Pregnancy and Reproductive Hazards in the Workplace: Physical and Biological Hazards

SafetyNet #: 107

Substances or agents that affect reproductive health or the ability of couples to have healthy children are called “reproductive hazards”. These hazards may be from exposure to radiation, chemicals, drugs (legal and illegal), cigarettes, microorganisms, or alcohol. Hazards may effect the male reproductive system, the female reproductive system, and/or the fetus.

Employees are encouraged to tell supervisors as soon as possible when they become pregnant. A supervisor should address concerns about potential workplace reproductive hazards. For information on employee health and safety training consult SafetyNet #33 [1], “Hazardous Material Information and Training” and SafetyNet #39 [2], “Safety Training Tips.” Supervisors are responsible for determining if substances used in the work area create a known risk of reproductive hazards. Supervisors should discuss the properties of these materials with all employees, establish standards for handling such substances, and establish protective measures appropriate for the type of work being performed.

Physical Hazards

Physical hazards in the workplace include ionizing radiation, radiofrequency/microwave radiation, magnetic fields, video display terminals, ultrasound, noise, hot/cold climates, and ergonomic considerations. During pregnancy special ergonomic considerations arise, especially those related to changes in the center of gravity (e.g. climbing ladders) and increased weight (e.g. prolonged sitting). Identified below are special considerations during pregnancy:

Lifting: Frequent and heavy lifting can result in increased risk of miscarriage.

Working at heights: Climbing will not normally affect the unborn child (assuming that a physician has approved this activity for the mother) but the mother may experience dizzy spells and be more prone to loss of balance. Balance can become a significant problem in late pregnancy since the size of the unborn child forces the center of gravity farther back and away from a ladder thus requiring greater strength to climb and maintain balance. Pregnant women who must climb ladders regularly should inform their physicians.

Sitting: Prolonged sitting can be uncomfortable due to increased body weight. Intersperse
duties to allow frequent changes in position and to avoid prolonged sitting.

**Hot and cold environments:** Working in a cold environment may pose a slight risk. A woman’s tolerance for hot environments may be lower than normal during pregnancy causing fatigue or fainting.

**Electromagnetic Fields (EMF):** Until the early 1970s, when manufacturers implemented EMF standards, there were concerns about large electromagnetic fields produced by computer monitors. Recent epidemiological studies (1994-1996) fail to support an association between occupational exposure to video display units and reproductive effects. For more information, refer to SafetyNet #100 [3], “Electric and Magnetic Fields.”

**Biological Hazards**

Biological agents including bacteria, viruses, and parasites pose a wide range of possible hazards to the unborn. Biological agents known to cause reproductive hazards include: Arbo Viruses, Chickenpox, Coxsackie virus, Cytomegalovirus (CMV), Group B Strep, Hepatitis B, Herpes simplex virus (types I and II), HIV and AIDS, Measles, Mumps, Parvovirus (Fifth Disease), Rubella (German Measles), Syphilis and Toxoplasmosis. Some of these biological agents are knowingly used in the university workplace, while others may be hidden hazards present in biological samples (i.e. blood, urine, feces, milk or tissues).

Actions you can take to protect against reproductive hazards are called standard precautions. Standard precautions are a prevention strategy in which all blood and potentially infectious materials are treated as if they are infections. Standard precautions dictate the use of gloves, gowns and face protection (to protect mucous membranes of the eyes, nose and mouth). You should also participate in all required health and safety programs (e.g. Bloodborne Pathogen Program). These programs should be in place and updated annually. These steps establish a priority for providing a safe and healthful place of work for all employees.

When working with biological materials follow the recommendations for working with chemicals found in SafetyNet#108 [4], “Pregnancy and Reproductive Hazards in the Workplace: Chemical and Radiological Hazards”, plus:

- Handle all pathogenic biological agents in an approved biological safety cabinet. Have the biocabinet checked annually and after any move or modification to the cabinet.
- Avoid accidental needle wounds by paying careful attention when using a needle, transporting needles with the cap in place, and discarding used needles into a hard plastic or equivalent container. Recapping before disposal is no longer recommended because this action is often a cause of accidents. See SafetyNet # 62 [5] “Needle and Syringe Safety” for more information.
- Be aware that aerosols present a significant risk of infection.

If your work involves any of the following biological agents, call EH&S for a detailed evaluation of the work practices:

- Exposure to pregnant or parturient sheep and goats, newborn lambs or abortuses (Q fever)
- Exposure to primates (simian B virus)
- Cleaning cages of birds or cats (chlamydiosis, toxoplasmosis)
- Work in an animal or human pathology laboratory
- Work in a human infectious disease ward
- Exposure to live or intact pathogenic bacteria or viruses

**Online Sources**

1. [NIOSH REPRODUCTIVE MANUAL](http://www.cdc.gov/niosh/docs/99-104/) [6]
2. [NATIONAL LIBRARY OF MEDICINE](http://toxnet.nlm.nih.gov) [7] - Developmental and Reproductive Toxicology Database
3. [Reproductive Toxicology Center](http://www.reprotoxcenter.org) [8]
4. [Health Physics Society](http://www.health-physics.org) [9] - Pregnancy and Radiation
5. [Infections During Pregnancy](http://www.cdc.gov/niosh/docs/99-104/) [10]

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**Related content**

1. Safety Training Tips
2. Hazardous Materials Information and Training
3. Electric and Magnetic Fields (EMF)
4. Pregnancy and Reproductive Hazards in the Workplace: Chemical and Radiological Hazards

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