



tangibilis physiotherapy

sports | spinal | rehabilitation

Berrimah Business Centre
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Berrimah NT 0828



tangibilis physiotherapy

A group of five people (three women and two men) are standing together in a professional setting. Behind them is a large screen displaying a 3D anatomical model of a human knee joint. The background is a dark wall with the Tangibilis logo.



**Biomedical trends in
Australian adults**

Australian Bureau of Statistics (ABS), 2016

What do the stats say about...

Mortality?

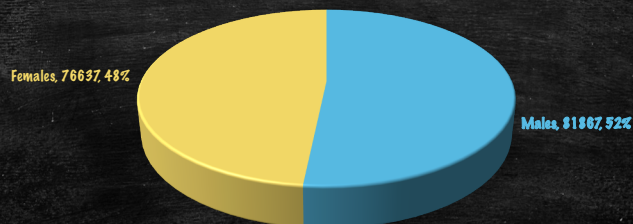
Morbidity?

Risk factors – behavioural and biomedical?

Mortality

- Males vs females
- Leading causes of death in Australia
- Leading causes of death by sex!
- Leading causes of death by age
- Leading cause of death in Aboriginal and Torres Strait Islander peoples.

158,504 deaths registered in Australia, 2016

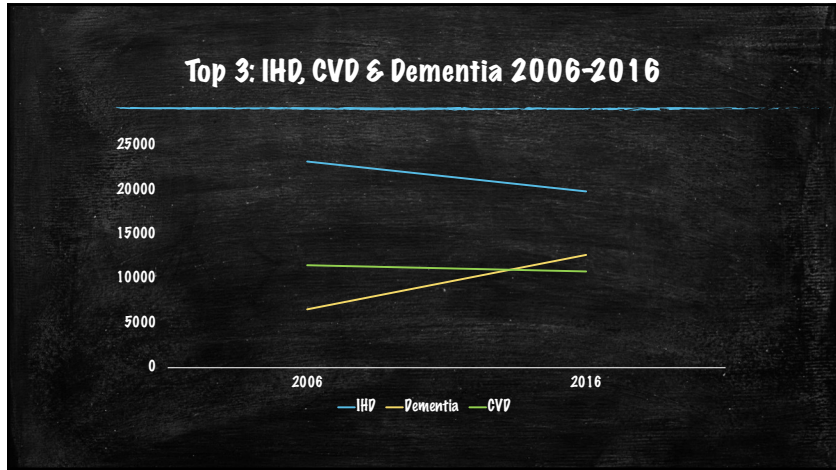
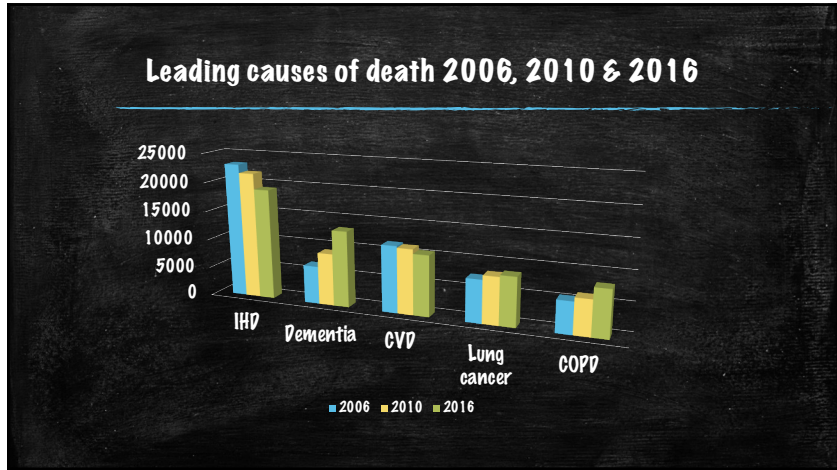


In 2016 there were 305,377 registered births, 51% male, 49% female

Leading causes of death in Australia, 2016

1. Ischaemic heart disease (IHD) – e.g. acute MI, angina
2. Dementia – fatal brain failure, includes Alzheimer's disease
3. Cerebrovascular disease (CVD) – e.g. stroke, aneurysms
4. Cancer of trachea, bronchus & lung
5. Chronic lower respiratory diseases (aka COPD)

