

CNAO: attività clinica



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VISITE GUIDATE 2022



Radioterapia

Più del 50% dei pazienti oncologici viene sottoposto a RT nel corso della malattia



CHIRURGIA

Malattia Locale



RADIOTERAPIA

Introduzione

Gli obiettivi principali di un trattamento radioterapico sono:

- Aumentare la dose al tumore
- Diminuire la dose ai tessuti normali circostanti



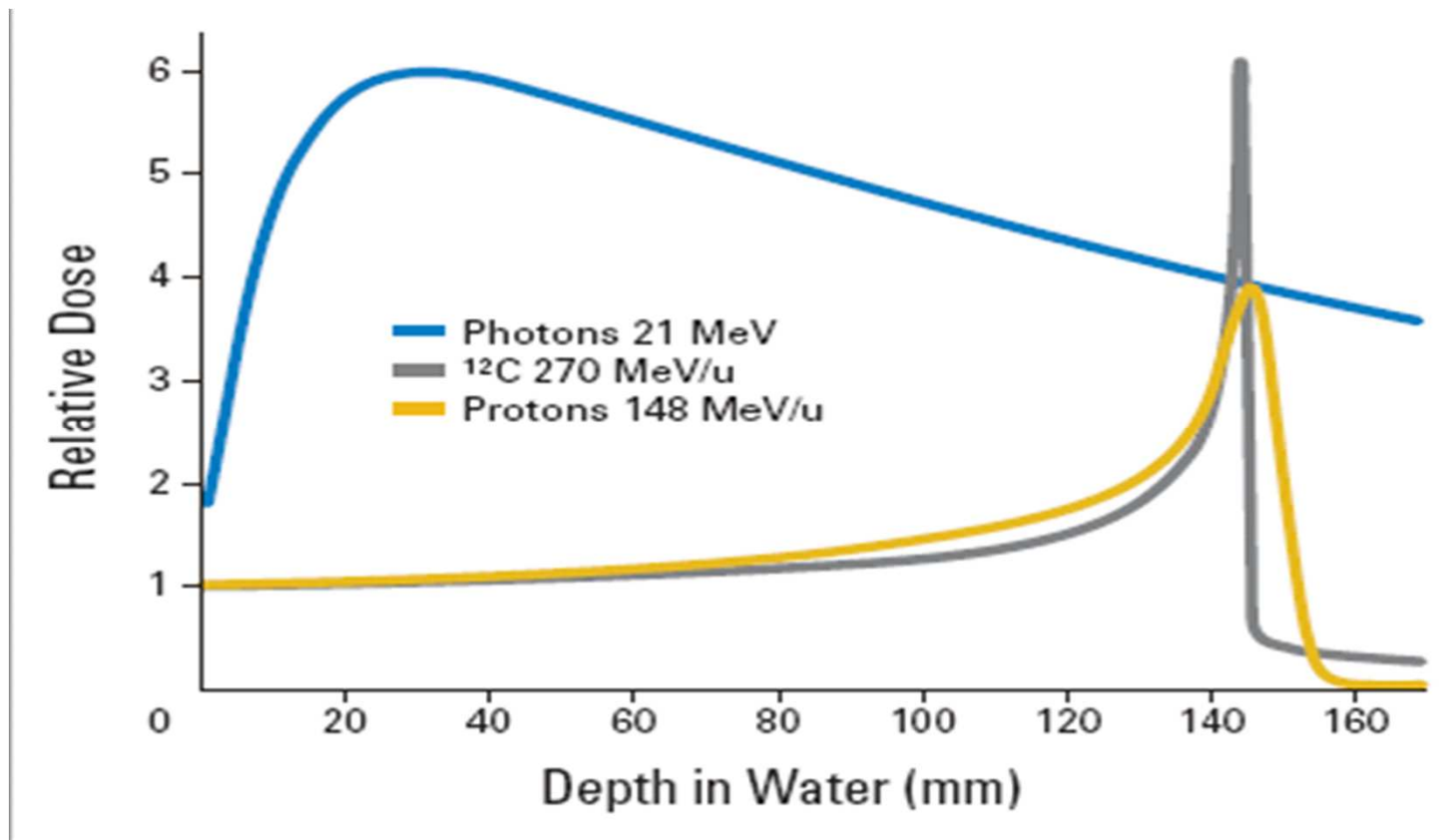
Sviluppi tecnici in radioterapia:

Tecniche moderne di radioterapia conformazionale: **IMRT e Tomoterapia**

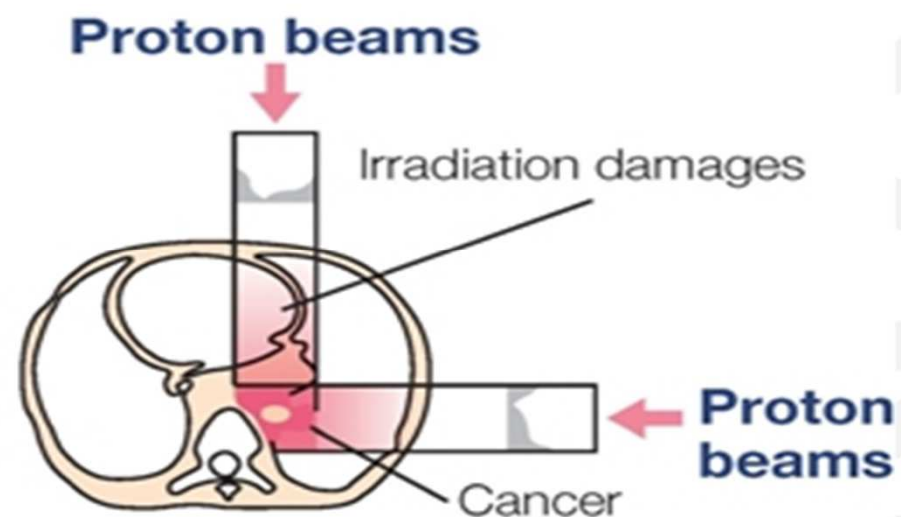
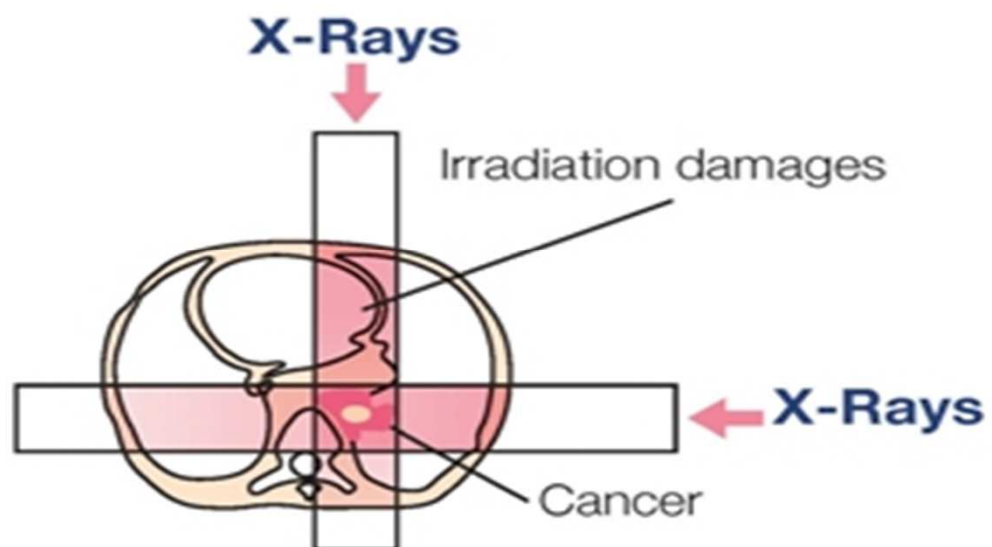
Radioterapia con particelle

