

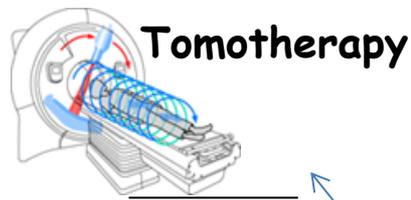
# Servizio Grandi Strumentazioni e Core Facility

## Dosimetria delle radiazioni ionizzanti



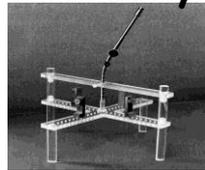
Emanuela Bortolin, Cinzia De Angelis, Sara Della Monaca, Paola Fattibene, Donatella Pietraforte, Maria Cristina Quattrini

# Competenze in diversi ambiti

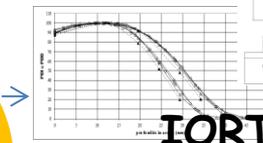


**Tomotherapy**

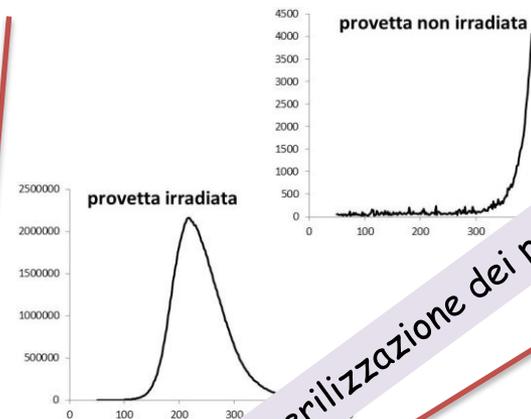
**Brachytherapy**



**Arc-therapy**

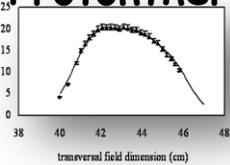


**IORT**

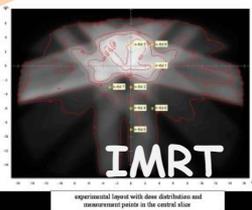


Controllo della sterilizzazione dei prodotti sanitari

**Protontherapy**



Dosimetria in campo medico

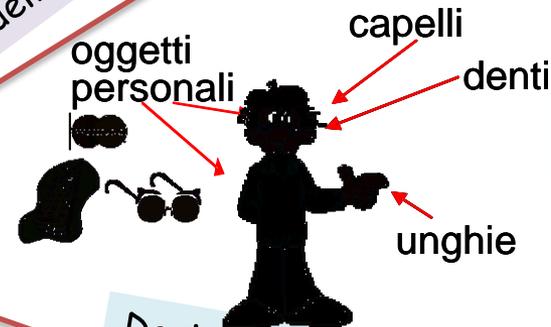
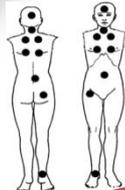


**IMRT**



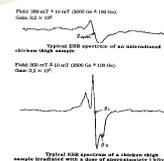
**audit**

**TBI**



Dosimetria retrospettiva

Identificazione di alimenti irradiati

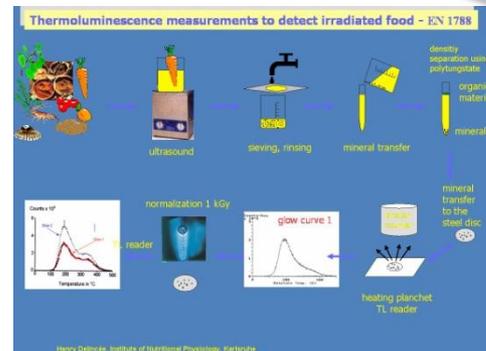


carni con ossa o pesci con lisca

frutta secca



frutta con guscio, frutta fresca e spezie



# Competenze disponibili per:

Servizio di irraggiamento **all'interno dell'Iss** (Centro TISP)

