

# Creating and maintaining a pool of skilled practitioners: the ESTRO approach.

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European Society  
for Radiotherapy & Oncology

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IAEA Scientific Forum

**Nuclear Techniques  
in Human Health**

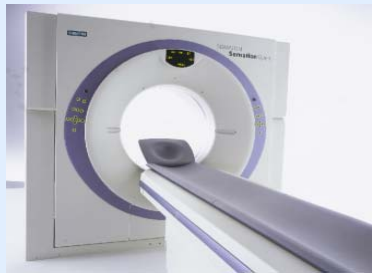
*Prevention, Diagnosis, Treatment*



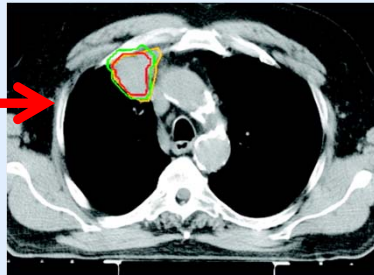
# state-of-the-art radiotherapy



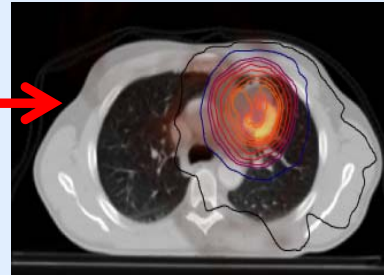
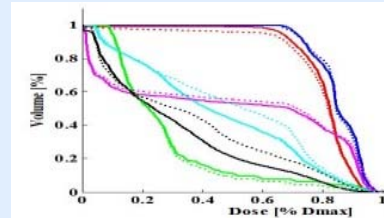
## *treatment preparation*



imaging



delineation

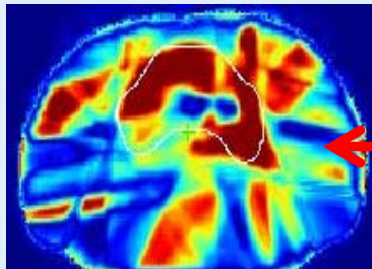


planning



pre-treatment dosimetry

## *treatment delivery*



per-treatment dosimetry



treatment

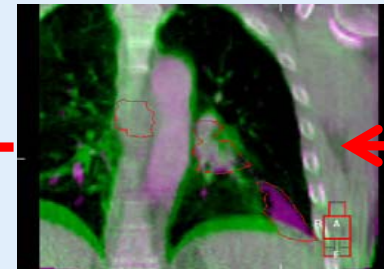
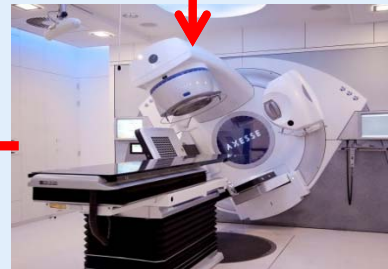


image registration & correction



imaging

**daily**

# state-of-the-art radiotherapy



reduced  
acute & late  
toxicity

better  
tumour  
control

shorter  
fractionation  
schedules

more  
efficient  
resource use

we can only make this happen  
with adequate (human) resources





# how many radiotherapy professionals will we need to close this gap?



2035

	High-income countries	Upper-middle- income countries	Lower- middle- income countries	Low-income counties
Fractions	76 424 000	77 014 000	40 974 000	13 268 000
Radiotherapy departments	4600	3700	2000	600
Megavoltage machines	9200	7400	3900	1300
CT scanners	4600	3700	2000	600
Radiation oncologists to be trained	15 500	16 800	9900	3300
Medical physicists to be trained	17 200	12 500	7200	2400
Radiation technologists to be trained	51 900	45 300	24 900	8100

