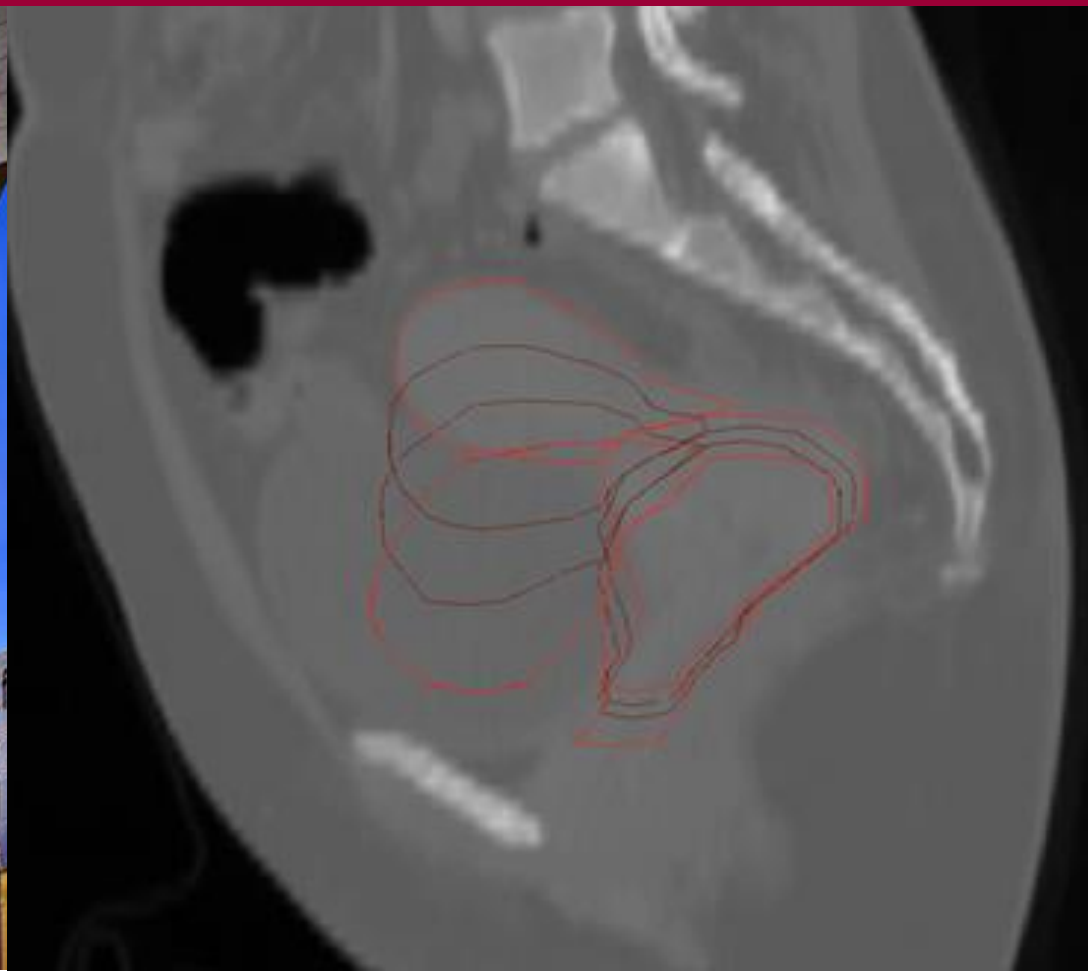
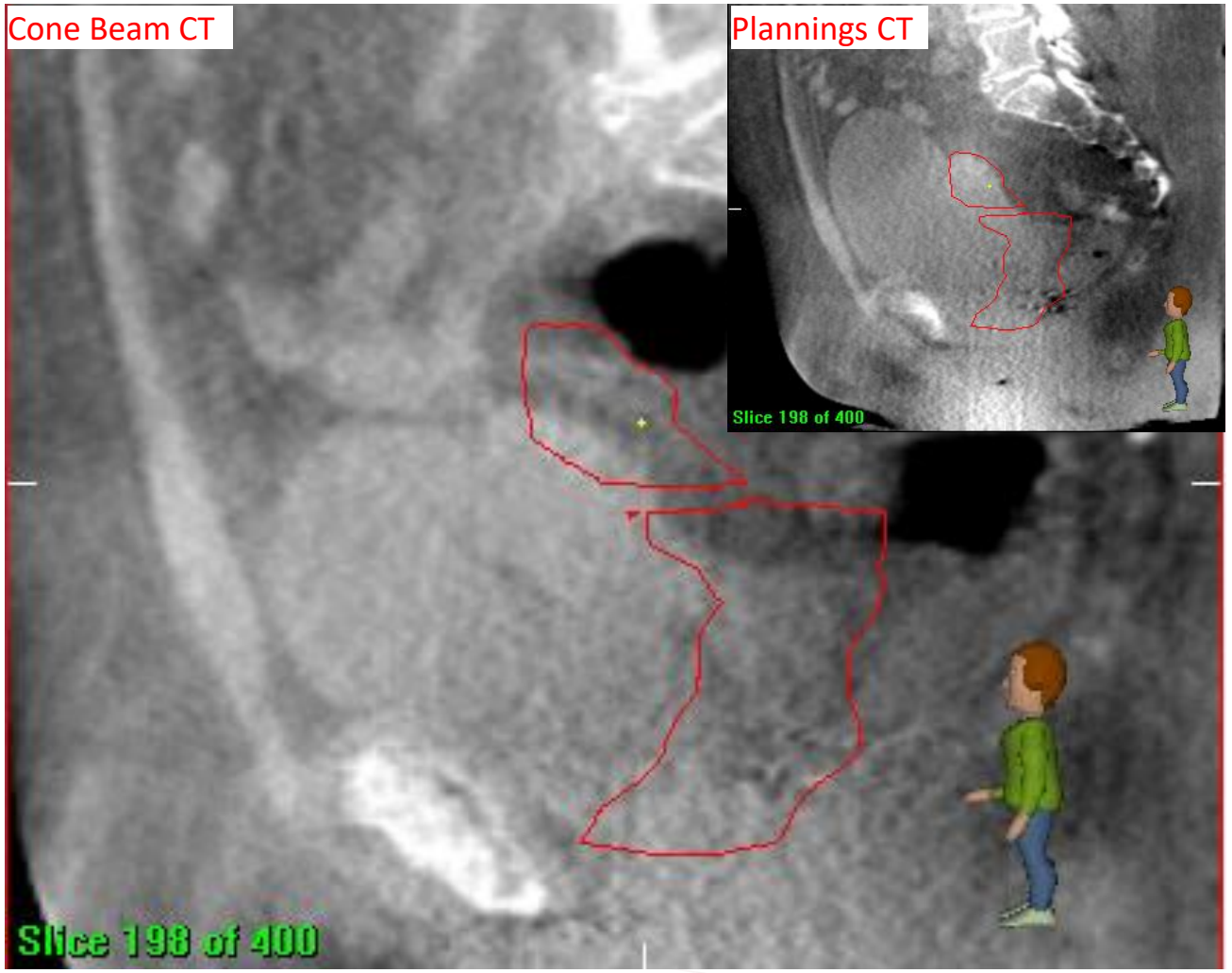


Cervix plan van de dag – de AvL benadering

Sanne van Weerdenburg – radiotherapeutisch laborant planning

ANTONI
VAN
LEEUWENHOEK
NEDERLANDS KANKER INSTITUUT

Inleiding



Locally advanced cervixcarcinoom

- Primaire radiotherapie + concurrent chemotherapie

Library of Plans (LoP)

