



Statement Regarding Radiation Dose in CT Exams

October, 2009

Recent articles in professional journals and the press have raised important concerns about the use of CT and associated radiation dose. In response, a number of professional societies formed the Image Gently Alliance to reduce or “child size” the radiation dose when performing CT on children. Noting that one size does not fit all, this concept may be applied to all CT examinations on all patients.

At Imaging Healthcare Specialists, we have taken the Image Gently pledge. Early in their training, our radiologists are taught the concept of ALARA (as low as reasonably achievable) to limit the use of ionizing radiation exposure when imaging patients. There exists a tradeoff, however, between lowering the radiation dose and achieving appropriate image quality which must be carefully balanced. As the radiation dose is reduced images may appear noisier but not necessarily less diagnostic. It is useful to remember that the average background radiation exposure that people receive in their everyday environment is 3 mSv (milliseiverts) per year. A CT scan of the abdomen is approximately 6-8 mSv which translates to 2-3 years of background radiation. This is a useful number for patients to be aware of and provides them with a realistic perspective of radiation dose. While growth in the use of CT in recent years has been substantial, this growth is largely appropriate with many lives saved and invasive procedures avoided. While we should not over react to this potential risk, we should take measures to reduce radiation exposure and educate patients and physicians on the risks, benefits and alternatives for various imaging examinations.

Please rest assured that your CT examination at Imaging Healthcare Specialists will be customized to maximize quality and minimize radiation dose. With CT, several factors contribute to radiation dose including tube current (mAs) and peak kilovoltage (kVp). There is a linear relationship between tube current and dose such that a 50% reduction in current results in a 50% reduction in dose. A more dramatic dose reduction can be achieved by lowering the peak kilovoltage as this is related to radiation dose in a non-linear fashion. We use a combination of techniques based on body mass index to tailor each CT examination to reduce the radiation dose to the lowest possible level. When possible, we limit the z-axis or length of coverage and the use of multiphase exams. And finally, we place bismuth breast shields on our female patients to reduce radiation exposure to breast tissue and diminish the risk of induced breast cancer.

At Imaging Healthcare Specialists, we hope to provide you a convenient, high quality experience from start to finish. Please do not hesitate to call our radiologists with any questions or concerns.

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