

Apports de l'IRM SIGNA Architect en Neuroradiologie Diagnostic Morphologique et Fonctionnelle

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Le Kremlin-Bicêtre, FRANCE

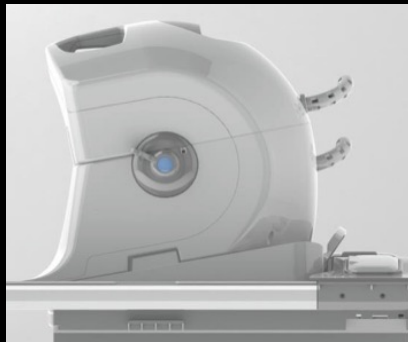
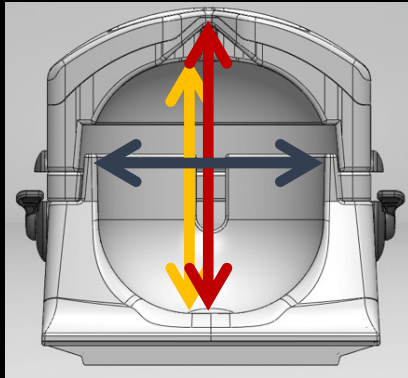
SIGNA Architect
au C.H.U. Bicêtre



SIGNA
Architect



Nouvelle antenne crâne Haute densité d'éléments



**Comfort Tilt pour patient
cyphotique**



**Poignée
antérieure
pour faciliter
l'installation**

**Sortie pour cables
EEG**

Antenne Neuro 48ch :

- ✓ **Nouvelle ergonomie / meilleur confort patient**
- ✓ **Gain SNR +++**
- ✓ **Vitesse d'acquisition +++**



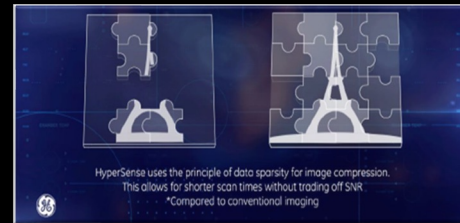
Compressed Sensing: Nouvelle accélération

- **Technique**

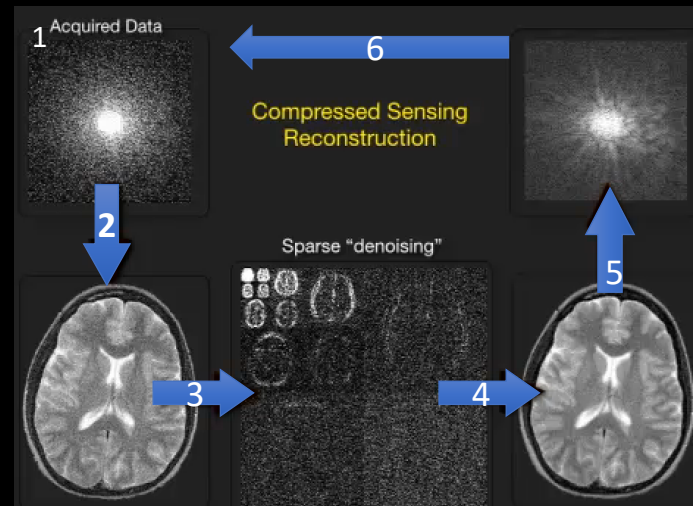
- ❑ **Sous-échantillonnage aléatoire** du plan de Fourier
- ❑ **Reconstruction itérative** basée sur le principe de sparsity de l'image.
- ❑ Applicable aux séquences CUBE, TOF, MRCP.
- ❑ Combinable avec les techniques classiques d'accélération.

- **Bénéfices cliniques et de productivité**

- Compressed Sensing permet:
 - D'augmenter la résolution spatiale pour la même durée d'acquisition
 - Ou de diminuer le temps d'acquisition pour une même résolution



Reconstruction Itérative



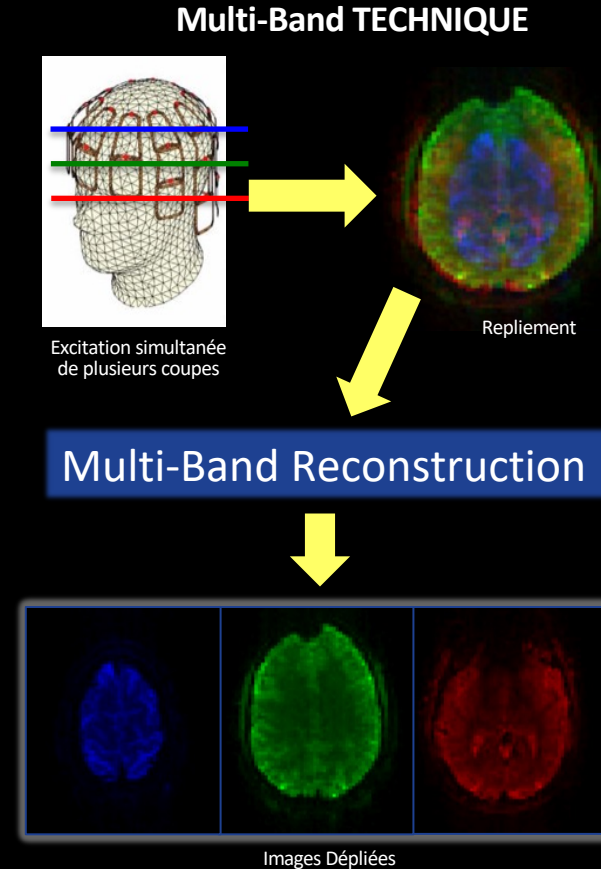
Multiband DWI

- **Technique**

- ❑ Acquisition simultanée de plusieurs coupes
- ❑ Utilisation du profil de sensibilité de l'antenne pour déplier les images acquises simultanément.
- ❑ Applicable à la diffusion, au tenseur de diffusion en neurologie.

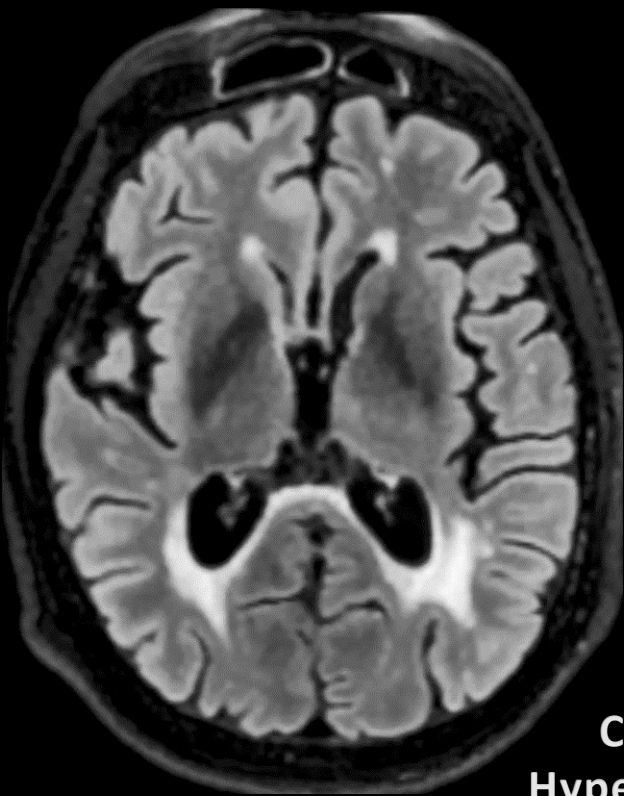
- **Bénéfices cliniques et de productivité**

- ❑ Multiband DWI permet de réduire significativement le temps de séquence, par exemple pour les urgences AVC.
- ❑ Permet d'acquérir des tenseurs de diffusion avec un nombre important de directions pour reconstructions DKI, HARDI



