HS091 – Health Monitoring Guideline

Introduction
The purpose of this guideline is to provide information on situations where air monitoring or health monitoring could be needed at UNSW.

1. Scope
This guideline applies to all UNSW workers. UNSW will conduct health monitoring for all workers exposed to a hazard if there is a significant risk to their health because of that exposure and there is a recognised means to measure the health effects of that exposure.
2. Prevention of exposure

Health monitoring should not be used as an alternative to implementation, maintenance and monitoring of control measures. Prevention of ill-health and disease through sound engineering controls, work practices and the use of personal protective equipment is vital. The purpose of health monitoring should thus be seen as a method to ensure that control measures are effective and to provide an opportunity to reinforce specific preventative measures and safe work practices.

3. Air monitoring

In order to determine whether health monitoring is required for exposure to chemicals or airborne contaminants it may be necessary to first carry out air monitoring.

No person at the workplace shall be exposed to a substance or mixture in an airborne concentration that exceeds the exposure standard for that substance or mixture.

Air monitoring must be carried out:

- if it is not certain on reasonable grounds whether the exposure standard is being exceeded or not, or
- if it is necessary to determine whether there is a risk to health.

A risk management plan that identifies the hazards and the means by which they are controlled provides the best method of indicating whether a risk to health exists or not. For example, the following control measures are likely to keep the airborne concentration to well below the exposure standard:

- substitute with lower hazard category chemicals;
- use enclosed systems;
- use extraction systems;
- use small quantities;
- use in diluted form;
- have experienced, well trained people;
- use personal protective equipment (PPE).

To help assess the potential exposure to hazardous chemicals/airborne contaminants, a measurement could be obtained of the air velocity in the work area to calculate the number of air changes in the area. Then compare this number to the relevant standard to determine if the extraction and ventilation system is operating effectively. A well-functioning extraction and ventilation system will assist in keeping the airborne concentration of contaminants below exposure standards.

For airborne contaminants, air monitoring may be required. This involves the sampling of workplace atmospheres to establish a quantitative measure of exposure to hazardous chemicals through inhalation. The result is then compared to the workplace exposure standards for airborne contaminants on the Safe Work Australia website. Monitoring should only be carried out by a competent person. UNSW Health & Safety should be contacted to organise any air monitoring required. The cost of air monitoring is met by the local area that requires the monitoring.

Records of air monitoring must be readily retrievable and available in an easy-to-understand format; they must be provided to employees in those areas where air monitoring was conducted. The records must be kept for at least 30 years.

Gas monitoring may also be required if the potential for a hazardous atmosphere could exist, for example if:

- oxygen levels could fall to unsafe levels (e.g., because of an asphyxiant gas leak);
- an oxygen leak could increase the risk of a fire;
- the concentration of a flammable gas (or vapour, mist or fume) exceeds 5% of the LEL for that gas;
- combustible dust is present in a form and quantity that could ignite;
- a toxic gas could be present at levels exceeding the occupational exposure standard.

In all such cases gas monitoring equipment must be inspected, calibrated and maintained as per manufacturers’ requirements. UNSW Health & Safety should be contacted to organise any gas monitoring required.

4. Health Monitoring – Chemicals

Health monitoring is required if:
(a) the worker is carrying out ongoing work using hazardous chemicals listed in Schedule 14 of the WHS Regulation (see HS628) and there is a significant risk of exposure to the worker’s health; OR

(b) the worker is carrying out ongoing work using chemicals other than those referred to in Schedule 14 where there is a significant risk of exposure and:

(i) valid techniques are available to detect the effect on the worker’s health, or

(ii) a valid way of determining biological exposure to the hazardous chemical is available and it is uncertain, on reasonable grounds, whether the biological exposure standard is being exceeded.

Such other chemicals which could be considered in a health monitoring program include:

- Chemicals which are known or presumed to be carcinogenic, mutagenic, or toxic to human reproduction;
- Respiratory or skin sensitisers;
- Those with known severe toxic effects.

Examples of chemicals referred to above can be found in the list of Related Documents for this guideline.

