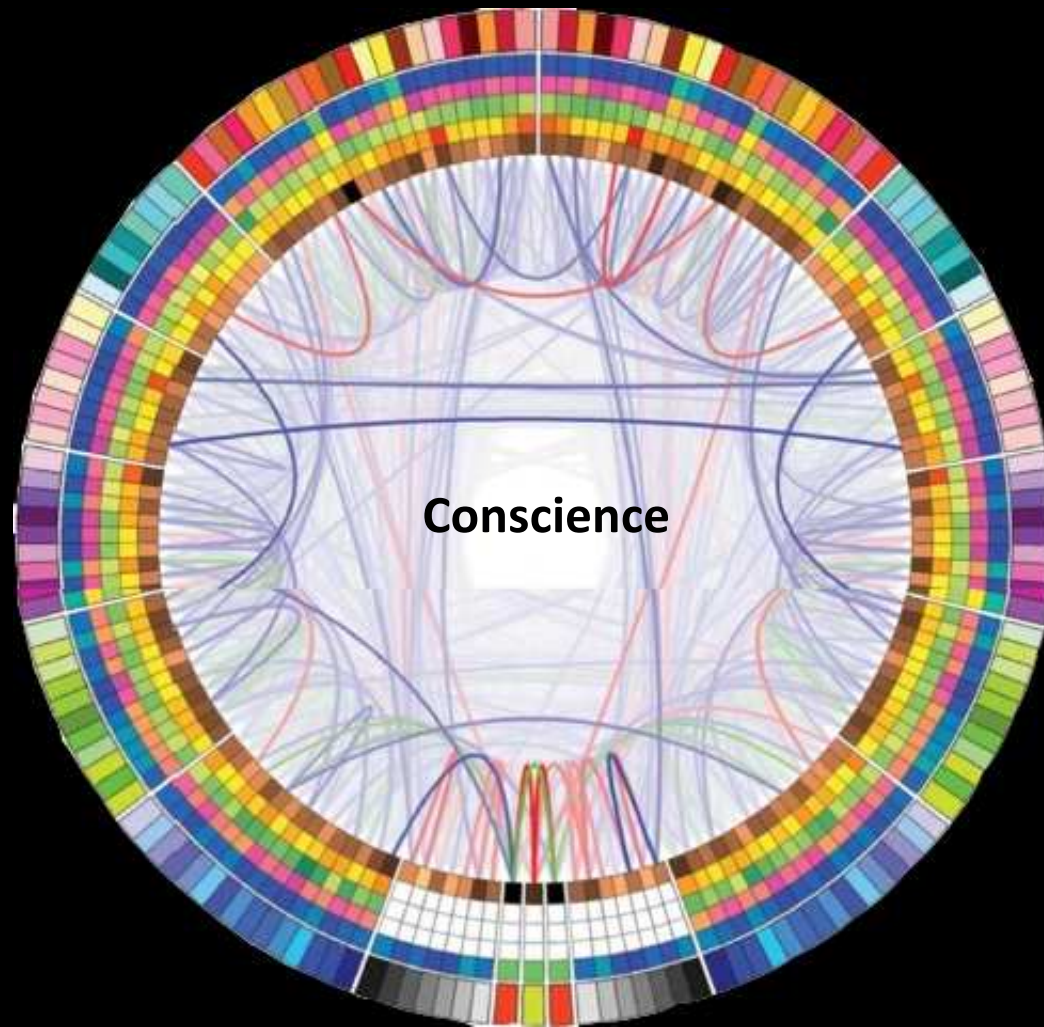
Hester F Lingsma, Bob Roozenbeek, Ewout W Steyerberg, Gordon D Murray, Andrew I R Maas

