

PERSONALISED MEDICINE FIGHTING CANCER

The Promise of Nuclear Medicine

Multidisciplinary treatment management who needs education and training?

Jolanta Kunikowska

Department of Nuclear Medicine,

Medical University of Warsaw, Warsaw, Poland

Radioligand therapy RLT - for whom?

A neuroendocrine tumour is a second tumour from gastrointestinal track, but that can develop in different organs

Prostate cancer is the second most frequent cancer diagnosis made in men and the fifth leading cause of death worldwide.

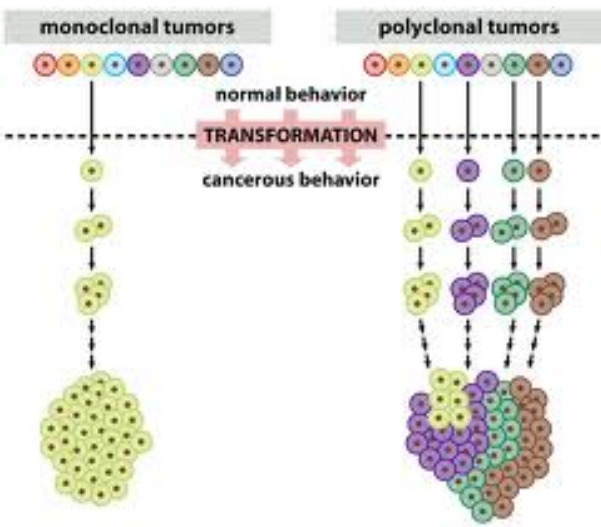
NETTER-1 trial [¹⁷⁷Lu]Lu-DOTATATE in neuroendocrine tumours

- **79% reduction** in the risk of disease progression/death
- Improvement of quality of life

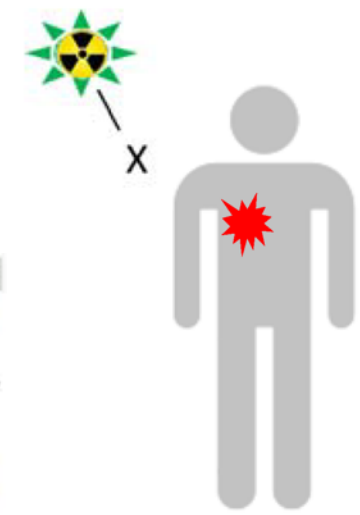
VISION Trial [¹⁷⁷Lu]Lu-PSMA617 in mCRPC

- **38% reduction** of death
- **60% reduction** risk of progression

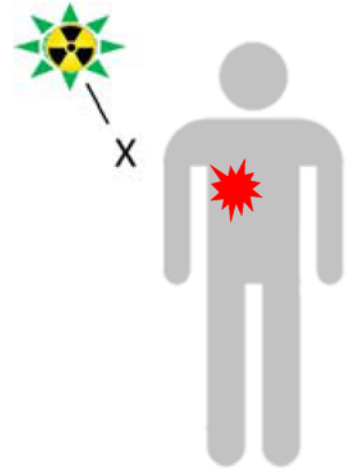
improvement of survival parameters



The Biology of Cancer (© Garland Science 2007)



