

Health monitoring

Guide for xylene



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Introduction

This guide is intended to be read by a registered medical practitioner with experience in health monitoring who is engaged by person conducting a business or undertaking (PCBU) to carry out or supervise health monitoring. It provides practical guidance to registered medical practitioners about requirements under the work health and safety (WHS) laws for health monitoring.

This guide applies to all workplaces covered by the WHS Regulations where health monitoring is required.

How to use this guide

This guide includes references to the legal requirements under the WHS Act and WHS Regulations. These are included for convenience only and should not be relied on in place of the full text of the WHS Act or WHS Regulations.

The words 'must', 'requires' or 'mandatory' indicate a legal requirement exists that must be complied with. The word 'should' is used in this guide to indicate a recommended course of action, while 'may' is used to indicate an optional course of action.

This guide provides information for those registered medical practitioners engaged by a PCBU to carry out or supervise health monitoring for workers. This guidance should be read in conjunction with the following:

- *Health monitoring guide for registered medical practitioners*
- *Health monitoring guides for hazardous chemicals*
- *Health monitoring guide for workers*
- *Health monitoring guide for persons conducting business or undertakings (PCBUs).*

Health monitoring under the WHS Regulations

In certain circumstances, the model WHS Regulations place duties on a PCBU to provide health monitoring to workers. These requirements arise if the worker is carrying out work with hazardous chemicals including lead and asbestos. In addition, the work being carried out must be the kind of work specified in the WHS Regulations. A PCBU has the duty to determine if health monitoring is required.

The WHS Regulations prescribe that health monitoring is carried out by or supervised by a registered medical practitioner with experience in health monitoring.

Xylene

Xylene (mixed isomers; CAS 1330-20-7) is a natural component of petroleum and coal tar. It is colourless, flammable and has a sweet odour.

Commercial xylenes consist of a mixture of o-, m- and p-isomers (CAS 95-47-6, 108-38-3 and 106-42-3, respectively); generally 60 to 70 per cent is m-xylene. They also contain six to 15 per cent ethyl benzene.

Synonyms: dimethylbenzene, methyl toluene.

Work activities that may represent a high risk exposure

Examples of work activities involving xylene that may require special attention when assessing exposure include:

- blending and distilling petrol
- chemical, plastics and synthetic fibre manufacturing
- printing, rubber and leather industries
- cleaning
- painting and paint production
- furniture making and restoration
- biomedical laboratory work
- wood processing plant workers
- automobile garage workers
- metal workers
- pesticide manufacturing, and
- perfume manufacturing.

Sources of non-occupational exposure

Non-occupational exposure may occur via:

- surface water, ground water and drinking water
- vehicle exhaust
- petroleum
- paint
- varnish
- shellac
- paint thinners
- paint removers
- rust preventatives
- cigarette smoke
- pesticides, and
- synthetic fragrances.

1. Health monitoring for xylene under the Work Health and Safety (WHS) Regulations

Collection of demographic, medical and occupational history
Records of personal exposure
Physical examination
Baseline blood sample for haematological profile
Urinary toluric (methyl hippuric) acid

Health monitoring before starting work in a xylene process

Health monitoring for xylene may be required before the worker starts work so that changes to the worker's health can be detected.

Initial discussions about a health monitoring program should include:

- possible health effects from exposure to xylene
- how to recognise and report symptoms, and
- what is involved in the health monitoring program, for example the frequency of testing and the tests that may be needed.

A physical examination should be carried out with emphasis on the central nervous system (CNS) and respiratory system.

Xylene is a respiratory irritant and it is important to investigate respiratory symptoms. However, spirometry may not be required at this stage.

A blood sample for a haematological profile should be used to record the worker's baseline health status.

During exposure to a xylene process

2. Monitoring exposure to xylene

Where workers are exposed, suspected of being exposed or are concerned about exposure to xylene, the person conducting the business or undertaking (PCBU) has a duty to arrange a health monitoring appointment with a registered medical practitioner. For example, an appointment should be arranged following spills or loss of containment of xylene, petroleum or coal tar resulting in excessive exposure to workers or when workers develop symptoms of xylene exposure for example CNS, respiratory, ocular or dermatological conditions.