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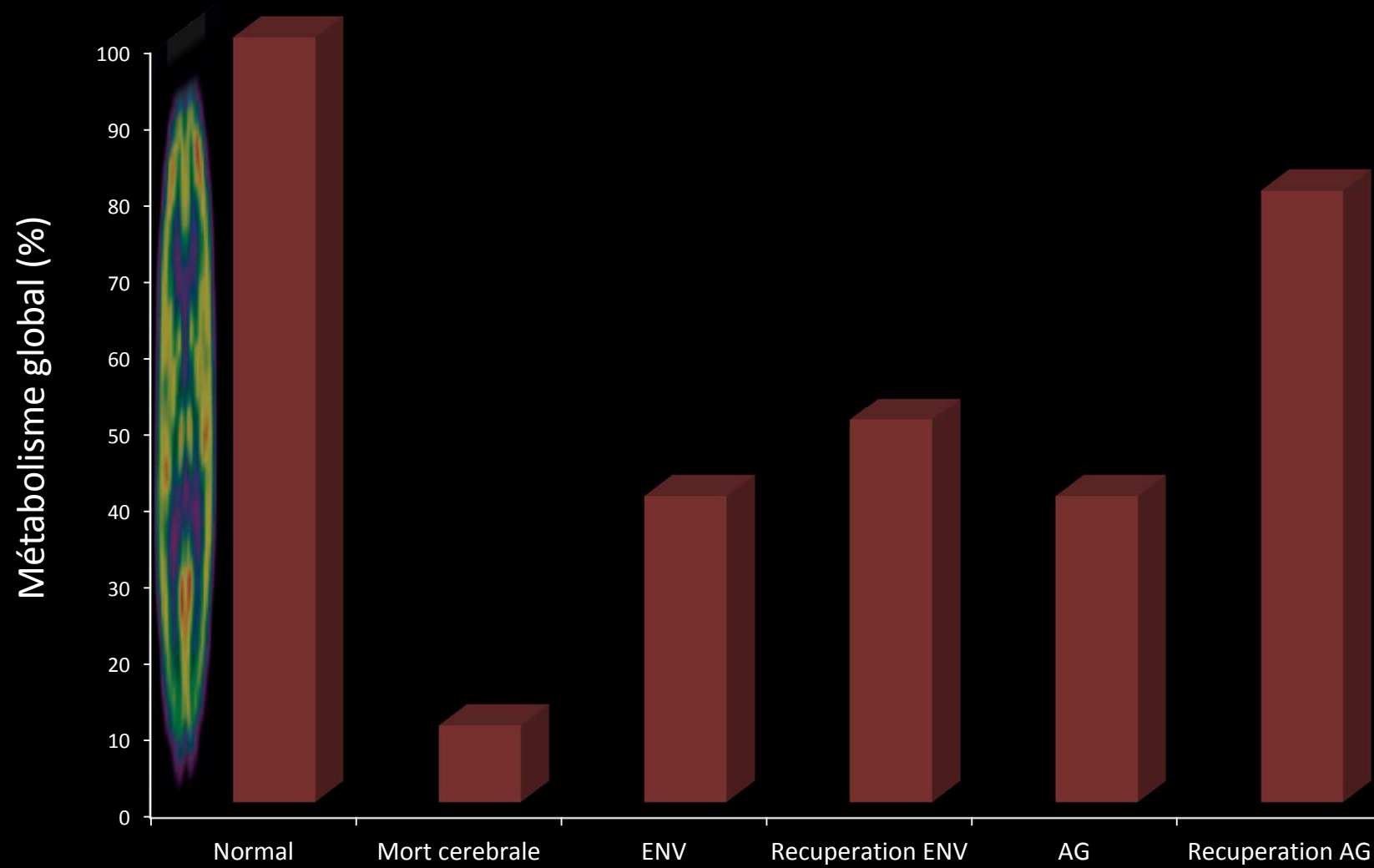
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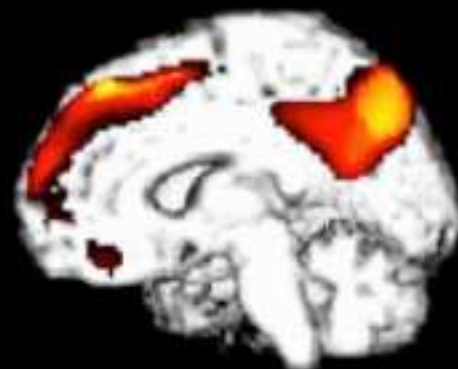
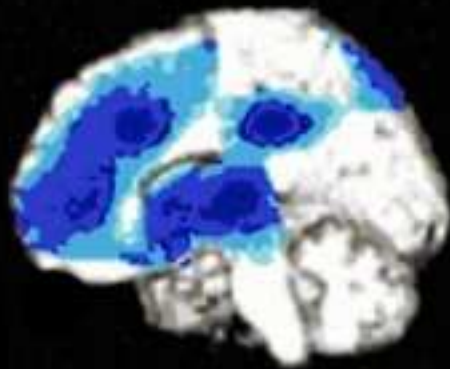
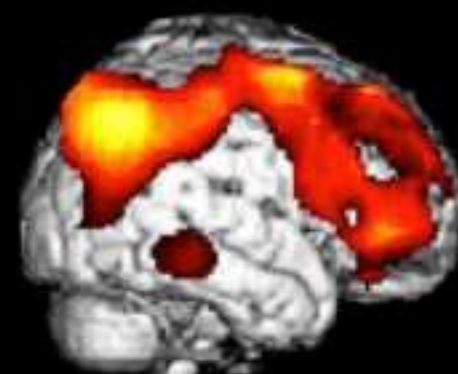
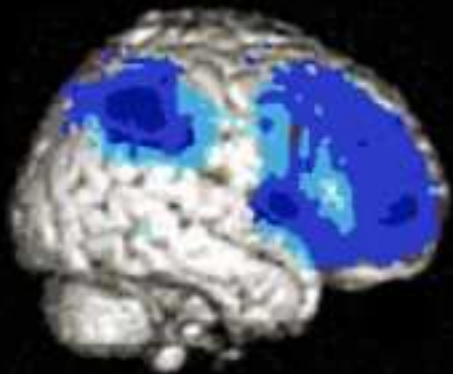
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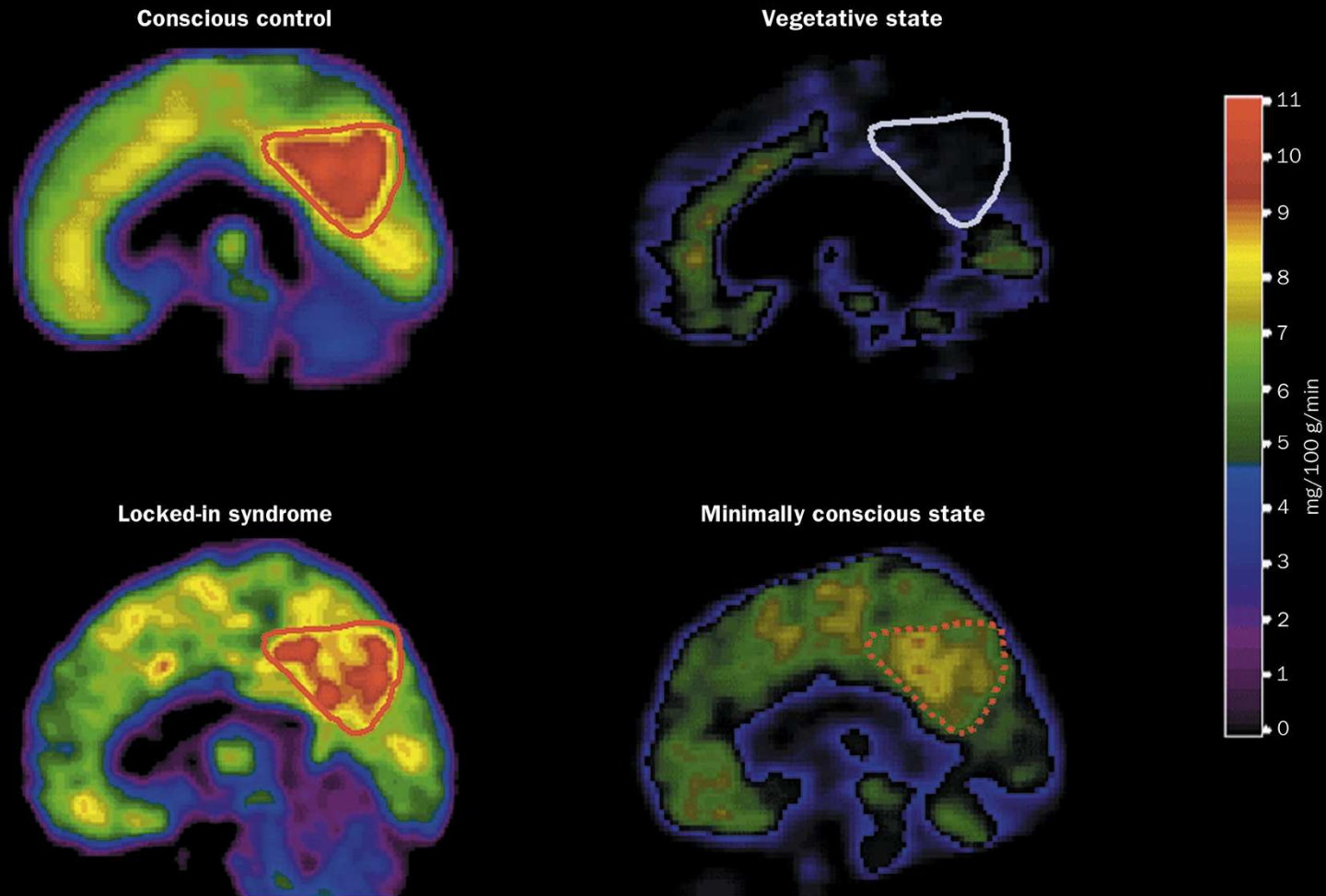
Laureys, *Lancet Neurol*, 2002