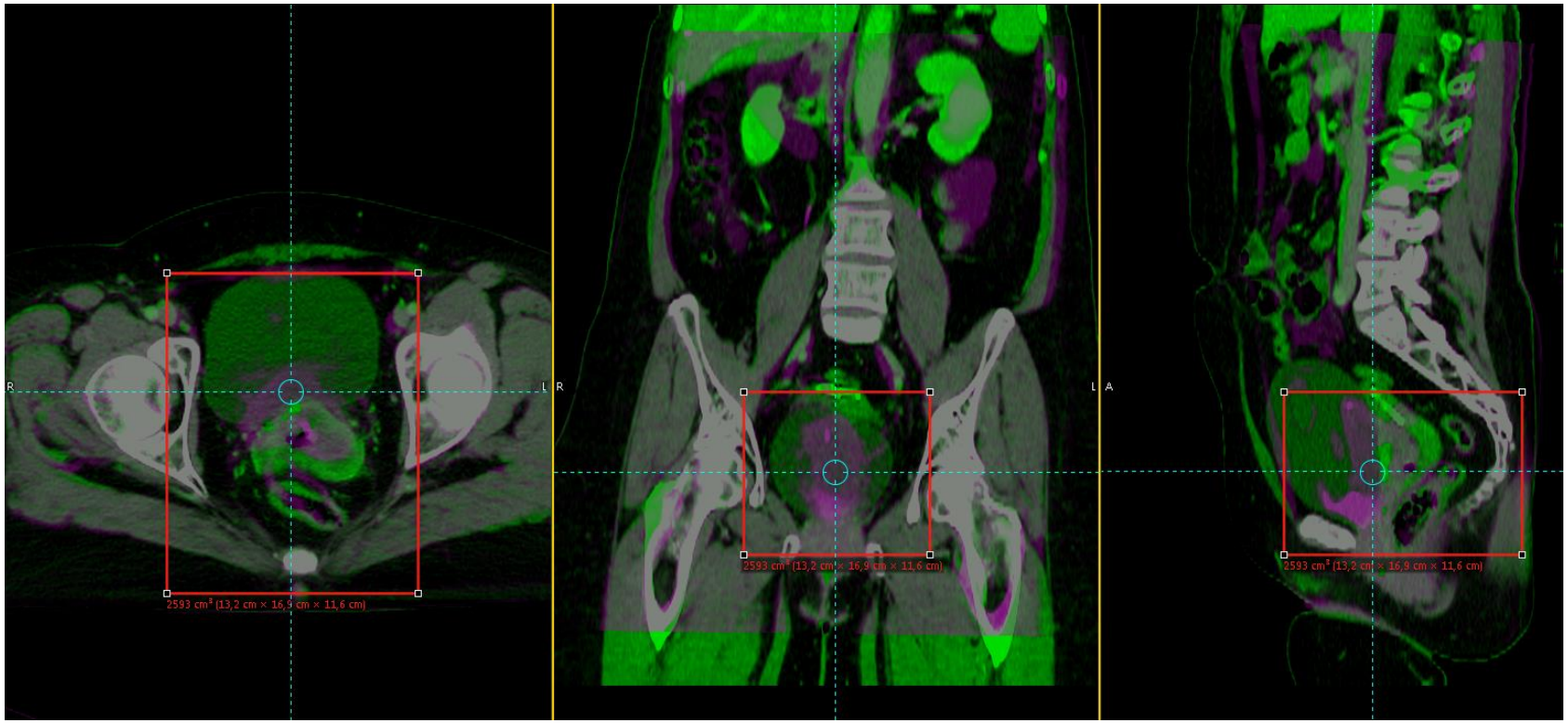
- Passend plan voor anatomie van de dag
  - Volle blaas is niet altijd even vol
  - Rectumvulling
- Marge reductie

CT

- Goudmarkers
- Twee CT scans
  - Extra volle blaas met contrastvloeistof
  - Lege blaas

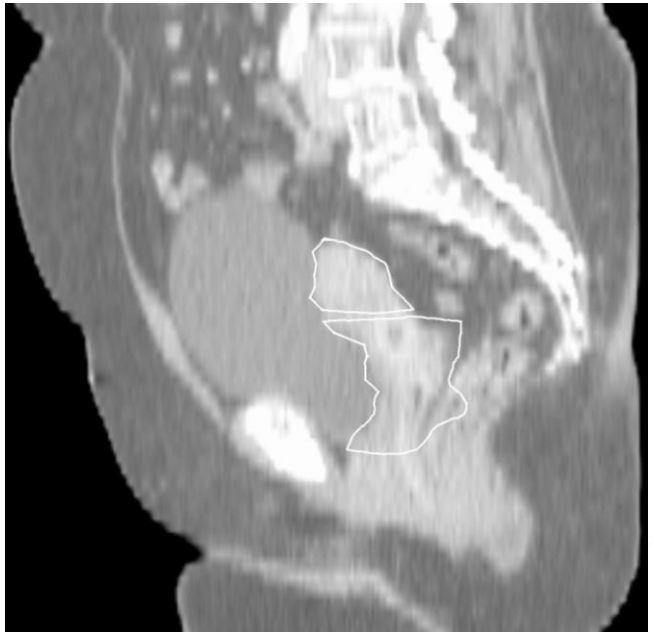
Imaging Voorbereiding

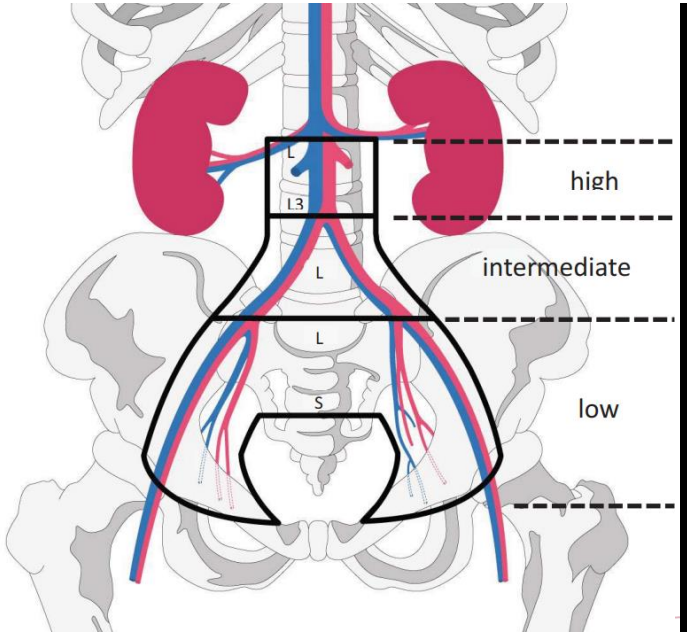
- Match volle en lege blaas CT

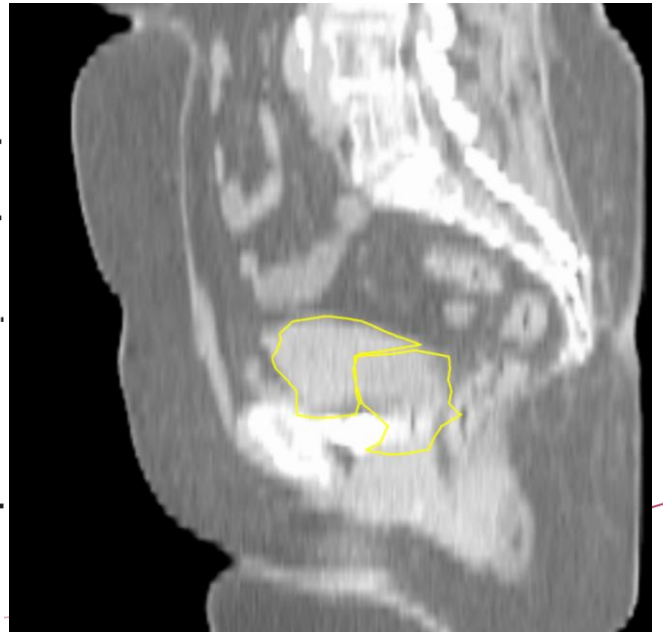


Intekening arts

- Volle blaas CT
  - CTVcervix
  - CTVuterus
  - CTV-Nx (pathologische klieren)
  - CTV-E (electieve klieren)
- Lege blaas CT
  - CTVcervix
  - CTVuterus