Absorption of xylene occurs mainly by inhalation, though some skin absorption can occur. Pulmonary retention of xylene has been estimated to be 60 to 65 per cent. Reports of accidental ingestion of liquid xylenes indicates rapid absorption.

Xylenes are mainly eliminated unchanged in exhaled air (approximately three to six percent of absorbed material) and as metabolites in urine (approximately 95 per cent of absorbed material). Urinary excretion of unchanged xylenes is a minor excretion pathway (representing less than one percent of absorbed material).

Approximately 95 per cent of absorbed xylene is rapidly metabolised to methyl benzoic acid which conjugates with glycine to form the corresponding methyl hippuric acids. Urinary excretion of methyl hippuric acids accounts for greater than 90 per cent of absorbed xylenes. Minor urinary metabolites (less than 10 per cent of the absorbed dose) include xylenols and their sulfate and etherglucuronide conjugates. The excretion of methyl hippuric acids is biphasic with half-lives of 3.6 hours and 30 hours.

The following test may be used to test the worker's xylene exposure levels:

- urine levels of toluric (methyl hippuric) acid

Where urinalysis is carried out, the following value should be considered when assessing exposure to xylene:

Biological exposure standard for xylene¹

Urinary *toluric (methyl hippuric) acid*:

650 mmol/mol creatinine (5.7 mmol/L)

Urine samples should be collected at the end of shift. Methyl hippuric acid metabolites are specific for xylene exposure and there is a low risk of contamination during sample collection.

The metabolism of xylenes to methyl hippuric acids is inhibited approximately 50 per cent after consumption of alcohol or ingestion of aspirin. Ingestion of either of these should be noted.

Co-exposure to ethyl benzene may suppress the metabolism of m-xylene up to 20 per cent.

There are reported ethnic differences in the metabolism of xylenes to methyl hippuric acids. Asian individuals may excrete approximately 30 per cent less methyl hippuric acids compared with Caucasian individuals exposed to equivalent xylene concentrations. The ethnic differences may be attributed to physiological and metabolic factors (for example body size, cardiac output, alveolar ventilation, fat volume and enzyme polymorphisms). These ethnic differences should be considered when interpreting the results.

Other health monitoring methods

Other biological tests that may be used (or have been used) to test worker exposure to xylenes include:

- xylene levels in exhaled air
- urinary xylene, or
- blood xylene levels.

While these tests are specific for xylene, sampling time and method are more critical for these tests than the test for urinary methyl hippuric acid levels. Xylene levels in blood have a short half-life (approximately 30 minutes) and sampling must occur immediately at the end of exposure. Sampling should occur in a clean room to avoid contamination, including any contamination from exposed clothing or skin.

These tests should be used for confirmatory purposes only.

Workplace exposure standard

The workplace exposure standard for xylene (o-, m-, p- isomers) is:

- eight hour time weighted average (TWA) of 80 ppm (350 mg/m³), and
- short term (15 minute time weighted average) exposure limit (STEL) of 150 ppm (655 mg/m³).

A physical examination, X-ray and urinary testing may be indicated if the results of air monitoring indicate frequent or potentially high exposure (half of the TWA or above).

Removal from work

Where a medical examination indicates the worker is displaying symptoms of exposure to xylene or where results of biological monitoring indicate exposure that may cause adverse health effects, the registered medical practitioner should consider recommending the worker be removed from xylene-related work.

¹ See [Chemical analysis branch handbook, 9th Edition, Workplace and biological monitoring exposure analysis, WorkCover NSW \(PDF 3.39MB\)](#) for more details

When removal from work is indicated the registered medical practitioner must provide the PCBU with the following recommendations:

- the worker should be removed from work with xylene, and
- the PCBU should review control measures and carry out recommended remedial action.

The worker must be informed of the results of health monitoring.

Return to work

Should a worker be removed from xylene-related work, they must not return until the registered medical practitioner has:

- assessed them as medically fit, and
- made a recommendation to the PCBU that the worker can return to remediated xylene-related work.

This assessment should take into consideration the clinical condition of the worker, the worker's biological monitoring results and remediation of the circumstances that led to the symptoms if possible.

At termination of work in a xylene process

3. Final medical examination

A collection of a specimen for urine methyl hippuric acid should be collected on the last shift on the last day of work and a final medical examination carried out as soon as practical thereafter.

