



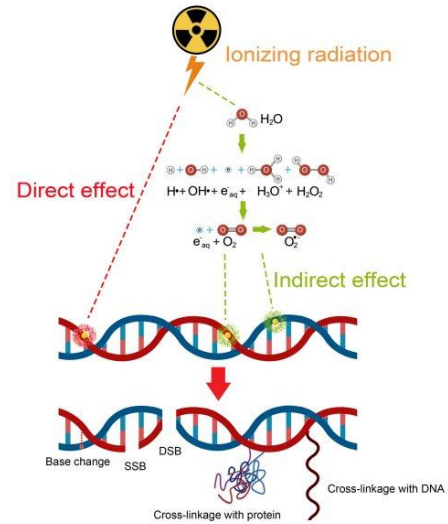
# Radiotherapie bij pancreascarcinoma

Ines Joye

- AZ Klina
- AZ Monica
- AZ Rivierenland
- AZ Voorkempen
- GZA Ziekenhuizen
- UZA
- Vitaz
- ZNA



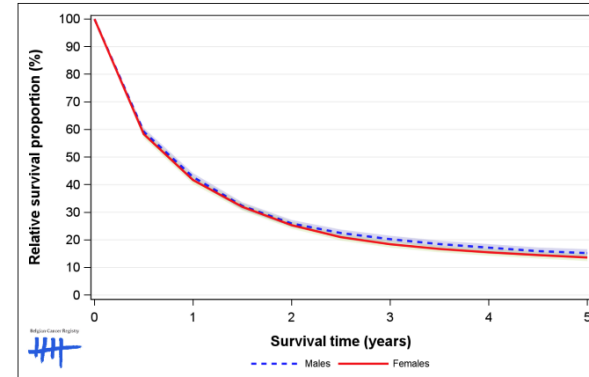
# Radiotherapie



# Radiotherapie

- slechte overleving
- nabijgelegen risico-organen
- inconclusieve retrospectieve studies

Relatieve overleving volgens geslacht, 2017-2021



# Guidelines



## SPECIAL ARTICLE

### Pancreatic cancer: ESMO Clinical Practice Guideline for diagnosis, treatment and follow-up<sup>☆</sup>

T. Conroy<sup>1,2</sup>, P. Pfeiffer<sup>3</sup>, V. Vilgrain<sup>4,5</sup>, A. Lamarca<sup>6</sup>, T. Seufferlein<sup>7</sup>, E. M. O'Reilly<sup>8</sup>, T. Hackert<sup>9</sup>, T. Golan<sup>10</sup>, G. Prager<sup>11</sup>, K. Haustermans<sup>12</sup>, A. Vogel<sup>13</sup> & M. Ducreux<sup>14</sup>, on behalf of the ESMO Guidelines Committee<sup>†</sup>

- neoadjuvant
- definitief
- adjuvant
- lokaal herval
- palliatief



National Comprehensive  
Cancer Network<sup>®</sup>

NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines<sup>®</sup>)

## Pancreatic Adenocarcinoma

Version 1.2024 — December 13, 2023

# Patiëntentraject

Verwijzing voor RT: status gesprek



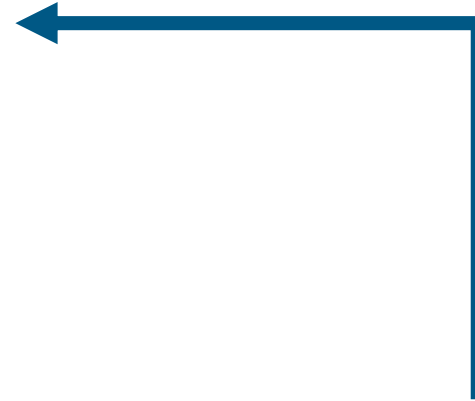
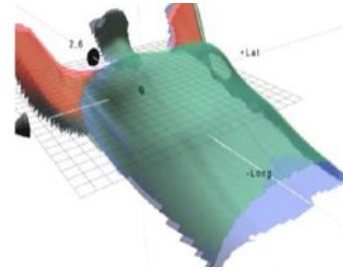
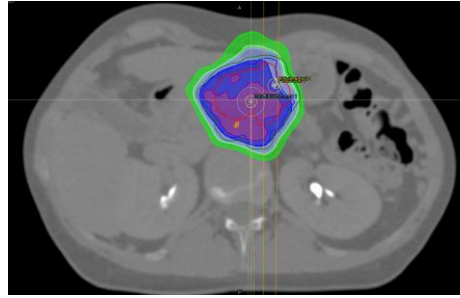
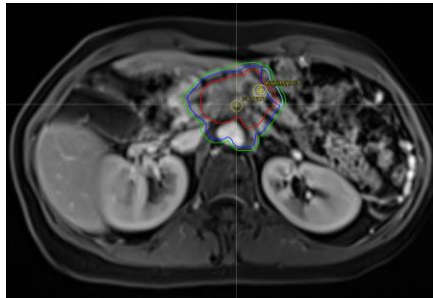
SIMULATIE

