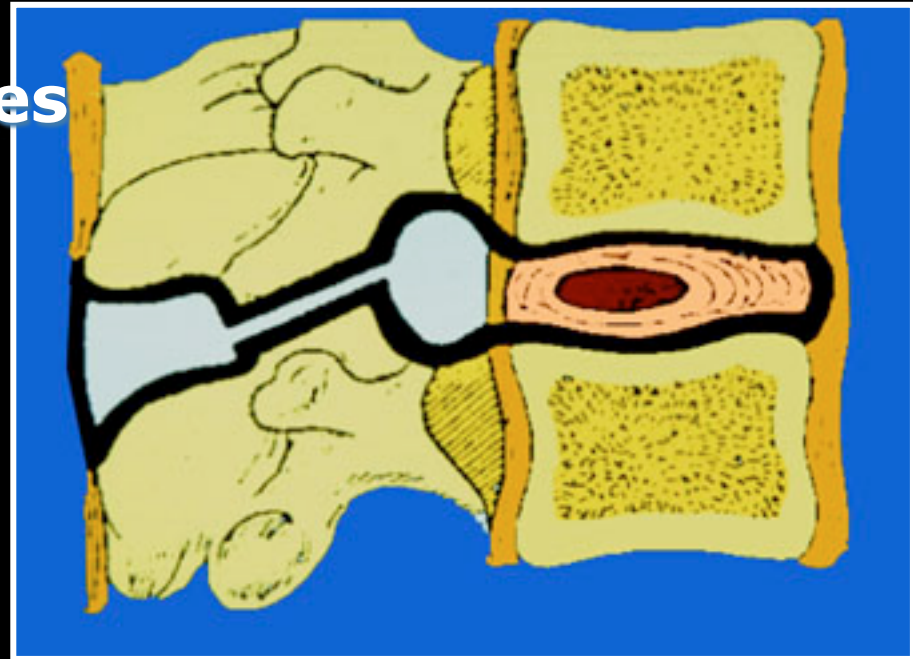


**Le disque lombaire.
Concepts actuels.**

**Le 05 février 2011
EPU Rachis. SFR Rhône-Alpes
Yannick Carrillon
Centre Orthopédique Santy
LYON**

L' espace intervertébral

- **Le segment mobile de Junghans**
 - **Disque**
 - **Massifs articulaires**
- **Ligaments**
- **Muscles**



D'après J.L. Lerat

La pathologie de l'espace intervertébral

Pathologie :

- **Discopathies**
- **Pathologie zygapophysaire**
- **Muscle**
- **Arthrose**



Symptômes :

- **Lombalgies**
- **Radiculalgies**
- **Claudication**

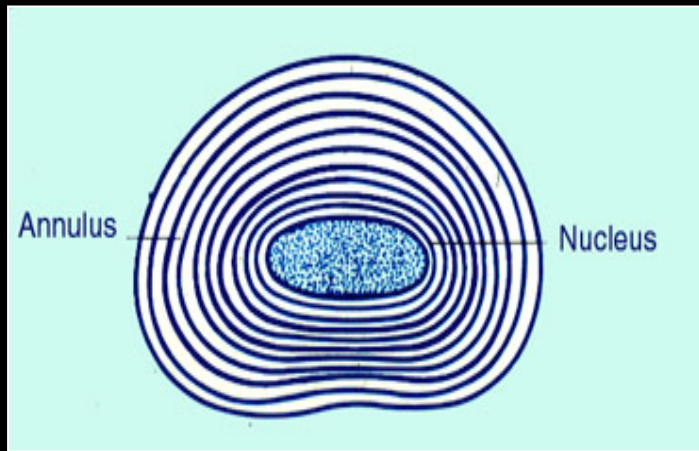
La pathologie de l'espace intervertébral

Imagerie +++

- Radiographies
- IRM
- Scanner
- Sacco radiculographie - myeloscanner

Le disque intervertébral

- **Nucléus** : protéoglycanes = mobilité
- **Annulus** : collagène = contention
- **Plaque cartilagineuse** : arrimage

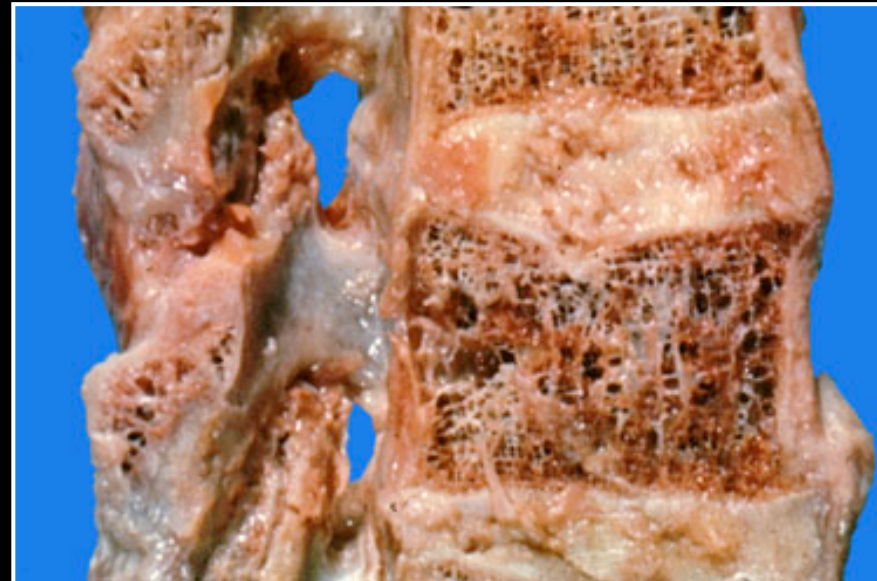


D'après J.L. Lerat

Le disque intervertébral

Annulus : amarrage

- Fibres de Sapey, plateau vertébral
- Ligaments Commun Vertébraux



D'après J.L. Lerat

Le disque intervertébral.

Fœtal



E. Widjajaa . Am J Neuroradiol. 2006 .

Le disque intervertébral.



Le disque intervertébral.

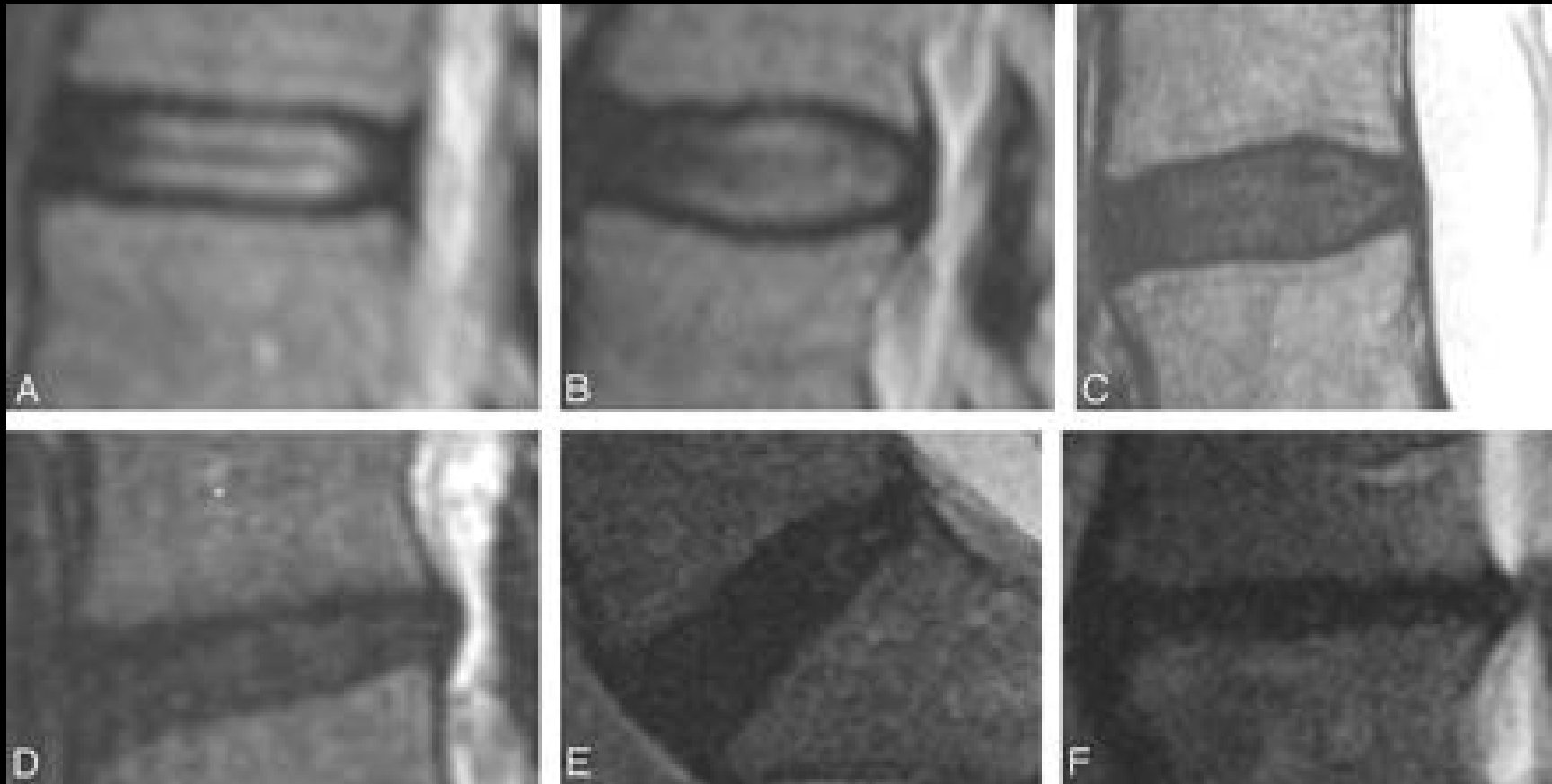
Enfant



Le disque intervertébral.



