



Forms

Contact List

GEMS Instructions

Help Desk

Find Subject Areas:

Index



Categories



Alpha



Show Side Menu

Search Subject Areas & Legacy Documents: 

## Contents: Reproductive Hazards

Effective Date: **November 2003**Point of Contact: [Reproductive Hazards Subject Matter Expert](#)

### Section

### Overview of Content (see section for full process)

#### [Introduction](#)

#### [1. Working with Reproductive Hazards](#)

- Identify reproductive hazards.
- Review documents if a reproductive hazard is identified.
- Request an occupational workplace evaluation.
- Report problems or suggest improvements.

#### [Definitions](#)

#### **Exhibits**

[Reproductive Risks from Biological Agents](#)

[Reproductive Risks from Physical Hazards](#)

[Guideline on Breast Feeding](#)

#### **Forms**

None

## Training Requirements and Reporting Obligations

This subject area does not contain training requirements.

This subject area does not contain reporting obligations.

## References

10 CFR 835, Occupational Radiation Protection

29 CFR 1910 Subpart Z, Toxic and Hazardous Substances

[BNL Reproductive Toxins Table](#), [Chemical Management System](#) web site

[Chemicals, Working With](#) Subject Area

[ES&H Standard 2.3.2, RF and Microwaves](#)

[Pregnancy, Declaration of](#) Subject Area

[Training and Qualifications](#) Web Site

## Standards of Performance

All staff and guests shall comply with applicable Laboratory policies, standards, and procedures, unless a formal variance is obtained.

All staff and users shall identify, evaluate, and control hazards in order to ensure that work is conducted safely and in a manner that protects the environment and the public.

All staff and users shall ensure that they are trained and qualified to carry out their assigned responsibilities, and shall inform their supervisor if they are assigned to perform work for which they are not properly trained or qualified.

## Management System

This subject area belongs to the **Worker Safety and Health** management system.

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-112003/standard/1x/1x00t011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)



Forms    Contact List    SBMS Instructions    Help Desk

**Find Subject Areas:**    Index    Categories    Alpha

Show Side Menu    Search Subject Areas & Legacy Documents:

---

## Introduction: Reproductive Hazards

Effective Date: **November 2003**

Point of Contact: [Reproductive Hazards Subject Matter Expert](#)

---

This subject area provides an overview of the BNL Reproductive Hazard Program and sets forth the elements to implement the regulatory requirements in OSHA Title 29 of the Code of Federal Regulations Part 1910 Subpart Z and DOE Title 10 of the Code of Federal Regulations Part 835.

The effects of reproductive hazards can occur before or after conception takes place. The agents can cause chromosomal damage (mutations); effects on fetuses (teratogenesis); impaired fertility; altered success of a pregnancy; or impaired or delayed development of an embryo, baby, or child.

Reproductive hazard agents can include:

- Certain chemicals;
- Ionizing and non-ionizing radiation;
- Physical agents (such as heat and noise);
- Biological agents (such as bacteria, virus).

This subject area provides procedures for identifying operations that can adversely affect the reproductive health of both male and female workers. Workers who are pregnant or seeking to bear children (both male and female) are encouraged to seek professional evaluation of their work areas for reproductive hazards.

- Staff exposed to radiological hazards may declare their pregnancy following the procedures in the [Declaration of Pregnancy](#) Subject Area.
- Staff exposed to non-radiological hazards follow the procedures in this subject area.

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-112003-/standard/1x/1x00i011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)



Forms
Contact List
EWG Instructions
Help Desk

**Find Subject Areas:**

**Show Side Menu**      Search Subject Areas & Legacy Documents:

Subject Area: **Reproductive Hazards**

# 1. Working with Reproductive Hazards

Effective Date: **November 2003**

Point of Contact: [Reproductive Hazards Subject Matter Expert](#)

## Applicability

This information applies to BNL staff and non-BNL staff who perform or plan work with a potential reproductive hazard.

## Required Procedure

<b>Step 1</b>	<p>Supervisors or staff identify reproductive hazards by:</p> <ul style="list-style-type: none"> <li>• Reviewing an existing Experimental Safety Review, Work Permit, or Radiological Work Permit (RWP) that addresses the reproductive hazard;</li> <li>• Reviewing the list of chemical reproductive hazards (see the <a href="#">BNL Reproductive Toxins Table</a> in the <a href="#">Chemical Management System</a> web site);</li> <li>• Reviewing the following exhibits on reproductive hazards: <a href="#">Reproductive Risks from Biological Agents</a>, <a href="#">Reproductive Risks from Physical Hazards</a>, and <a href="#">Guideline on Breast Feeding</a>; or</li> <li>• Contacting an <a href="#">ESH Coordinator</a>, <a href="#">Industrial Hygiene (IH) Representative</a> or <a href="#">Facility Support (FS) Representative</a> for a job, task, or project assessment.</li> </ul>
<b>Step 2</b>	<p>If a reproductive hazard is identified, staff review the following documents:</p> <ul style="list-style-type: none"> <li>• For radiological hazards, female workers refer to the <a href="#">Declaration of Pregnancy</a> Subject Area and follow the procedures, if appropriate.</li> <li>• For chemical hazards, see the <a href="#">Chemicals, Working With</a> Subject Area.</li> <li>• For non-ionizing radiation hazards, see <a href="#">ES&amp;H Standard 2.3.2, RF and Microwaves</a>.</li> </ul>