INTEKENING

PLANNING

QA

BESTRALING



# Simulatie



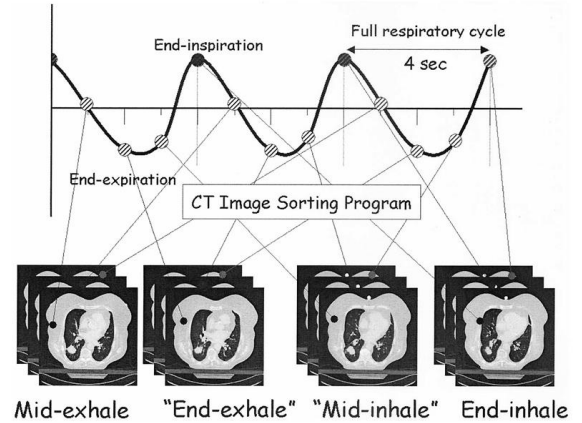
Idealiter met armen boven hoofd, maar comfort primeert!  
CAVE poortkatheter

Al dan niet contrast

Ruim scannen (incl beide longen en nieren)

Nuchter

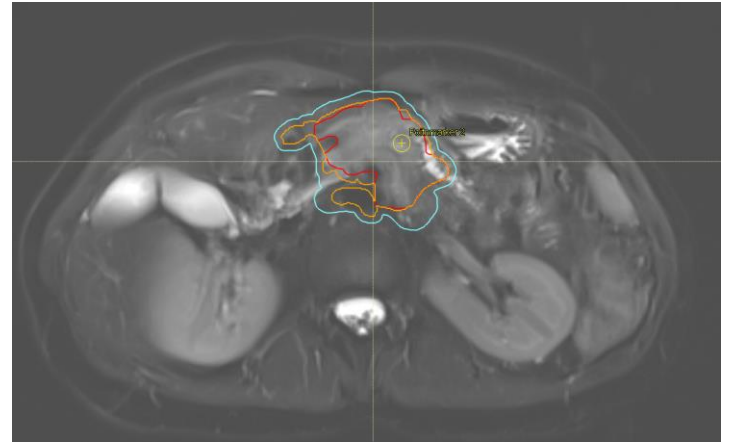
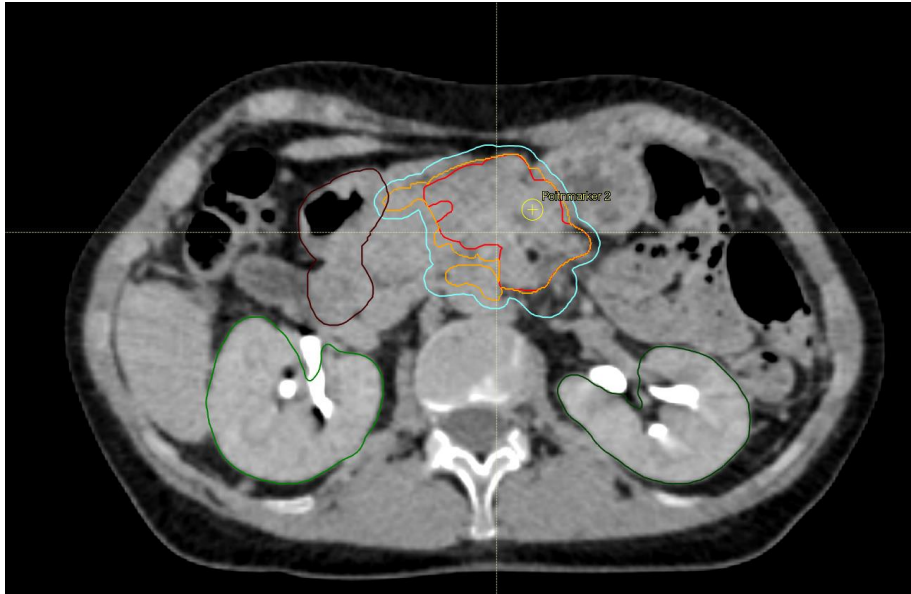
## 4D-CT