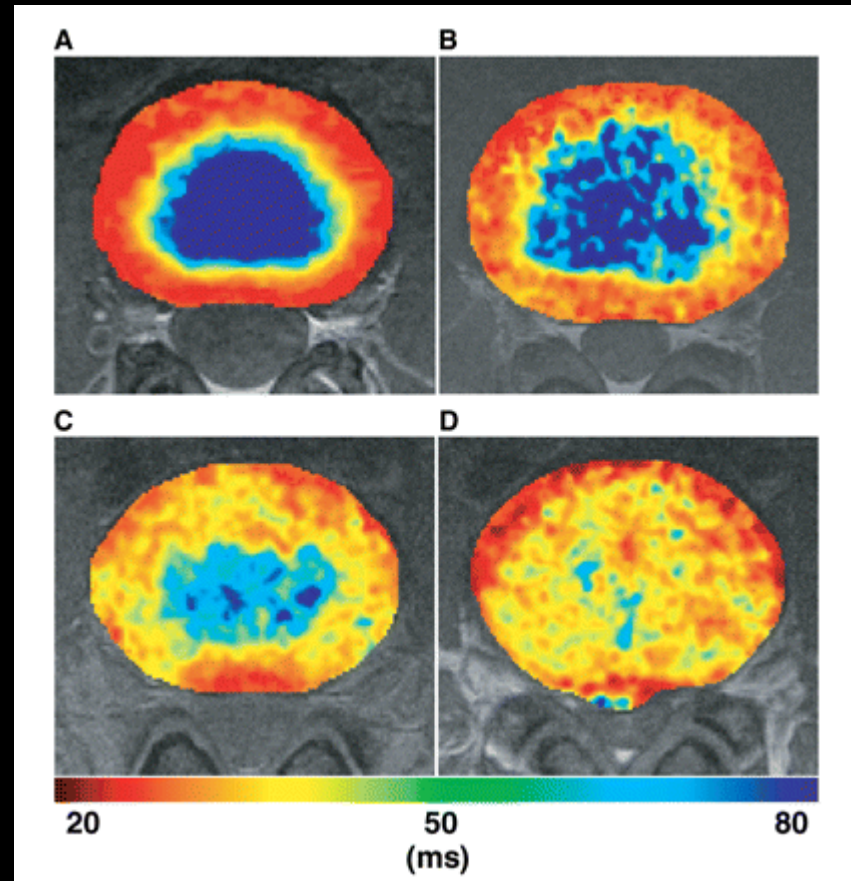
Le disque intervertébral.



Sharma A. Am J Neurorad 2009

Le disque intervertébral.

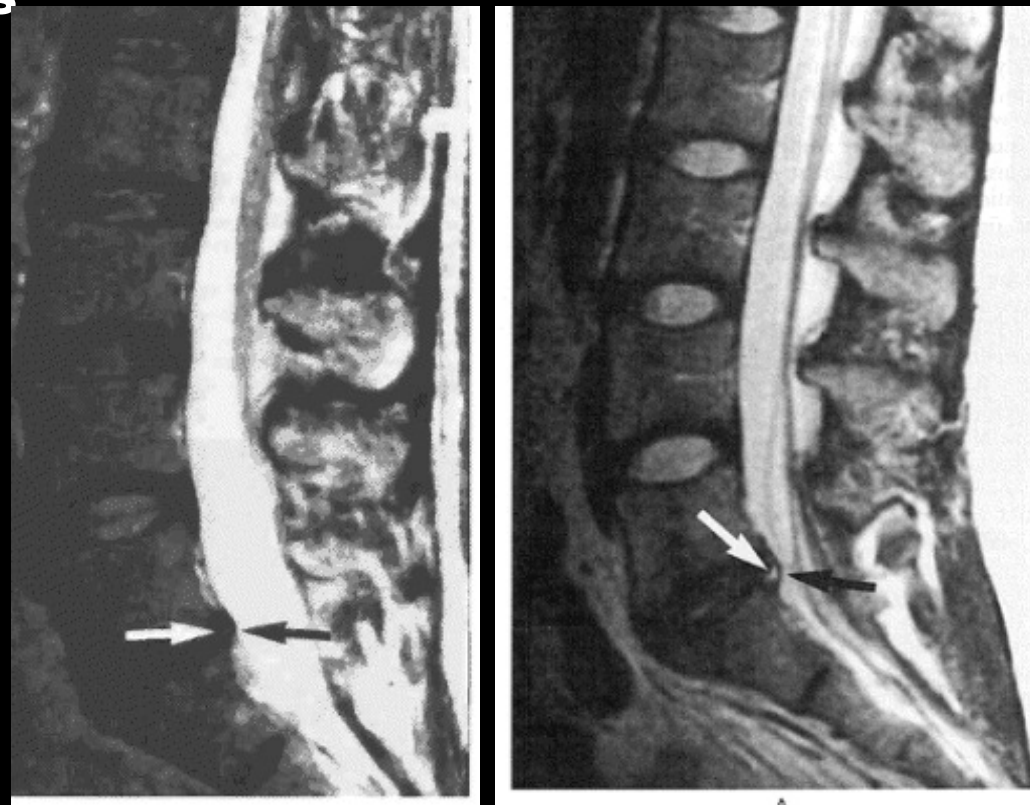
- **Déstructuration annulus-nucleus.**
- **Cartographie T2.**



Watanabe A. Am J Roentgenol 2007

Les discopathies.

