

# FETAL PROTECTION AND REPRODUCTIVE HEALTH

*(What Every Supervisor Should Know)*

There are a large number of chemical and physical agents which are known or suspected reproductive hazards to both **MEN** and **WOMEN**, such as solvents, carbon disulfide, lead, radiation, vibration, and physical strain. Many of these may be present in your workplace within the Defense Contract Management Agency or supported contractor sites.

Some of the same chemical and physical agents may be particularly dangerous to the health of a pregnant female and her unborn child. The most sensitive time period for these agents to affect the fetus is during the **first** 3 to 10 weeks of pregnancy. It is of extreme importance that pregnancy be confirmed as soon as possible so necessary work accommodations can be afforded to the pregnant employee at risk for exposure.

Once pregnancy is suspected, employees should see their personal physicians for confirmation of pregnancy. Temporary accommodations may be employed based on physician recommendations at this time. Pregnant workers should be educated on general and specific reproductive hazards, occupational hazards, and non-occupational hazards within their work environments.

Proper personal protective equipment (PPE) is essential for healthy work environments especially in relation to pregnancy. The supervisor plays an important role in protecting the health and well being of the mother and the unborn child by insuring proper PPE is available and used by their employees. Medical accommodations recommended by the employee's personal physician may also need to be implemented. A list of work space exposures is attached and should be reviewed by all pregnant personnel and shared with their physician to insure appropriate decisions and recommendations can be made.

## HARMFUL EFFECTS CHEMICALS MAY HAVE ON FETUS

An increased number of women in the workplace have resulted in an increased probability of children being born with birth defects. If you use chemicals at work or home, you should find out what they are and if your exposure to them might harm you or your baby. Occasional exposures to small amounts of some chemicals such as paint fumes are not likely to harm your fetus.

Miscarriage, slower growth and birth defects may occur. Some chemicals can find their way into breast milk and a child can be exposed. During the first three months of pregnancy the organs and limbs are being formed. This is the period when the fetus is most sensitive to chemicals which cause birth defects. During the last six months of pregnancy, exposures to harmful chemicals can slow down the growth of the fetus or affect brain development. Effects on brain development may appear as slow learning ability, hyperactivity, coordination problems or in severe cases, mental retardation. A woman may not know that she is pregnant during the first three months, it is important for her to find out about workplace hazards before she gets pregnant.

Whether the fetus is affected depends on several things. The most important are what chemicals are in use, how much, how often, how long you are exposed, and whether the chemical gets into your body and reaches the fetus. To harm the fetus, a chemical must get into your body, be absorbed into your blood and reach the fetus. Chemicals can enter your body through the air you breathe, through contact with your skin or through your digestive system if you accidentally swallow them. If you are concerned ask your supervisor or contractor

safety office for the Material Safety Data Sheets (MSDS) for the products you use. The MSDS list the hazardous ingredients in a product.

In the MSDS some chemicals may be labeled as a mutagen or teratogen. A mutagen is an agent (mustard gas, or various radiation) that tends to increase the frequency or extent of alteration in hereditary material. A teratogen is an agent (chemicals, drugs, common solvents, physical factors such as x-rays or viruses) that causes developmental malformations. Effects of these agents on the fetus is determined by the ability of the toxin or agent to alter normal processes, intensity of the exposure, susceptibility of target tissues, and your individual resistance to the agent. In addition, the stage and development of the fetus and the duration of exposure is also a determinant.

### **IONIZING RADIATION**

Ionizing radiation is a type of radiation given off by x-ray machines and radioisotopes. It has been known for some time to have an effect on the fetus. Exposure to high levels of ionizing radiation can result in fetal growth retardation, birth defects, cancer, and even death. The effects on the child appear to be more serious if the mother is exposed to the radiation during the first trimester. This is a critical developmental time for the fetus when all the body organs are forming. (Examples: medical and dental x-ray). Pregnant employees in these work areas are not automatically removed they are monitored carefully to ensure exposure does not exceed 0.5rem (0.005 Sievert) during the entire pregnancy. Efforts should be made to avoid substantial variation above the uniform monthly exposure rate that would satisfy this limiting value.

### **RADIO FREQUENCY RADIATION**

Employees may be exposed to applicable OSHA Permissible Exposure Limits (PELs) to Radio Frequency (RF) Radiation in the range of 3 kilohertz to 300 Gigahertz. No special RF exposure limits or additional accommodations are imposed in the case of pregnancy.

### **EXCESSIVE NOISE**

Employees exposed to excessive noise measured at greater than 80 decibels over an eight hour day for a 40 hour work week meet the OSHA threshold for enrollment in Medical Surveillance. PPE can include earplugs, ear muffs or a combination of the two depending on overall noise exposure levels. During pregnancy employees may need to limit their noise exposures both in time and frequency as PPE for a fetus is nonexistent. Pregnant employees should rely on recommendations from their personal physicians in regards to total exposure limits.

### **ERGONOMIC ACCOMODATIONS**

Pregnant employees are at increased risk for injury during their **third** trimester (last 3 months). The employee's workstation should be adjustable to reduce any awkward postures and to accommodate the pregnant employee's changing body. Physician recommendations for accommodation during this time can include: avoidance of jobs that require balance or lifting heavy objects >10kg or 22 lbs, rotating shift work, long working hours (>40hrs/week), prolonged sitting or standing.

# Pregnancy Exposures to Avoid

Pregnant employees should avoid potential exposures to environmental hazards in the workplace and home at all times. The fetus is most vulnerable to exposures in the first trimester. The following is a list of some potential exposures that DCMA employees may be exposed to but it is not all inclusive. Each employee and supervisor should assess the work environment for any and all potential hazards to be reviewed by the employee's personal physician for a safety determination.

## ^ **Chemical Agents**

- ✓ at work
- ✓ at home (cleaning materials)

## ^ **Radiation**

- ✓ Ionizing (x-ray, Gamma)
- ✓ Non-ionizing
- ✓ RF

## ^ **Noise**

- ✓ Greater than 85 dB (decibels)/8 hours per day/40 hours per week.

## ^ **Physical energy demands causing exertion**

- ✓ prolonged standing
- ✓ lifting
- ✓ pulling
- ✓ Climbing (stairs, mountains etc.)

## ^ **Biological**

- ✓ Communicable diseases (measles, rubella, mumps, chicken pox, etc.)
- ✓ Blood-borne pathogens (HIV, Hep B)
- ✓ Parasites from food and pets (toxoplasmosis)

## ^ **Temperature Extremes**

- ✓ avoid high temps from spas, saunas, hot tubs, jacuzzis, tanning booths
- ✓ illness causing high body temperatures

## ^ **Medications**

- ✓ danger in taking any medications (i.e., over the counter or prescribed)
- ✓ inform health care provider of pregnancy
- ✓ take medications as directed only
- ✓ Avoid harmful drugs before and during pregnancy.

## ^ **Passive Smoke**

- ✓ Select non-smoking areas in public places
- ✓ Maintain non-smoker status
- ✓ Restrict smoking in personal environments at home and work
- ✓ Inform friends/relatives of danger of smoking to fetus and children

## ^ **Alcohol - NO SAFE LIMIT OF CONSUMPTION HAS BEEN DEFINED**