

Information for Declared Pregnant Radiation Workers

If you are pregnant and work with or near radioactive materials or radiation producing equipment such as x-ray machines, you may have questions about radiation exposure as a prenatal hazard.

Understanding the risk associated with exposure and the options available to you as a pregnant worker can help you make informed decisions regarding your work around radiation.

Through the [Florida Department of Health Bureau of Radiation Control \(BRC\)](#), Florida law sets limits on radiation exposure for all radiation workers. The BRC has also established regulations that allow a pregnant worker to choose to have reduced occupational exposure limits by voluntarily notifying the Radiation Safety Office in writing of pregnancy and the estimated conception date.

This information sheet provides answers to the most common questions and outlines FSU's policy for declared pregnant radiation workers. You are invited to contact the Radiation Safety Office (RSO) for more information. The RSO will handle your inquiries confidentially.

Background on Fetal Radiation Exposure

Studies have shown that an embryo/fetus is more sensitive to ionizing radiation than mature adult cells, especially during the first three months of pregnancy when cells are progressing most rapidly. The occurrence and severity of health effects, generally associations with cancer and physical and mental defects, caused by radiation is dependent upon multiple factors including the type and overall dose of radiation exposure. While the exact risk is unknown, experts agree that the risk is small and can be carefully managed by pregnant workers.

The Nuclear Regulatory Commission (NRC) has put together the following guides to provide information on radiation exposure:

- [Regulatory Guide 8.13](#), "Instruction Concerning Prenatal Radiation Exposure"
 - Information to pregnant workers regarding radiation exposure during pregnancy
- [Regulatory Guide 8.29](#), "Instruction Concerning Risks from Occupational Radiation Exposure"
 - Information on the risks of radiation exposure to occupational workers

Both of these documents can be found online and are available from the Radiation Safety Office.

Pregnancy Declaration

To avoid discriminatory workplace actions, a pregnant worker has the right to voluntarily declare pregnancy. While information regarding pregnancy and workplace exposure will always be available and the Radiation Safety Office staff will answer any questions regarding prenatal exposure, reduced dose limits will not be enacted unless a pregnant worker chooses to declare pregnancy in writing.

A Declaration of Pregnancy form may be obtained from the Radiation Safety Office. You may also choose to draft your own letter to submit. At a minimum, the required information that must be included is:

- First and last name
- Estimated date of conception (month and year)
- Signature
- Date

Once the Declaration of Pregnancy has been received by the Radiation Safety Office, your status is considered a **Declared Pregnant Worker**. This status is only recognized within radiation protection and does not affect your ability to do your job or impact your University employee or student status in any way. Declared Pregnant Workers will be contacted by RSO staff to evaluate occupational exposure to ionizing radiation and determine the need for fetal dosimetry monitoring. Radiation Safety staff may make recommendations regarding the employee's duties based on the work environment, past exposure history, and potential for future exposure. In many cases you may continue in your present work with no change and easily meet the reduced dose limit.

The Radiation Safety Office staff will keep Declared Pregnant Worker information confidential and only disseminate pertinent information on a need-to-know basis. For example, if your job duties and past exposure history indicate that reduced limits may be exceeded, the Radiation Safety Office may need to work with you and your supervisor to determine solutions for reducing your exposure while pregnant. You will be notified prior to other parties being informed of your declaration of pregnancy. You may choose to notify your supervisor at any time so that they may work with you on addressing your occupational exposure concerns.

Fetal Dose Limits

To minimize the possibility of any adverse health effects to the fetus from ionizing radiation, the federal (NRC) and state (BRC) regulatory agencies have set the radiation limit for Declared Pregnant Workers to 500 mrem for the entire pregnancy. The regulatory agencies have reviewed scientific literature and concluded the 500 mrem limit provides a conservative and adequate margin of protection for the fetus. Below a fetal dose of 500 mrem, non-cancer health effects are NOT detectable and estimated childhood cancer incidence does not increase.

FSU has implemented administrative As Low As Reasonably Achievable (ALARA) limits for Declared Pregnant Workers. To further limit exposure to both the Declared Pregnant Worker and the fetus, the FSU limit for occupational radiation exposure is reduced to 50 mrem for the entire pregnancy. The best way to put this in perspective is to look at other events where you receive radiation dose:

Sources/Events	Whole Body Dose
Dental x-ray	1 mrem
Cross country flight	3 mrem
Chest x-ray	10 mrem
Smoking a pack of cigarettes per day for 1 year	36 mrem
Mammogram	42 mrem
Head CT	200 mrem
Average U.S. annual background exposure from natural sources	310 mrem
Radiotherapy treatment of cancers	1,000 + mrem

Even with no occupational exposure to radiation, a pregnant individual will still be exposed to natural sources such as terrestrial and cosmic radiation.