Workers with health conditions or continuing symptoms due to xylene exposure (for example CNS or respiratory symptoms) should be advised to seek continuing medical examinations as organised by the registered medical practitioner supervising the health monitoring program.

A health monitoring report from the registered medical practitioner should be provided to the PCBU as soon as practicable after the completion of the monitoring program, and at regular intervals for longer term or ongoing health monitoring processes. The report must include:

- the name and date of birth of the worker
- the name and registration number of the registered medical practitioner
- the name and address of the PCBU who commissioned the health monitoring
- the date of the health monitoring
- any test results that indicate whether or not the worker has been exposed to a hazardous chemical
- any advice that test results indicate that the worker may have contracted an injury, illness or disease as a result of carrying out the work that triggered the requirement for health monitoring
- any recommendation that the PCBU take remedial measures, including whether the worker can continue to carry out the type of work that triggered the requirement for health monitoring, and
- whether medical counselling is required for the worker in relation to the work that triggered the requirement for health monitoring.

Potential health effects following use of xylene

4. Route of occupational exposure

The primary route of exposure is via inhalation.

However, skin absorption and ingestion may also occur.

5. Target organ/effect

The target organs and potential effects of xylene exposure include:

Table 1 Target organs and potential effects of xylene exposure

Target organ	Effect
Central nervous system	<ul style="list-style-type: none">• Headache• Neurological impairment
Liver	<ul style="list-style-type: none">• Hepatic toxicity
Skin	<ul style="list-style-type: none">• Irritation
Respiratory tract	<ul style="list-style-type: none">• Irritation• Laboured breathing• Impaired pulmonary function• Central mediated respiratory depression
Eyes	<ul style="list-style-type: none">• Irritation

6. Acute effects

Acute exposure to high concentrations of xylene vapours can result in irritation of the skin, eyes and respiratory system, and can lead to CNS impairments and cardiovascular problems such as tachycardia.

Acute exposure to mixed xylenes may result in:

- irritation of the eyes, nose, and throat
- nausea
- vomiting and gastric discomfort
- impairment of short term memory
- reduced reaction time, and
- alterations in equilibrium and body balance.

CNS

Acute effects from exposures may include:

- impaired short term memory
- impaired reaction time
- performance decrements in numerical ability, and
- alterations in equilibrium and body balance.

Acute inhalation exposure to mixed solvents containing xylene may cause:

- feelings of intoxication and headaches
- difficulty concentrating

- slurred speech
- ataxia
- fatigue
- agitation
- confusion
- tremors
- dizziness
- sensitivity to noise
- unconsciousness
- amnesia
- brain haemorrhage, and
- epileptic seizure.

After ingestion there has been one report of a coma occurring that persisted for more than 26 hours.

Other effects may include:

- malaise
- dysphasia
- hyperreflexia
- reduced grasping power, and
- reduced muscle power in the extremities.

Respiratory system

Acute-duration inhalation (where respiratory toxicity is a critical effect) may cause:

- respiratory, nose and throat irritation, and
- laboured breathing and impaired pulmonary function including:
 - decreased forced vital capacity
 - increased forced expiratory volume, and
 - increased ratio of forced expiratory volume in one minute to forced vital capacity (FEV₁/FVC).

At concentrations over 10,000 ppm, the lungs may be adversely affected, that may lead to patchy diffuse opacities seen on a chest X-ray. There has been one reported death following acute inhalation exposure (10,000 ppm) where the autopsy showed severe pulmonary congestion, inter-alveolar haemorrhage, pulmonary oedema, brain showing haemorrhaging and evidence of anoxic damage.

Gastrointestinal system

Nausea, vomiting and gastric discomfort have all been reported after exposure to xylene via inhalation and ingestion.

Kidneys

Inhalation and skin absorption may lead to:

- increased blood urea
- distal renal tubular academia
- decreased urinary clearance of endogenous creatinine
- increased b-glucuronidase, and
- increased urinary excretion of albumin, erythrocytes and leukocytes.

Liver

Exposure to xylene vapours and liquid may be hepatotoxic. Acute exposure to high levels may cause:

- hepatic toxicity
- elevated serum transaminase levels
- hepatocellular vacuolation, and
- increased urinary D-glucuronic acid indicating hepatic microsomal enzyme induction.