Top 5 accounted for over 37% of all deaths registered in 2016



- ### Other major causes of death in Australia, 2016
- | | |
|--|----------------------------|
| 6. Cancer of colon and lower intestine | 12. Prostate cancer |
| 7. Diabetes | 13. Breast cancer |
| 8. Blood & lymph cancer - Inc. leukaemia | 14. Pancreatic Cancer |
| 9. Heart failure | 15. Intentional Self-harm |
| 10. Diseases of the urinary system | 16. Accidental falls |
| 11. Influenza and pneumonia | 19. Melanoma & skin cancer |

- ### Leading causes of death by sex
- | Males | Females |
|---------------------------|-------------------|
| 1. IHD | 1. Dementia |
| 2. Lung cancers | 2. IHD |
| 3. Dementia | 3. CVD |
| 4. CVD | 4. COPD |
| 5. COPD | 5. Lung cancer |
| 6. Prostate cancer | 6. Breast cancer |
| 7. Colon cancer | 7. Colon cancer |
| 8. Diabetes | 8. Diabetes |
| 9. Blood & lymph cancer | 9. Influenza |
| 10. Intentional self-harm | 10. Heart failure |

Leading causes of death by age (combined sexes)

Age < 1 year perinatal/congenital	Age 45-64 Ischaemic heart disease
Age 1-14 land transport accidents	Age 65-74 Lung cancer
Age 15-24 Intentional self-harm (34%)	Age 75-94 Ischaemic heart disease
Age 24-44 Intentional self-harm	Age 95+ Ischaemic heart disease

	1st	2nd	3rd	4th	5th
Age < 1	Infant/congenital Perinatal & congenital	Other Ill-defined	Infant/congenital SIDS	Injury Accidental threats to breathing	Other Selected metabolic disorders
Age 1-14	Injury Land transport accidents	Infant/congenital Perinatal & congenital	Cancer Brain cancer	Injury Accidental drowning & submersion	Other Cerebral palsy & related
Age 15-24	Injury Suicide	Injury Land transport accidents	Injury Accidental poisoning	Injury Assault	Injury Event of undetermined intent
Age 25-44	Injury Suicide	Injury Accidental poisoning	Injury Land transport accidents	Cardiovascular Coronary heart disease	Other Liver disease
Age 45-64	Cardiovascular Coronary heart disease	Cancer Lung cancer	Cancer Breast cancer	Injury Suicide	Cancer Colorectal cancer
Age 65-74	Cancer Lung cancer	Cardiovascular Coronary heart disease	Respiratory COPD	Cardiovascular Cerebrovascular disease	Cancer Colorectal cancer
Age 75-84	Cardiovascular Coronary heart disease	Cardiovascular Cerebrovascular disease	Mental/neurological Dementia & Alzheimer disease	Cancer Lung cancer	Respiratory COPD
Age 85-94	Cardiovascular Coronary heart disease	Mental/neurological Dementia & Alzheimer disease	Cardiovascular Cerebrovascular disease	Respiratory COPD	Cardiovascular Heart failure
Age 95+	Circulatory Coronary heart disease	Mental/neurological Dementia & Alzheimer disease	Cardiovascular Cerebrovascular disease	Cardiovascular Heart failure	Respiratory Influenza & pneumonia

Leading causes of death in Aboriginal & Torres Strait Islanders

1. Ischaemic heart disease	6. CVD
2. Diabetes	7. Liver cirrhosis
3. Chronic lower respiratory diseases	8. Land transport accidents
4. Lung cancer	9. Accidental poisoning
5. Intentional self-harm	10. Dementia

Closing the Gap (led by COAG)

- Indigenous rates of death almost double that of NIAs
- Diabetes 4.7 times higher than NIAs