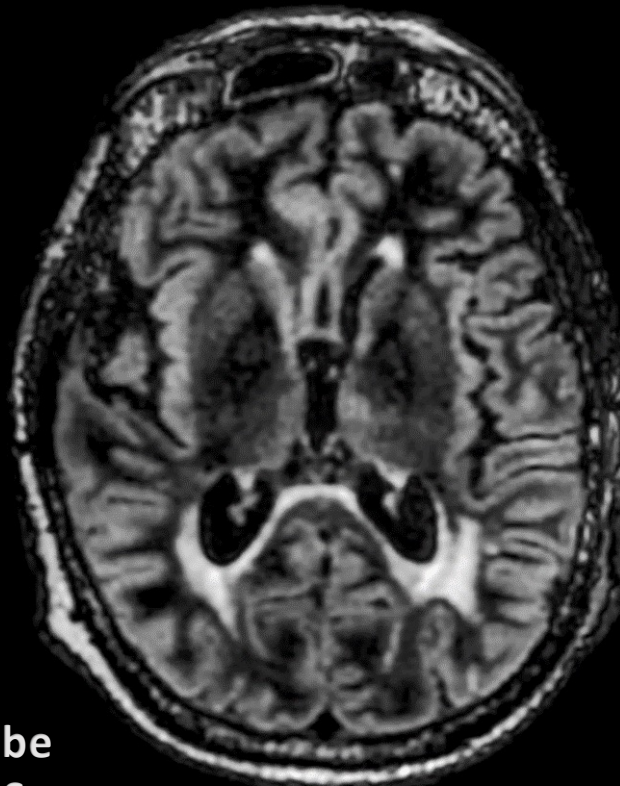
SIGNA Architect: Imagerie Diagnostique

1

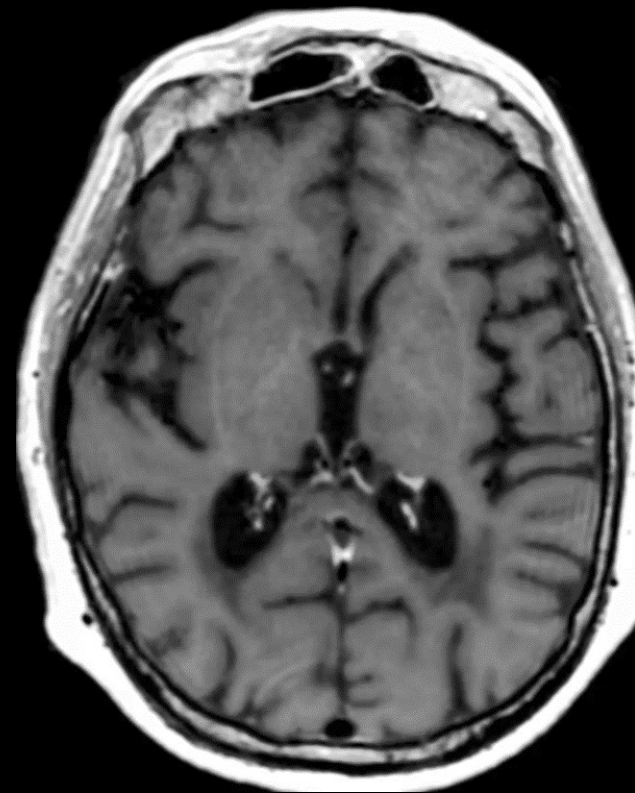


T2Prep FLAIR

Cube
HyperSense

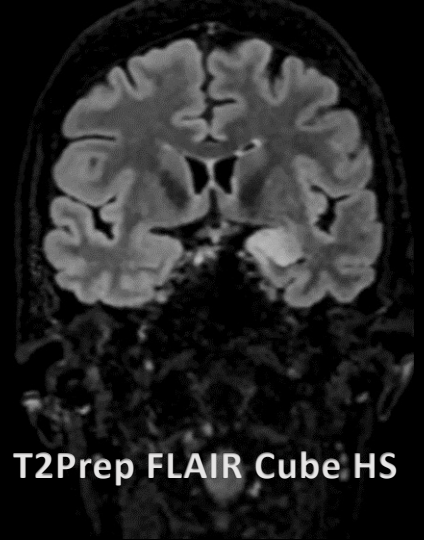
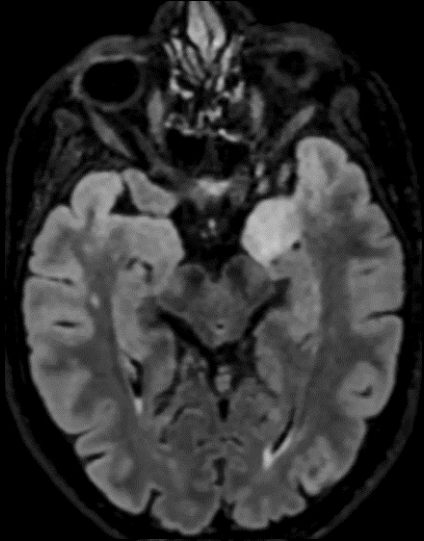


T2Prep DIR

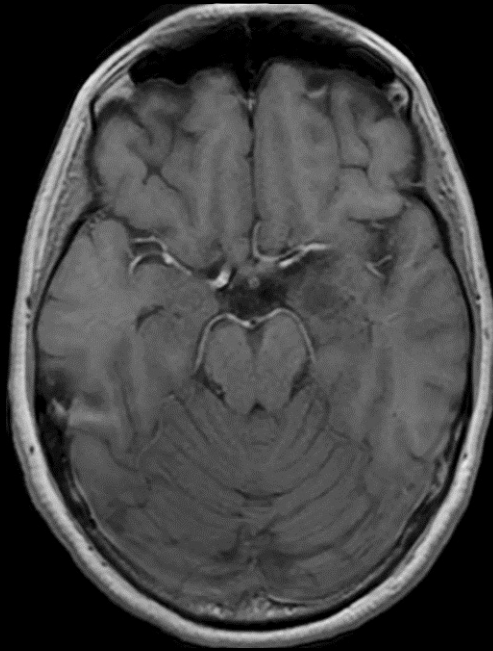


3D T1 Cube Gado

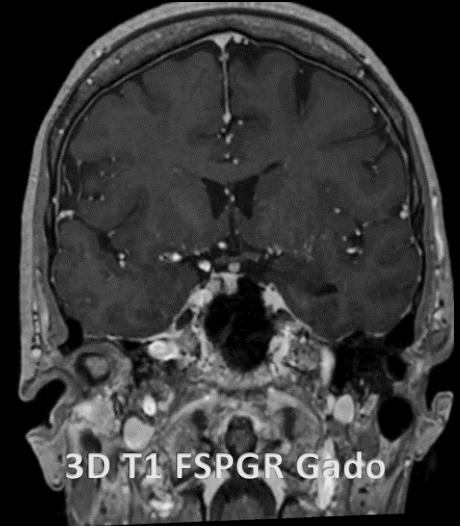
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T2Prep FLAIR Cube HS



2D T1 FSPGR



3D T1 FSPGR Gado

3



T2Prep FLAIR Cube HS

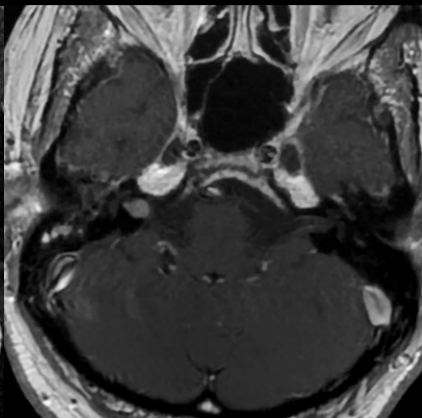
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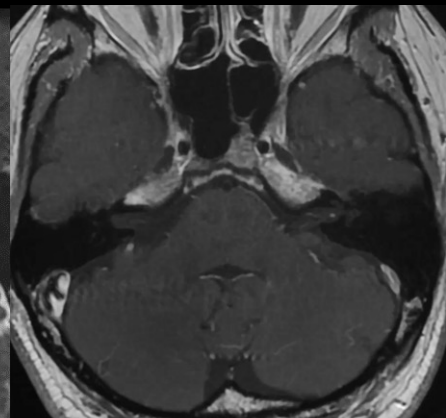
HyperCube T2



T1 Gd FSE

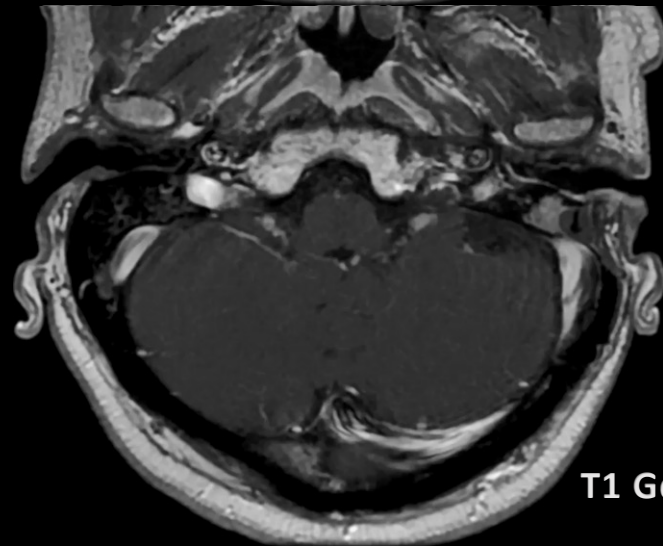
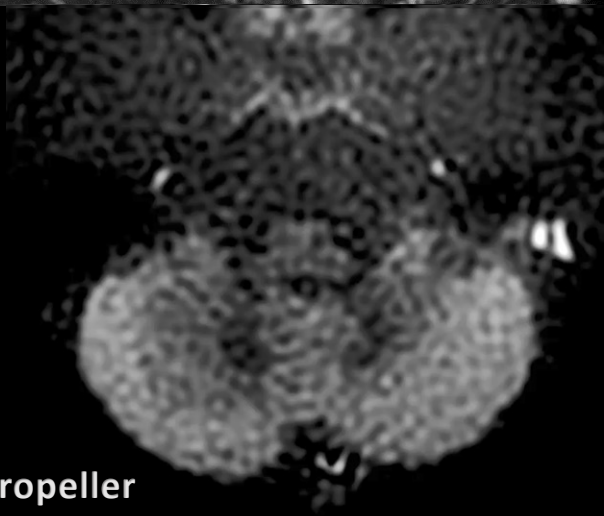
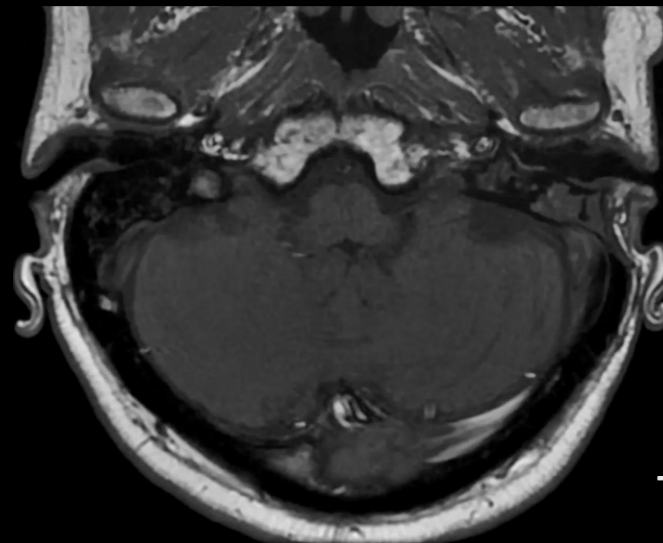
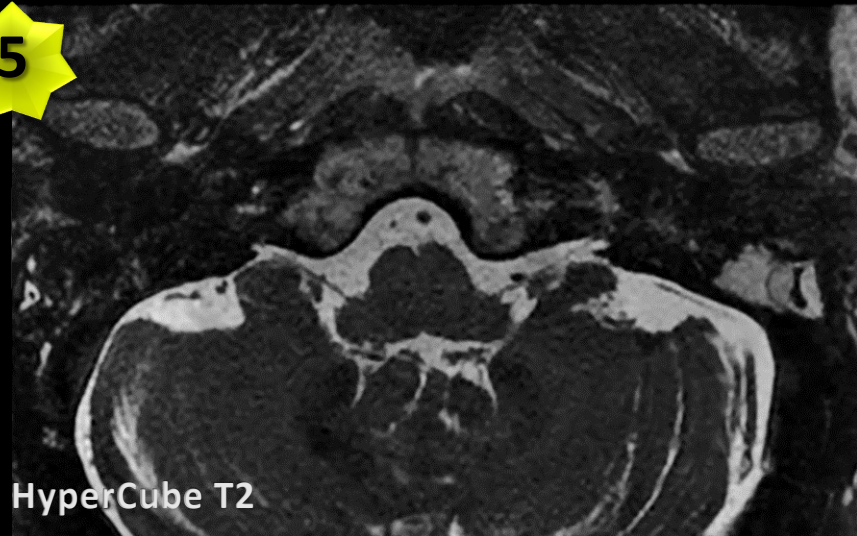