Eyes

Acute exposure to vapours may produce mild and transient eye irritation.

Eye contact may lead to:

- photophobia
- redness of the conjunctiva and partial loss of the conjunctival and corneal epithelia
- subconjunctival haemorrhage, and
- xylene keratopathy (melting of the corneal stroma).

Skin

Skin contact may lead to:

- skin irritation
- vasodilation of the skin
- dryness and scaling, and
- urticaria.

7. Chronic effects

Xylene may be present as a contaminant in mixed solvents and health effects may be due to exposure to the mixture.

Chronic occupational exposure to mixed solvents can lead to:

- increases in depression, anxiety, and loss of interest
- reduced conduction velocities
- duration related numbness, cramps and weakness
- solvent odour on the breath, and
- cyanosis of the extremities.

CNS

Effects on the CNS from chronic exposure to mixed xylenes include:

- headache
- dizziness
- fatigue
- tremors
- incoordination
- anxiety
- impaired short-term memory and inability to concentrate
- amnesia, and
- respiratory depression.

Cardiovascular system

Heart palpitations, chest pain, abnormal electrocardiogram (ECG), and flushing have all been reported after chronic occupational exposure to xylene.

Haematological effects

Chronic exposure to solvent mixtures of xylene and benzene may cause blood dyscrasias.

Reproductive system

Effects on the reproductive system include:

- spontaneous abortion, and
- developmental effects including:
 - increased incidence of skeletal muscle variations in foetuses
 - delayed ossification
 - foetal resorptions, and
 - decreased foetal body weight in animals.

8. Carcinogenicity

Xylene has not been classified as carcinogenic according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

9. GHS classification

The following GHS health hazard classification for xylene (o-, p-, m-) has been taken from Safe Work Australia's Hazardous Chemicals Information System.:

Hazard category

Acute toxicity – category 4 (harmful in contact with skin)

Acute toxicity – category 4 (harmful if inhaled)

Specific target organ toxicity (single exposure) – category 3
(may cause respiratory irritation)

Skin irritation – category 2

Source documents

Agency for Toxic Substances and Disease Registry; [Toxicological profile for xylene.](#)

[Chemical analysis branch handbook, 9th Edition, Workplace and biological monitoring exposure analysis](#), WorkCover NSW (PDF 3.39MB).

Jacobson, G.A. and McLean, S. (2003) Biological monitoring of low level occupational xylene exposure and the role of recent exposure. *Ann. Occup. Hyg.* 47: 331-336.

Kandyala, R., Raghavendra, S. P. C., and Rajasekharan, S. T. (2010) Xylene: An overview of its health hazards and preventive measures. *J. Oral Maxillofacial Pathol.* 14(1): 1-5.

Lauwerys, R.R. and Hoet, P. (2001) *Industrial Chemical Exposure Guidelines for Biological Monitoring*, 3rd Ed, Lewis Publishers, Boca Raton.

National Industrial Chemicals Notification and Assessment Scheme; Human Health Tier II Assessment for [Xylenes](#).

Rajan, S.T. and Malathi, N. (2014) Health Hazards of Xylene: A Literature Review. *J. Clin. Diagn. Res.* 8(2): 271-274.

Riihimaki, V. and Savolainen, K. (1980) Human exposure to m-xylene: Kinetics and acute effects on the central nervous system. *Ann. Occup. Hyg.* 23: 411-422.

Safe Work Australia (2013); [Workplace Exposure Standards for Airborne Contaminants](#) (PDF 873KB).

Safe Work Australia; [Hazardous Chemicals Information System](#).

Uchida, Y., Nakatsuka, H., Uka, H., Watanabe, T., Liu, Y.T. and Huang, M.Y. (1993) Symptoms and signs in workers exposed predominantly to xylene. *Int. Arch. Occup. Environ. Health* 64: 597-605.

US Department of Labor, Occupational Safety and Health Administration; Chemical Sampling Information; [Xylene](#).



Health monitoring report

Xylene

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Health monitoring report – Xylene

This health monitoring report is a confidential health record and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with the consent of the worker.

There are two sections. Complete both sections and all questions as applicable.

Section 1 A copy of this section should be forwarded to the person conducting the business or undertaking (PCBU) who has engaged your services.

