



The Limitations of Online Dose Calculators

This website and other online resources offer patients information on the typical amount of radiation used in various medical and nuclear medicine imaging studies (see the Effective radiation dose chart). Other websites offer online tools that allow users to "calculate" a total radiation dose for up to multiple imaging studies.

These dose charts and calculators provide only typical estimates of radiation exposure for an imaging study, not the actual dosage received by individual patients. Radiologists make every effort to reduce radiation exposure risk by using the lowest amount of radiation possible to answer the clinical question. As a result, the actual amount of radiation a specific patient receives during an imaging study cannot be determined using typical radiation dose charts or obtained online dose calculators.

Accurate, patient-specific dose numbers are not easily accessible and are available only from the medical institution performing the study. A number of variables must be considered to determine the actual, patient-specific effective dose. These include the size of the patient, the study techniques, the specific machine used, its manufacturer, and other considerations.

Typical dose information is helpful for understanding how the radiation used in medical imaging studies compares to the background radiation we are exposed to from natural sources as part of daily living. Most imaging procedures have a relatively low risk and the medical profession is working to ensure that patients are given appropriate imaging tests that use as little radiation as possible.

If you're concerned about radiation risk, talk to your doctor about the benefits and risks of a given procedure. You may want to consider tracking your medical imaging history and sharing it with your doctor and radiologist. To manage your medical imaging history, Image Wisely suggests taking the following steps:

- Keep track of your medical imaging history by recording the date, name of study and institution where the exam was performed (see Patient Medical Imaging Record card and My Child's Medical Imaging Record for sample records).
- Ask your doctor about the benefits and risks of imaging procedures, such as:
 - How will the results of the exam be used to evaluate my condition or guide my treatment (or that of my child)?
 - Are there alternative exams that do not use ionizing radiation that are equally useful?
- Ask the imaging facility:
 - If it uses techniques to reduce radiation dose, especially to sensitive populations such as

children.

- About any additional steps that may be necessary to perform the imaging study (e.g., administration of oral or intravenous contrast agent to improve visualization, sedation, or advanced preparation).

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