HyperCube T2

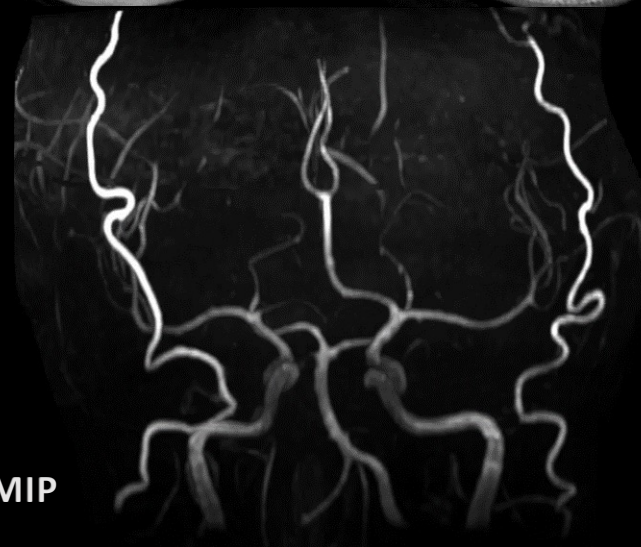
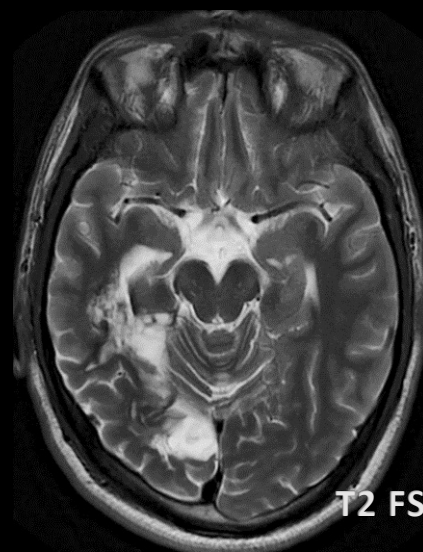
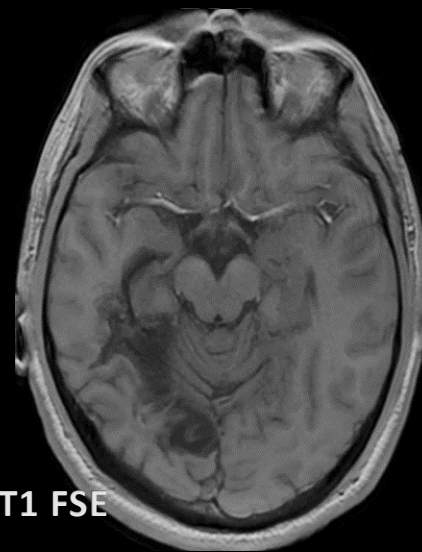
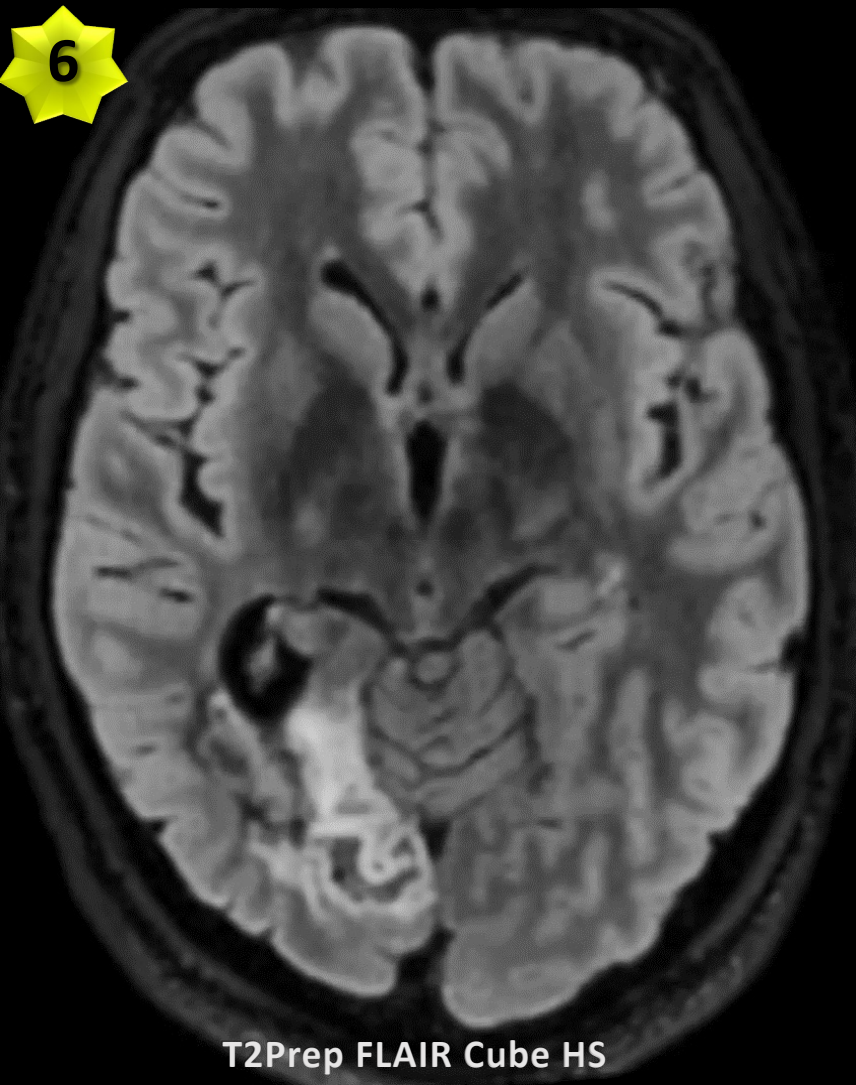


