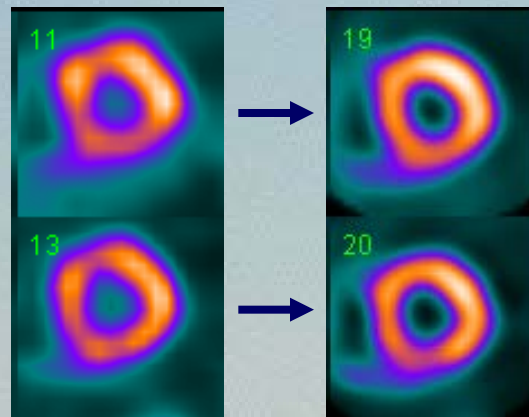


Myokardscintigrafi med halvledardetektorer – Lunds erfarenheter av ny teknik



Jenny Oddstig
Strålningsfysik,
Skånes Universitetssjukhus, Lund



Halvledar-detektor

CZT (Kadmiumtellurid och Zinktelluride)



D-SPECT



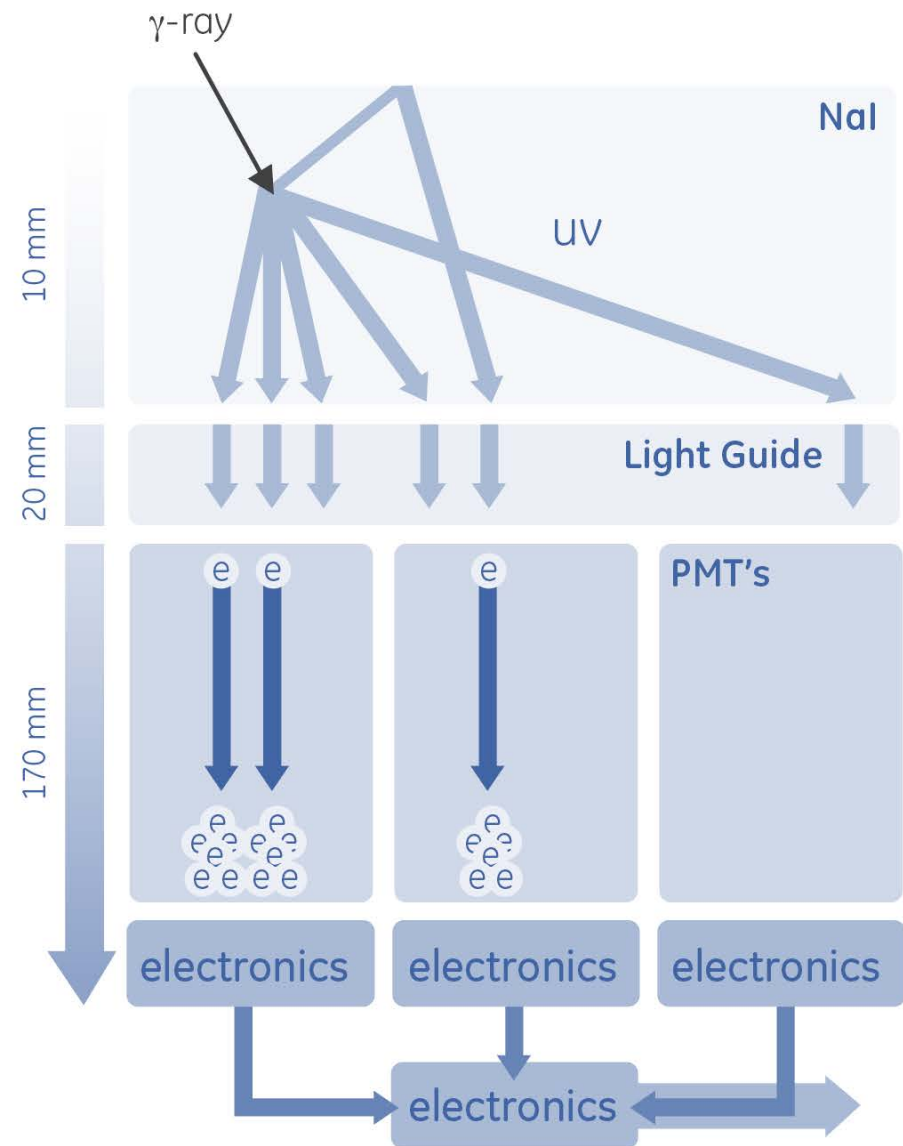
GE Discovery 530c



2010

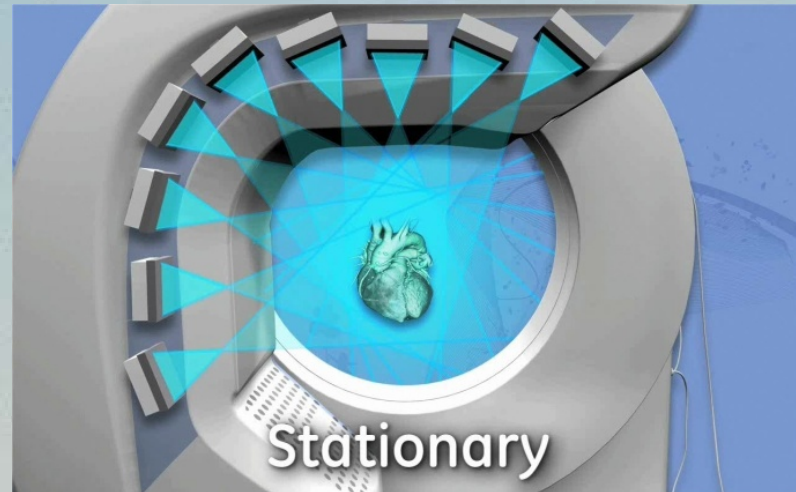


Indirect

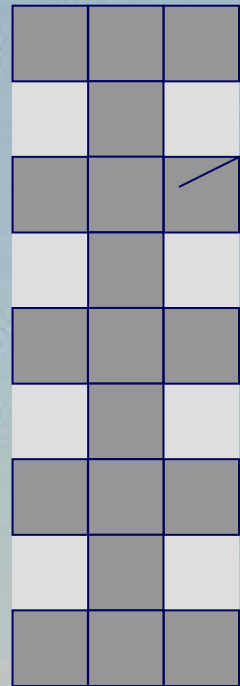


GE Discovery 530c

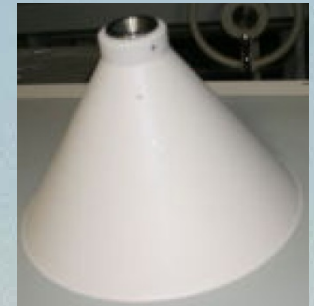