## Gamma Rays **Cs-137** irradiator



Dose rate of **0.84 Gy/min** (15/2/11)

Attenuators – A set of 3 attenuators can reduce the central dose rate by approximately 33% (**0.56 Gy/min**), 60% (**0.34 Gy/min**) or 80% (**0.17 Gy/min**) respectively



## All'esterno dell'Iss

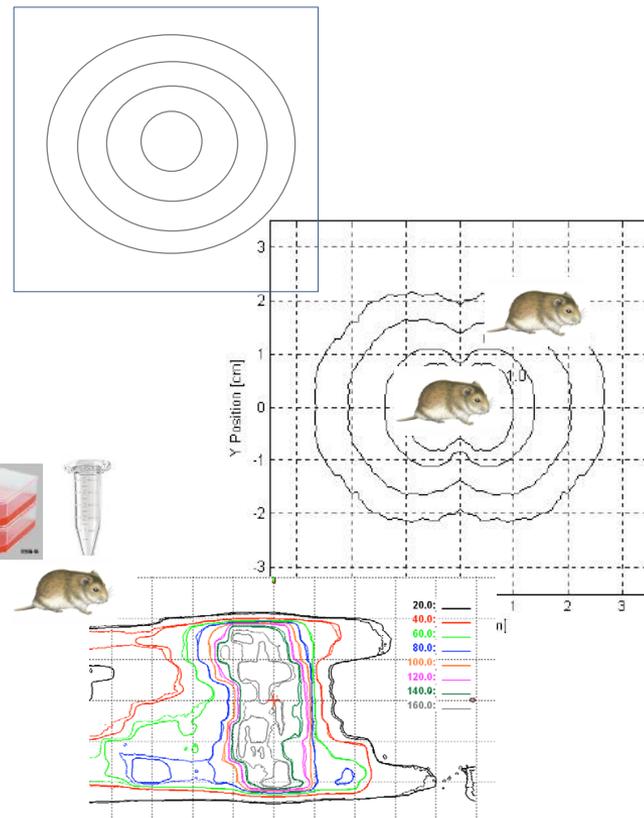
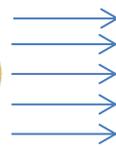


# Parametri da analizzare per una corretta dosimetria

- Tipo di sorgente (radiazione X,  $\gamma$ , e, p...)
- Geometria della sorgente (puntiforme, estesa, ...)
- Distribuzione di dose
- Tipo di campione da irradiare
- Dimensioni campione
- Fantoccio/supporto per posizionamento campione
- Distanza dalla sorgente (diverso rateo di dose)

...

...



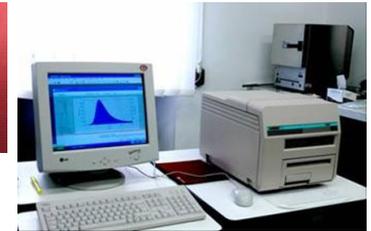
# Strumentazione per dosimetria

## Sistemi dosimetrici

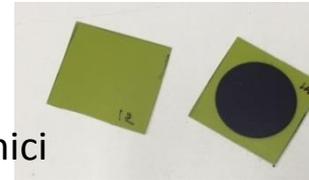


Camera a ionizzazione  
Rivelatore al silicio  
Rivelatori a diamante  
Elettrometro Kithley 6517A

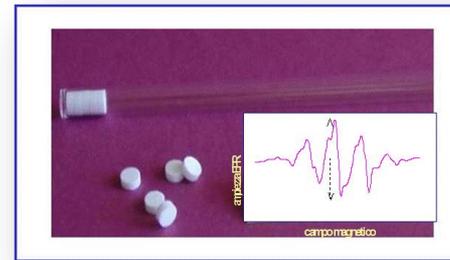
Dosimetria a  
termoluminescenza



Film radiocromici



Sistema alanina/EPR



## Fantocci

Rando Alderson phantom  
Fantocci in PMMA  
Fantocci ad acqua