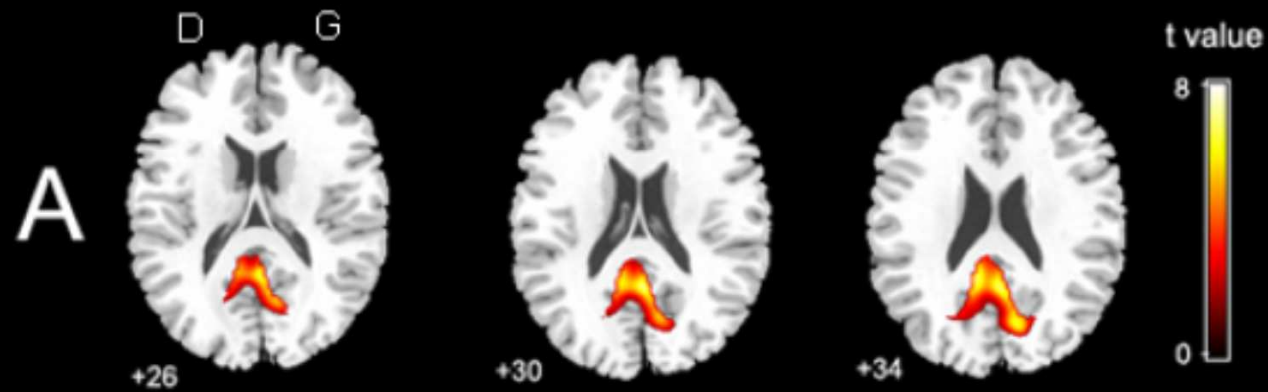
Sommeil profond

Anesthésie

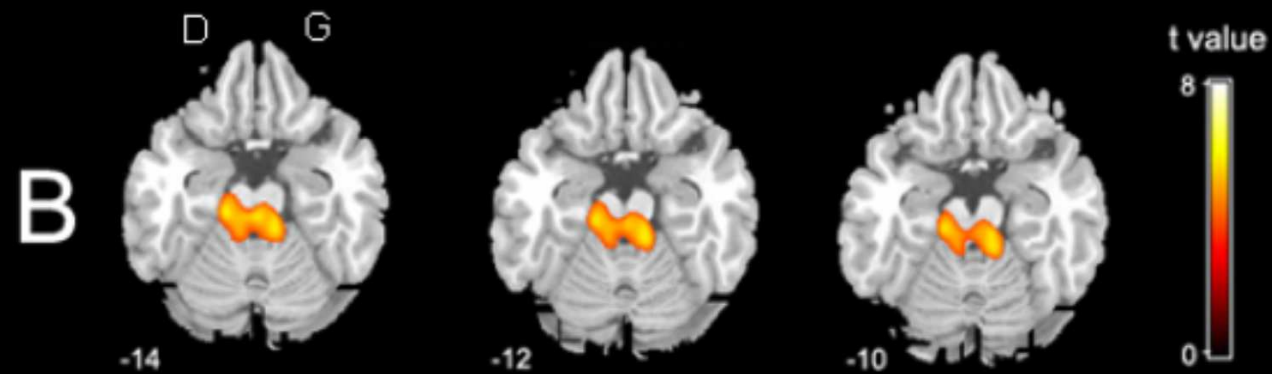
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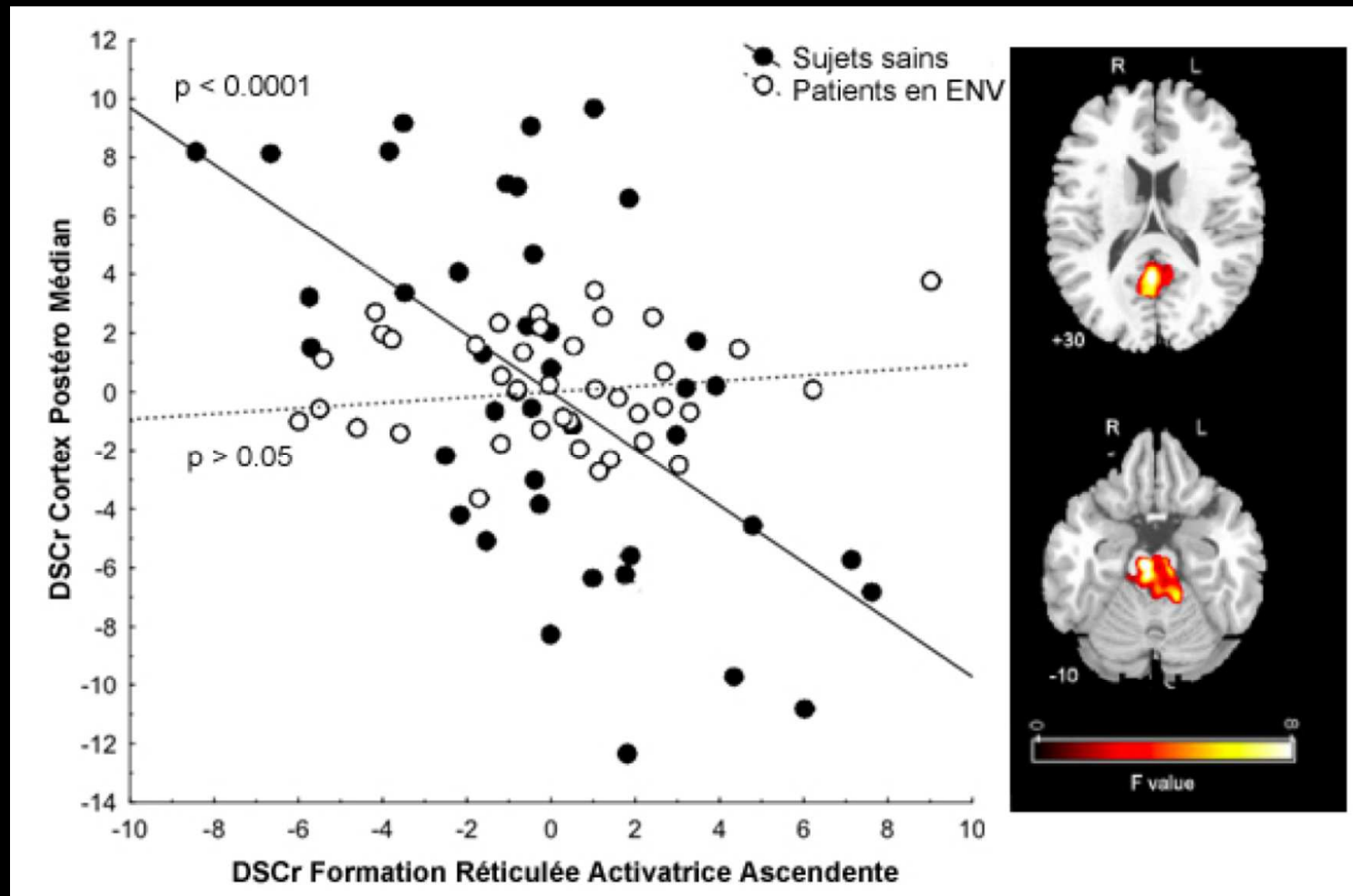