Caratteristiche fisiche delle particelle cariche

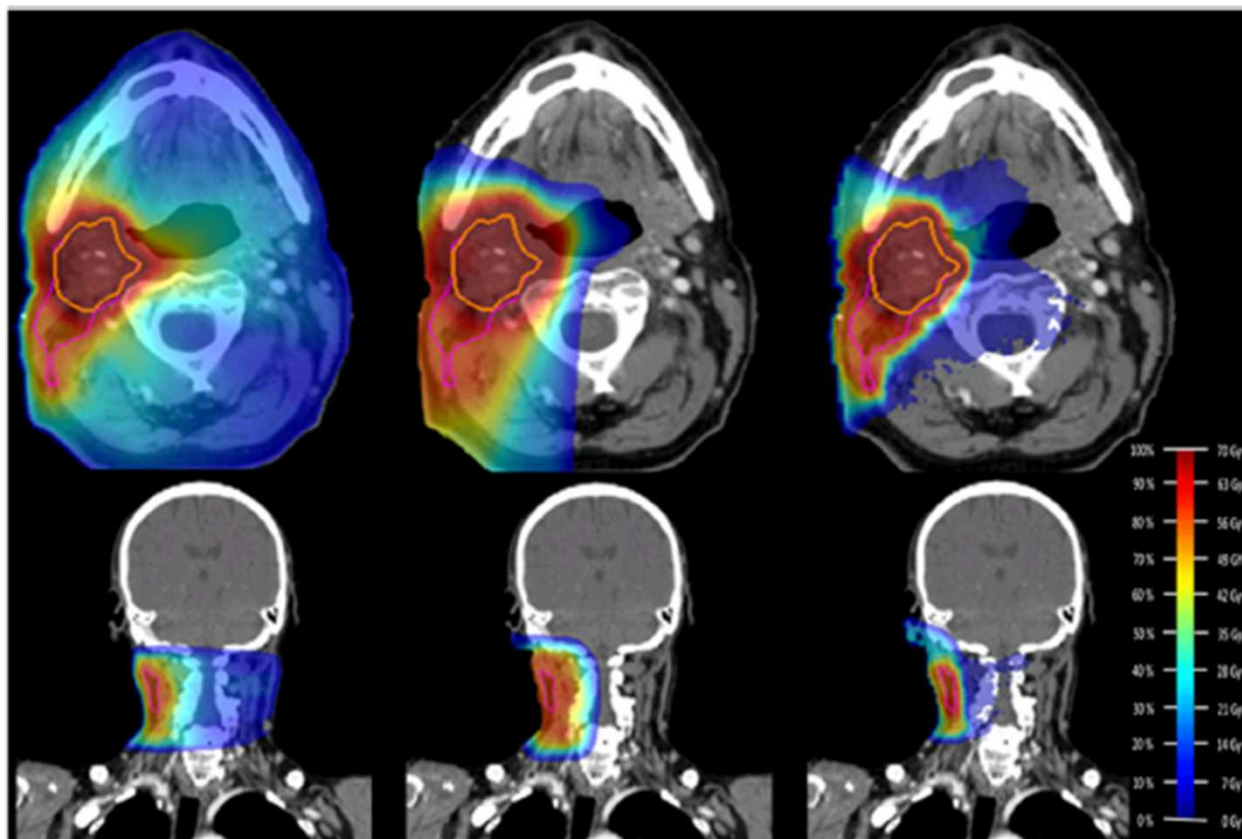
→ > dose al tumore > dose ai tessuti normali circostanti



Questo implica...



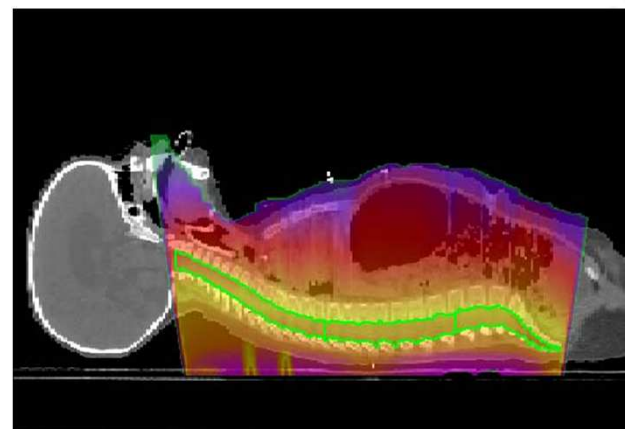
... nella pratica clinica...



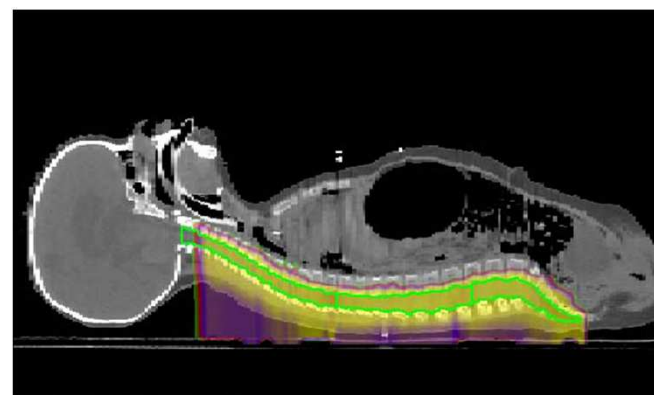
Fotoni

Protoni

Ioni carbonio

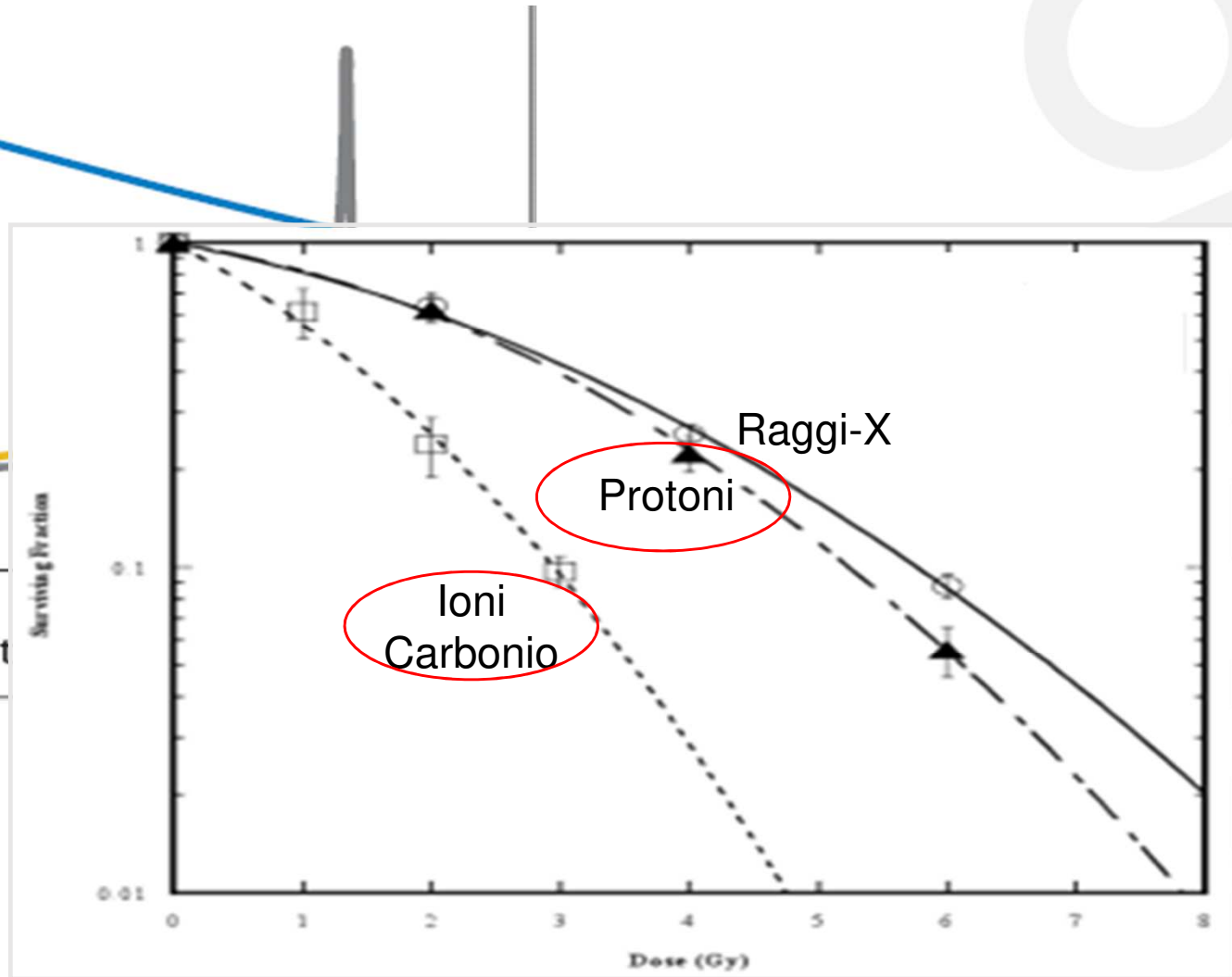
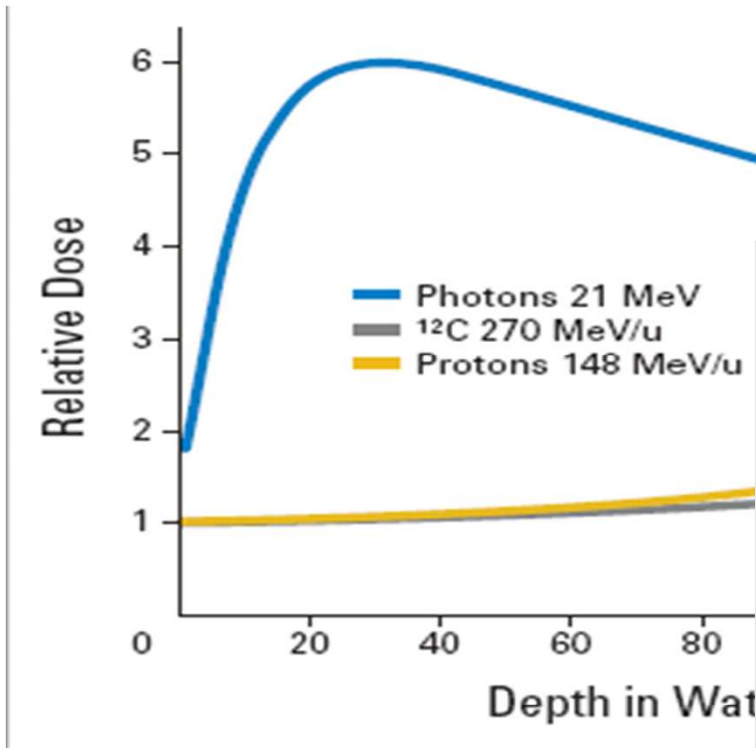