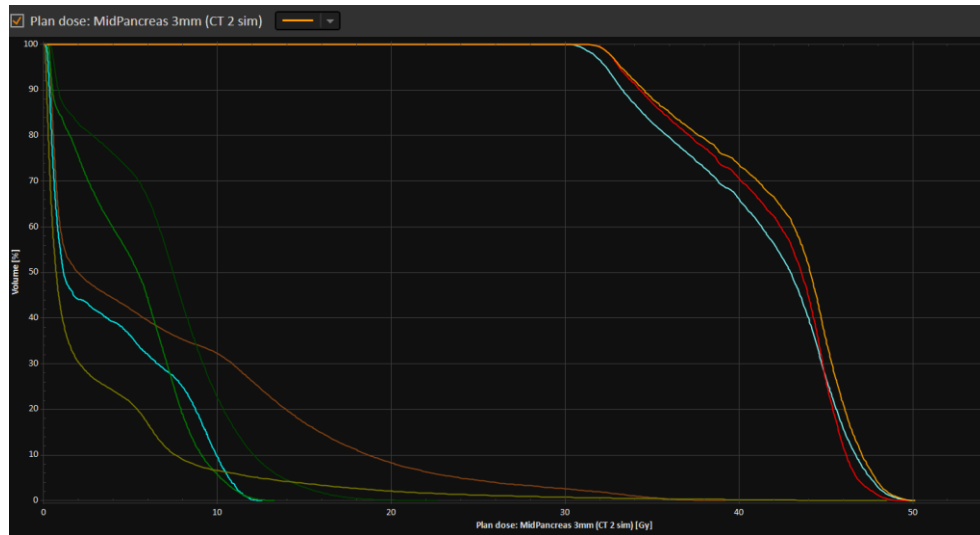
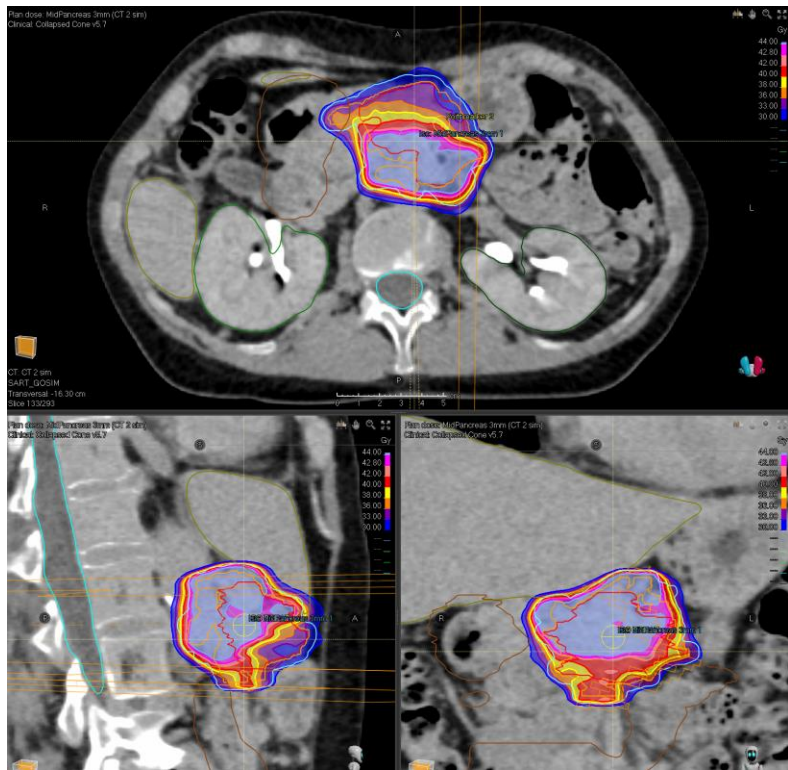
## Abdominale compressie



