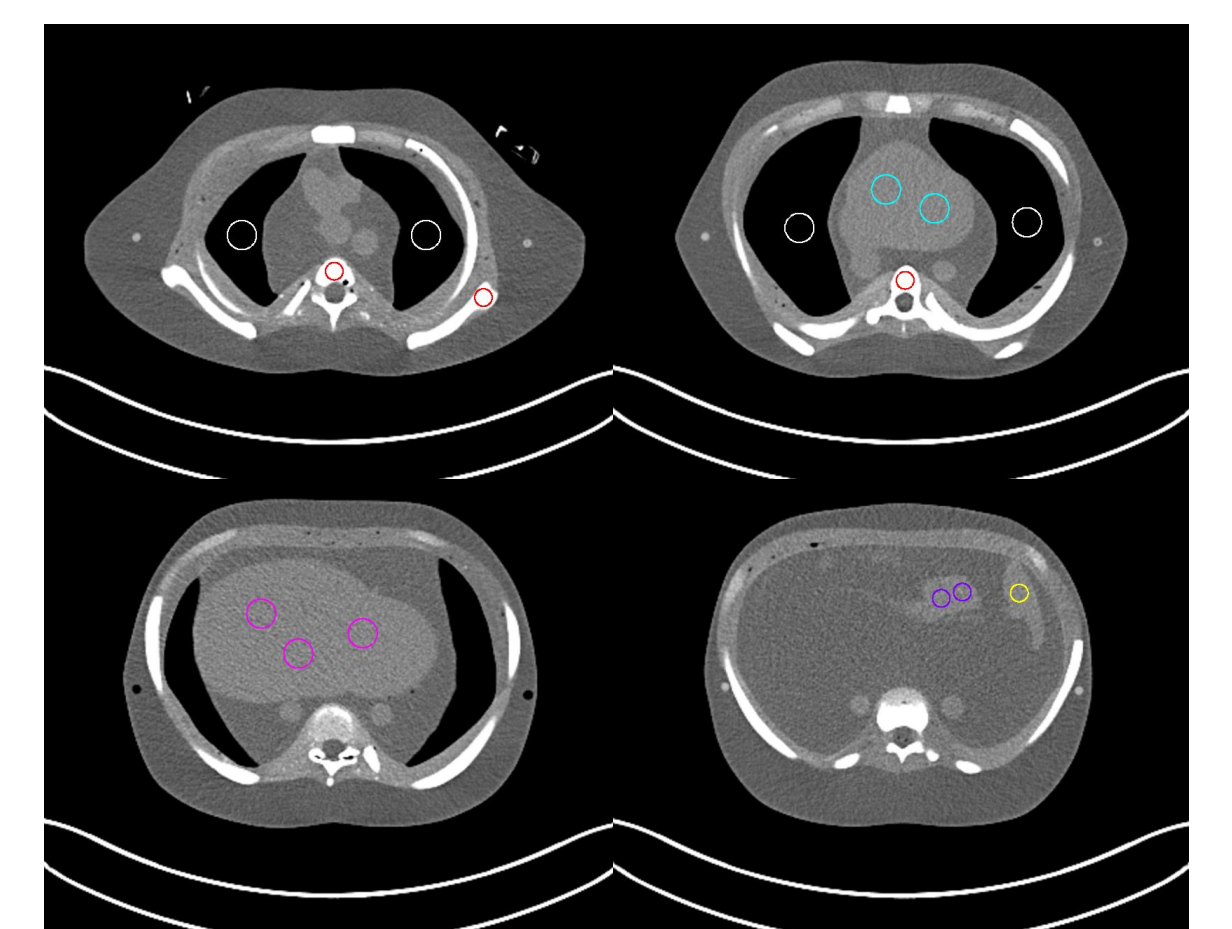
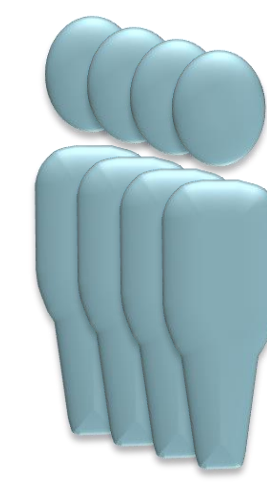