Fotoni

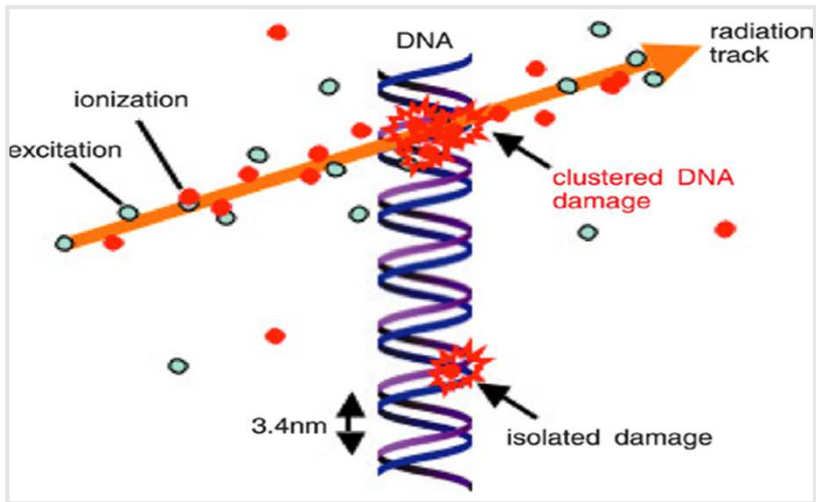


Protoni

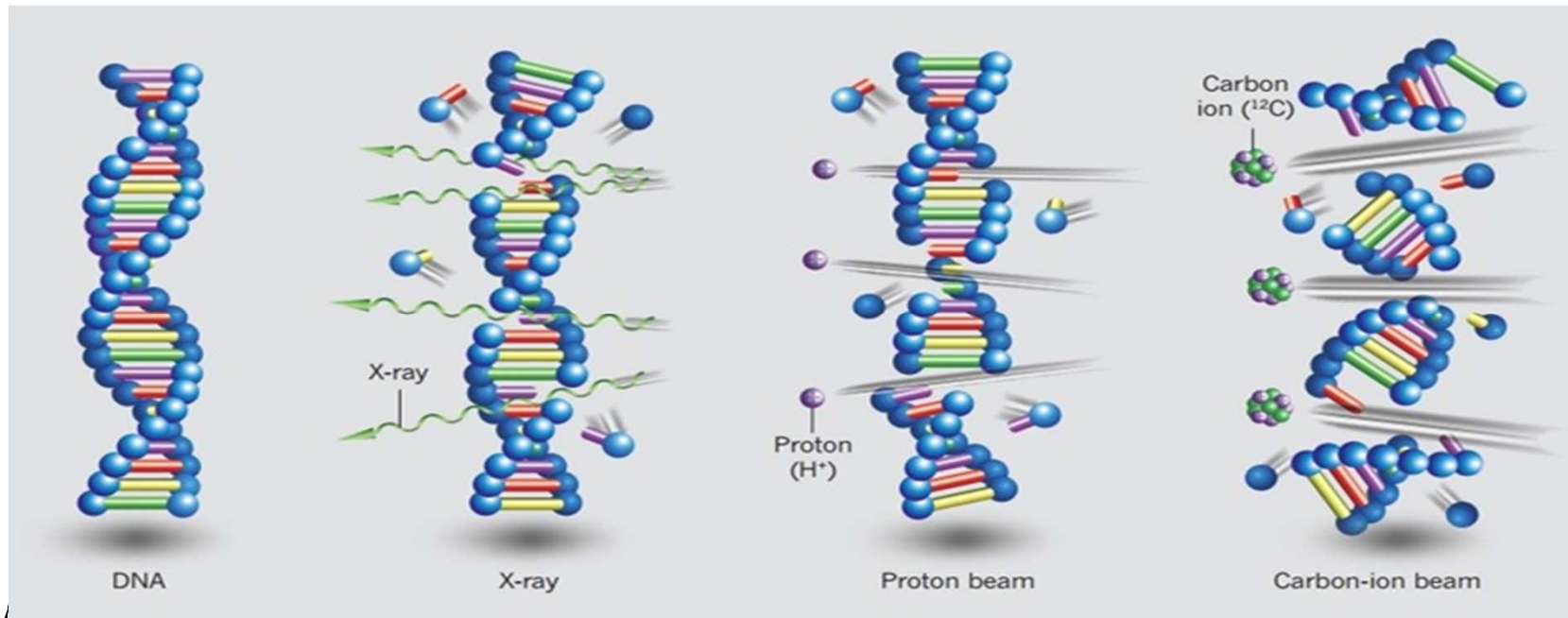
Caratteristiche radiobiologiche delle particelle cariche



