

# Health monitoring

*Guide for antimony*



# Contents

Introduction .....	3
Antimony.....	4
1. Health monitoring for antimony under the WHS Regulations .....	4
2. Monitoring exposure to antimony.....	5
Workplace exposure standard .....	6
Removal from work.....	6
Return to work .....	6
3. Final medical examination .....	6
4. Route of occupational exposure .....	7
5. Target organ/effect .....	7
6. Acute effects .....	8
7. Chronic effects .....	8
8. Carcinogenicity.....	8
9. GHS Classification .....	8
Source documents.....	8
Health monitoring report – Antimony .....	11
Section 1 – A copy of this section to be provided to the PCBU .....	11
Section 2 – This section to be retained by the registered medical practitioner .....	15

# 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.

## Antimony

Antimony (CAS 7440-36-0) is a brittle, silver white metallic element. Antimony (Sb) exists in a number of oxidation states, including the free metal, trivalent (Sb[III]) and pentavalent (Sb[V]) oxidation states.

Antimony is found in the environment mainly as the sulfide and stibnite.

### Work activities that may represent a high risk exposure

Under the Work Health and Safety (WHS) Regulations, antimony and its compounds are listed as restricted hazardous chemicals and must not be used for abrasive blasting at concentrations greater than 0.1 per cent without authorisation from a relevant WHS regulator.

The main use of antimony is as a fire retardant in plastics, rubber, building materials and textiles.

Antimony is alloyed with other metals such as lead and tin and is used as hardener in lead acid batteries and in the production of solders, bearings and bullets. Antimony oxides are used as fire retardants for plastics, textiles, rubber, adhesives, pigments and paper.

It is also used in the manufacturing of paints, polymers and high quality, transparent glass and the development of memory devices and electronics.

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

- mining, and
- smelting.

### Sources of non-occupational exposure

Antimony may be released into the atmosphere from volcanoes and is a common component of coal and petroleum. It may also be released from vehicle exhaust.

Antimony is also used as a medical treatment for parasitic and tropical diseases.

## 1. Health monitoring for antimony under the WHS Regulations

Collection of demographic, medical and occupational history

Records of personal exposure

Physical examination with emphasis on the respiratory system and skin

Urinary antimony level

Health monitoring under the WHS Regulations is applicable to antimony and its inorganic compounds. The toxic effects of antimony compounds are primarily attributed to the antimony ion. Hence, antimony and its compounds are considered to have a similar hazard and toxicity profile.

In this guide, 'antimony' is used to refer to antimony and its compounds.

### Health monitoring before starting work in an antimony process

Health monitoring for antimony 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 antimony

- 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.

An initial physical examination should place emphasis on the respiratory system, including baseline spirometry and skin if work and medical history indicates this is necessary, for example through the presence of symptoms.

## During exposure to an antimony process

### 2. Monitoring exposure to antimony

Where workers are exposed, suspected of being exposed, or are concerned about exposure to antimony, 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 antimony resulting in excessive exposure to workers or when workers develop symptoms of antimony exposure.

A medical examination should be carried out every 12 months and include:

- physical examination, noting any skin changes or lesions, and
- respiratory function tests including both standardised lung function questionnaire and spirometry.

Any changes in a worker's health status should be compared with the worker's initial health examination test results.

The primary route of occupational exposure is via inhalation. Absorption from the gastrointestinal tract is slow for organic salts of antimony and poor for the metallic form.

Sb(III) is excreted in the urine and as a glutathione conjugate via bile to the faeces. Absorbed Sb(III) is excreted approximately equally by the faeces and urine, whereas Sb(V) is mainly excreted by the renal route.

The following test may be used to assess the worker's exposure to antimony:

- end of shift urinary antimony levels (preferably at the end of the working week).

Care should be taken during sample collection to avoid contamination from air and exposed skin and clothing.

No biological exposure guidance values have been published for urinary antimony. However, urinary levels of 2.6 ng Sb/g creatinine or less have been reported in non-occupationally exposed individuals. Levels above this may indicate occupational exposure.