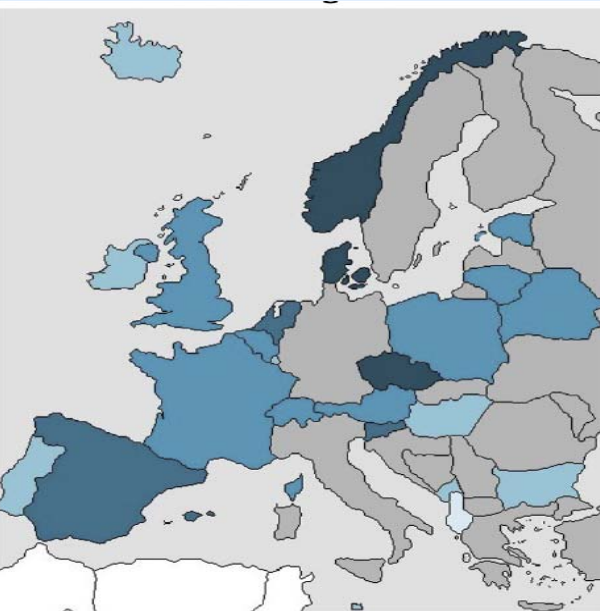
# radiotherapy professionals... ...a heterogeneous landscape



radiation oncologists

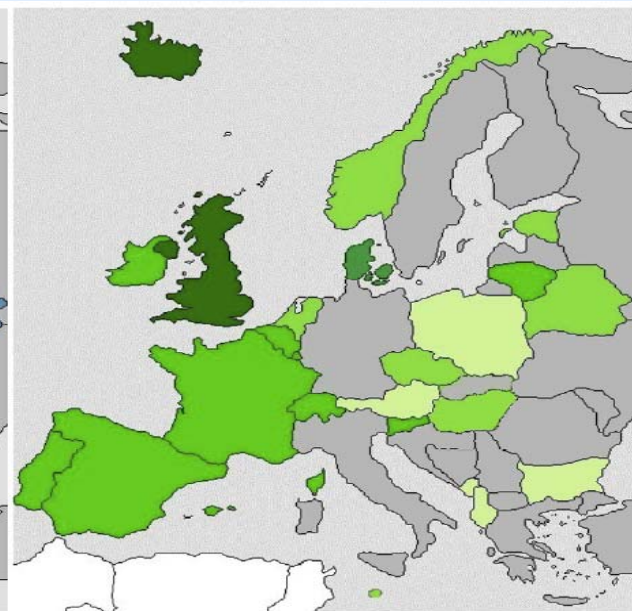
medical physicists  
& dosimetrists

radiation therapists  
(RTTs) & nurses



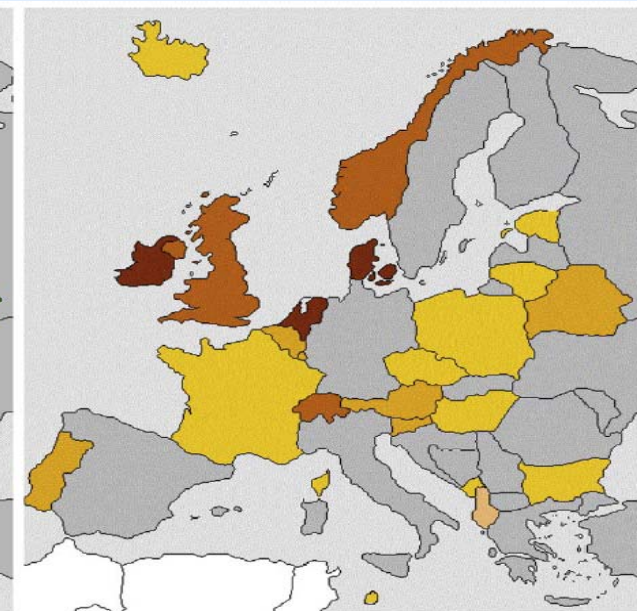
Mean:12.8 Med:11.0 Min:2.5 Max:30.9

0-5 5-10 10-15 15-20 > 20



Mean: 9.8 Med:9.8 Min:0.0 Max:21.9

0-5 5-10 10-15 15-20 > 20



Mean:36.9 Med:30.9 Min:4.9 Max:78.0

0-15 15-30 30-45 45-60 > 60



**we need**

**innovative education  
to train these professionals**

**innovative approaches  
to define the appropriate skill sets**



# educational activities of the ESTRO School



backbone = live courses, **41** Radiation Oncology topics  
**460** in total, **62** outside Europe (worldwide)  
> **40.000** participants, of which **about 9.000** worldwide