03/05/2022

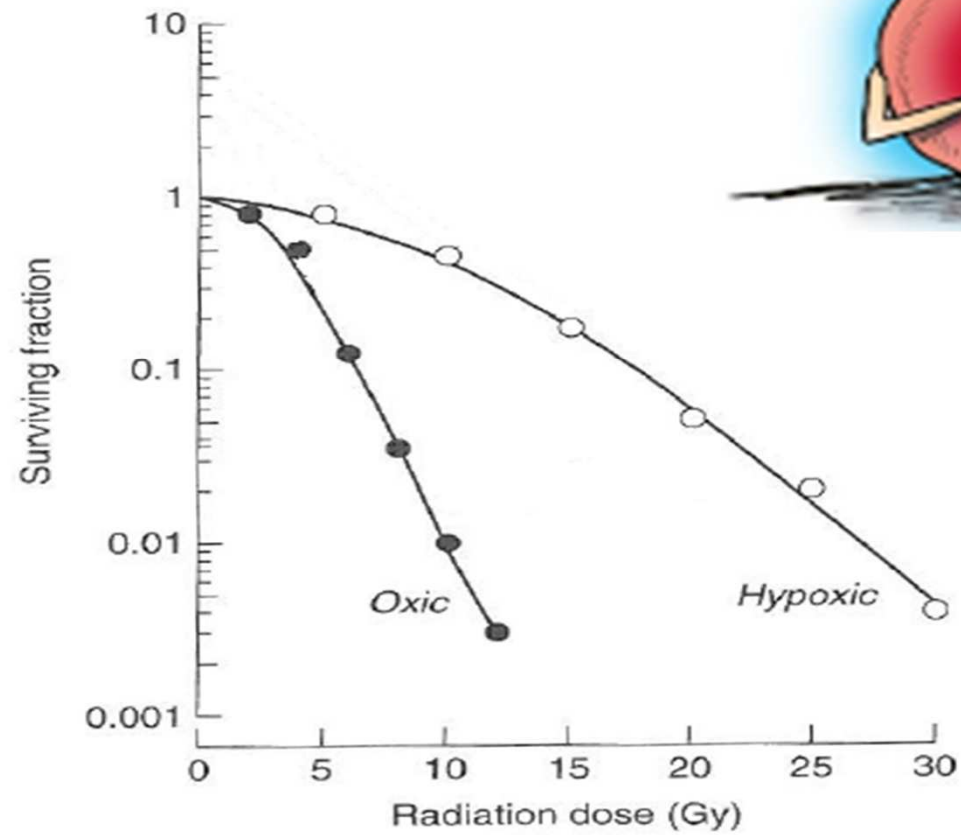


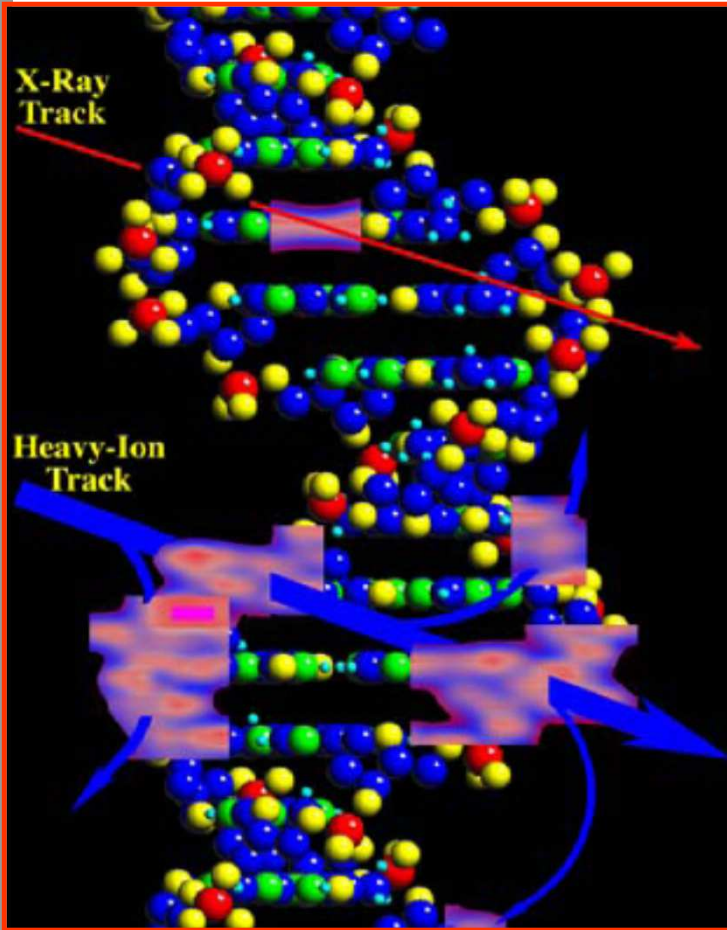
Caratteristiche radiobiologiche



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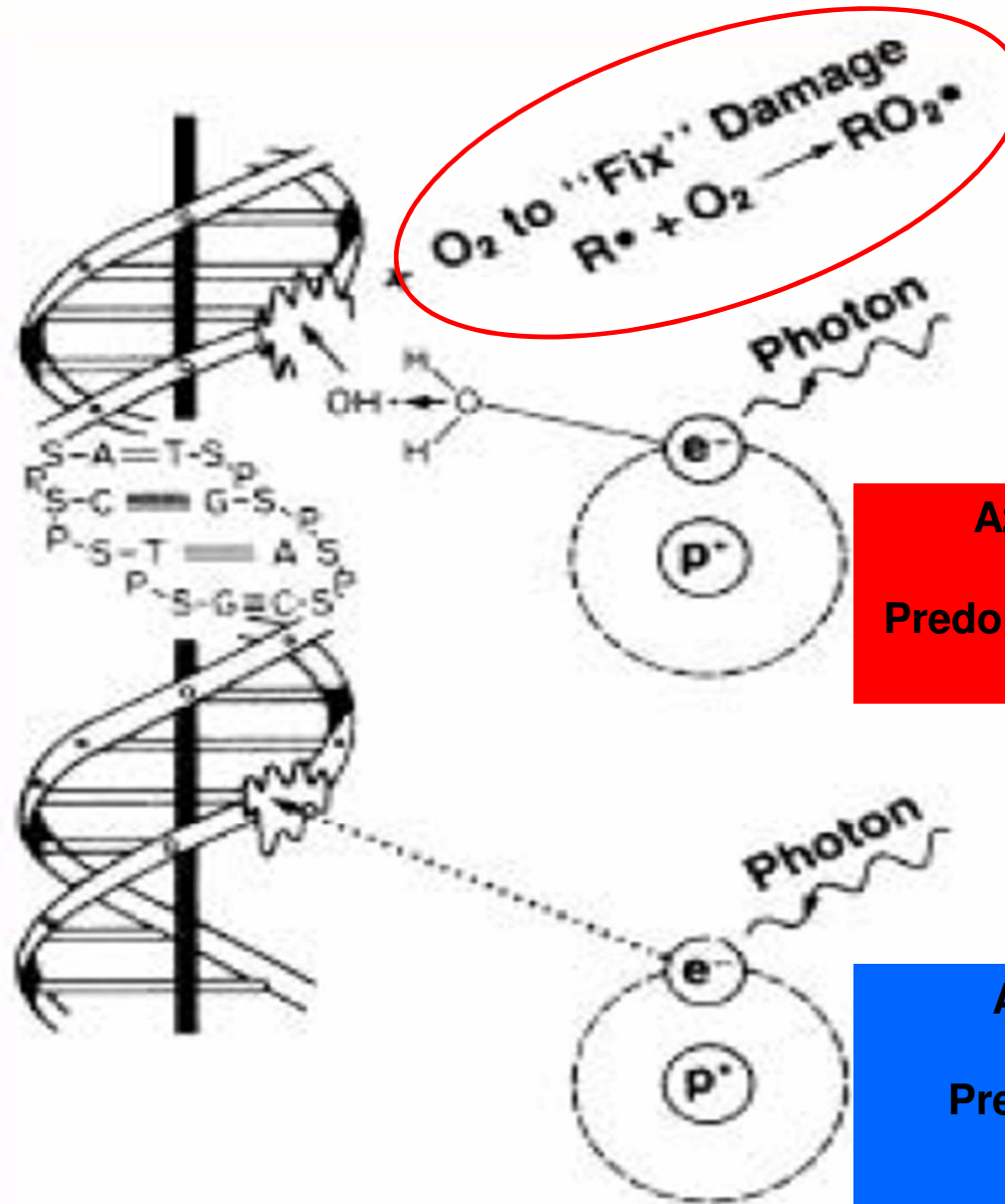
Effetto ossigeno





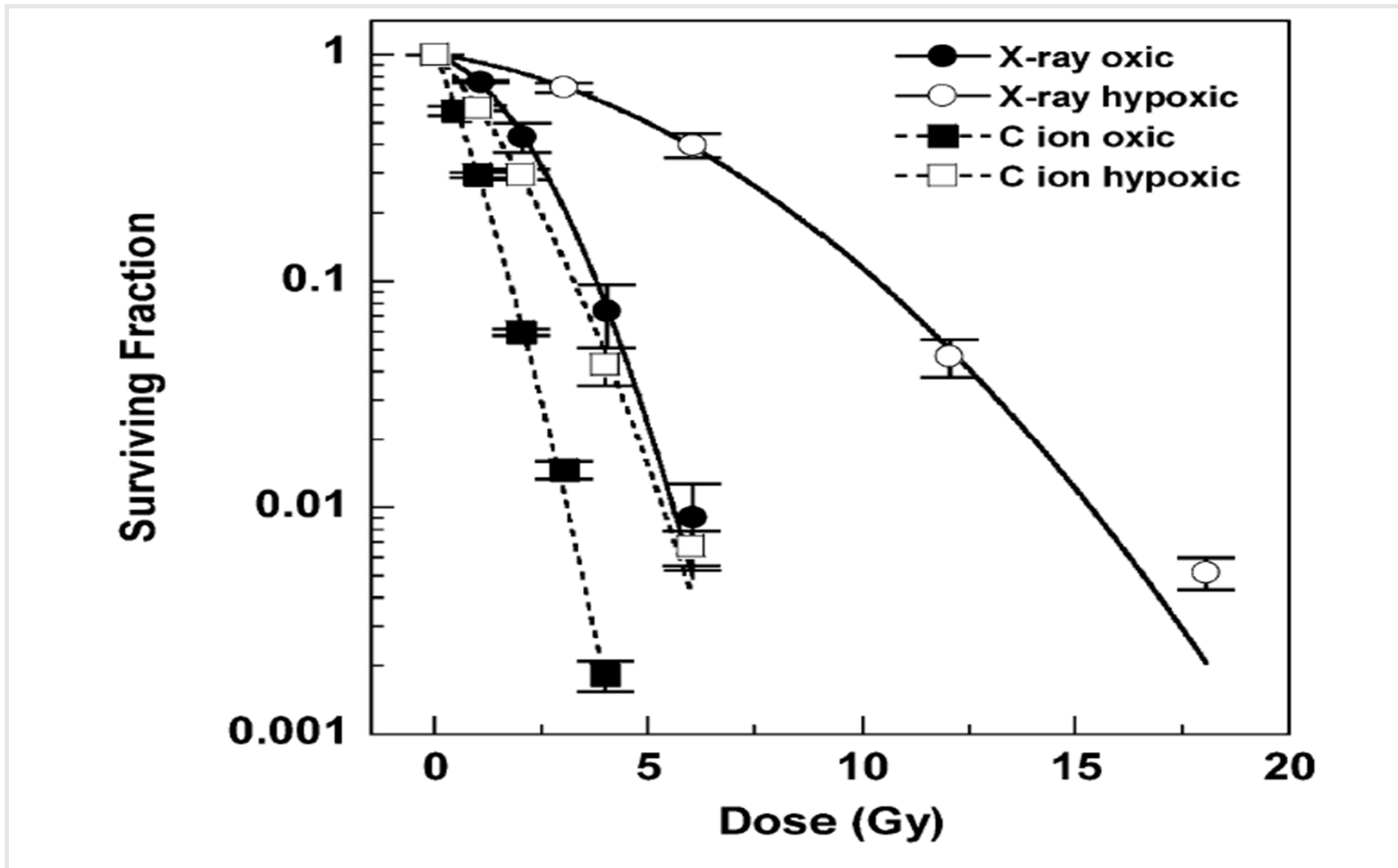
Modificato da: E. Hall, Radiobiology for the Radiologist

03/05/2022



Azione indiretta
Predominante con Raggi X

Azione diretta
Predominante con Radiazioni alto LET



Hirayama E et al, 2005

03/05/2022

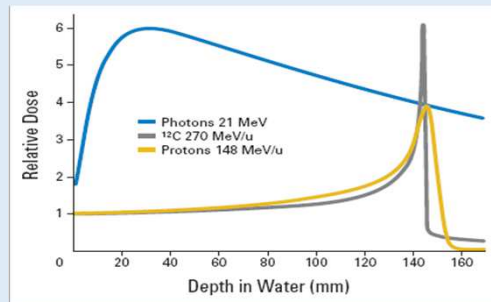
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Adroterapia... per chi?