Sains > Patients

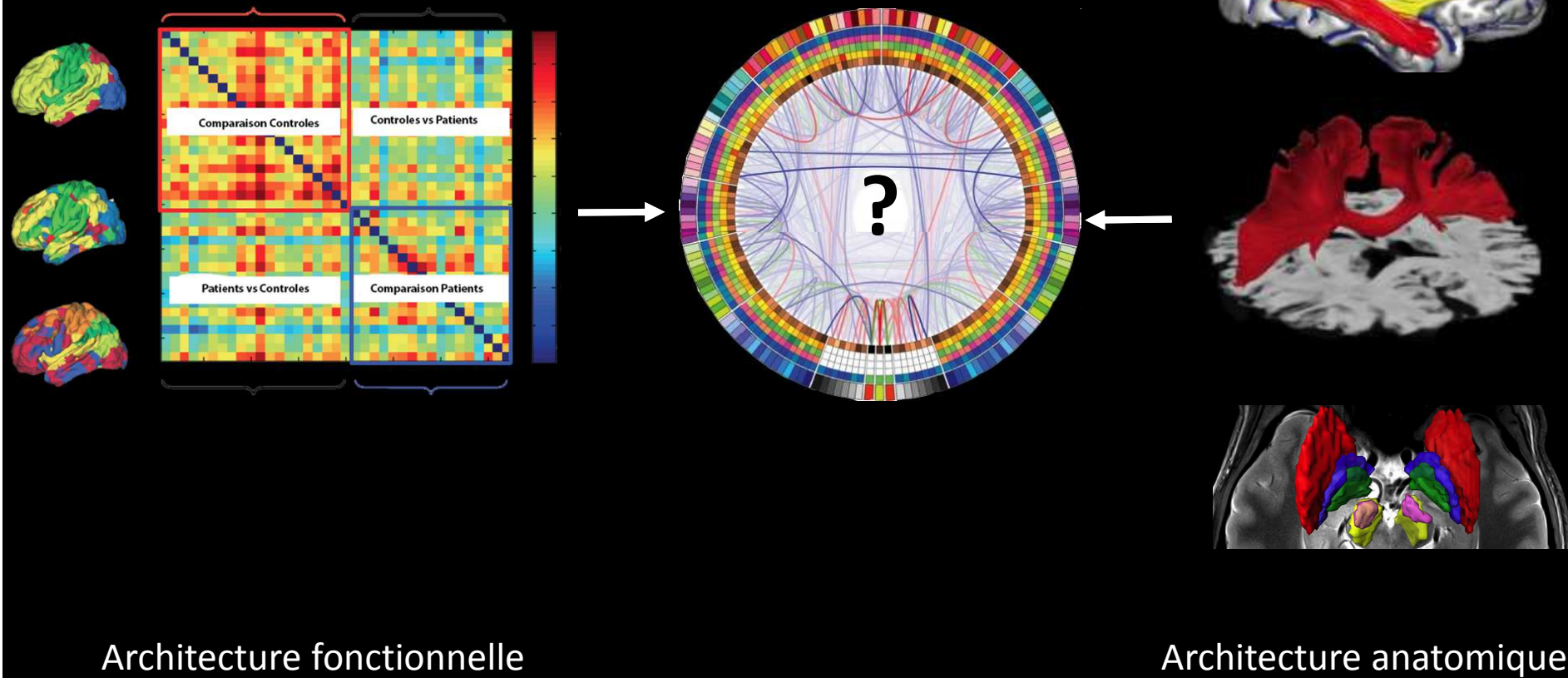


Patients > Sains

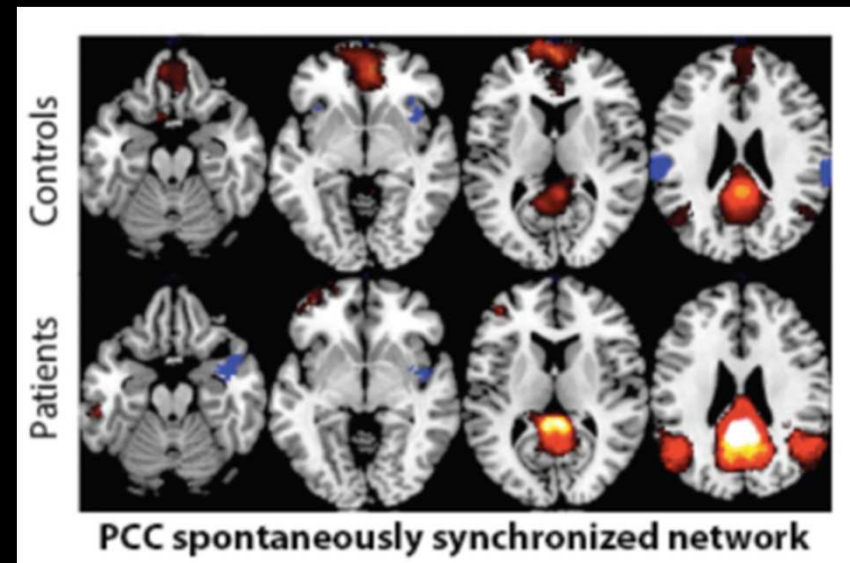
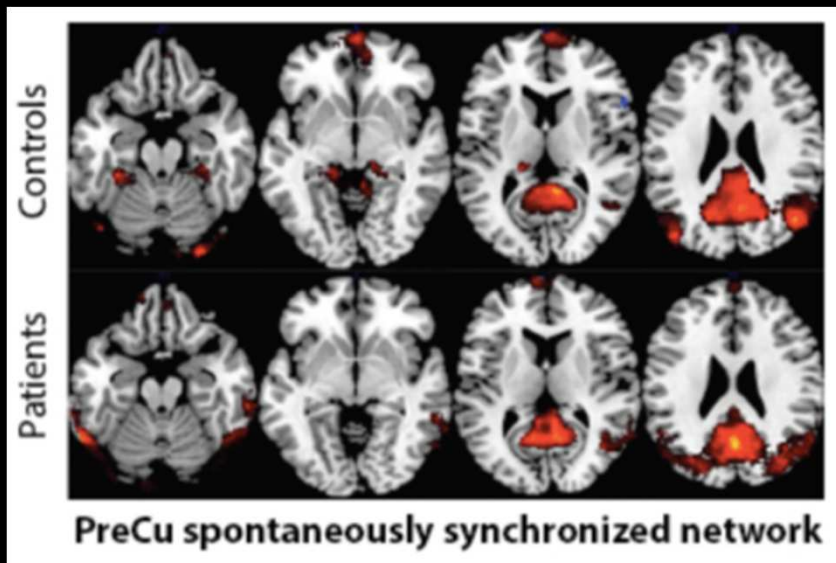
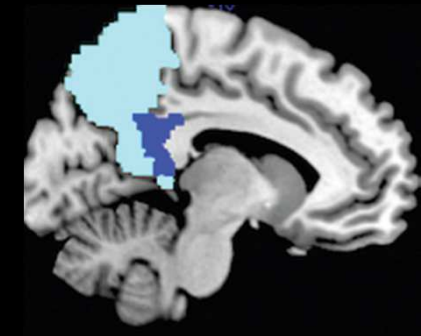


