

LOW GRADE GLIOMAS

- **L'astrocitoma diffuso** è una neoplasia astrocitaria di grado II della scala WHO. Nella maggioranza dei casi insorge nella terza-quarta decade di vita.
- L'incidenza è tra 0,16 e 0,26 casi per 100.000 per persone per anno.
- Nei bambini interessa normalmente il tronco cerebrale.

- Si tratta di un tumore ad alta capacità infiltrativa i cui limiti risultano indefinibili

Un astrocitoma diffuso che rimane ben differenziato può permettere una sopravvivenza anche di molti anni.

Più frequentemente, dopo una media di 4-5 anni, la neoplasia progredisce verso forme più maligne (glioblastoma).

Istologia	Percentuale
Glioblastoma*	50,7
Astrocitoma anaplastico*	7,9
Astrocitoma diffuso*	1,7
Astrocitoma pilocitico*	5,7
Altri astrocitomi*	9,1
Oligodendroglioma	9,2
Ependimoma	5,6
Altri	10,1

() Gli astrocitomi (compreso il glioblastoma) rappresentano il 75%ca. di tutti i gliomi.*

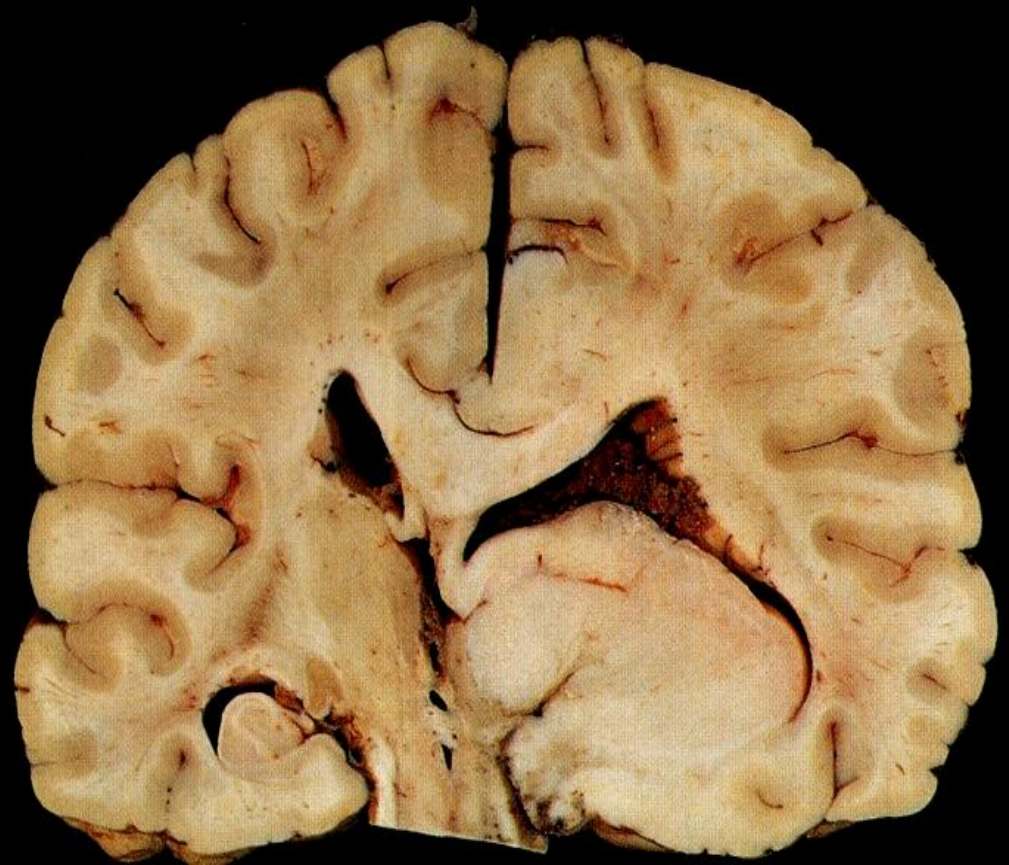
Astrocitoma diffuso

Di grado II

1,4 nuovi casi per milione di persone per anno

Varianti(stessa prognosi)

- astrocitoma fibrillare**
- astrocitoma protoplasmatico**
- astrocitoma gemistocitico**



SVILUPPO



MARKERS

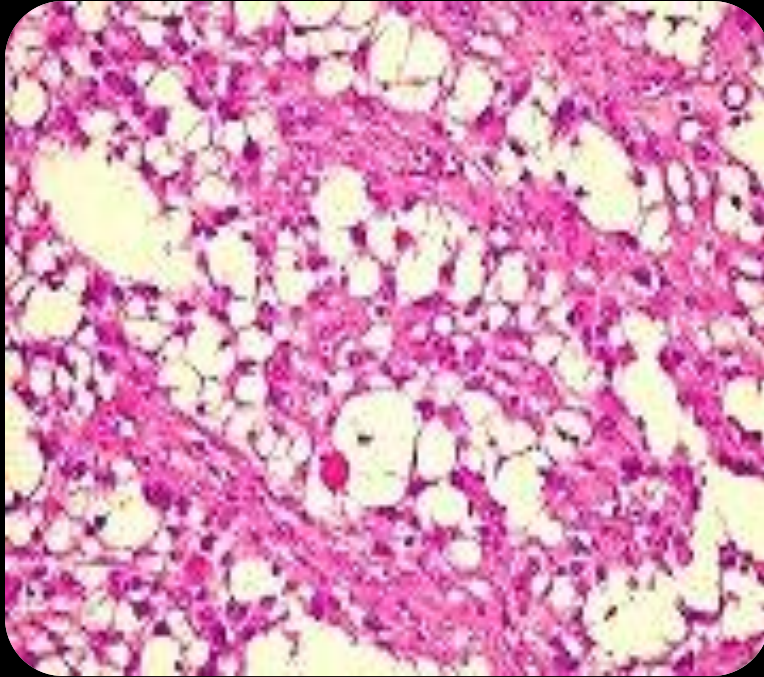


According to a study from Sweden, "platelet-derived growth factor (PDGF), vascular endothelial growth factor (VEGF) and fibroblast growth factor 2 (FGF-2) are involved in the development of grade 2 gliomas.

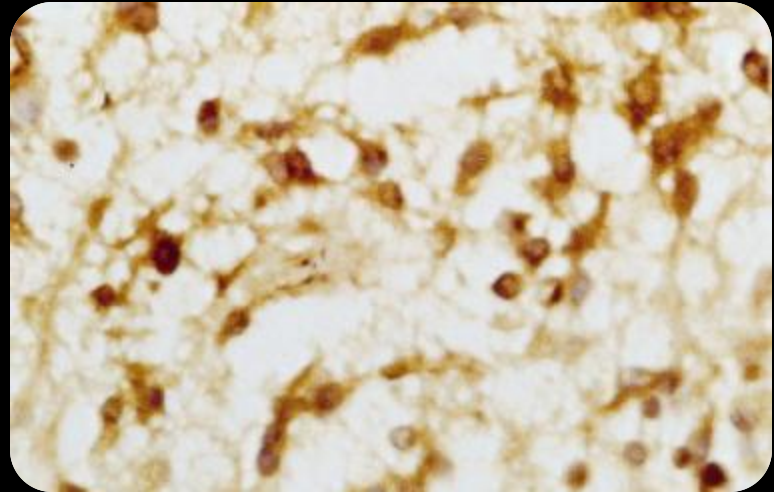
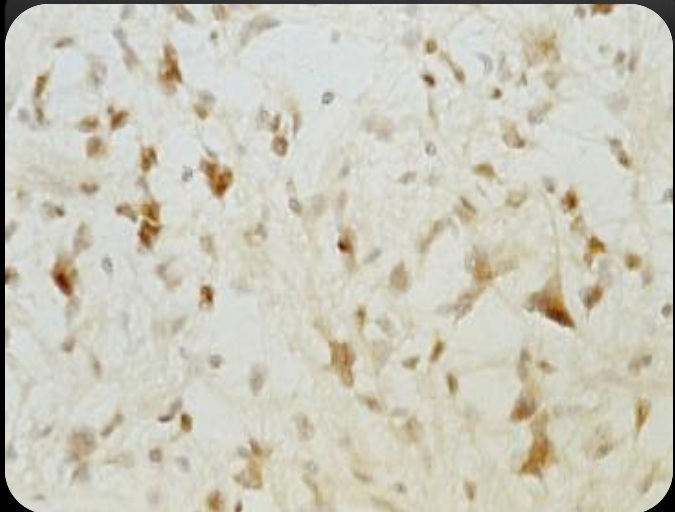
Protoplasmic

Usually cortical

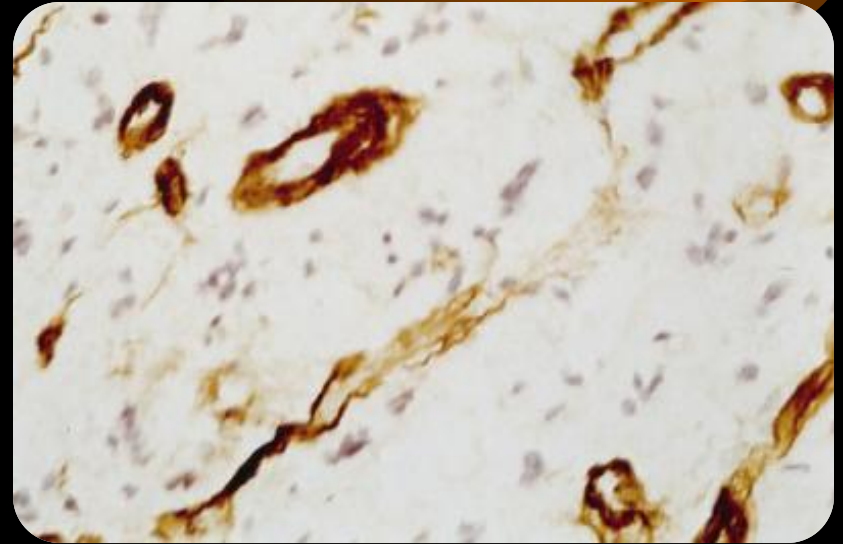
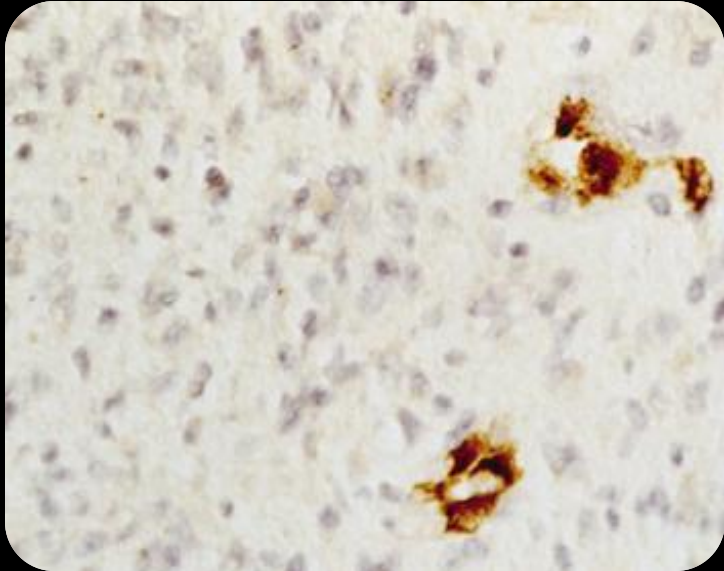
Abundant cytoplasm