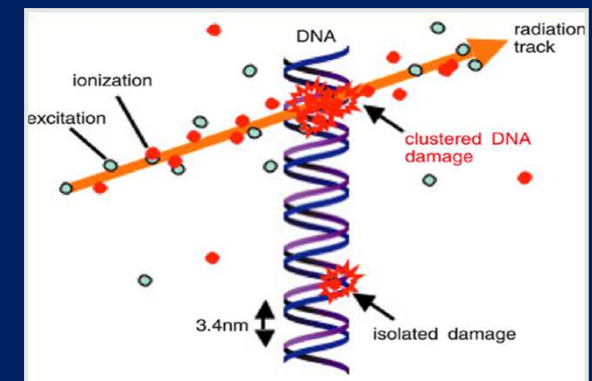
CARATTERISTICHE DOSIMETRICHE



*Comuni a protoni e ioni
carbonio*

Tumori localizzati vicino ad organi a rischio
Tumori pediatrici
Tumori radioresistenti
Re-irradiazioni

CARATTERISTICHE RADIOBIOLOGICHE



*Peculiare degli ioni
carbonio*

I nuovi Livelli essenziali di assistenza (LEA)



CONDROSARCOMI E
CORDOMI DELLA BASE
DEL CRANIO E DEL
RACHIDE



TUMORI DEL TRONCO
ENCEFALICO E DEL
MIDOLLO SPINALE



SARCOMI DEI TESSUTI
MOLLI



SARCOMI OSSEI
INCLUSI
OSTEOSARCOMI E
CONDROSARCOMI



MENINGIOMI
INTRACRANICI IN
SEDI CRITICHE



TUMORI ORBITARI E
PERIORBITARI
INCLUSO IL
MELANOMA OCULARE



CARCINOMI
ADENOIDEO-CISTICI
DELLE GHIANDOLE
SALIVARI



TUMORI SOLIDI
PEDIATRICI



TUMORI IN PAZIENTI
AFFETTI DA SINDROMI
GENETICHE



RITRATTAMENTI DI
TUMORI IN SEDI GIÀ
IRRADIAE

ALTRE PATOLOGIE OGGETTO DI PROTOCOLLI CLINICI



TUMORI AL PANCREAS

(Trattamento pre-operatorio e trattamento per tumori

localmente avanzati inoperabili)

NON C'È INDICAZIONE PER I

CASI METASTATICI



TUMORI ALLA PROSTATA AD ALTO RISCHIO

IN CORSO: studio clinico di fase II per il trattamento prostatico ad alto rischio (maggiori info)



REIRRADIAZIONI DI RECIDIVE DI TUMORI DEL RETTO



TUMORI DEI SENI PARANASALI

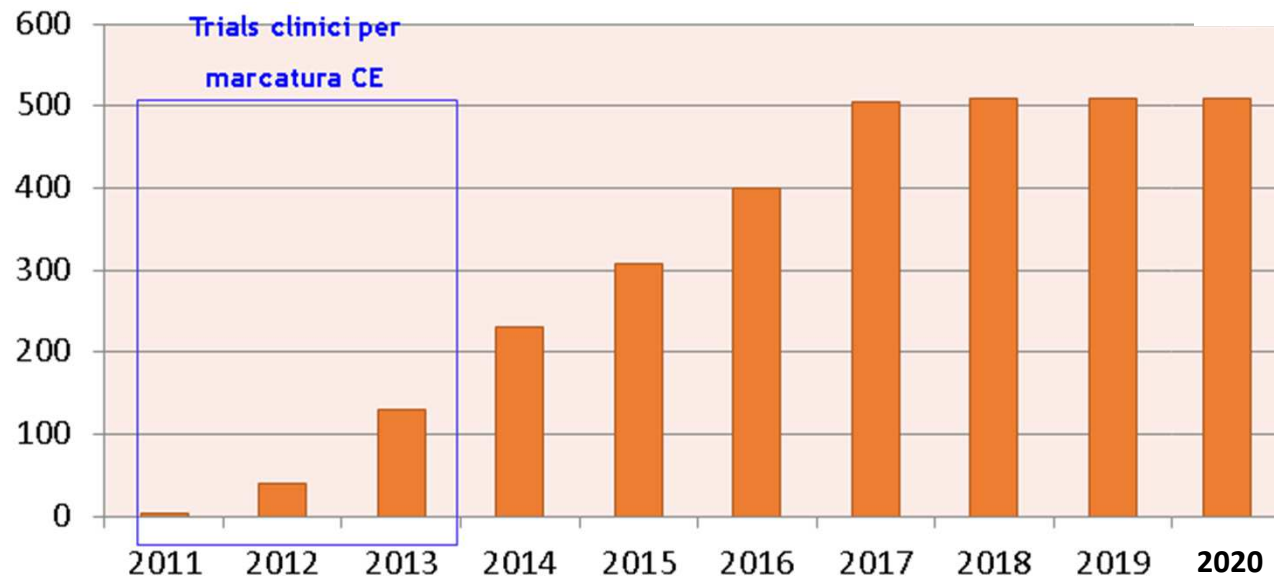


NEOPLASIE DELL'ENCEFALO

(inclusi i ritrattamenti con ioni carbonio delle recidive in pazienti già irradiati)

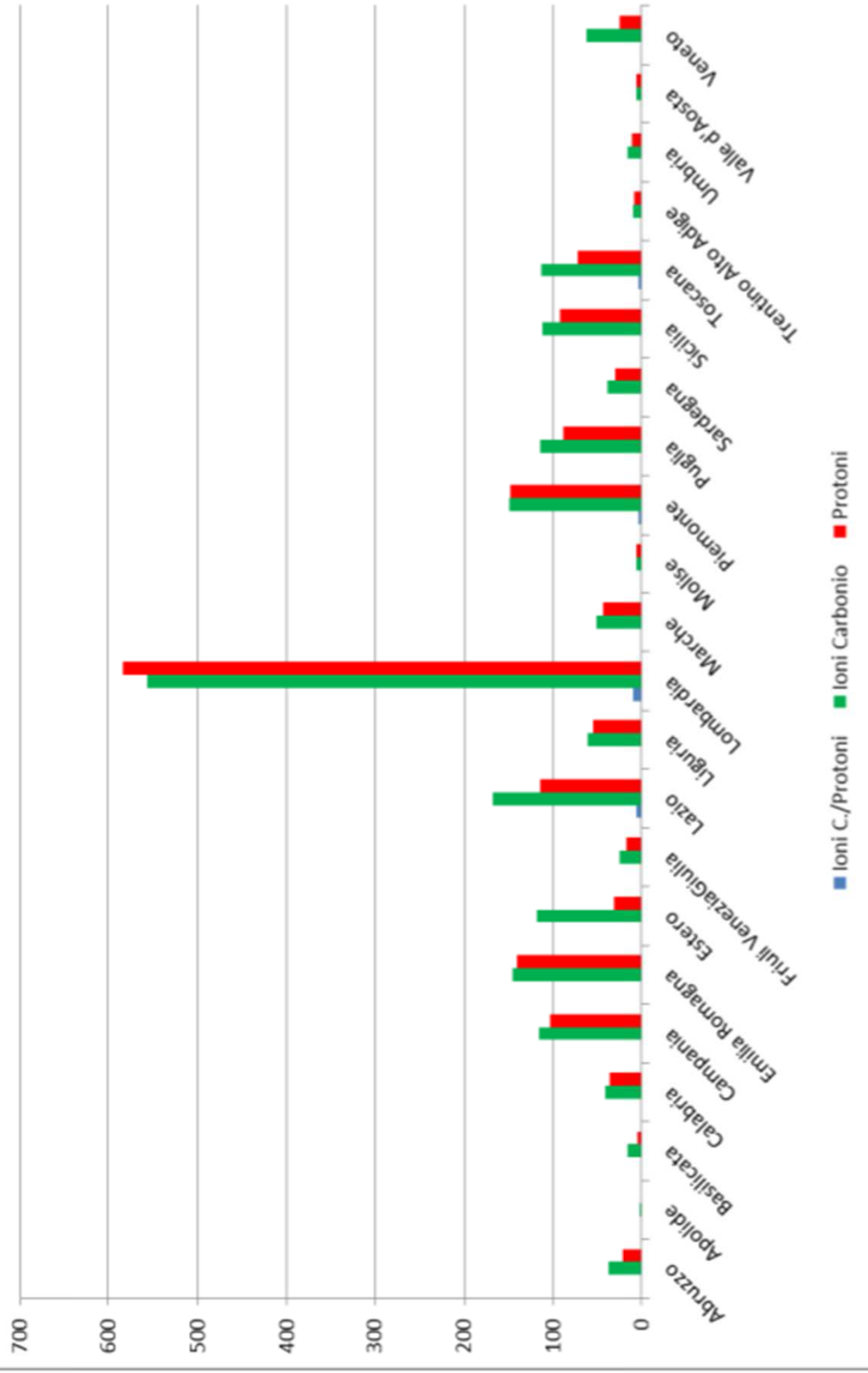
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Pazienti per anno