# Intekening



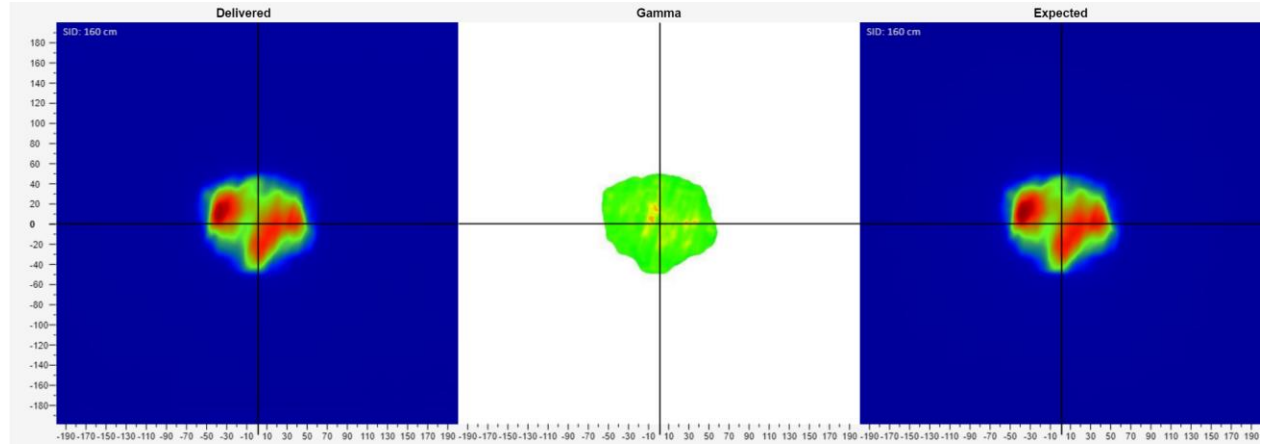
# Planning



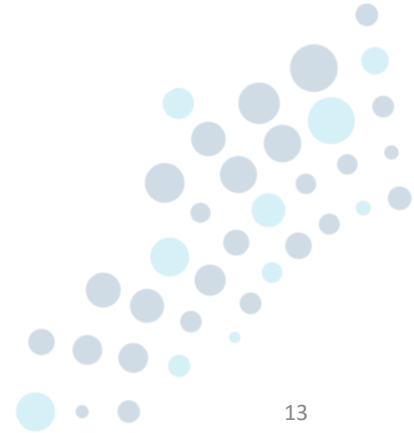


# QA

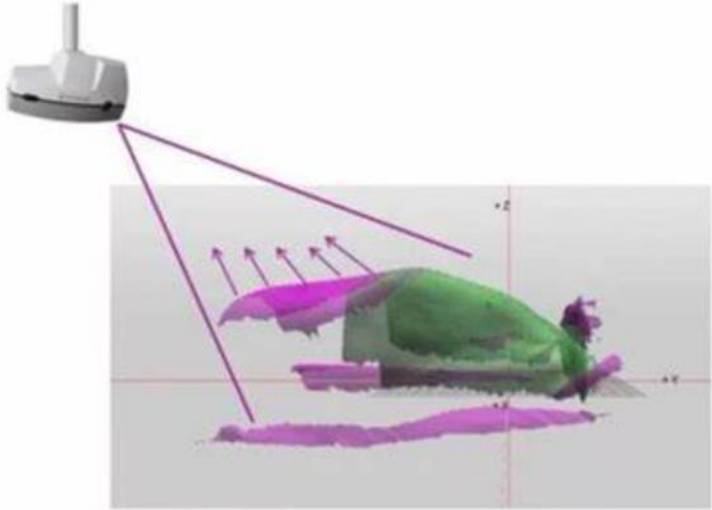
In vivo dosimetrie



# CBCT



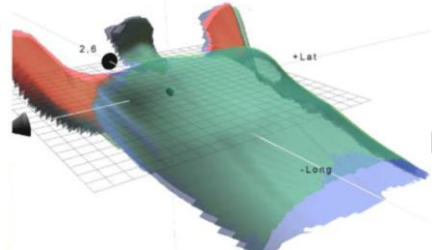
# Bestraling



(a)

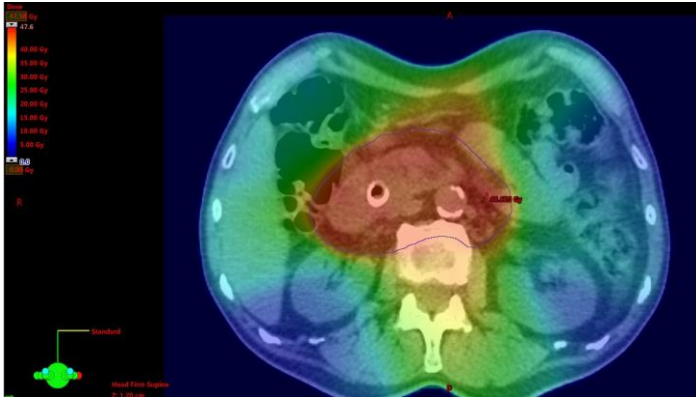


(b)



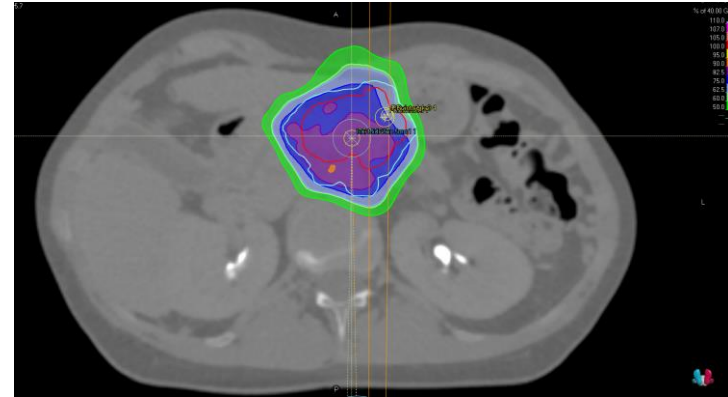
# RT technieken

## VMAT



- Grote volumes
- 15-28 fracties van 1,8 Gy-3 Gy