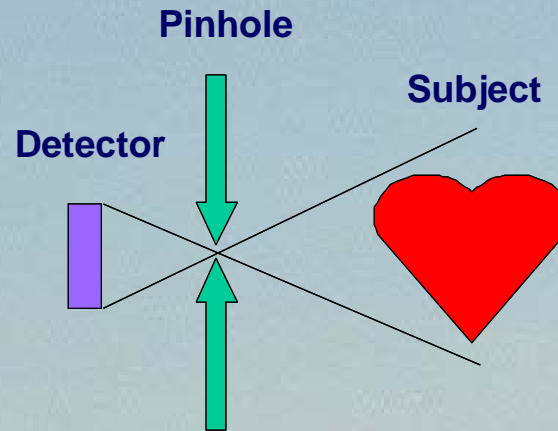
Fokuserad kollimering – 19 pinhole kollimatorer



GE Discovery 530c



CZT panel



Pinhole kollimatorer

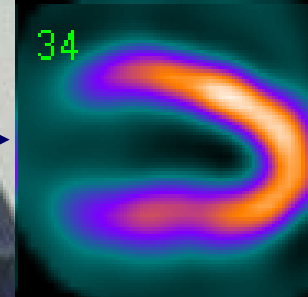
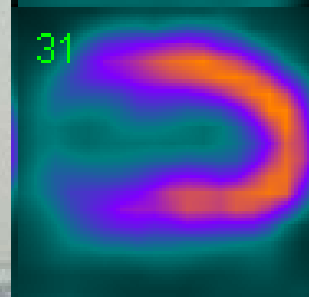
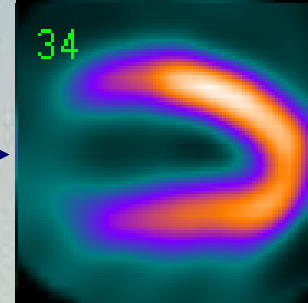
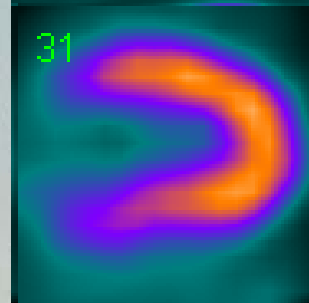
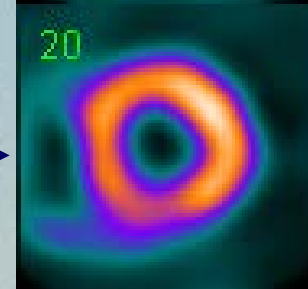
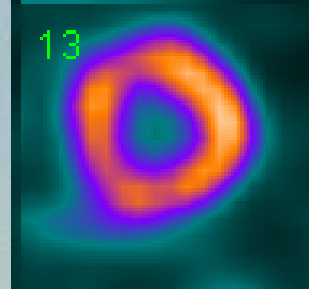
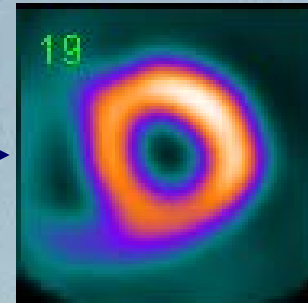
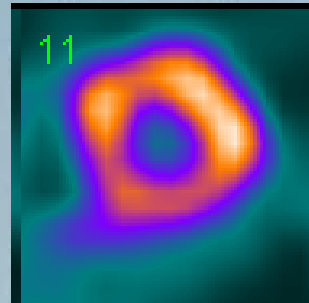
Stationära detektorer
Liten känslig volym



