The real story behind medical imaging radiation dose

As accuracy has improved, the use of imaging has increased. A large part of this is due to CT scans. Today in the US 1 in 5 people receive a CT scan each year, 1 in 20 of these scans are unnecessary.

Radiation dose isn’t just an issue for patients.

During certain procedures healthcare workers are exposed to radiation, increasing their risk of cataracts or cancer.

Nearly 68 million CT scans are performed annually in the US

Knowing how you might be exposed to radiation isn’t enough.

You also need to know

- 0.1 μSv: Eating a banana
- 0.4 μSv: Natural radiation in the human body
how much.

Even though the radiation dose is larger, CT scans can be far better diagnostic tools than conventional X-rays. In some cases, CT scans have negated the need for exploratory surgery.

The challenge is to balance the risk versus the benefit. This is called “justification”.

10 μSv  Background dose received on an average day
40 μSv  Flight from New York to LA
20 μSv  Chest X-ray
700 μSv  Mammogram
8,000 μSv  Average CT scan
14,000 μSv  F-18 PET scan
15,800 μSv  Fluoroscopic angiogram
50,000 μSv  Maximum yearly dose permitted for US radiation workers

Today, sophisticated imaging software can improve image quality at a low dose. By “optimizing” the scan the patient gets

only the dose needed
In addition to scan optimization we now have tools that can track dose levels for healthcare professionals and patients.

- **Patient**: 95 mGy
- **Physician**: 45 uGy
- **OR Staff**: 45 uGy

Education about the risks and benefits of medical imaging combined with new tools and protocols from the healthcare industry can help track and manage exposure for both healthcare workers and patients.

To learn more about managing dose, visit [www.philips.com](http://www.philips.com)