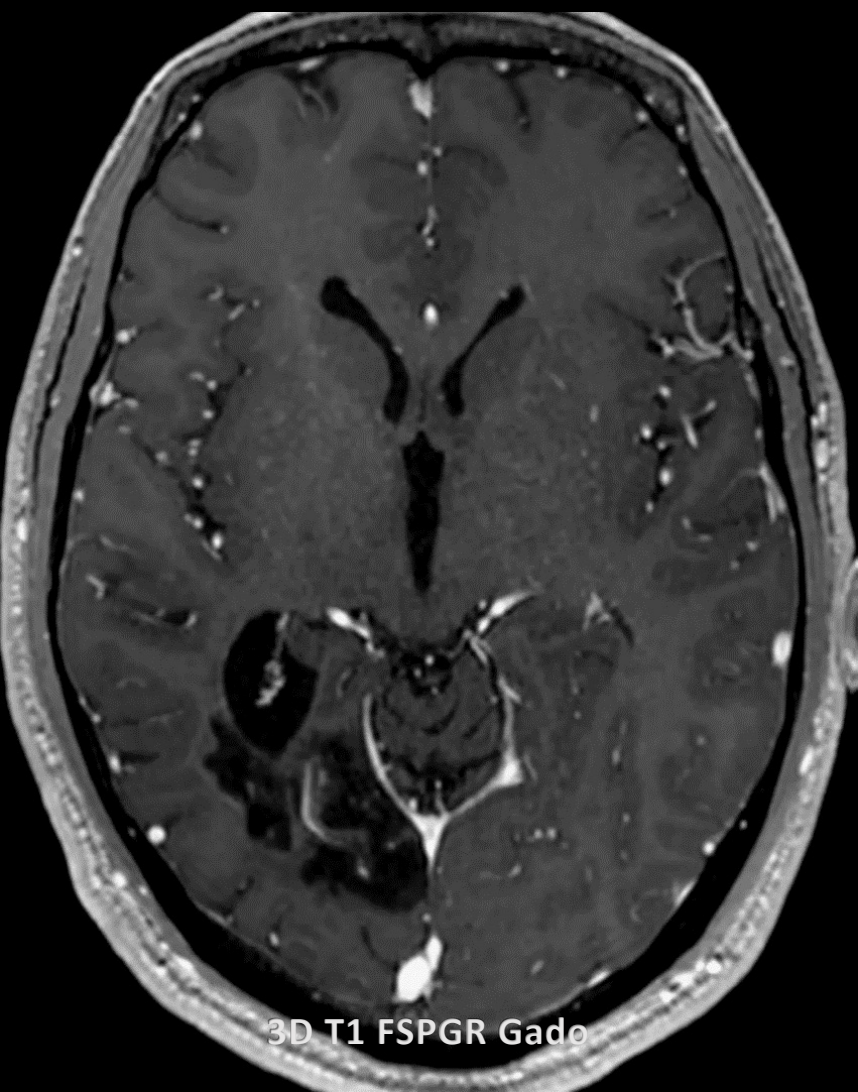
T1 Gd FSE

5

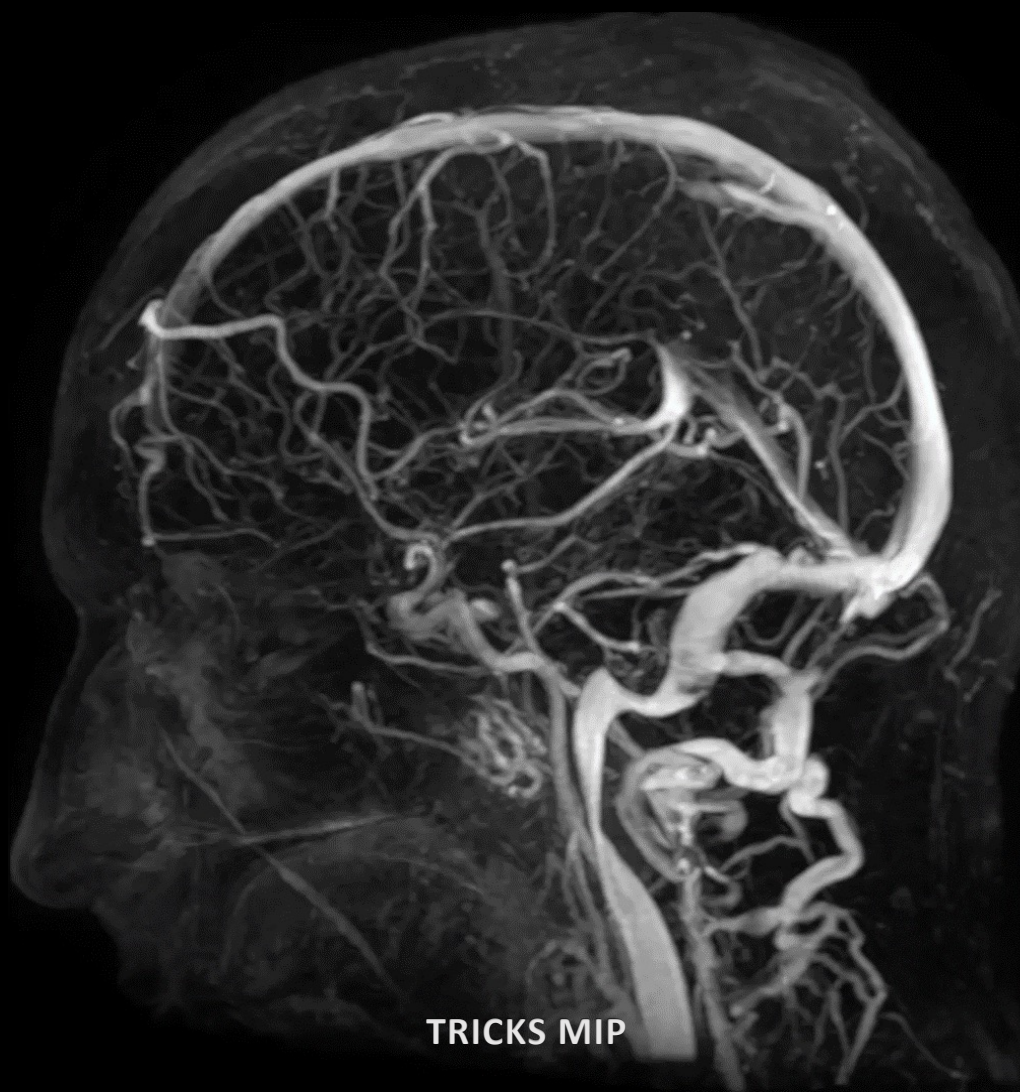


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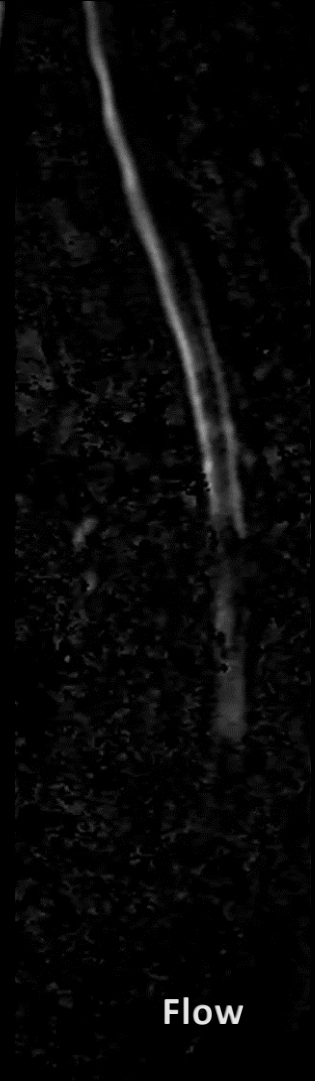


3D T1 FSPGR Gado

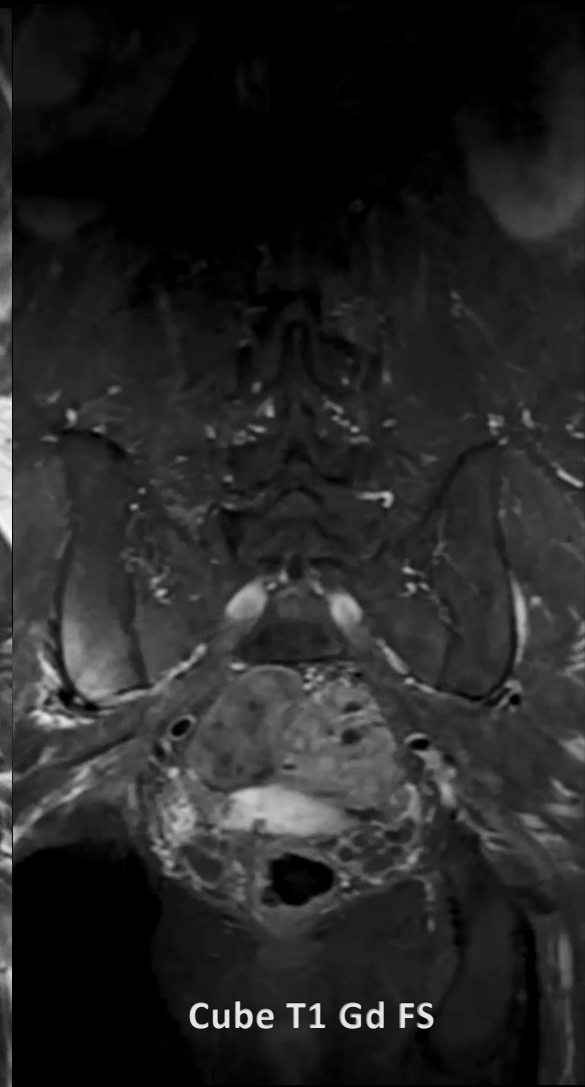
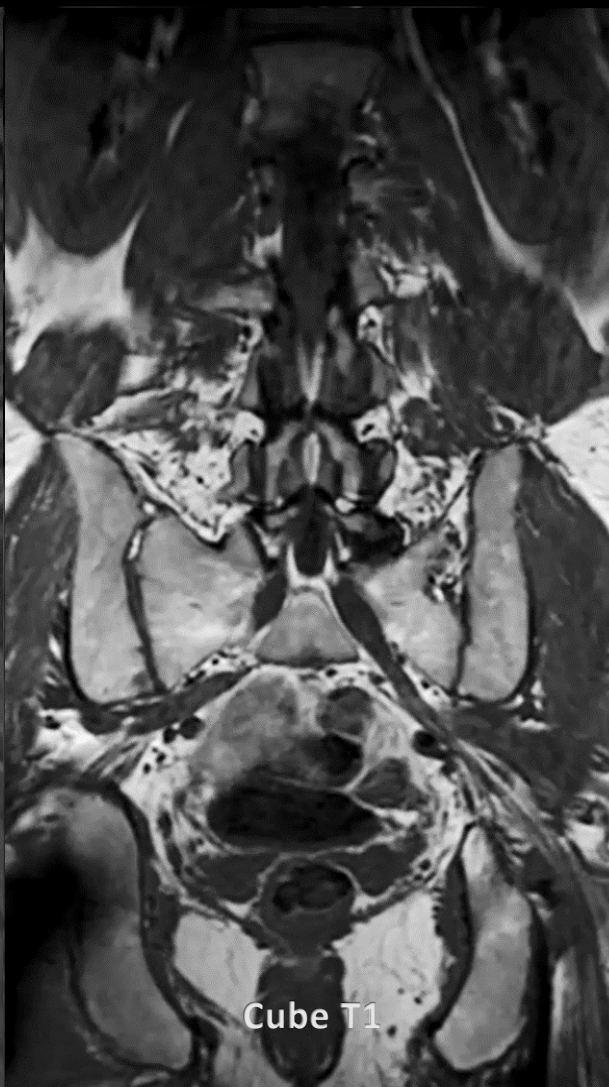
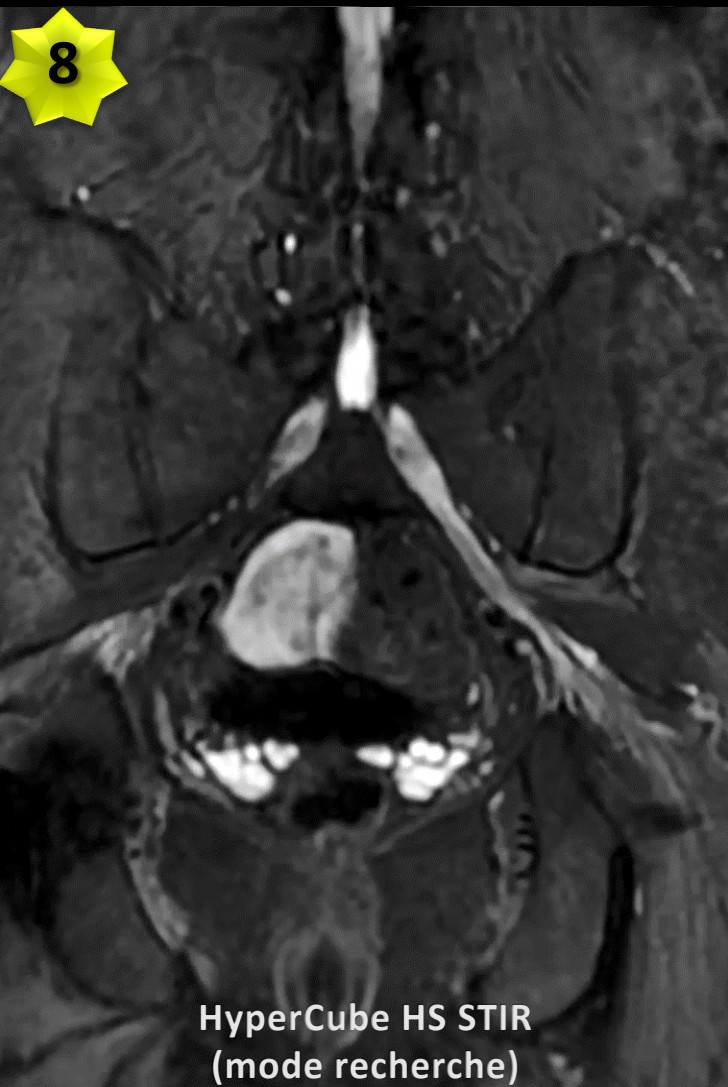


