

The ARRT dose limits cheat sheet

Pure memorization — no formula rebuilds these on exam day. Learn the patterns at the bottom and the numbers come with them.

Occupational — the radiographer

The numbers for you, wearing the badge.

50 mSv (5 rem)

Effective dose per year

10 mSv × age (age in years)

Cumulative lifetime limit

500 mSv (equivalent dose)

Thyroid, skin, hands and feet per year

Public and students

One number, two groups — that overlap is a favorite distractor.

1 mSv

Member of the public, per year

1 mSv

Student under 18, per year

Pregnancy — declared

Two numbers, one pregnancy: the monthly limit and the total.

0.5 mSv

Embryo/fetus, per month

5 mSv

Embryo/fetus, entire pregnancy

Units: 1 Gy = 100 rad · 1 Sv = 100 rem · 1 rad = 10 mGy · 1 rem = 10 mSv

Equipment and regulatory numbers

Not limits on a person — but the same memorize-cold species of number, tested from the same chapters.

Total beam filtration (above 70 kVp)	≥ 2.5 mm Al
Protective apparel	0.25 mm Pb minimum · 0.5 mm typical for fluoro
Fluoroscopy timer alarm	5 minutes cumulative
Minimum fluoro source-to-skin distance	38 cm stationary · 30 cm mobile
Fluoroscopy tabletop exposure limit	100 mGy/min · 200 mGy/min with high-level control
Standard SIDs	40 in (100 cm) routine · 72 in (180 cm) chest · 60–72 in lateral C-spine
Control booth	a secondary barrier — the useful beam never points at it

How to make them stick

- The ladder is 1 → 5 → 50: public 1 mSv, fetus 5 mSv for the pregnancy, occupational 50 mSv for the year.
- The extremity/organ limit is 10× the whole-body limit: 500 vs 50 mSv.
- The fetal monthly limit is a tenth of the fetal total: 0.5 vs 5 mSv.
- A student under 18 is limited like the public (1 mSv), not like staff — being enrolled does not buy occupational limits.

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