Health monitoring is only required if there is significant risk of exposure. The risk management form should identify the nature and severity of the risk from each chemical used in a process. Other facts such as how the chemical is used, quantities used, work practices and adequacy of existing controls need to be taken into account. Air monitoring may help determine if control measures are effective.

If risks are being controlled in accordance with known control measures including those mentioned on the SDS then the risk is not considered significant and health monitoring is not normally required.

Significant risk could exist if exposure is high, the substance used is highly toxic or if it is reasonably foreseeable that leaks or spills could occur. Wherever the risk is deemed inadequately controlled or it is unknown or uncertain then health monitoring should be conducted.

If it is uncertain whether a chemical should be included in a health monitoring program advice should be sought from an occupational hygienist or occupational physician.

Health monitoring will include a baseline health screening which should be conducted before the worker begins work with a scheduled hazardous chemical. The health screening may involve collection of demographic data, previous work history and medical history. Tests may be required in some cases.

After initial health monitoring, subsequent health monitoring should also be provided in the event of excessive exposure e.g., spills or loss of containment, if the worker has any concerns or symptoms that could relate to the exposure and in some cases upon cessation of work.

5. Health Monitoring – Ionising radiation

All persons working with and potentially exposed to penetrating radiation are to use an appropriate personal monitoring device which records ionising radiation dose exposure. Arrangements to obtain personal dosimeters are to be made with the School or Departmental Radiation Safety Supervisor. At UNSW Canberra arrangements are made through the UNSW Canberra (ADFA) Ionising Radiation Officer. Exemptions may be made for students performing specifically defined experimental work. Thermo luminescent dosimeters (TLDs) issued to users of high energy beta and gamma emitters are sent to an external agency for processing periodically (monthly for finger TLDs and 3 monthly for chest TLDs) via UNSW Health and Safety.

Personal dose records are maintained by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and by UNSW Health & Safety. The results are available to individuals on request. A record of individual cumulative radiation dose is required to be provided by the local area on termination of employment at the University. In Canberra the exposure monitoring is managed by the UNSW Canberra (ADFA) Ionising Radiation Officer.

Biological monitoring to determine any internal uptake of radioactive iodine or tritium is recommended for persons using activities greater than 10 times the Annual Limit on Intake (outlined in AS2243.4 Safety in Laboratories, Ionizing Radiation).

6. Health Monitoring – Laser equipment

Laser worker pre-employment, routine and end-of-employment ophthalmic eye examinations are not required at UNSW. Only medically advisable eye examinations shall be carried out following any actual or suspected
exposure to laser radiation in excess of the maximum permissible exposure; (this should be supplemented with a full biophysical investigation of the circumstances under which the accident occurred).

For UNSW Kensington staff or students, eye examinations can be arranged through the UNSW School of Optometry (x54624).

UNSW Canberra staff and students should contact the local Laser Safety Officer or HR Unit.

Post incident health monitoring should be conducted for any suspected illness (skin or eye) plausibly tied to an exposure to laser radiation.

Regular eye examinations, such as those routinely carried out by an optometrist are encouraged to ensure good eye health and the detection of evolving pathology. However, such examinations are not justified on the basis of working with lasers alone and are not mandatory, so staff and students should consult their optometrist.

7. Health Monitoring – Noise

Audiometric testing is required for any worker who is frequently required to use personal protective equipment to protect from risk of hearing loss associated with noise that exceeds the exposure standard.

Audiometric testing may also be carried out on workers who are exposed to:

- ototoxic substances listed in WorkCover Managing Noise Code of Practice (see appendix B) where the airborne exposure (without regard to respiratory protection worn) is greater than 50 per cent of the national exposure standard for the substance, regardless of the noise level
- ototoxic substances at any level and noise with LAeq,8h greater than 80 dB(A) or LC, peak greater than 135 dB(C)
- hand-arm vibration at any level and noise with LAeq,8h greater than 80 dB(A) or LC, peak greater than 135 dB(C).

Testing must be carried out within 3 months of commencing work and at least every 2 years thereafter.