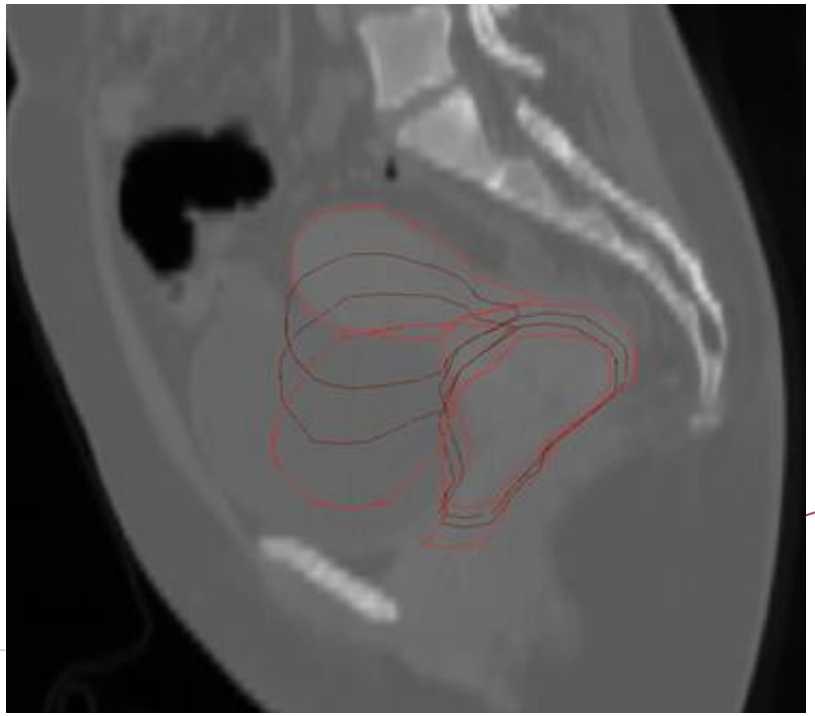






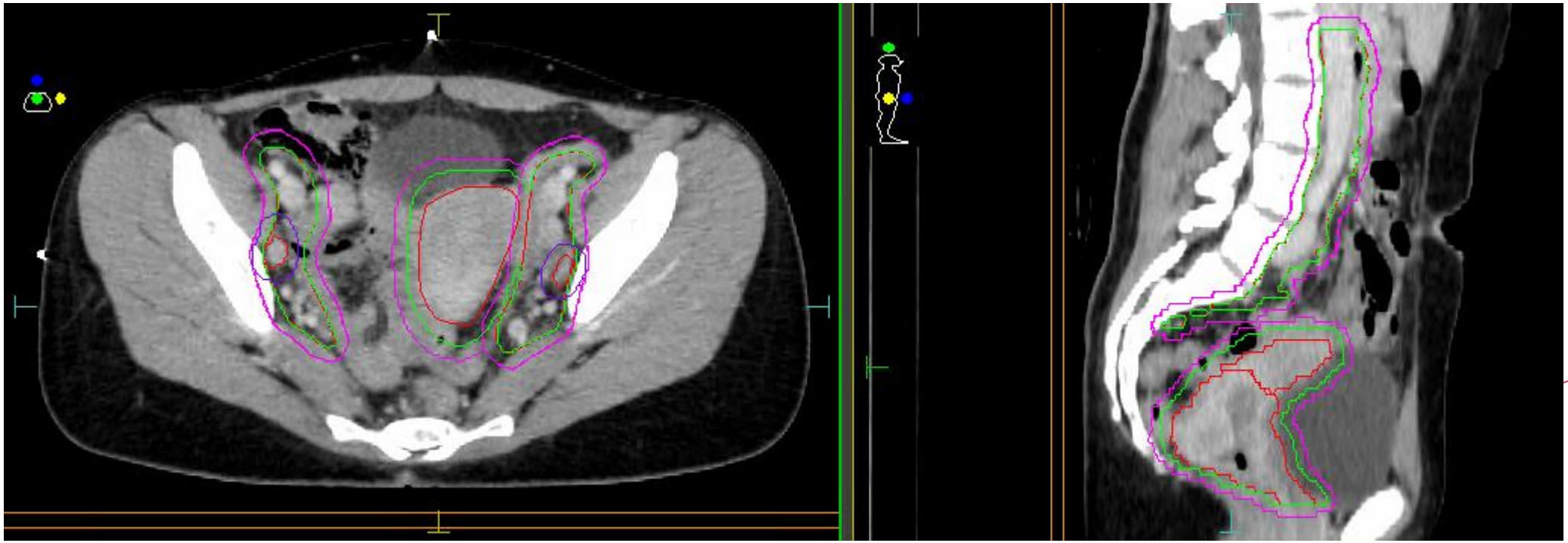
LoP generatie

- Interpolatie LoP
- Afhankelijk van verschil volle – lege blaas worden er meerdere CTV’s geïnterpoleerd
  - Script meet de maximale vector tussen ingetekende CTVs
  - Afstand tussen CTVs minimaal 5 mm
  - Maximaal 4 plannen