Fattore di accrescimento endoteliale



Antigene per il fattore 8



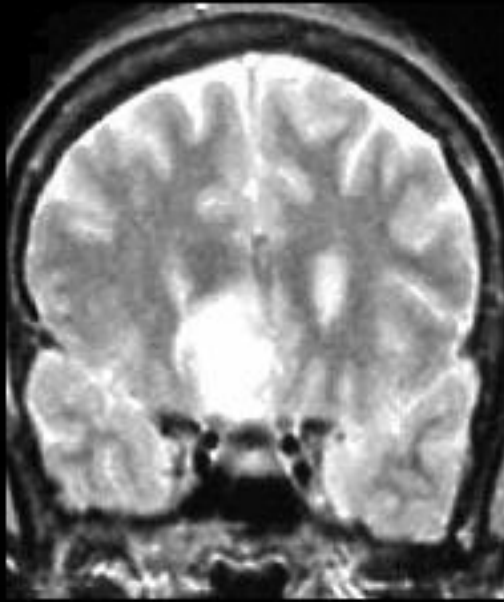
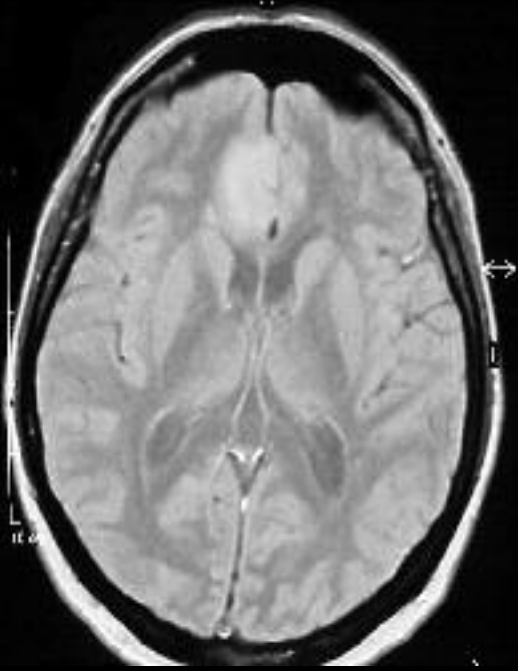
MARKERS

PROTEINA GLIALE FIBRILLARE ACIDA



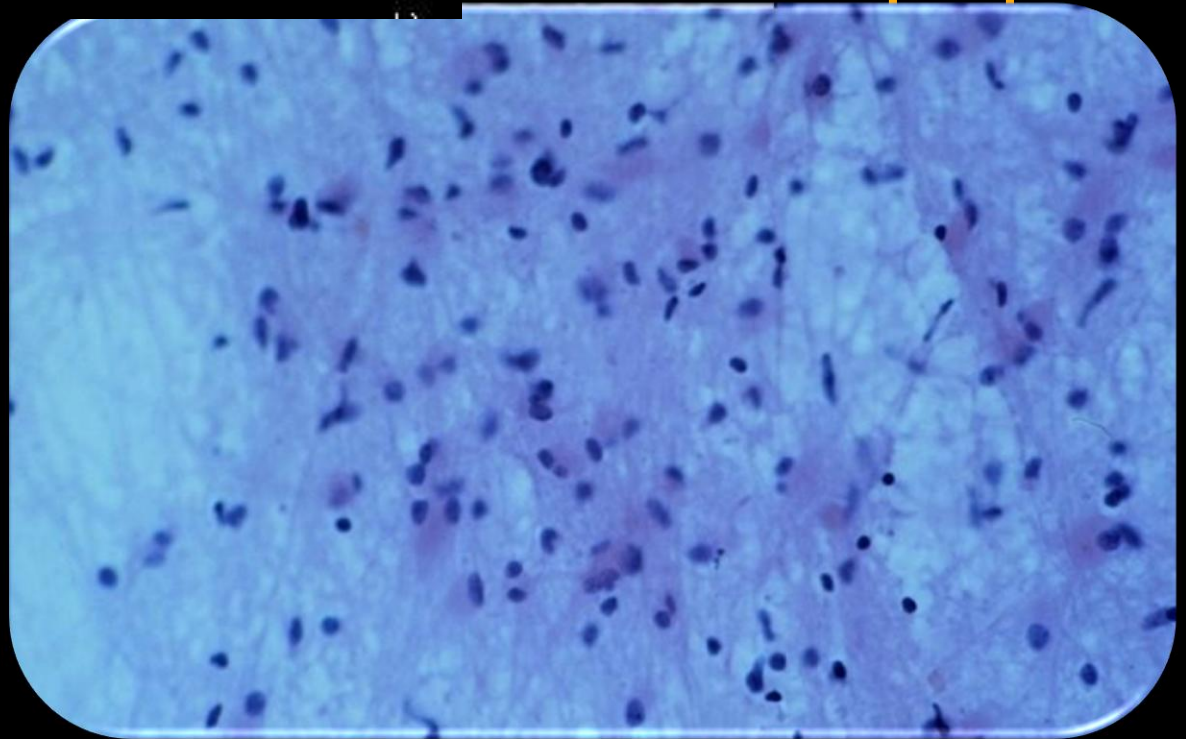
MIB -1





Fibrillare

mon
al variant

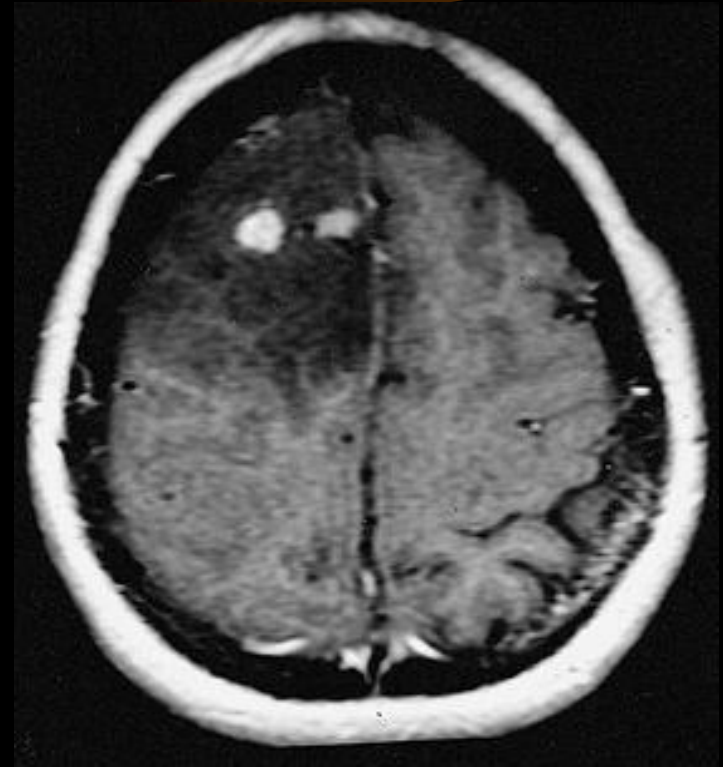
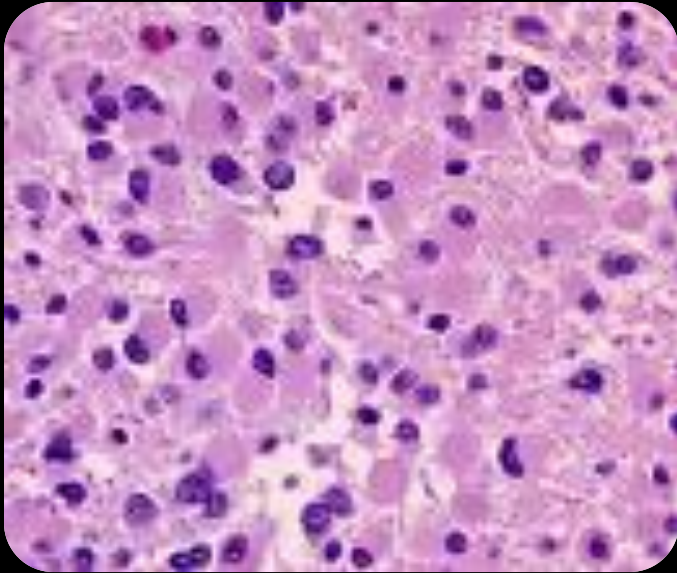