<b>Step 3</b>	<p>For operations identified with a potential reproductive hazard, staff and supervisors can request an occupational workplace evaluation by contacting their <a href="#">ESH Coordinator</a>.</p> <p><b>Note:</b> Staff may consult with the Occupational Medicine Clinic (OMC) to discuss medical concerns that pertain to reproductive hazards.</p>
<b>Step 4</b>	<p>When an occupational workplace evaluation has determined there is unacceptable risk from reproductive hazards posed to their worker(s), Supervisors reassess job assignments and controls.</p>
<b>Step 5</b>	<p>Staff inform the Supervisor, <a href="#">ESH Coordinator</a>, <a href="#">Facility Support Representative</a>, the <a href="#">Declaration of Pregnancy Counselors</a>, or an <a href="#">Industrial Hygiene (IH) Representative</a> of any problems encountered or to suggest improvements to the program.</p>

## Guidelines

- Workers can obtain information on reproductive hazards in BNL training courses, such as Chemical Hygiene Laboratory Standard, Hazard Communications, Lead, and radiological protection courses (see the [Training and Qualifications](#) Web Site).
- Basic chemical hygiene practices (such as wearing protective gloves and washing hands frequently) are always important when working with hazardous materials. These practices are even more important for women who work in laboratories while they are pregnant or attempting to become pregnant.
- Pregnant laboratory workers should discuss the work they perform and the hazardous materials they handle with their personal physicians to determine if any work restrictions are necessary. In some cases, certain chemicals may need to be substituted for other reagents, or certain activities curtailed, for the duration of the pregnancy. Restrictions placed by the attending physician should be discussed with BNL's Occupational Medicine Clinic (OMC) Manager.

## References

[BNL Reproductive Toxins Table](#), [Chemical Management System](#) web site

[Chemicals, Working with](#) Subject Area

[ES&H Standard 2.3.2, RF and Microwaves](#)

[Pregnancy, Declaration of](#) Subject Area

[Training and Qualifications](#) Web Site

[Training and Qualifications](#) web site

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-112003/standard/1x/1x01d011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)


[Forms](#)
[Contact List](#)
[GEMS Instructions](#)
[Help Desk](#)
**Find Subject Areas:**



[Show Side Menu](#)

 Search Subject Areas & Legacy Documents: 

 Subject Area: **Reproductive Hazards**

## Reproductive Risks from Biological Agents

 Effective Date: **November 2003**

 Point of Contact: [Reproductive Hazards Subject Matter Expert](#)

Laboratory, health care, and animal welfare workers, and those dealing with animal products are at a higher risk of infection than other groups of workers.

Biological agents can affect the unborn child if the mother is infected during pregnancy. Adverse reproductive outcomes may include birth defects, developmental disorders, miscarriage, low birth weight, or childhood cancer.

Preventive measures that reduce risks include good hygienic practices, such as hand washing, vaccinations (where applicable), and using universal precautions.

*Disclaimer: The following is a partial list of known or suspected biological agents that may pose a reproductive hazard. This list is a guideline and may not be inclusive. Other agents may pose a risk. Contact the Industrial Hygiene Group and the Occupational Medicine Clinic for evaluation of risk posed by a potential workplace exposure.*

### Agents

- Chlamydia
- Cytomegalovirus (CMV)
- Hepatitis B virus
- Herpes virus hominis I and II
- Human immunodeficiency virus (HIV)
- Human parvovirus B19 (Erythema infectiosum)
- Rubella (German measles)
- Syphilis
- Toxoplasmosis
- Tuberculosis
- Typhoid
- Varicella-zoster virus (chicken pox/shingles)
- Venezuelan equine encephalitis virus

Source:

- NIOSH 99-104 Table 2. Disease-causing agents that are reproductive hazards for women in the workplace.

- American College of Occupational and Environmental Medicine

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-112003/standard/1x/1x01e011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)


[Forms](#)
[Contact List](#)
[GWS Instructions](#)
[Help Desk](#)
**Find Subject Areas:**






[Show Side Menu](#)

 Search Subject Areas & Legacy Documents: 

 Subject Area: **Reproductive Hazards**

## Reproductive Risks from Physical Hazards

 Effective Date: **November 2003**

 Point of Contact: [Reproductive Hazards Subject Matter Expert](#)

Physical hazards in the workplace may include ionizing radiation, electromagnetic radiation, magnetic fields, ultrasound, noise, hot/cold climates, and ergonomic stressors.

During pregnancy, special ergonomic considerations arise, especially those related to changes in the center of gravity, balance, and body weight. Physical activities to consider during pregnancy may include lifting, working at heights, confined space entry, prolonged sitting, and work in extreme hot/cold environments. This list is a guideline and may not be inclusive. Employees may wish to discuss these job tasks with their health care provider or BNL's OMC physicians.