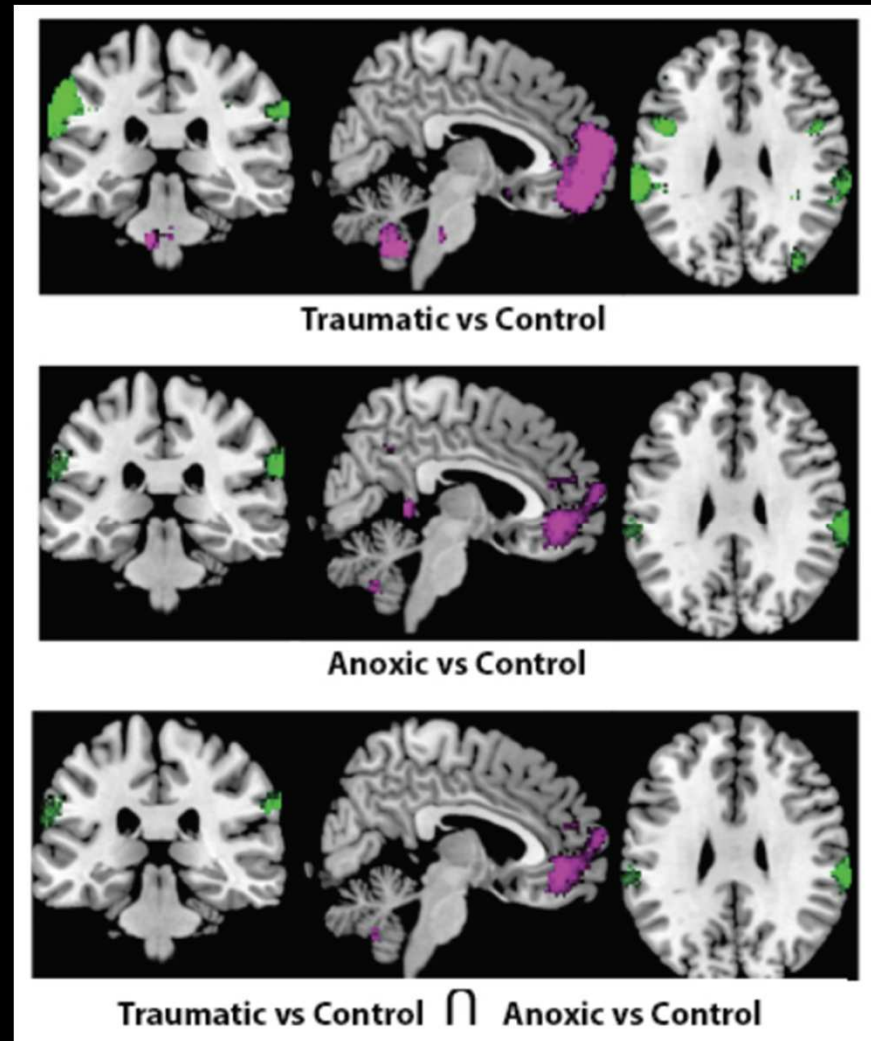


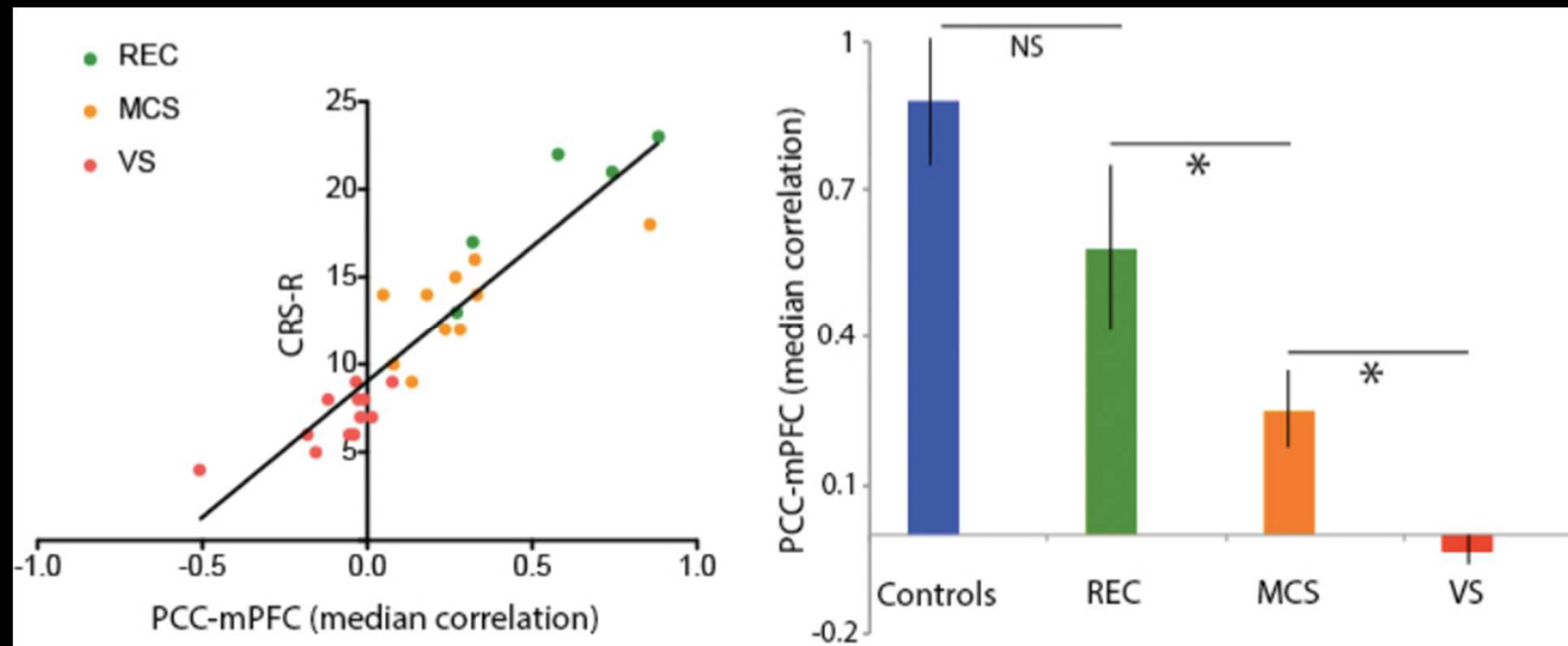
Cerveau au repos: **Projet ACI-Coma**

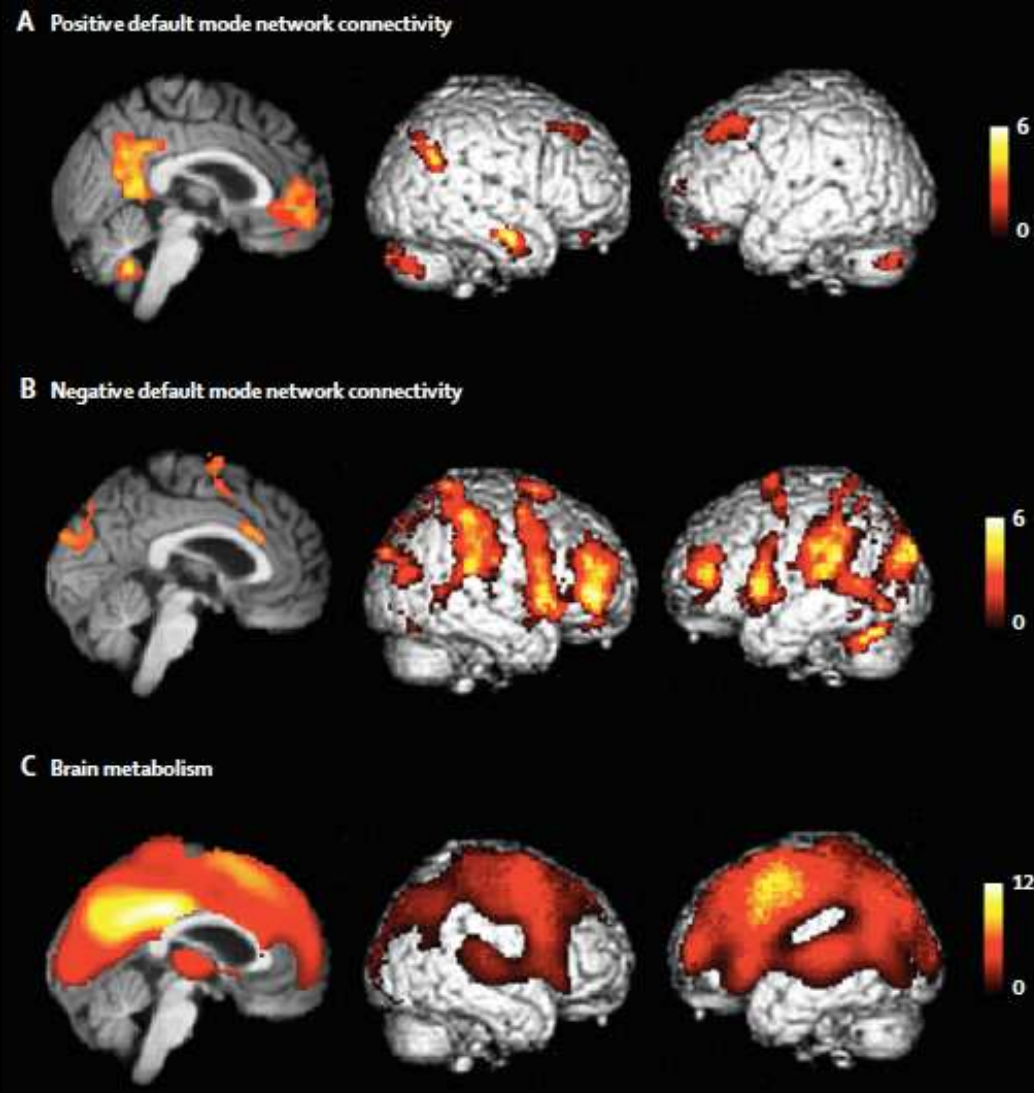


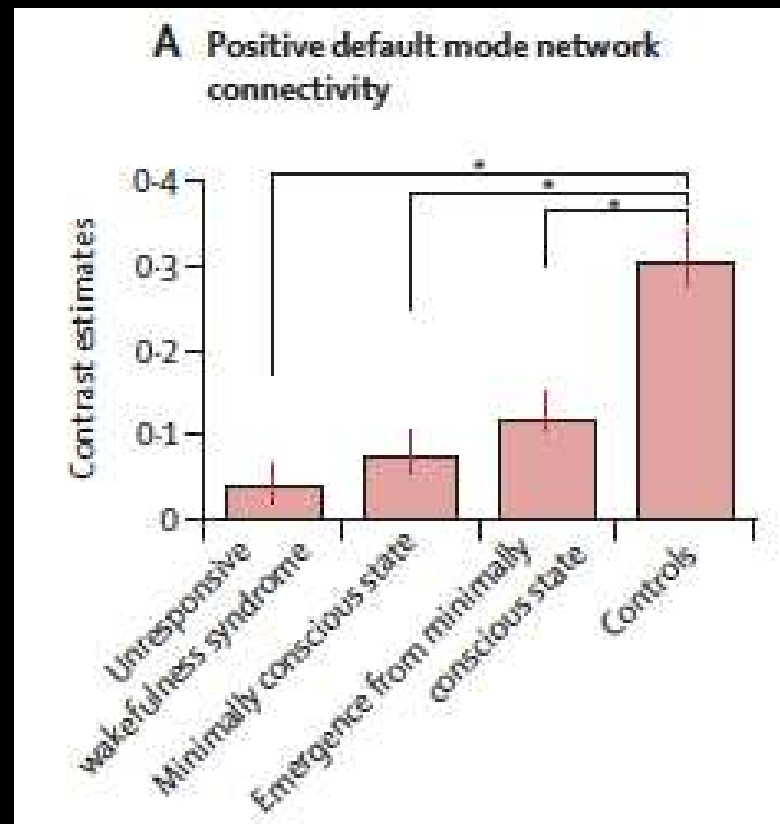
Disruption of posteromedial large-scale neural communication predicts recovery from coma