Ischaemic heart disease

Australian absolute cardiovascular disease risk calculator

www.cvdcheck.org.au

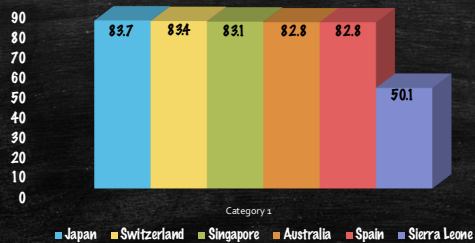
Suicide in Australia, 2015

- 3027 suicide deaths
- 12.6 /100,000 people, highest rate in 10 years
- Leading cause of death in 15-44 year olds
- Males 3 x > females
- Highest in males 40-44 years, women 45-49 years
- Biggest differences males vs females; 15-19 years (females)
- NT highest jurisdictional rate (4 x higher in 5-17 year olds)
- A/TI child suicide 5 x > NIA

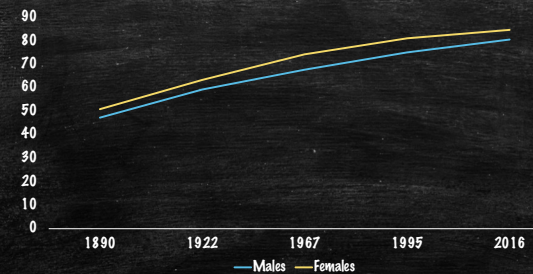
Interesting implications of 2016 ABS stats

- Australian's have a comparatively high life expectancy, a quality healthcare system and an increasing proportion of elderly people.
 - Male life expectancy 1995: 75 years, 2014 80.3 years
 - Female life expectancy 1995: 80.8 years, 2014 84.4 years
- Number of Australians aged > 80 projected to double to 2 million over next 20 years
- Hence the rise of dementia.
- Tipped to be Australia's future leading cause of death by 2021
- Consider implications in workforce & health service planning

Countries with leading life expectancy at birth (combined sexes, WHO, 2015)



Life expectancy in Australia at birth by sex (AIHW, 2016)



Economic Cost of Dementia in Australia, 2017

- 1 in 4 people aged 85 years suffer dementia. 1 in 2 people aged 95.
- Biggest risk is age
- Currently 4000 Australians over 100 years of age. Tipped to be 70,000 by mid century.
- Currently 413000 Australian dementia sufferers, tipped to be 1.1 million by 2056
- 2017 forecast \$14 billion to fund medical, hospital, community and aged care to support Australians living with dementia

Morbidity (ill health)

- Ill health can be physical, mental/behavioural or both
- An illness can be acute or chronic
- Morbidity often statistically measured as "*burden of disease*"
- **Fatal burden and non-fatal burden = Total burden**

Fatal vs non-fatal burden of disease in Australia

(system categories)

Leading fatal burdens

1. Cancer
2. Cardiovascular
3. Injuries
4. Neurological
5. Respiratory

Leading non-fatal burdens

1. Mental
2. Musculoskeletal
3. Respiratory
4. Neurological
5. Cardiovascular

Leading specific causes of burden in Australia

1. Coronary heart disease
2. Other musculoskeletal conditions (inc arthritis)
3. Back pain and problems
4. COPD
5. Lung cancer
6. Dementia

		Age group							
		Under 5	5-14	15-24	25-44	45-64	65-74	75-84	85+
Males	1	Pre-term/lbw complications	Asthma	Suicide/self-inflicted injuries	Suicide/self-inflicted injuries	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease
	2	Birth trauma/asphyxia	Anxiety disorders	Alcohol use disorders	Back pain and problems	Lung cancer	Lung cancer	COPD	Dementia
	3	Other disorders of infancy	Autism spectrum disorders	RTI/motor vehicle occupant	Alcohol use disorders	Other musculoskeletal	COPD	Dementia	Stroke
	4	SIDS	Conduct disorder	Depressive disorders	Poisoning	Back pain and problems	Diabetes	Stroke	COPD
	5	Other congenital conditions	Depressive disorders	Asthma	Depressive disorders	Suicide/self-inflicted injuries	Bowel cancer	Lung cancer	Prostate cancer
Females	1	Birth trauma/asphyxia	Anxiety disorders	Anxiety disorders	Anxiety disorders	Other musculoskeletal	Coronary heart disease	Coronary heart disease	Dementia
	2	Pre-term/lbw complications	Asthma	Depressive disorders	Depressive disorders	Breast cancer	Lung cancer	Dementia	Coronary heart disease
	3	Other disorders of infancy	Depressive disorders	Asthma	Back pain and problems	Back pain and problems	COPD	COPD	Stroke
	4	SIDS	Dental caries	Suicide/self-inflicted injuries	Other musculoskeletal	Anxiety disorders	Other musculoskeletal	Stroke	COPD
	5	Cardiovascular defects	Upper respiratory conditions	Bipolar affective disorder	Asthma	Lung cancer	Breast cancer	Lung cancer	Diabetes

