

GBD PROFILE: AUSTRALIA

GLOBAL BURDEN OF DISEASES, INJURIES, AND RISK FACTORS STUDY 2010

The Global Burden of Disease Study 2010 (GBD 2010) is a collaborative project of nearly 500 researchers in 50 countries led by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. It is the largest systematic scientific effort in history to quantify levels and trends of health loss due to diseases, injuries, and risk factors. GBD serves as a global public good to inform evidence-based policymaking and health systems design.

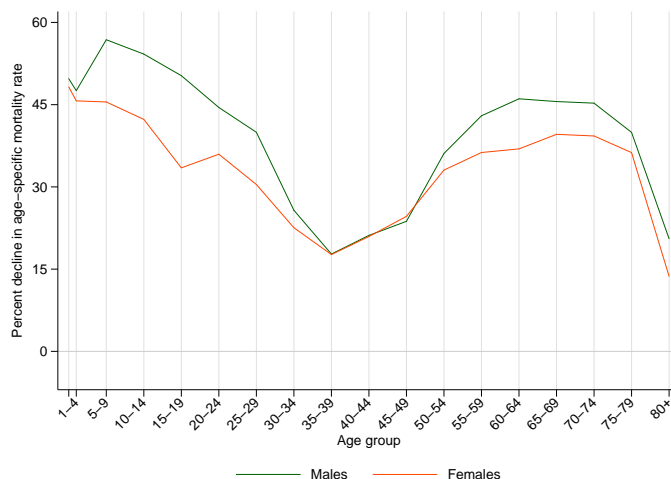
PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Australia, ischemic heart disease, trachea, bronchus, and lung cancers, and cerebrovascular disease were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), ischemic heart disease showed the largest decrease, falling by 28% from 1990 to 2010.
- The leading risk factor in Australia is dietary risks.

ALL-CAUSE MORTALITY RATE

- This chart shows the decline in mortality rate at every age range. The higher points on the chart indicate that declines in mortality rates were faster in those age groups between 1990 and 2010.
- The greatest reductions in all-cause mortality rate were experienced by males aged 5-9 years (57%). Females aged 80+ years saw the smallest decrease in mortality rate (14%).

Percent decline in age-specific mortality rate by sex from 1990-2010 in Australia



CAUSES OF PREMATURE DEATH

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths.

