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**PJBS**

ISSN 1028-8880

**Pakistan  
Journal of Biological Sciences**

**ANSI***net*

Asian Network for Scientific Information  
308 Lasani Town, Sargodha Road, Faisalabad - Pakistan

## Experts Urge Even Greater Caution in Use of X-Rays During Pregnancy and Infancy

*Clinicians should be careful about using x-rays on pregnant women and infants because of the potential for a slight increase in the risk of children developing cancer, concludes a new study published on the British Medical Journal website.*

The study is consistent with what doctors have long suspected, and why women of childbearing age are always asked about the possibility of pregnancy before being x-rayed.

A UK-US collaborative study found small increases in risk of cancer for children who had x-rays at ages less than three months and in children whose mothers had undergone an x-ray while pregnant. These increases were not statistically significant. The researchers report no increased risk from ultrasound scans.

Researchers studied the childhood cancer risk associated with exposure to radiation and ultrasound scans during gestation (in utero) and in early infancy.

Previous studies of children born between the 1940s and the 1970s, when radiation doses were likely to be higher, found in utero x-ray exposure to be associated with an increased risk of childhood cancer, particularly leukaemia. The effect of medical radiation on young children has been less clear.

Although diagnostic x-rays and other radiological imaging procedures to the abdomen and pelvis of pregnant women are rare, there are concerns about the growing use of computed tomography (CT) scans and other types of higher-dose imaging procedures on younger children.

Furthermore, much of the existing data are based on interviews, allowing for the distinct possibility of misclassification, recall bias, or both as regards exposure.

Researchers compiled data on 2,690 children with cancer and 4,858 healthy children from the UK Childhood Cancer

Study. All children were born between 1976 and 1996. Data on exposure to radiographic and ultrasound examinations were collected from medical records

A total of 305 children received 319 radiographic and related examinations while in utero and 170 children received 247 diagnostic x-ray examinations in early infancy. A total of 13,723 in utero and 138 early infant ultrasound scans were carried out.

Researchers measured the risk of childhood cancer overall, and leukaemia, lymphoma, and central nervous system tumours specifically.

Results showed a slightly heightened risk following in utero exposure to x-rays for all cancers and for leukemia, though neither was statistically significant.

Exposure to diagnostic x-rays in early infancy was found to be associated with a small, non-significant extra risk for all cancers and leukemia, as well as increased risk of lymphoma, but this finding was based on small numbers (only seven cases).

The researchers conclude: "Our results, which indicate possible risks of cancer from radiation at doses lower than those associated with CT scans, suggest a need for cautious use of diagnostic radiation imaging procedures to the abdomen/pelvis of the mother during pregnancy and in children at very young ages."

**Source:** P. Rajaraman, J. Simpson, G. Neta, A. Berrington de Gonzalez, P. Ansell, M. S. Linet, E. Ron, E. Roman. Early life exposure to diagnostic radiation and ultrasound scans and risk of childhood cancer: case-control study. *BMJ*, 2011; 342 (feb10 1): d472 DOI: 10.1136/bmj.d472