

Monash University Procedure

Procedure Title	Protecting Unborn and Breast-Fed Children from the Effects of Maternal Exposure to Chemicals, Biologicals, Animals and Radiation Procedure
Parent Policy	OHS Policy
Date Effective	December 2017
Review Date	December 2020
Procedure Owner	Manager, OH&S
Category	Operational
Version Number	4
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Scope	This procedure applies to pregnant or breast-feeding women at the Australian Campuses of Monash University.
Purpose	This procedure sets out the appropriate measures that must be taken to control the exposure of any pregnant or breastfeeding staff member or student working with chemicals, biologicals, animals or radiation.

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1. Abbreviations

mSv	Millisieverts
OH&S	Monash Occupational Health and Safety
OHS	Occupational Health and Safety
RPO	Radiation Protection Officer
RSO	Radiation Safety Officer
SDS	Safety Data Sheet
TLD	Thermoluminescent dosimeter

2. Definitions

A comprehensive list of definitions is provided in the [Definitions Tool](#). Definitions specific to this procedure are as follows.

Breastfeeding Radiation Worker: A breast feeding worker is a person that is breastfeeding a child and still continues their duties as a radiation worker.

Genetic Disorder: Genetic disorders of the parents or certain genes carried by the parents and chromosome aberrations that occur during the development of the embryo, may result in genetic diseases in the child such as Huntington's chorea, sickle cell anaemia, Down's syndrome and cystic fibrosis. It is estimated that genetic disorders are responsible for 25% of malformations in unborn children.

Occupational Exposure: Occupational exposure is exposure of a person to radiation that occurs in the course of that person's work or study.

Pregnant Radiation Worker: A pregnant radiation worker is a radiation worker who has declared their pregnancy or their intention to become pregnant to their supervisor, RSO, head of academic/administrative unit or to a member of [OH&S](#).

Radiation Protection Officer: The Radiation Protection Officer is the OH&S staff member responsible for providing and coordinating radiation protection services at Monash University.

Radiation Safety Officer: A radiation safety officer is a designated staff member in a unit responsible for approving and supervising the ionising radiation work and study of staff and students.

Radiation Worker: A radiation worker is a staff member or student who is occupationally exposed to ionising radiation source(s).

Teratogen: Teratogens (from the Greek words *teras* or *teratos*, meaning monster) are agents that cause congenital malformations, growth retardation, functional disorder and sometimes death in the embryo or foetus. As a general rule a substance is considered to be a teratogen if it has adverse effects on the unborn child at doses below where there are adverse effects on the mother. It should be emphasised that most drugs and chemicals can be shown to cause adverse effects to the embryo or foetus (often the only data available is on animals), at high doses, under laboratory conditions. However, it does not follow that most drugs or chemicals are considered to be teratogens.

Unborn Child: An unborn child may be an embryo, which is defined as an unborn child up to 8 weeks after conception or a foetus which is defined as an unborn child from 8 weeks to birth.

3. Risk Management Process

The types of hazards that must be considered are:

- Chemicals
- Biological materials
- Animals
- Radiation

- 3.1. Determine the duration and frequency that you will be exposed to the identified hazard.
- 3.2. Speak with your supervisor, Safety officer, Biosafety officer, [OHS Consultant/Advisor](#) or the [OHS Health team](#) to discuss the hazards and seek advice on controlling the hazards.
- 3.3. Complete a risk assessment following the [OHS Risk management procedure](#), using the [Risk management program](#).
- 3.4. Based on the level of risk to the unborn or breast-fed child that has been identified in the risk assessment, consult with your supervisor and the OHS Health team to determine if the level of risk associated with the activity is acceptable.
- 3.5. Implement any controls that are identified as required and monitor the activities performed for any variation to the activities that may alter the hazard or risk to the unborn or breast-fed child.