- 98 asymptomatiques
- 52% discopathies
- 27% protrusion
- 1% hernie



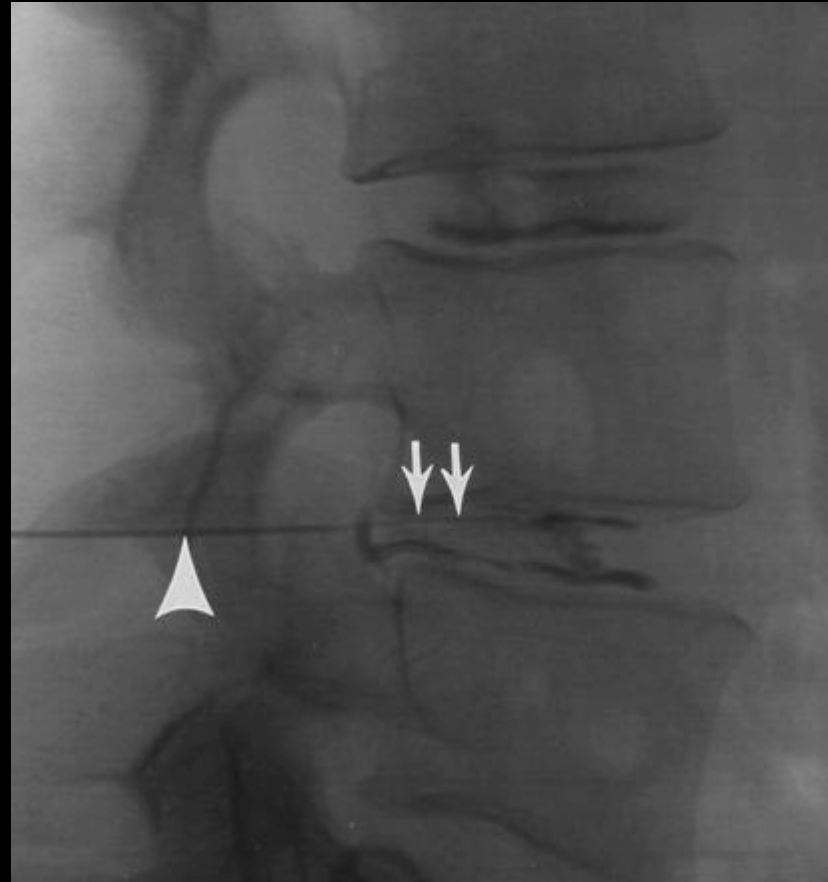
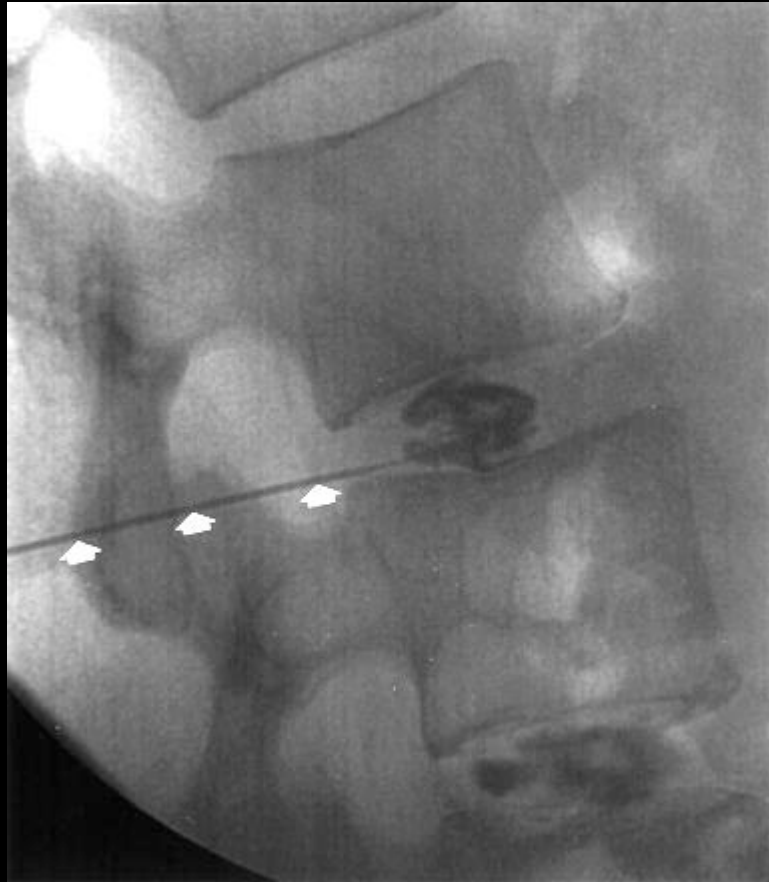
Maureen C. N Eng J Med 1994

Le rachis lombaire des patients asymptomatiques

Weishaupt D. MR imaging of the lumbar spine: prevalence of intervertebral disk extrusion and sequestration, nerve root compression, end plate abnormalities, and osteoarthritis of the facet joints in asymptomatic volunteers. Radiology 1998 Dec;209(3): 661-6.

- **60 patients asymptomatiques (20-50 ans)**
- **aspect pathologique (<50 ans) de :**
 - **hernie discale**
 - **arthrose postérieure**
 - **compression des racines nerveuses**
 - **anomalie de signal des plateaux**

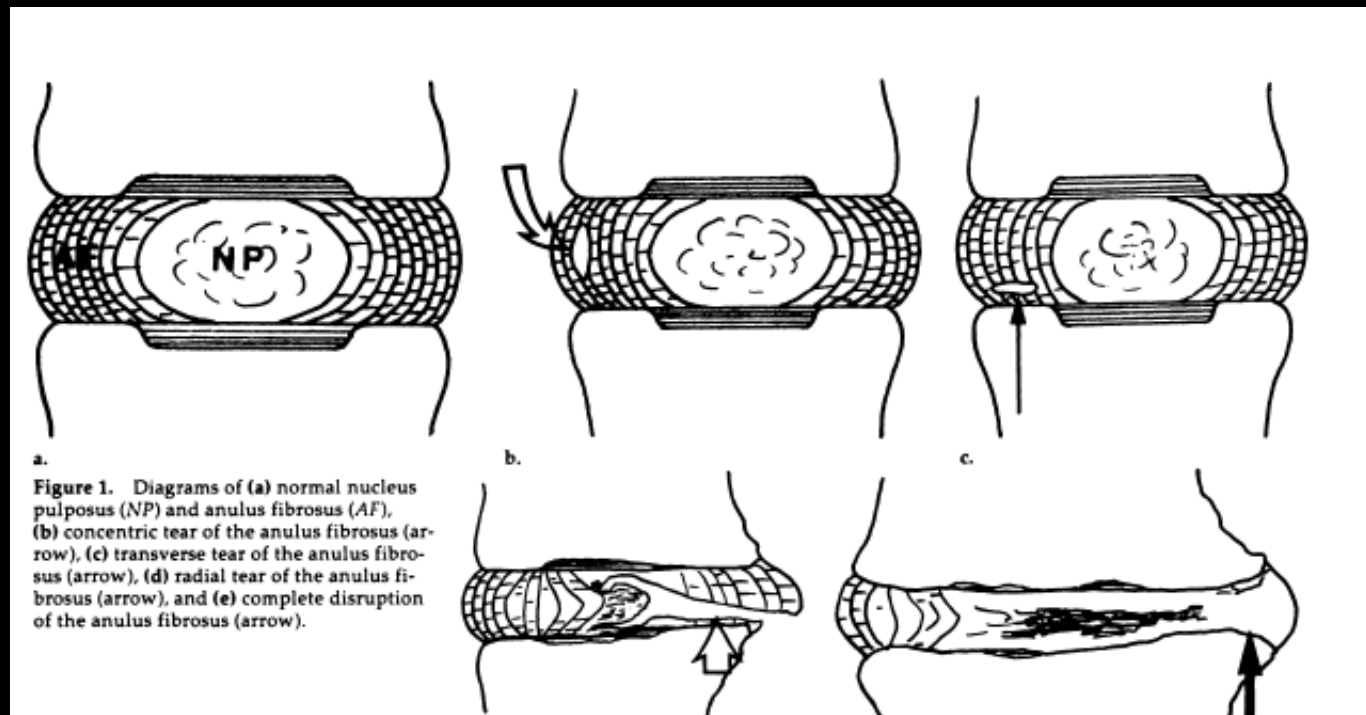
La discographie.



Kapoor V. Am J Roentgenol. 2003

Le disque intervertébral.

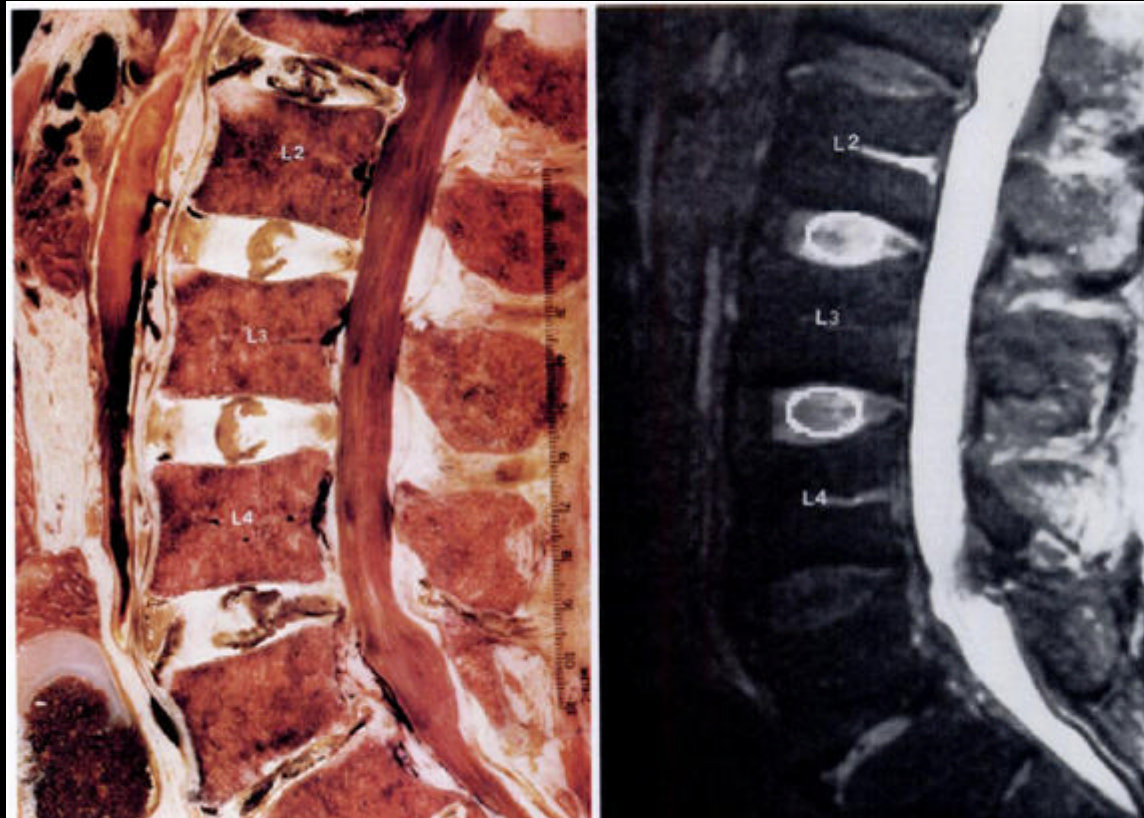
- Les fentes annulaires.