TRICKS MIP

7

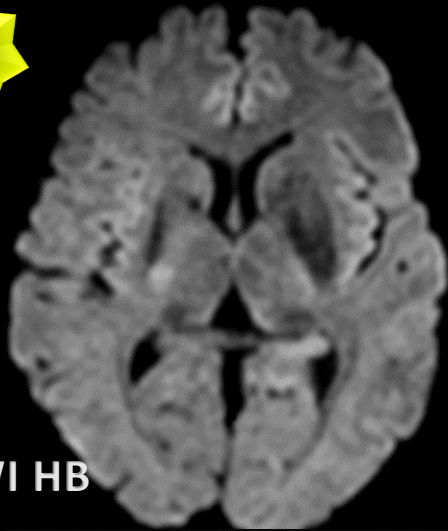


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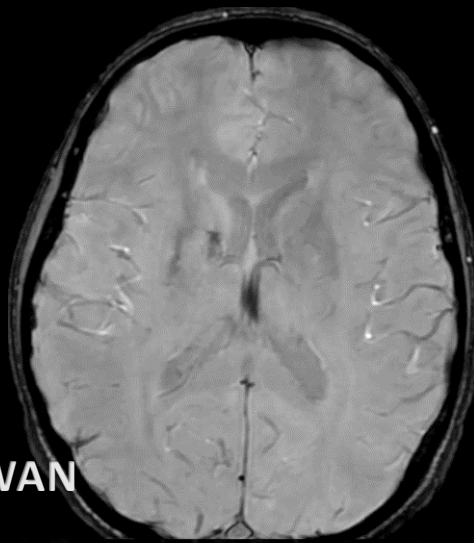


SIGNA Architect: Imagerie Fonctionnelle

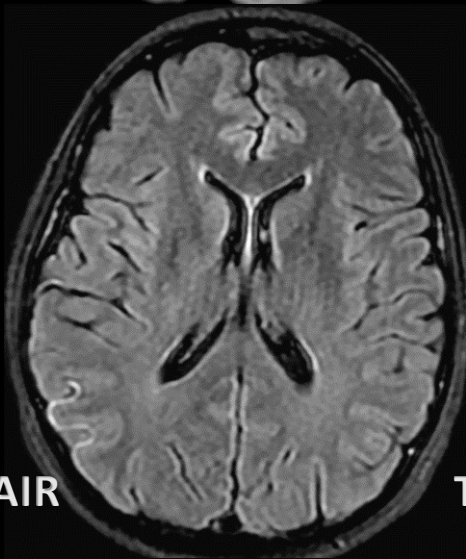
9



DWI HB



SWAN



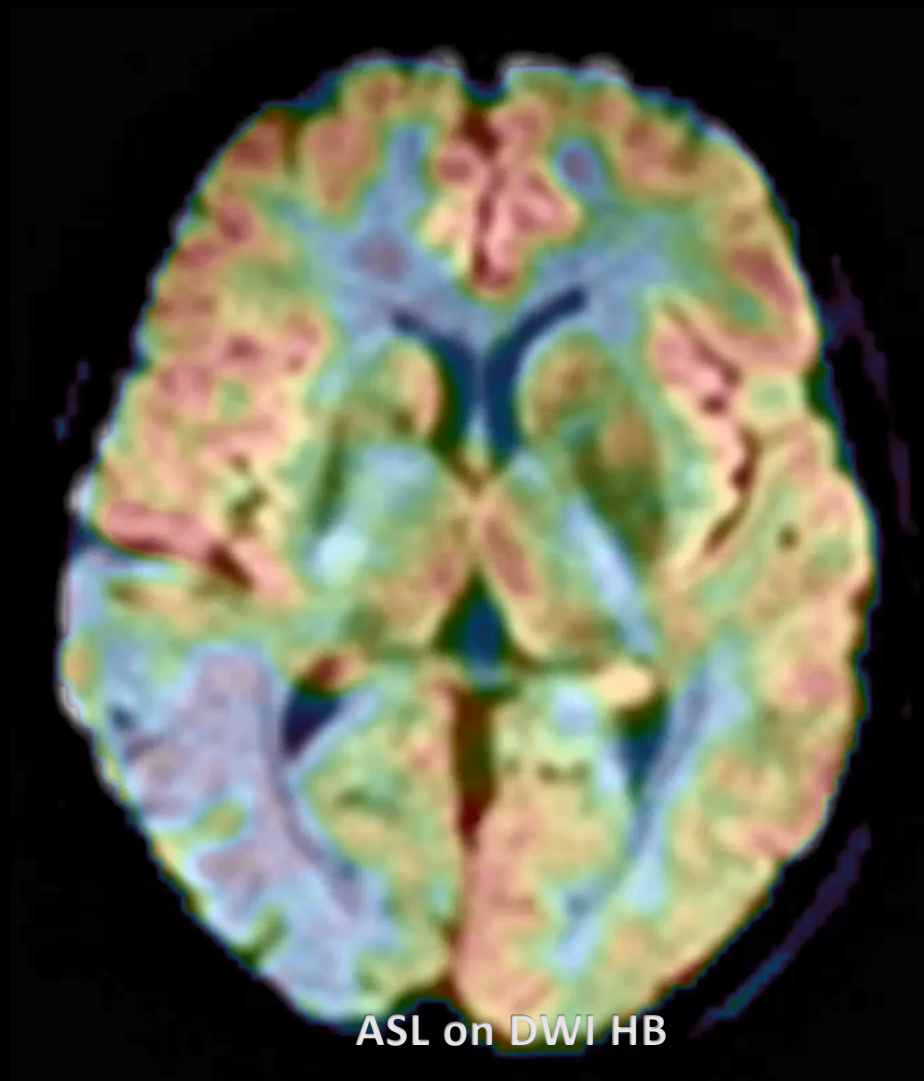
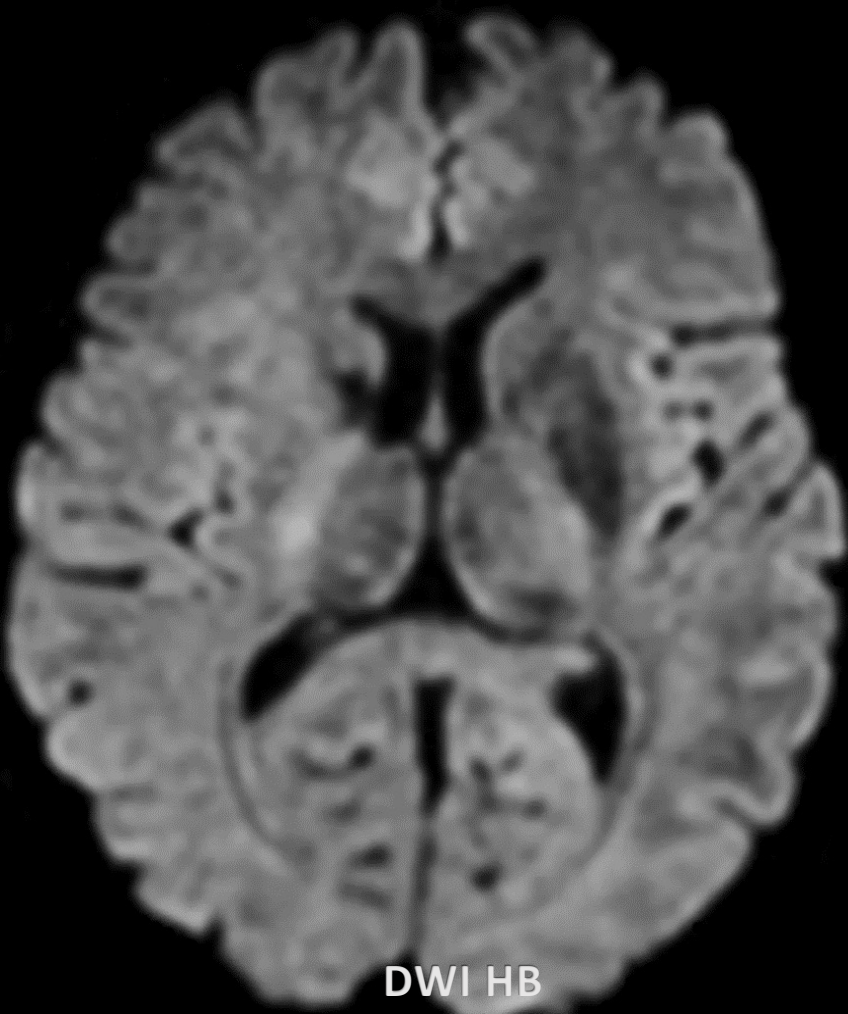
FLAIR