Planning

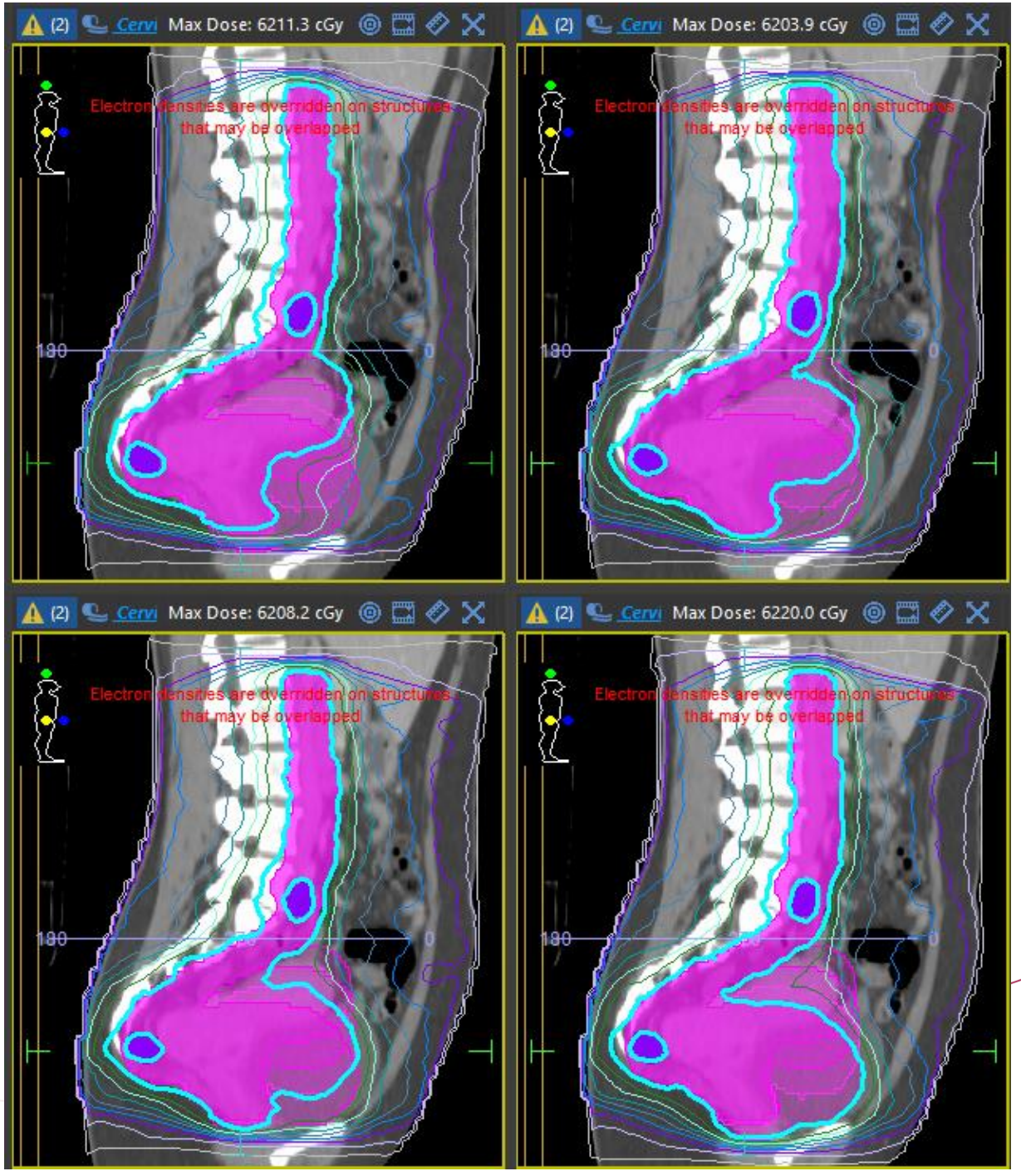
- PTVcervix = CTVcervix + 5 mm caudaal, 10 mm overige richtingen
- PTVuterus = CTVuterus + 10 mm alle richtingen
- PTV-E = CTV-E + 5 mm alle richtingen
- PTV-Nx = CTV-Nx + 5 mm alle richtingen
- ITV= (CTVcervix + 0 mm caudaal, 5mm overige richtingen) + (CTVuterus + 5mm alle richtingen) + CTV-E



Planning

- Dosisschema
  - PTVcervix, uterus en electieve klieren
    25 x 1,8 Gy = 45 Gy / 5x per week
  - Pathologische klieren
    25 x 2,3 Gy = 57,5 Gy / 5x per week

- Monaco
  - VMAT
  - LP1, van daar uit LP2, LP3 en LP4



Planning

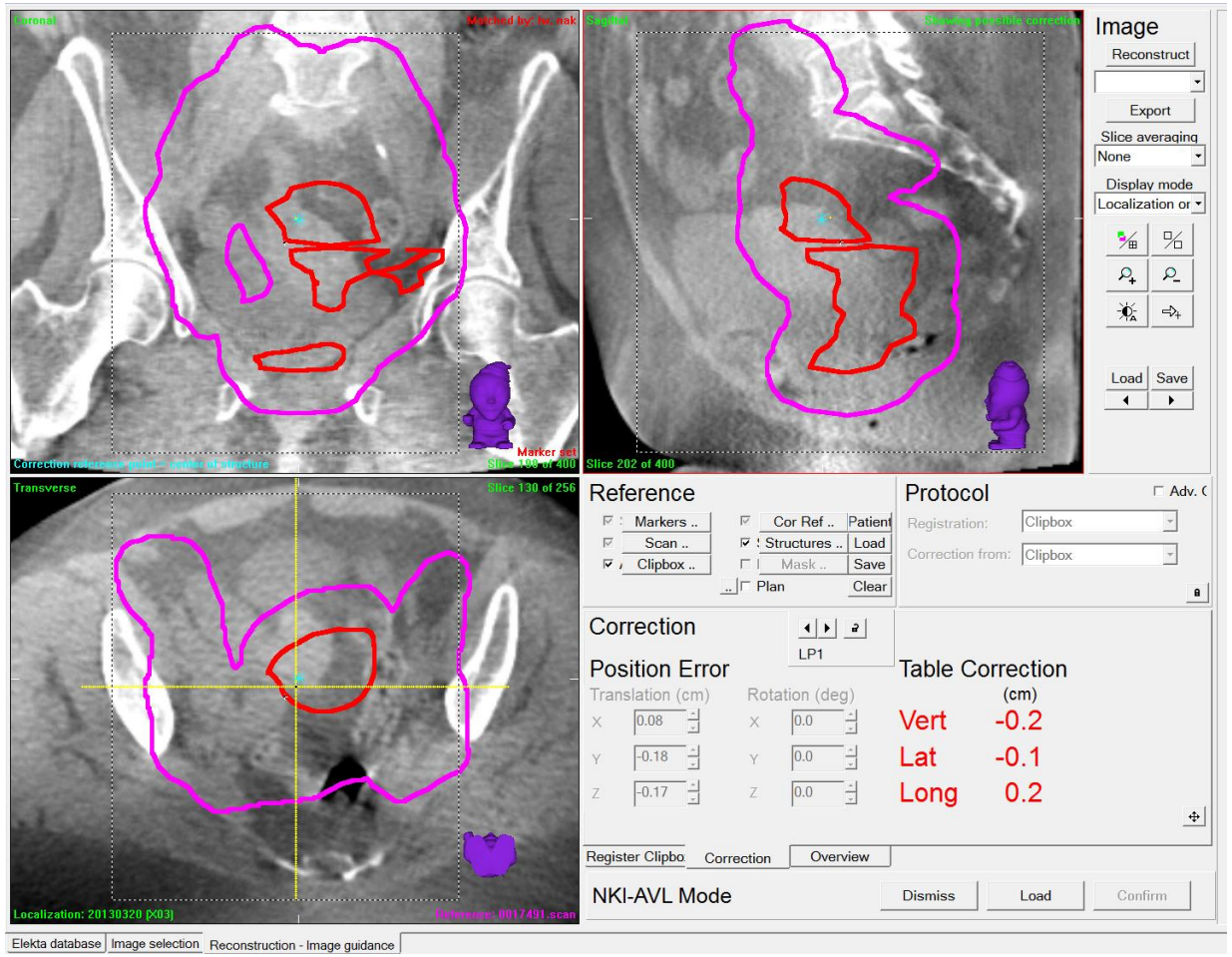
- Embrace II criteria PTVs + OARs

	Hard constraint	Soft constraint
PTV-Nx	D98% > 90%	
	Dmax < 107%	
CTV-Nx	D98% > 100%	
	D50 > 102%	
PTVcervix/uterus/E	V95% > 95%	
ITV	Dmin > 95%	
Bladder (-PTV-Ntot+15mm)	Dmax < 105%	
Bladder		V40Gy < 60%
		V30Gy < 80%
Bowel (-PTV-Ntot+15mm)	Dmax < 105%	
Bowel		V40Gy < 300cc
		V30Gy < 650cc
Sigmoid (-PTV-Ntot+15mm)	Dmax < 105%	
Rectum (-PTV-Ntot+15mm)	Dmax < 105%	
Rectum		V40Gy < 75%
		V30Gy < 95%
Kidney	Dmean < 15Gy	
Spinal cord	Dmax < 48Gy	
Femoralhead	Dmax < 50Gy	