Shiwei Y. Radiology. 1989.

Le disque intervertébral.

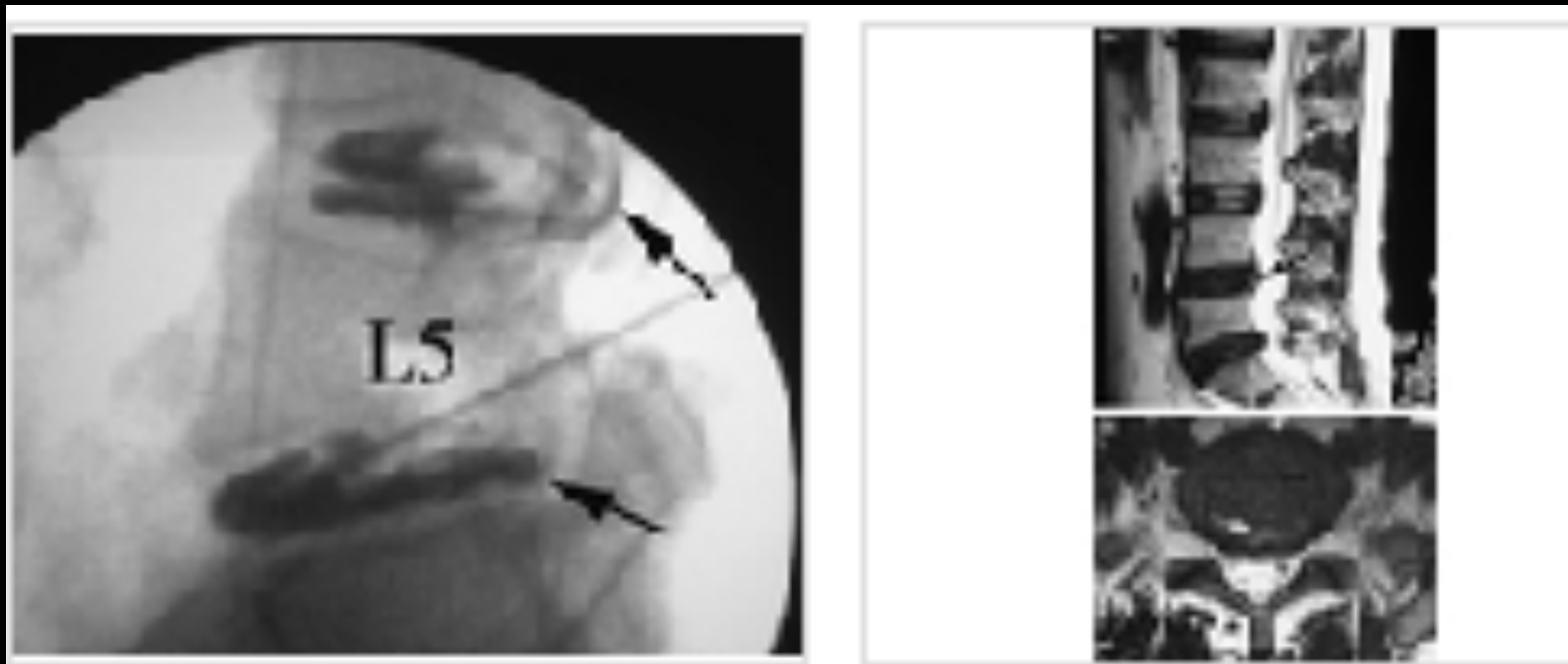
- Les fentes annulaires.



Lowel AS. Radiology. 1990.

Le disque intervertébral.

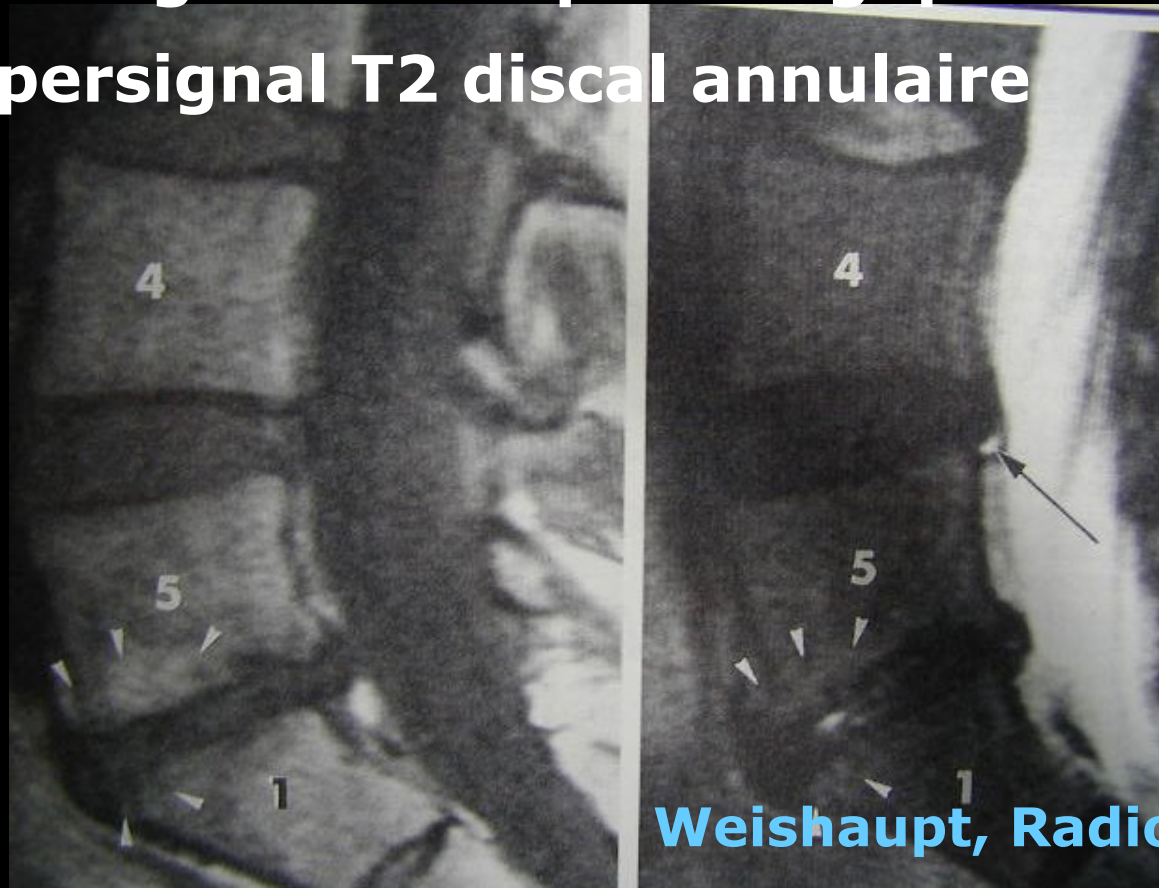
- Les fentes annulaires.



Lowel AS. Radiology. 1990.

Le disque intervertébral.

- Les fentes annulaires
- Pas de signification pathologique de l' hypersignal T2 discal annulaire