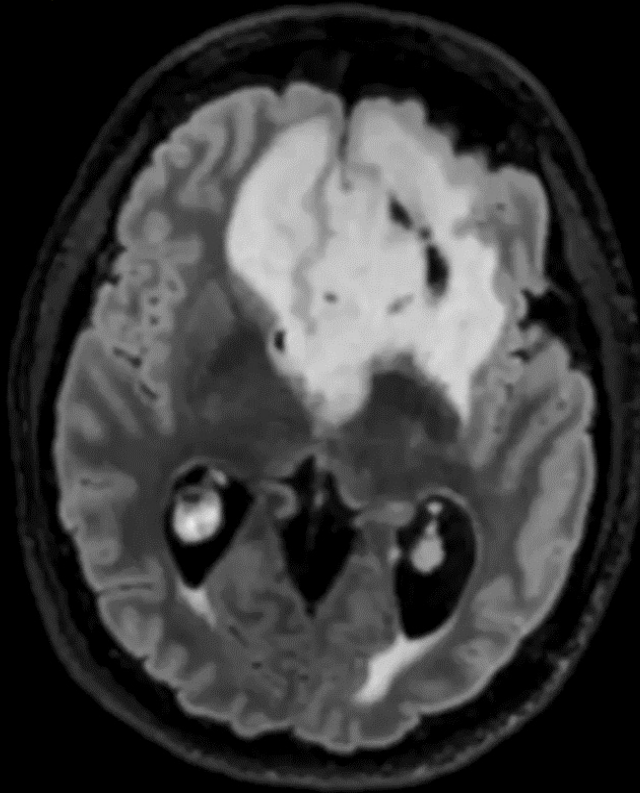
TOF HS MIP



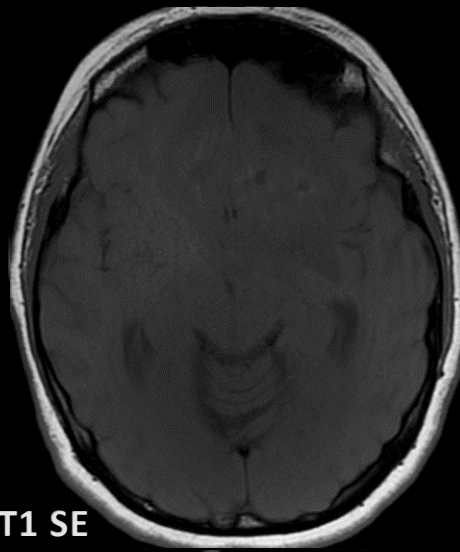
TSA MIP



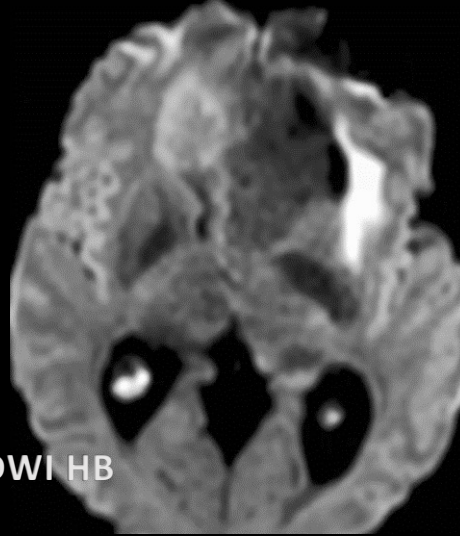
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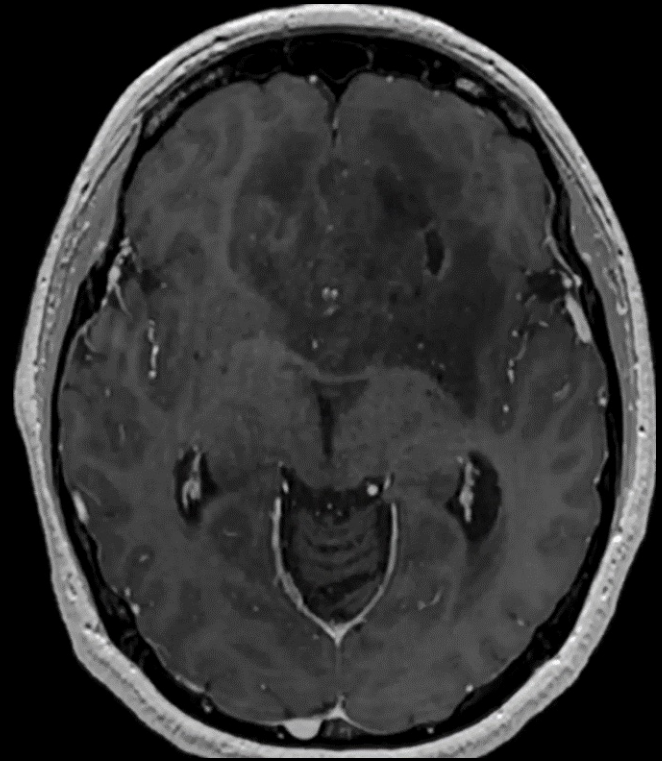
T2Prep FLAIR Cube HS



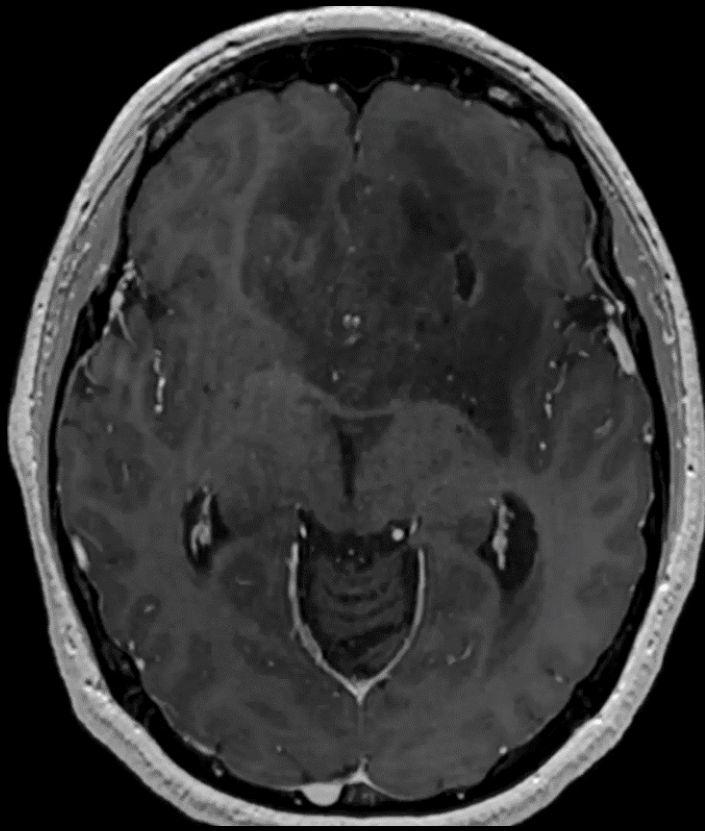
T1 SE



DWI HB



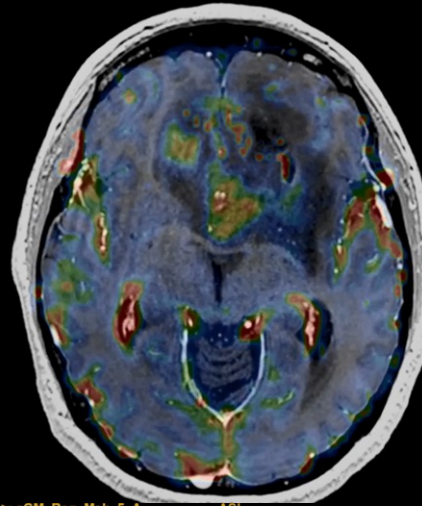
3D T1 FSPGR Gd



3D T1 FSPGR Gd

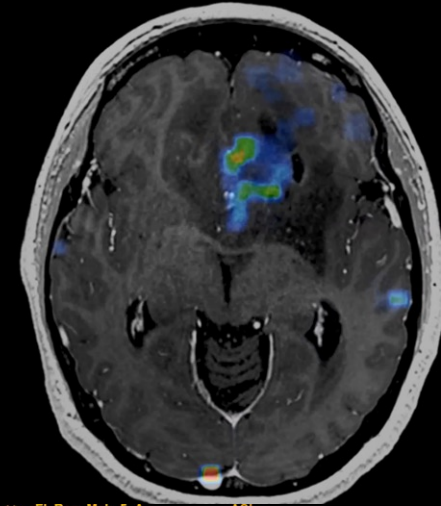
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ASL



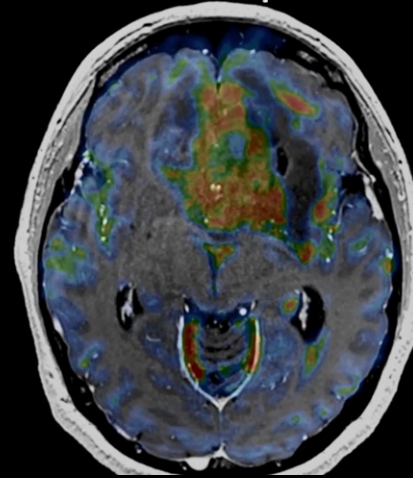
D ...<->: fBV_Reg_MoC_Msk...