8. Health Monitoring – SCUBA Diving

A worker must not carry out general diving work or undergo training for general diving work unless the worker holds a current certificate of medical fitness. The work or training must comply with any conditions on the current certificate of medical fitness of the worker.

A certificate of medical fitness must:

a) be issued by a registered medical practitioner with appropriate training in underwater medicine, and
b) state the following:

- the name of the person to whom it is issued,
- its date of issue and its expiry date,
- whether or not the person to whom it is issued is, in accordance with the fitness criteria, medically fit to carry out diving work,
- any conditions in relation to the type of diving work the person to whom it is issued is fit to carry out, or the circumstances in which the person is fit to carry out general diving work, including, in the case of a person who is under 18 years of age, any particular conditions applicable to the age of the person.


Personnel working with human pathogens of Risk Group 3 or 4 shall have an initial medical examination (including any specific tests such as a chest x-ray, if relevant) and periodic monitoring examinations. Subject to privacy and informed consent considerations, a baseline serum sample should be obtained from at-risk personnel and stored for future reference. “At-risk personnel” are those who are immuno-suppressed, immuno-compromised, or otherwise unduly vulnerable to infection, such as persons who are diabetic. Additional serum samples may be collected periodically, depending on the risk of exposure to agents handled in the laboratory. If samples are collected, procedures shall be documented defining who owns the serum, how it is stored, who can access it for testing, who may order tests, who evaluates the tests and who can have access to the results.

10. Health Monitoring – Lead

Health monitoring must be provided to a worker conducting lead risk work.
Examples of processes that could lead to work being classified as lead-risk include:

- Manufacture or handling of dry lead compounds that could result in exposure to lead dust or fumes
- Work involving manufacture, assembly, handling or repair of lead batteries or pasting or casting lead
- Spraying molten lead metal or alloys containing lead metal
- Foundry process, melting or casting lead alloys
- Recovering lead ore, oxides or other compounds
- Grinding, discing, buffing or cutting alloys containing lead
- Welding, cutting or cleaning metal coated with lead or lead paint
- Radiator repairs
- Fire assays if lead, lead compounds or lead alloys are used
- Spray painting with lead paint
- Removing paint containing lead
- Handling waste containing lead
- Detonators or other explosives that contain lead
- Firing weapons at an indoor firing range.

If any of these processes are undertaken an assessment must be carried out to determine whether any of these are lead-risk i.e. whether it is likely to cause the lead level in a worker’s blood to exceed:

- 10 µg/dL (0.48 µmol/L) for a female of reproductive capacity
- 30 µg/dL (1.45 µmol/L) for all other workers.

Any worker conducting lead-risk work must have health monitoring:

(a) before the worker first commences lead-risk work, and
(b) 1 month after the worker first commences lead-risk.

If the worker has already commenced work then health monitoring shall be carried out as soon as practicable after the lead-risk work is identified, and then 1 month after the first monitoring of the worker.

Biological monitoring of workers who do lead-risk work shall be carried out at the following times:

(a) for females not of reproductive capacity and males:
   (i) if the last monitoring shows a blood lead level of less than 30µg/dL (1.45µmol/L)—6 months after the last biological monitoring of the worker, or
   (ii) if the last monitoring shows a blood lead level of 30µg/dL (1.45µmol/L) or more but less than 40µg/dL (1.93µmol/L)—3 months after the last biological monitoring of the worker, or
   (iii) if the last monitoring shows a blood lead level of 40µg/dL (1.93µmol/L) or more—6 weeks after the last biological monitoring of the worker.

(b) for females of reproductive capacity:
   (i) if the last monitoring shows a blood lead level of less than 10µg/dL (0.48µmol/L)—3 months after the last biological monitoring of the worker, or
   (ii) if the last monitoring shows a blood lead level of 10µg/dL (0.48µmol/L) or more—6 weeks after the last biological monitoring of the worker.