Weishaupt, Radiology 1998

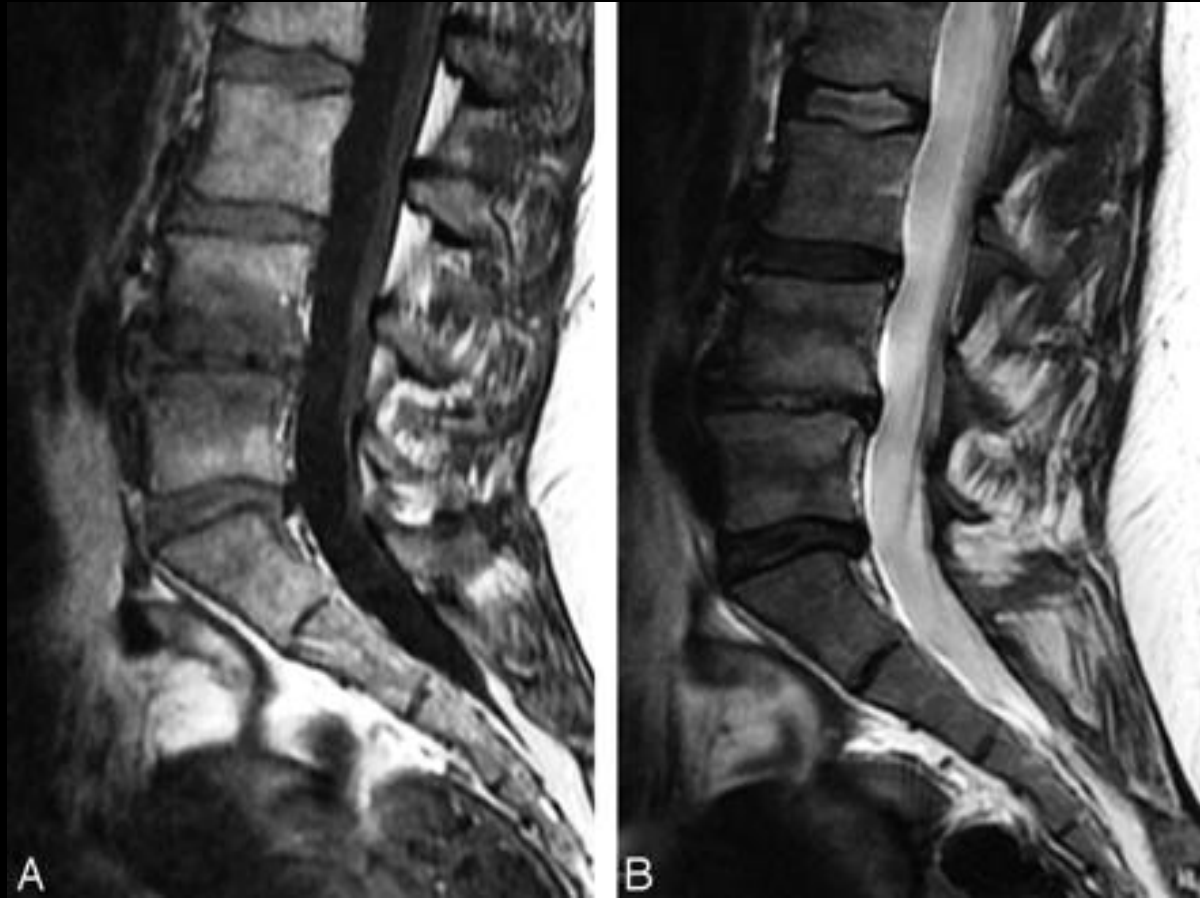
Les remaniements des plateaux vertébraux

Classification de Modic :

- **type 1** : tissu fibreux inflammatoire
hypoT1, hyperT2
- **type 2** : tissu graisseux
hyperT1, iso ou hyperT2
- **type 3** : tissu fibreux amorphe
hypoT1, hypoT2

Remaniements des plateaux vertébraux

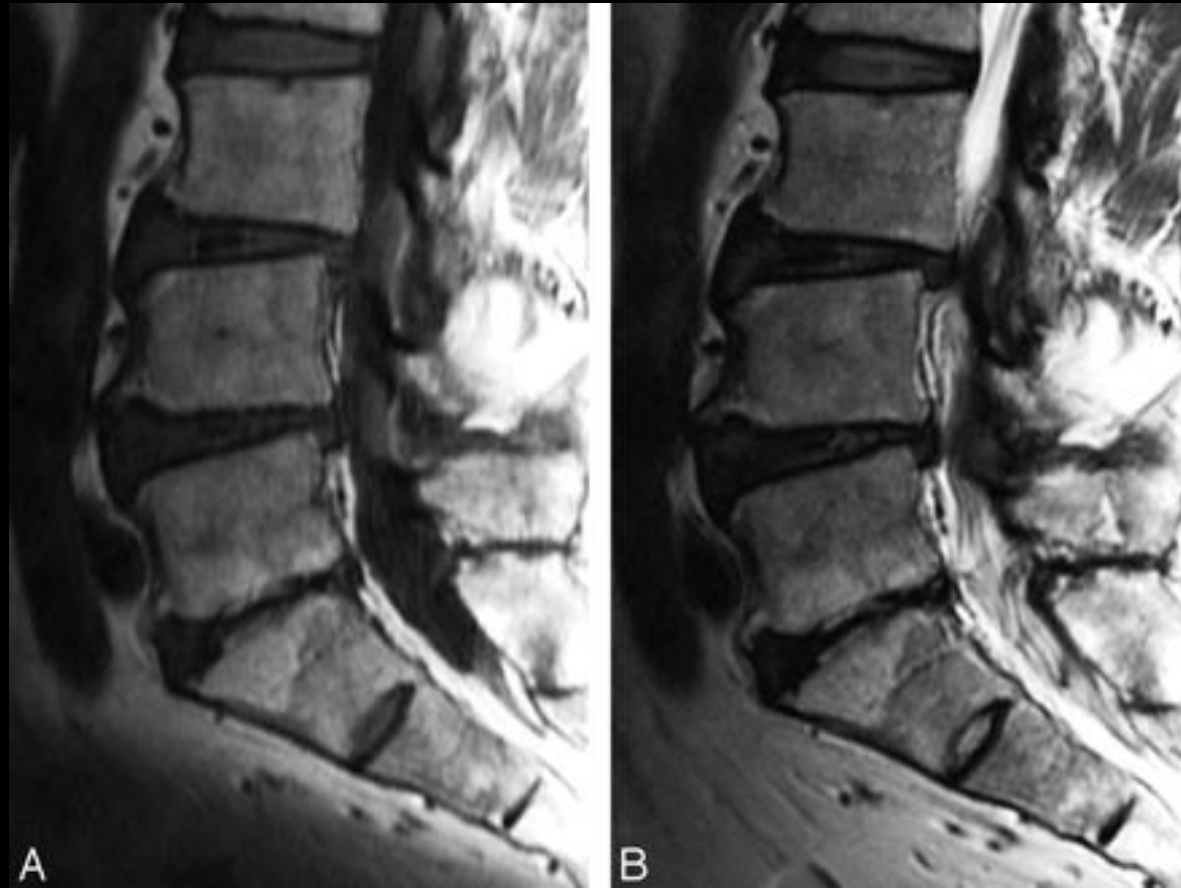
Type 1



Rahme R. A J Neuroradiol 2008

Remaniements des plateaux vertébraux

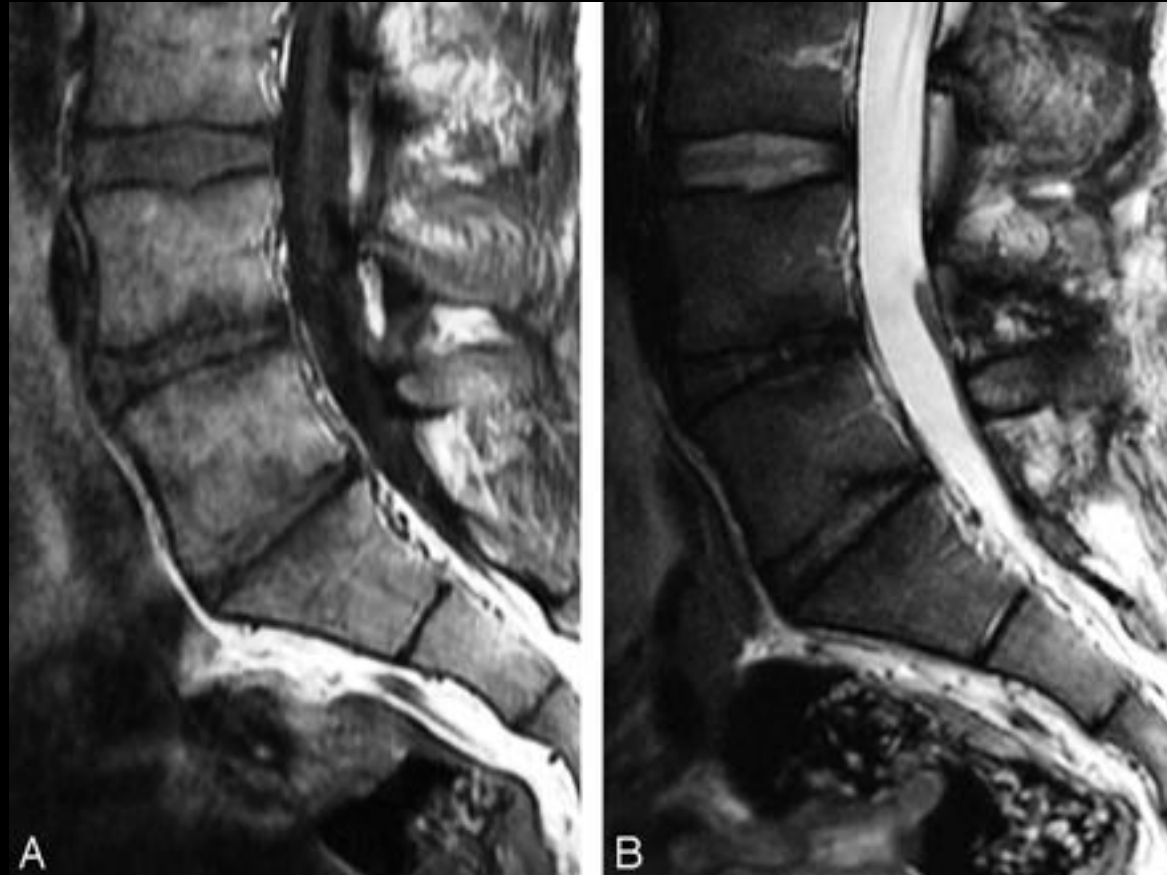
Type 2



Rahme R. A J Neuroradiol 2008

Remaniements des plateaux vertébraux

Type 3



Rahme R. A J Neuroradiol 2008

Stades de Modic



Grade 1, 2, 3 ?