Ranks for top 25 causes of YLLs 1990-2010, Australia

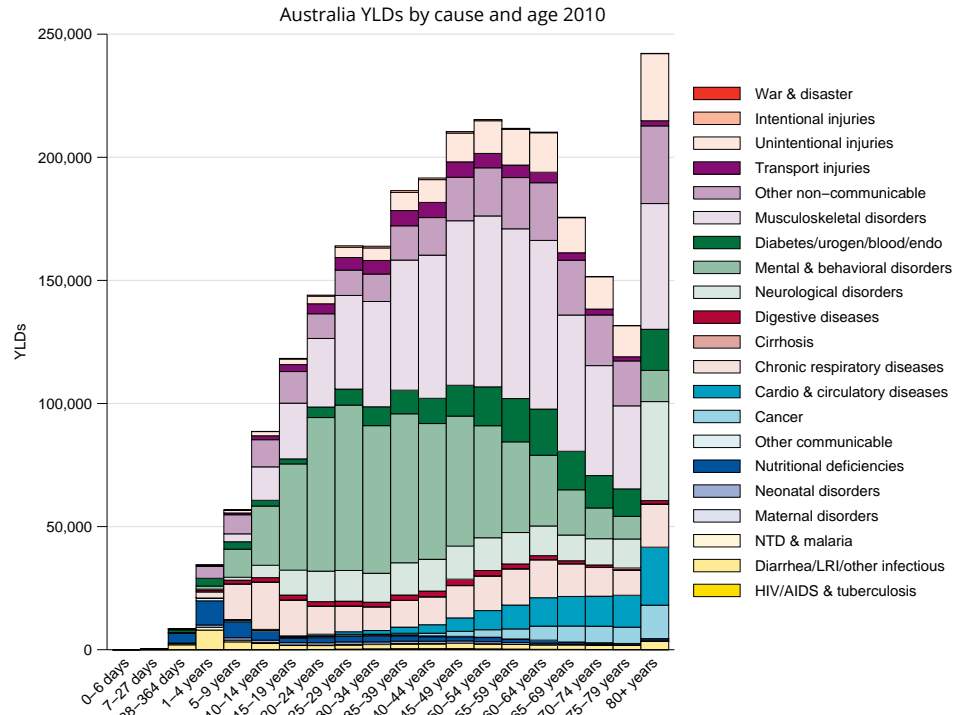
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
498 (21.1%)	1 Ischemic heart disease	1 Ischemic heart disease	343 (15.0%)	-32
160 (6.8%)	2 Stroke	2 Lung cancer	142 (6.2%)	11
135 (5.7%)	3 Road injury	3 Stroke	129 (5.6%)	-19
129 (5.5%)	4 Lung cancer	4 Colorectal cancer	100 (4.4%)	18
103 (4.4%)	5 Self-harm	5 Self-harm	90 (4.0%)	-12
87 (3.7%)	6 COPD	6 Road injury	81 (3.6%)	-40
84 (3.5%)	7 Colorectal cancer	7 COPD	78 (3.4%)	-10
60 (2.5%)	8 Congenital anomalies	8 Breast cancer	62 (2.7%)	5
59 (2.5%)	9 Breast cancer	9 Alzheimers disease	58 (2.5%)	170
56 (2.4%)	10 Preterm birth complications	10 Diabetes	50 (2.2%)	40
36 (1.5%)	11 Diabetes	11 Prostate cancer	43 (1.9%)	47
34 (1.4%)	12 Cirrhosis	12 Pancreatic cancer	39 (1.7%)	46
32 (1.4%)	13 Lower respiratory infections	13 Lower respiratory infections	37 (1.6%)	15
30 (1.3%)	14 Leukemia	14 Leukemia	36 (1.6%)	21
30 (1.3%)	15 Prostate cancer	15 Cirrhosis	36 (1.6%)	8
28 (1.2%)	16 Other cardio & circulatory	16 Congenital anomalies	36 (1.6%)	-41
28 (1.2%)	17 Brain cancer	17 Non-Hodgkin lymphoma	35 (1.5%)	33
27 (1.2%)	18 Non-Hodgkin lymphoma	18 Other cardio & circulatory	33 (1.5%)	21
27 (1.2%)	19 Pancreatic cancer	19 Preterm birth complications	33 (1.4%)	-42
27 (1.1%)	20 Stomach cancer	20 Brain cancer	33 (1.4%)	19
24 (1.0%)	21 Cardiomyopathy	21 Chronic kidney disease	29 (1.3%)	37
24 (1.0%)	22 Melanoma	22 Drug use disorders	32 (1.4%)	22
23 (1.0%)	23 SIDS	23 Kidney cancers	26 (1.1%)	81
22 (0.9%)	24 Drug use disorders	24 Melanoma	26 (1.2%)	4
21 (0.9%)	25 Chronic kidney disease	25 Stomach cancer	23 (1.0%)	-16
	26 Alzheimers disease	26 Cardiomyopathy		
	35 Kidney cancers	45 SIDS		

This chart shows the change in the top 25 causes of YLLs due to premature mortality from 1990 to 2010. Solid lines indicate a cause has moved up in rank or stayed the same. Broken lines indicate a cause has moved down in rank. The causes are color coded by blue for non-communicable diseases, green for injuries, and red for communicable, maternal, neonatal, and nutritional causes of death.