Phenotypic Imaging



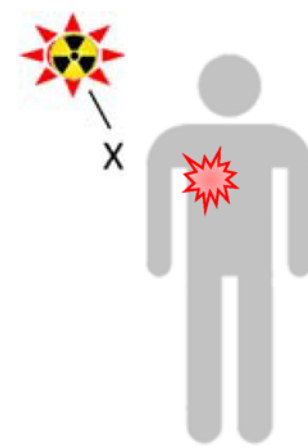
Companion approach



Theranostic approach



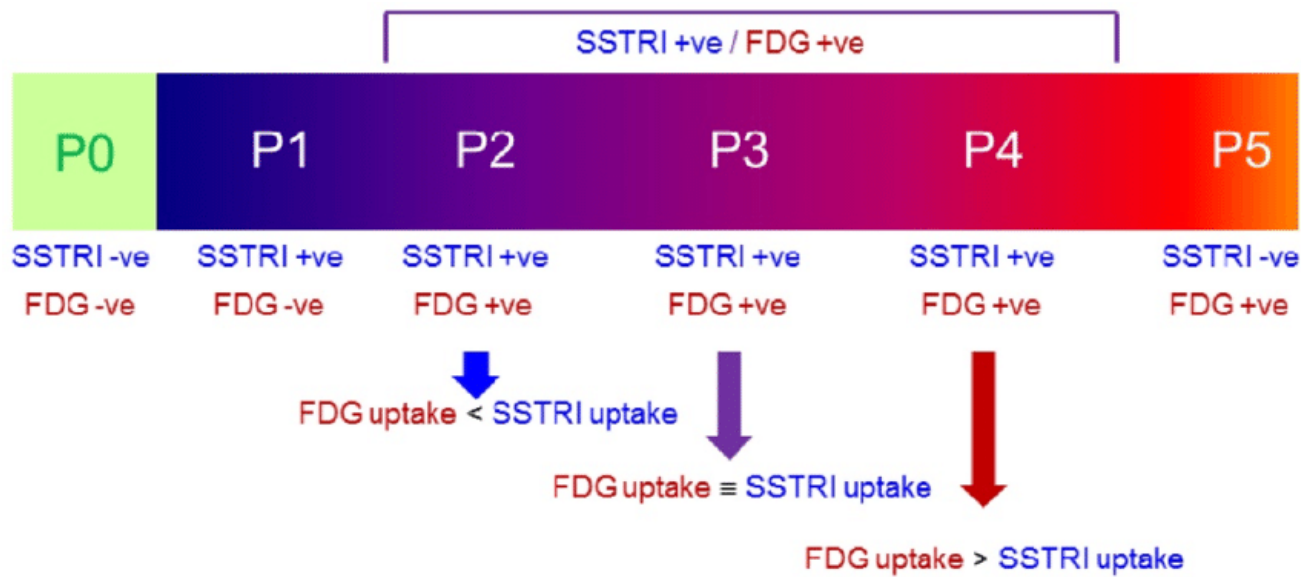
Targeted Therapy



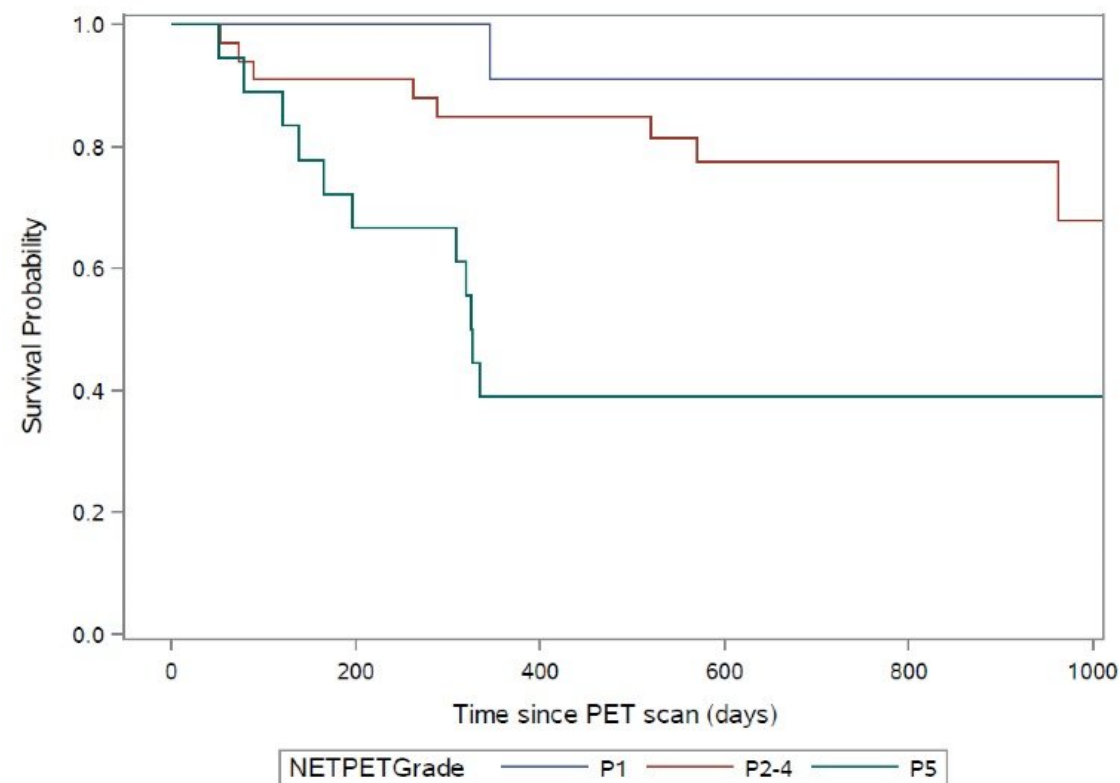
Why do we need phenotyping imaging?