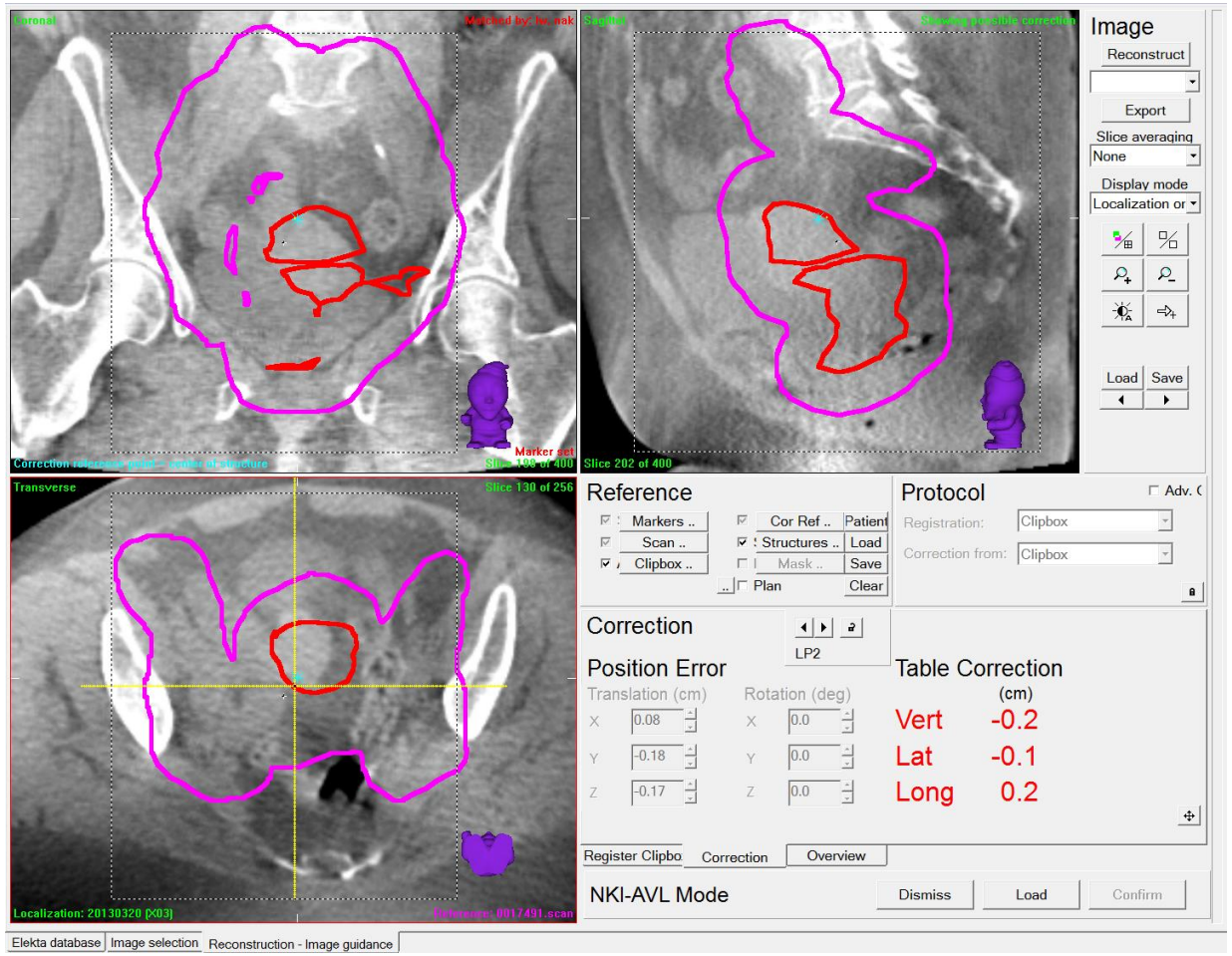
Toestel

- Drinkinstructies
- Cone Beam CT -> welk plan past het beste qua CTV, PTV en OARs