**Konventionell
SPECT**

CZT

Lund 2011

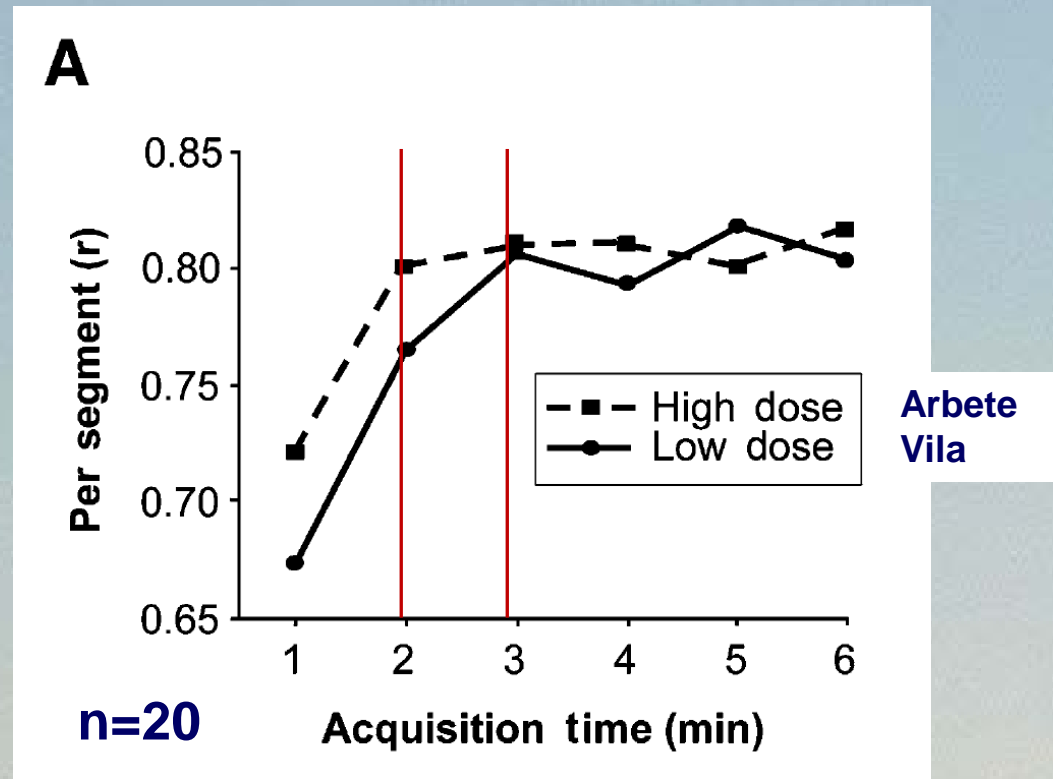


Nya möjligheter med CZT

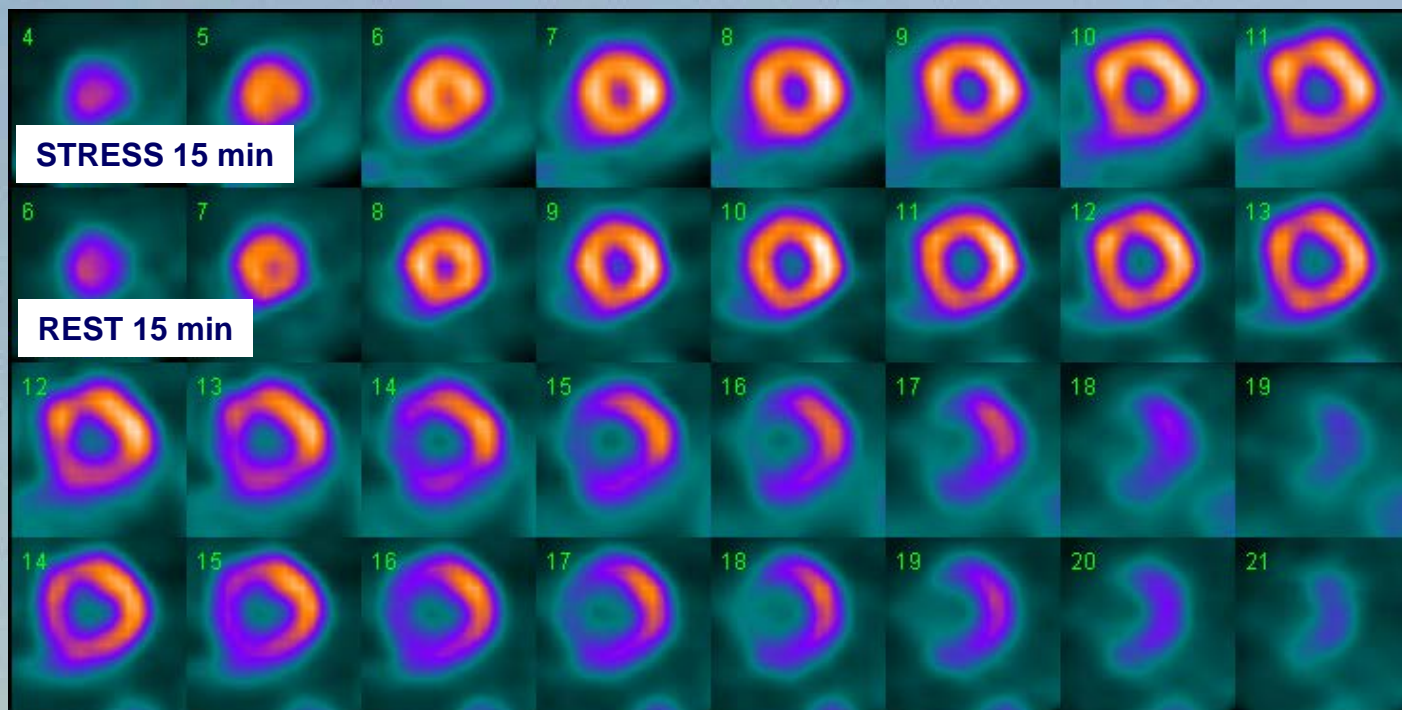
- Snabbare scanning
- Lägre injicerad aktivitet
- Bättre spatiell upplösning



