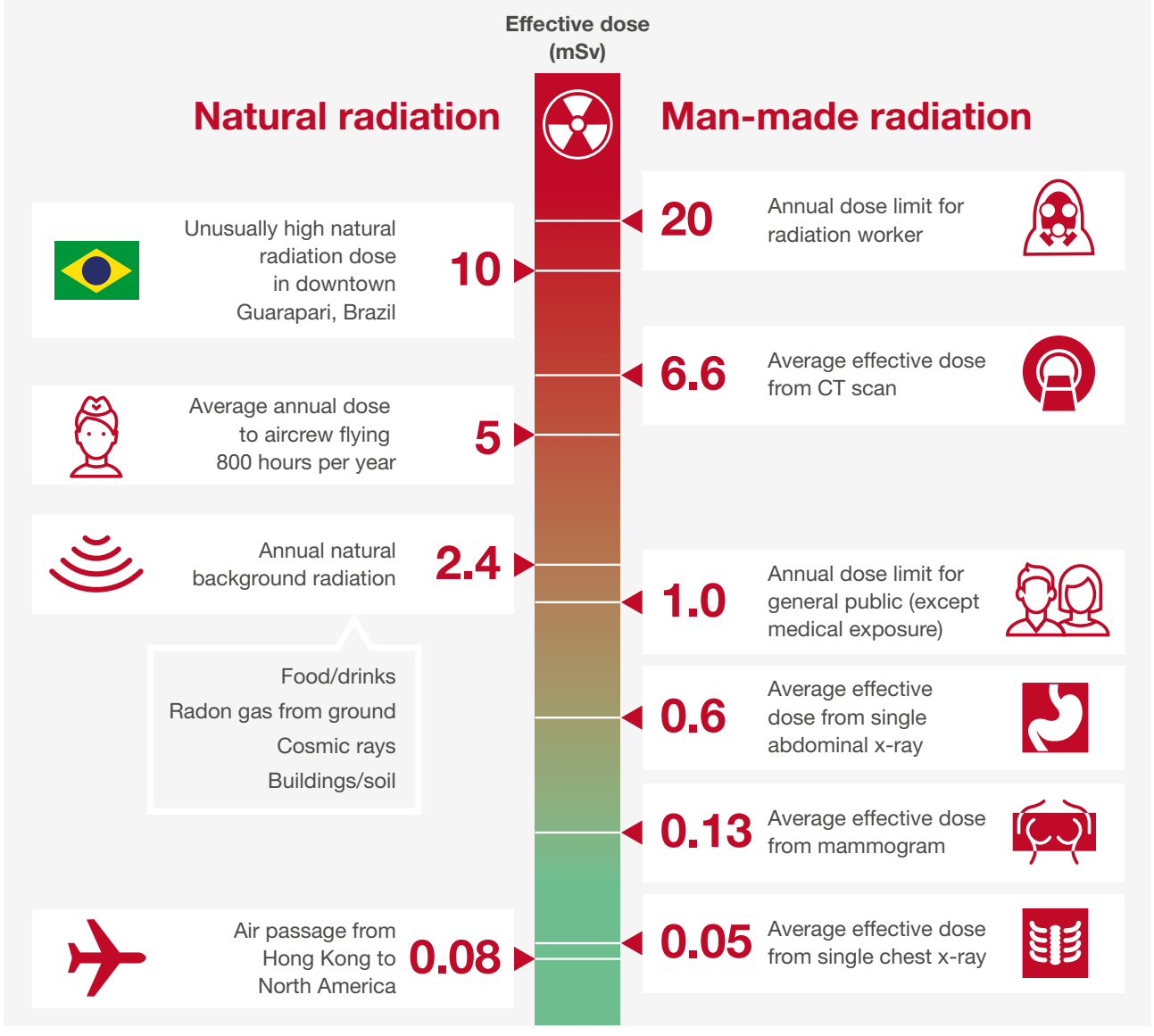
AndersonMoores
your veterinary specialists

Feline Hyperthyroid Clinic

Pre-treatment information for owners

Radiation in everyday life

Exposure to environmental radiation is part of our everyday lives. The average amount of environmental radiation exposure in the UK is 2-3 millisieverts (mSv) a year, depending on the geographical area you live in. We are also exposed to medical radiation when we undergo certain medical procedures such as x-rays or a CT scan. The diagram below shows the different sources and amounts of radiation we might be exposed to in daily life.



How much radiation will I be exposed to after my cat comes home?