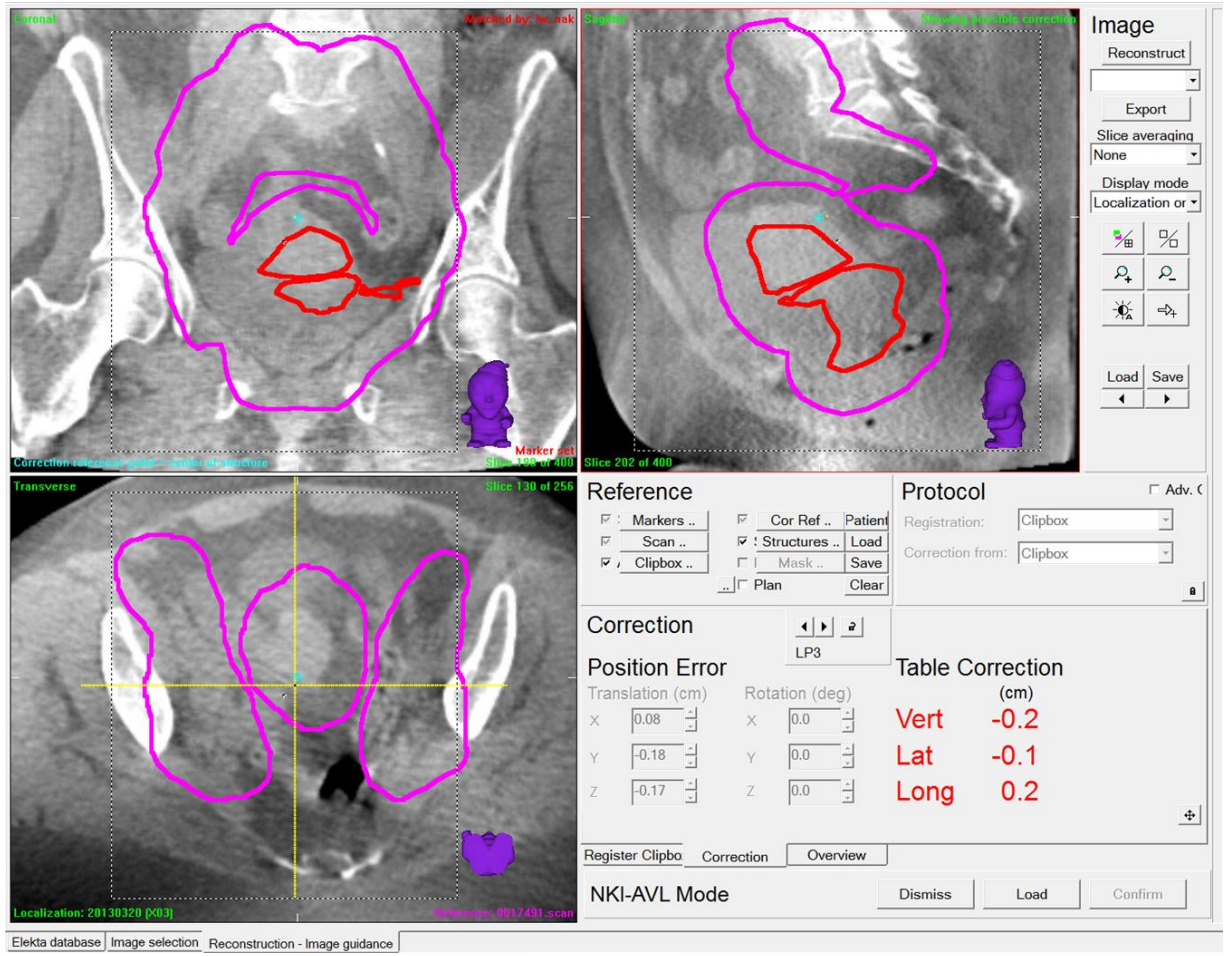
LP1 = volle blaas



LP2


Coronal
Sagittal
Transverse
Slice 202 of 400
Slice 130 of 256
Image
Reconstruct
Export
Slice averaging
None
Display mode
Localization or
Load
Save
Reference
Markers ..
Scan ..
Clipbox ..
Cor Ref ..
Patient
Structures ..
Load
Mask ..
Save
Plan
Clear
Protocol
Adv.
Registration:
Clipbox
Correction from:
Clipbox
Correction
LP2
Position Error
Translation (cm)
Rotation (deg)
X 0.08
Y -0.18
Z -0.17
X 0.0
Y 0.0
Z 0.0
Table Correction
(cm)
Vert -0.2
Lat -0.1
Long 0.2
Register Clipbo
Correction
Overview
NKI-AVL Mode
Dismiss
Load
Confirm
Elekta database
Image selection
Reconstruction - Image guidance

LP3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Export
Slice averaging
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Display mode
Localization or
Load
Save
Reference
Markers ..
Scan ..
Clipbox ..
Cor Ref ..
Structures ..
Mask ..
Plan
Patient
Load
Save
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Protocol
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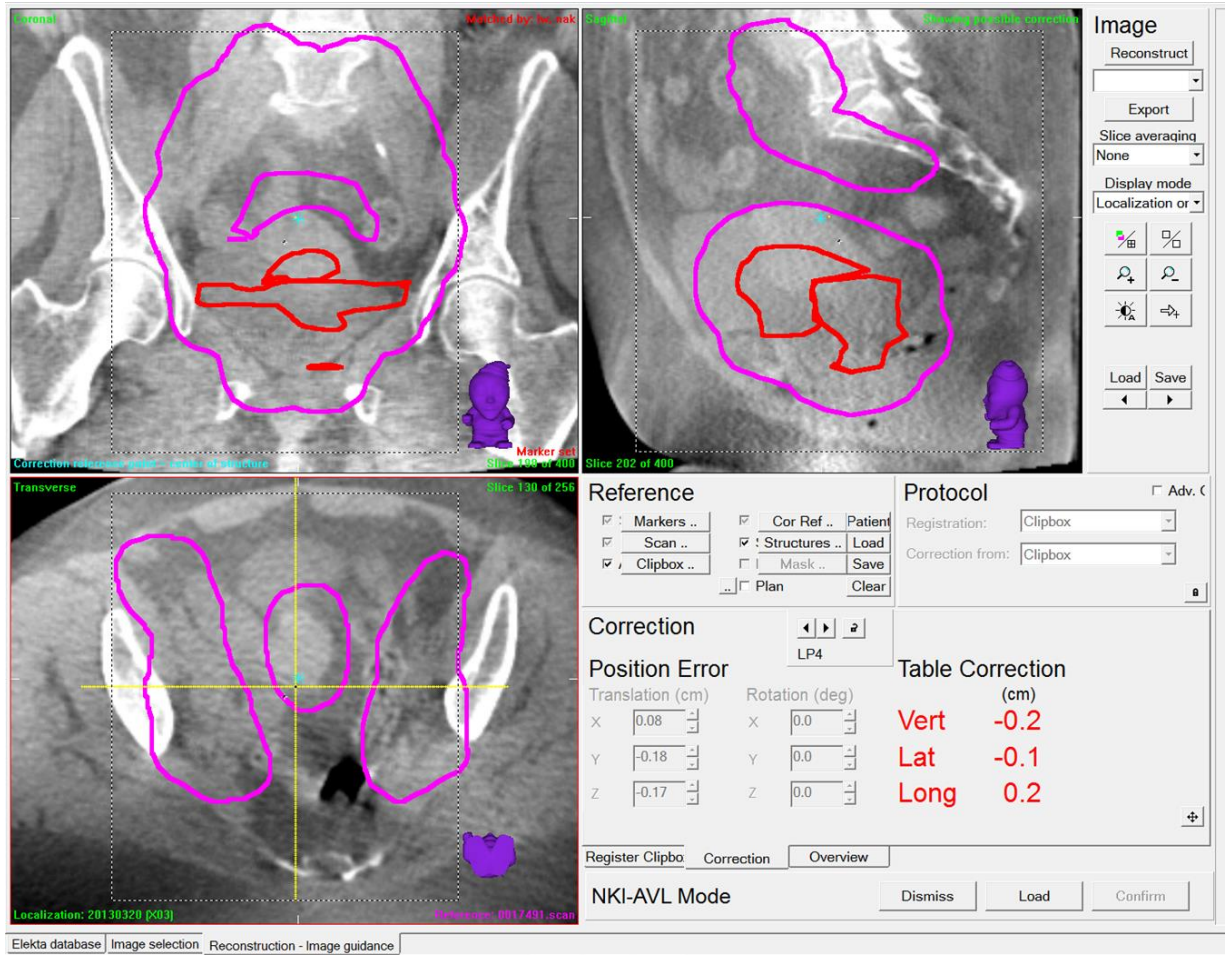
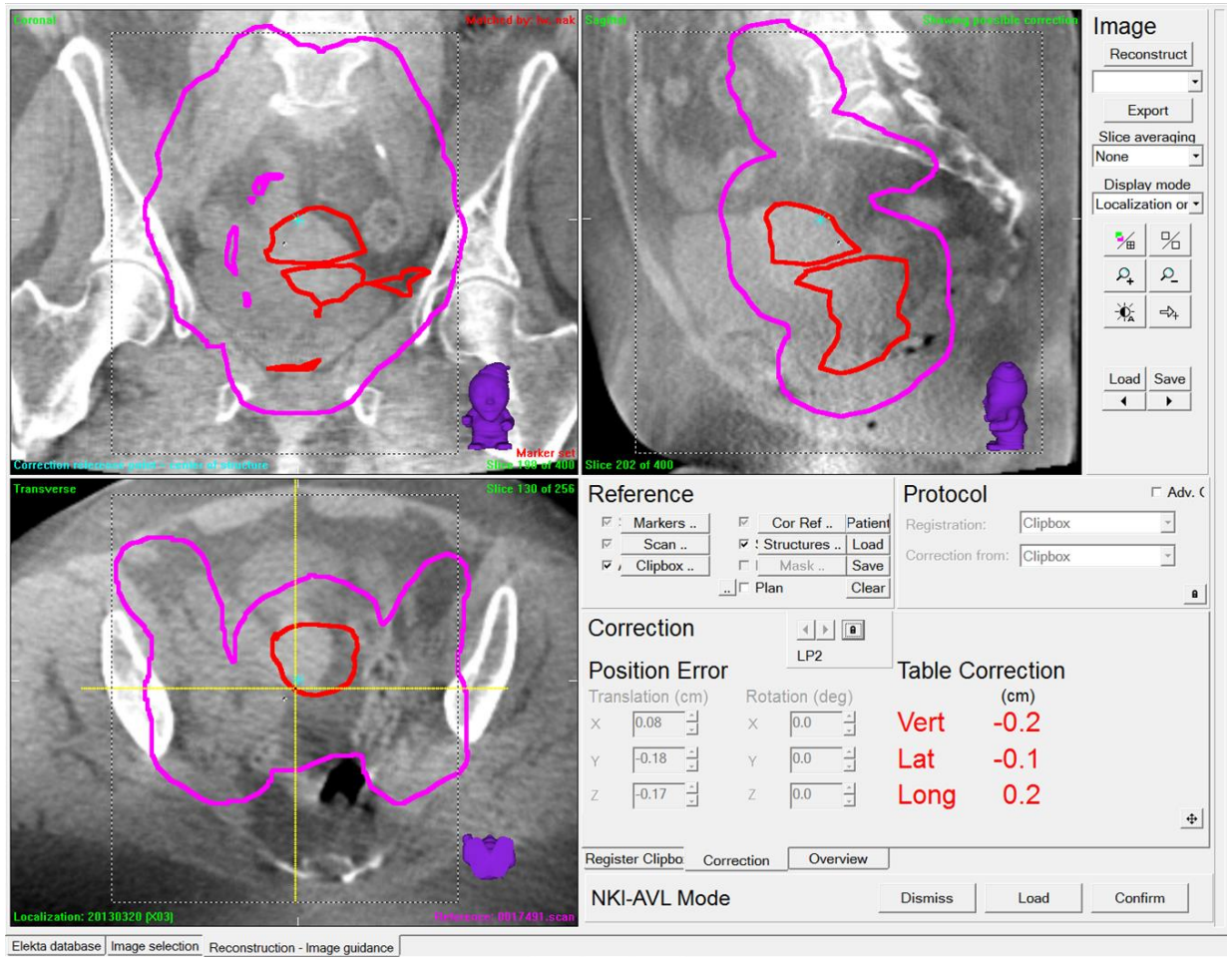
Registration:
Clipbox
Correction from:
Clipbox
Correction
LP3
Position Error
Translation (cm)
Rotation (deg)
X 0.08
Y -0.18
Z -0.17
X 0.0
Y 0.0
Z 0.0
Table Correction
(cm)
Vert -0.2
Lat -0.1
Long 0.2
Register Clipbo
Correction
Overview
NKI-AVL Mode
Dismiss
Load
Confirm
Elekta database
Image selection
Reconstruction - Image guidance