<b>Hot and cold environments:</b>	<p>Pregnant women are less tolerant of heat and may be at risk of fainting or prone to heat stress. The risk may extend to women who have recently given birth, as it is not certain at what stage an improvement would come about. Breast-feeding may also be hampered by heat dehydration. There is no conclusive evidence of teratogenic effects of hyperthermia (overheating) in humans. The NIOSH criteria document (1986) recommends that a pregnant worker's body temperature should not exceed 39° to 39.5°C [102° to 103°F] during the first trimester of pregnancy.</p> <p>In men, repeatedly raising the testicular temperature 3° to 5°C decreases sperm counts. There is no conclusive evidence of reduced fertility among heat-exposed women. There are no adequate data from which conclusions can be drawn regarding the reproductive effects of occupational heat exposure at currently accepted exposure limits.</p>
<b>Electromagnetic fields (EMF) (i.e., non-ionizing radiation)</b>	<p>Recent epidemiological studies (1994 -1996) have not found an association between occupational exposure to video display units and reproductive effects.</p>
Source:	

- University of California at Davis
- University of Bath
- H. Kay; Reproductive Hazards of the Workplace, 1998, p.391-400.

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-112003/standard/1x/1x02e011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)



Forms    Contact List    SBMS Instructions    Help Desk

**Find Subject Areas:**    Index    Categories    Alpha

Show Side Menu    Search Subject Areas & Legacy Documents:

Subject Area: **Reproductive Hazards**

## Guideline on Breast Feeding

Effective Date: **November 2003**

Point of Contact: [Reproductive Hazards Subject Matter Expert](#)

Chemicals found in human milk are generally fat soluble and poorly metabolized. In some instances, women with occupational exposures to certain chemicals may have concentrations of chemical contaminants, which exceed the levels that are permitted by the Food and Drug Administration in cow's milk for human consumption.

Women who are breast feeding and working with any of the following chemicals in processes with the potential for significant exposure should consult the Industrial Hygiene Group and the Occupational Medicine Clinic for evaluation of risk for transfer to breast milk:

*Disclaimer: The following is a partial list of chemicals known to have been found in breast milk. This list is a guideline and may not be inclusive. Other agents may pose a risk. Contact the Industrial Hygiene Group and the Occupational Medicine Clinic for evaluation of potential workplace hazards.*

- Polychlorinated compounds
- Persistent organochlorine pesticides
- Polychlorinated biphenyls
- Polychlorinated dibenzodioxins (PCDD) and dibenzofurans (PCDF)
- Polybrominated compounds
- Polycyclic aromatic hydrocarbons (PAH)
- Nitrates, nitrites, and nitrosamines
- Nicotine, caffeine, and ethanol
- Certain drugs

Based on: Somogyi A, Beck H. Nurturing and breast-feeding: exposure to chemicals in breast milk. *Environmental Health Perspectives Supp.* 101(2):45-52 (1993).

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-112003/standard/1x/1x04e011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)


[Forms](#)
[Contact List](#)
[SBMS Instructions](#)
[Help Desk](#)
**Find Subject Areas:**



[Show Side Menu](#)

 Search Subject Areas & Legacy Documents: 

## Definitions: Reproductive Hazards

 Effective Date: **November 2003**

 Point of Contact: [Reproductive Hazards Subject Matter Expert](#)

Term	Definition
mutagen	Any agent, which causes damage to eggs and sperm, resulting in sterility or birth defects.
occupational workplace evaluation	A characterization of potential worker exposure by monitoring, calculation, and/or inspection of hazard levels and controls.
reproductive hazard	A chemical or physical agent that affects the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).
teratogen	An agent that causes growth abnormalities in embryos, genetic modifications in cells, etc.
universal precautions	An approach to infection control. According to the concept of universal precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-112003/standard/1x/1x00I011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)


[Forms](#)
[Contact List](#)
[SBMS Instructions](#)
[Help Desk](#)
**Find Subject Areas:**



[Show Side Menu](#)

 Search Subject Areas & Legacy Documents: 

## Revision History: Reproductive Hazards

 Point of Contact: [Reproductive Hazards Subject Matter Expert](#)

### Revision History of this Subject Area

Date	Description	Management System
November 2003	<p>This subject area provides an overview of the BNL Reproductive Hazard Program and sets forth the elements to implement the regulatory requirements in OSHA Title 29 of the Code of Federal Regulations Part 1910 Subpart Z and DOE Title 10 of the Code of Federal Regulations Part 835.</p> <p>This subject area provides procedures for identifying operations that can adversely affect the reproductive health of both male and female workers.</p>	Worker Safety and Health

[Back to Top](#)

**The only official copy of this file is the one online in SBMS. Before using a printed copy, verify that it is the most current version by checking the document effective date on the BNL SBMS website.**

1.0-112003/standard/1x/1x00a011.htm

Send a question or comment to the [SBMS Help Desk](#)  
[Disclaimer](#)