Section 2 may contain confidential health information. Information that is required to be given to the PCBU should be summarised in Section 1.

Section 1 – A copy of this section to be provided to the PCBU

Person conducting a business or undertaking

Company/organisation name: Click here to enter text.

Site address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Site Tel: Click here to enter text.

Site Fax: Click here to enter text.

Contact Name: Click here to enter text.

Other businesses or undertakings engaging the worker (include a separate section for each PCBU)

N/A

Company/organisation name: Click here to enter text.

Site address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Site Tel: Click here to enter text.

Site Fax: Click here to enter text.

Contact Name: Click here to enter text.

Worker details (tick all relevant boxes)

Surname: Click here to enter text.

Given names: Click here to enter text.

Date of birth: Click here to enter a date.

Sex: Male Female

Address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Current job: Click here to enter text.

Tel (H): Click here to enter text.

Mob: Click here to enter text.

Date started employment: Click here to enter a date.

Employment in xylene risk work (tick all relevant boxes) (information provided by the PCBU)

New to xylene work

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

- New worker but not new to xylene work
- Current worker continuing in xylene work

Worked with xylene since: Click here to enter a date.

Risk assessment completed: Yes No

Work environment assessment (tick all relevant boxes)
(information provided by the PCBU)

Date of assessment: Click here to enter a date.

Xylene industry/use

- Blending and distilling petrol
- Chemical, plastics and synthetic fibre manufacturing
- Printing, rubber and leather industries
- Painting and paint production
- Biomedical laboratory work
- Automobile garage workers
- Pesticide manufacturing
- Other (specify): Click here to enter text.
- Cleaning
- Furniture making and restoration
- Wood processing plant workers
- Metal workers
- Perfume manufacturing

Other chemicals the worker may be exposed to: Click here to enter text.

Controls

Eye protection	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Wear gloves	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Respirator use	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Respirator type	Click here to enter text.	
Local exhaust ventilation	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Overalls/work clothing	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Laundering by employer	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Emergency eye wash and showers (with hot and cold water)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other please specify		

Health monitoring results

Biological monitoring results

Include/attach test results that indicate whether or not the worker has been exposed

Date	Tests performed	Recommended action or comment
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

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Date	Tests performed	Recommended action or comment
Click here to enter text.	Click here to enter text.	Click here to enter text.

Comments about health monitoring results (for example any early indications or diagnosis of injury, illness or disease): Click here to enter text.

Recommendations (by registered medical practitioner) (tick all relevant boxes)

Further/additional health monitoring for worker

- This is the final health monitoring report
- Repeat health assessment in Click here to enter text. month(s) / Click here to enter text. week(s)
- Counselling required
- Medical examination by registered medical practitioner. On Click here to enter a date.
- Referred to Medical Specialist (respiratory/dermatology/other). On Click here to enter a date.

Recommendations to PCBU

- The worker is suitable for work with xylene
- Review workplace controls
- The worker should be removed from work with xylene. On Click here to enter a date.
- The worker is fit to resume work. On Click here to enter a date.
- Biological monitoring results indicate unacceptably high exposure levels

Specialist's name: Click here to enter text.

Additional comments or recommendations: Click here to enter text.

Registered medical practitioner (responsible for supervising health monitoring)

Name: Click here to enter text.

Signature:

Date: Click here to enter a date.

Tel: Click here to enter text.

Fax: Click here to enter text.

Registration Number: Click here to enter text.

Medical Practice: Click here to enter text.

Address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

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Section 2 – This section to be retained by the registered medical practitioner

Person conducting a business or undertaking

Company/organisation name: Click here to enter text.

Site address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Site Tel: Click here to enter text.

Site Fax: Click here to enter text.

Contact Name: Click here to enter text.

Other businesses or undertakings engaging the worker

N/A

Company/organisation name: Click here to enter text.

Site address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Site Tel: Click here to enter text.

Site Fax: Click here to enter text.

Contact Name: Click here to enter text.

Worker details (tick all relevant boxes)

Surname: Click here to enter text.

Given names: Click here to enter text.

Date of birth: Click here to enter a date.

Sex: Male Female Pregnant/breastfeeding

Address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Current job: Click here to enter text.

Tel (H): Click here to enter text.

Mob: Click here to enter text.