YEARS LIVED WITH DISABILITY (YLDs)

Years lived with disability (YLDs) are estimated by weighting the prevalence of different conditions based on severity. The top five leading causes of YLDs in Australia are low back pain, major depressive disorder, other musculoskeletal disorders, neck pain, and falls.

The size of the colored portion in each bar represents the number of YLDs attributable to each cause. The height of each bar shows which age groups had the most YLDs in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain.

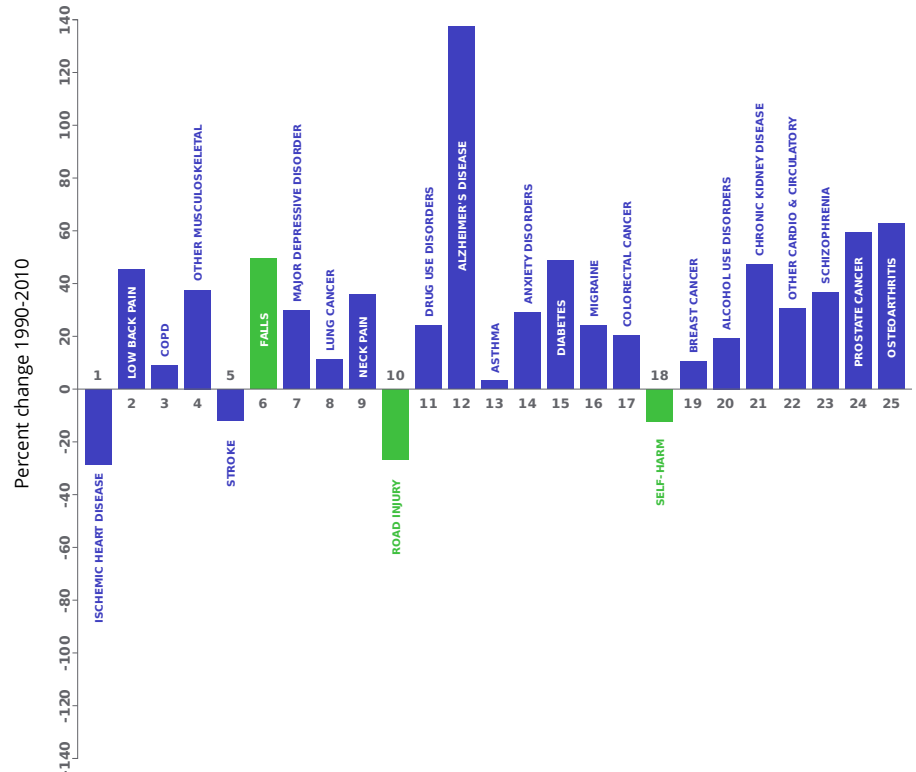


DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Australia, the top three causes of DALYs in 2010 were ischemic heart disease, low back pain, and chronic obstructive pulmonary disease. Two causes that appeared in the 10 leading causes of DALYs in 2010 and not 1990 were falls and neck pain.

The top 25 causes of DALYs are ranked from left to right in order of the number of DALYs they contributed in 2010. Bars going up show the percent by which DALYs have increased since 1990. Bars going down show the percent by which DALYs have decreased. Globally, non-communicable diseases and injuries are generally on the rise, while communicable, maternal, neonatal, and nutritional causes of DALYs are generally on the decline.