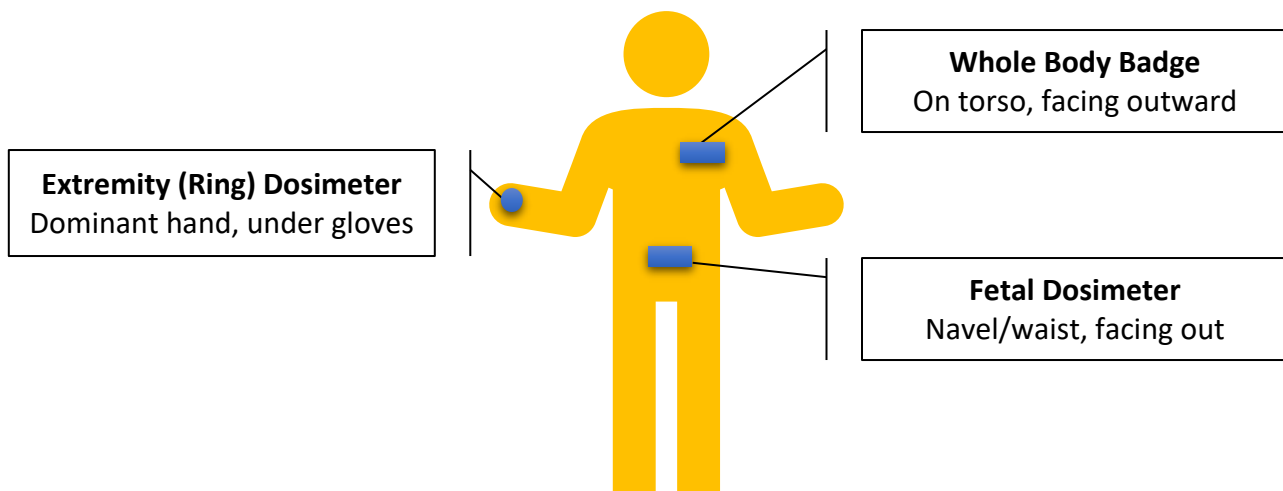
Annual Exposure Limits for Radiation Workers	Whole Body
NRC/BRC Limit	5000 mrem
FSU ALARA Limit	500 mrem
FSU Declared Pregnant Worker Exposure Limit	50 mrem

Most badged individuals at FSU receive very little to no measurable dose while working with radioactive materials or radiation producing equipment. Employees and students will regularly stay below 50 mrem for an entire year, and in most cases, for their entire tenure at FSU.

Fetal Dose Monitoring

In addition to the regular whole body badge, Declared Pregnant Workers may be issued a fetal radiation badge. The badge will be the same style as the whole body badge but will be worn at the waist/navel level. Both badges will be exchanged on a monthly frequency. As an additional ALARA measure, badges should be worn outside of any protective clothing, such as lead aprons. Monthly dose reports will be shared with the Declared Pregnant Worker as they are received.

Dosimeter Placement



Undeclare/Conclude Pregnancy Declaration

Declared Pregnant Worker dose limits will remain in effect until the worker withdraws the pregnancy declaration in writing. A Declared Pregnant Worker should notify the Radiation Safety Office when the pregnancy ends but may also choose to withdraw from Declared Pregnant Worker status at any time for any reason. If the declaration is not withdrawn, the written declaration may be considered expired one year after submission.

A Withdrawal of Pregnancy Declaration form can be obtained from the Radiation Safety Office. You may also choose to draft your own letter to submit. At a minimum, the required information that must be included is:

- First and last name
- Requested date of withdraw
- Signature

Resources for More Information

- [Florida Department of Health Bureau of Radiation Control](#)
- [Florida Administrative Code \(F.A.C.\) 64E-15.311 – Dose to an Embryo or Fetus](#)
- [Center for Disease Control Radiation and Pregnancy: A Fact Sheet for the Public](#)
- [Health Physics Society – Pregnancy and Radiation Exposure](#)