LP4 = lege blaas





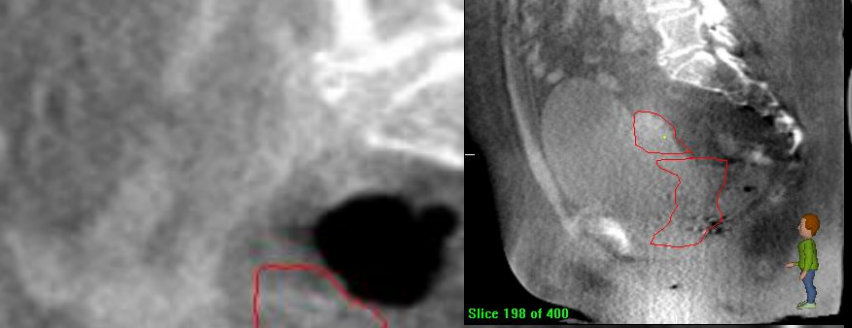
Keuze is gevallen op LP2

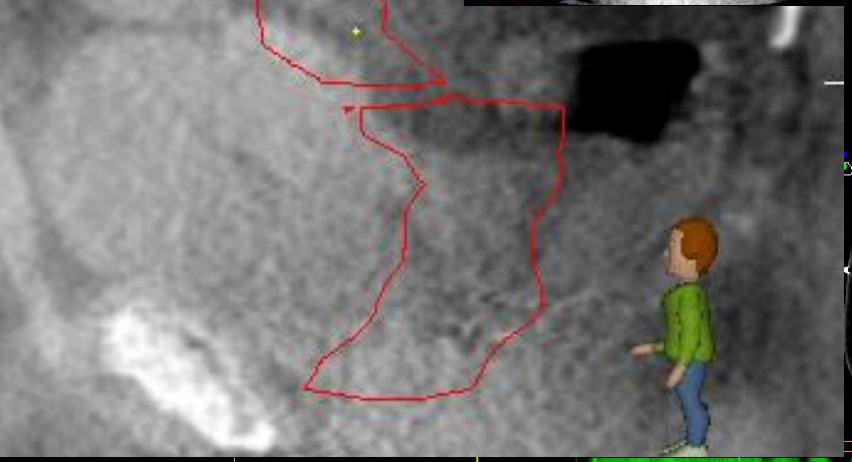
Toestel

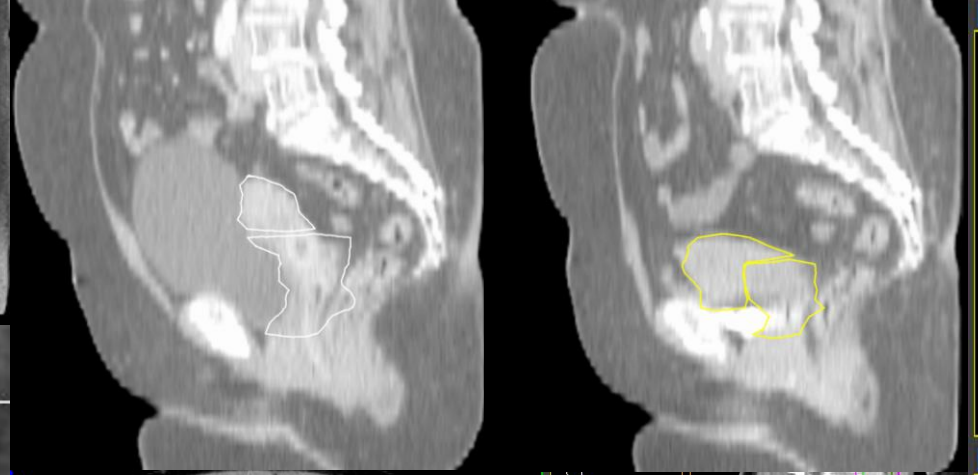
- Tafelverplaatsing
- Stralen
- Post Cone Beam CT

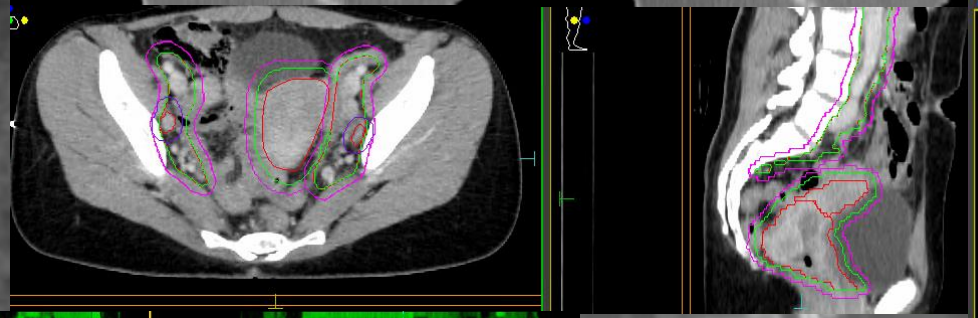
Actieprotocol

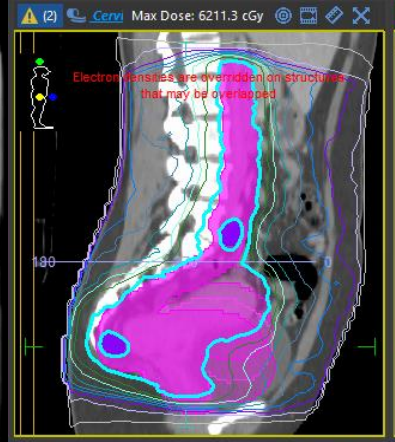
- CTV buiten PTV
  - Plan toevoegen aan Library of Plans
  - Nieuwe Library of Plans
  - Verruimen van de marges


