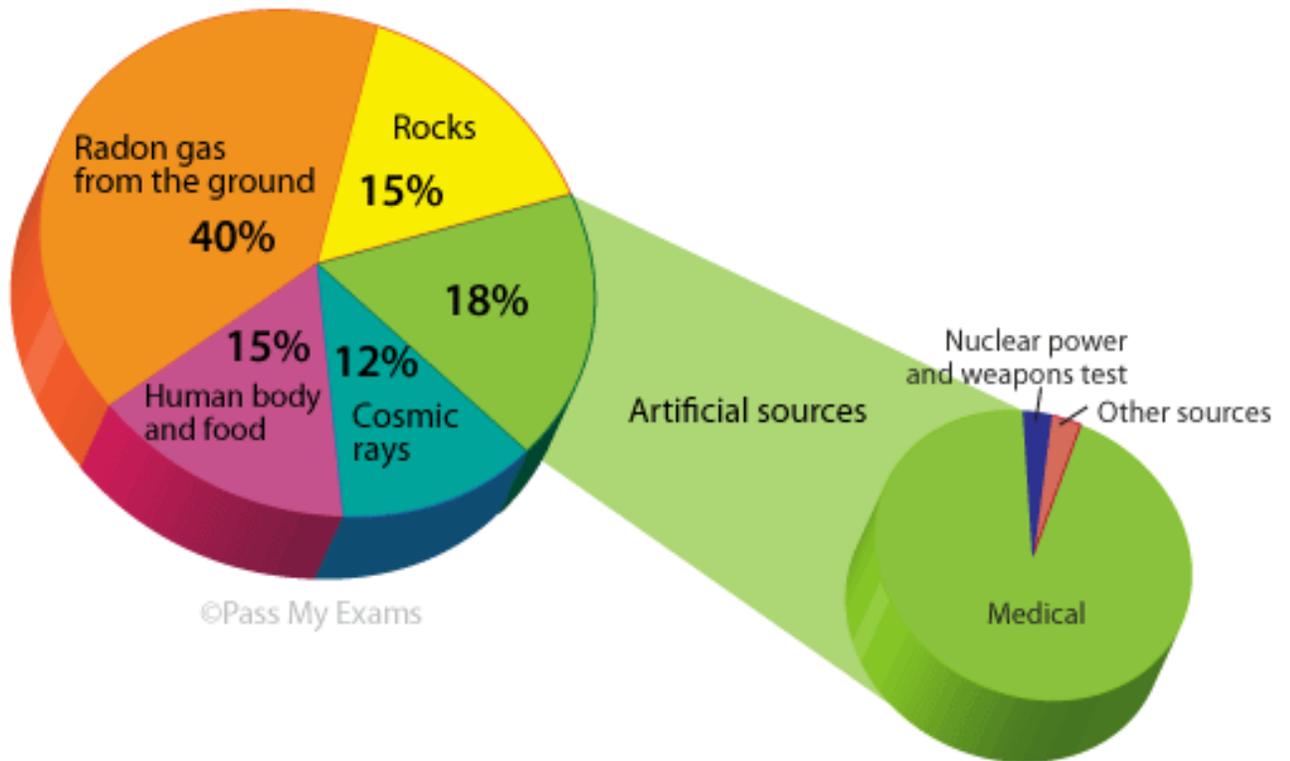


Radiation is everywhere!