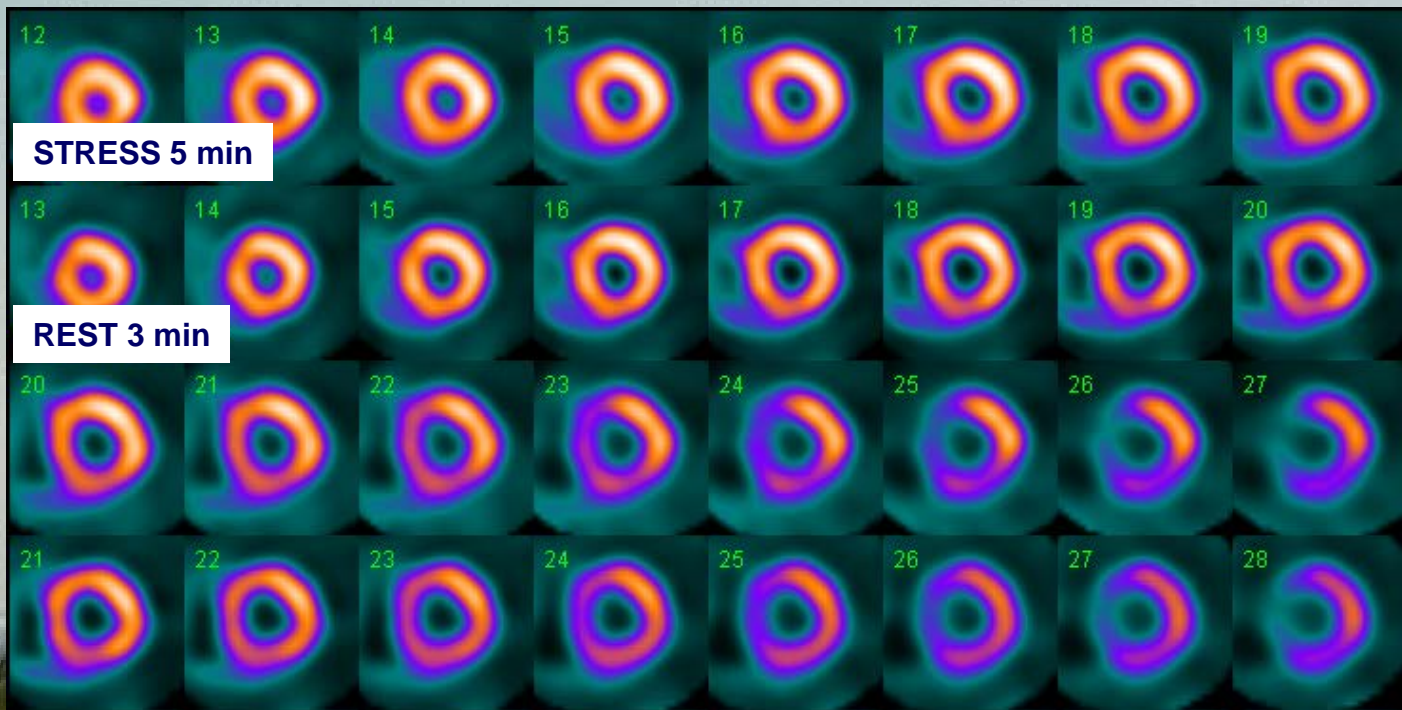
Segmentellt upptag för CZT



Konventionell SPECT



CZT

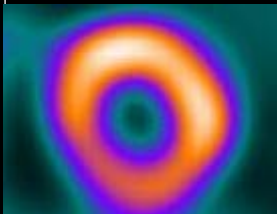
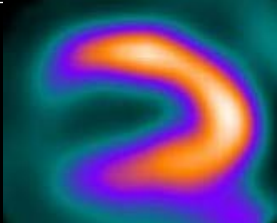


Nya möjligheter med CZT

- Snabbare scanning
- Lägre injicerad aktivitet
- Bättre spatiell upplösning

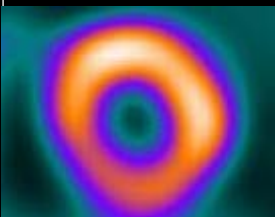
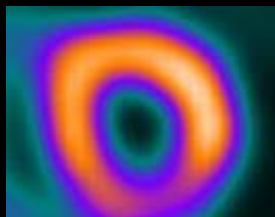
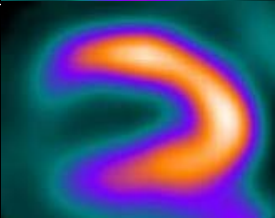
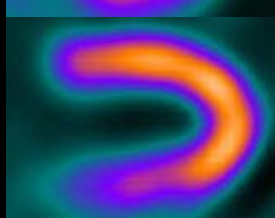


Bildkvalité- Arbete

Administrerad aktivitet	4 MBq/kg		
Insamlingstid	Arbete (300 s)		
SA			
HLA			
Bild kvalitet			

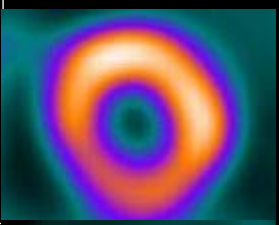
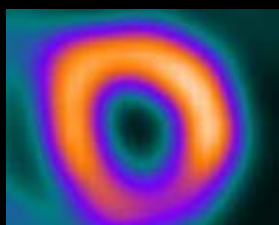