Slice 198 of 400





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Electron densities are overridden on structures that may be overlapped
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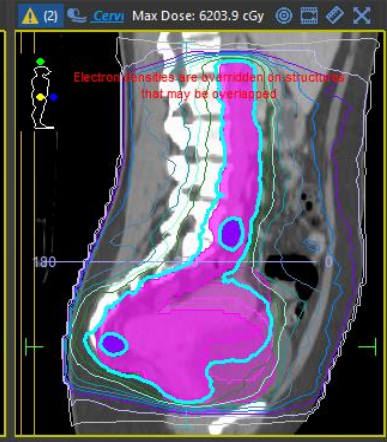
0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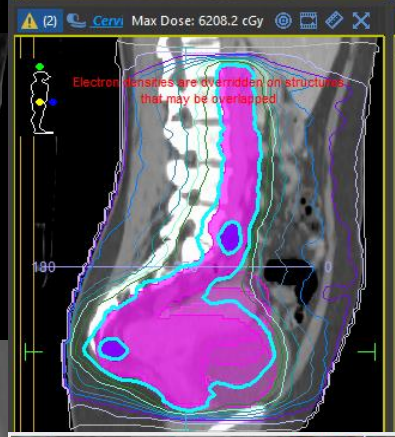
(2) Cervi Max Dose: 6208.2 cGy
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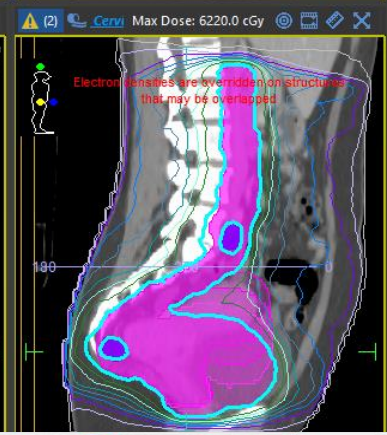
(2) Cervi Max Dose: 6220.0 cGy
Electron densities are overridden on structures that may be overlapped
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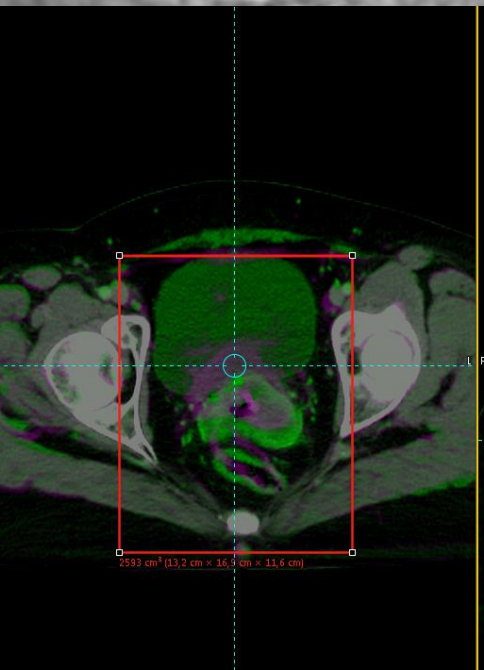
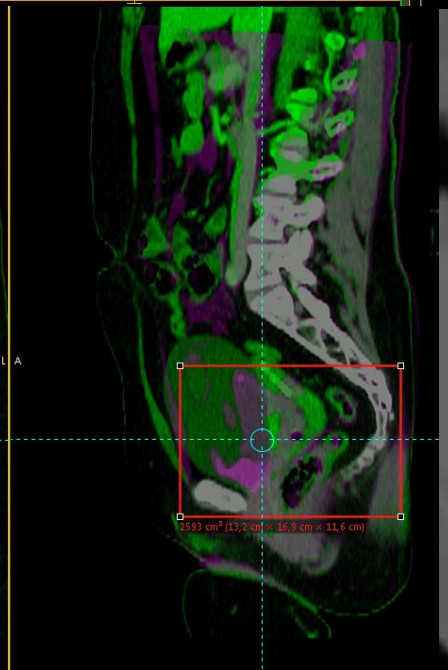
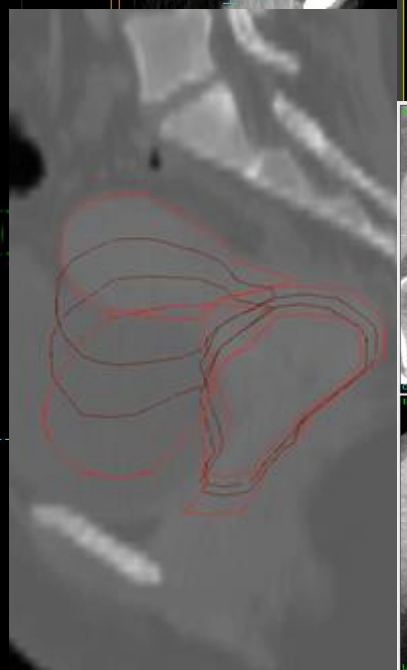
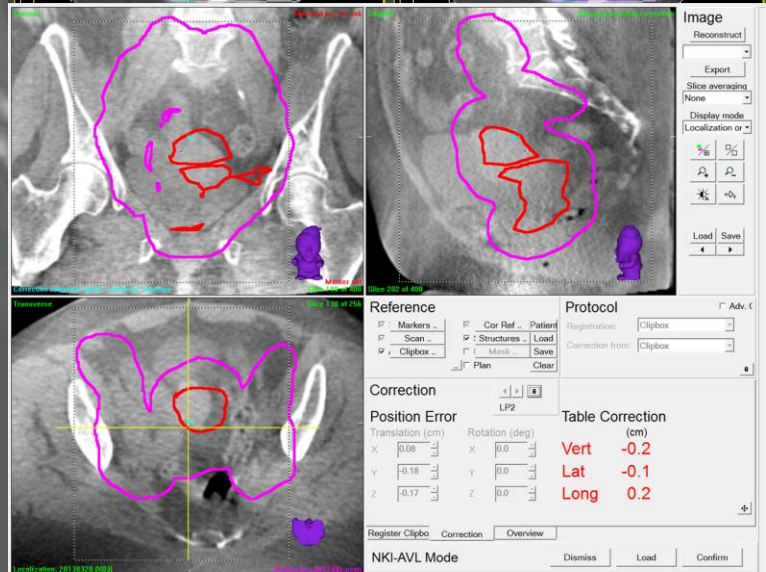

2593 cm³ (13,2 cm × 16,9 cm × 11,6 cm)


2593 cm³ (13,2 cm × 16,9 cm × 11,6 cm)


2593 cm³ (13,2 cm × 16,9 cm × 11,6 cm)

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