Everybody is exposed to radiation through natural occurring and artificial background radiation. Put these cards in order of their radiation severity



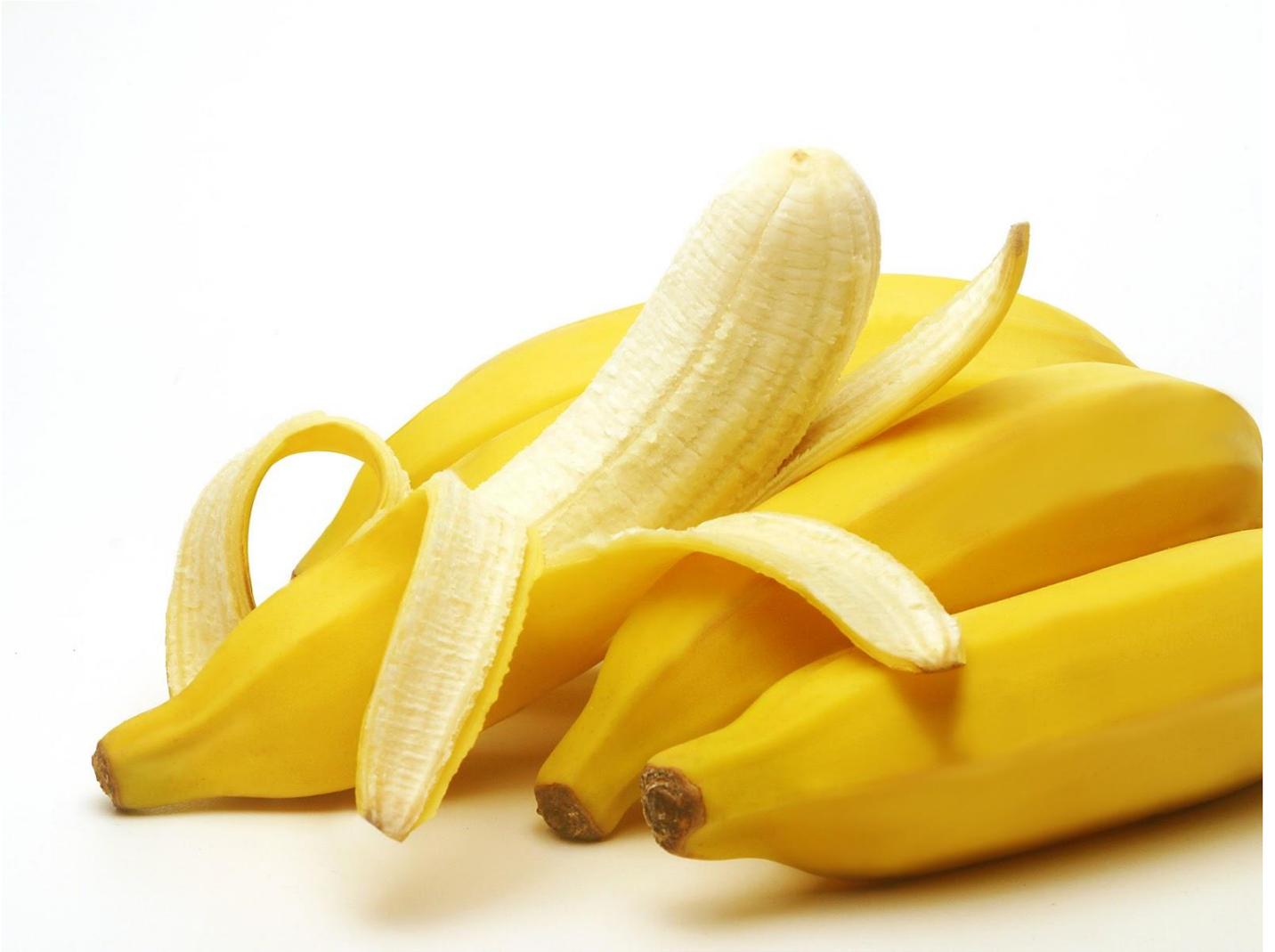
Radiation Doses



**Radiation doses are measured in
milisievert (mSv)
as a unit of radiation absorption**

Exposure	Dose
A banana	0.0001 mSv
Replace salt (NaCl) with Lo-Salt (KCl) for one week (mean UK consumption)	0.004.5 mSv
Dental x-ray	0.01 mSv
100g bag of Brazil nuts	0.01 mSv
Chest X-ray	0.02 mSv
Transatlantic flight (8 hours)	0.08 mSv
Two week holiday in Cornwall (radon dose)	0.25 mSv
Head CT	1.4 mSv
Mean UK annual radiation dose	2.7 mSv
Whole body CT	20 mSv
Annual exposure limit for radiation workers	20 mSv
Dose to emergency workers at the Fukushima nuclear accident (2011)	100 mSv – 700 mSv
Average dose to survivors of WWII atomic bombs (within 2.5km of blast)	200 mSv
Round trip to Mars	600 mSv
Acute radiation effects	1000 mSv
Fatal radiation dose within weeks	10000 mSv

One banana



Replacing normal salt with Lo-Salt (KCl), over one week (average salt consumption)



