

## SENIOR PDHPE WORKSHEET

### *Health Priorities in Australia*

NAME \_\_\_\_\_

ORGANISATION \_\_\_\_\_

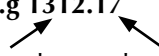
DATE \_\_\_\_\_

#### INSTRUCTIONS

1. Make sure you read the bold text in boxes throughout the worksheet as they contain important information

**These boxes contain instructions explaining how to complete the next section of your worksheet**

2. To find a particular disease or specimen you may need to refer to its specimen number. Once you have found the bay, the specimen will have a purple label to help you locate it on the shelf.

e.g 1312.17  
  
 specimen number      bay number (refer to map)

3. Detailed information about a specific disease or specimen will either be found on an info sheet, poster or next to the specimen itself. The following symbols are used throughout the worksheet.



**Info sheet**  
A4 displays on table  
nearest to specimen



**Poster**  
located throughout  
museum



**Observation**  
Find exhibit and  
describe features

#### IMPORTANT

*Real people have generously donated their body so that medical scientists can learn about health and disease.  
Our donors deserve the utmost respect and admiration for their invaluable contribution to medical science.*

#### NOTES

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# AUSTRALIA'S HEALTH PRIORITIES

The current AIHW report, *Australia's Health*, identifies ten major categories of disease and injury as priority areas for Australian Health. These areas are cancer, cardiovascular disease, diabetes, chronic kidney disease, mental health, dementia, respiratory diseases, arthritis and musculoskeletal conditions, injury and infectious diseases.

In this section you will learn about four of these priority areas for action and the problems they cause.

## 1. CARDIOVASCULAR DISEASE (CVD)

Cardiovascular disease is a general term that refers to diseases of the heart and blood vessels. Although death rates for CVD are declining it remains a leading cause of death in Australia. The process of atherosclerosis is the most common underlying cause of CVD and can ultimately lead to strokes, heart attacks, angina, heart failure and peripheral vascular disease.

Find the *Atherosclerosis* poster to help with this section



What is atherosclerosis? How does it effect blood flow around the body?

In the box below, draw a labelled diagram showing plaque formation in an artery.


Labelled Diagram


List the major risk factors for atherosclerosis and cardiovascular disease.


## CARDIOVASCULAR DISEASE COMPLICATIONS

The restriction of blood flow or complete occlusion of a blood vessel can lead to a wide range of problems. There are many examples of cardiovascular disease and its complications in the museum.


Select one CVD complication to investigate in detail by viewing the relevant specimen and associated information  
(Circle your selection)

Myocardial infarction   
1312.17


Cerebral infarction   
485.12

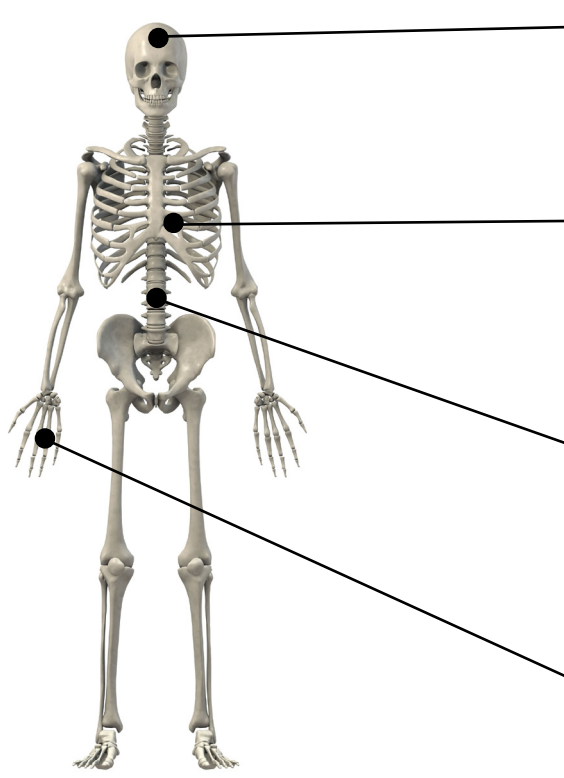
Gangrene   
1450.17

<b>Nature of the problem (cause)</b>	
<b>Groups at risk</b>	

Find a specimen, photo or diagram of the disease you have studied above to observe and complete this section 

Describe the appearance and disease changes evident in this specimen.

