

## Week 6 – The Health of Australians:

- **1995 National Nutrition Survey:** 24-hour dietary recall and a qualitative food frequency questionnaire. 14,000 participants – making it the nutrition survey with the most participants.
  - **2007 Children’s Nutrition & Physical Activity Survey:** 4.5 thousand children. Involved two 24-hour dietary recalls.
  - **2011-2012 Nutrition & Physical Activity Survey:** part of the **Australian health survey** - the largest and most comprehensive health survey ever conducted in Australia. 12,000 participants. Two 24-hour dietary recalls. Also asked about whether on a diet, and for what reason. The first survey in 15 years to look at the nutrition of Australians.
  - **The Australian Total Diet Study:** buys a basket of foods commonly consumed by Australians and analyses then for **pesticides** and chemicals. The information collected informs food policy. Done every 2 years. For example, the 2008 study lead to the mandatory fortification of foods with iodine.
- Diet related disease accounts for **2/3** of all deaths in Western countries
  - **Migrants** tend to have health that is equal to or better than that of the Australian born population

### Cardiovascular disease:

- CVD includes all diseases and conditions of the heart & blood vessels
  - The main types of CVD include:
    - Coronary heart disease
    - Stroke
    - Heart failure
    - Rheumatic heart disease
    - Congenital heart disease
  - The main cause of CVD is **atherosclerosis** – which is a build up of fatty deposits in the arteries (causing blockages)
  - **CVD kills more Australians than any other disease group**
  - CVD causes the largest number of ‘lost years’ through death of males over 75
  - Cost the economy \$7.7 billion in 2008/2009
  - **Indigenous people** are more likely to die from CVD at a younger age (12 times higher risk of dying from CVD between the ages of 34 and 54)
- **Coronary heart disease (CHD):**
    - Also known as ischemic heart disease
    - Can result in heart attack or angina (a chronic condition)
    - Risk factors for CHD include smoking, high BP, high cholesterol, diabetes, overweight, physically inactive & depression.
  - **Stroke:**
    - Where the artery supplying blood to the brain is blocked or begins to bleed
    - There are 2 types of stroke – ischaemic or haemorrhagic.

## Type 2 Diabetes:

- A lifestyle disease
- Associated with high BP, high cholesterol & weight gain
- 85-90% of all cases of diabetes
- Where cells don't respond to insulin properly, resulting in a build up of glucose in the blood over time. This can cause damage to parts of the body.
- 4.4% of the Australian population have type 2 diabetes
- Type 2 diabetes is predicted to become the leading cause of disease burden by 2023.

## Cancer:

- Is a disease of the body's cells
- Cancer causes cells to multiply in an uncontrolled way
- If damaged cells spread into surrounding areas of the body, these are known as **malignant** cells
- If damaged cells stay in the same area and do not spread, they are known as **benign** cells
- Prostate cancer is the most common cancer diagnosed.
- Breast cancer is the most common cancer in women. The cancer that most commonly causes death in women is lung cancer.
- Cancer rates in the indigenous population are only slightly higher. Cancers more common amongst indigenous people than non-indigenous people are lung & smoking related cancers, cervical cancer & cancer of the uterus, cancer of the pancreas, & liver cancer. Cancers less common amongst indigenous people than non-indigenous people are breast cancer, prostate cancer, bowel cancer & non-Hodgkin lymphoma.

## Food & Disease:

### **Nutrients/food groups associated with disease include:**

- Excess fat (total fat, saturated fat & trans fat)
- Excess salt
- Insufficient intake of fruits & vegetables (11% of cancer deaths are caused due to this)
- Excessive alcohol (cancer & kidney failure)
- Excessive total energy intake
- Excessive intake of simple sugars

## How do we establish a relationship?

- Using **epidemiological approaches** – comparisons between countries, migration studies
- Using **case controls** – look at people with and without disease, and looking at the factors that contribute to having or not having that disease
- Using **longitudinal studies** (prospective) – follow up people over long periods of time (e.g. months and years) & look at disease states (i.e. whether they have the disease or not, or how the disease is progressing)
- Using **intervention studies** – which look at changes in diet (e.g. removing or adding something to the diet) and whether the rate of disease changes.

### Examples of studies:

- **Ansel Keys'** study in the 1980's looked at the relationship between fat consumption and mortality in 7 countries. Found that there is a strong relationship between saturated fat consumption & mortality.
- In the **Veterans administration, Oslo & Lyons heart interventions**, cholesterol was manipulated within diet.
- The **Intersalt** study looked at salt intake (specifically the relationship between sodium excretion & hypertension). It found that consumption of 2300mg of sodium (~6g of salt) per day increased blood pressure by 3-6mmHg and 0-3mmHg (systolic & diastolic respectively).
- A **meta-analysis of sodium consumption** found that a reduction in sodium consumption of around 2300mmHg reduces BP by 5mmHg SBP and 3mmHg DBP.
- A **2007 BMJ study** found that lowering salt consumption also reduces the chance of CVD by 20%.

⇒ The **DASH** diet tries to stop hypertension by modifying diet

⇒ **Indigenous Australian's** have a life expectancy of 10 years less than non-indigenous Australians.

⇒ The biggest micronutrient concerns in Australia are related to **folate, iodine & thiamin**.

