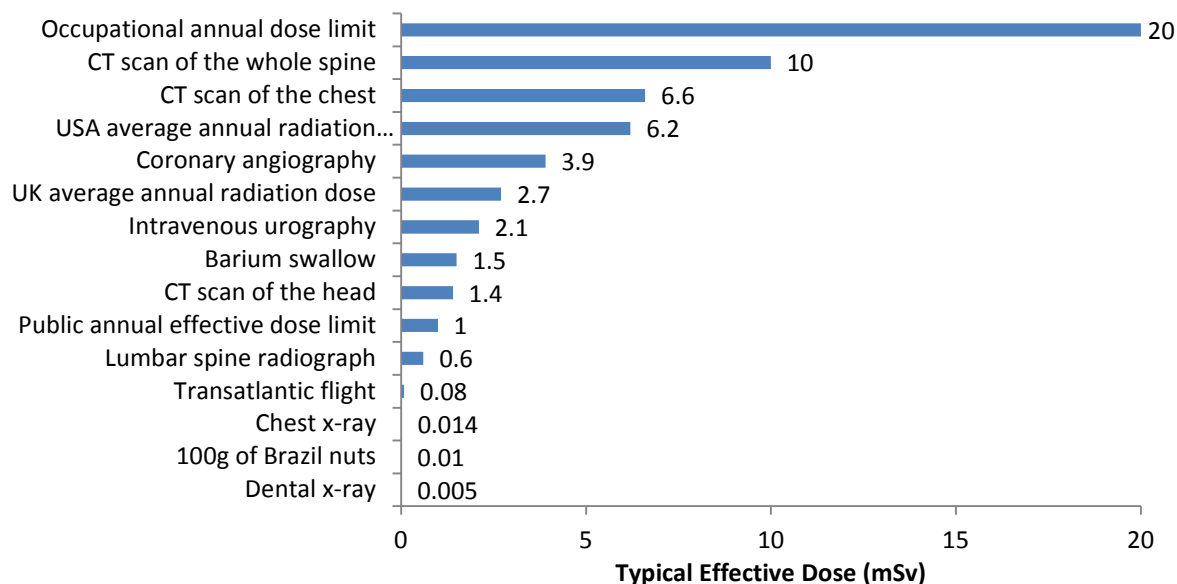
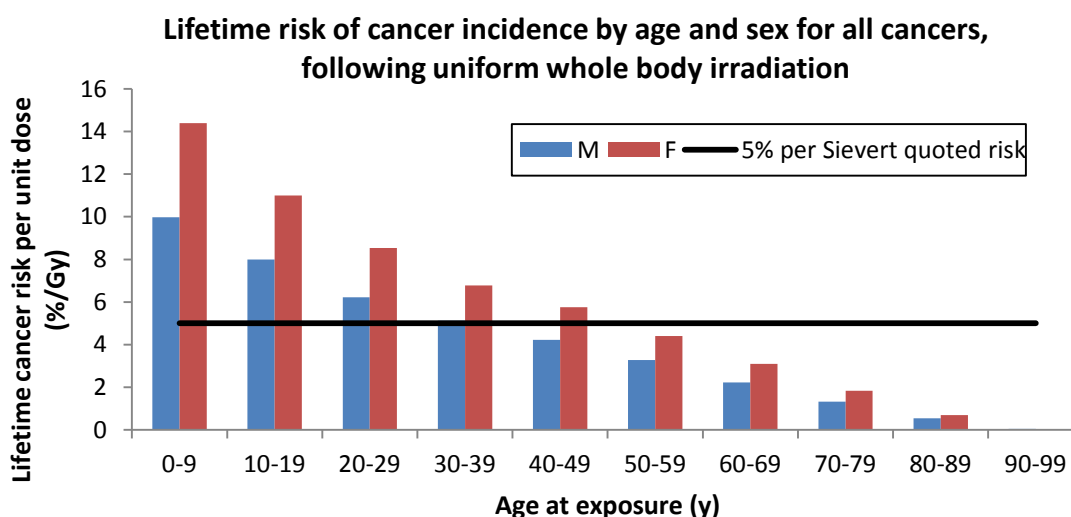


Radiation Dose and Risk

What's the dose? The radiation dose usually quoted for radiographic examinations is the **effective dose** (unit the sievert, Sv). This is based on the energy deposited in a mass of tissue, but includes weighting factors for radiation type and for tissues exposed, each of which has its own radiosensitivity. The effective dose does not consider the characteristics of a specific individual, but it's a useful value for comparing or combining the impact of different exposures.



What's the risk? We often say that there is a 5% increased risk of cancer per Sievert. However, this is only an approximate assessment: the risk drops off significantly with age and also varies with sex.



So what? In justifying an X-ray examination the practitioner is required to consider the dose and risk to the individual patient. It is therefore important to have an idea of the range of doses involved and also the variation in risk with age and sex, as highlighted here.

[1] HPA-CRCE-028: "Radiation risks from medical x-ray examinations as a function of the age and sex of the patient"

[2] Ionising radiation: dose comparisons <https://www.gov.uk/government/publications/ionising-radiation-dose-comparisons/ionising-radiation-dose-comparisons>