Pre- and post-shift differences in urinary antimony concentrations of 35 µg Sb/g creatinine have been reported in workers exposed to two Sb(V) compounds at an airborne concentration of 0.5 mg Sb/m<sup>3</sup>, the TWA value<sup>1</sup>. This may provide some indication of the relationship between airborne concentrations and urinary concentrations of antimony. However, if using this value in the place of a biological exposure standard, there are some factors that should be considered:

- the extent of biological exposure will be dependent on the workplace process which may result in particles with different aerodynamic diameters with a consequential effect on the pulmonary deposition and absorption profile of antimony, and

---

<sup>1</sup> Berg and Skyberg (1998) *The Nordic Expert Group for Criteria Documentation of Health Risks from Chemicals*. 123. Antimony.

- the extent of urinary excretion in the elimination of antimony is dependent on the valence of the antimony compound to which the worker is exposed (see above):
  - for example, identical urinary antimony concentrations would be reflective of higher exposures to Sb(III) compounds than Sb(V) compounds (higher faecal excretion occurs for the former compared with the latter set of compounds).

Precautions should be taken to prevent contamination during sampling (e.g. collect samples in an uncontaminated area and avoid contamination from exposed skin or clothes).

### **Workplace exposure standard**

The workplace exposure standard for antimony and compounds (as Sb) (including the handling and use of antimony trioxide) is:

- eight hour time weighted average (TWA) of 0.5 mg/m<sup>3</sup>.

A physical examination 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 antimony 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 antimony-related work.

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

- the worker should be removed from work with antimony, 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 antimony-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 antimony-related work.

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

## **At termination of work in an antimony process**

### **3. Final medical examination**

A urine sample should be collected on the last day of the worker's final shift, and a final medical examination should be carried out at the same time or as soon as possible thereafter. Emphasis should be placed on the skin and respiratory system and any other organs or systems that were indicated during the health monitoring program.

Workers with health conditions or continuing symptoms due to antimony exposure 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 exposure to antimony

### 4. Route of occupational exposure

The primary route of exposure is via inhalation.

### 5. Target organ/effect

The target organs and potential effects of antimony exposure include:

**Table 1** Target organs and potential effects of antimony exposure

Target organ	Effect
Central nervous system	<ul style="list-style-type: none"> <li>• Headache</li> <li>• Loss of consciousness</li> <li>• Coma</li> </ul>
Skin and mucous membranes	<ul style="list-style-type: none"> <li>• Irritation</li> <li>• Skin lesions</li> <li>• Ulceration and perforation of the nasal septum and larynx</li> </ul>
Respiratory tract	<ul style="list-style-type: none"> <li>• Irritation of the nose, throat and respiratory systems</li> <li>• Bronchitis</li> <li>• Emphysema</li> <li>• Fibrosis of the lungs (pneumoconiosis)</li> </ul>
Eyes	<ul style="list-style-type: none"> <li>• Irritation</li> </ul>
Heart	<ul style="list-style-type: none"> <li>• Electrocardiogram and heart muscle changes</li> </ul>

Target organ	Effect
Reproductive system	<ul style="list-style-type: none"> <li>• Spontaneous late abortions</li> <li>• Premature births</li> <li>• Gynaecological problems</li> </ul>

## 6. Acute effects

The acute symptoms of oral antimony exposure are similar to those of arsenic poisoning and include abdominal pain, vomiting, diarrhoea, dehydration and muscular pain. Shock may also occur with acute intoxication.

Gastrointestinal disturbances, pulmonary oedema and pneumonitis have been reported following acute inhalational exposure to antimony.

## 7. Chronic effects

Chronic exposure to antimony may give rise to the following symptoms:

- headache
- vomiting
- coughing
- joint and muscular pain
- sleeplessness
- vertigo
- loss of appetite
- skin lesions (popular eruptions) that may be preceded by an intense itch
- contact dermatitis
- pneumoconiosis, or
- cardiovascular effects
  - increased blood pressure
  - altered ECG readings, or
  - heart muscle damage.

## 8. Carcinogenicity

Most antimony compounds have not been classified as carcinogenic according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), with the exception of antimony trioxide. The latter chemical has been classified as a Category 2 Carcinogen according to the GHS as it is suspected of causing cancer in humans.

For further information on specific antimony compounds, refer to Safe Work Australia's Hazardous Chemical Information system or the relevant safety data sheet.

## 9. GHS Classification

Different antimony compounds may have different health hazard classifications. The specific antimony compound to which a worker is exposed will need to be reviewed to ensure appropriate identification of the health hazards. For the GHS classification of a specific antimony compound, refer to Safe Work Australia's Hazardous Chemical Information System or the relevant safety data sheet for detailed information.