## *broad educational offer*

Education Council

Live  
programme

Blended  
learning  
programme

Intercontinental  
Education  
programme

CC/UEMS/  
exams/Fellow  
programme

Pedagogical  
programme

Mobility  
programme

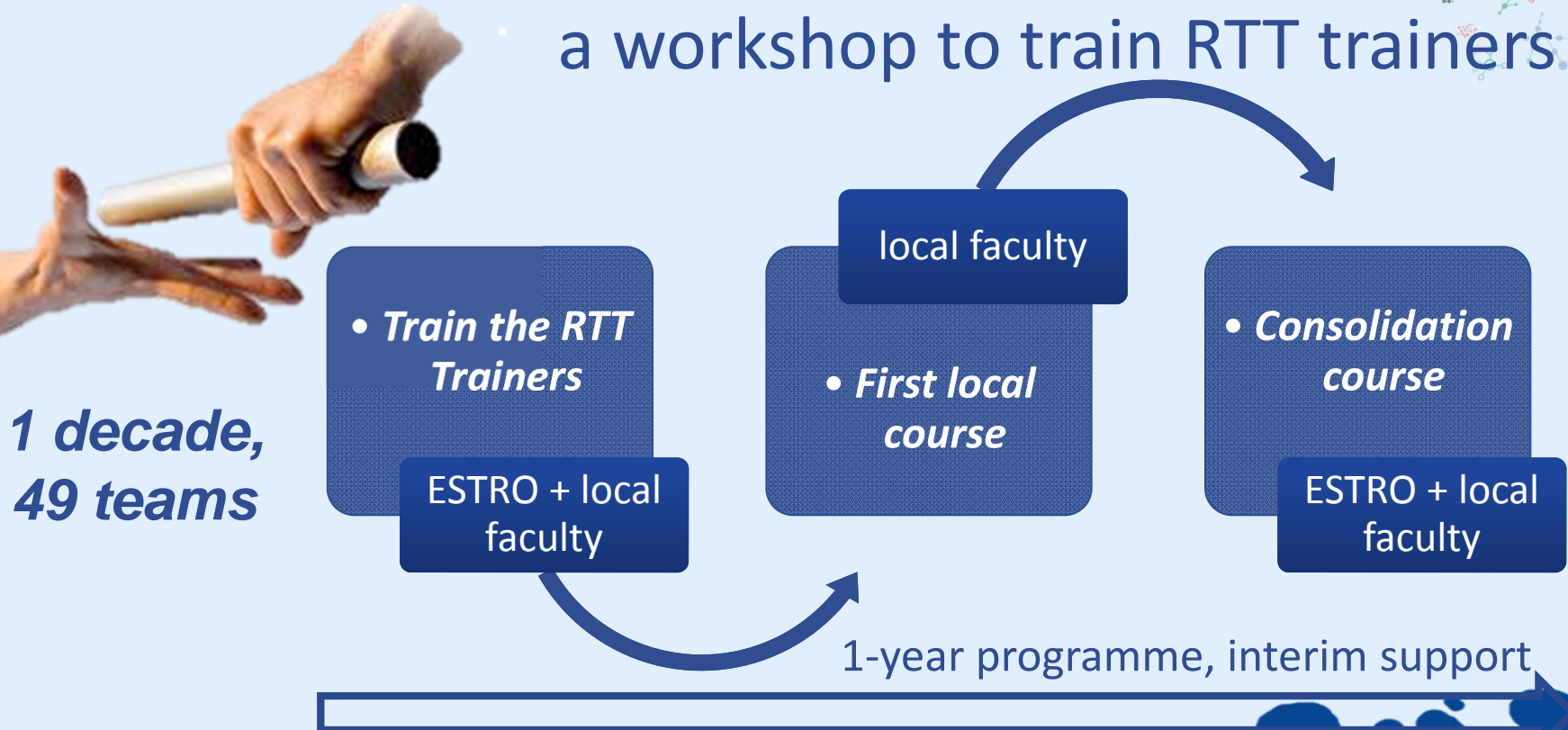
FALCON





# Train-The-Trainer

- Best practice in Radiation Oncology – a workshop to train RTT trainers.