Leading causes of DALYs and percent change 1990 to 2010 for Australia



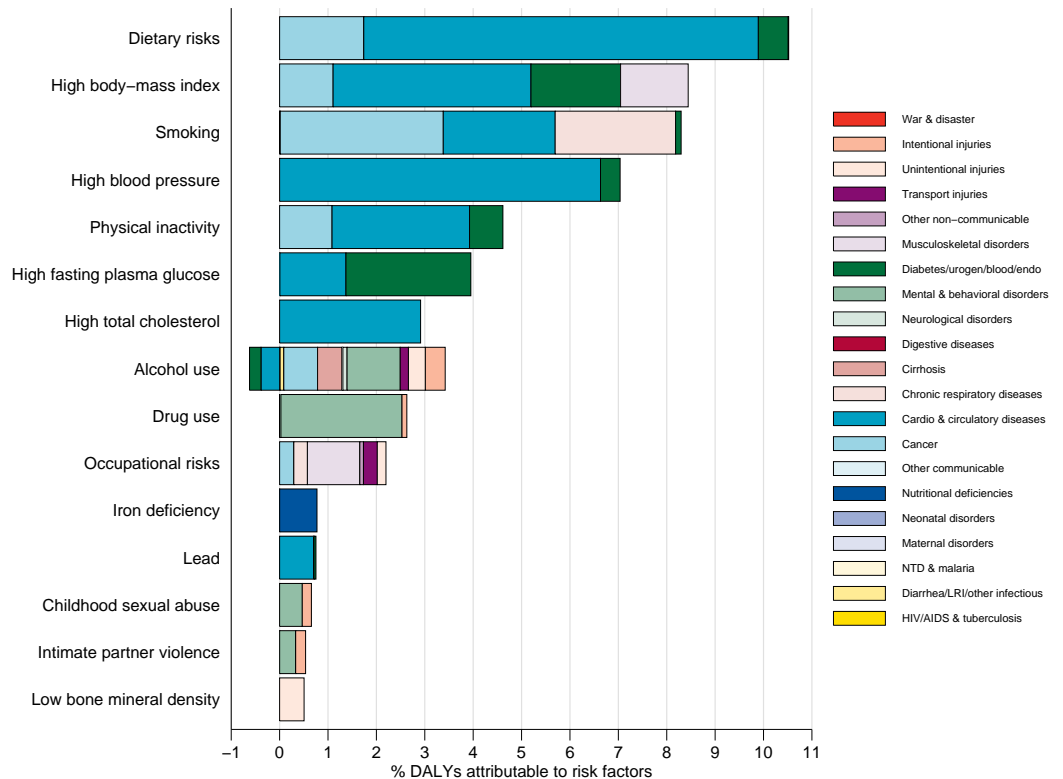
- Communicable, maternal, neonatal, and nutritional
- Non-communicable
- Injuries

RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Australia are dietary risks, high body-mass index, and tobacco smoking. The leading risk factors for children under 5 and adults aged 15-49 years were iron deficiency and drug use, respectively, in 2010.

The graph shows the top 15 risk factors for Australia. The colored portion of each bar represents the specific diseases attributable to that risk factor while bar size represents the percentage of DALYs linked to specific risk factors.

Burden of disease attributable to 15 leading risk factors in 2010, expressed as a percentage of Australia DALYs



COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Australia against other comparator countries provides key insight into public health successes and areas where Australia might be falling behind. The table identifies Australia's rank across 14 other comparator countries, selected and ordered by income per capita, for five metrics of interest, with 1 indicating the best rank and 15 indicating the worst rank.

- Age-standardized rates are used to make meaningful comparisons across time by adjusting for changes in population size and age structure.
- Life expectancy incorporates mortality, and health-adjusted life expectancy further incorporates years lived in less than ideal health.
- In 2010, Australia ranked 2nd for health-adjusted life expectancy and 5th for age-standardized YLD rate.

Age-standardized death rates, YLL rates, YLD rates, and life expectancy at birth and health-adjusted life expectancy at birth for 1990 and 2010, both sexes combined