Dual Somatostatin Receptor/FDG PET/CT Imaging in Metastatic Neuroendocrine Tumours: Proposal for a Novel Grading Scheme with Prognostic Significance

David LH Chan, Nick Pavlakis, Geoffrey P Schembri, Elizabeth J Bernard, Edward Hsiao, Aimee Hayes, Tristan Barnes, Connie Diakos, Mustafa Khasraw, Jaswinder Samra, Enid Eslick, Paul J Roach, Alexander Engel, Stephen J Clarke and Dale L Bailey[✉]



*With image display thresholds set at: $\text{SUV}_{\max}(\text{SSTR1}) = 15$
 $\text{SUV}_{\max}(\text{FDG}) = 7$



Long term follow-up and outcomes of re-treatment in an expanded 50 patient single-center phase II prospective trial of Lutetium-177 (¹⁷⁷Lu) PSMA-617 theranostics in metastatic castrate-resistant prostate cancer



GUIDELINES

EANM procedure guidelines for radionuclide therapy with ¹⁷⁷Lu-labelled PSMA-ligands (¹⁷⁷Lu-PSMA-RLT)

VISION Trial

12.6% pts

didn't meet criteria for PSMA- therapy



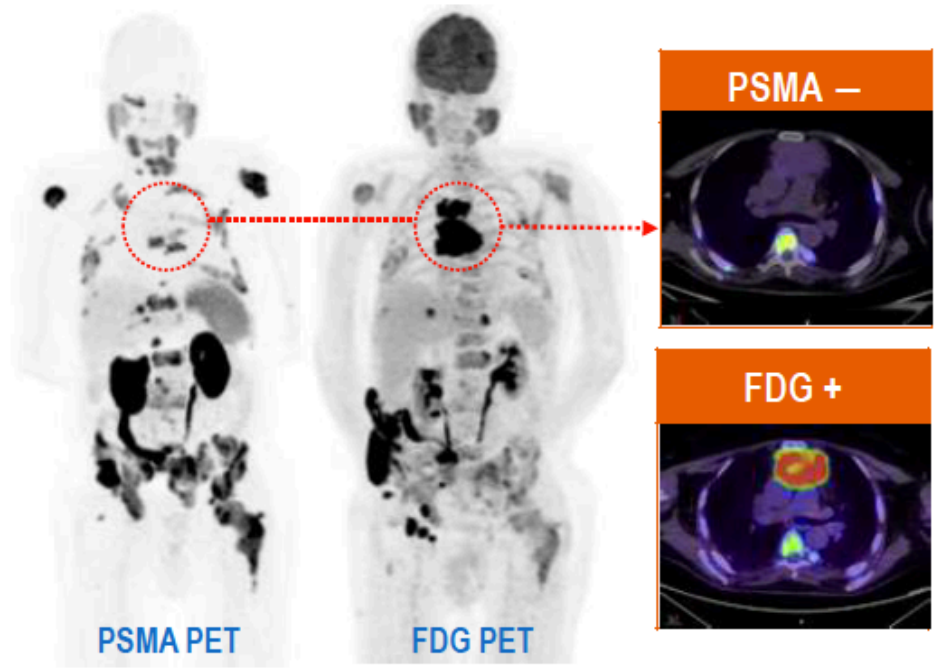
- primum non nocere
- regulations radiation exposure and safety