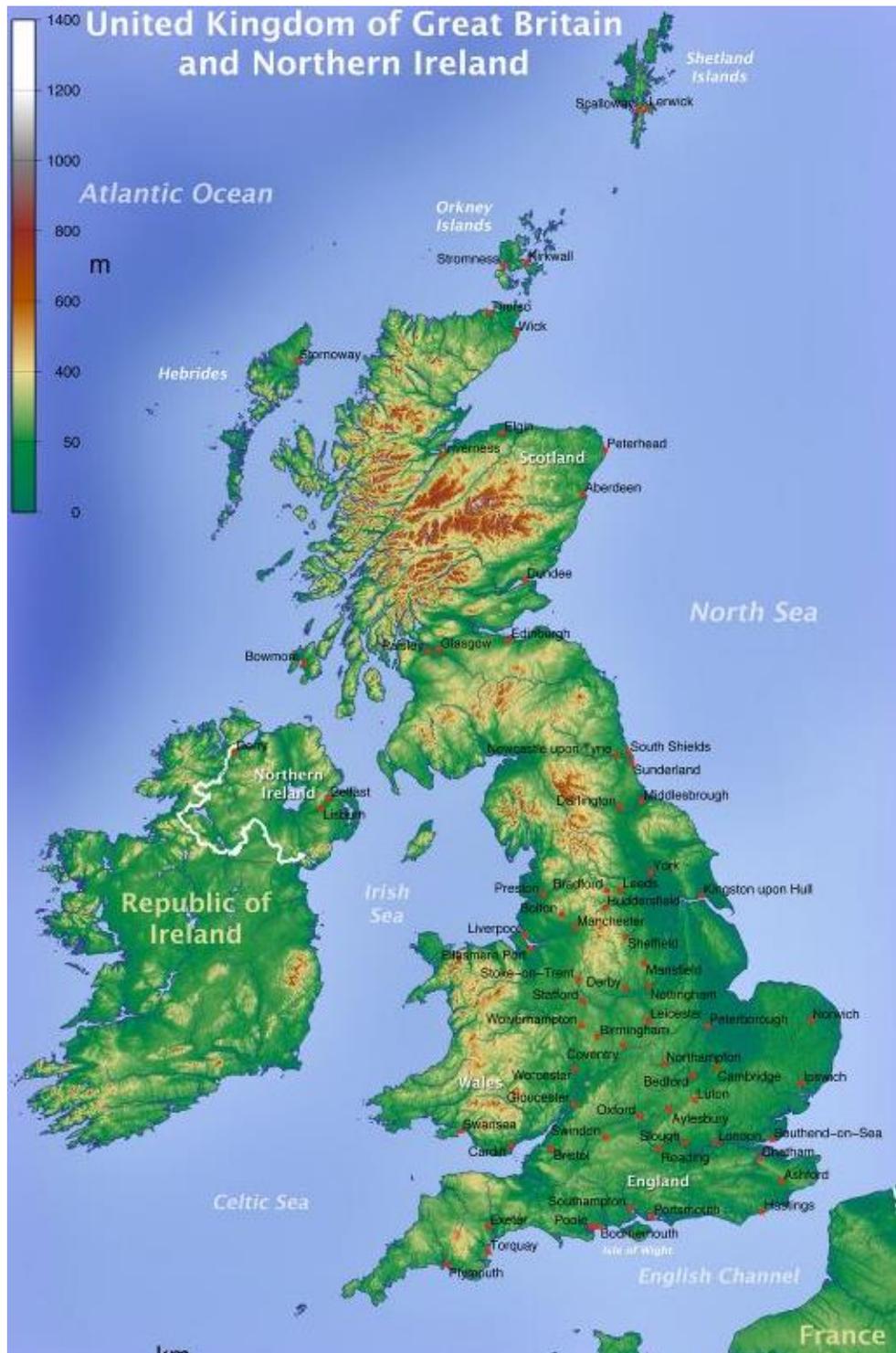
A dental x-ray



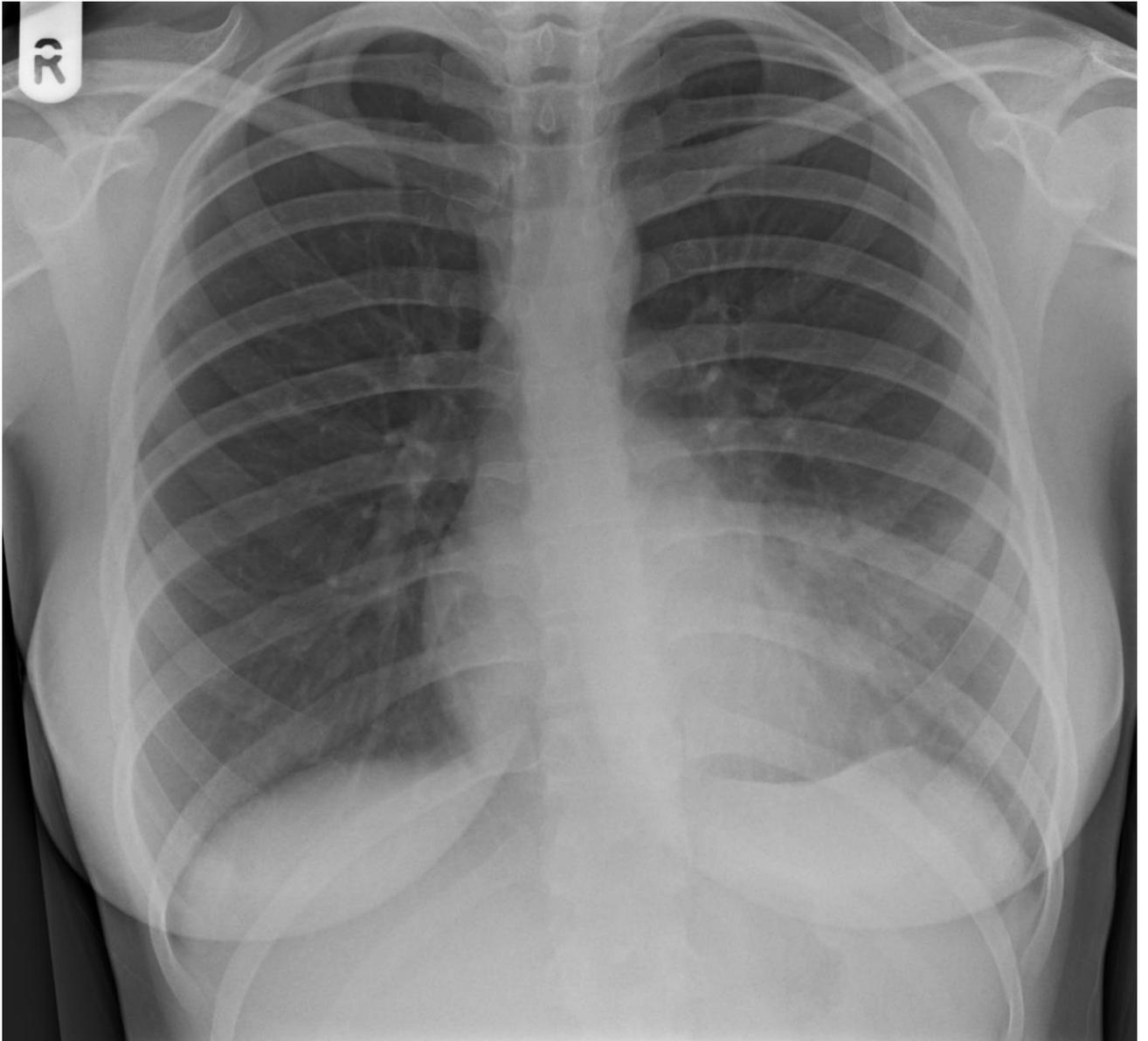