Find the following specimens and identify the CVD complication that has occurred to these parts of the body or organ to complete this section 



**453.29**  
Organ or body part  
Condition

**2161.11**  
Organ or body part  
Condition


**2540.12**  
Organ or body part  
Condition


**1152.17**  
Organ or body part  
Condition


## 2. CANCER

Cancer refers to a range of diseases characterised by the abnormal and uncontrolled growth of cells. These defective cells can also spread (metastasise) to other parts of the body and cause further damage. It is a leading cause of premature death and at current rates one in three men and one in four women in Australia will develop cancer in their lifetime.

**Select one priority cancer to investigate by viewing relevant specimens and associated information**  
*(Circle your selection)*

**Lung Cancer**   
 722.8

**Breast Cancer**   
 350.20

**Prostate Cancer**   
 512.18

<b>Nature of the disease</b>	
<b>Trends (occurrence)</b>	
<b>Risk factors</b>	

**Find a specimen, photo or diagram of the disease you have studied above to observe and complete this section**



Describe the appearance and disease changes evident in this specimen.

**This section will be led by Museum staff during the computer session**

### SKIN CANCER

Australia has the highest rate of skin cancer in the world. There are several types of skin cancer, such as squamous cell carcinoma (SCC), basal cell carcinoma (BCC), and melanoma. Of these skin cancers, malignant melanoma is the most serious and its incidence rate in Australia continues to rise.

**What are the major risk factors for melanoma?**

**Why is early detection vital in preventing the progression of melanoma?**

### 3. DIABETES

Diabetes mellitus is a metabolic disorder characterised by high levels of glucose in the blood. In recent times, its prevalence has risen dramatically in Australia and around the world. If left undiagnosed or poorly controlled it can lead to a range of serious complications as you will discover below.

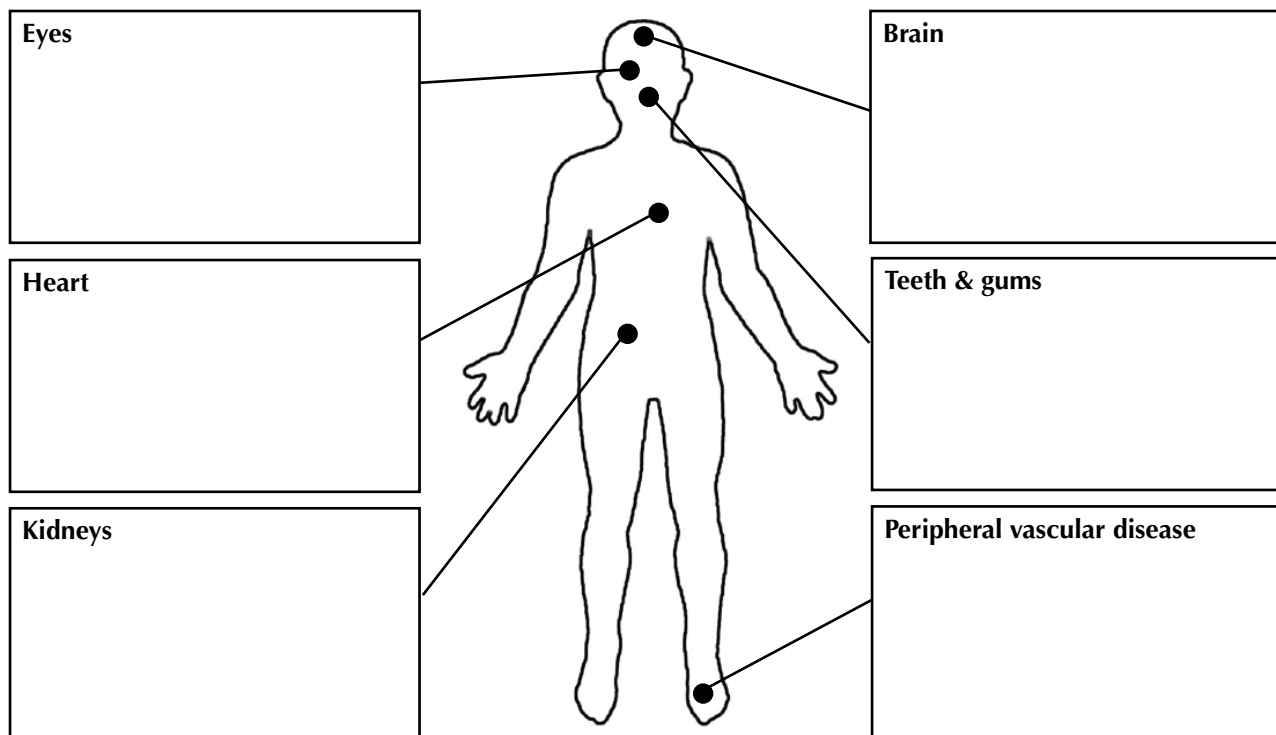
Find the *Obesity display* and *Understanding Diabetes poster* to help with this section



Complete the table below explaining the difference between the two most common types of diabetes

Type of diabetes	Type 1 diabetes	Type 2 diabetes
Nature of the problem (cause)		
Risk factors		

Complete the boxes on following diagram to explain some of the possible complications of diabetes.