Country	Age-standardized death rate (per 100,000)				Age-standardized YLL rate (per 100,000)				Age-standardized YLD rate (per 100,000)				Life expectancy at birth				Health-adjusted life expectancy at birth			
	1990		2010		1990		2010		1990		2010		1990		2010		1990		2010	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	LE	Rank	LE	Rank	HALE	Rank	HALE	Rank
United Arab Emirates	795	15	615	15	18,366	15	13,157	15	12,272	15	11,951	15	72.7	15	76.3	15	62.2	15	65.1	15
Kuwait	489	1	511	13	11,796	3	12,133	14	12,022	14	11,867	14	77.8	1	77.4	14	66.1	6	65.9	14
United States	639	11	516	14	15,130	14	11,447	13	10,503	1	10,509	1	75.2	12	78.2	13	65.6	9	67.9	12
Switzerland	532	2	369	2	11,825	4	7,071	2	10,663	2	10,807	2	77.5	4	82.2	2	67.5	1	70.8	1
Netherlands	572	7	426	7	11,847	5	7,988	5	11,355	11	11,492	13	77	6	80.6	7	66.5	4	69.1	6
Ireland	692	14	453	9	14,298	12	8,764	9	11,024	5	11,138	8	74.8	14	79.9	9	65.2	14	68.9	8
Iceland	548	4	365	1	11,310	2	6,675	1	10,763	3	11,108	7	77.6	2	82.2	1	65.5	10	68.4	11
Australia	568	6	389	3	12,381	7	7,722	4	11,153	8	10,979	5	76.9	7	81.5	3	66.4	5	70.1	2
Canada	558	5	422	6	12,079	6	8,546	8	10,806	4	10,845	3	77.2	5	80.6	5	67	2	69.6	4
Austria	622	9	418	5	13,732	10	8,401	6	11,052	6	11,381	10	75.7	9	80.6	6	65.8	7	69.1	5
Sweden	539	3	403	4	11,196	1	7,296	3	11,378	12	11,250	9	77.6	3	81.4	4	66.8	3	69.6	3
Denmark	656	13	504	12	14,383	13	9,592	12	11,209	10	11,456	12	75.2	13	78.9	12	65.3	13	67.9	13
Belgium	615	8	460	11	13,458	9	9,381	11	11,119	7	10,933	4	75.9	8	79.5	11	65.7	8	68.5	10
United Kingdom	638	10	455	10	13,452	8	8,949	10	11,453	13	11,435	11	75.7	10	79.9	10	65.4	11	68.6	9
Germany	644	12	433	8	14,032	11	8,512	7	11,165	9	11,015	6	75.4	11	80.2	8	65.3	12	69	7

COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Australia relative to the same comparator countries for the leading causes of DALYs in 1990 (top) and 2010 (bottom).

- The columns are ordered by the absolute number of DALYs in Australia for that particular year, with greatest burden on the left.
- The numbers indicate the rank across countries for each cause in terms of age-standardized DALY rates, with 1 as the best performance and 15 as the worst.

Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 1990																									
Country	Ischemic heart disease	Low back pain	Road injury	Stroke	COPD	Lung cancer	Other musculoskeletal	Major depressive disorder	Asthma	Self-harm	Neck pain	Falls	Drug use disorders	Anxiety disorders	Migraine	Colorectal cancer	Diabetes	Congenital anomalies	Breast cancer	Preterm birth complications	Alzheimer's disease	Alcohol use disorders	Other cardio & circulatory	Lower respiratory infections	Schizophrenia
United Arab Emirates	15	3	15	15	15	2	1	15	13	2	1	8	15	9	1	2	14	11	1	15	2	2	15	15	10
Kuwait	11	2	13	13	2	1	2	14	8	1	2	3	2	13	2	1	15	15	2	13	1	1	7	12	8
United States	12	1	11	3	12	14	15	8	7	6	15	1	12	15	3	6	13	6	5	14	9	11	9	10	14
Switzerland	1	4	9	4	10	4	7	10	5	15	13	15	7	5	12	5	8	12	9	1	13	9	5	4	6
Netherlands	3	7	3	7	7	11	12	13	1	4	9	4	1	12	7	8	6	10	12	5	5	3	12	3	2
Ireland	14	11	5	11	14	9	11	1	11	5	12	10	4	7	9	14	5	13	10	8	6	4	11	13	5
Iceland	6	9	4	2	3	7	6	5	3	8	14	7	8	2	10	3	1	1	11	4	8	10	2	11	11
Australia	5	5	10	5	9	6	13	2	15	7	5	5	14	11	15	12	3	4	4	11	11	6	3	1	13
Canada	4	8	6	1	6	10	14	4	10	9	7	2	9	3	6	7	9	5	6	6	14	7	1	6	15
Austria	8	10	12	14	5	5	9	7	2	13	11	14	11	6	8	9	10	9	7	12	3	12	10	2	3
Sweden	7	13	2	6	1	3	5	12	12	12	3	6	3	8	13	4	4	8	3	2	10	14	6	9	9
Denmark	10	14	7	10	13	13	10	6	6	14	4	13	10	4	5	15	11	14	14	3	12	15	4	5	1
Belgium	2	6	14	9	8	15	4	9	4	11	10	11	5	1	11	10	7	3	13	7	15	8	14	8	4
United Kingdom	13	12	1	12	11	12	3	3	14	3	6	9	13	14	14	11	2	2	15	9	7	5	8	14	12
Germany	9	15	8	8	4	8	8	11	9	10	8	12	6	10	4	13	12	7	8	10	4	13	13	7	7
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																									
Country	Ischemic heart disease	Low back pain	COPD	Other musculoskeletal	Stroke	Falls	Major depressive disorder	Lung cancer	Neck pain	Road injury	Drug use disorders	Alzheimer's disease	Asthma	Anxiety disorders	Diabetes	Migraine	Colorectal cancer	Self-harm	Breast cancer	Alcohol use disorders	Chronic kidney disease	Other cardio & circulatory	Schizophrenia	Prostate cancer	Osteoarthritis
United Arab Emirates	15	3	12	1	15	3	15	2	1	15	13	2	6	7	14	1	2	2	1	1	14	15	11	2	15
Kuwait	14	2	3	2	14	5	13	1	2	14	5	1	10	12	15	2	1	1	2	2	15	9	9	1	14
United States	13	1	15	15	10	2	6	12	15	12	15	15	9	15	13	3	5	9	7	11	13	11	14	8	11
Switzerland	2	4	11	3	3	15	12	5	14	7	2	5	8	5	8	11	4	14	8	6	3	1	6	7	7
Netherlands	1	8	9	9	8	7	14	14	7	3	1	9	2	10	3	7	14	4	13	4	5	12	2	9	1
Ireland	12	10	8	10	9	12	4	8	12	8	9	6	11	6	5	10	13	10	11	8	9	7	4	11	4
Iceland	4	9	1	4	1	6	7	6	13	1	7	14	4	14	2	9	3	5	3	7	4	3	10	15	9
Australia	3	5	6	13	2	4	1	4	5	11	12	8	15	11	4	15	12	7	6	3	6	4	13	12	2
Canada	7	6	5	14	4	1	5	11	11	5	11	13	12	1	11	6	8	11	10	5	11	2	15	6	13
Austria	10	11	7	6	7	14	10	7	9	10	10	3	1	3	10	8	6	13	5	13	10	10	3	4	5
Sweden	5	13	2	5	5	8	8	3	3	2	3	11	13	8	6	13	7	12	4	14	1	5	8	13	12
Denmark	6	14	14	12	13	11	11	15	4	9	8	10	7	4	12	5	15	8	12	15	8	6	1	14	3
Belgium	8	7	10	8	12	13	3	13	10	13	6	12	3	2	7	12	11	15	15	9	7	14	7	10	8
United Kingdom	9	12	13	11	11	9	2	10	6	4	14	7	14	13	1	14	10	3	14	10	2	8	12	5	10
Germany	11	15	4	7	6	10	9	9	8	6	4	4	5	9	9	4	9	6	9	12	12	13	5	3	6
Ranking Legend	1 - 3			4 - 7			8 - 11			12 - 15															