ASL



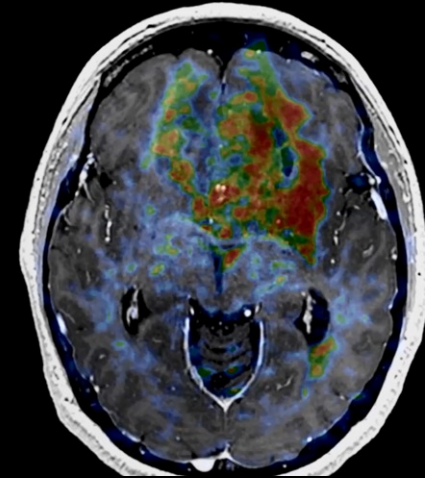
...<->: cGM_Reg_Msk_5_A...

ASL



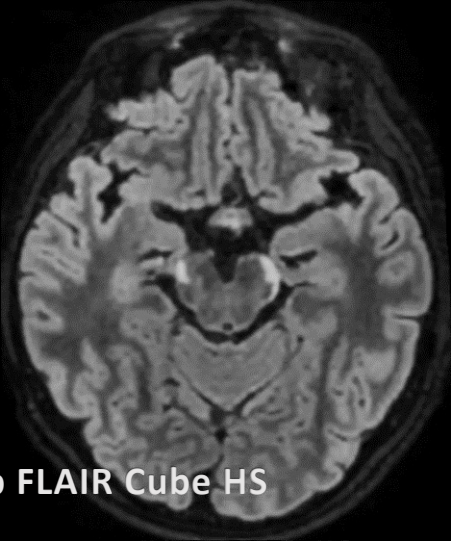
κ 3D ...<->: cFl_Reg_Msk_5_A...