Gemistocytic

Cerebral hemispheres

Large, round cells

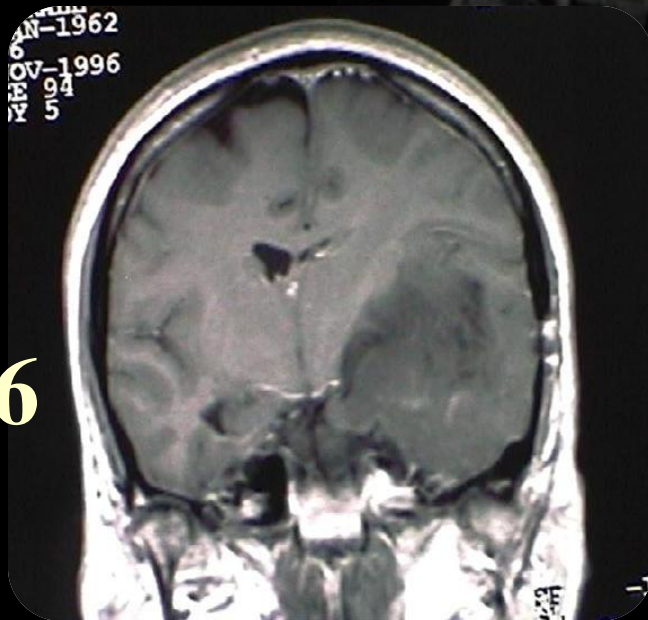
Eosinophilic cytoplasm



1993

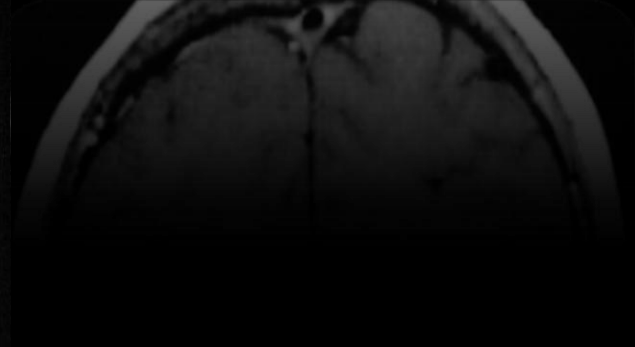
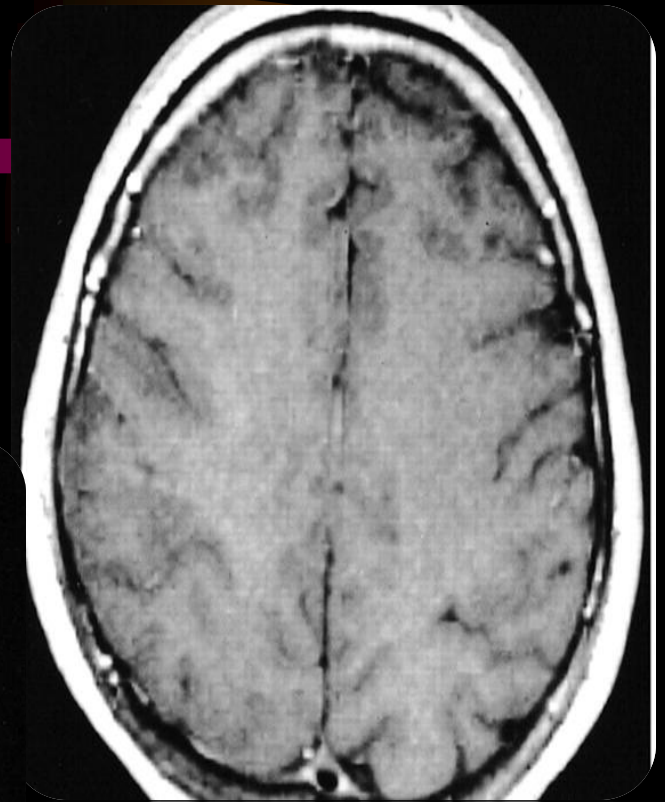
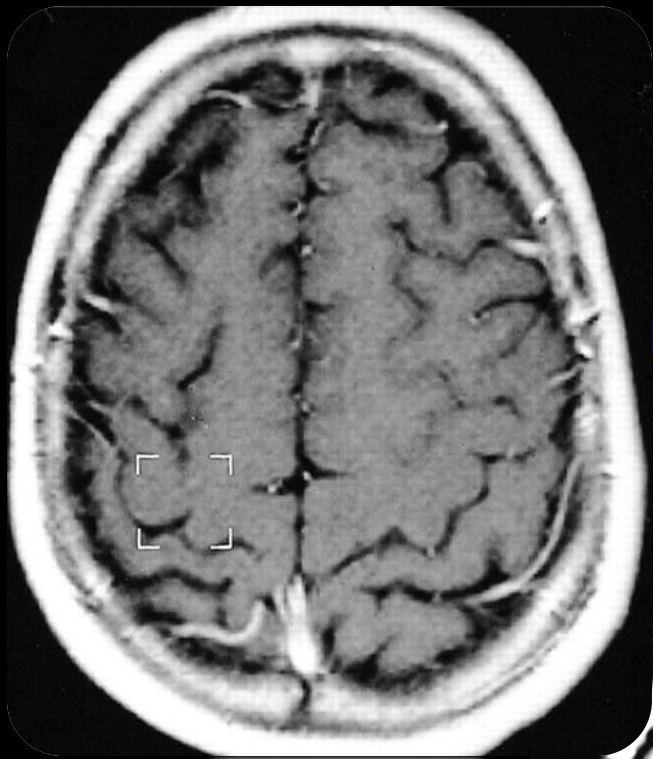


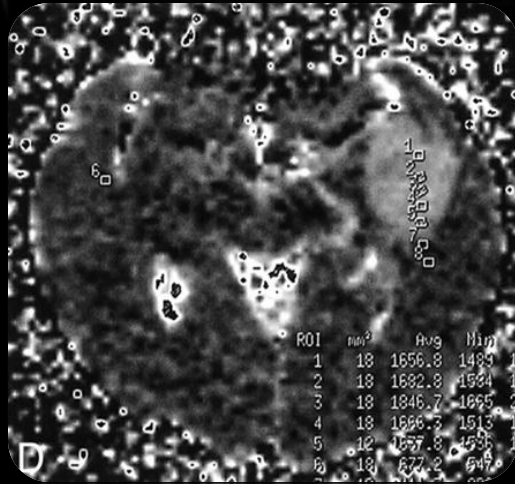
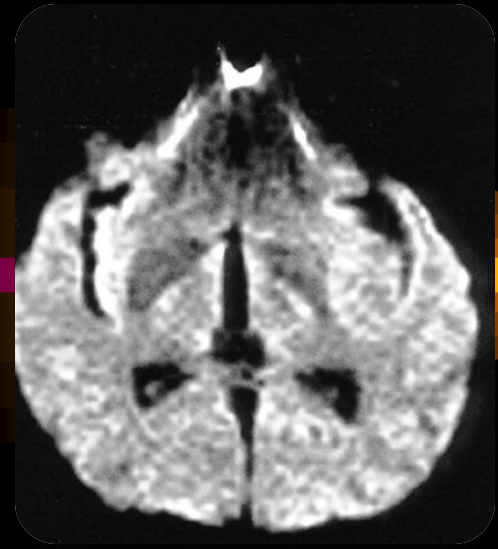
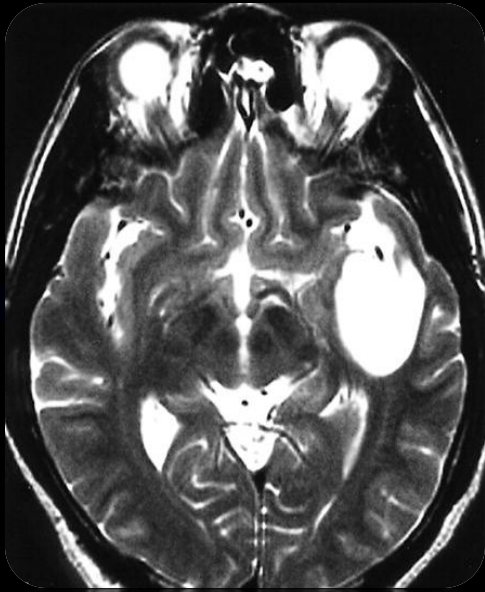
1996

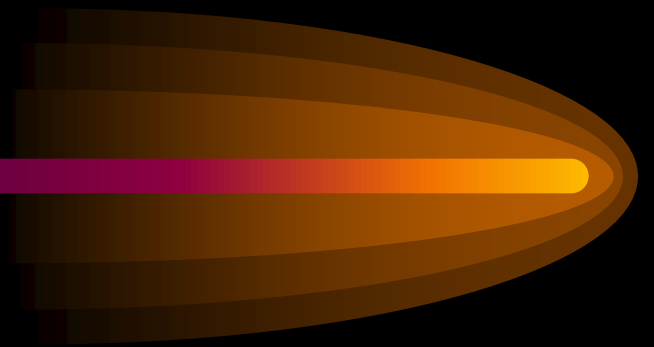


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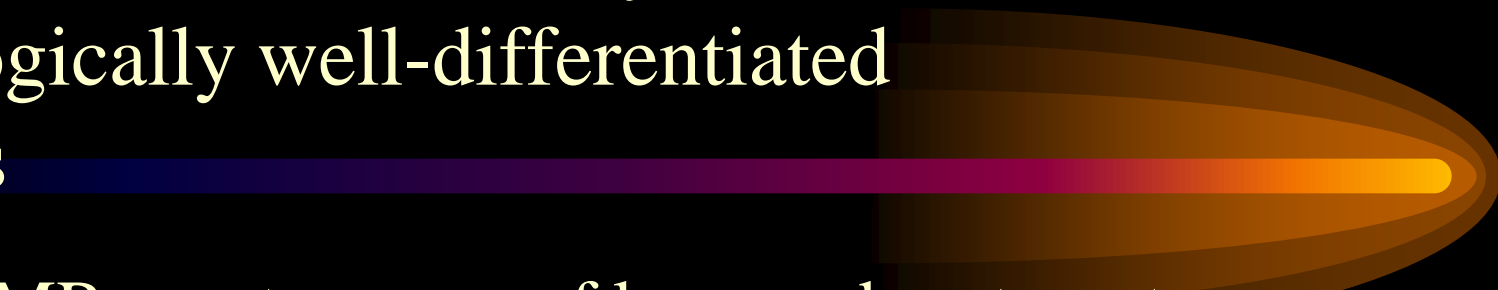








Low grade diffuse astrocytomas are histologically well-differentiated tumors



Proton MR spectroscopy of low grade astrocytomas shows elevation of *myo*-inositol (*m*-Ins), normal creatine (Cr), high levels of choline (Cho), and reduced *N*-acetylaspartate (NAA) .

In general, MR spectroscopic studies of tumors show an increase in the Cho/Cr ratio and a decrease in the NAA/Cr ratio, with increasing histologic grade of malignancy and elevation of the Cho level regardless of the type of tumor

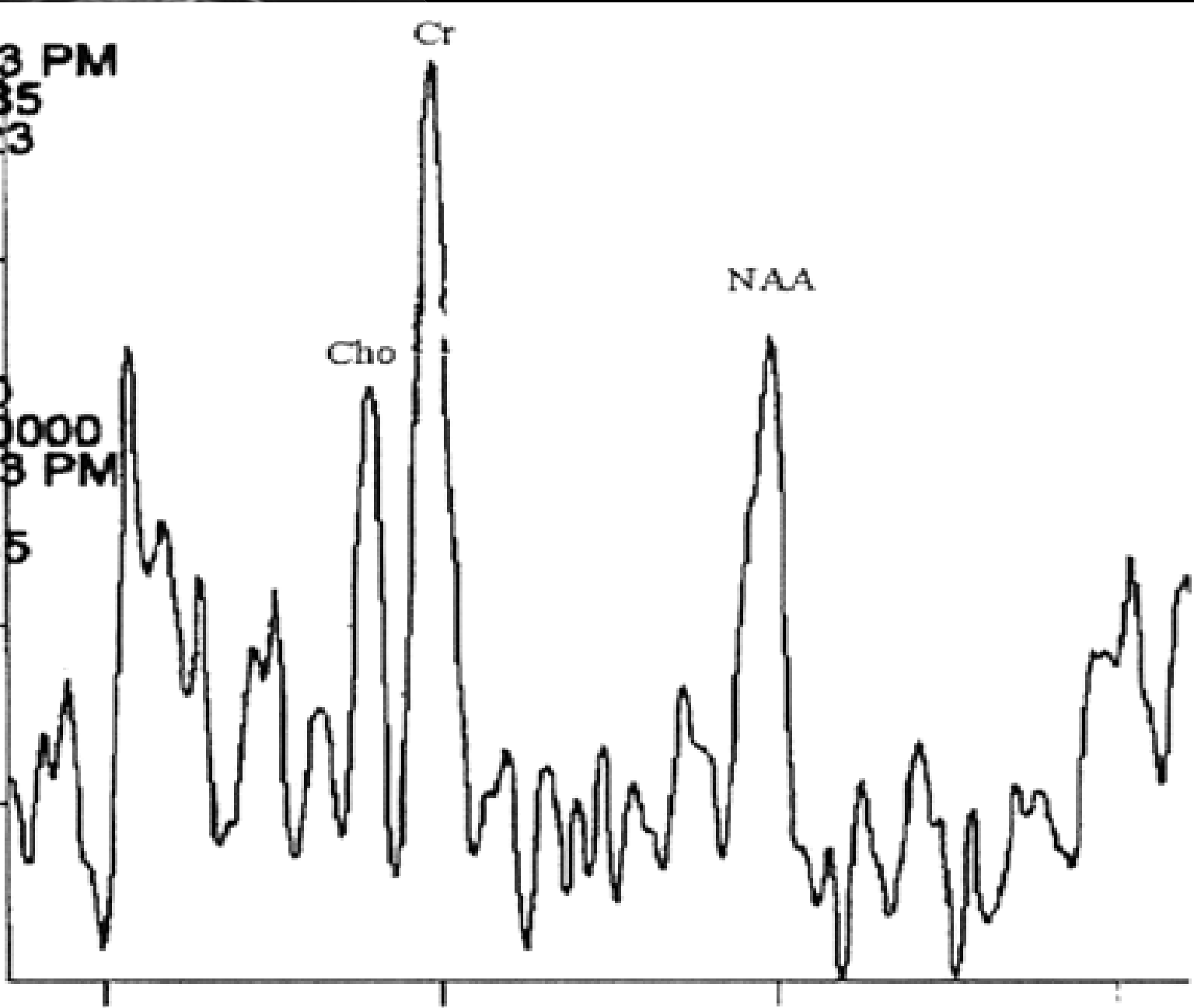
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Handwritten notes on the right margin, including a vertical line and some illegible characters.

