



# HEALTH PHYSICS SOCIETY

*Specialists in Radiation Safety*

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## Radiation Exposure and Pregnancy

### HEALTH PHYSICS SOCIETY FACT SHEET

Everyone is exposed to radiation every day. People are continuously exposed to low-level radiation found in food, soils, building materials, and the air and from outer space. All of this radiation originates from naturally occurring sources. For example, bananas contain naturally occurring radioactive potassium-40 and air contains radon, a radioactive gas. Your “average natural background” radiation dose is about 300 millirem each year (a millirem is a unit of radiation dose, much like a gram or an ounce is a unit of weight).

In addition to natural background radiation, you may be exposed to radiation from medical x rays and medical radiation tests or treatments. If you think, or there is a possibility, that you may be pregnant and need a medical x ray or radiation procedure, the information below will help answer your question “Does a medical x ray increase my baby’s health risks?”

#### **What are the health risks from medical x rays or radionuclide medical tests performed during pregnancy?**

There is a lot of reliable information about the effects of radiation exposure during pregnancy. Potential radiation effects vary depending on the fetal stage of development and the magnitude of the doses. According to the American College of Radiology, a routine x ray of a mother’s abdomen, back, hips, and pelvis will not cause an increased health risk to your fetus. However, specialty x rays [such as a computerized tomography (CT or CAT scan) or a “lower GI fluoroscope” exam] to the mother’s stomach or hips may give much higher doses. Therefore, the risk of the exposure needs to be evaluated. Most diagnostic x ray or radionuclide medical procedures do not give a radiation dose above levels that can be associated with any increased risk. If you have a specialty x ray, test, or treatment that might give your fetus a higher dose, a medical physicist or health physicist in consultation with your doctor can determine the possibility of risk. A medical physicist or health physicist may be contacted through your hospital’s Radiology or Safety Department.

#### **What if I find out I’m pregnant after being exposed to radiation?**

If you discover you are pregnant after you have had a specialty x ray, test, or treatment to your stomach or hips, you should consult with the doctor who ordered the test. You and your doctor should contact a medical physicist or health physicist, who will calculate the radiation dose to your fetus. The calculated radiation dose and developmental stage of your fetus will help the medical physicist or health physicist determine the potential health risks. This information should be shared with your doctor.

Most standard x-ray exams, tests, and treatments produce radiation doses below 5,000 millirem. The National Council on Radiation Protection and Measurements and the American College of Doctors and Gynecologists both agree that the potential health risks to your fetus are not increased from most standard x-ray and medical

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tests with a radiation dose below 5,000 millirem. Potential health risks, however, may increase for a few specialty medical tests that exceed 5,000 millirem depending on the dose, dose rate, and stage of pregnancy.

### **Does it matter how far along in the pregnancy I am?**

The sensitivity of a developing fetus to radiation can vary with the stage of development, the magnitude of the dose, and the length of time of the total exposure (minutes, hours, days, or weeks). The medical physicist or health physicist will consider all these factors in determining the risks to your fetus.

### **I am not pregnant now, but will an x ray or radionuclide medical test cause my child to have birth defects in the future?**

There is no evidence that your child will be at a greater risk for birth defects from x rays or radionuclide medical tests. This conclusion is based on extensive studies of women exposed at Hiroshima and Nagasaki and women given x rays, radionuclide medical tests, and other radiation procedures. Since the discovery of x rays over a century ago, the number of women exposed to medical radiation has increased dramatically while the rate of birth defects and miscarriages has not changed.

### **What else do I need to know?**

As a precaution, if during your pregnancy you are considering having an abdominal/pelvic x ray or are participating in a radionuclide medical test, consult your doctor. The doctor in consultation with the medical physicist or health physicist will help you determine if any increased risk exists. If there is unacceptable risk, your doctor can determine if the procedures can be delayed until after birth or whether another medical procedure, such as an ultrasound or MRI, could be used instead. If you are pregnant and abdominal x rays or radionuclide medical procedures are scheduled without consultation with your doctor, inform the person performing the exam that you are pregnant. As a precaution, you should inform a person performing any type of x ray or radiation procedure that you are pregnant.

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\* The Health Physics Society is a nonprofit scientific professional organization whose mission is excellence in the science and practice of radiation safety. Since its formation in 1956, the Society has grown to approximately 6,000 scientists, physicians, engineers, lawyers, and other professionals representing academia, industry, government, national laboratories, the Department of Defense, and other organizations. Society activities include encouraging research in radiation science, developing standards, and disseminating radiation safety information. Society members are involved in understanding, evaluating, and controlling the potential risks from radiation relative to the benefits. Official position statements are prepared and adopted in accordance with standard policies and procedures of the Society. The Society may be contacted at 1313 Dolley Madison Blvd., Suite 402, McLean, VA 22101; phone: 703-790-1745; fax: 703-790-2672; email: [HPS@BurkInc.com](mailto:HPS@BurkInc.com).