1. LOW PSMA EXPRESSION

Exclusion



2. DISCORDANT FDG+ PSMA-



Multidisciplinary team (MDS)

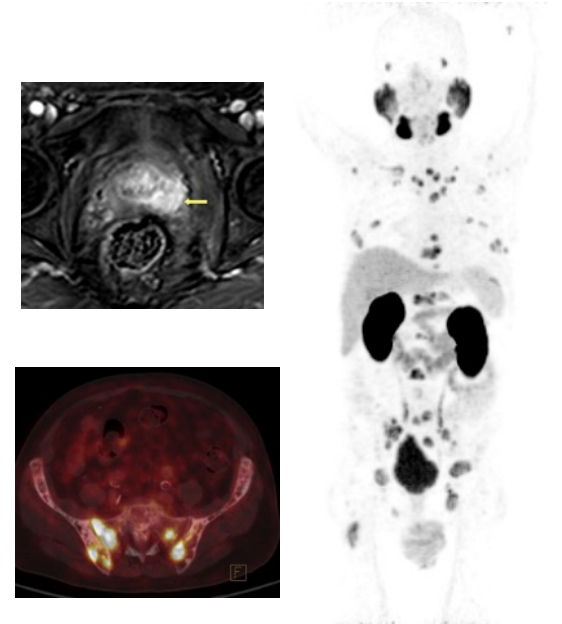


Multidisciplinary team



Clinician:
Endocrinologist/urologist

Image:
Radiologist
Nuclear Medicine



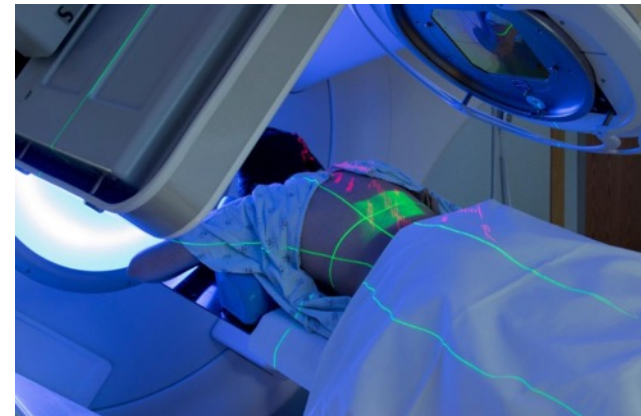
Oncologist



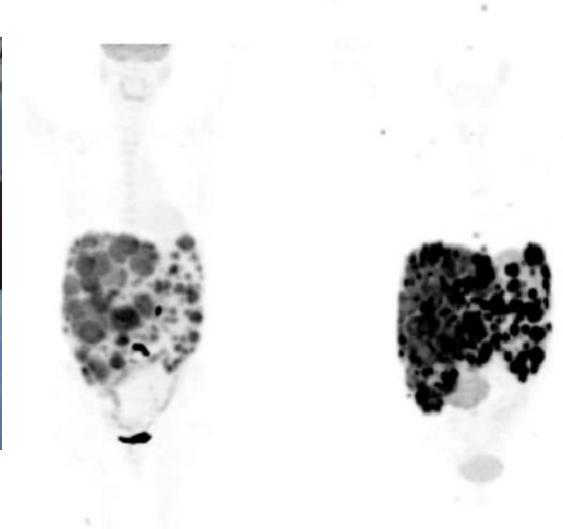
Surgeon



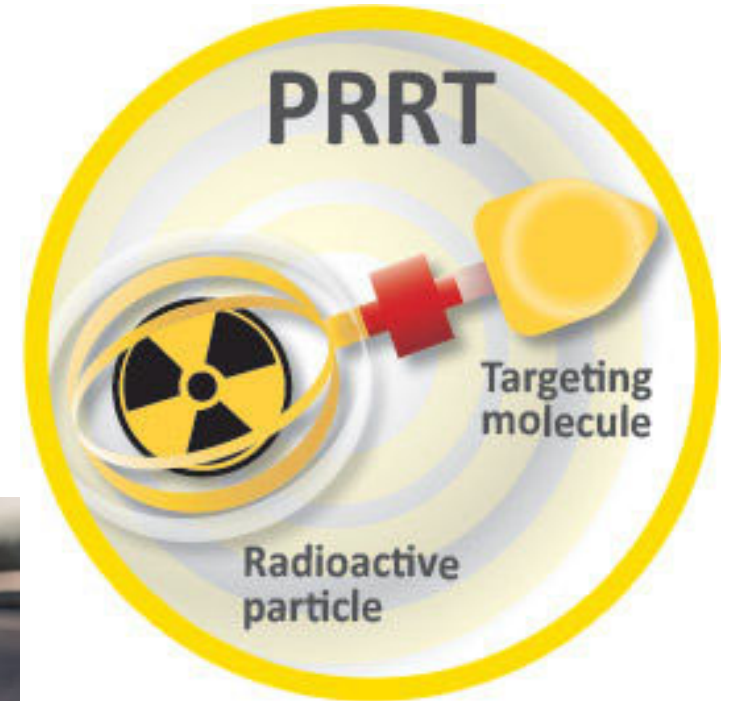