The incidence of diabetes is rising dramatically in Australia and around the world. Between 1989-90 and 2004-05, the proportion of people with diagnosed diabetes in Australia more than doubled from 1.3% to 3.3%.

**What factors do you think might be contributing to the increased prevalence of diabetes?**

#### 4. RESPIRATORY DISEASE

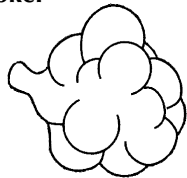
Respiratory Disease or chronic obstructive pulmonary disease (COPD) includes a range of diseases that destroy lung tissue and air passages, obstruct oxygen intake and lead to chronic shortness of breath and death. The most common is emphysema.

**This section will be led by Museum staff during the computer session**

##### EMPHYSEMA

Emphysema is characterised by permanent enlargement of the airspaces in the lungs due to the destruction of bronchiole and alveoli walls.

**Non-smoker**



Normal alveoli arrangement

**Smoker**



Coalesced alveoli

**Describe the changes that have occurred in Specimen 156.9 due to emphysema.**

**What symptoms will this cause for the patient?**

##### ASTHMA

Asthma is an inflammatory disease of the airways. Australia has one of the highest rates of asthma in the world (10.2%) and approximately 60,000 Australians are admitted to hospital annually due to Asthma

**Investigate asthma by viewing the following specimens and posters**

**Asthma**

1872.9



**Asthma**



<b>Nature of the problem (cause)</b>	
<b>Groups at risk</b>	

**Find a specimen, photo or diagram of the disease you have studied above to observe and complete this section**

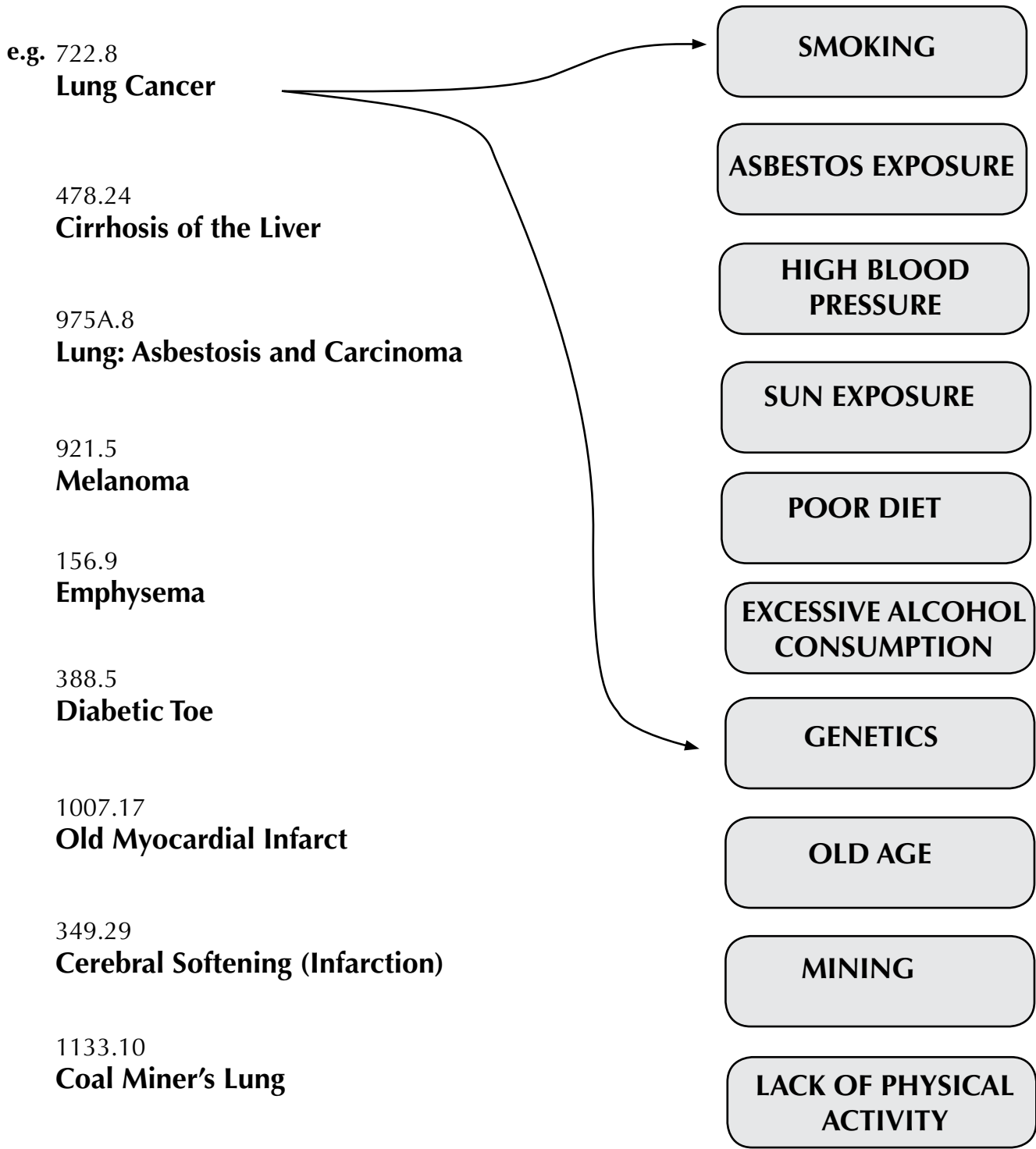


**Describe the appearance and disease changes evident in this specimen.**

## SOCIAL & ENVIRONMENTAL DETERMINANTS OF DISEASE

Many diseases in the Museum are related to the lifestyle of the individual. Lifestyle risk factors such as obesity, smoking, excessive alcohol consumption are also referred to as environmental determinants. In this section you are required to identify the links between these determinants and various specimens and diseases in the Museum. In most cases, various factors will combine to increase an individuals disease risk.

Find each specimen and related information and draw links to the appropriate environmental determinant/s