UK legislation sets a public dose limit (maximum legal amount) of 1mSv/year for radiation from all man-made sources, but there is a much lower dose constraint (your maximum expected dose) of 0.3mSv/year from any single source of radiation. This constraint applies to the radiation you will receive from your cat when he/she comes home following radioactive iodine treatment. By following a few simple radiation safety rules for a couple of weeks at home after your cat is discharged you will ensure that you do not exceed the UK dose constraint level of 0.3mSv. These rules are available to view on our website **www.andersonmoores.com/feline-hyperthyroid-clinic/feline-hyperthyroidism-faq-for-owners/** and will be discussed with you at the pre-assessment appointment. It is very important that you follow these rules and you will be asked to sign a form stating you are willing and able to adhere to these instructions when your cat is admitted for treatment.

Before being discharged from the Feline Hyperthyroid Clinic all cats are checked to ensure they are within safe radiation limits. By this time, most of the radiation will have been excreted in their urine and provided you adhere to the radiation safety rules for the first 14–17 days, the small amount that you will be exposed to after they come home will typically be no more than the equivalent of a return flight between the UK and Australia.

On the day of discharge a nurse will demonstrate the level of radioactivity present in your cat and check that you understand and are able to comply with the radiation safety rules. A discharge letter will be provided, outlining your cat's treatment and any further follow up appointments due (usually one, three and six months). A nurse will call you two or three days following discharge for a progress report/update on how you and your cat are getting on.

Radiation used to treat hyperthyroidism

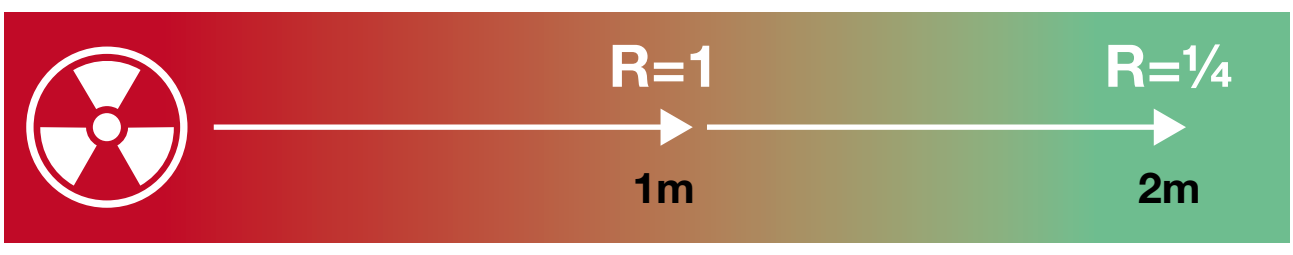
Radioactive Iodine (I131) is the radionuclide used to treat hyperthyroidism. It produces two types of radiation – Beta particles and Gamma rays:

The injectable radio-active iodine is rapidly concentrated in the thyroid tissue, where the Beta radiation particles kill abnormal thyroid cells. Beta particles are very damaging to body cells but they are only capable of travelling very short distances (<1mm), so they can only cause harm if injected or ingested into the body. Wearing gloves to clean the litter tray, washing your hands after any contact with your cat and keeping your cat away from areas where food is stored/prepared reduces the likelihood of accidentally ingesting the small amount of radiation excreted in your cat's urine or saliva.

Gamma rays travel much further and can damage deeper cells/tissues within the body (including developing babies within the womb, which is why it is important that pregnant owners have no close contact whatsoever with the cat when they first come home). Exposure to this type of radiation can be significantly reduced by limiting the time you spend very close to your cat after he/she first comes home.

The 'Inverse Square Law' describes how the intensity of radiation decreases with the distance from the radiation source (your cat). By doubling your distance from your cat, you can reduce your amount of radiation exposure to one quarter. This demonstrates the importance of maintaining a safe distance from your cat (for example allowing them to sleep on the opposite end of the sofa or another armchair rather than on your lap) for the first 14–17 days after they come home.

The Inverse Square Law



Radioactive timeline of events

Diagnosis
Your vet diagnoses your cat with hyperthyroidism and requests a referral to AMVS. Client information available at: **www.andersonmoores.com/feline-hyperthyroid-clinic/feline-hyperthyroidism-faq-for-owners/**

1

Pre-assessment appointment
Literature provided for owner to read at home.
Consultation at AMVS to ascertain if RAI is most suitable treatment for your cat and discuss treatment options/costs/protocols.
In some circumstances, this can be a phone consultation if you are not local to us.

2

Monday – week 1
Admit day
Consultation to confirm treatment
Client signs radiation safety disclaimer
Blood tests/admission procedures performed

3

Tuesday – week 1
Blood results back
Iodine doses calculated
Iodine order sent to radio-pharmacy

4

Mostly eating and snoozing!
Updates from nurses
Tuesday, Wednesday, Friday (week 1), then Monday, Wednesday and Friday (week 2)

6

Wednesday – week 1
Injection day

5

Friday – week 2
Blood sampling
Results reported to you early next week

7

Discharge
Option 1: Friday (9 days after injection)
Option 2: Tuesday (15 days after injection)
Follow up rechecks at 30, 60 and 180 days

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