## Source documents

Agency for Toxic Substances and Disease Registry; [Antimony](#).



American Conference of Governmental Industrial Hygienists (ACGIH) (2017) Documentation of the Threshold Limit Values and Biological Exposure Indices, Antimony, 7th edition, Cincinnati.

Australian Government, Department of the Environment, [Antimony and compounds](#).

Berg and Skyberg (1998) The Nordic Expert Group for Criteria Documentation of Health Risks from Chemicals. 123. [Antimony](#).

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

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

Nordberg, G.F., Fowler, B A. and Nordberg, M. (Eds.) (2014). *Handbook on the Toxicology of Metals*. Academic Press.

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

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

US Environmental Protection Agency; Health Effects Notebook for Hazardous Air Pollutants; [Antimony Compounds](#).



# Health monitoring report

*Antimony*

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 – Antimony

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 if 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.

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

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

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

**Worked with antimony 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.](#)

**Antimony industry/use**

- Mining
- Smelting

**Use in**

- Metal alloys
- Storage batteries
- Solder
- Sheet and pipe metal
- Ammunition
- Metal bearings
- Castings
- Pewter
- Paint
- Ceramics
- Fireworks
- Enamels
- Glass
- Stibine used in the semiconductor industry
- Fire-retardant in plastics, rubber, building materials and textiles
- Other (specify): [Click here to enter text.](#)

**Other chemicals the worker may be exposed to:** [Click here to enter text.](#)

**Controls**

Wear gloves	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Wear eye protection	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Respirator use	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Respirator type	<a href="#">Click here to enter text.</a>	
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
Wash basins & showers (with hot and cold water)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other please specify		

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 results

### Biological monitoring results

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

Date	Tests performed	Recommended action and/or comment
<a href="#">Click here to enter a date.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>
<a href="#">Click here to enter a date.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>
<a href="#">Click here to enter a date.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>
<a href="#">Click here to enter a date.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>

**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 the PCBU

- The worker is suitable for work with antimony
- Review workplace controls
- The worker should be removed from work with antimony. 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.](#)

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

**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.

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

## 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)
Mining antimony	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Smelting antimony	<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.
<b>Use in:</b>			<b>Comments (all 'yes' answers)</b>
Metal alloys	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Storage batteries	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

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

			Comments (all 'yes' answers)
Solder	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Sheet and pipe metal	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Ammunition	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Metal bearings	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Castings	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Pewter	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Ceramics	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Fireworks	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Enamels	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Glass	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Paint	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Fire-retardant in plastics, rubber, building materials and textiles	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Stibine used in the semiconductor industry	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

### General health questionnaire (tick all relevant boxes)

			Comments (all 'yes' answers)
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.
Are you pregnant or breast-feeding, or contemplating pregnancy	<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	



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

### Specific health questions (tick all relevant boxes)

Do you have or have you ever had:			Comments (all 'yes' answers)
Blurred vision or other vision problems	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Itchy eyes, runny and/or congested nose	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Chest pains or irregular heartbeats or suffered from rheumatic fever	<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.
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.
Allergies, hay fever, or allergic bronchitis	<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.
Severe stomach pain or peptic ulcers	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Diarrhoea, vomiting or passing blood	<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.
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.

**Registered medical practitioner to provide comments for any 'Yes' responses (reference Question number):**

Click here to enter text.

### Respiratory questionnaire (tick all relevant boxes)

	Yes	No	Details
<b>Cough and phlegm</b>			

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

		Yes	No	Details
1	Do you usually cough first thing in the morning	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
2	Do you usually cough during the day or at night	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
<b>If no go to Q9</b>				
3	Do you cough like this on most days for as much as three months of the year	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
4	Do you usually bring up phlegm from your chest first thing in the morning	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
5	Do you usually bring up phlegm from your chest at any other time of the day or night	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
<b>If no go to Q9</b>				
6	Do you bring up phlegm like this on most days for as much as three months each year	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
7	In the past three years have you had a period of increased cough and phlegm lasting for three weeks or more	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
8	If Yes, have you had more than one such period	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
<b>Breathlessness</b>				
9	Do you get short of breath when hurrying on level ground or walking up a slight hill	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
<b>If no go to Q13</b>				
10	Do you get short of breath walking with other people of your own age on level ground	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
11	Do you have to stop for breath when walking at your own pace on level ground	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
12	Have you at any time in the last 12 months been woken at night by an attack of shortness of breath	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
<b>Wheezing and chest tightness</b>				