Histological Class

Characteristics

Protoplasmic

Usually cortical

Abundant cytoplasm

Fibrillary

Most common histological variant

Diffuse or circumscribed

Well-differentiated

Pilocytic

Pilocytes

Hair-like glial processes

Well-differentiated

Gemistocytic

Cerebral hemispheres

Large, round cells

Eosinophilic cytoplasm

Pilomyxoid

More aggressive subset of JPA's

Previously identified as JPA's

Primarily in the hypothalamic region

Pleomorphic

Peripheral hemispheric lesions

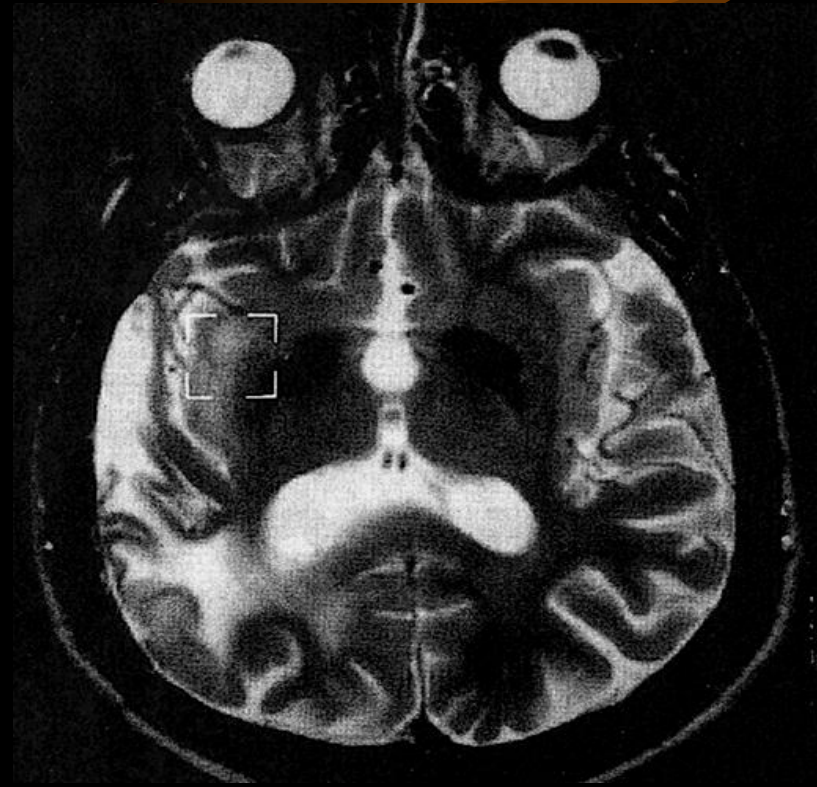
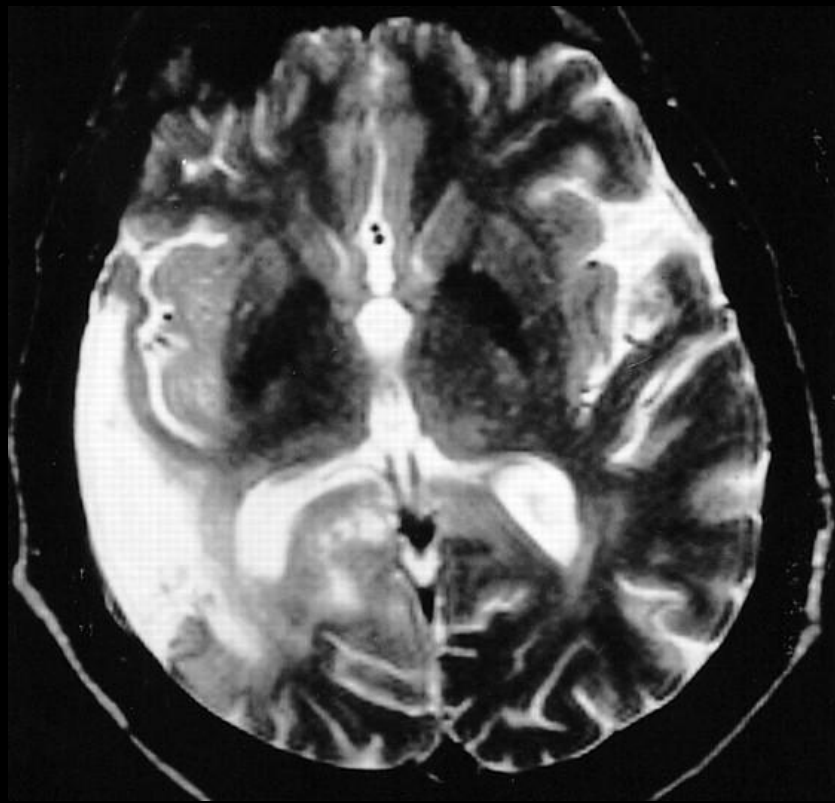
xanthoastrocytomas

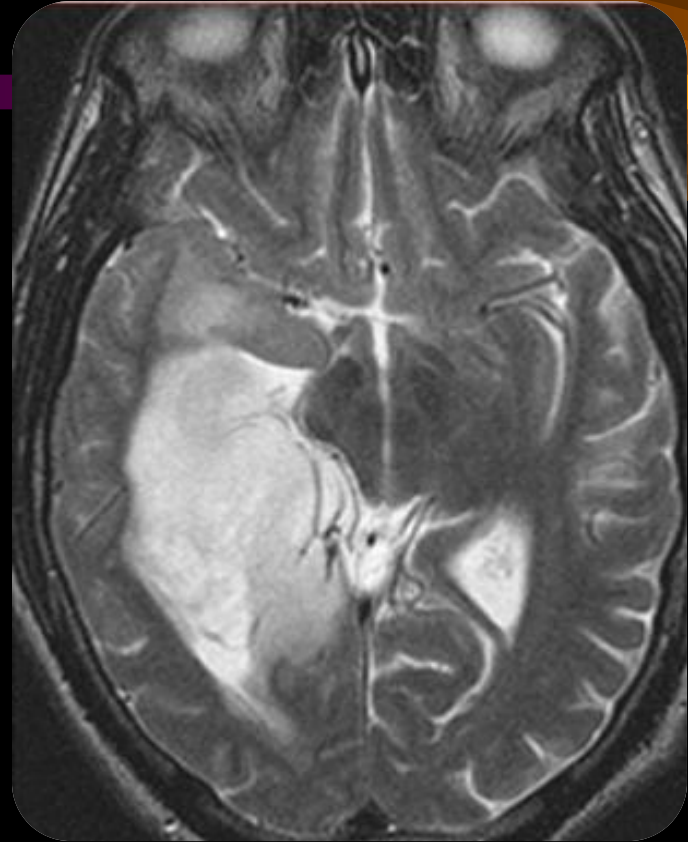
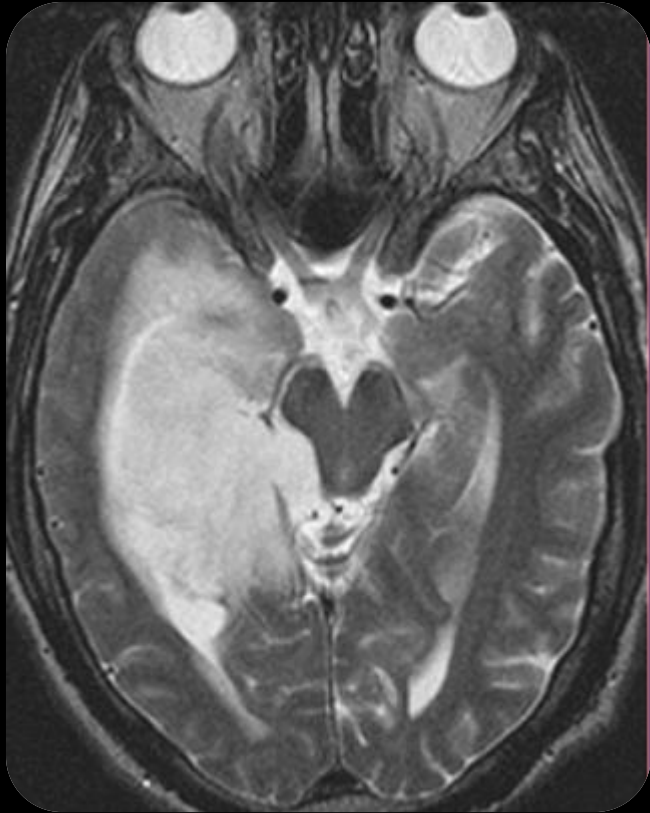
Often involve leptomeninges

More aggressive histology

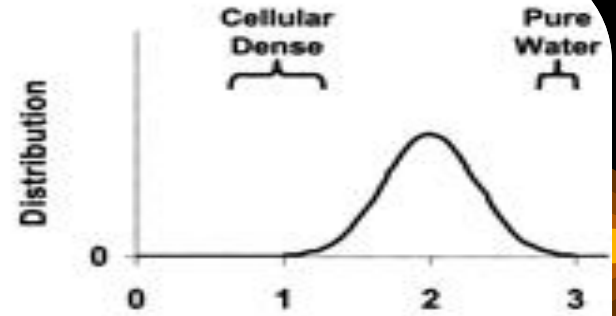
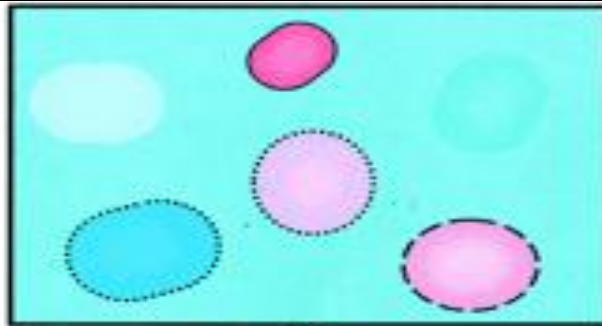
Rare