The worker must immediately be removed from carrying out lead-risk work if following health monitoring:

(a) biological monitoring of the worker shows that the worker’s blood lead level is, or is more than:
   (i) for females not of reproductive capacity and males—50µg/dL (2.42µmol/L), or
   (ii) for females of reproductive capacity—20µg/dL (0.97µmol/L), or
   (iii) for females who are pregnant or breastfeeding—15µg/dL (0.72µmol/L), or

(b) the registered medical practitioner who supervised the health monitoring recommends that the worker be removed from carrying out the lead-risk work, or

(c) there is an indication that a risk control measure has failed and, as a result, the worker’s blood lead level is likely to reach the relevant level for the worker referred to in (a).

The university must notify the Regulator as soon as practicable if a worker is removed from carrying out lead-risk work as a result of health monitoring results. The worker must be medically examined by a registered
medical practitioner with experience in health monitoring within 7 days after the day the worker is removed from the lead-risk work.

If a worker is removed from carrying out lead-risk work and it is believed the worker will return to carrying out lead-risk work, health monitoring must be arranged under the supervision of a registered medical practitioner with experience in health monitoring at a frequency decided by the practitioner. This will determine whether the worker’s blood lead level is low enough for the worker to return to carrying out lead-risk work.

The worker must not return to carrying out lead-risk work until:

(a) the worker’s blood lead level is less than:
   (i) for females not of reproductive capacity and males—40µg/dL (1.93µmol/L), or
   (ii) for females of reproductive capacity—10µg/dL (0.48µmol/L), and

(b) a registered medical practitioner with experience in health monitoring is satisfied that the worker is fit to return to carrying out lead-risk work.

11. Health Monitoring – Asbestos

Health monitoring must be provided if the worker is:

(a) carrying out licensed asbestos removal work at a workplace and is at risk of exposure to asbestos when carrying out the work, or

(b) is carrying out other ongoing asbestos removal work or asbestos-related work and is at risk of exposure to asbestos when carrying out the work.

Health monitoring of the worker must commence before the worker carries out licensed asbestos removal work.

12. Health Monitoring – Laboratory Animal Allergens (LAA)

Exposure to animals or animal products (scurf, dander, hair, or urine components) can cause allergies and asthma. About 33% of animal handlers have allergic symptoms (e.g., rhinitis) and approximately 10% have animal-induced asthma. Inhalation is one of the most common ways for allergens to enter the body. Some workers develop allergic symptoms quickly, while others can take longer to become sensitized. The majority of LAA sufferers experience symptoms within 6 months to 3 years of their first exposure; therefore, this is the critical period for monitoring.

To reduce the incidence of these conditions, adequate ventilation with increased air changes per hour, ventilated cage/rack systems and local exhaust systems should be provided.

It is recommended that respiratory protection is worn where necessary to prevent the development of laboratory animal allergies. Usually, P2 particulate respirators are adequate but fit testing of the respirator is important to ensure that it is appropriate for the individual.

Health monitoring consists of an initial health questionnaire (HS903 Health Monitoring Form – Laboratory Animal Allergens); any at-risk persons identified in the questionnaire should be referred for a follow-up health assessment which could include pulmonary function tests. LAA is most likely to occur in persons with previously known allergies. The most common symptoms are watery eyes and an itchy, runny nose, although skin symptoms and lower respiratory tract symptoms may also occur. Ongoing monitoring of symptoms should be carried out by the individual by regular completion of the questionnaire (3/6/12 months). Any unusual personal reaction or allergy to animals or animal products must be reported to the supervisor so that appropriate action can be taken.

13. Health monitoring – Hazardous manual tasks

A hazardous manual task means a task that requires a person to lift, lower, push, pull, carry, or otherwise move, hold, or restrain any person, animal or thing involving one or more of repetitive or sustained force, high or sudden force, repetitive movement, sustained or awkward posture or exposure to vibration.

Hazardous manual tasks may cause musculoskeletal disorders (MSD). This means an injury to, or a disease of, the musculoskeletal system, whether occurring suddenly or over time. MSDs can occur due to:

- gradual wear and tear by repeated or continuous use of the same body parts, including static body positions
• sudden damage caused by strenuous activity, or unexpected movements such as when loads being handled move or change position suddenly.
• a combination of these.

