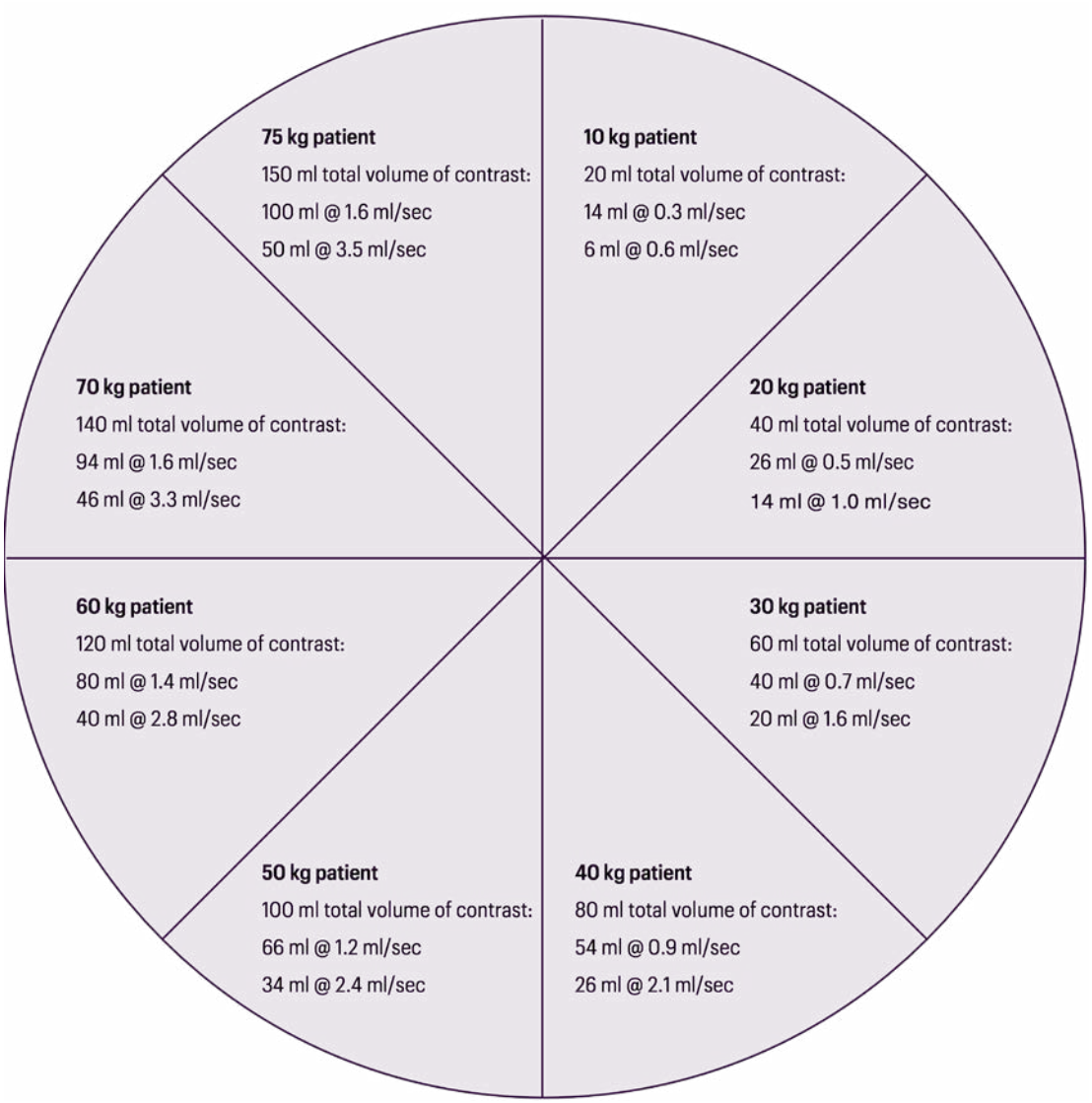
A2 Camp Bastion contrast calculator and CT dose optimisation

Scan protocol: 2/3 contrast volume injected at slow rate x, and 1/3 volume injected at approximately 2x. Contrast rates are calculated for injection phase to last 70 secs. Scan initiated at 70 seconds.



A2

Contrast calculator

CT dose optimisation

1. Use scan parameters – mA, kVp and pitch according to a patient's weight or age.[a] For example:

   10 kg patient. 20 ml total volume of contrast. 6 ml at 0.5 ml/sec then 14 ml at 1 ml/sec. Scan initiated at 70 secs.

2. There should be an acceptable level of noise for 'trauma scanning'.
3. Single-phase acquisition with a dual-contrast model.
4. Use iterative reconstruction, tube current modulation or organ-based modulation where available.[b]
5. Use protocols to reduce dose to particularly radiosensitive areas (for example, lens) where possible.

References

a. Brady Z, Ramanauskas F, Cain TM, Johnston PN. Assessment of paediatric CT dose indicators for the purpose of optimisation. *Br J Radiol* 2012; **85**(1019): 1488–1498.

b. Brady SL, Moore BM, Yee BS, Kaufman RA. Pediatric CT: implementation of ASIR for substantial radiation dose reduction while maintaining pre-ASIR image noise. *Radiology* 2014; **270**(1): 223–231.