

DI Notice

Notice Statement

1. **Discontinuation of Shielding:** Effective June, 2026, the routine use of gonadal and fetal shielding for patients undergoing X-ray imaging procedures is discontinued.
2. **Education and Training:** All radiology staff will receive updated training on this policy, including the rationale for the change and the latest evidence supporting the discontinuation of gonadal and fetal shielding.
3. **Patient Communication:** Patients and/or their guardians will be informed of this policy change and the reasons behind it. Information materials will be made available to address common concerns and questions.

Purpose

The purpose of this Notice is to discontinue the routine use of gonadal and fetal shielding during X-ray imaging procedures, in alignment with the latest guidelines from Health Canada's Safety Code 351.

This Notice applies to all radiology departments, X-ray technologists, radiologists, and any healthcare professionals involved in the administration of X-ray imaging within MGH.

Evidence

Recent evidence and guidelines from Health Canada's Safety Code 35¹, as well as recommendations from the Canadian Association of Radiologists (CAR), indicate that gonadal and fetal shielding during X-ray imaging does not significantly reduce radiation risk and may interfere with diagnostic quality. Therefore, to optimize patient care and ensure adherence to current best practices, this policy mandates the discontinuation of these shielding practices.

“Routine gonadal shielding should not be used. Recent evidence (including a reduction in the ICRP tissue weighting factor of the gonads relative to other tissues from 0.2 to 0.08 in ICRP 103) has demonstrated that use of gonadal and fetal shields shows negligible benefit to either the patient or their offspring (ICRP 2007, ACOG 2017)^{2, 3}. Furthermore, patient shielding of the gonads may reduce the effectiveness of an exam by obscuring anatomy of interest, reducing image quality, or interfering with automatic exposure control (Fawcett et al., Frantzen et al., Lee et al., ACR 2017)⁴.

FAQ Handout

Discontinuation of the use of gonadal and fetal shielding for patients receiving x-ray imaging – FAQ

This FAQ aims to provide clarity and reassurance regarding the discontinuation of gonadal and fetal shielding during X-ray exams, emphasizing patient safety and the latest evidence-based practices.

More than 50 years of research has shown that levels of radiation used in modern X-ray machines are so low that the risk of harm is very small or even zero. That's why we are no longer using shields, sometimes called lead aprons, during x-ray exams. Here are answers to some of our most frequently asked questions.

I thought shields protected a person from radiation. Why are you not using them anymore?

There are several reasons we are no longer using shields during X-ray exams:

- The shield can hide body parts the doctor needs to see. When this happens, we may have to take another X-ray, which can increase your radiation exposure.
- Modern X-ray machines like the ones used at Michael Garron Hospital have built-in sensors that automatically determine how much radiation is needed to take a good picture. A shield could get in the way of the sensor and cause the machine to deliver more radiation than needed.

We know more about how radiation affects the body than we used to. Research has shown that reproductive organs like the testicles and ovaries are not affected by modern X-ray systems, so shields have no added benefit.

Why were shields used in the first place if they have no benefit to the patient and carry a risk for using more radiation?

Shields were first recommended by the FDA in 1976. At the time, they were thought to impact a person's ability to have children. Now, after more than 50 years of research, we know this is not true. Also, modern X-ray machines use approximately 96% less radiation than the machines used when the recommendation was first made.

Can radiation impact my or my child's ability to one day have children?

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No. Research has shown that the radiation levels used in today's X-ray machines does not cause damage to you or your child's eggs or sperm. Also, the amount of radiation required to cause infertility is more than 100 times the dose from a single X-ray exam.

If I receive X-ray exams regularly, am I at greater risk of harm from radiation?

There is no evidence to suggest that multiple exams over a person's life adds up to increased risk.

Why do I have to wear a shield but my child doesn't?

Our goal is to keep the levels of radiation exposure to the patient, patient family and our staff as low as possible. When we take images of your child, we don't want the shield to get in the way of this. When we take the X-ray, however, a small amount of radiation may bounce off your child and hit you. We ask you to wear a shield to protect you from this needless radiation exposure.

Can I still get a shield?

Yes. If you prefer that we shield you during an X-ray exam, we can so long as it doesn't impact our ability to take images of the body part(s) the doctor needs to see. If the shield affects the image, this can result in higher levels of radiation exposure to you.

Can you provide a shield for my body parts that are not part of the image?

The radiation exposure to you outside of the area we're imaging is extremely small. This means there is no real benefit to shielding the remainder of your body. Additionally, the shield covering your other body parts could slip into the area we're imaging. This could mean we'd have to take another X-ray, which could increase your radiation exposure.

What if I am pregnant? Can you shield my stomach?

We are especially careful when imaging pregnant patients and have protocols that ensure there is very low radiation exposure to the fetus. However, if we place a shield over your stomach and it impacts the image, we may need to repeat the X-ray, which can increase the overall radiation to you or your fetus. Since shielding shows no benefit to the fetus, it is better not to shield your stomach.

What exams *will* be done with shields?

No patient exams will be routinely done with a shield.

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How does the X-ray equipment at Michael Garron Hospital ensure the lowest level of radiation exposure to me?

Our Imaging Department uses only the latest X-ray technology. This technology means the least amount of radiation possible is used to produce high quality X-ray exams for patients of all sizes. We also train our staff on low radiation imaging practices.

References

1. Lavoie C, Canada, Health Canada. *Radiation Protection in radiology – large facilities: safety procedures for the installation, use and control of x-ray equipment in large medical radiological facilities*. Ottawa: Health Canada. [\[link\]](#)
2. Canadian Association of Radiologists (CAR). *Recommendations on the Use of Patient Gonadal and Fetal Shielding*. [\[link\]](#)
3. ICRP (2007). International Commission on Radiological Protection. *The 2007 Recommendations of the International Commission on Radiological Protection*. ICRP Publication 103, Annals of the ICRP 37(2-4).
4. ACOG (2017). American College of Obstetricians and Gynecologists' Committee on Obstetric Practice. *Committee opinion no. 723: Guidelines for diagnostic imaging during pregnancy and lactation*. *Obstet Gynecol*. 2017;130(4):933-934.
5. Fawcett SL and Barter SJ. *The use of gonad shielding in pediatric hip and pelvis radiographs*, *BJR*: 82: 363-370; 2009