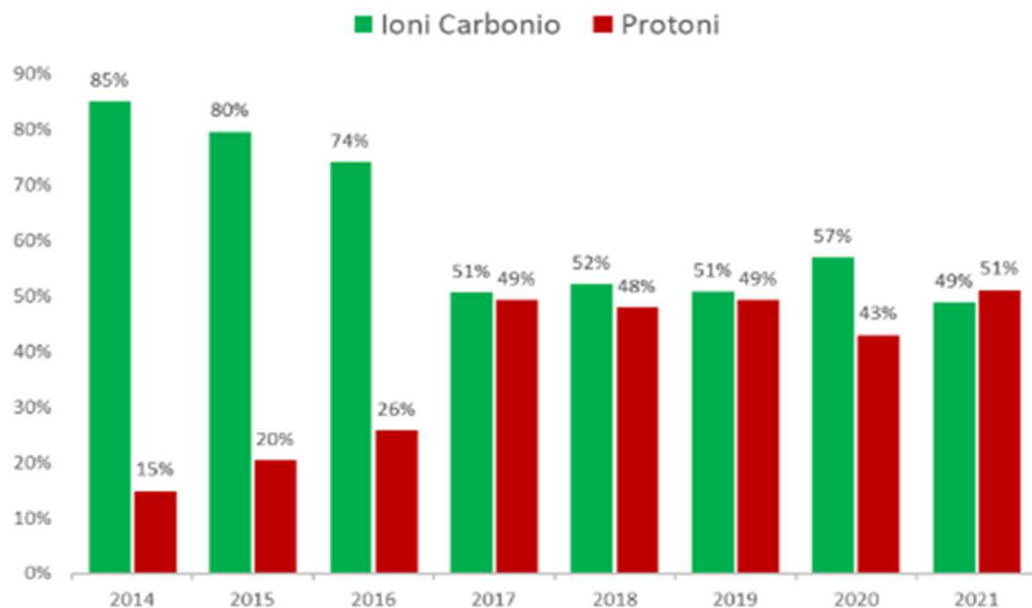


Pazienti totali (28 Ottobre 2021): 3634

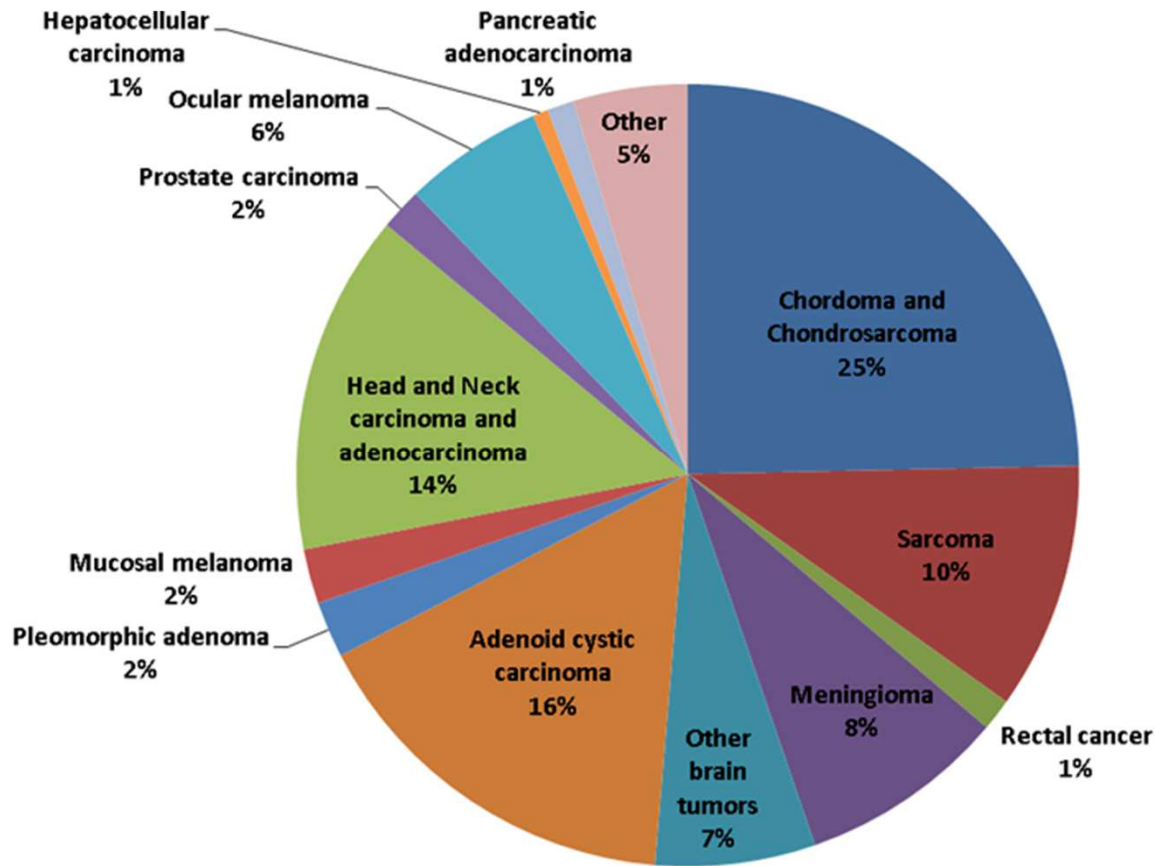
Distribuzione geografica dei pazienti del CNAO
dal 22 Settembre 2011 ad oggi