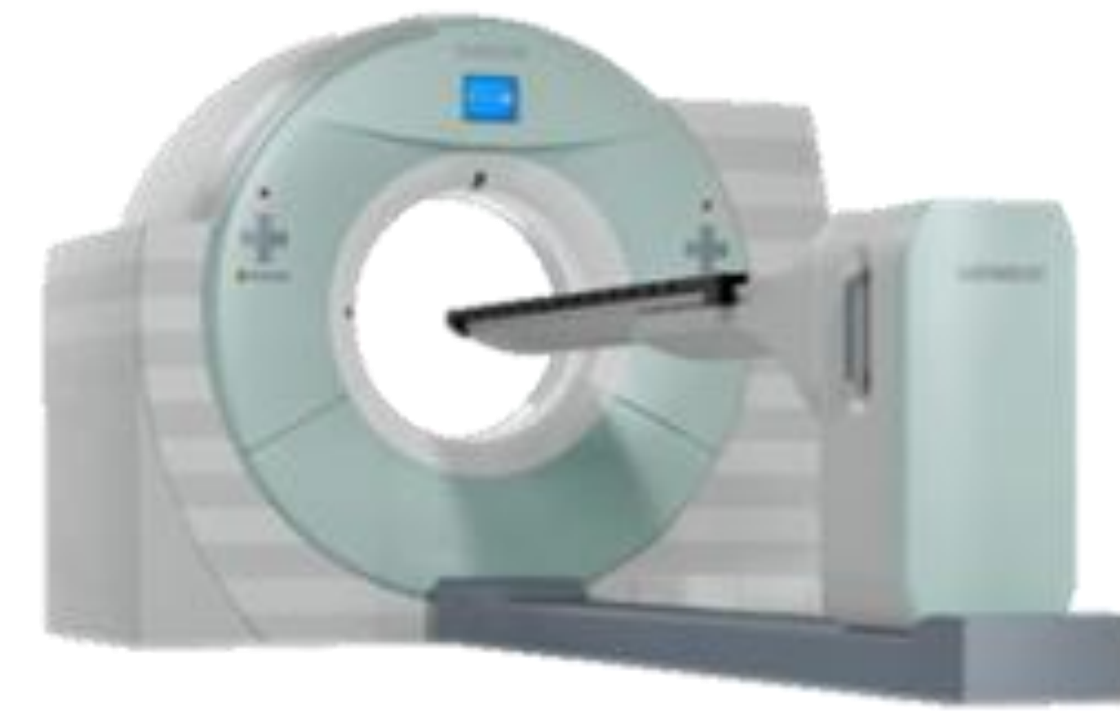