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

		Yes	No	Details
13	Have you had attacks of wheezing or whistling in your chest at any time in the last 12 months	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
14	Have you ever had attacks of shortness of breath with wheezing	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
15	If Yes, was your breathing absolutely normal between attacks	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
<b>Smoking</b>				
16	Do you or did you smoke more than one cigarette/day; a cigar/week; two oz. pipe tobacco/month)	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
<b>If no proceed to General health assessment</b>				
17	Do (did) you inhale smoke	<input type="checkbox"/>	<input type="checkbox"/>	If yes, indicate: <input type="checkbox"/> Slightly <input type="checkbox"/> Moderately <input type="checkbox"/> Deeply
18	How old were you when you started smoking regularly			Click here to enter text.
19	Do (did) you smoke manufactured cigarettes	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
<b>If no go to Q24</b>				
20	How many cigarettes do (did) you smoke per day on weekdays			Click here to enter text.
21	How many per day on weekends			Click here to enter text.
22	Do (did) you smoke plain or filtered cigarettes			Click here to enter text.
23	What brands do (did) you usually smoke			Click here to enter text.
24	Do (did) you smoke hand rolled cigarettes	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
<b>If no go to Q27</b>				
25	How much tobacco do (did) you usually smoke per week in this way			Click here to enter text.
26	Do (did) you put filters in these cigarettes	<input type="checkbox"/>	<input type="checkbox"/>	
27	Do (did) you smoke a pipe	<input type="checkbox"/>	<input type="checkbox"/>	
<b>If no go to Q29</b>				
28	How much tobacco do (did) you usually smoke per week in this way			Click here to enter text.

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

		Yes	No	Details
29	Do (did) you smoke cigars	<input type="checkbox"/>	<input type="checkbox"/>	
<b>If no go to Q31</b>				
30	How many of these do (did) you usually smoke per week in this way			Click here to enter text.
31	If you are a present smoker have you been cutting down in the past year	<input type="checkbox"/>	<input type="checkbox"/>	
32	If you are a past smoker when did you give up smoking altogether			Click here to enter text.

**Registered medical practitioner to provide comments for any 'Yes' responses (reference Question number):**

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

				Medical comments (for all yes/abnormal)
<b>Cardiovascular system</b>				
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.
Evidence of cardiac failure/oedema	<input type="checkbox"/> No	<input type="checkbox"/> Yes		Click here to enter text.
<b>Respiratory system</b>				
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.

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

### Spirometry

At least three technically acceptable manoeuvres should be obtained with the highest and second highest FEV<sub>1</sub> and FVC within 0.15 L (within 0.100 L for those with an FVC of equal to or less than 1.0 L)<sup>2</sup>. Use best result for FEV<sub>1</sub> and FVC, even if from different tests.

	Actual	Predicted	% Predicted	
<b>FEV<sub>1</sub></b>	Click here to enter text. L/min	Click here to enter text. L/min	Click here to enter text. %	Click here to enter text.
<b>FVC</b>	Click here to enter text. L/min	Click here to enter text. L/min	Click here to enter text. %	Click here to enter text.
<b>FEV<sub>1</sub>/FVC</b>	Click here to enter text. L/min	Click here to enter text. L/min	Click here to enter text. %	Click here to enter text.
		<b>Yes</b>	<b>No</b>	
Spirometry quality acceptable	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.	
Spirometry normal	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.	

### Chest X-ray (if required)

All chest X-rays undertaken by a specialist radiology clinic and must be read by registered medical radiation practitioner (radiologist).

**Date of X-ray:** Click here to enter text.

**Meets quality criteria?**  Yes  No

**X-ray reported as:** Click here to enter text.

**ILO Classification:** Click here to enter text.

Skin	Medical comments (for all abnormal)		
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.

<sup>2</sup> Miller MR, Hankinson J, et al, 'Standardisation of spirometry', Series 'ATS/ERS Task Force: Standardisation of Lung Function Testing', Brusasco V, Crapo R, Viegi G (eds), Number 2 in this series, Eur Respir J, vol. 26, pp 319-338, 2005. <http://www.thoracic.org/statements/resources/pfet/PFT2.pdf>.