Unique to children

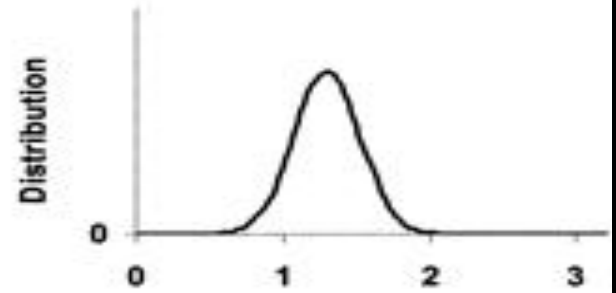
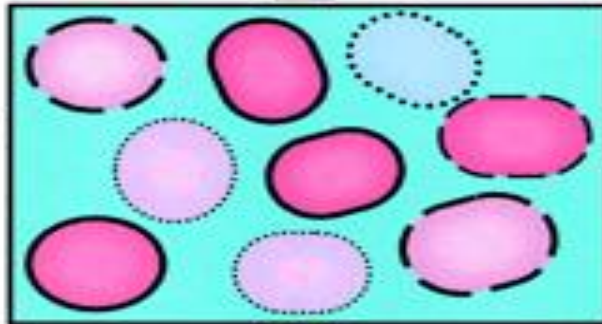




Necrosis

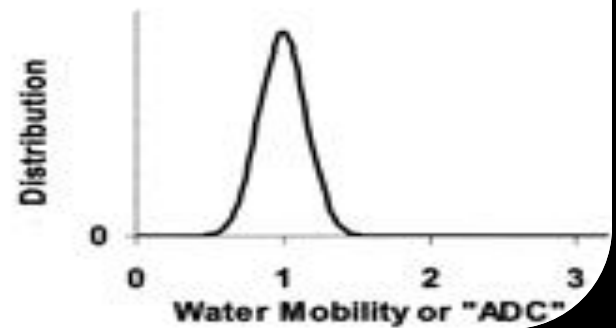
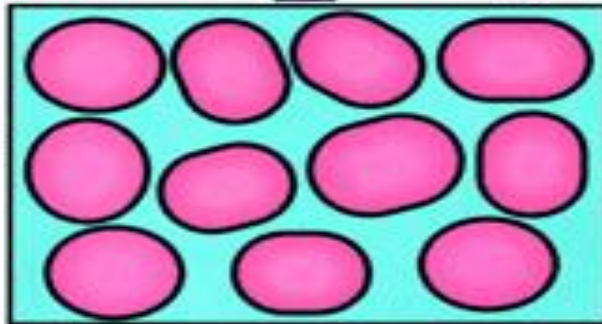


Microscopic / Cellular Necrosis

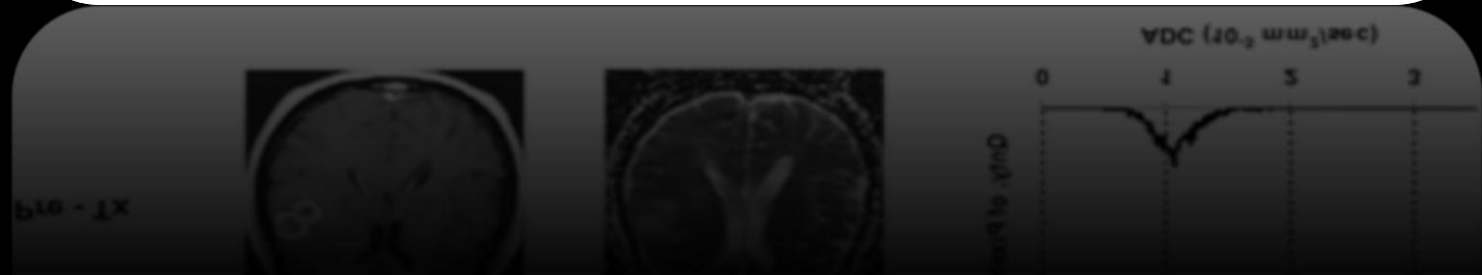
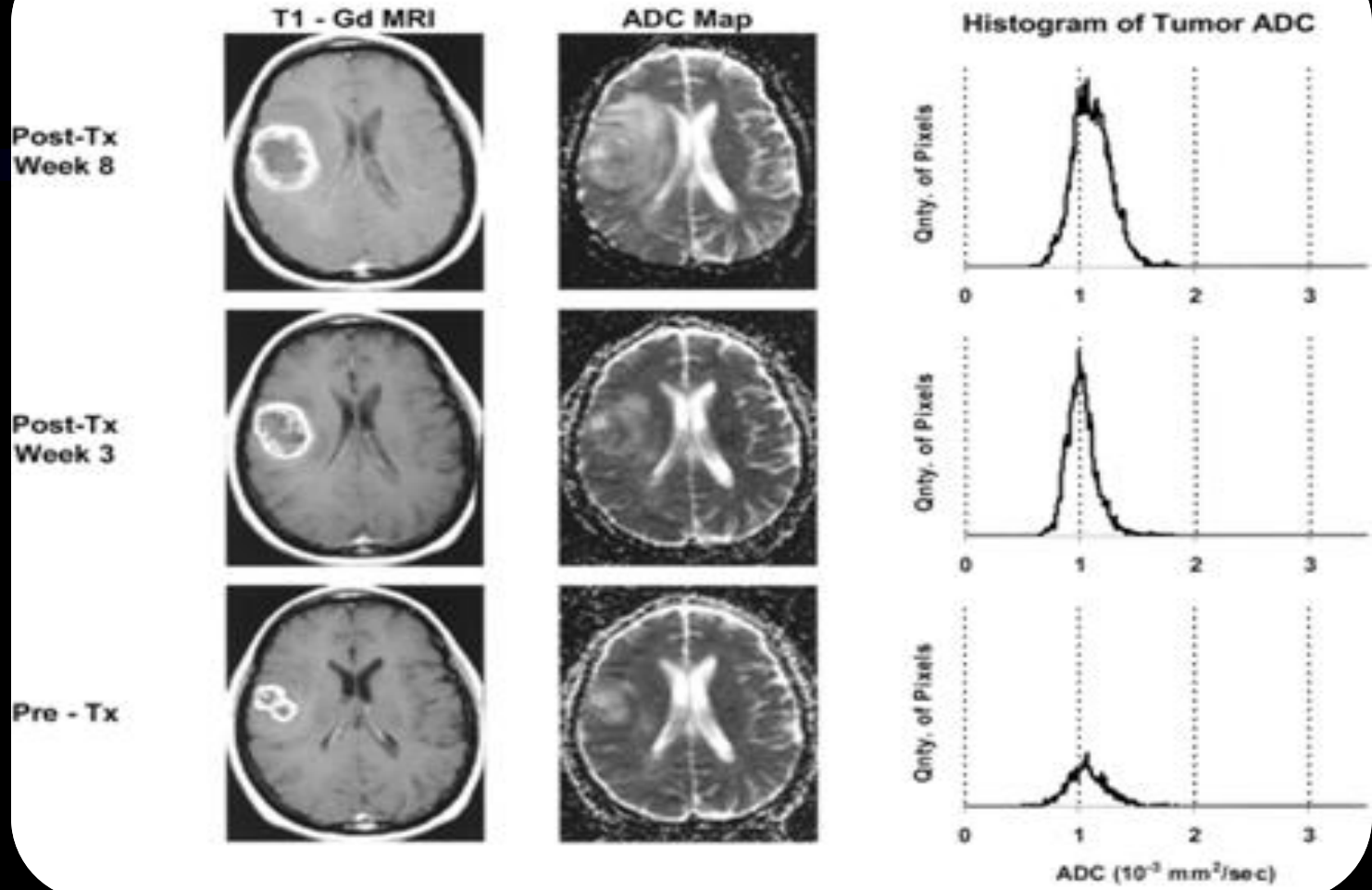


Effective Therapy

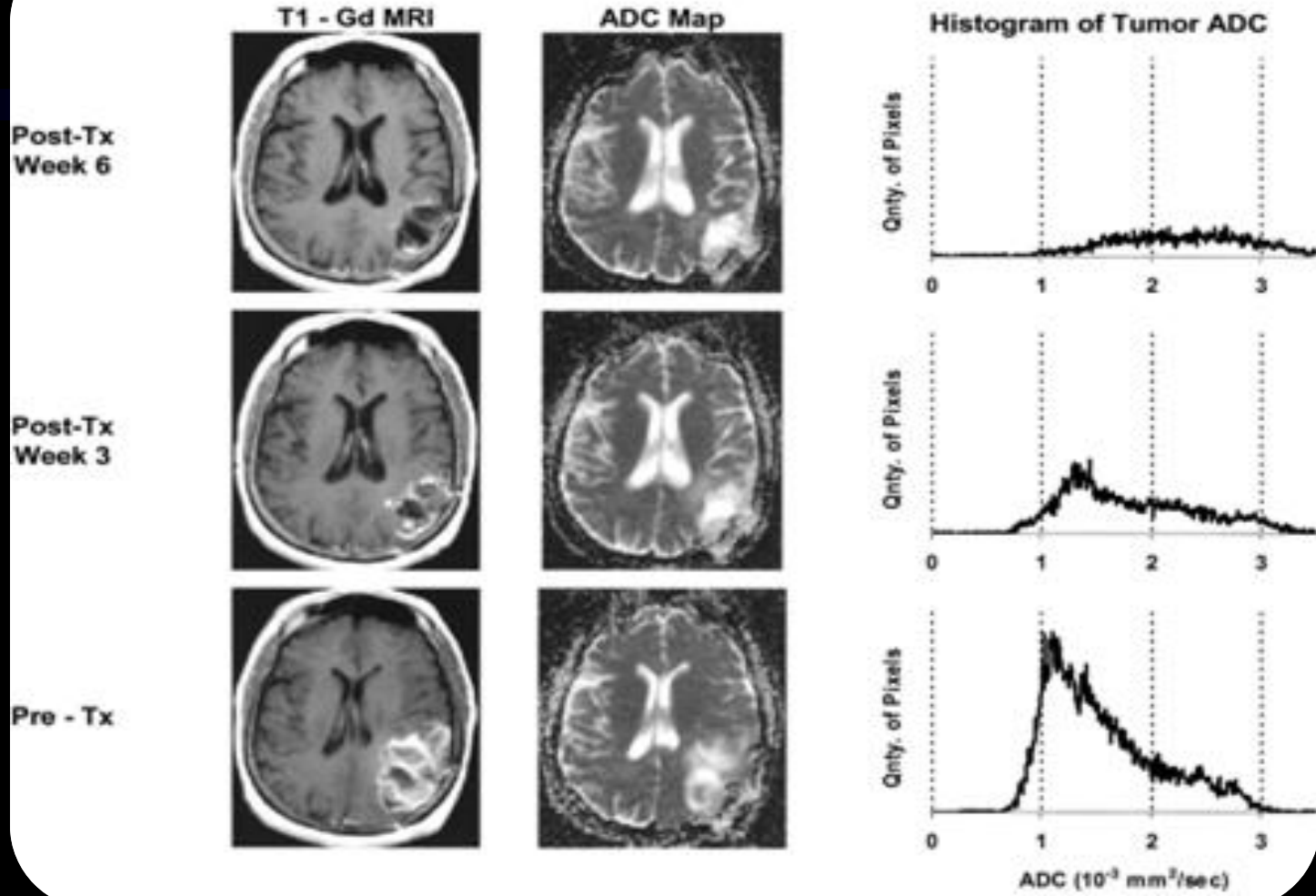
Solid / Cellular Tumor



Astrocytoma NonResponsive to XRT Treatment



Anaplastic Oligo Responsive to XRT Treatment



Positron Emission Tomography (PET)