## INTERESTING SPECIMEN 1

### 1872.9 Asthma

#### Constriction of airways due to inflammation

##### What's happened?

This specimen shows the narrowing and obstruction of the airways in the lungs due to asthma, a chronic inflammatory disease. This inflammation of the airways is often accompanied by the accumulation of mucus which can further obstruct the airway leading to shortness of breath, coughing, wheezing and difficulty breathing. In most cases, asthma is an intermittent or episodic condition which can be brought on by various triggers such as infection, stress, allergens, or exercise. These episodes are known as 'asthma attacks'.

Australia has one of the highest rates of asthma in the world (10.2%). The highest prevalence occurs in persons aged 15-24 years (12.4%).



## INTERESTING SPECIMEN 2

### 1450.17 Dry Gangrene of Foot

#### Dead tissue in foot due to insufficient blood supply

##### What's happened?

Gangrene is cell death (necrosis) due to an obstruction or loss of blood supply. This specimen shows gangrene in the left foot of a patient who had no detectable pulse or blood flow in the affected limb. A loss of blood supply can be caused by many conditions, including atherosclerosis and thrombosis (blood clotting).





### KEY SPECIMEN 3

## 174.12 Atheroma of Aorta with Teflon Graft Arterial plaque build up due to cardiovascular disease

### What's happened?

This specimen shows atheroma build up on the inner lining of the artery. Atheroma is also referred to as atherosclerotic plaque or simply plaque. Atheroma deposits may progressively thicken and harden the walls of the artery. This can affect blood flow and lead to angina, myocardial infarction (heart attack), stroke, clots, and aneurysms.

Arteries may become so diseased that they require replacement. A vascular graft is used to replace a section of diseased artery. This specimen displays a vascular graft made of teflon.



### KEY SPECIMEN 4

## 554.6 Rheumatoid Arthritis Damaged joints due to an autoimmune condition

### What's happened?

This specimen shows the effect that long-term rheumatoid arthritis has on joints. These fingers belonged to a 66 year old woman who had suffered from rheumatoid arthritis for 40 years.

Rheumatoid arthritis is an autoimmune condition in which the body's own immune system attacks the tissue lining the joints, causing pain and eventual joint deformity. The exact cause of the disease is unknown.



# MUSEUM MAP

