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## Some Radiation 'Safe' for Expectant Mother, Foetus



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According to researchers at Thomas Jefferson University, imaging studies necessary to diagnose traumatic injuries sustained by pregnant women are safe when used properly. Their findings are reported in the *Journal of the American Academy of Orthopaedic Surgeons (JAAOS)*.

Nearly 5 to 8 percent of pregnant women sustain traumatic injuries, such as fractures and muscle tears. Proper diagnosis and treatment of these injuries is important because traumatic injuries are the leading cause of non-pregnancy-related maternal death. Radiographs and other imaging studies are often recommended by orthopaedic surgeons for evaluating and managing these injuries. Expectant mothers, however, may be concerned about the impact of radiation exposure on the foetus and may perceive the risk of a diagnostic test as high.

"While care should be taken to protect the foetus from exposure, most diagnostic studies are generally safe, and the radiation doses from these studies are well below thresholds considered risky," says lead study author and orthopaedic surgeon Jonas L. Matzon, MD. "The true risk is low, so these concerns should not prevent pregnant women from having indicated diagnostic imaging studies."

Radiation exposure may cause birth defects or spontaneous abortions and increase the risk of cancer. However, foetal exposure to ionising radiation depends on many factors, including the body part being imaged, the type of imaging selected, the amount and type of radiation emitted, the mother's bodily build, the distance between the foetus and the area being imaged, and the safety protocols followed.

According to researchers, ultrasound and magnetic resonance imaging (MRI) are not associated with known foetal effects and are considered safe for pregnant patients. In contrast, computed tomography (CT) of the pelvis results in higher doses of radiation to the foetus, and therefore, greater consideration must be taken.

Dr. Matzon's research team also reported these findings:

- X-ray exposure from a single diagnostic procedure does not result in harmful foetal effects.
- The likelihood of a harmful effect is proportional to the radiation dose and the gestational age of the embryo or foetus at the time of exposure.

"If a patient requires multiple scans and repeated doses of radiation, a consultation with a qualified medical physicist should be considered to determine estimated foetal dose," says Dr. Matzon, who is an associate professor of orthopaedic surgery at Thomas Jefferson University Hospital.

Source: [American Academy of Orthopaedic Surgeons](#)

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