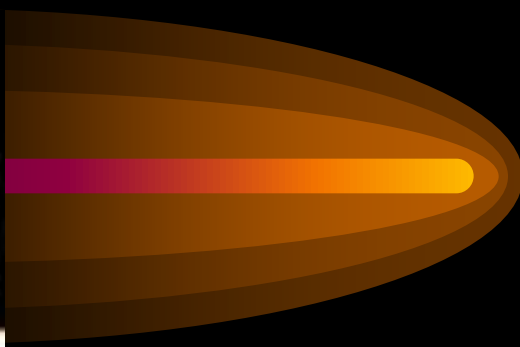
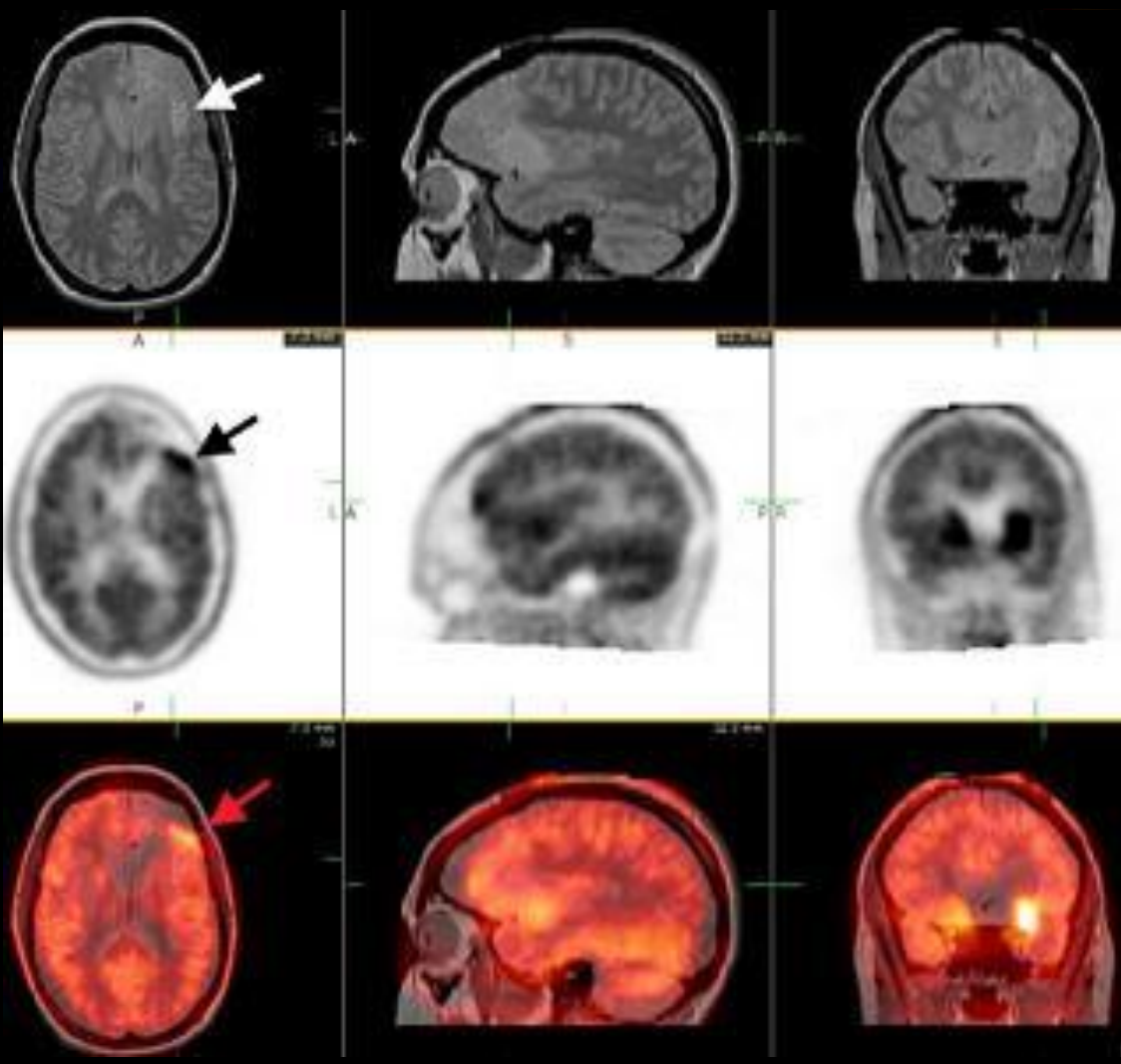
PET can provide unique information about tumor behavior.

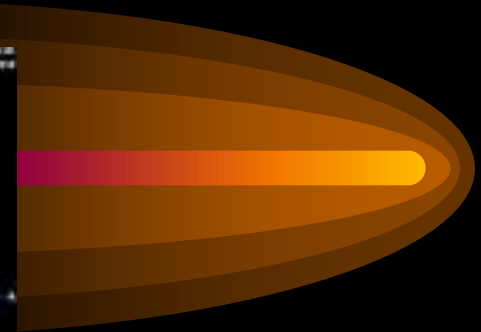
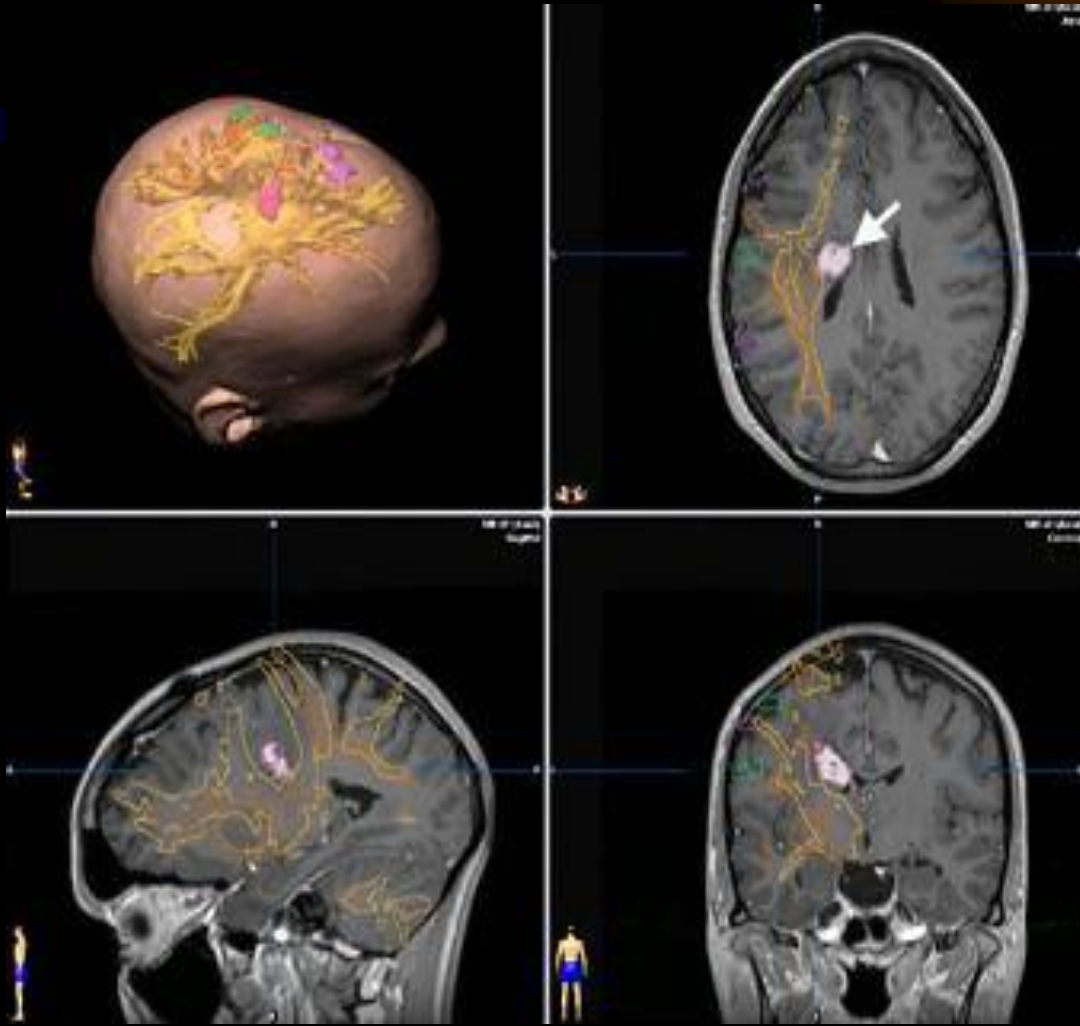
FDG-PET assesses how much sugar (glucose) the tumor is using comparing to the normal brain.

FDOPA-PET looks to see if the tumor takes up DOPA, a chemical used by brain cells to make other signaling molecules.

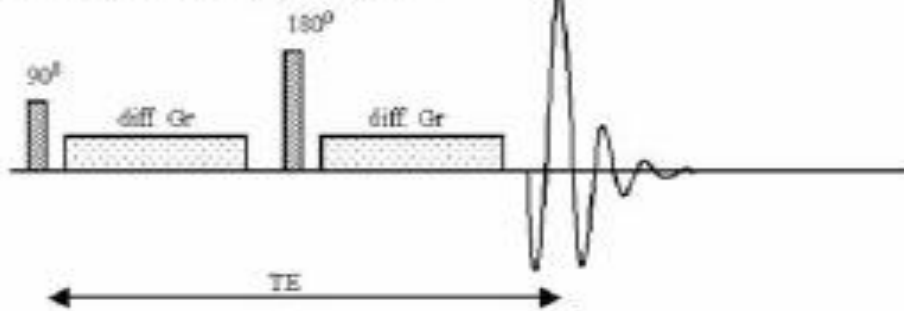
PET can sometimes identify the most malignant portion of a large tumor, guiding the surgeon to an appropriate biopsy site.

PET can be used to follow tumors over time, assessing if they change in behavior.