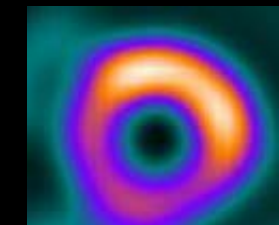
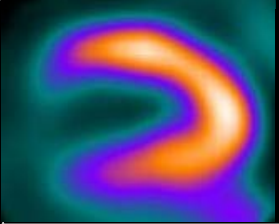
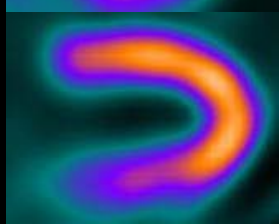



Bildkvalité- Arbete

Administrerad aktivitet	4 MBq/kg	3 MBq/kg	
Insamlingstid	Arbete (300 s)	Arbete (400 s)	
SA			
HLA			
Bildkvalité			



Bildkvalité- Arbete

Administrerad aktivitet	4 MBq/kg	3 MBq/kg	2.5 MBq/kg
Insamlingstid	Arbete (300 s)	Arbete (400 s)	Arbete (475 s)
SA			
HLA			
Bildkvalité	3.7 ± 0.5	3.8 ± 0.5	3.8 ± 0.4



Effektiv dos

1-dagars protokoll

	4 MBq/kg	3 MBq/kg	2.5 MBq/kg	EANM
Effektiv dos arbete [mSv]	2.2	1.6	1.4	2.8-3.6
Effektiv dos vila [mSv]	7.1	5.1	4.4	9.4-12.2
Total effektiv dos [mSv]	9.3	6.7	5.8	12.3-15.7