PURPOSE

- To evaluate if an anthropomorphic phantom is suitable to mimic clinical conditions regarding CT automated current modulation behaviour.
- To describe the variation of the image noise as a function of reference mAs in the phantom, in order to predict noise level in clinical patients .

METHODS

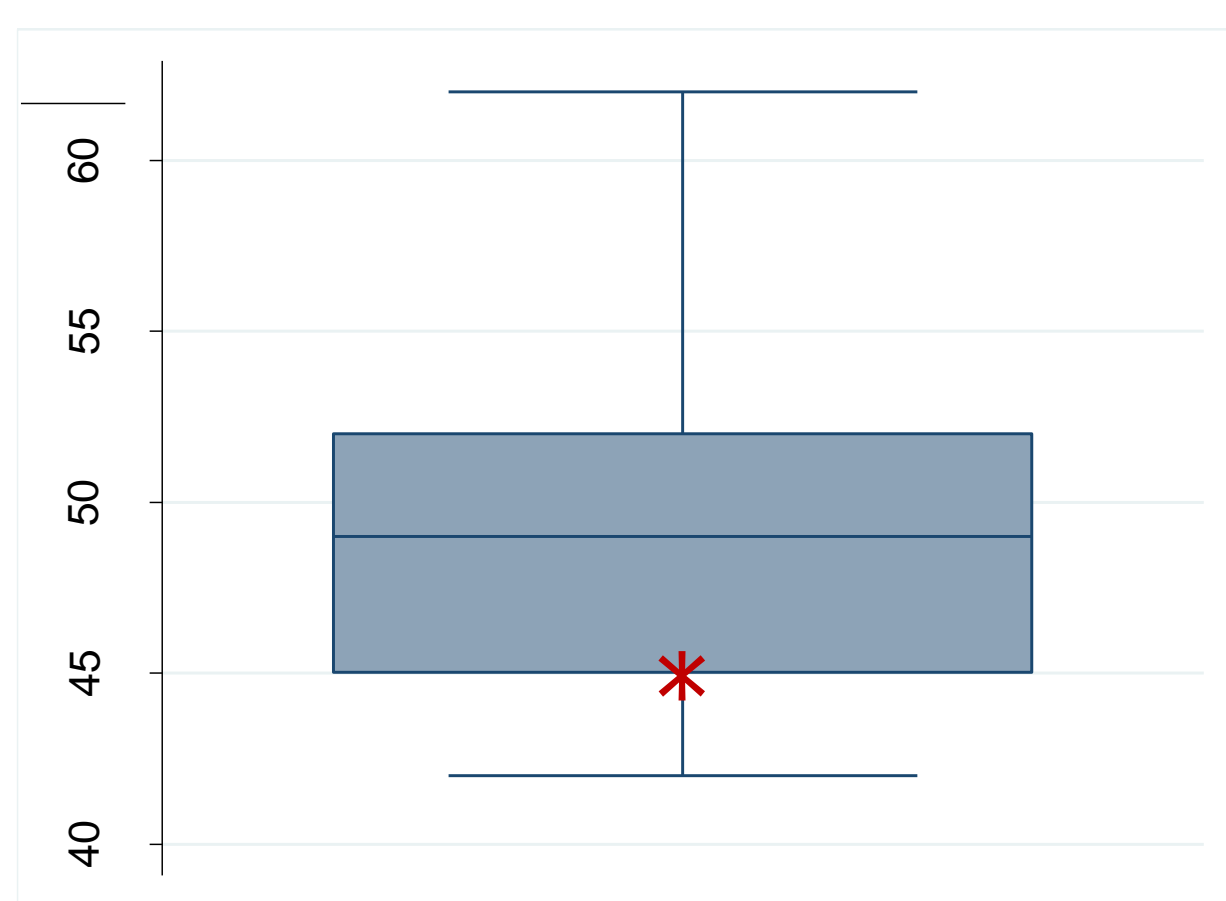
- Acquisition: Biograph mCT TrueV PET/CT
 - 64-slice Somatom Definition AS CT
 - 120 kV, 0.5 s rotation time, pitch 1, automated current modulation
- 94 clinical PET/CT studies were reviewed
 - Men with weight 65-75 kg were selected → N=18
 - 80 reference mAs → Effective mAs and CTDIvol were registered
- CIRS 3D Torso Phantom
 - Different reference mAs → Effective mAs and CTDIvol were recorded.
 - ROIs in bone, heart, kidneys, liver, lung, pancreas, spleen → Mean of SD (HU).