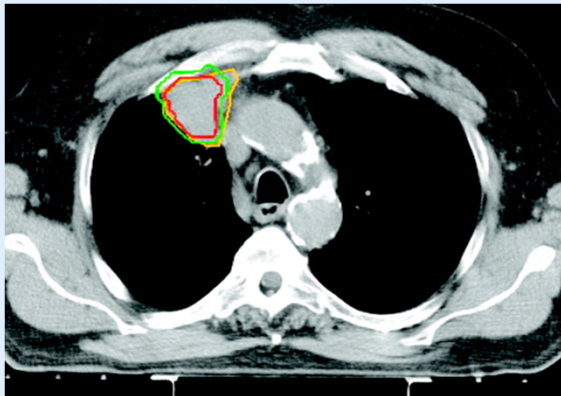
- Advanced Technologies (*India → ESTRO-AROI*)  
Basic Clinical Radiobiology (*Australia, RANZCR*)



# FALCON

*fellowship in anatomical delineation and contouring*

online contouring platform

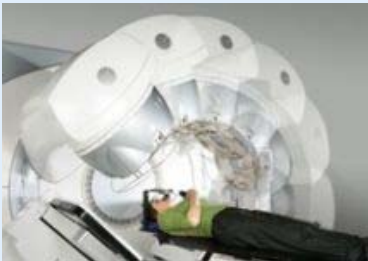
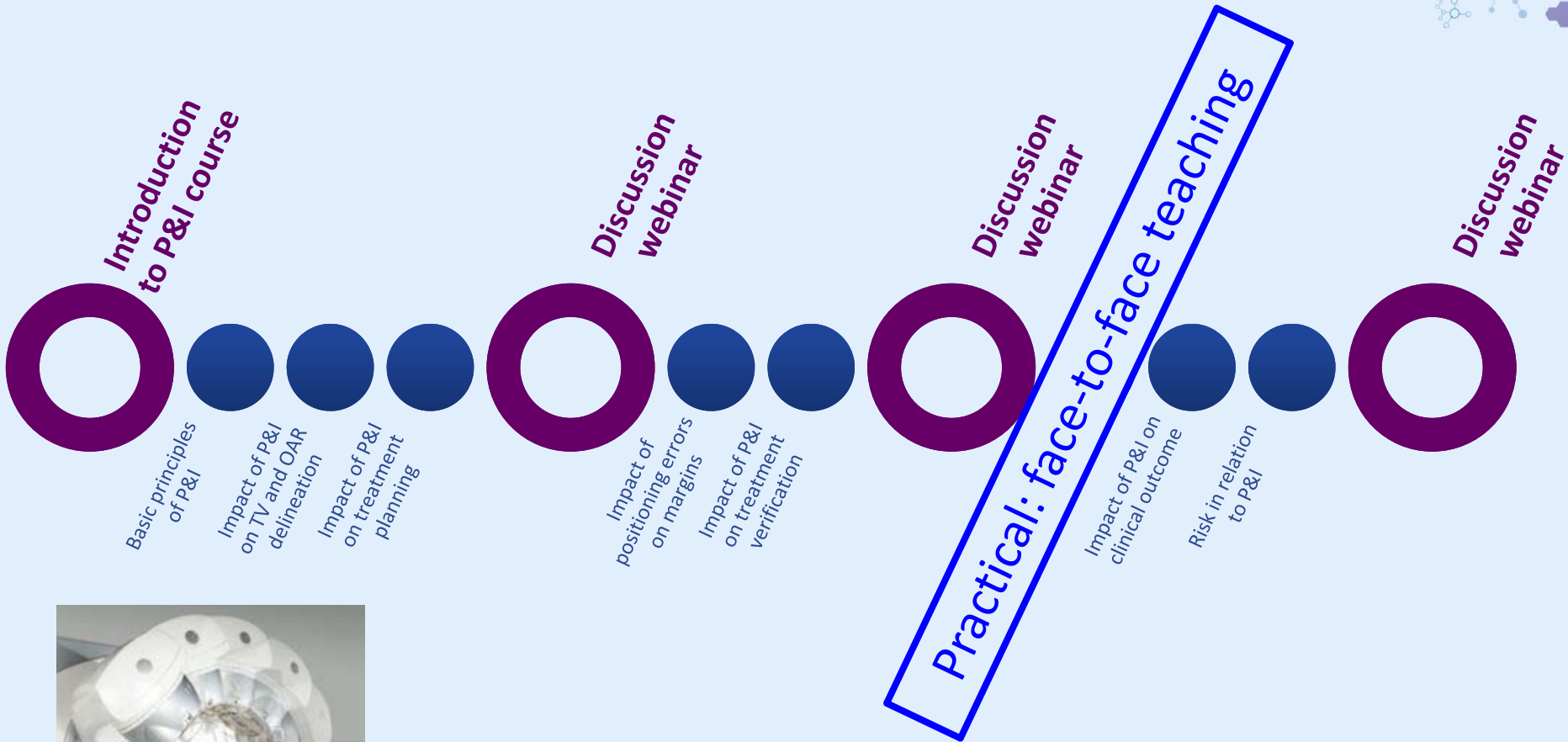