Date started employment: Click here to enter a date.

Past employment and exposure details (tick all relevant boxes)

Have you ever worked in any of the following jobs?

If you answered 'yes' to any of the questions, please advise if you experienced any symptoms such as cough or wheeze or asthma when working.

			Comments (all 'yes' answers)
Blending and distilling petrol	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Chemical, plastics and synthetic fibre manufacturing	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Printing, rubber and leather industries	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Cleaning	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

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Comments (all 'yes' answers)

Painting and paint production	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Furniture making and restoration	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Biomedical laboratory work	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Wood processing plant workers	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Automobile garage workers	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Metal workers	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Pesticide manufacturing	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Perfume manufacturing	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Other (please specify)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

General health questionnaire (tick all relevant boxes)

Did you suffer any incapacity lasting two weeks or longer in the last two years	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Have you ever had any operations or accidents or been hospitalised for any reason	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Are you currently being treated by a doctor or other health professional for any illness or injury	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Are you currently receiving any medical treatment or taking any medications. Please detail.	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Do you currently smoke	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Do you practice personal hygiene at work, for example nail biting, frequency of hand washing, eating or smoking, clean shaven, shower and change into clean clothes at end of shift	<input type="checkbox"/> No	<input type="checkbox"/> Yes	

Specific health questions (tick all relevant boxes)

Do you have or have you ever had:

Blurred vision or other vision problems	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Itchy eyes, runny or congested nose	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Chest pains or irregular pulse	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
High blood pressure or heart disease (including heart attack, heart surgery, murmurs, angina)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

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Family history of heart disease	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Shortness of breath on exertion	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Wheezing, bronchitis or asthma now or in the past	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Any other lung or respiratory conditions (emphysema, pneumonia or sinusitis)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Does anyone in your immediate family (blood relatives only) have asthma, hay fever or eczema	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Breathing problems, nasal blockage, nose bleeds or lump in nose	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Liver disease (including alcohol related or other hepatitis)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Kidney or bladder disease	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Fits, blackouts, dizziness or fainting	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Severe headaches or migraines	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Chronic fatigue or tiredness	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Any neurological condition affecting nerves in your feet or hands, your coordination or balance	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Skin disorders or dermatitis	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Any form of cancer	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Any other significant health conditions	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

General health assessment (if applicable)

Height: Click here to enter text. cm

Weight: Click here to enter text. kg

BP: Click here to enter text. / Click here to enter text. mmHg

Urinalysis

Blood: Normal Abnormal

Protein: Click here to enter text.

Referred for further testing

Sugar: Click here to enter text.

No Yes

Cardiovascular system			Medical comments (for all yes/abnormal)
Blood pressure	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	Click here to enter text.
Heart rate	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	Click here to enter text.
Heart sounds	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	Click here to enter text.
Murmurs present	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

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Cardiovascular system		Medical comments (for all yes/abnormal)	
Evidence of cardiac failure/oedema	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.	
Respiratory system		Medical comments (for all abnormal)	
Breathing normal and regular in character	<input type="checkbox"/> Yes <input type="checkbox"/> No	Click here to enter text.	
Auscultation normal	<input type="checkbox"/> Yes <input type="checkbox"/> No	Click here to enter text.	
Signs of past/present respiratory disease	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.	
Nervous system			
Muscular tone, co-ordination	<input type="checkbox"/> Normal <input type="checkbox"/> Abnormal	Click here to enter text.	
Tremor	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.	
Skin			
Eczema, dermatitis or allergy	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.	
Skin cancer or other abnormality	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.	
Evidence of nail biting	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.	
Other	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.	