4. Where to Find Further Information

- 4.1. Toxicological information for a chemical can be obtained from:
 - the Safety Data Sheet (SDS);
 - the labels on chemical containers. These should contain statements which mention the 'unborn child' or 'pregnancy'.
- 4.2. Information on biological agents or substances derived from animals:
 - the Safety Data Sheet (SDS);
 - books, your attending doctor or the OH&S website.
- 4.3. The following terms, which indicate potential effects on the unborn child, may be used:
 - Embryotoxic – meaning toxic to the embryo
 - Fetotoxic/foetotoxic – meaning toxic to the foetus
 - Teratogenic – meaning that it induces developmental abnormalities in the foetus

5. Responsibility for Implementation

A comprehensive list of OHS responsibilities is provided in the [OHS Roles, Responsibilities and Committees procedure](#). The specific responsibilities with respect to this procedure are summarised below.

Head of Academic/Administrative Unit and Supervisor: The Head of the academic/administrative unit and the supervisor must:

- Make it clear to women who declare pregnancy that subject to meeting university OHS requirements, the woman may choose whether or not to:
 - Work with chemicals, biologicals, animals or radiation during the pregnancy, and/or
 - Work with chemicals, biologicals, animals or radiation during breast-feeding;without fear of this decision impacting on their career progression/continuation.
- Keep the details of any pregnancy confidential to the greatest possible extent, if requested by the pregnant worker.
- Where the woman elects to continue working with:
 - chemicals, biologicals, animals or radiation during pregnancy, or
 - chemicals, biologicals, animals or radiation during breast-feeding;review, in conjunction with Monash Occupational Health & Safety (OH&S), appropriate risk assessments and put in place control measures to reduce these risks to a negligible level (where no significant risk is foreseeable) in accordance with this procedure.
- Facilitate, in accordance with current workplace agreements, the modification of a woman's duties in accordance with special needs during pregnancy or breast-feeding.
- Create an environment where:
 - All people who work with chemicals, biologicals, animals or radiation, particularly women, understand the requirements of this procedure.
 - Women who work with chemicals, biologicals, animals or radiation feel comfortable to declare their intention to become pregnant or their pregnancy and/or breast-feeding.
 - Both male and female co-workers and supervisors understand the special needs of a pregnant woman's unborn child or breast-fed child in relation to chemical, biological or radiation safety or work with animals.

Pregnant or Breast-Feeding Woman: Women at Monash University who are either pregnant, considering pregnancy or breast-feeding must:

- Read this procedure and seek out any other relevant information provided on the OH&S website or by OH&S staff such as the University's Radiation Protection Officer (RPO), Occupational Health Physician or Occupational Nurse Consultants.
- Seek out and read local information pertaining to their area.
- Declare their pregnancy to their supervisor, Safety Officer, Biosafety Officer, Radiation Safety Officer, OHS Consultant/Advisor or Head of academic/administrative unit at the earliest possible time, on the understanding that the matter will be kept as confidential as possible.
- Must seek advice from the OHS Health team at the earliest possible time. Such consultations are strictly confidential.
- Minimise their exposure to chemicals, biologicals, radiation and animals as much as possible by cooperating fully in any effort that is made to fairly and sensibly modify their duties in order to minimise these risks.

- Report immediately any suspected high exposures to their supervisor, Safety Officer, Biosafety Officer, Radiation Safety Officer, OHS Consultant/Advisor or the OHS Health team.

Radiation Protection Officer (RPO): The RPO is responsible for:

- Providing technical advice on Ionising Radiation safety issues to the pregnant or breastfeeding radiation worker;
- Routinely inspecting their workplace;
- Examining and maintaining copies of the pregnant radiation worker's 4 weekly Thermoluminescent dosimeter (TLD) results and instigating investigation when needed to ensure relevant dose limits are not exceeded.

Radiation Safety Officer (RSO): The RSO is responsible for:

- Providing any pregnant radiation worker who wears a TLD for their work with 4 weekly TLD monitoring for the duration of their pregnancy;
- Assisting the pregnant or breastfeeding radiation worker and their supervisor with implementing any agreed changes to their work environment or practices;
- Working with the RPO to investigate the dose obtained by a pregnant radiation worker, if necessary to ensure relevant dose limits are not exceeded.