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

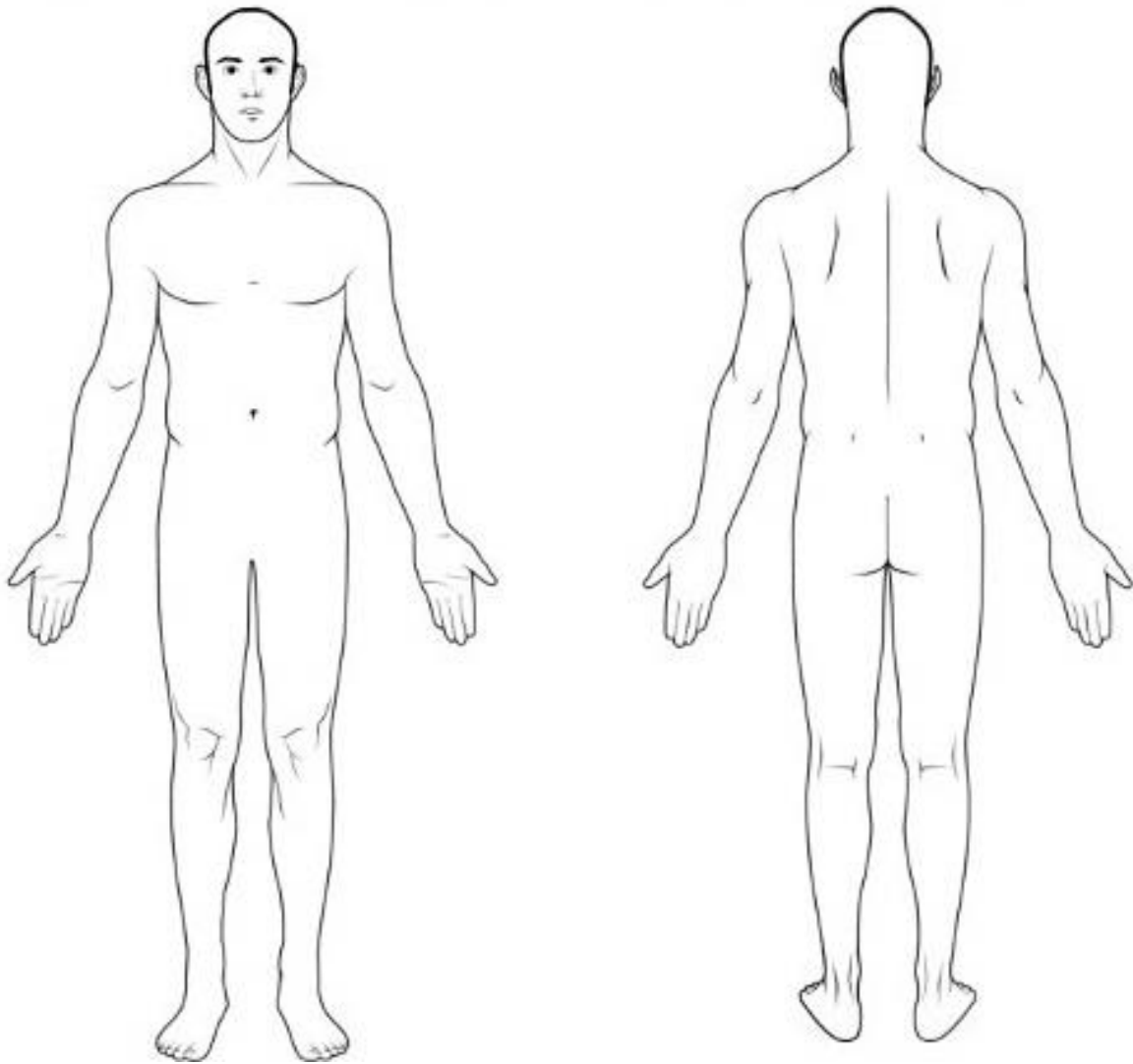


Figure 1 Template of the human body to indicate the location of abnormalities

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

**Biological monitoring results**

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

Date	Tests performed	Recommended action and/or comment
<a href="#">Click here to enter a date.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>
<a href="#">Click here to enter a date.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>
<a href="#">Click here to enter a date.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>
<a href="#">Click here to enter a date.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>

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

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

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.