- live work shops
  - in live courses (2010)
  - at ESTRO congresses (ESTRO 29, 2010)
- online workshops
  - web-conferences, interactive, over 3 weeks
- 4 cases available online for ESTRO members
- life events from 3<sup>rd</sup> parties
  - IAEA
  - worldwide National Radiotherapy Societies
- support for
  - guidelines
  - clinical trials
  - educational research project (*IAEA 20450 NA*)



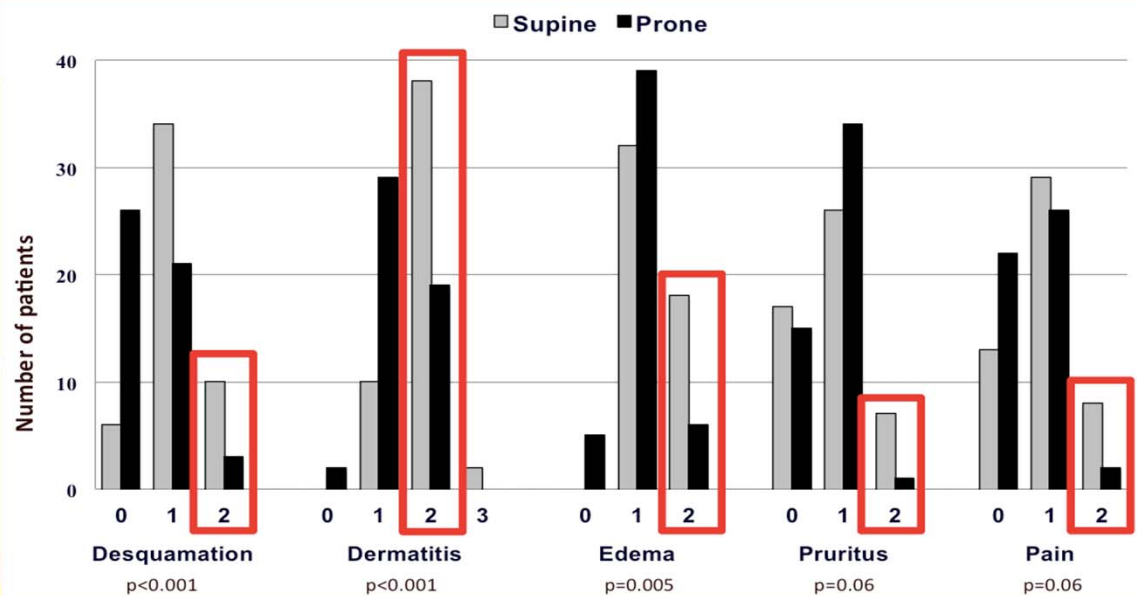