ASL

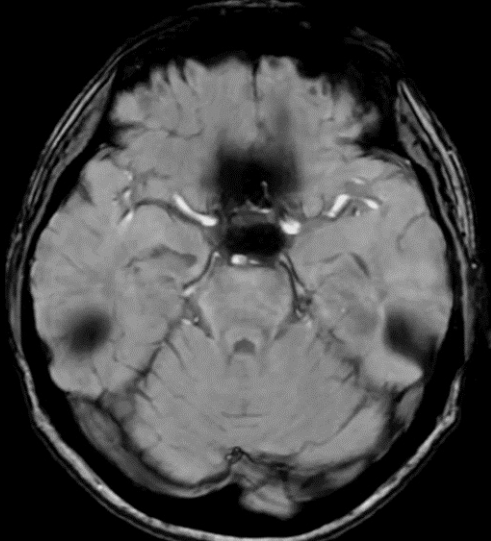


Maps on 3D T1 FSPGR Gd

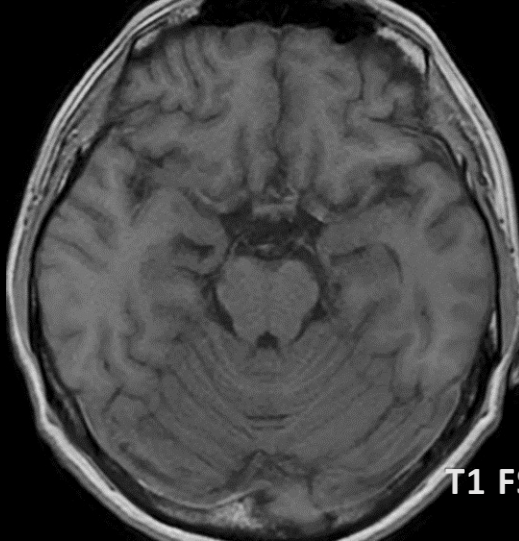
11



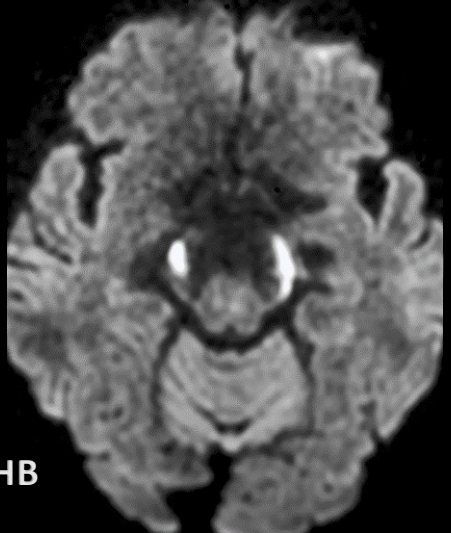
T2Prep FLAIR Cube HS



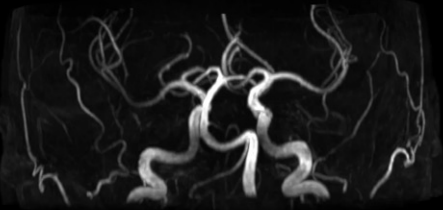
SWAN



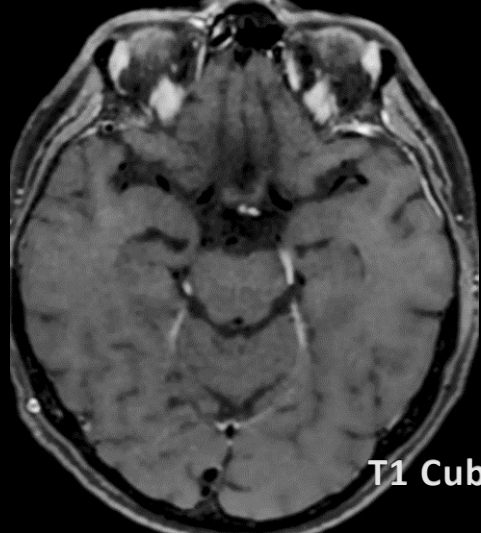
T1 FSPRG



DWI HB



TOF HS MIP



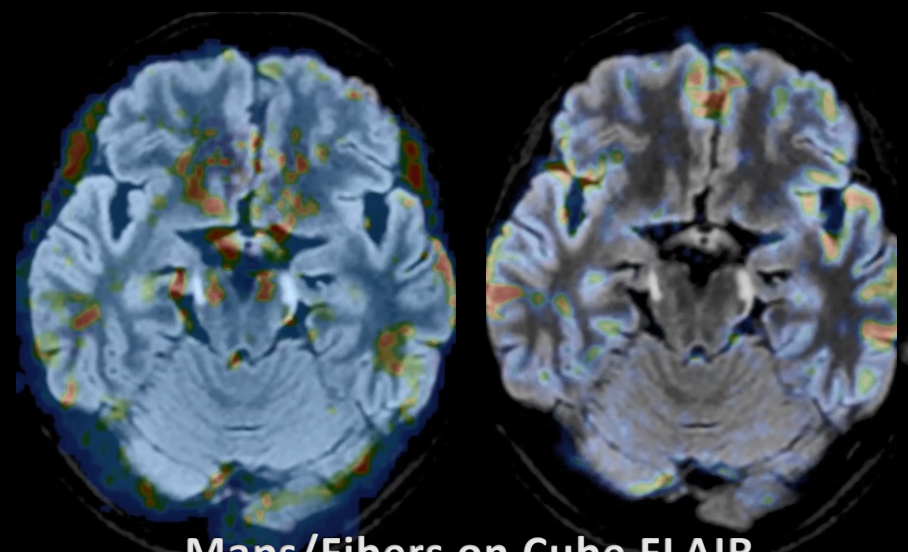
T1 Cube Gd

WL 1525 MW: 2931

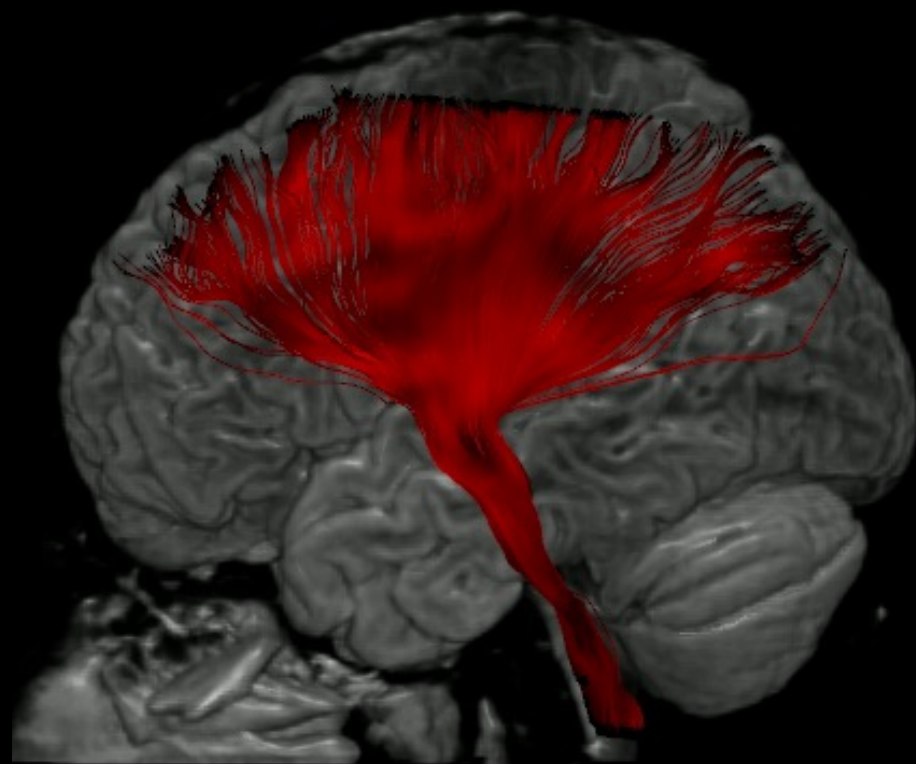
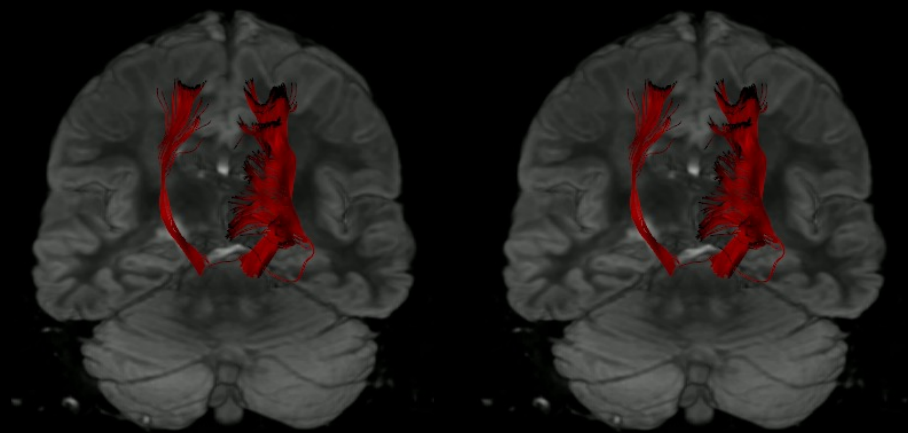
A

ASIX

52-51
150-53
104.29



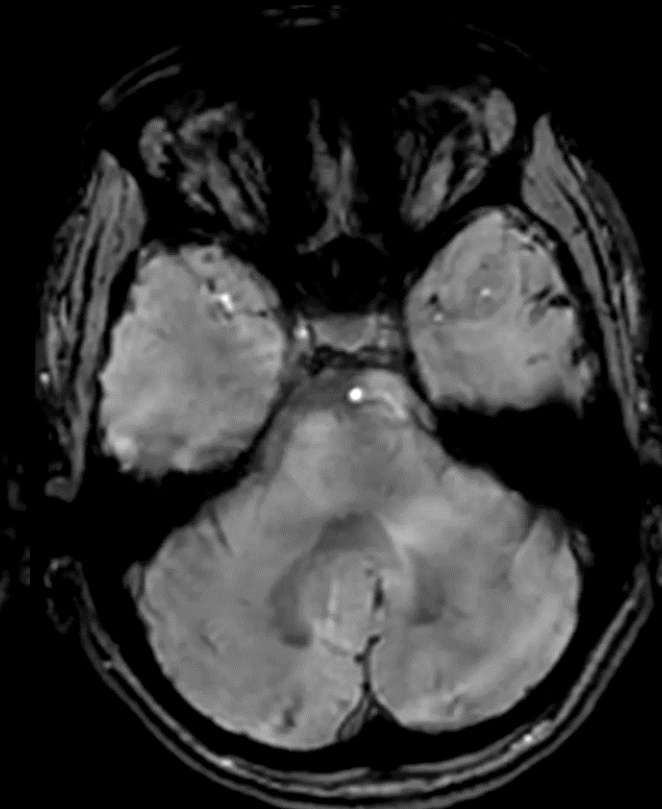
Maps/Fibers on Cube FLAIR



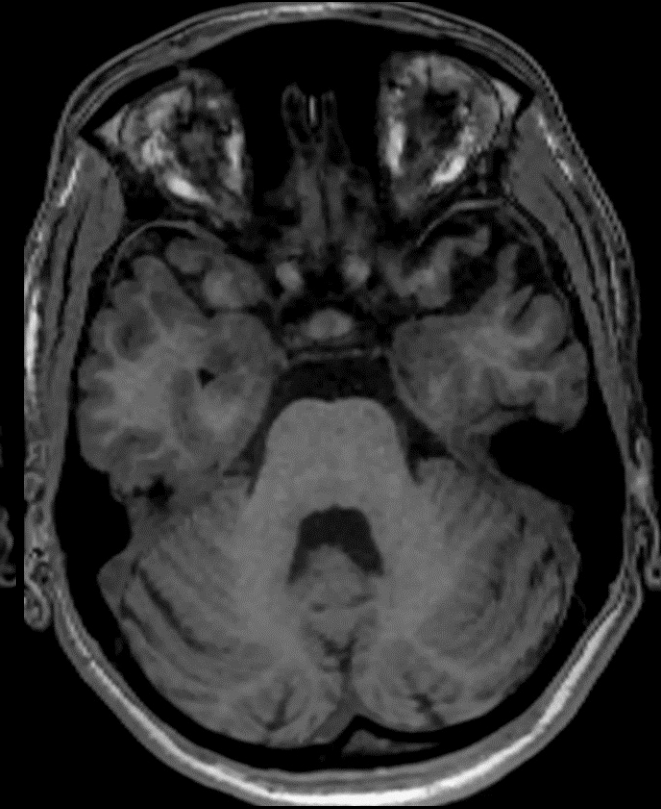
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T2Prep FLAIR Cube HS



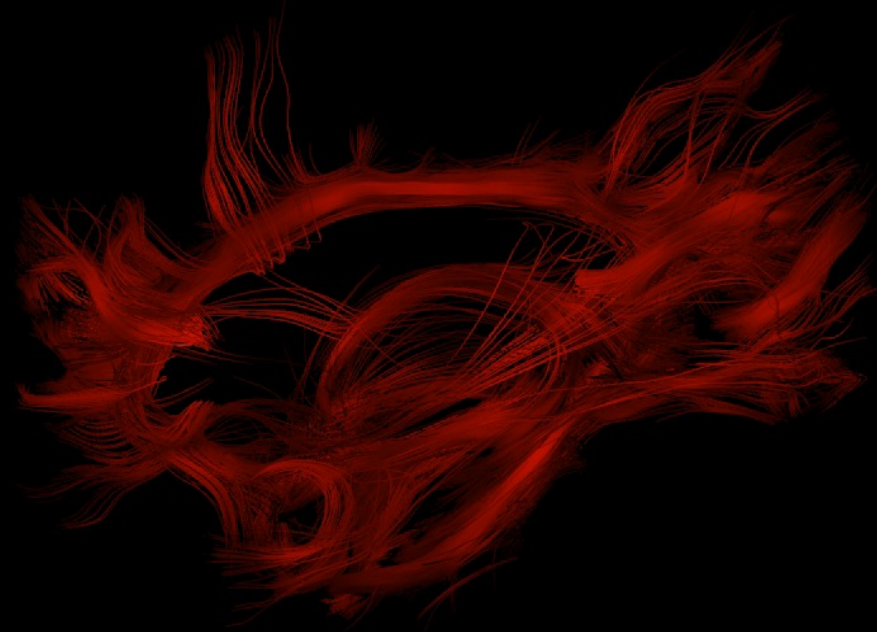
SWAN



BRAVO

Fibers from DTI no HB Pepolar 0
HNU Coil

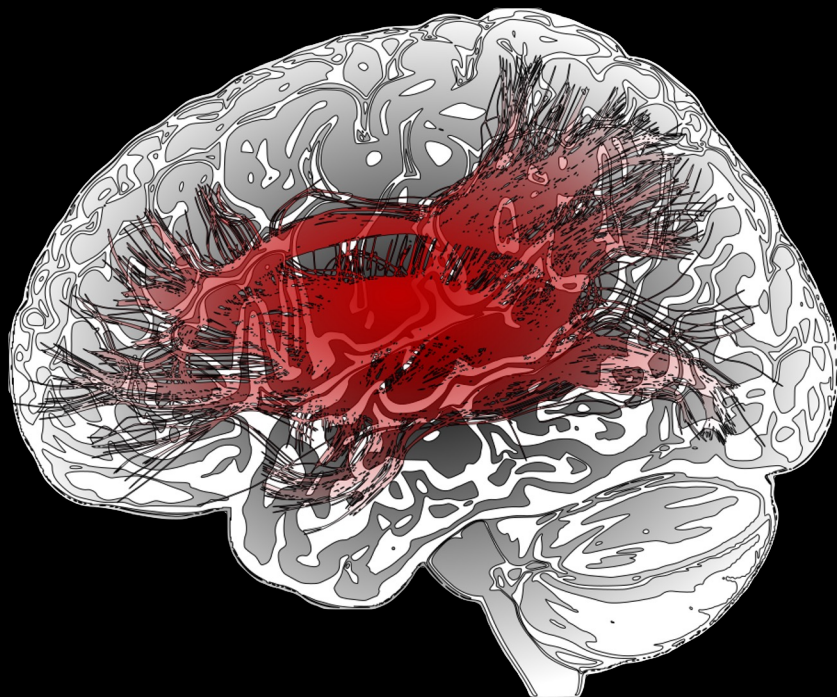
Fibers from DTI no HB Pepolar 0
48 Ch Coil



Normal Subject

MBI Patient

SIGNA Architect: Précision et Performances



Merci de votre attention !