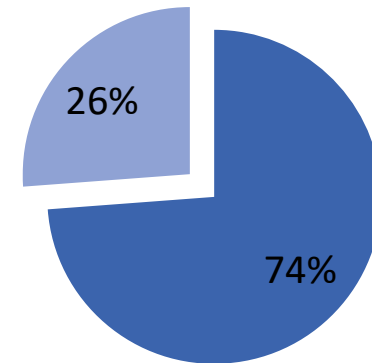
ATTIVITA' CLINICA



Trattamenti 2021	
Carbonio	242
Protoni	301
Carbonio + Protoni	19
Totale	562

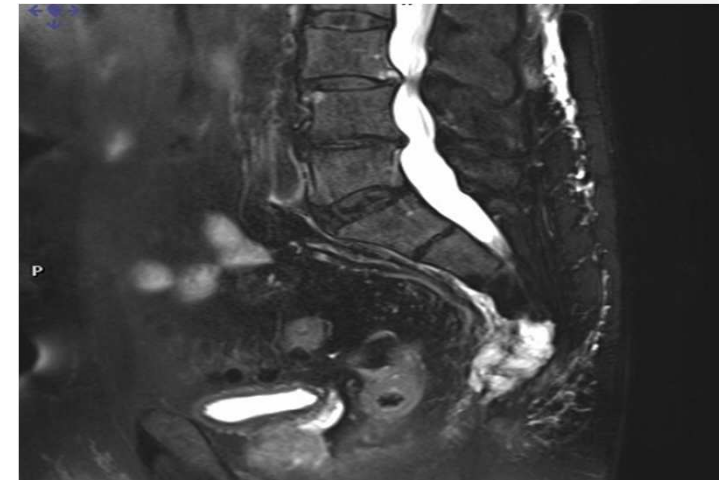
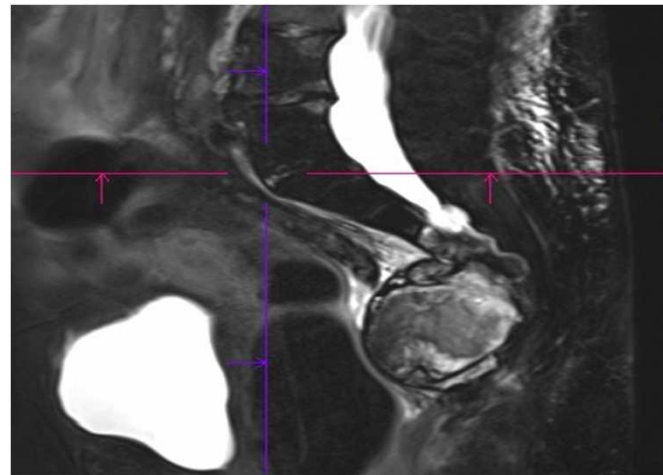
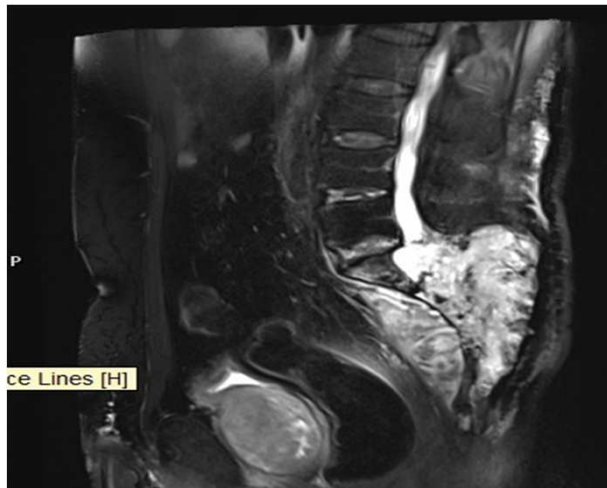
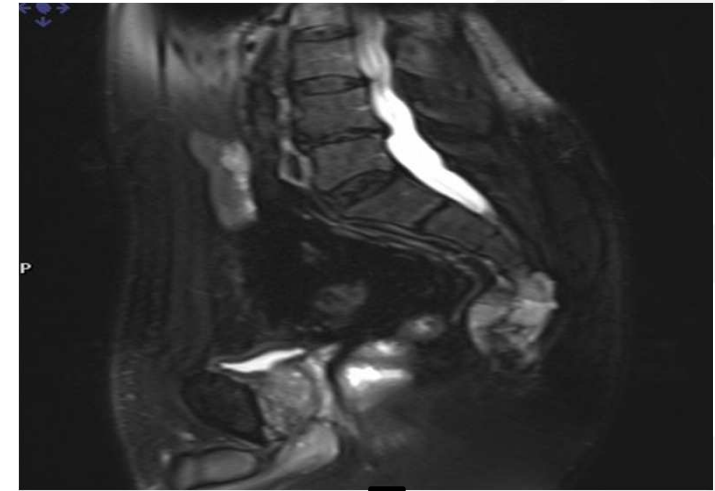
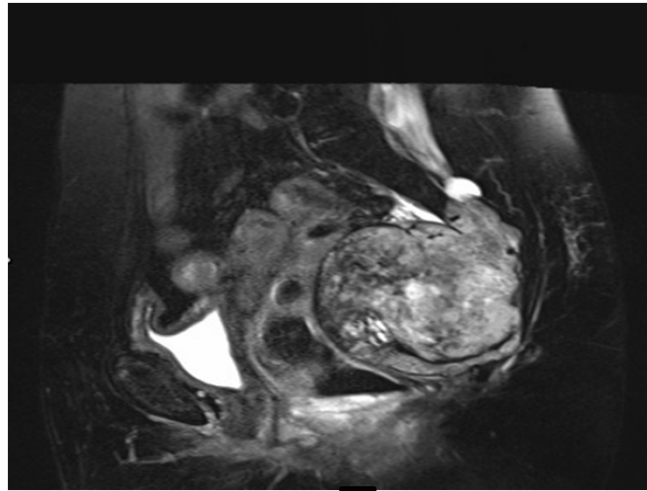
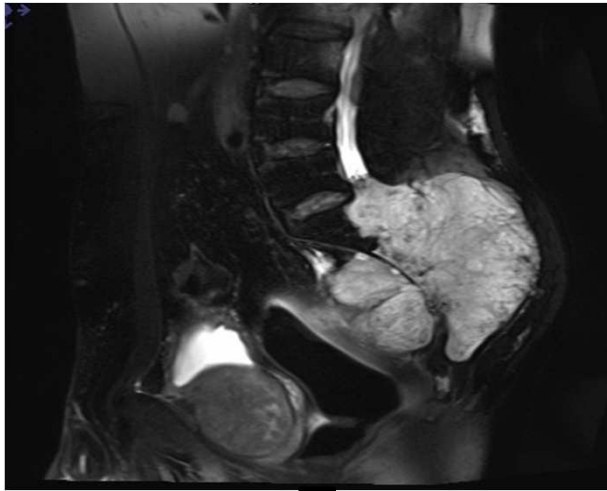


■ first radiotherapy ■ re-irradiation

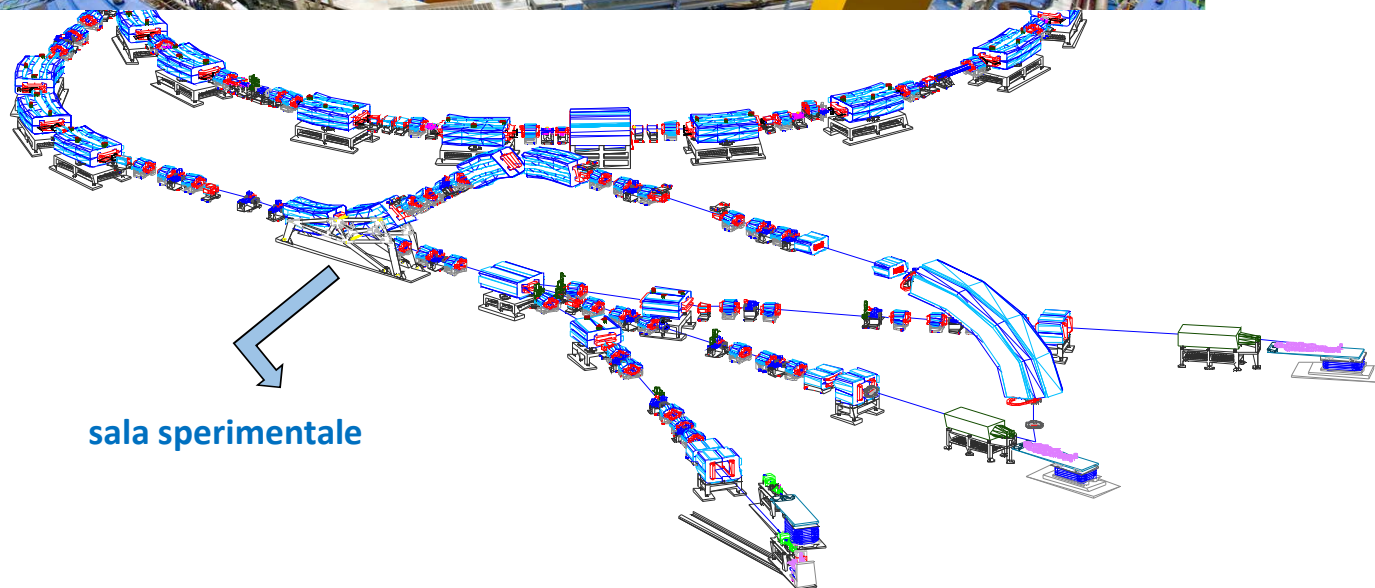
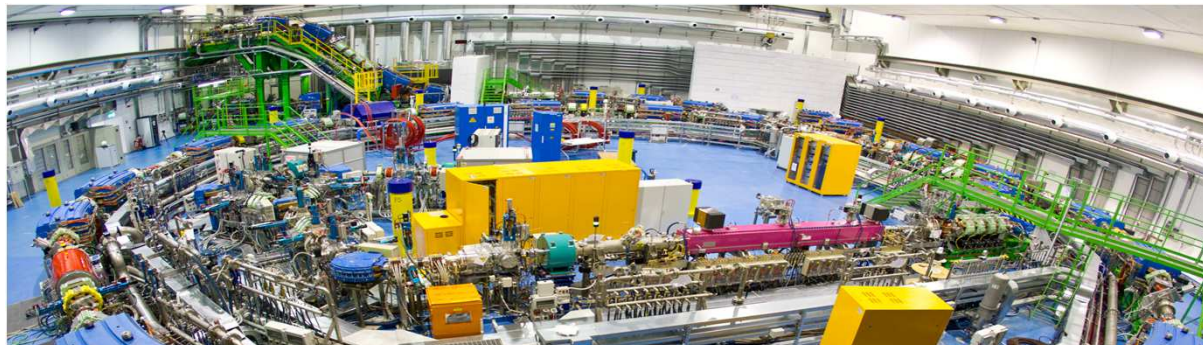


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Sacral Chordoma: CNAO experience