Stades de Modic



Les remaniements des plateaux vertébraux

- Discographie
- Bonne corrélation



Painful Lumbar Disk Derangement: Relevance of Endplate Abnormalities at MR Imaging. Weishaupt D. Radiology 2001.

Les remaniements des plateaux vertébraux

- **Discographie**
- **2457 cas**
- **Modic 1**



Modic changes on MR images as studied with provocative diskography: clinical relevance--a retrospective study of 2457 disks. Thompson KJ. Radiology 2009.

Les remaniements des plateaux vertébraux

- Modic 1 ++
- Hydrocortancyl

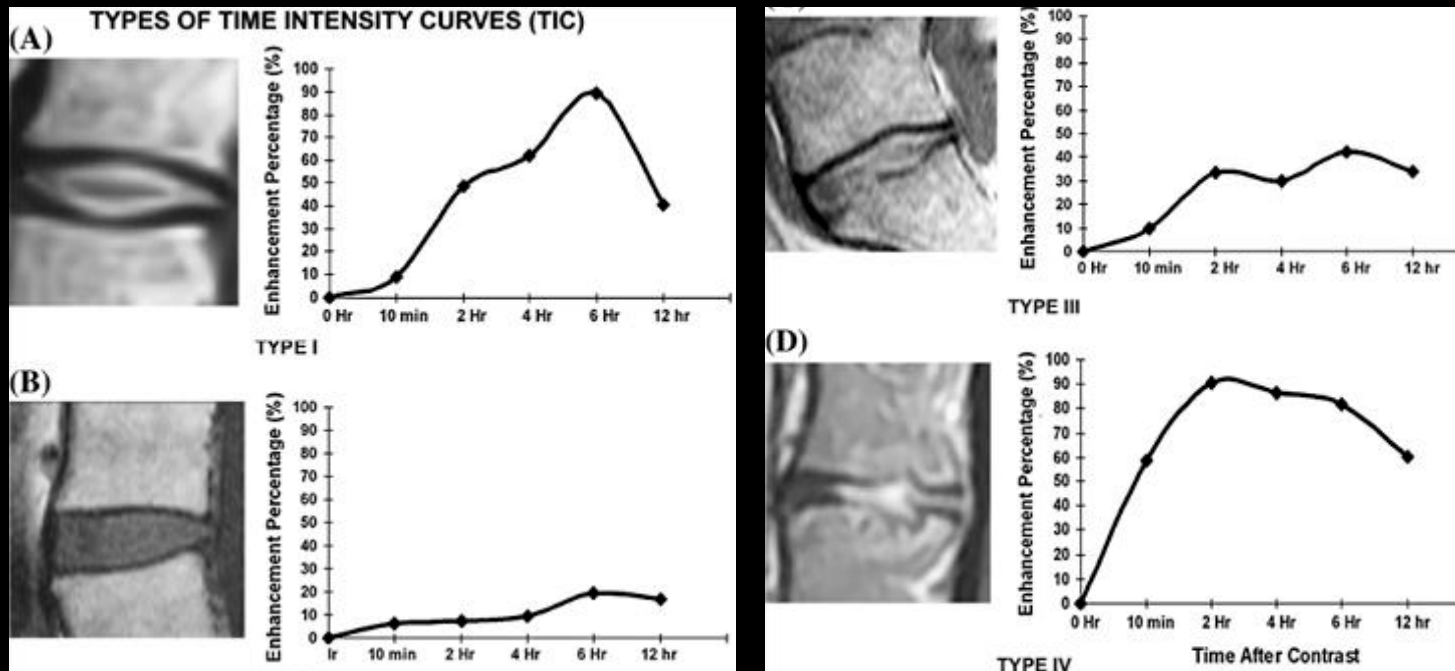


Relation of inflammatory modic changes to intradiscal steroid injection outcome in chronic low back pain

Fayad F. Eur Spine J 2007

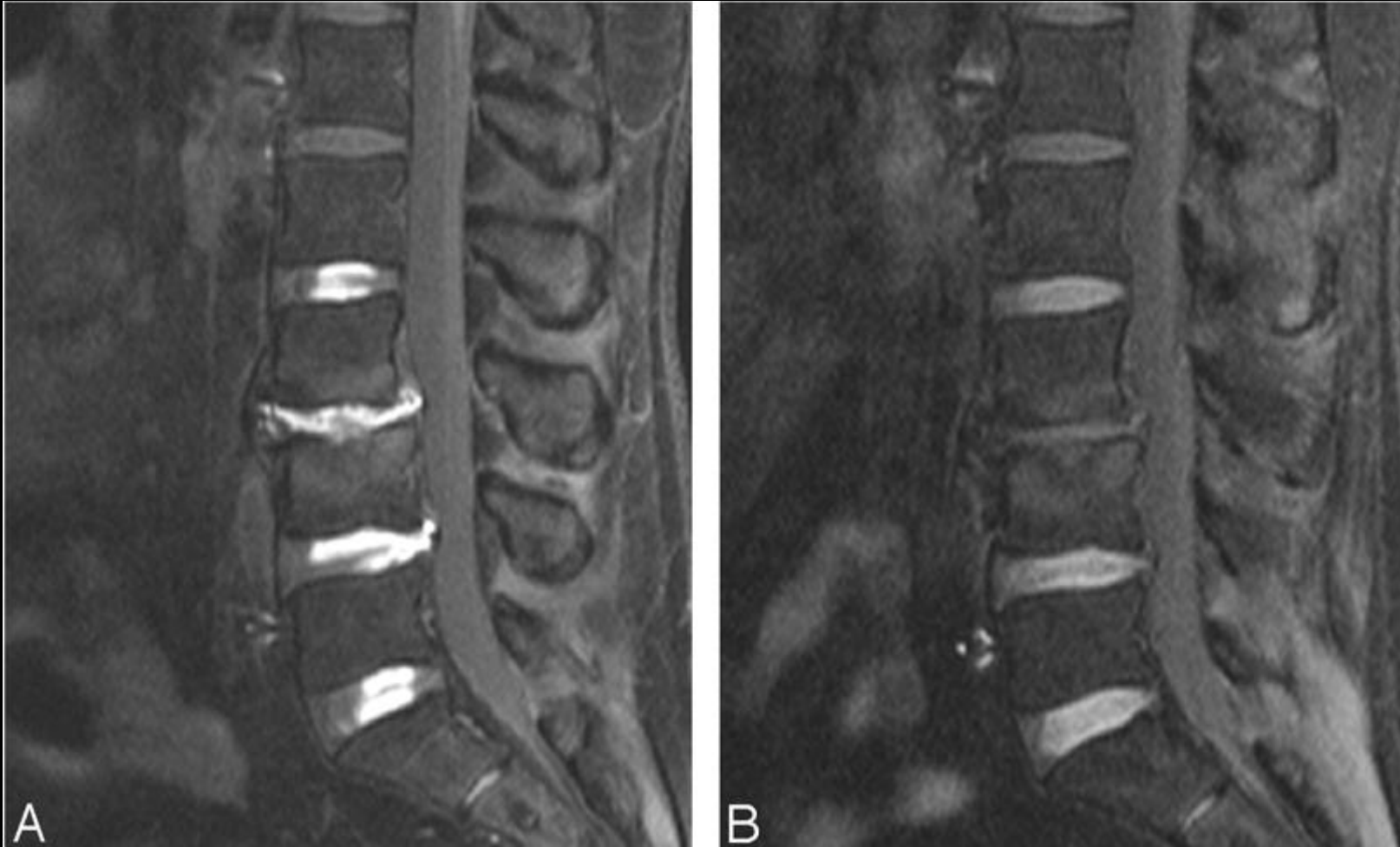
La prise de contraste discale

- Dynamique



Pharmacological enhancement of disc diffusion and differentiation of healthy, ageing and degenerated discs : Results from in-vivo serial post-contrast MRI studies in 365 human lumbar discs. [Rajasekaran S](#) . Eur Spine J 2008

Le disque intervertébral.