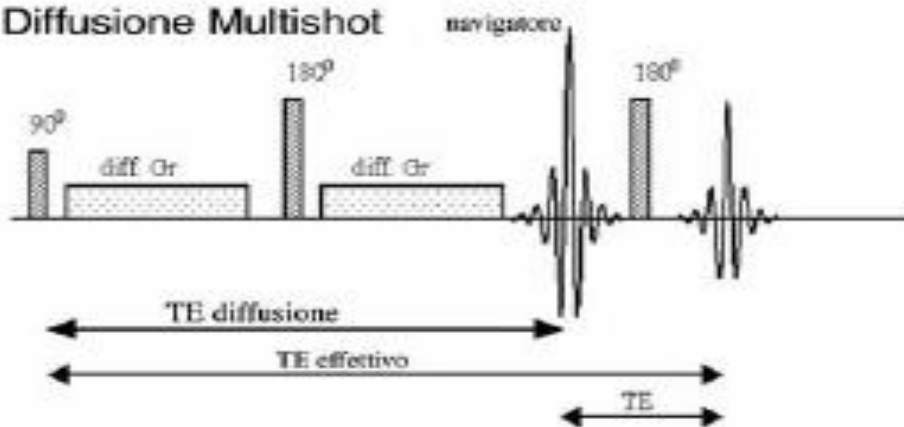




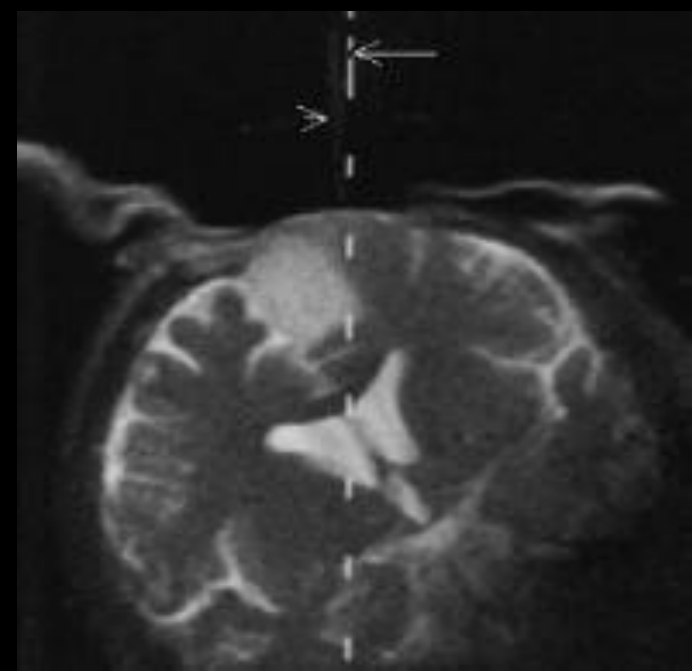
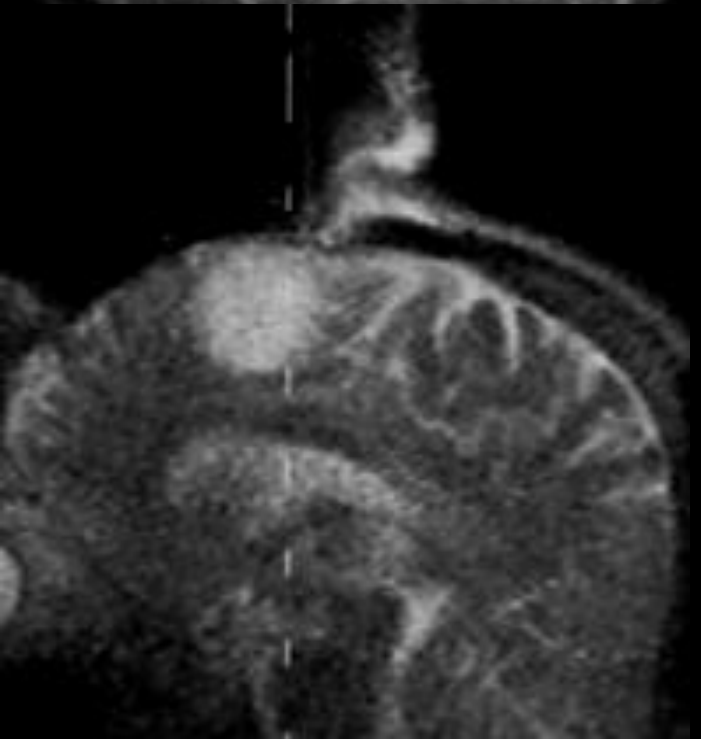
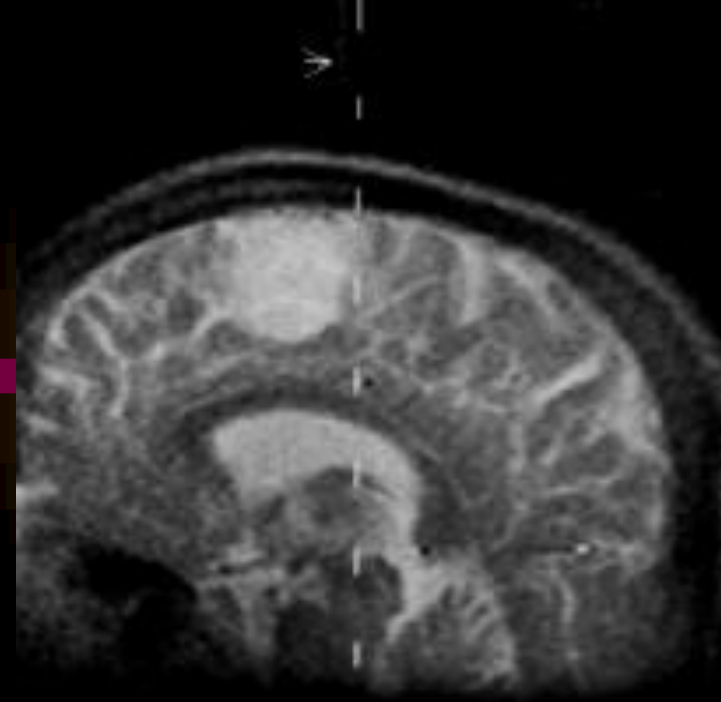
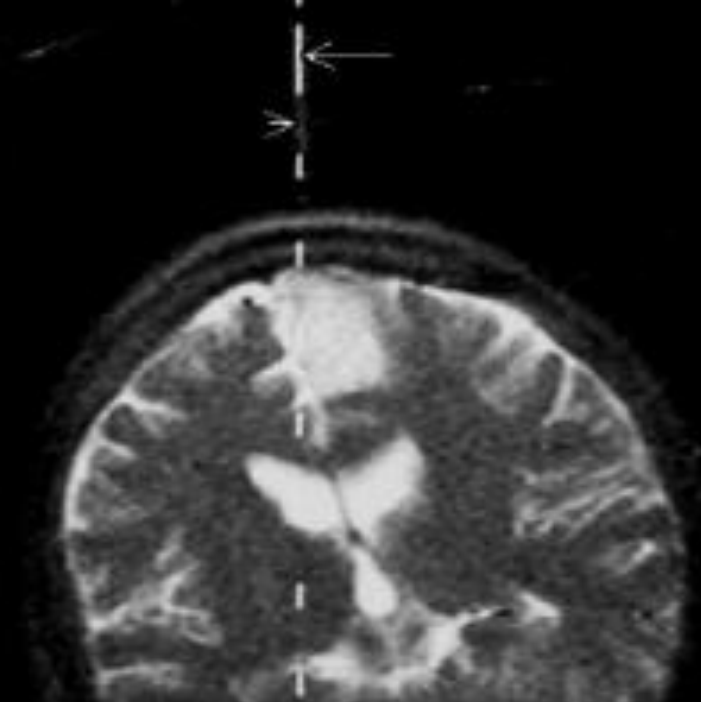
Diffusione Single shot