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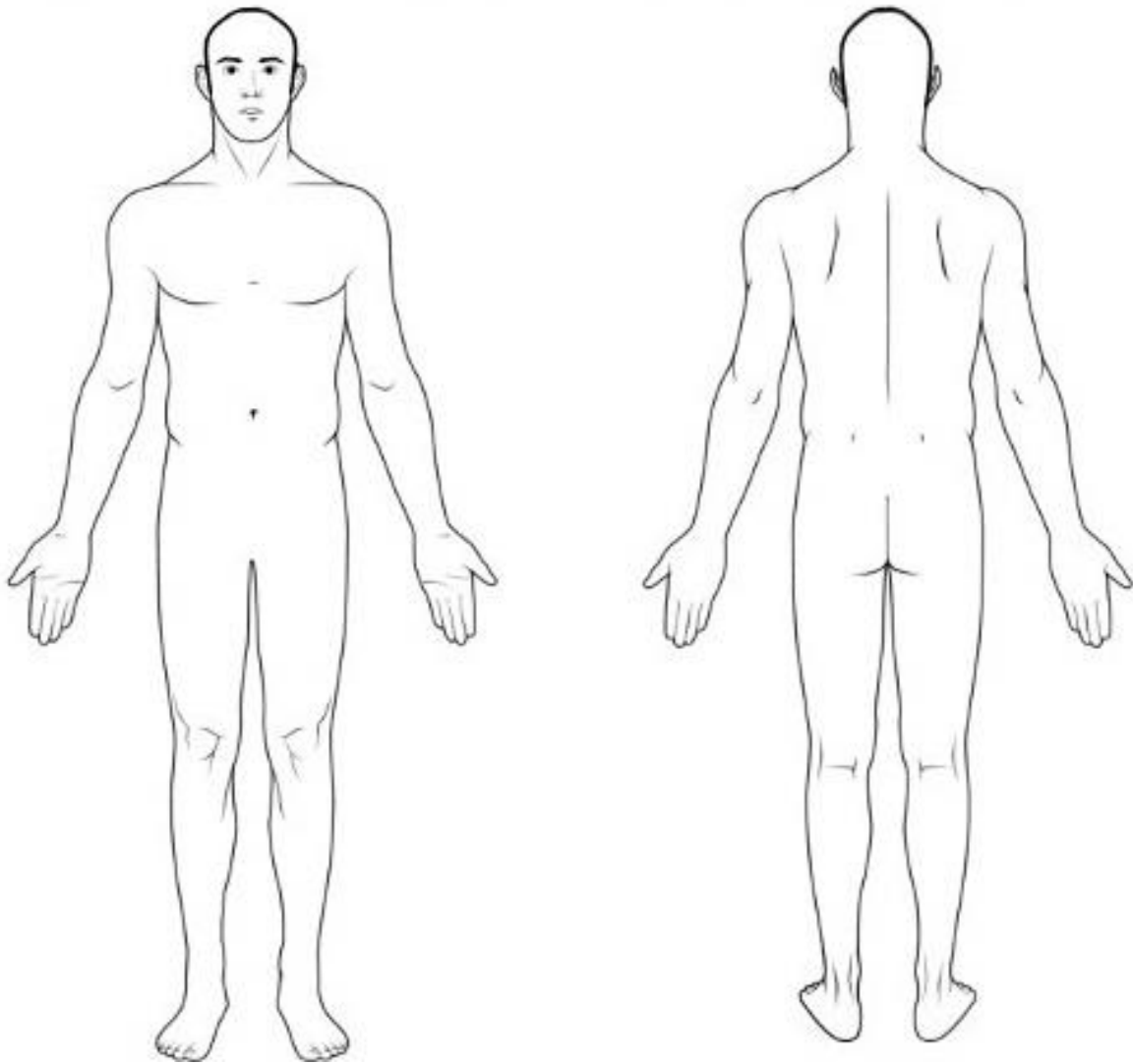


Figure 1 Template of the human body to indicate the location of abnormalities

Eye	Medical comments (for all abnormal)
Evidence of eye irritation <input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.

Biological monitoring results

Include/attach at least the previous two test results (if available)

Date	Tests performed	Recommended action or comment
Click here to enter a date.	Click here to enter text.	Click here to enter text.
Click here to enter a date.	Click here to enter text.	Click here to enter text.
Click here to enter a date.	Click here to enter text.	Click here to enter text.
Click here to enter a date.	Click here to enter text.	Click here to enter text.

Other medical history, family medical history, current medication, comments, tests or recommendations (use separate sheet if necessary)

[Click here to enter text.](#)

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Registered medical practitioner (responsible for supervising health monitoring)

Name: Click here to enter text.

Signature:

Date: Click here to enter a date.

Tel: Click here to enter text.

Fax: Click here to enter text.

Registration Number: Click here to enter text.

Medical Practice: Click here to enter text.

Address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.