Wagner AL. Am J Neuroradiol. 2004

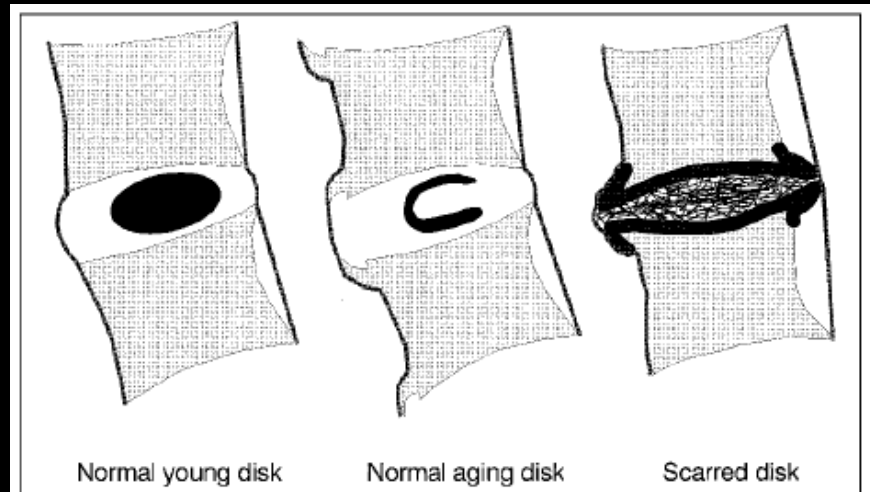
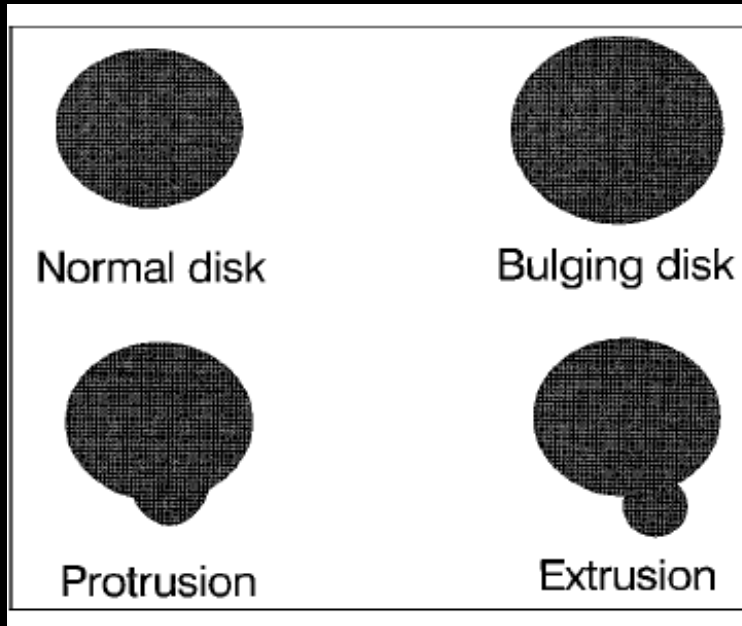
Pathologie du disque lombaire

Terminologies

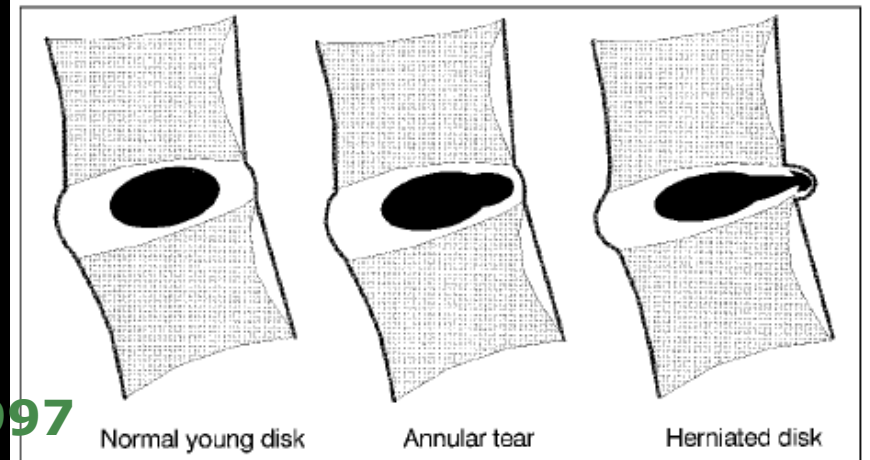
- Dysfonctionnement (instabilité)**
- Discopathie**
- Hernie discale**
- Discarthrose**

Le disque intervertébral lombaire

Terminologies



A



B

Millette PC. Am J Neuroradiol 1997

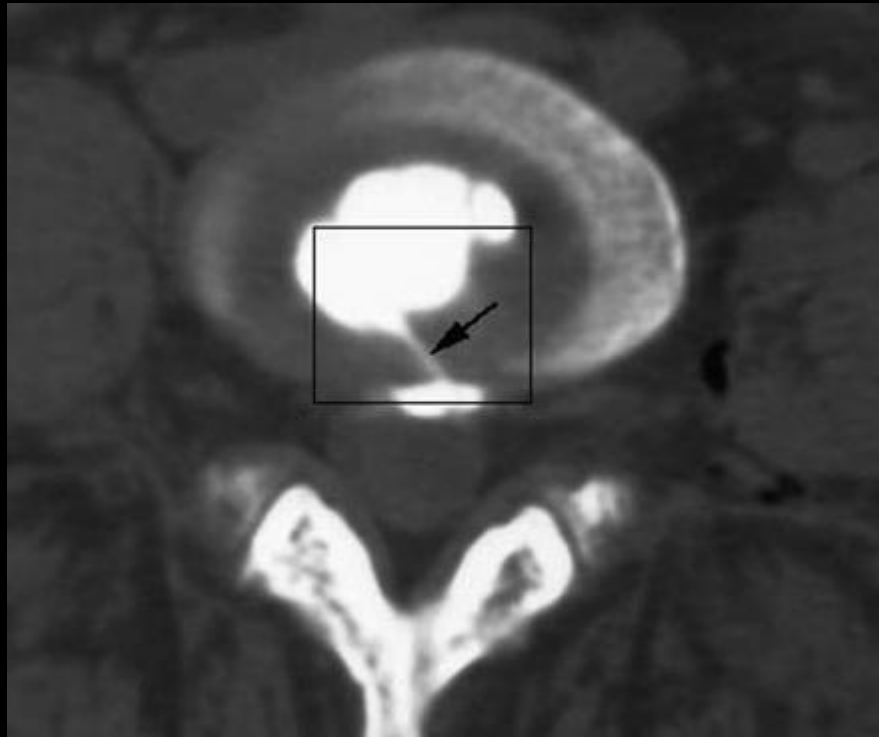
**Le disque
intervertébral
lombaire**



La discarthrose



Hernie discale



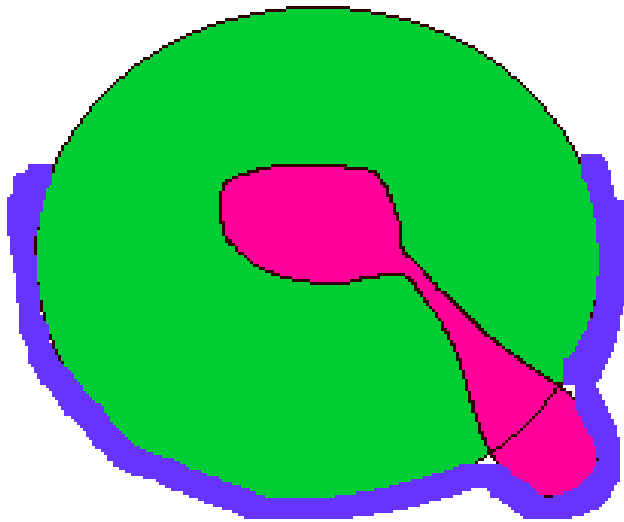
Peng B. J Bone Surg Br. 2005

La hernie discale

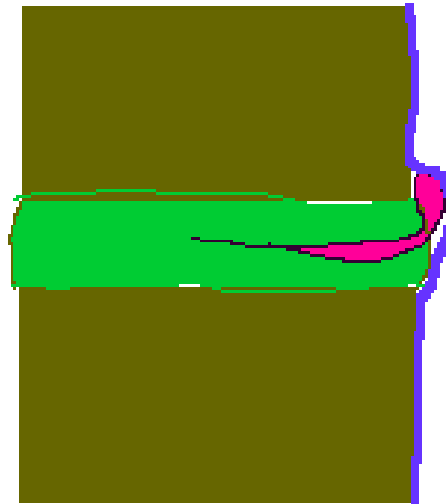
- **Accident traumatique**
 - **Sur disque sain**
 - **Sur discopathie**