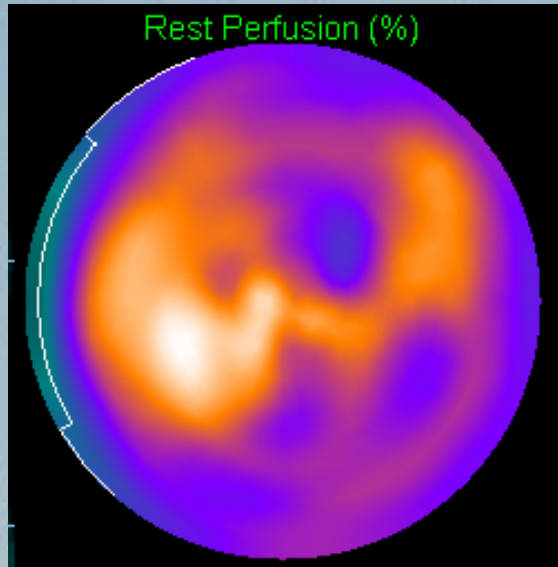


Nya möjligheter med CZT

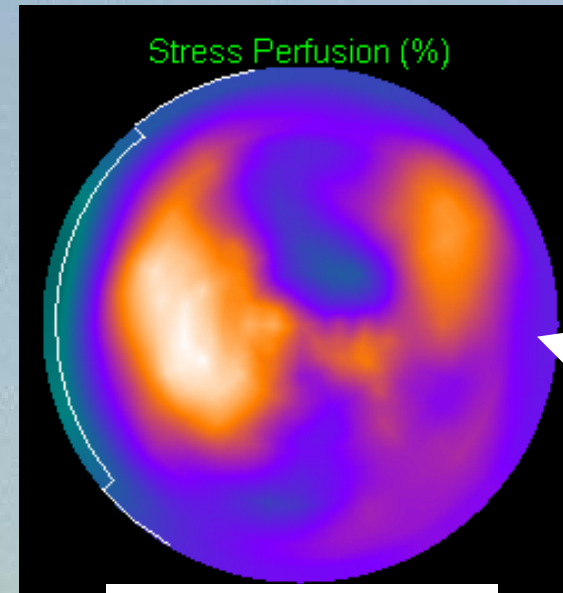
- Snabbare scanning
- Lägre injicerad aktivitet
- Bättre spatiell upplösning



VILA

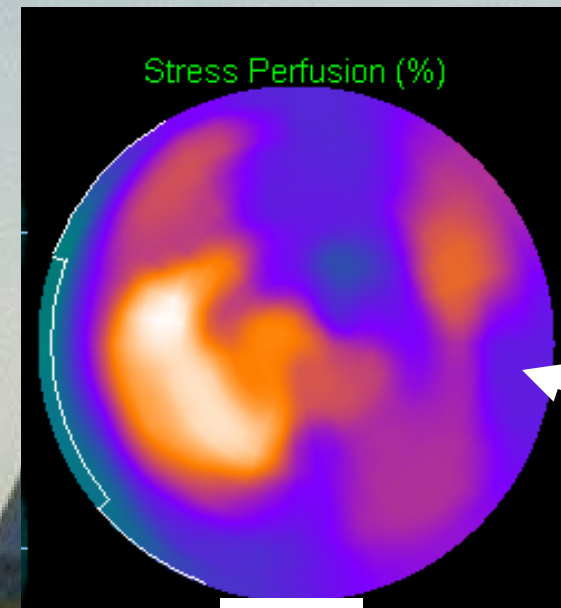


STRESS



Konventionell

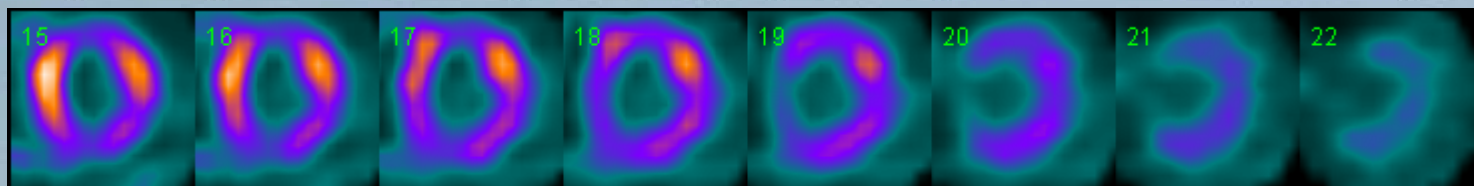
- 3-kärlssjuk
- CABG-opererad
- Accentuerad angina
- Stressutlöst ischemi?
- Rikta revaskularisering