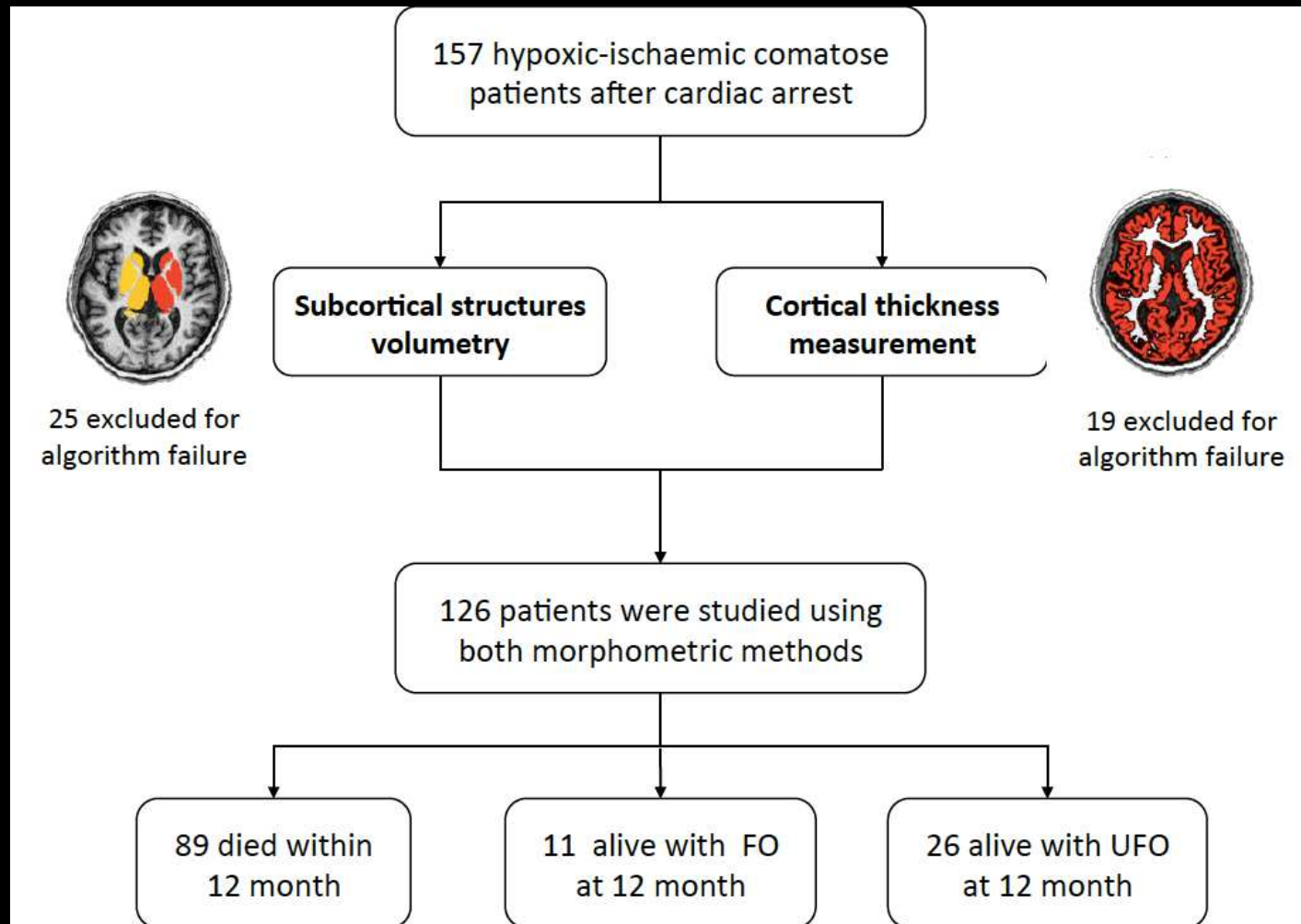


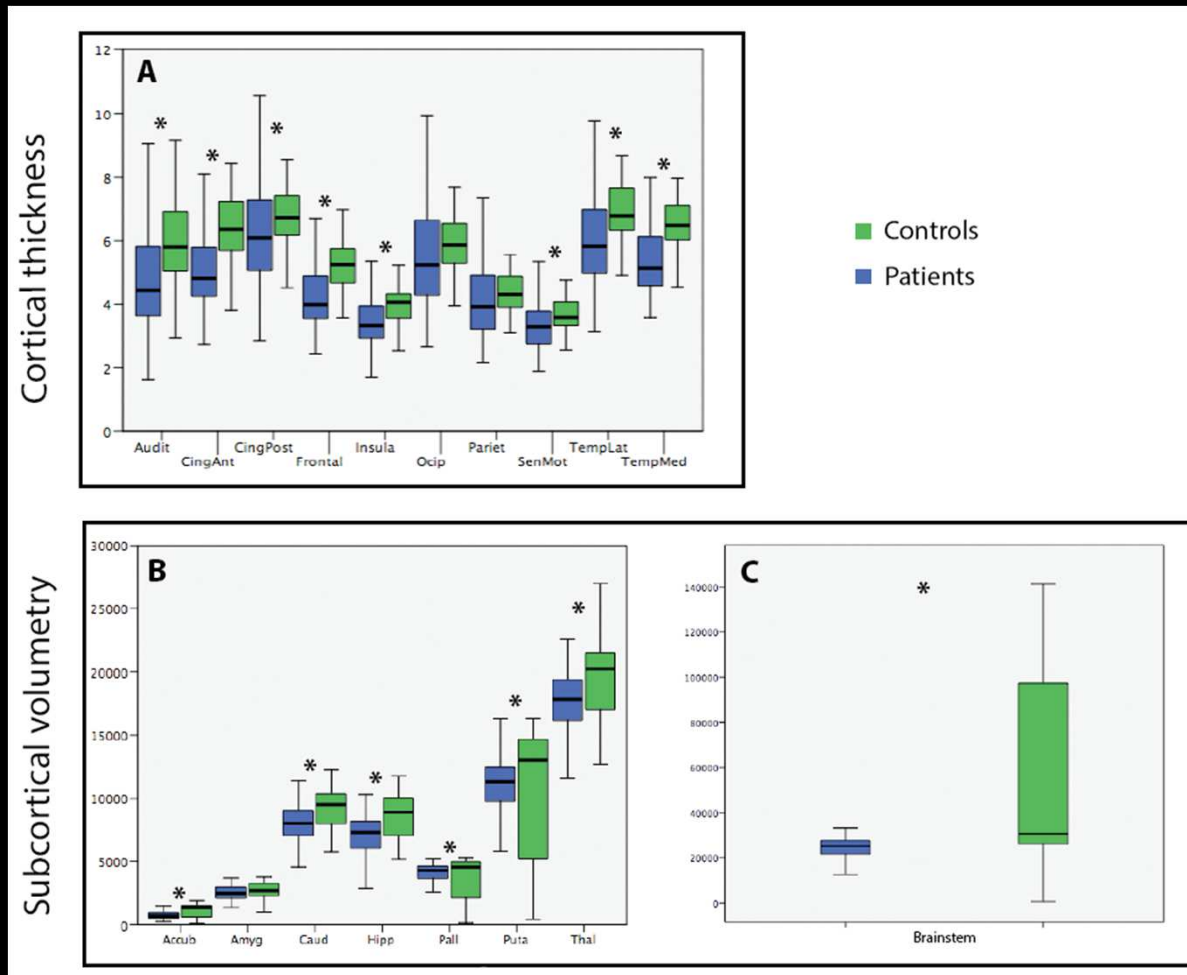


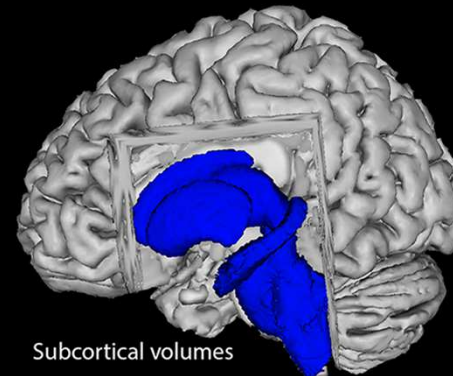
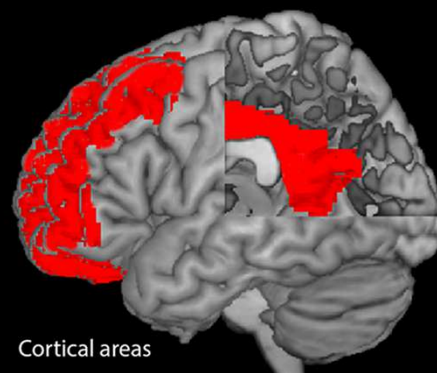
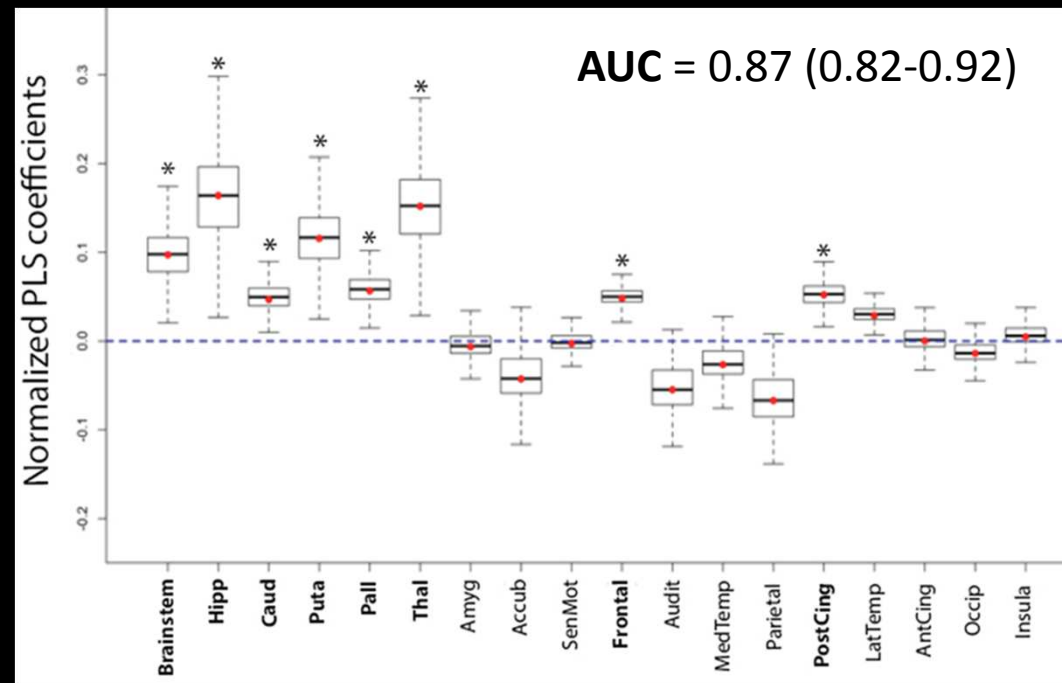


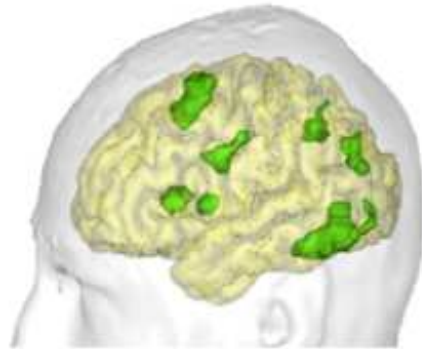




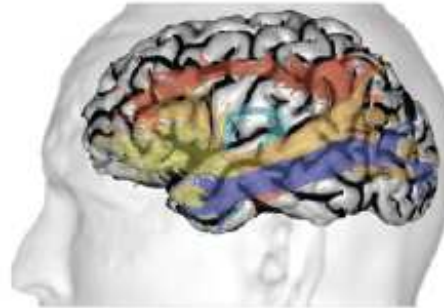




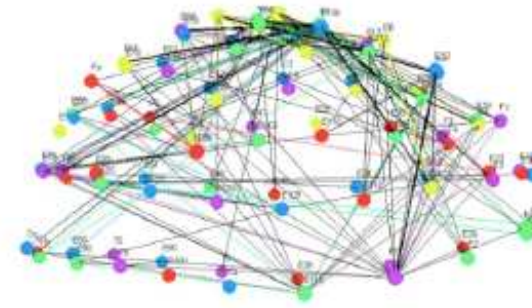




IRMf



IRMa



EEG-hd

Projet *CogniComa*

Improving the evaluation of comatose and post-comatose patients
and boosting their cognitive functions



The French National Research Agency
Projects for science

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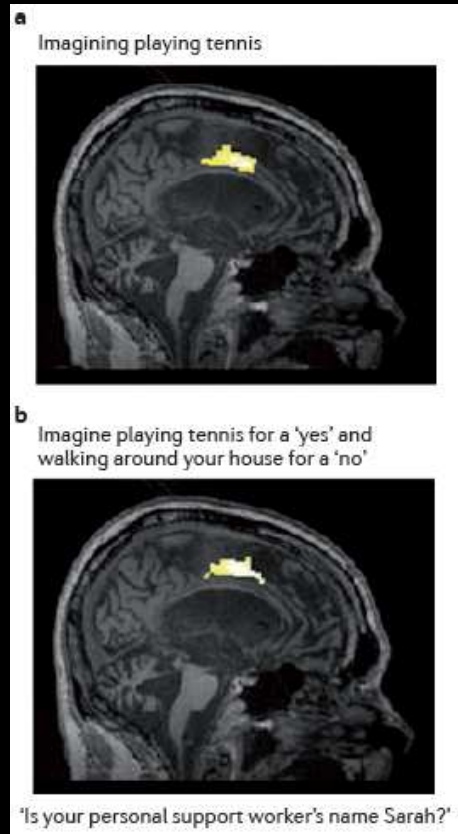
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SCIENCE AND SOCIETY

Detecting awareness after severe brain injury

Davinia Fernández-Espejo and Adrian M. Owen

Question	Correct or incorrect information	Number of times question asked	What the question assesses
Is a banana yellow?	Correct	Once	Basic semantic knowledge
Is your name John?	Correct name	Twice	Self-identity
Is your name Mike?	Incorrect name	Twice	Self-identity
Is the year 1999?	Incorrect year	Once	Orientation in time
Is the year 2012?	Correct year	Once	Orientation in time
Are you in a supermarket?	Incorrect	Once	Orientation in space
Are you in a hospital?	Correct	Once	Orientation in space
Is your support worker's name Bob?	Incorrect name	Once	New knowledge (familiar people)
Is your support worker's name Sarah?	Correct name	Twice	New knowledge (familiar people)
Is your support worker's name Julia?	Incorrect name	Once	New knowledge (familiar people)
Do you like watching (ice) hockey on TV?	NA	Once	Personal preference and quality of life
Are you in pain?	NA	Once	Clinical condition and quality of life