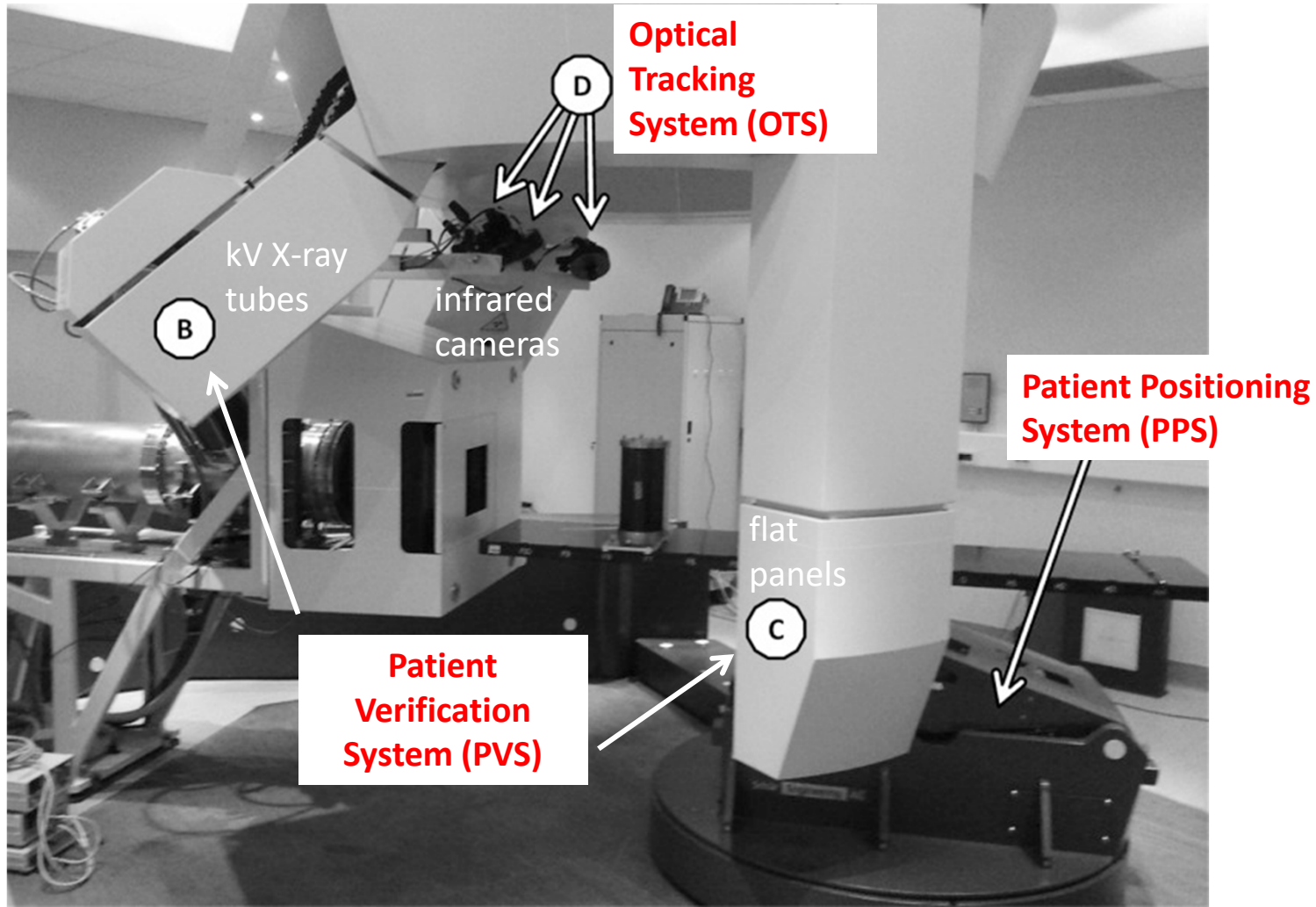
3 sale di trattamento: 52 – 55 pazienti/giorno



Preparatory examinations and the simulation Immobilization devices: personalised thermoplastic masks and pillows



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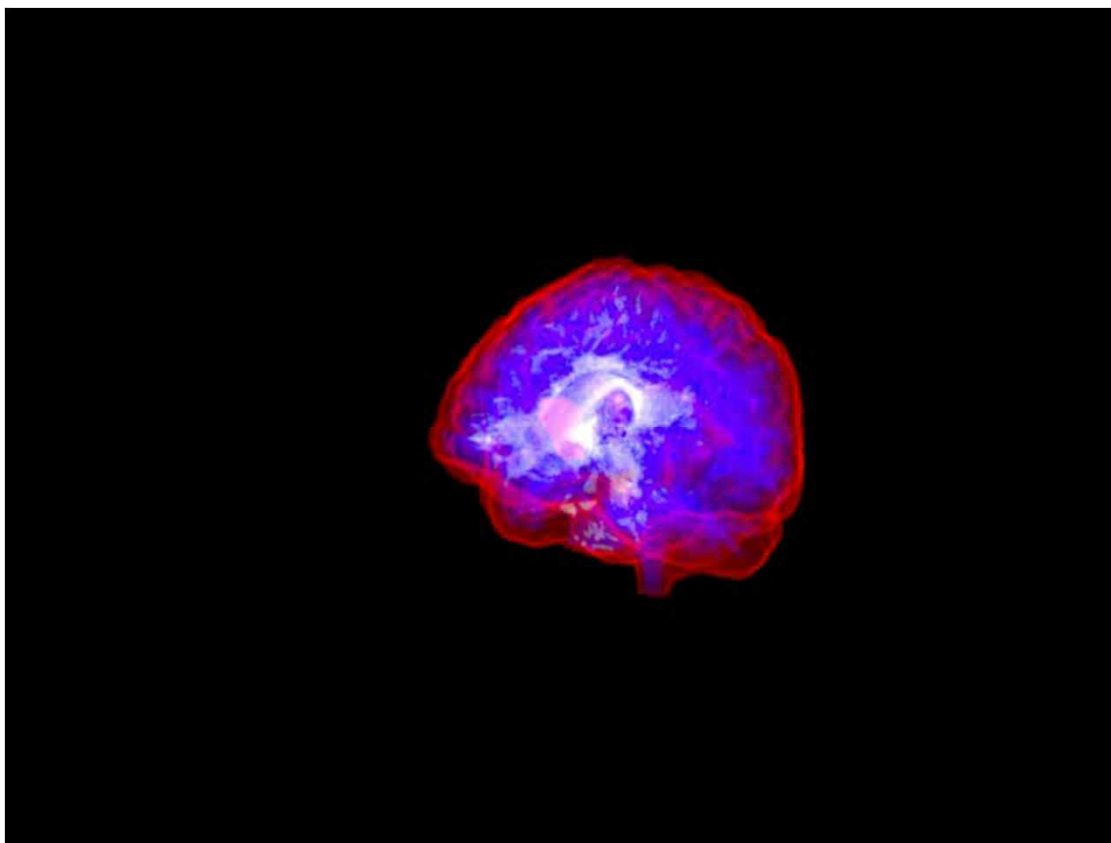


Desplanques M et al, *J Radiat Res.*

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The irradiation begins. The treatment plan subdivides the lesion in various slices. The particle beam irradiates one slice after another, following the commands determined by the treatment plan





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Protocolli CNAO



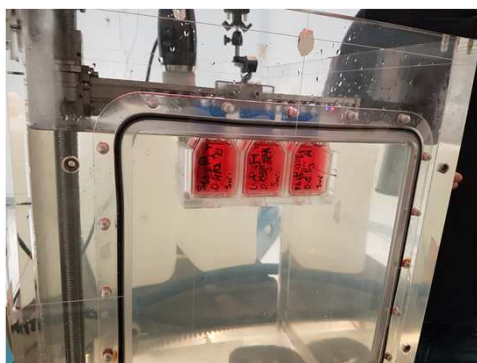
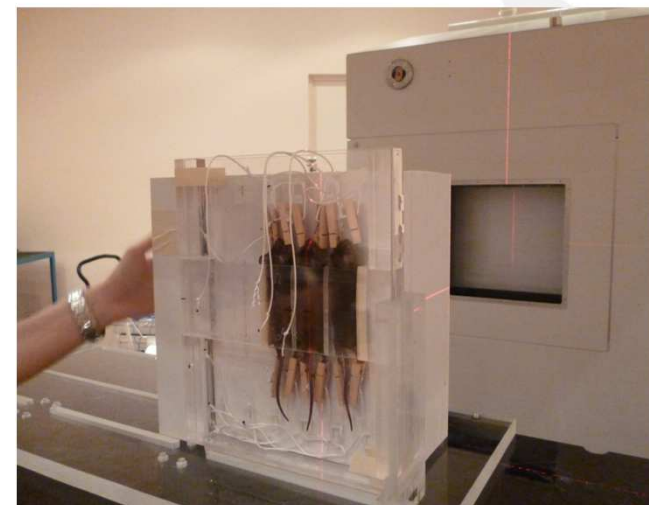
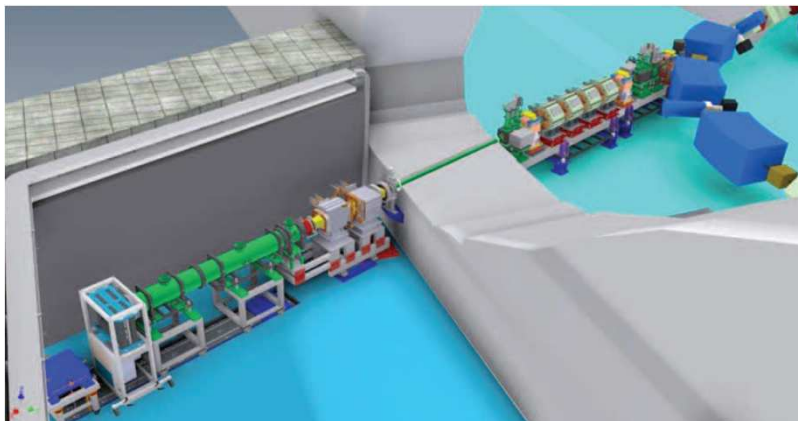
Prima Visita



“True progress is when the advantages of new technology are available for all “

H. Ford

Implementazione delle facilities di laboratorio nella nuova AREA di RICERCA



Uno sguardo sulla nuova Area di Ricerca





Grazie!

03/05/2022

CNIA