135g bag of brazil nuts



Average UK annual background dose



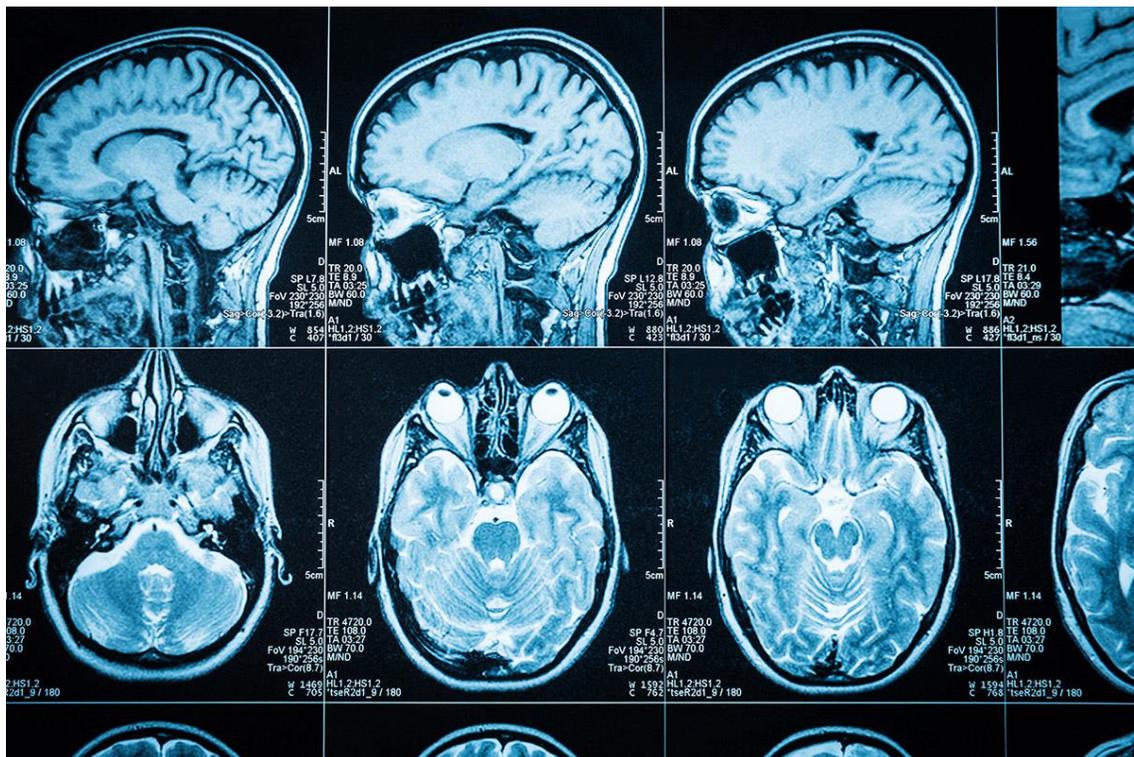
A chest x-ray



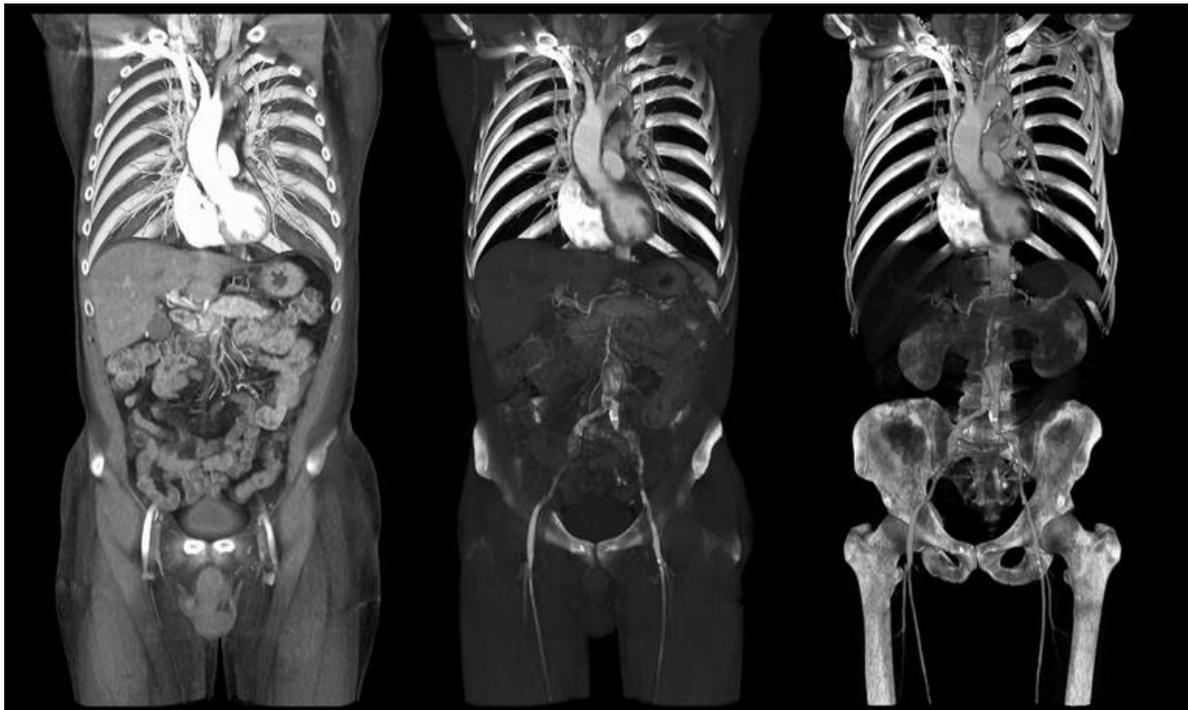
**One transatlantic (8
hour) flight – dose from
cosmic radiation**



