

Pediatric Fluoroscopy Radiation Safety

1. What campaign has been established to increase awareness of the doses and risks from medical irradiation of children?
 - a. Image Wisely Campaign
 - b. Image Gently Campaign
 - c. Image Lower Campaign
 - d. Image Smart Campaign
2. What denotes the capture of discrete images from an imaging chain and/or digital system?
 - a. Fluorography
 - b. Fluoroscopy
 - c. Radiography
 - d. Archiving
3. Which of the following is a justification for a fluoroscopy procedure?
 - a. Family asked about previous procedures
 - b. Referral guidelines need to be used where appropriate
 - c. Alternative approaches such as ultrasound and MRI are used where appropriate
 - d. All the above
4. Which is not essential to optimize fluoroscopy?
 - a. Positioning
 - b. Collimation
 - c. Selection of exposure factors
 - d. Type of exam
5. What type of added filtration can be used to decrease the radiation dose?
 - a. Copper
 - b. Lead
 - c. Tungsten
 - d. Glass

For questions 6 through 8 list the air kerma range for the different operational modes.

6. 12 – 16 nGy/image
 - a. Low Fluoroscopy
 - b. Medium fluoroscopy
 - c. High fluoroscopy
 - d. Digital fluoroscopy
7. 6.0–8.5 nGy/image
 - a. Low fluoroscopy
 - b. Medium fluoroscopy
 - c. High fluoroscopy
 - d. Cardiac digital

8. 450 – 900
 - a. Low fluoroscopy
 - b. Medium fluoroscopy
 - c. High fluoroscopy
 - d. Digital angiography
9. At the time the text was written most fluoroscopy units have a range of _____ to 15-30 pulses/s.
 - a. 3 - 7.5
 - b. 3 – 8.0
 - c. 4 – 9.0
 - d. 5 – 10
10. True or false. Fluoroscopy systems generally emit audible periodic time alerts.
 - a. True
 - b. False
11. What is helpful in achieving knowledge of the dose used and is required by law in many countries?
 - a. Timer
 - b. Log sheet
 - c. KAP meter
 - d. Dose meter
12. The risk of _____ to patients and staff is much greater with interventional procedures.
 - a. Complications
 - b. High doses
 - c. Injury
 - d. A & C
13. According to an IAEA study, what percentage of interventional rooms had an annual workload of more than 2000 patients?
 - a. 30%
 - b. 40%
 - c. 45%
 - d. 50%
14. According to the IAEA study, the number of pediatric patients compared to adults shows that in 2 countries the pediatric workload is the range of _____ of adult procedures.
 - a. 10 – 20%
 - b. 30 – 35%
 - c. 40 – 50%
 - d. 55 – 60%
15. It is well recognized that _____ improves performance with interventional procedures conducted on adults.
 - a. Operator training
 - b. New equipment
 - c. Number of staff
 - d. Room design

16. True or false. Image acquisition using fluoroscopy or during digital subtraction angiography accounts for the largest radiation doses during many interventional procedures.
- True
 - False
17. Pediatric patient sizes vary from as small as _____ to in excess of 100 kg.
- 400 g
 - 450 g
 - 500 g
 - 550 g
18. What campaign recommends auditing radiation doses for all operators?
- As low as reasonably possible
 - Step lightly
 - As low as reasonably achievable
 - Dose reduction campaign

Questions 19 through 21, what is the effective dose for the pediatric cardiac procedure listed?

19. Balloon dilation
- 3.9 mSv
 - 4.4 mSv
 - 4.6 mSv
 - 12 mSv
20. Coil embolization
- 3.9 mSv
 - 4.4 mSv
 - 4.6 mSv
 - 12 mSv
21. Atrial septostomy
- 3.6 mSv
 - 3.9 mSv
 - 4.4 mSv
 - 4.6 mSv