Behavioural risk factors in Australians

(AIHW 2014-2015, self-reported data)

1. Tobacco smoking
2. Excessive alcohol consumption
3. Inadequate fruit & vegetable consumption
4. Insufficient physical activity

Biomedical risk factors in Australians

(AIHW 2011-2015, measured data)

1. Overweight or obesity
2. High blood pressure
3. Abnormal blood lipids (dyslipidaemia, e.g. high cholesterol)
4. Impaired fasting glucose

Combined Leading Risk factors

About 1/3 of burden can be prevented by reducing exposure to:

1. Tobacco use
2. High body mass
3. Alcohol use
4. Physical inactivity
5. High blood pressure

Physical inactivity

Insufficient physical activity

Increased risk of...

- Cardiovascular disease
- Type 2 diabetes
- Osteoporosis

Sufficient physical activity

Decreased risk of...

- Obesity
- High blood pressure
- High blood cholesterol

Australia's Physical Activity & Sedentary Behaviour Guidelines

Recommend adult Australians aged 18-64...

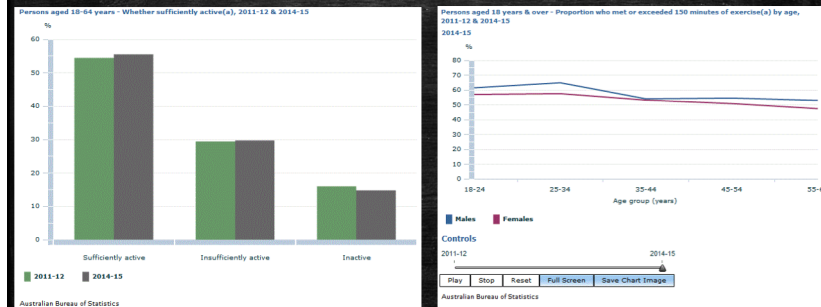
- Be active on most, preferably all, days every week
- 150-300 mins @ moderate intensity or 75-150 mins @ vigorous intensity, or an equivalent combination of both, each week
- Muscle strengthening activities 2 days each week
- > 65 years, 30 minutes @ moderate intensity every day
- Minimise time spent in prolonged sitting
- Break up long periods of sitting as often as possible

How is physical activity measured?

Any bodily movement by the muscles which results in energy expenditure.

- Deliberate activity during leisure/recreation/sporting times
- Walking or cycling for transport
- Work-related activity
- Daily household tasks such as housework or gardening

Who is physically inactive? (ABS-NHS, 2015)



Times have changed for the kiddies

Australian kids are among the least active when benchmarked to comparable countries

- Technology – screens galore (gaming, social media, binge tv, etc.)
- 2 parents working is the norm
- Single parents/fatherlessness is common
- Safety culture has gone bonkers – fear, suspicion, risk averse default
- Good food is expensive, junk food is cheap
- Organised sport is expensive (public liability)
- Free activity programs are rare, as are volunteers

The future of burden

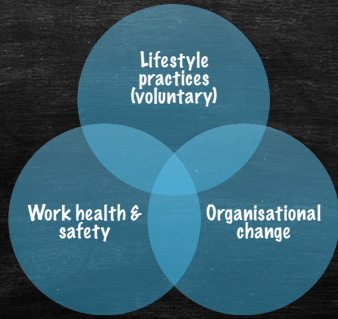
1. Ageing workforce
2. Younger, more sedentary workforce coming through
3. Increase in physically unfit & unhealthy workforce
4. Increase in psychological distress @ work

What are employers doing about it?

The rise of corporate health challenges and innovative workspaces!



Workplace health programs need to consider...



Creation of innovative workspaces

C&A Sydney Darling Quarter - best in design!



Smart ergonomics

Standing for work or school



Prestart exercises


Inpex 2015



10000steps.org.au

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relayforlife.org.au