Regular hazardous manual tasks must be assessed to eliminate or reduce the risk (e.g., through engineering controls). If the risk still exists any staff or students who carry out the hazardous manual task on a regular basis should undergo health monitoring to assess the individual’s ability to undertake the tasks.

14. Consult with the worker

Workers should be informed by their supervisor about the possible health effects from exposure to hazards/substances with which they are working and the need to conduct health monitoring based on their exposure.

15. Who conducts health monitoring?

Health monitoring must be carried out either by, or under the supervision of, a registered medical practitioner with experience in health monitoring of the particular hazard. Such practitioners may be a single practitioner in a medical centre, occupational physician or specialists in areas such as respiratory screening and chest x-rays. At UNSW, health monitoring is managed by VerifyCV (partnering with Medibank) and/or UNSW Health Service (at Kensington campus). Health monitoring should not, and cannot, legally be used to preclude employment but rather is useful to detect any changes in the individual or for early detection of failure of control measures that may put persons at risk.

The medical practitioner should be provided with relevant information to help in their assessment such as:

(a) the name and address of the person conducting the business or undertaking,
(b) the name and date of birth of the worker,
(c) the work that the worker is, or will be, carrying out that has triggered the requirement for health monitoring (e.g. risk management forms, SDS),
(d) if the worker has started the work, how long the worker has been carrying out that work.

The medical practitioner must comply with the following:

• Medical assessments must relate strictly to the candidate’s ability to carry out the duties the job requires.
• Do not test for general health or medical conditions that would not affect the person’s ability to perform the job.
• Do allow the individual to use any usual corrective appliance e.g., glasses, hearing aid.
• Do tell the individual the outcome of the assessment.

Appointments are arranged by the UNSW Human Resources Manager who will liaise with VerifyCV.

16. Health Monitoring report

The health monitoring report must include the following:

(a) the name and date of birth of the worker,
(b) the name and registration number of the registered medical practitioner,
(c) the name and address of the person conducting the business or undertaking who commissioned the health monitoring,
(d) the date of health monitoring
(e) any advice that test results indicate that the worker may have contracted a disease, injury or illness as a result of carrying out the work that triggered the requirement for health monitoring,
(f) any recommendation that the person conducting the business or undertaking take remedial measures, including whether the worker can continue to carry out the type of work that triggered the requirement for health monitoring,
(g) whether medical counselling is required for the worker in relation to the work that triggered the requirement for health monitoring.

A copy of the report must be provided to

• The worker as soon as reasonably practicably after it has been received.
• The Regulator as soon as practicable after obtaining the report if the report contains:
a) any advice that test results indicate that the worker may have contracted a disease, injury or illness as a result of carrying out the work that triggered the requirement for health monitoring, or
b) any recommendation that the University take remedial measures, including whether the worker can continue to carry out the work.

- All other persons conducting businesses or undertakings who have a duty to provide health monitoring for the worker as soon as practicable after obtaining the report.

Where an adverse health monitoring result is obtained which can be attributed to the workplace exposure, actions should be taken to minimise any further risks to the health and safety of the individual. If the worker has been certified unfit for further exposure to the hazardous chemical, then the worker should be relocated to alternative duties to ensure exposure is prevented.

17. Recordkeeping

Health monitoring records should be maintained for a period of 30 years from the date of last entry. Confidentiality is required for all health monitoring records and disclosure to another person must not occur without the worker’s written consent.

18. Refusing health monitoring

Workers must follow any reasonable instruction given by UNSW to allow the university to comply with health monitoring duties. If you refuse, you may be contravening your duties under the Work Health and Safety Act 2011 (NSW).