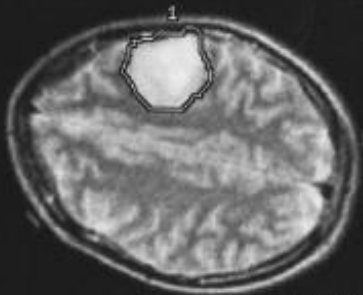


Diffusione Multishot

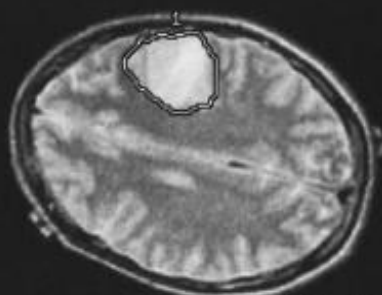




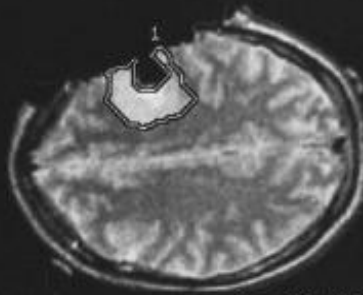




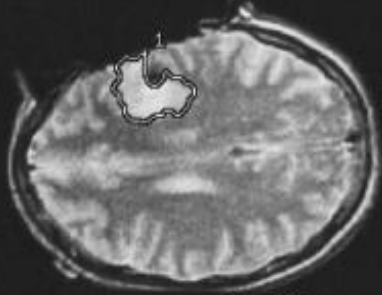
A = 1228 mm²



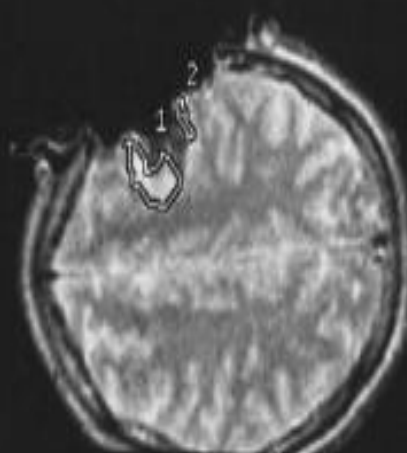
A = 1271 mm²



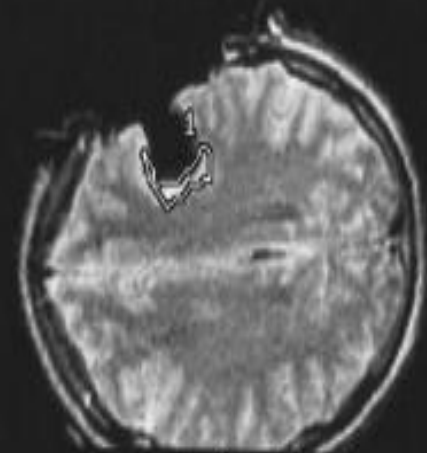
A = 849 mm²



A = 725 mm²



A = 239 mm²



A = 140 mm²



A = 849 mm²



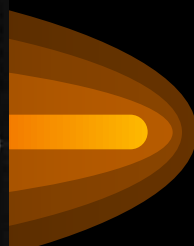
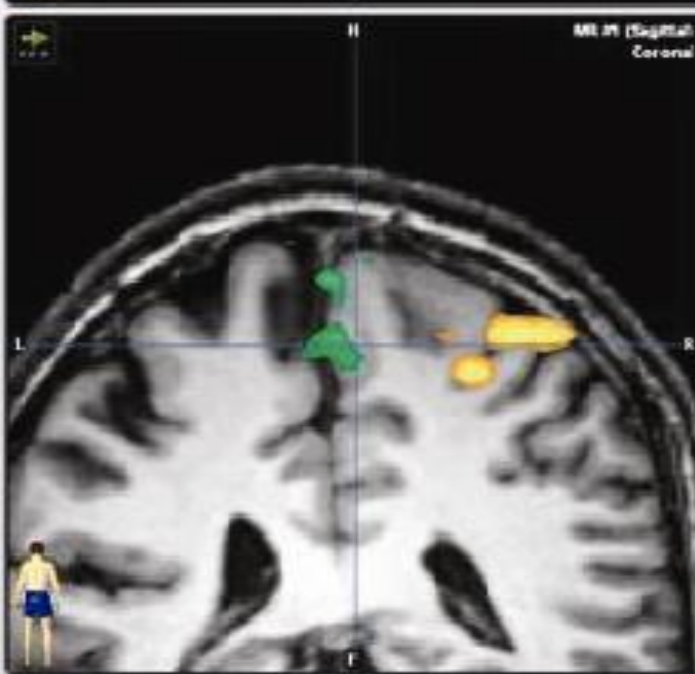
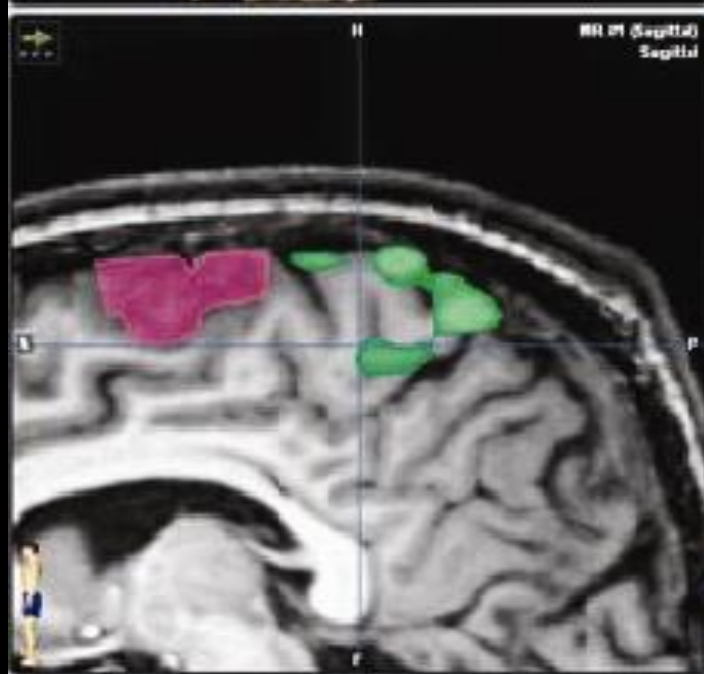
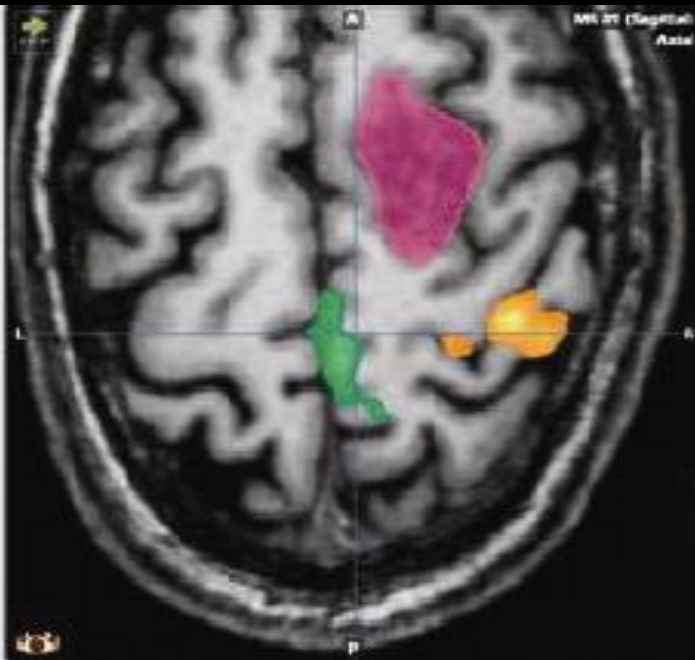
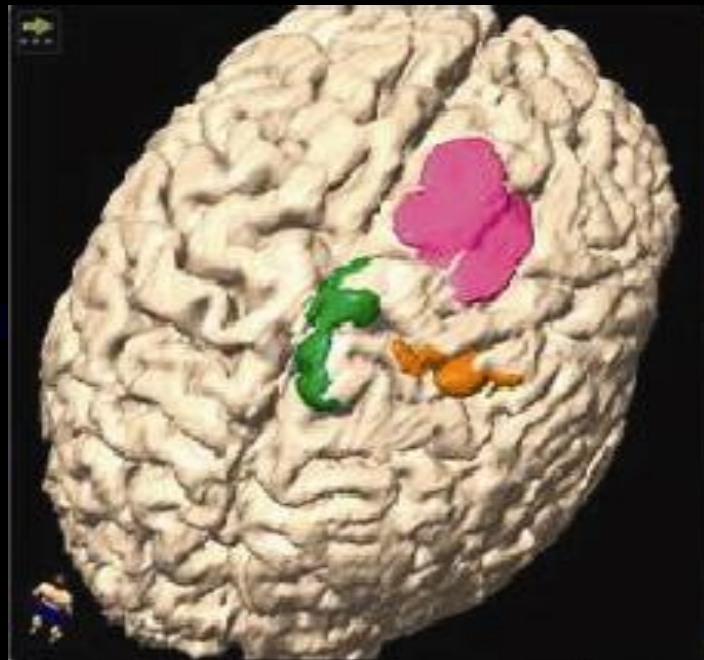
A = 725 mm²

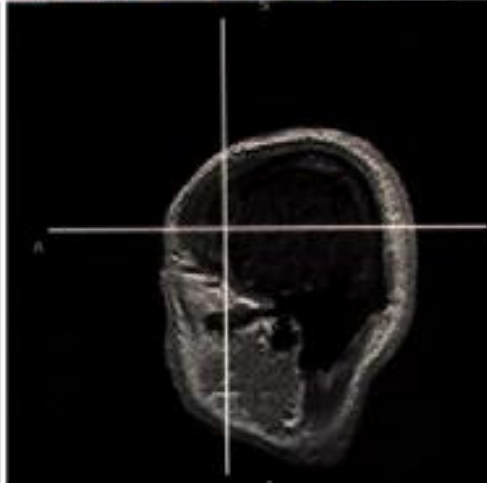
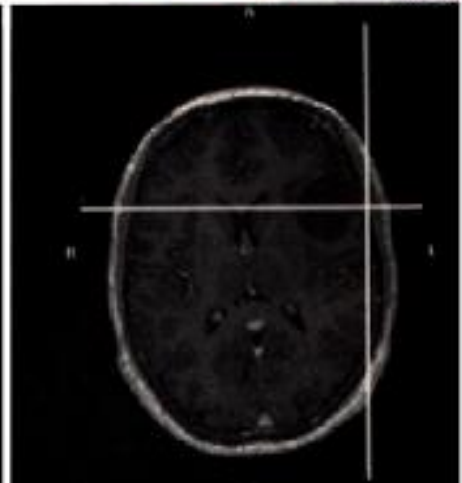
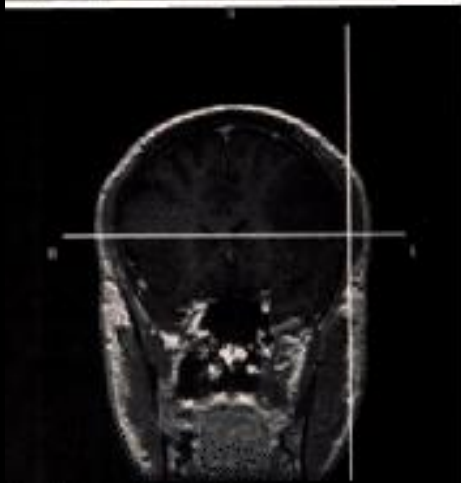
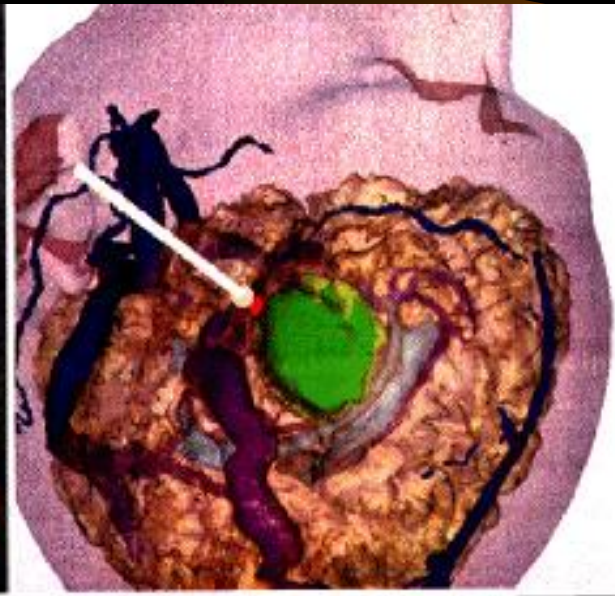
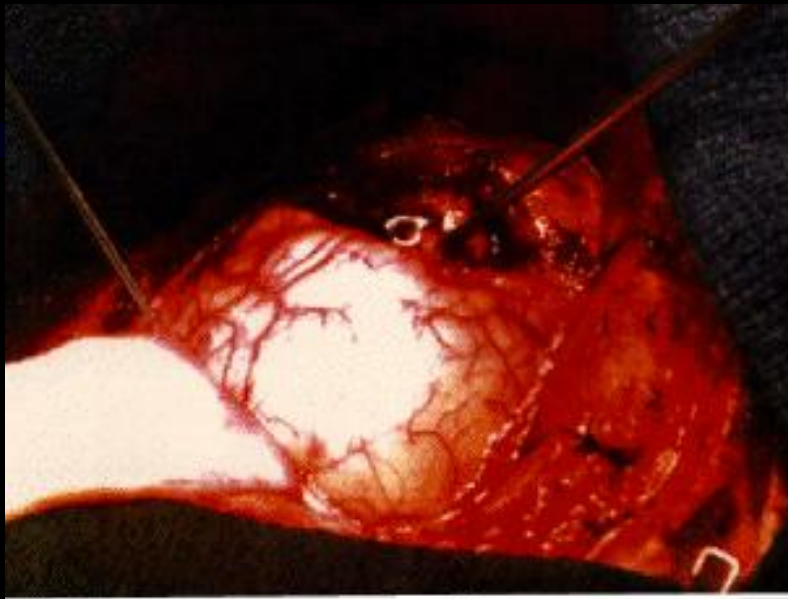


A = 239 mm²



A = 140 mm²





GRAZIE PER L'ATTENZIONE