CT scan of the head



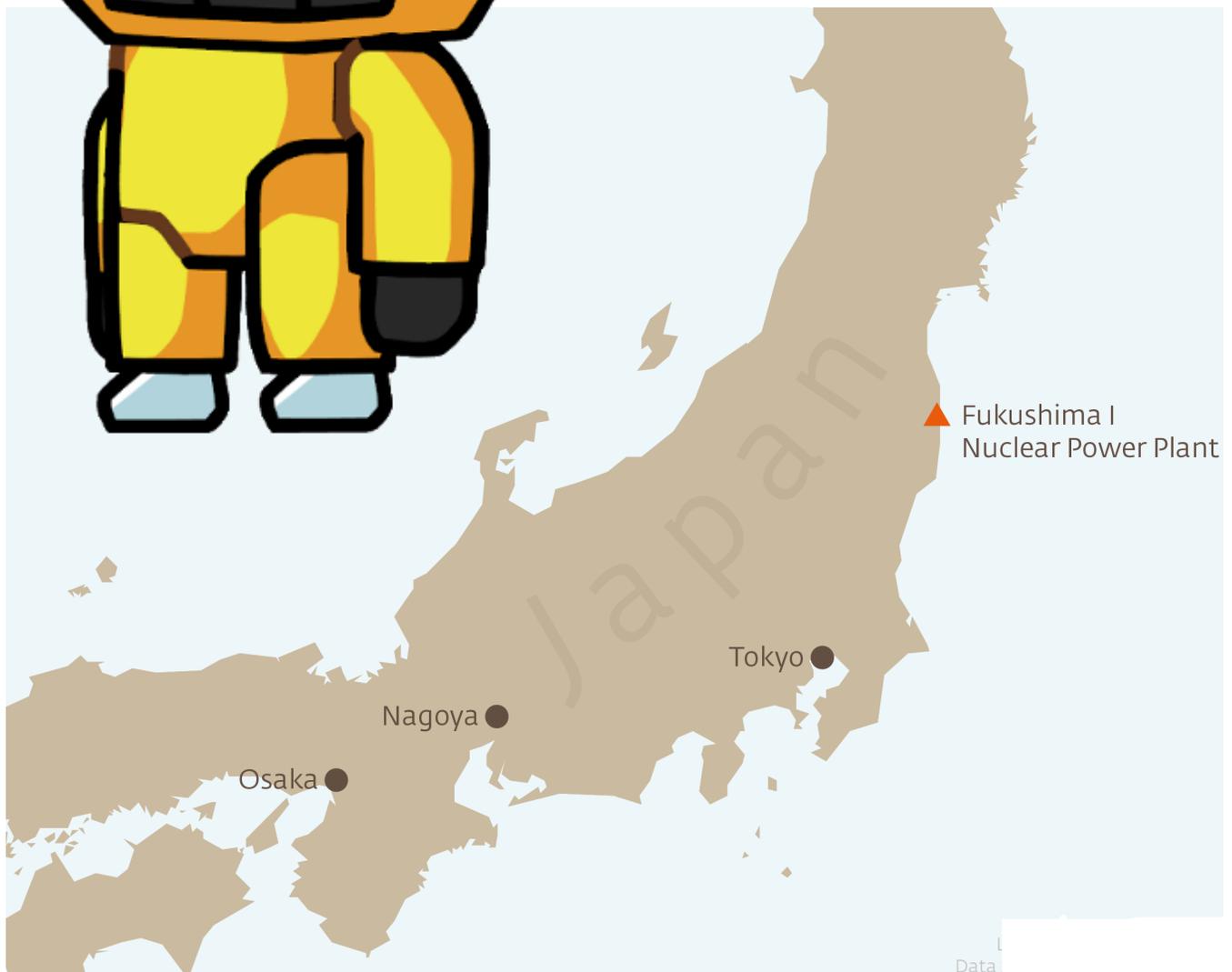
A whole-body CT scan



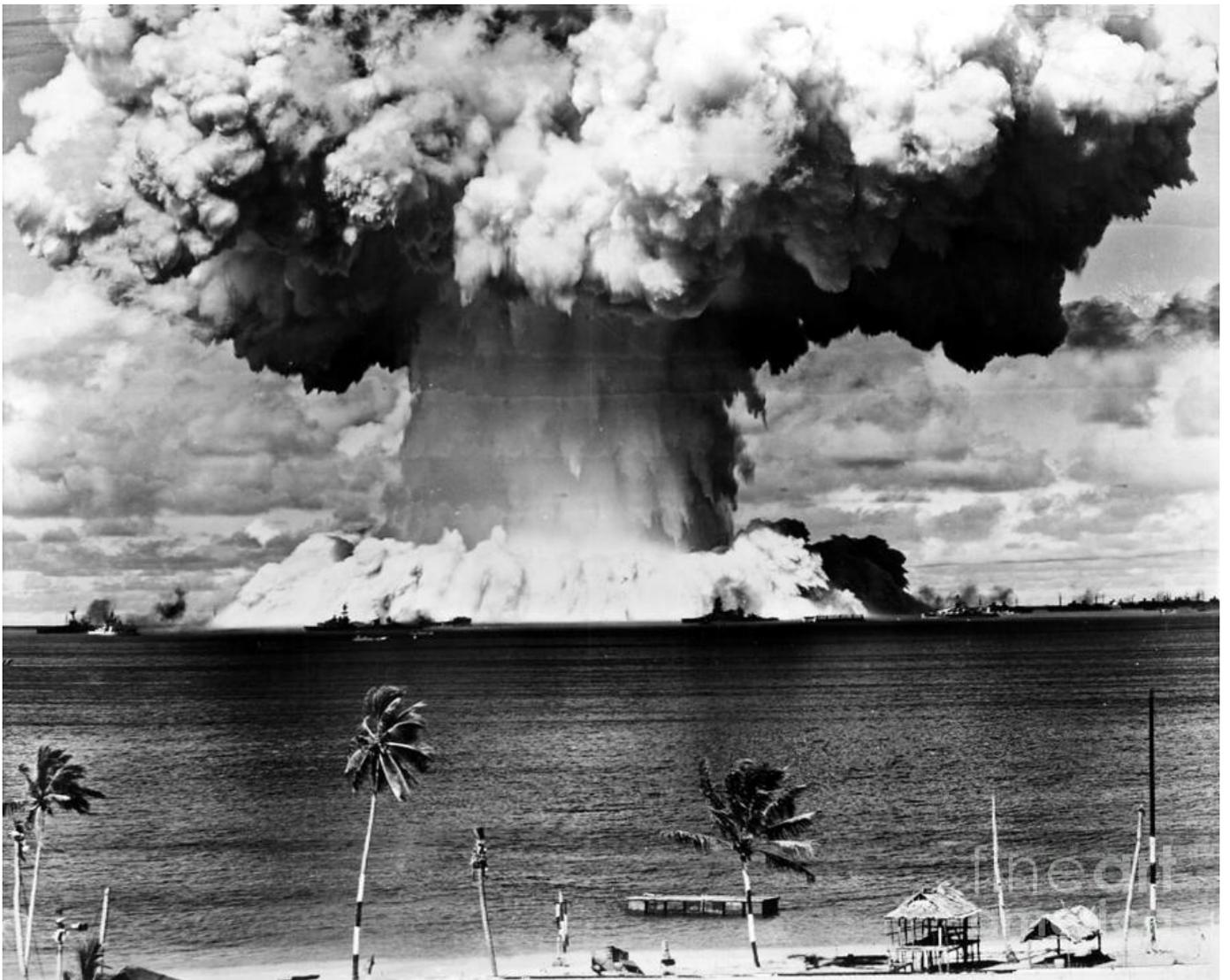
Annual exposure limit for radiation workers



Dose to emergency workers at the Fukushima nuclear accident (2011)



Mean dose to survivors of WWII atomic bombs (within 2.5 km of blast)



A round-trip to Mars



Acute radiation effects

Early symptoms, exposure levels and time to symptom onset

	1–2 Sv	2–6 Sv	6–8 Sv	8–10 Sv
Nausea, vomiting	6 hrs.	2 hrs.	1 hr.	10 min.
Diarrhea	—	8 hrs.	3 hrs.	1 hr.
Headache	—	24 hrs.	4 hrs.	2 hrs.
Fever	—	3 hrs.	1 hr.	1 hr.

Later symptoms

Dizziness, disorientation	—	—	1 wk.	Immediate
Weakness, fatigue	4 wks.	1–4 wks.	1 wk.	Immediate
Hair loss, bloody vomit and stools, infections, poor wound healing, low blood pressure	—	1–4 wks.	1 wk.	Immediate

**Fatal radiation dose
(within 30 days,
50% probability)**