LA HERNIE DISCALE

En imagerie : saillie focale de matériel discal à travers une fente annulaire



Plan transversal



Plan longitudinal

HERNIE DISCALE

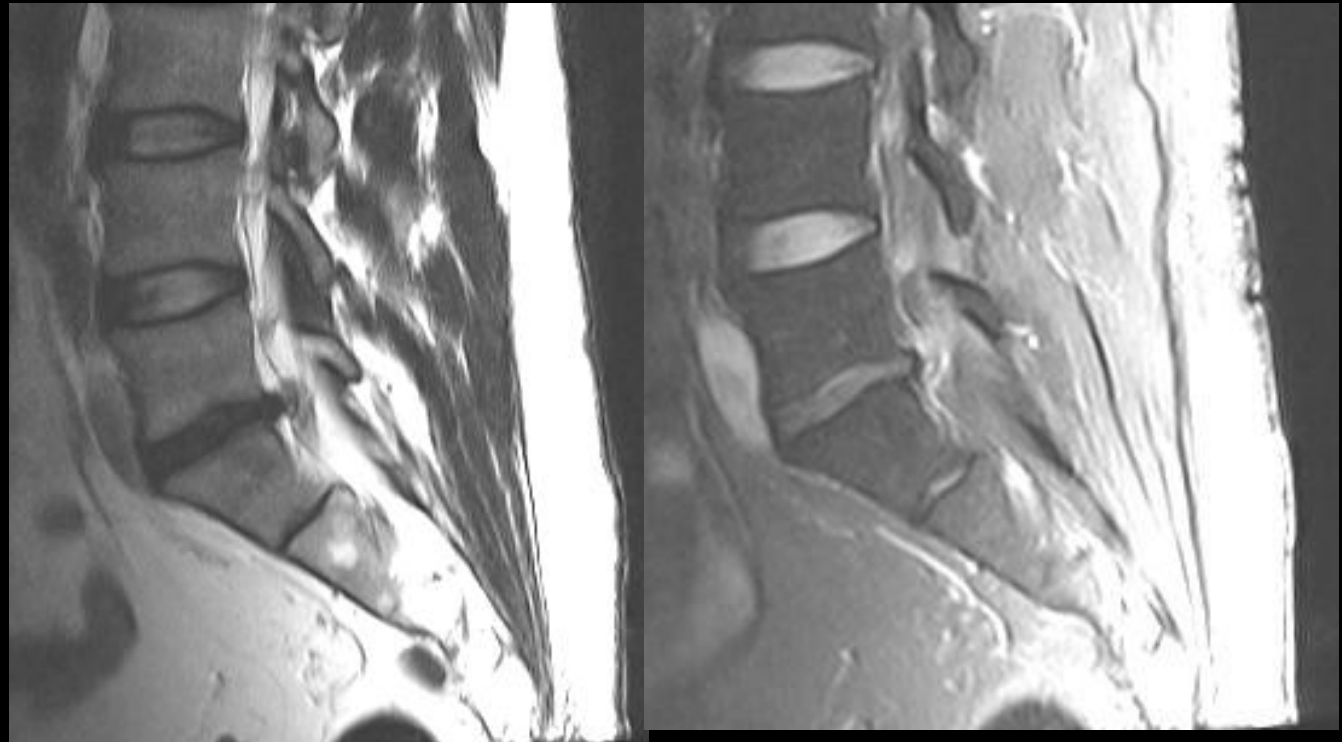
Saillie focale longitudinale:

- **Contenue**
- **Migrée**
 - vers le bas : paramédiane ou médiane
 - vers le haut : foraminale
- **Sous ligamentaire**
- **trans-ligamentaire (exclue)**
- **séquestre**

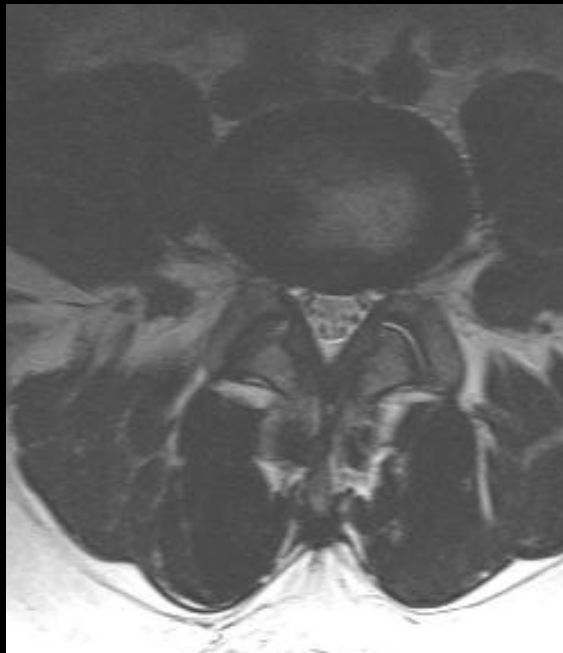
Hernie discale

- **Conflit mécanique**
- **Inflammation, œdème**
- **Disque sain ou discopathie**

Hernie discale



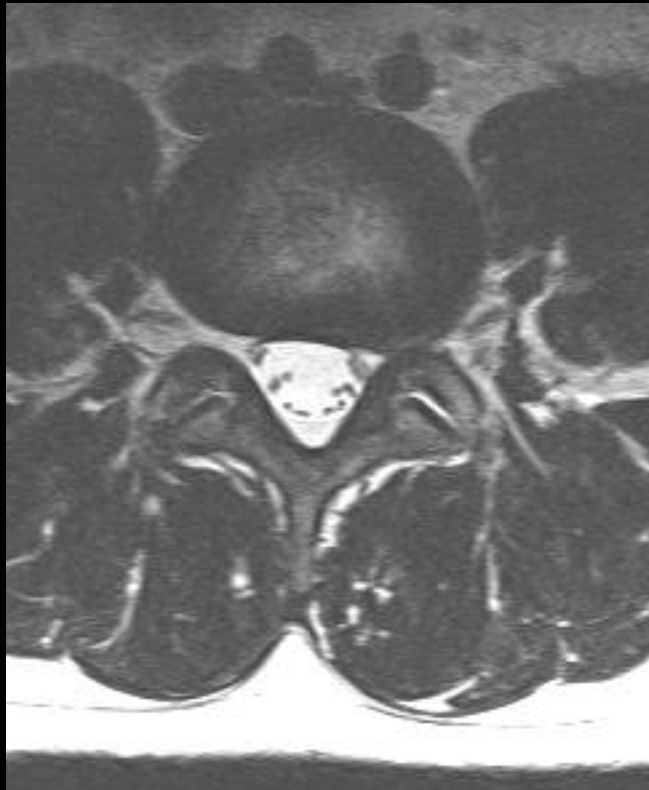
Hernie discale



Hernie discale



Hernie discale



Hernie discale

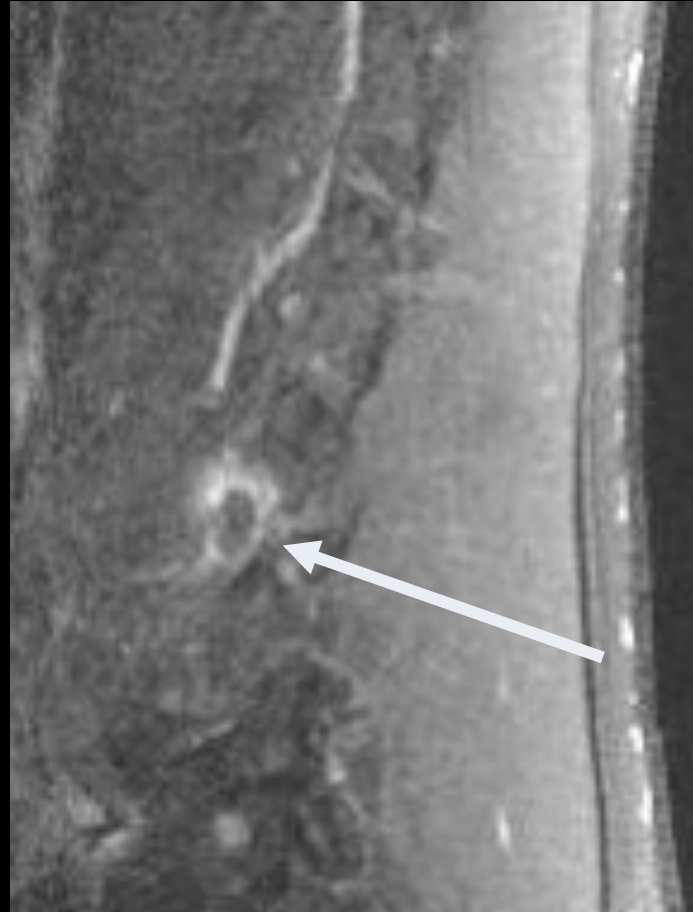


La saillie focale sagittale



Exclue!

H. extra-foraminale



Conclusion

- **Toute discopathie n' est pas pathologique!**
- **Pensez Modic!**
- **Évitez les abus de hernie discale!**