- Soms in combinatie met chemotherapie
- Conformeel

## SBRT



- Kleine volumes
- 5 fracties van 6 Gy-10 Gy
- Nooit in combinatie met chemotherapie
- Scherpe dose fall-off

# Pancreas SBRT

## Stereotactic Body RadioTherapy

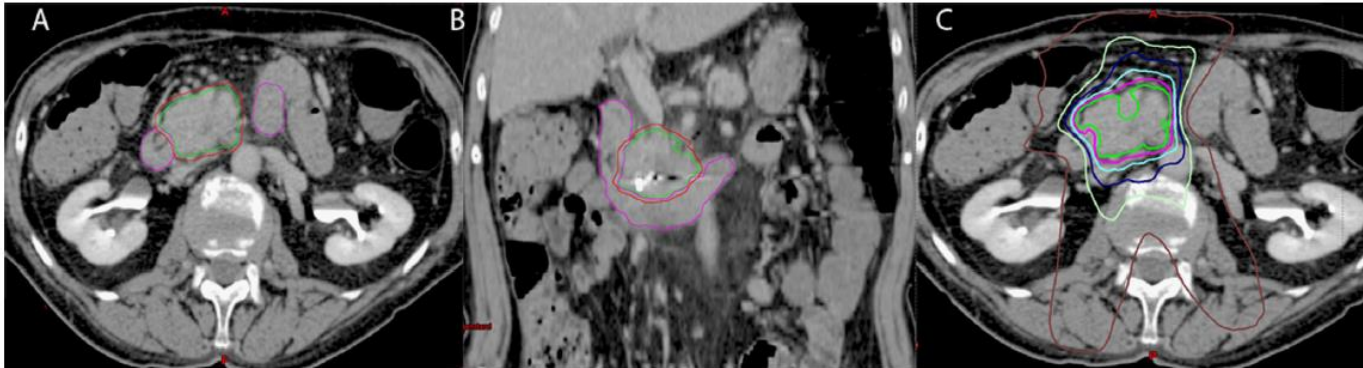
Methode van externe bestraling waarbij een hoge dosis bestraling zeer accuraat wordt toegediend aan een extracraniële target in een beperkt aantal behandelssessies

