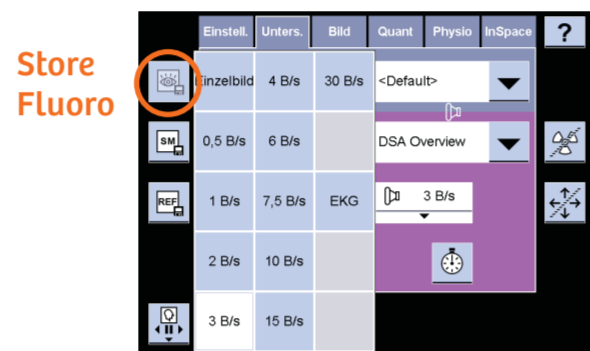


Reduce X-ray dose

Recommendations for your daily routine during interventions

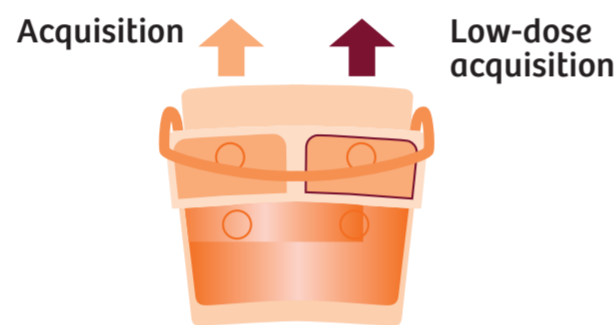
1. Select the adequate protocol

- Choose a proper organ program
- Replace acquisition by low dose acquisition and/or fluoro as often as possible
- Use Fluoro Loop and/or Store Fluoro



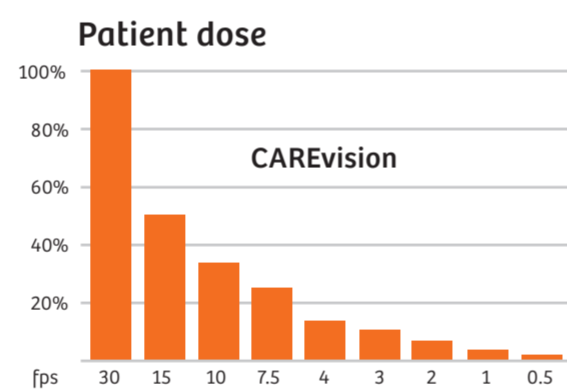
2. Minimize footswitch-on time

- The shorter the footswitch-on time, the lower the air kerma
- Example: Half the time on the pedal results in 50% less skin dose and 50% less dose area product for average patient size



3. Use a low frame rate

- The lower the frame rate, the lower the air kerma
- Example: Half the frame rate results in 50% less air kerma and 50% less dose area product
- CAREvision enables individually adjustable frame rates from 30 fps down to 0.5 fps



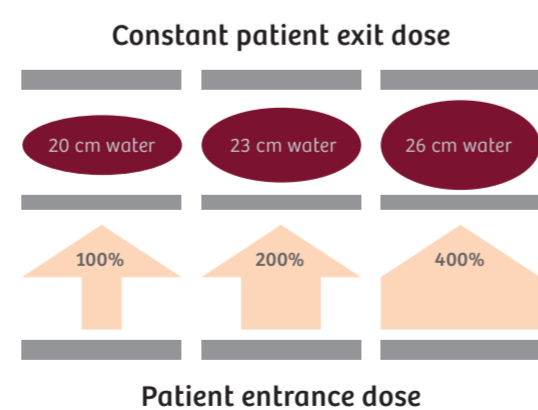
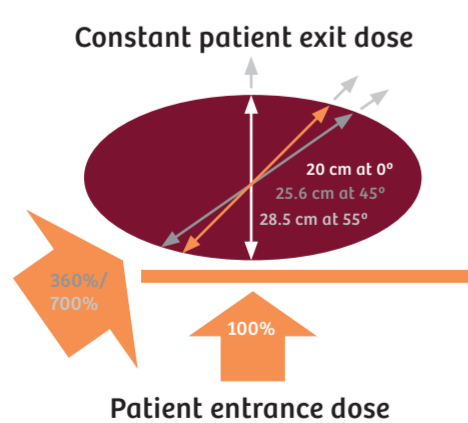
4. Zoom out as much as practicable