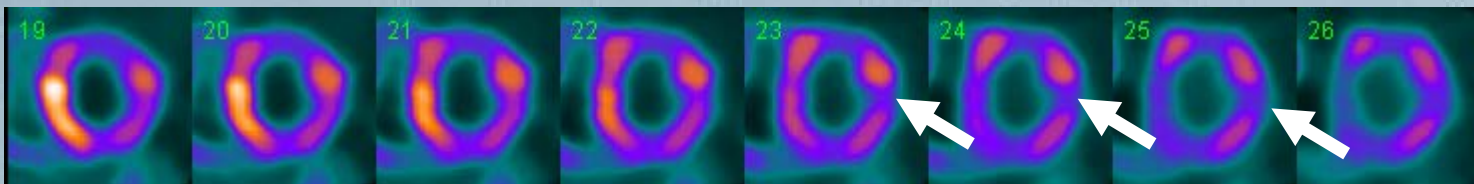
CZT



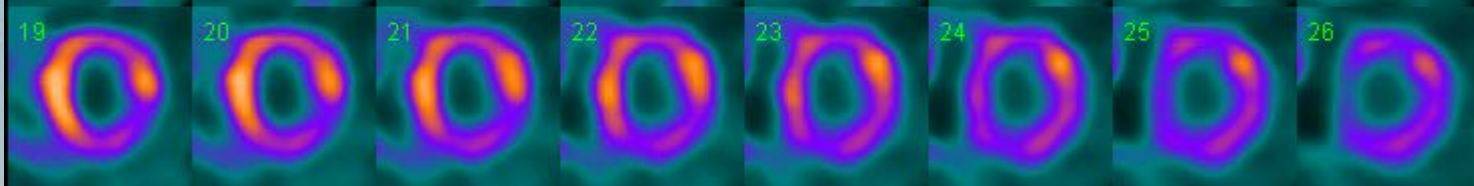
**STRESS-
konventionell**



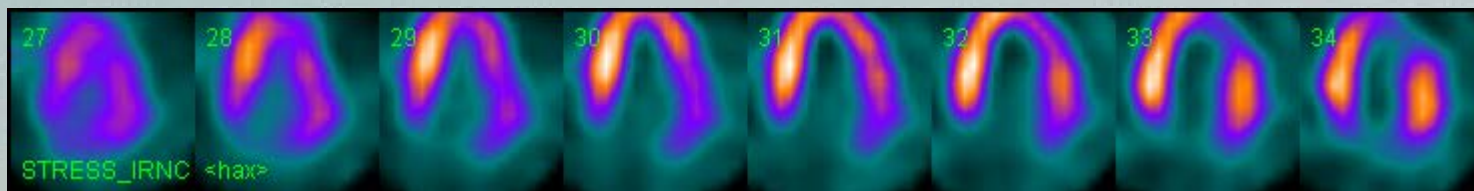
STRESS-CZT



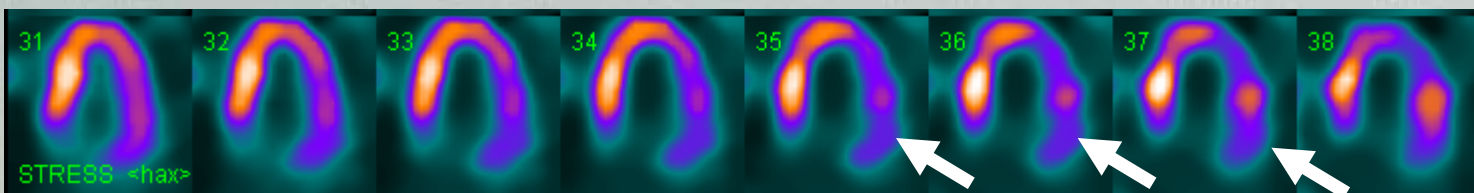
VILA



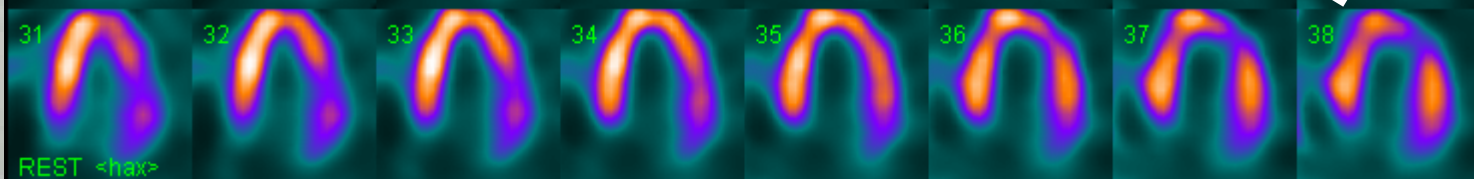
**STRESS-
konventionell**



STRESS-CZT



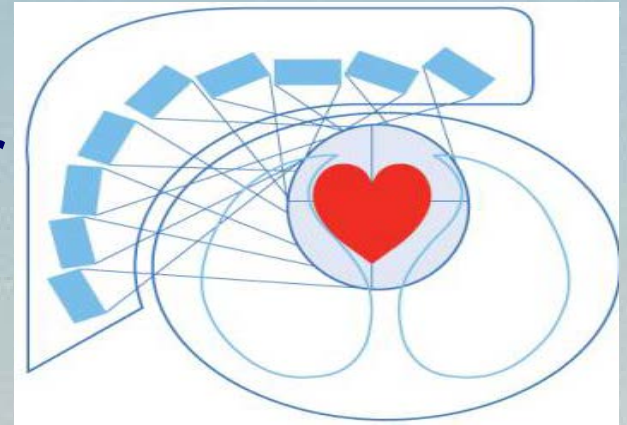
VILA



Nya utmaningar med CZT

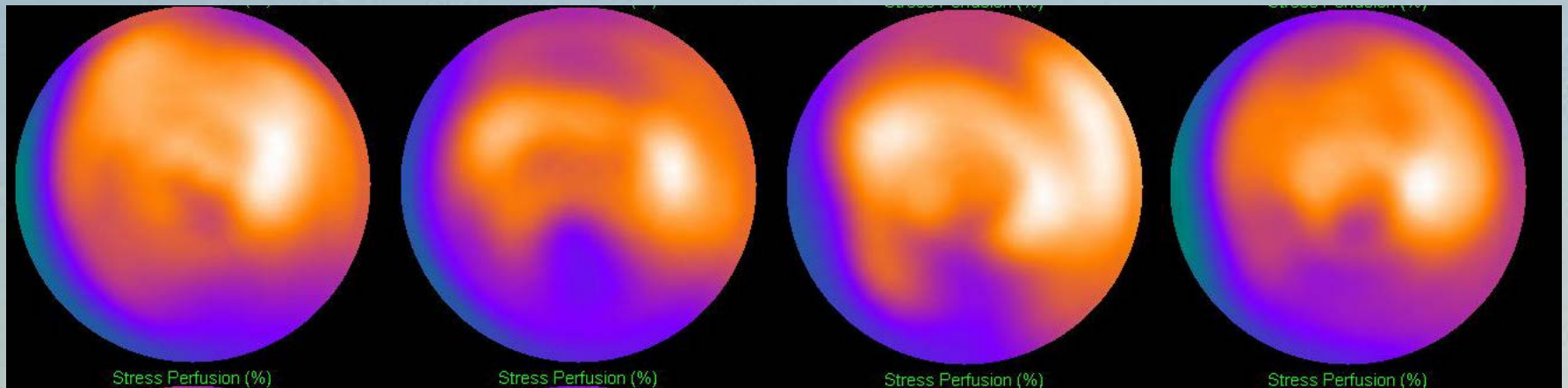
Fixerad volume of interest

- Positionering är viktigt
- Svårt med stora patienter