### Rationale

- Steile dosis gradiënt met maximaal sparen van normale weefsels
  - Minder acute nevenwerkingen, betere QoL
- Ablatieve dosissen mogelijk: beter antitumor effect, effect op vasculatuur en anti tumor immuniteit
- SBRT kan worden toegediend in 3-5 dagen, tov 25-30 dagen met conventionele bestraling
- Minder delay voor additionele behandeling (CT, HK)
- Niet invasief

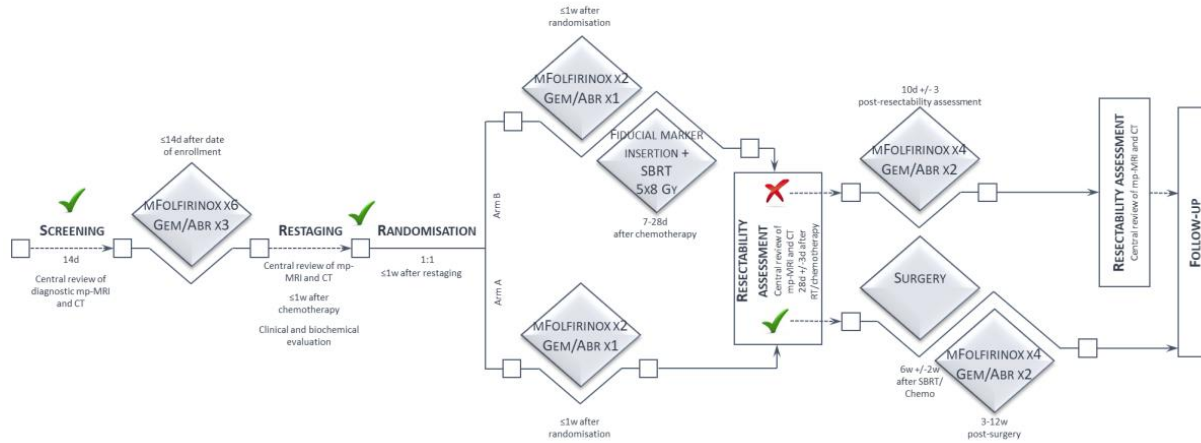


# Pancreas SBRT



**Figure** Representative pancreatic SBRT plan: (A) axial view showing pancreatic tumor (GTV: green), a typical PTV (red), and the duodenum (magenta); (B) coronal view demonstrating tumor relationship with the duodenum; and (C) dose distribution for a plan treating to 33 Gy in 5 fractions. Isodose lines: green = 45 Gy; magenta = 40 Gy; cyan = 33 Gy; blue = 30 Gy; light green = 20 Gy; and brown = 10 Gy. Abbreviation: GTV, gross tumor volume. (Color version of figure is available online.)

# TORPEDO studie



Target: 160 patiënten  
2y LPFS (16% vs. 36%)

# Conclusies

- Met de komst van betere systeemtherapie en technische vooruitgang, speelt RT steeds een grotere rol
  - RT kan resectabiliteit verhogen
  - RT kan leiden tot duurzame lokale controle
  - RT kan bijdragen tot betere symptoomcontrole
- Combinatie met nieuwere systeemtherapie wordt bestudeerd
- Biomarkers nodig om beste kandidaten te selecteren