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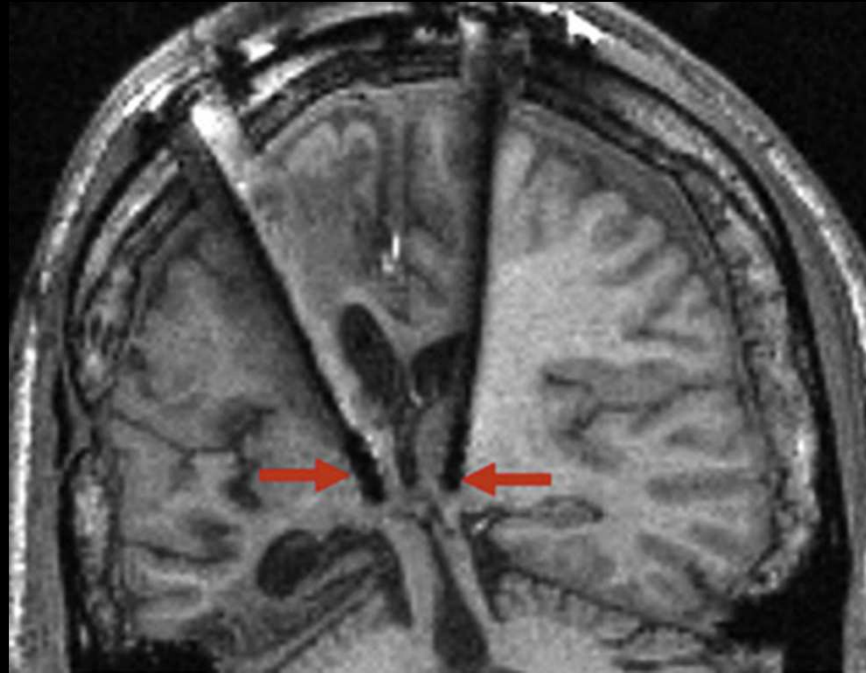
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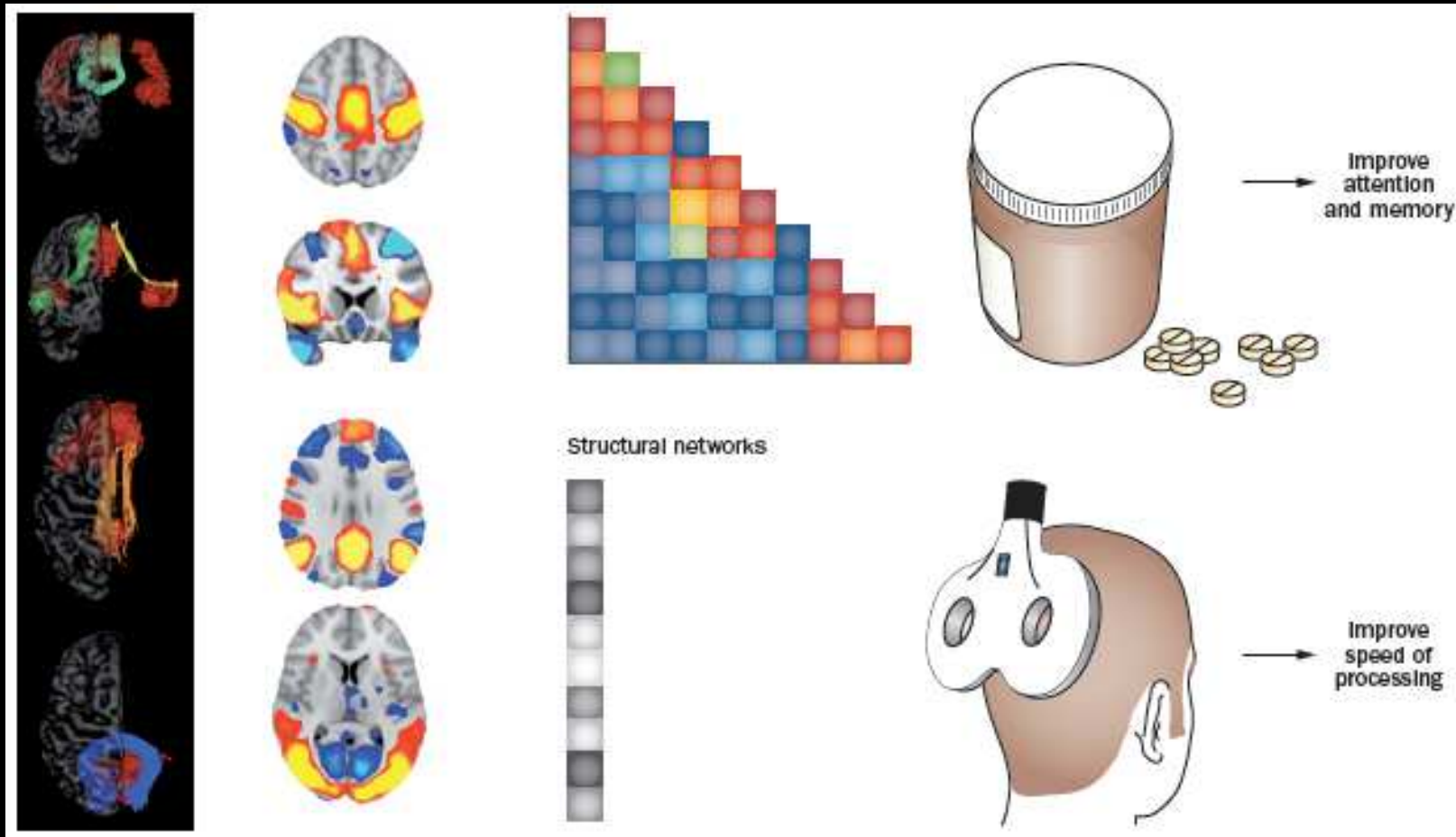
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Nouveaux traitements



Modulation thérapeutique de la plasticité cérébrale



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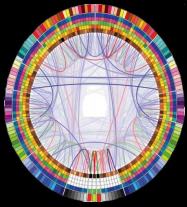
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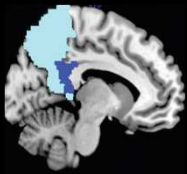
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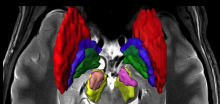
Technique	Signal	Forces	Faiblesses	Résolution spatiale	Résolution temporelle	Expertise	Côût
PET-FDG	Métabolique	CMR-glu	Radioations ionisantes	+	--	+++	+++
fMRI	Débit sanguin	Actif Passif	Champ magnétique	++	-	++++	+
aMRI	Structure	Substance grise Substance blanche	Champ magnétique	++	++	+	+
EEG TMS	Electrique Magnétique	Robuste Facile	Sources Artefacts	--	++	++	—



- TDM cérébrale: en urgence.
- Nouvelles technologies: besoin de validation.



- Prendre le temps: un réseau des soins.
- Prophéties auto-réalisatrices.



- Nihilisme thérapeutique.

Remerciements

Toulouse

Inserm U1214:

P Peran

I Loubinoux

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CHU

B Riu

B Sarton

L Gonzalez

X Deboissezon

V Bounes

Paris

APHP:

L Naccache

L Puybasset

Cambridge

Neurocritical Care Unit

D Menon

R Adapa

MRC Neuroscience

T Bekinschtein

Lausanne

Leenaards Memory Center

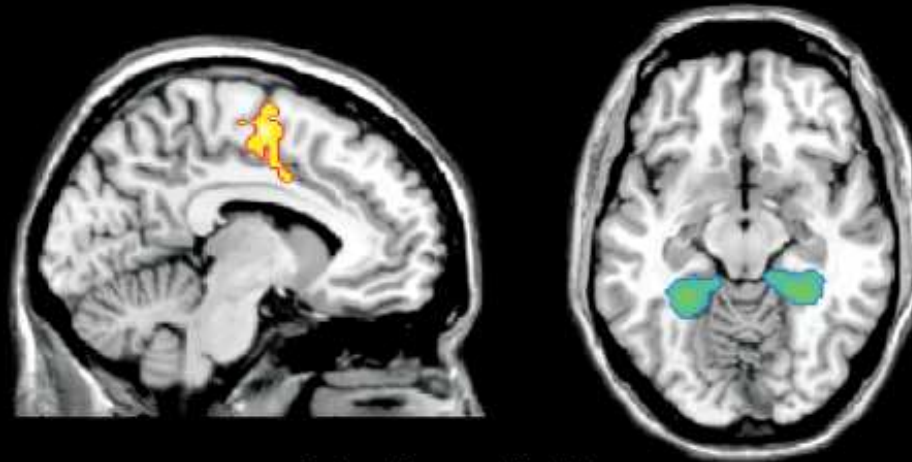
JF Demonet

Rome

Santa Lucia Foundation

F de Pasquale

Healthy control



Patient with traumatic brain injury