Radiation therapy specialist



Nuclear Medicine



Radioligand(RLT) therapy is different

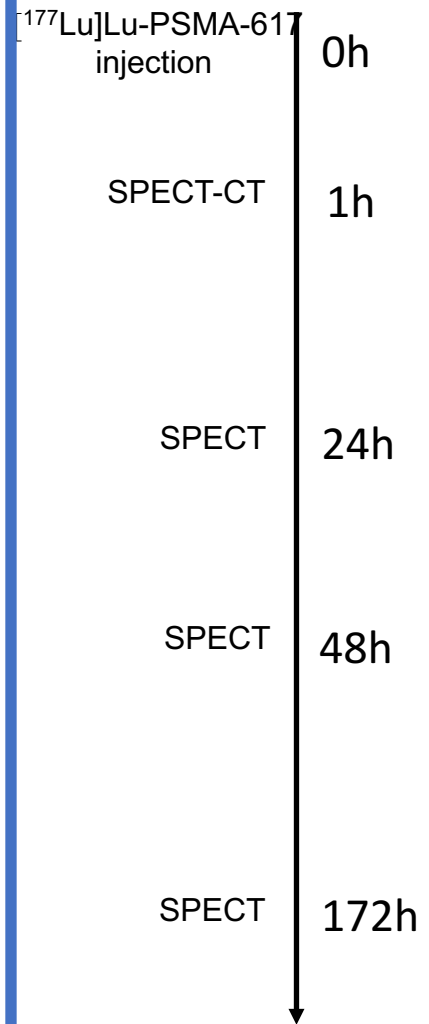


An hidden MDS team within the MDS: the multidisciplinary within nuclear medicine

- Radiopharmacy
 - Supply
 - Production
- Radiation safety
 - dosimetry requirements
 - waste management
- Inpatient treatment facility staff