19. Acknowledgements

Work Health and Safety Act 2011 (nsw.gov.au)
Work Health and Safety Regulation 2017 (nsw.gov.au)
List of codes of practice | SafeWork NSW
Resources | Safe Work Australia
intro to health surveillance guidelines (safeworkaustralia.gov.au)

AS/NZS 3580.1.1:2007 Methods for sampling and analysis of ambient air - Guide to siting air monitoring equipment (saiglobal.com)

Appendix A: Definitions

Ototoxic substance – Substance that causes damage to the hearing or balance functions of the ear.
## Appendix B: Health Monitoring Summary Table

The following table lists work hazards for which health monitoring may be required:

<table>
<thead>
<tr>
<th>Work type:</th>
<th>Initial employment</th>
<th>Ongoing</th>
<th>Exit employment</th>
<th>Requirement</th>
<th>How</th>
</tr>
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<tbody>
<tr>
<td>Significant exposure to Schedule 14 chemicals or • Chemicals which are known or presumed to be carcinogenic, mutagenic, or toxic to human reproduction. • Respiratory or skin sensitisers; • Those with known severe toxic effects.</td>
<td>Initial health monitoring based on the chemical concerned</td>
<td>Health monitoring or biological exposure test at a frequency determined by risk. If there is a spill or significant exposure. If the worker has symptoms of concern.</td>
<td>Final examination dependent on the chemical</td>
<td>Regulations 368 – 378 of WHS regulation 2011</td>
<td>Contact Faculty/area HR Manager to arrange health monitoring through VerifyCV.</td>
</tr>
<tr>
<td>Work with ionising radiation E.g., Laboratory researchers</td>
<td>Arrange for a chest dosimeter or finger dosimeter</td>
<td>Monthly report for finger dosimeter. Three-monthly report for chest dosimeter.</td>
<td>Final dose report</td>
<td>Radiation Control Act</td>
<td>Contact the UNSW Health and Safety or UNSW Canberra Radiation Officer</td>
</tr>
<tr>
<td>Work with Class 3B or class 4 lasers (where the laser is not embedded). E.g., Laboratory researchers</td>
<td></td>
<td>Following excessive exposure Following injury/illness to eye</td>
<td></td>
<td>AS2211.1.2004 Section 10.11</td>
<td>Contact Faculty/area HR Manager to arrange monitoring through VerifyCV OR Arrange appointment at UNSW Health Service</td>
</tr>
<tr>
<td>Noise exposure where hearing-protection is required to be worn or • Work with ototoxic substance • Hand-arm vibration E.g., Workshop staff</td>
<td>Audiometric test within 3 months of commencing work</td>
<td>Audiometric test every 2 years</td>
<td>n/a</td>
<td>Regulation 58 of WHS regulation 2011</td>
<td>Contact Faculty/area HR Manager to arrange an audiometry test through VerifyCV</td>
</tr>
<tr>
<td>Work type:</td>
<td>Initial employment</td>
<td>Ongoing</td>
<td>Exit employment</td>
<td>Requirement</td>
<td>How</td>
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<tr>
<td>SCUBA Diving</td>
<td>Certificate of medical fitness before diving work or diving training commences</td>
<td>Comply with conditions of the certificate</td>
<td>n/a</td>
<td>Regulation – 168 - 170 of WHS regulation 2011</td>
<td>Contact Faculty/area HR Manager to arrange diving certificate through VerifyCV. OR Arrange appointment at specialist Dive GP (Prince of Wales Hospital has a department of Diving and Hyperbaric Medicine)</td>
</tr>
<tr>
<td>Work with risk group 3 or 4 biological agents</td>
<td>Initial medical examination for all. Baseline serum sample from at-risk persons</td>
<td>Additional serum samples collected periodically depending on the risk of exposure to agents handled in the laboratory.</td>
<td>n/a</td>
<td>AS2243.3:2010 Section 2.6.1</td>
<td>Contact Faculty/area HR Manager to arrange monitoring through VerifyCV OR Arrange appointment at UNSW Health Service</td>
</tr>
<tr>
<td>Lead-risk work</td>
<td>Before work with lead starts and 1v months after first work with lead Demographic, medical and occupational history Physical examination Biological monitoring</td>