- Increasing the zoom factor increases the skin dose area product but decreases skin dose (only for open collimation)
- Effect on image quality: For large patients at the dose rate limit, increasing the zoom factor increases image quality. For small patients, decreasing the zoom factor increases image quality

Zoom level	Input field	
	FD 20 x 20 (diagonal)	FD 30 x 40 (diagonal)
Nominal format/Zoom 0	25 cm	48 cm
Zoom 1	20 cm	42 cm
Zoom 2	16 cm	32 cm
Zoom 3	10 cm	22 cm
Zoom 4	–	16 cm
Zoom 5	–	11 cm

5. Use shallow angles as much as possible

- For every 3 cm patient thickness, entrance dose is doubled
- Shallow angles reduce air kerma

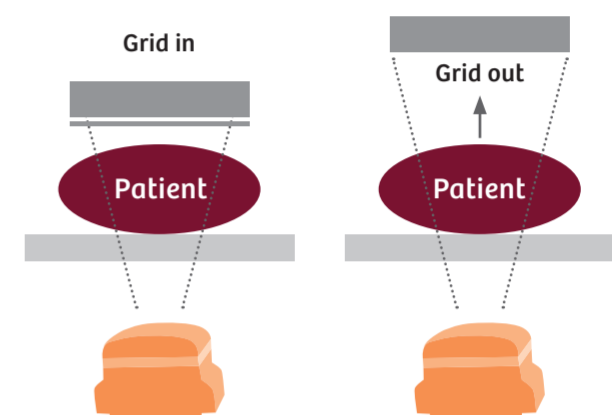


How to protect the patient

6. Remove grid and increase SID

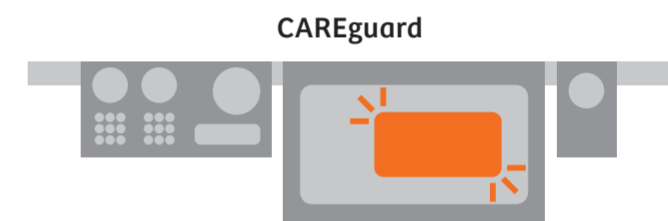
"Air Gap Technique"
for small children < 20 kg

- Remove anti-scatter grid (= additional absorber)
- Lift up receptor as a scatter reduction measure



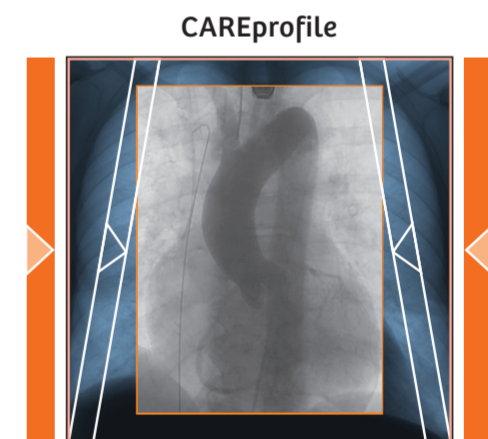
7. Dose monitoring

- CAREwatch: Displays the dose values during the patient examination on the image monitors in the examination room as well as in the control room
- CAREguard: Three dose threshold values (low, medium, and high) can be individually defined. If the accumulated patient entrance dose exceeds the threshold, an audible and visual signal is given



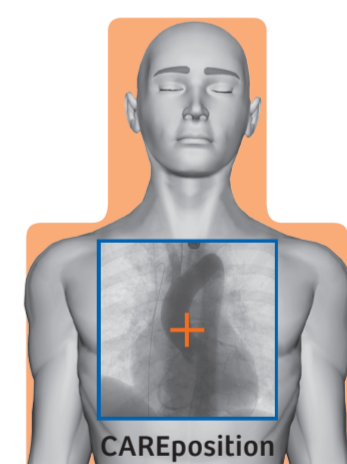
8. Use CAREprofile

- Using the last image hold (LIH) as a reference, CAREprofile allows radiation-free collimation and semitransparent filter position setting to precisely target the region of interest



9. Use CAREposition

- CAREposition provides radiation-free object positioning
- Graphic display of the outline of the subsequent image allows panning the table without fluoroscopic radiation exposure



A91GER-H-000018-C1-20-7600