Data acquisition

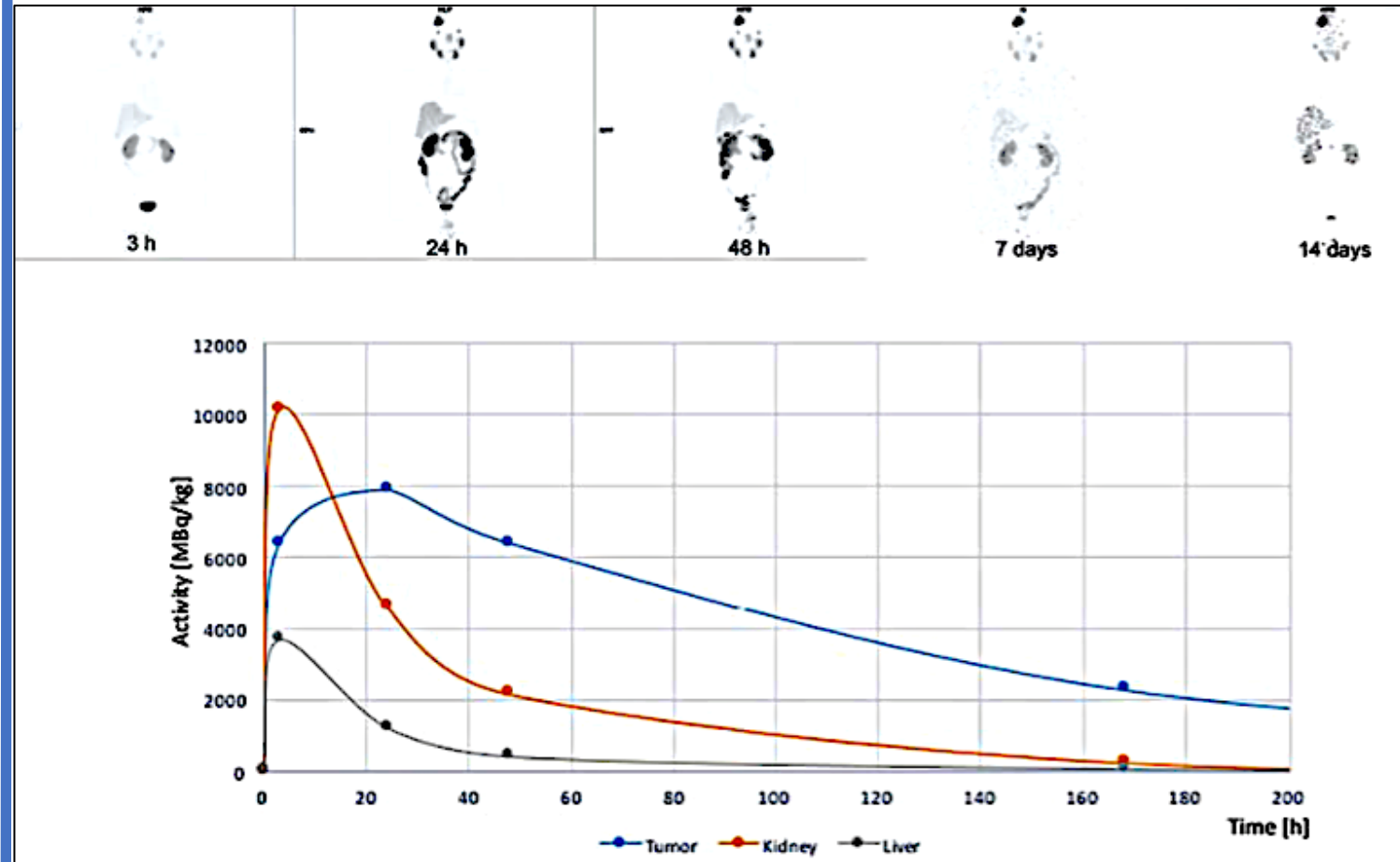


Determining regions (targets and organs at risk) of interest



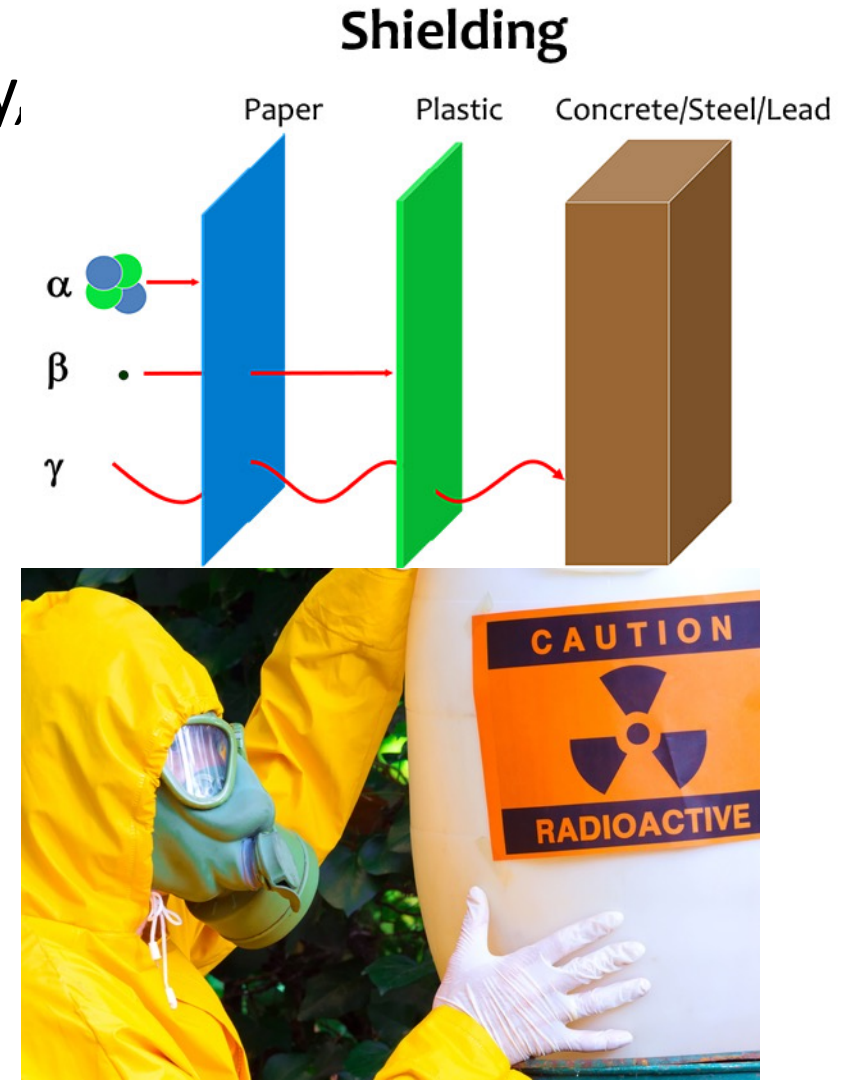
Determination of activity curves in time at the target and organs at risk

Absorbed doses to organs at risk



MDS team: the "non-nuclear" components

- “normal” drug vs radioactive → patients’ eligibility, radiation safety, patients’ management
- Understand the peculiarity of nuclear medicine:
 - patients’ selection
 - radiopharmaceuticals’ logistics
 - dosimetry
 - inpatient treatment facility
 - waste management



Who needs education and training?

All the members of the multidisciplinary team

But not everyone the same:
based on their specific field of expertise

What EANM is doing? 2021 ESMIT Events



Live Webinars 2021

12. March	Theranostics	Radiopharmacy	Tracers targeting FAP for PET imaging and therapy: premises and future promises
26. March	Theranostics	OncoThera	Theranostic application for radionuclide treatment
16. April	Theranostics	TMI&T + Rad Prot	Radiobiology in practice
01. October	Theranostics	OncoThera	Round Table Discussion Radionuclide Therapy in Prostate Cancer: Where are we now and where are we going?
12. November	Clinical NM	Radiation Protection	Radioprotection in NM

Online Courses

Sept 30- Oct 1, 21	Theranostic	Oncology	Prostate Cancer
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F2F courses in Vienna