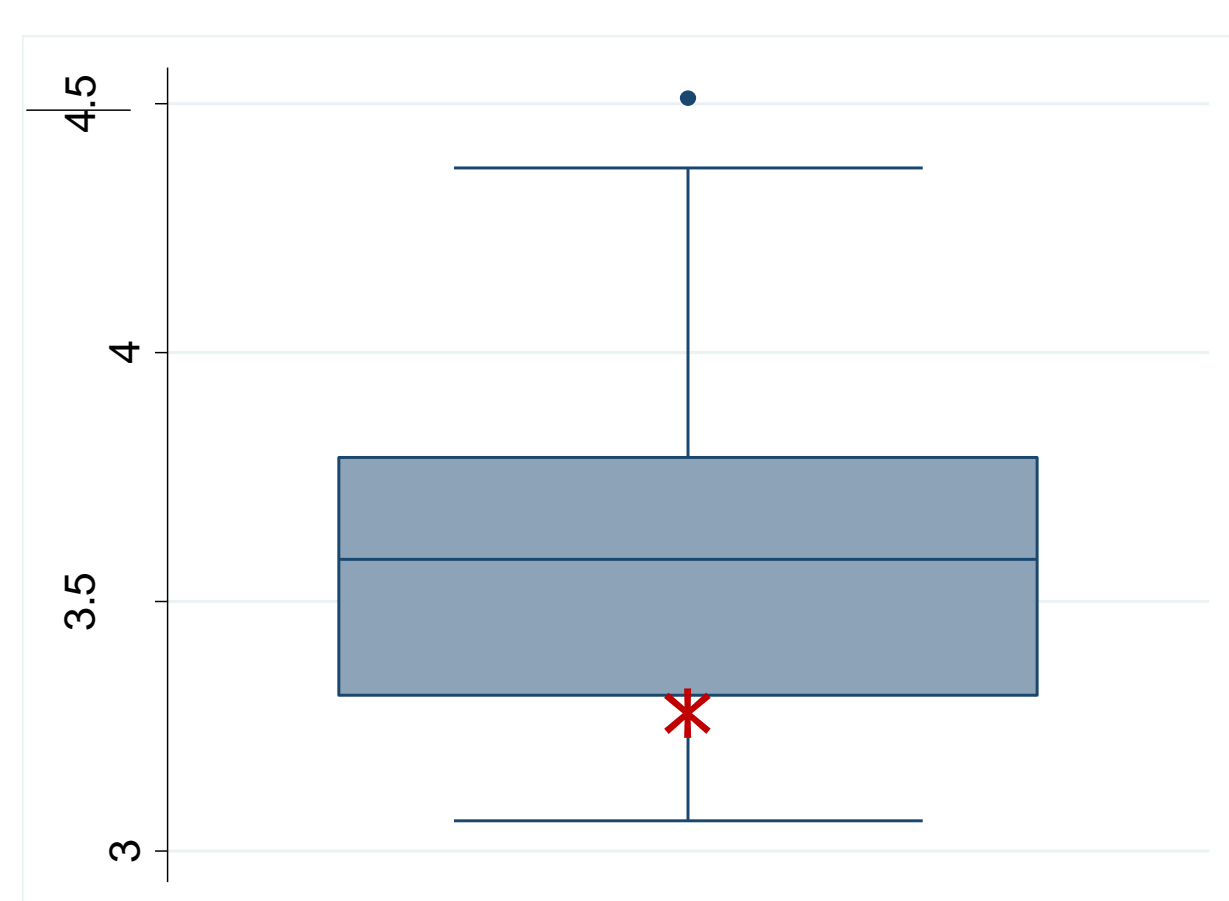
RESULTS

Phantom vs. clinical dose parameters

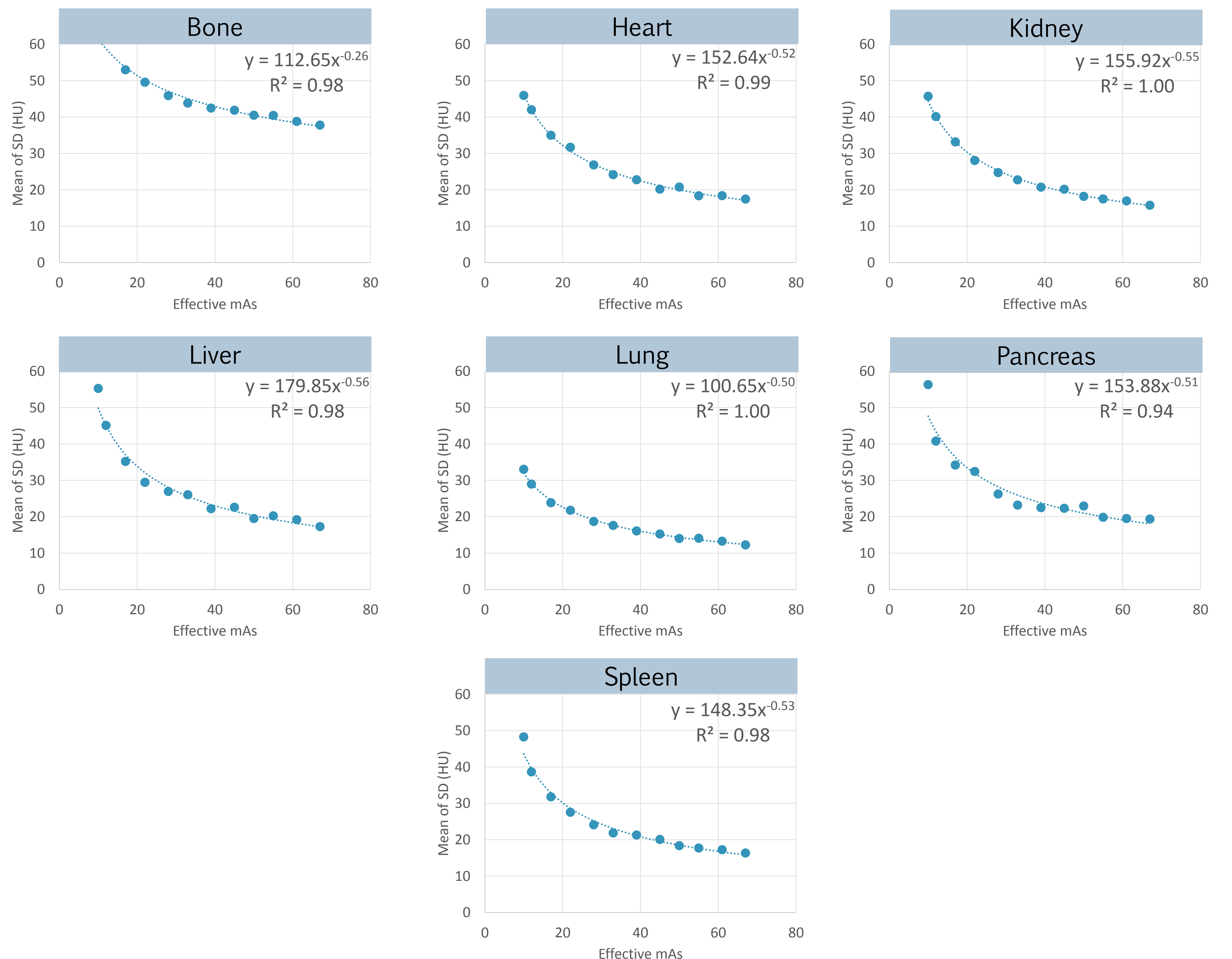
Effective mAs	Patients	49.5±5.7 mAs
	CIRS	45 mAs
	T-test	p<0.05



CTDIvol	Patients	3.62±0.4 mGy
	CIRS	3.28 mGy
	T-test	p<0.05



Noise level as a function of effective mAs in the phantom



CONCLUSION

- There is no concordance between the anthropomorphic phantom and the clinical studies dose parameters.
- A potential function to model the relation between eff. mAs and noise has been determined with an excellent adjust.