Nya utmaningar med CZT - Positionering

Patient arbete



Centrum

**Kamera ut
20 mm**

**Brits ner
20 mm**

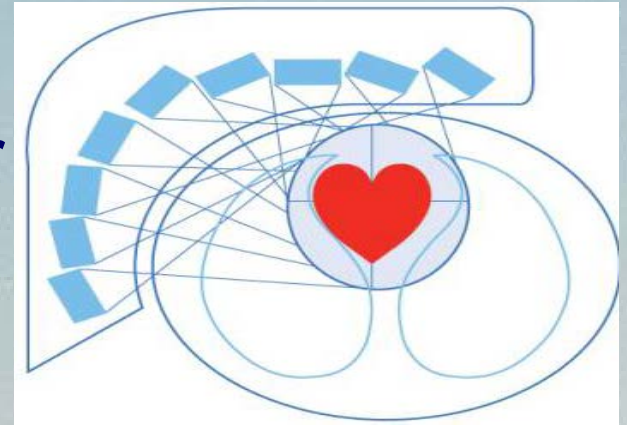
**Brits in
20 mm**



Nya utmaningar med CZT

Fixerad volume of interest

- Positionering är viktigt
- Svårt med stora patienter
- Normalvärden saknas
- Vi ser nya saker –
omprogrammering av cortex



Framtid

- Bättre diagnostik?
- Absolut blodflöde?



Lägre dos,
kortare insamlingstid
och bättre bilder –
är det möjligt?

JA