<td>At a frequency based on requirements regulation 407 (6 weeks / 3 months/ 6 months)</td>
<td>n/a</td>
<td>Regulations 405 – 418 of WHS regulation 2011</td>
<td>Contact Faculty/area HR Manager to arrange a blood-lead test through VerifyCV OR Arrange appointment at UNSW Health Service</td>
</tr>
<tr>
<td>Asbestos removal work or asbestos-related work</td>
<td>Before work is carried out Demographic, medical and occupational history Records of personal exposure Physical examination</td>
<td>At a frequency determined during the initial monitoring</td>
<td>n/a</td>
<td>Regulations 435 – 44 of WHS regulation 2011</td>
<td>Contact Faculty/area HR Manager to arrange health monitoring through VerifyCV OR Arrange appointment at UNSW Health Service</td>
</tr>
<tr>
<td>Work with laboratory animals (e.g., exposure to fur, bedding, excrement)</td>
<td>Questionnaire. Health monitoring/Lung function for at-risk persons</td>
<td>Monitoring for symptoms of Laboratory Animal Allergens</td>
<td>n/a</td>
<td>AS2243.3:2010 Sec 6.3.2.</td>
<td>Contact Faculty/area HR Manager to arrange monitoring through VerifyCV OR Arrange appointment at UNSW Health Service</td>
</tr>
<tr>
<td>Work type:</td>
<td>Initial employment</td>
<td>Ongoing</td>
<td>Exit employment</td>
<td>Requirement</td>
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<tr>
<td>Manual handling work (heavy lifting of items or persons) or physically demanding work on a regular basis&lt;br&gt;E.g., Grounds, childcare, mortuary, stores staff</td>
<td>Questionnaire and Health Assessment</td>
<td>At a frequency determined during the initial monitoring</td>
<td>n/a</td>
<td>n/a</td>
<td>Contact Faculty/area HR Manager to arrange health monitoring through VerifyCV OR Arrange appointment at UNSW Health Service</td>
</tr>
<tr>
<td>Work in a Clean Room</td>
<td>Questionnaire and Health Assessment</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Arrange appointment at UNSW Health Service</td>
</tr>
<tr>
<td><strong>IMMUNISATIONS</strong></td>
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<tr>
<td>Work involving exposure to blood or tissues of cattle, sheep, goats, pigs, or native animals</td>
<td>Pre-vaccination screening followed by Q Fever vaccination</td>
<td>n/a</td>
<td>n/a</td>
<td>AS2243.3:2010</td>
<td>Complete HS427 Immunisation Form Contact Sydney University Health Service, or medical practice licensed for Q fever Or UNSW Canberra HR Manager</td>
</tr>
<tr>
<td>Work handling animals or soils</td>
<td>Tetanus vaccination</td>
<td>Every 5 years</td>
<td>n/a</td>
<td>AS2243.3:2010</td>
<td>Arrange vaccination through University Health Service or GP Or UNSW Canberra HR Manager</td>
</tr>
<tr>
<td>Work handling or exposure to human blood or tissues (other than formalin-fixed tissues).</td>
<td>Hepatitis B vaccination</td>
<td>3 vaccinations followed by blood test to establish antibody response</td>
<td>n/a</td>
<td>AS2243.3:2010</td>
<td>Complete HS427 Immunisation Form Arrange vaccination through University Health Service or GP Or UNSW Canberra HR Manager</td>
</tr>
<tr>
<td>First aid or patient care</td>
<td>Hepatitis B vaccination</td>
<td>3 vaccinations followed by blood test to establish antibody response</td>
<td>n/a</td>
<td>AS2243.3:2010</td>
<td>Complete HS427 Immunisation Form Arrange vaccination through University Health Service or GP Or UNSW Canberra HR Manager</td>
</tr>
<tr>
<td>Work involving handling or exposure to fresh human gut tissues or faecal samples?</td>
<td>Hepatitis A vaccination</td>
<td>n/a</td>
<td>n/a</td>
<td>AS2243.3:2010</td>
<td>Complete HS427 Immunisation Form Arrange vaccination through University Health Service or GP Or UNSW Canberra HR Manager</td>
</tr>
<tr>
<td>Travel to developing countries</td>
<td>Travel vaccinations</td>
<td>n/a</td>
<td>n/a</td>
<td>WHS Act and Regulation 2011</td>
<td>Complete HS427 Immunisation Form Arrange vaccination through University Health Service or GP Or UNSW Canberra HR Manager</td>
</tr>
</tbody>
</table>
## Appendix B: Common ototoxic substances