6. Tools

Tools: The following tools are associated with this procedure.

[Pregnancy and work OHS information sheet](#)

7. Records

For OHS Records document retention please refer to:

[Monash University OHS Records Management Procedure](#)

Status	Revised
Approval Body	Monash University OHS Committee
Legislation Mandating Compliance	Occupational Health and Safety Act 2004 (Vic) Occupational Health and Safety Regulations 2017 (Vic) Fair Work Act 2009 (Cth) Radiation Act 2005 (Vic) Radiation Safety Regulations 2007 (Vic)
Related Policies	OHS Policy
Related Documents	<p>Codes of Practice and Related Documents</p> <p>Recommendations for Limiting Exposure to Ionizing Radiation (Printed 1995 - Republished 2002)</p> <p>National Standard for Limiting Occupational Exposure to Ionizing Radiation (Printed 1995 - Republished 2002)</p> <p>Australian Standards</p> <p>AS/NZS 4801:2001 Occupational Health & Safety Management Systems – specifications with guidance for use.</p> <p>OHSAS 18001:2007 Occupational Health & Safety Management Systems – requirements</p> <p>AS 2243.4:1998 Safety in Laboratories: Ionizing radiation</p> <p>AS 2243.3: 2010 Safety in Laboratories: Microbiological Safety and Containment</p> <p>AS 2243.2: 1997 Safety in Laboratories - Chemical aspects</p> <p>Monash University OHS Documents:</p> <p>OHS Roles, Committees and Responsibilities procedure</p> <p>Health Surveillance Procedure</p> <p>OHS Risk Management Procedure</p> <p>Risk Control Program</p> <p>Guidelines for the development of safe work instructions</p> <p>Disposal of radioactive waste procedure</p> <p>Ionising radiation dosimetry procedures</p> <p>Ionising radiation sources: Purchase and licensing procedures</p> <p>Using Ionising Radiation Procedure</p> <p>Using Chemicals Procedure</p> <p>Using Biologicals and Animals Procedure</p>

Acknowledgements

The following documents were used as references in the development of this procedure:

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- Lewis, R.J., Reproductively Active Chemicals – A Reference Guide, Van Nostrand Reinhold, New York, 1991.
- NIOSH, The Effects of Workplace Hazards on Male Reproductive Health and The Effects of Workplace Hazards on Female Reproductive Health, www.cdc.gov/niosh/.
- Teratogens – Chemicals Which Cause Birth Defects, Studies in Environmental Science 31, Meyers, V.K. (ed), Elsevier, New York, 1988.
- O'Rahilly, R. and F Muller, Human Embryology and Teratology, Wiley-Liss, New York, 2001.

8. Document History

Version	Date of Issue	Changes made to document
2.1	November 2010	Procedures for protecting unborn and breast-fed children from the effects of maternal exposure to chemicals, biologicals and animals, v.2.1
3	November 2014	<ol style="list-style-type: none"> 1. Removed reference to legislative compliance from purpose and added this to compliance section. 2. Shortened wording of purpose and scope sections to align with other OHS procedures. 3. Updated Definitions section to only include definitions specific to this procedure. 4. Deleted 'Overview' section, as this is not procedural. 5. Removed generic information from 'Risk management' section and included specific process for assessing risks to pregnant or breast-feeding women. 6. Deleted reference to ionising radiation, as this is covered in separate procedure. 7. Added Tools section. 8. Added Compliance section.

3.1	July 2015	1. Updated hyperlinks throughout to new OH&S website.
3.2	August 2017	1. Updated logos in header
4	November 2017	<ol style="list-style-type: none"> 1. Combined the “Radiation use during pregnancy or breast feeding procedure” with this procedure and updated all sections accordingly. 2. Updated Definitions section. 3. Updated Responsibility for Implementation section to include reference to Radiation. 4. Updated Records section to refer to Records Management Procedure.