Nov 25 - 26, 21	Theranostic	Thyroid	Management of Thyroid Cancer
Dec 2 - 3, 21		OncoThera	Therapy Assessment in Oncology
Dec 9 - 10, 21	Theranostic	Dosimetry	Practical Implementation of Clinical Dosimetry in NM Therapy

ESMO/ESMIT joint course on theranostic



Live Webinars

Vision Trial	The VISION Trial: What we Have to Get Ready for	Theranostics	04.Feb
Total Body Pet	Getting Ready for Total Body PET	AI and Quantification	18.Feb
Theranostics	Learning the Secret of Theranostic Practice	Theranostics	04.Mar
Pipeline Theranostics	Next in the Pipeline of Theranostics	Theranostics	08.Apr
Phenotyping	Spotlight on Tumour Microenvironment: What Is Next in Imaging Phenotyping?	Scientific Track	06.May
Radioprotection & Theranostics	Radioprotection and Theranostics	Theranostics	28.May
Alpha Emitters	Alpha-Emitters: Still a Game for Scientists of Ready for the Clinical Arena?	Theranostics	16.Sep
Biomarkers	Maximising Personalised Approaches through Imaging Biomarkers	AI and Quantification	18.Nov



Online Courses

Thyroid	Practical Management of Thyroid Cancer: a Multidisciplinary Team Discussion	Clinical Nuclear Medicine	24-25 Mar
Theranostics	The Steps to Build your Successful Theranostics Team and Facility	Theranostics	28-29 Apr
Research Methods	Fundamentals of Research in Imaging and Theranostics	Scientific Track	8-9 Sep

Advanced Courses in Vienna

Quantification And Total Body PET	Advanced Features of Quantification + Total Body PET	AI and Quantification	24-25 Feb
Radiopharmacy	The Secret of the Radiopharmacy Lab: Modern Approaches in Radiopharmaceutical Preparation	Scientific Track	9-10 Jun
Prostate Cancer	Prostate Cancer Theranostics: The Future is Now	The+	23-24 June
Spotlight On Net	SPOTLIGHT on NET Theranostics in Practice	Theranostics	22-23 Sep
AI	Artificial Intelligence in Imaging: Making the Future	AI and Quantification	24-25 Nov

ESMO/ESMIT joint course on theranostic - july 2022

EANM is involved

RLT Accademy



EN English

Erasmus+

EU programme for education, training, youth and sport

Home

About Erasmus+ ▼

Opportunities ▼

Programme Guide

Resources and tools ▼

News

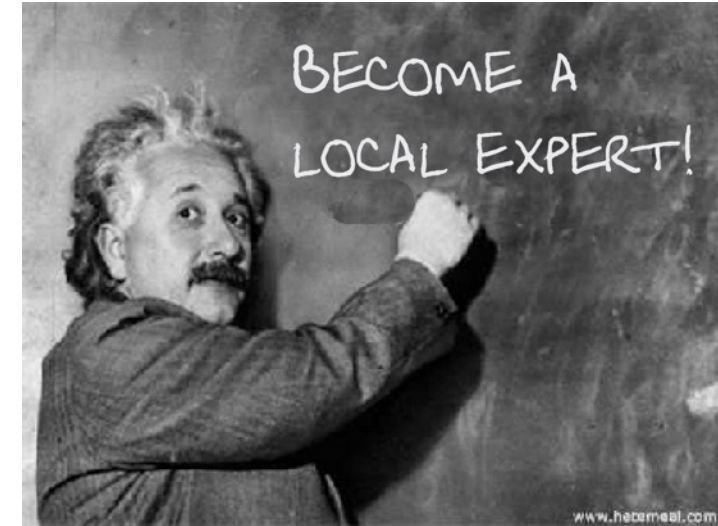
- Map the knowledge gap in RLTs
- Launch dedicated training programme in RLTs
- Promote the integration of RLTs into mainstream cancer care

Learning Line

Live webinars+On line courses

Advanced courses

Practical training



Thank you for your attention