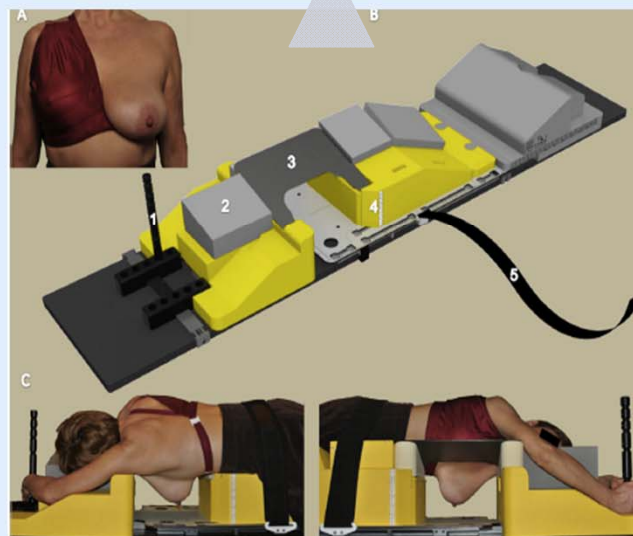
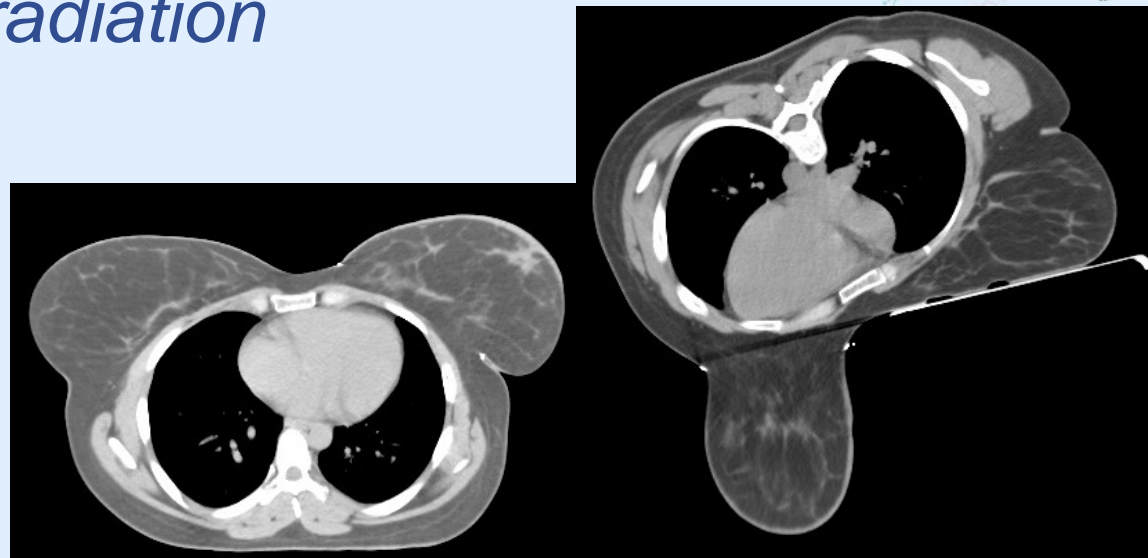
# Blended Teaching Course

## *Positioning and Immobilization for Radiation Therapy*



# the potential of skilled personnel...

*ex. prone breast irradiation*







# Acknowledgements

Richard Pötter  
Jesper Eriksen  
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over 200 ESTRO teachers annually  
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# Thank you !