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Skin absorption*</th>
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<tbody>
<tr>
<td><strong>Solvents</strong></td>
<td>Butanol</td>
<td></td>
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<tr>
<td></td>
<td>Carbon disulphide</td>
<td>√</td>
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<tr>
<td></td>
<td>Ethanol</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ethyl benzene</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n-heptane</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n-hexane</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perchloroethylene</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solvent mixtures and fuels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stoddard solvent (white spirits)</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Styrene</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Toluene</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Trichloroethylene</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Xylenes</td>
<td></td>
</tr>
<tr>
<td><strong>Metals</strong></td>
<td>Arsenic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lead</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manganese</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mercury</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Organic tin</td>
<td></td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>Acrylonitrile</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Carbon monoxide</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hydrogen cyanide</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Organophosphates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paraquat</td>
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</table>

*Can be absorbed through the skin and are considered particularly hazardous.*
## Appendix B: Version control

<table>
<thead>
<tr>
<th>Version</th>
<th>Authorised by</th>
<th>Approval Date</th>
<th>Effective Date</th>
<th>Sections modified</th>
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<tbody>
<tr>
<td>0.1</td>
<td>Director, Human Resources</td>
<td>1 November 2006</td>
<td>1 November 2006</td>
<td>The information in this guideline has been extracted from the superseded Hazardous Substances Program October 2000. Released for consultation purposes.</td>
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<tr>
<td>1.0</td>
<td>Director, Human Resources</td>
<td>1 January 2007</td>
<td>1 January 2007</td>
<td>No changes from consultation.</td>
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<tr>
<td>1.1</td>
<td>Director, Human Resources</td>
<td>10 October 2008</td>
<td>10 October 2008</td>
<td>Direction to authorised medical practitioners list on WorkCover website and information that health monitoring must only be conducted by a listed practitioner.</td>
</tr>
<tr>
<td>1.2</td>
<td>Director, Human Resources</td>
<td>2 November 2009</td>
<td>2 November 2009</td>
<td>Addition of table “other hazards that require health surveillance”.</td>
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<td>1.3</td>
<td>Director, Human Resources</td>
<td>10 November 2010</td>
<td>10 November 2010</td>
<td>Check references, update links</td>
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<td>1.4</td>
<td>Director, Human Resources</td>
<td>16 December 2010</td>
<td>16 December 2010</td>
<td>Updated format in line with University template</td>
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<tr>
<td>1.5</td>
<td>Director, Human Resources</td>
<td>1 March 2013</td>
<td>1 March 2013</td>
<td>Updated in line with WHS Regulation 2011 Updated Branding Logo in accordance with UNSW Branding Guidelines. Modified the document identifier from OHS to HS in accordance with WHS legislation review</td>
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<tr>
<td>2.0</td>
<td>Director, Safety and Sustainability</td>
<td>30 October 2014</td>
<td>30 October 2014</td>
<td>More detailed guidelines around health monitoring for hazards other than chemical. Added S20, Summary Table. Added appendix A. Document Name change from Air Monitoring &amp; Health Surveillance Guideline</td>
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<td>2.1</td>
<td>Director, Safety and Sustainability</td>
<td>21 March 2016</td>
<td>21 March 2016</td>
<td>Minor edits for clarity</td>
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<td>2.2</td>
<td>Director, Safety and Wellbeing</td>
<td>30 July 2020</td>
<td>30 July 2020</td>
<td>Minor amendment to Section 5; 16 and Appendix A</td>
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<td>3.0</td>
<td>Director, Risk &amp; Safety Management</td>
<td>8 August 2022</td>
<td>8 August 2022</td>
<td>Removed from Governance Updated template and administrative update.</td>
</tr>
</tbody>
</table>

Updates to this document

Any suggestions, recommendations or updates to this document should be emailed to safety@unsw.edu.au with the email header stating GUIDELINES UPDATE Health Monitoring Guideline (HS091).