ACCESS ECONOMICS Pty Limited

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The Economic Costs of Obesity

Executive Summary of a Report

by Access Economics Pty Limited to

Diabetes Australia

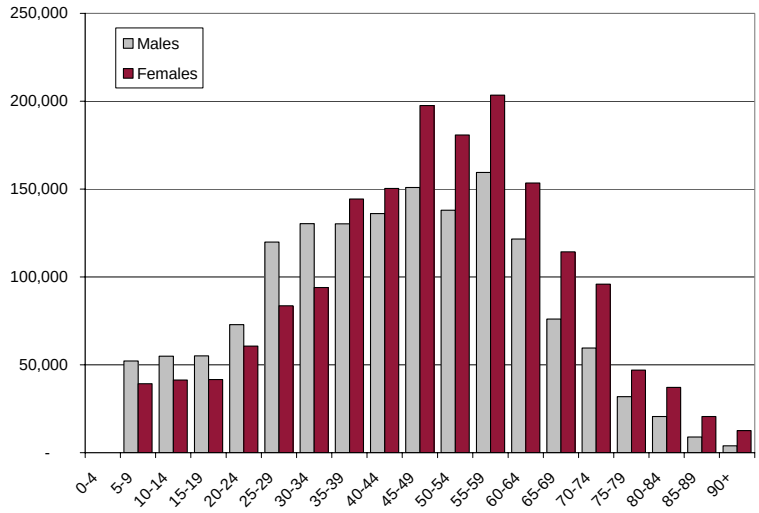
DIABETES AUSTRALIA

EXECUTIVE SUMMARY

In 2005, **3.24 million Australians were estimated to be obese –** 1.52 million males (15.1% of all males) and 1.72 million females (16.8% of all females).

- Obesity is the accumulation of excessive fat in the body, defined here in terms of Body Mass Index (BMI) over 30 for adults and, for children and adolescents aged 2 to 18 years, a set of age-gender specific BMI-thresholds are used. Obesity is linked to genetic, perinatal, socioeconomic and other factors, but is primarily due to energy imbalance.
  - BMI is defined as body weight (in kg) divided by height (in metres squared).
  - Whilst well accepted for people of Caucasian extraction, the definition of obesity is not appropriate for application to other major ethnic groups in Australia, especially people of Asian extraction, where it will otherwise underestimate 'true obesity'.
  - Moreover, this report focuses on obesity alone, excluding 'overweight' (defined generally as BMI between 25 to 30) so the costs estimated are far less than the costs of all excess body weight.
- The 55-59 year age group contained the largest number of obese people for both men (159,000) and women (203,000).
  - Over 280,000 young Australians (aged 5-19 years) are obese.
- Prevalence rates are based on Australian measured anthropomorphic data from AusDiab, the National Nutrition Study and the NSW Schools Physical Activity and Nutrition Survey (SPANS) study for children.

PREVALENCE OF OBESITY, 2005 (AUSTRALIANS)



Despite serious weaknesses in data, obesity prevalence rates appear to be increasing for both adults and children, although it is unclear at exactly what rate. A baseline prevalence projection (with no further change in age-gender prevalence rates, such that all further increases are due to demographic ageing alone) indicates that, by 2025, a total of 4.2 million Australians (16.7% of the population) are forecast to be obese.

- However, if rates continue to increase at historical rates, there could be as many as 7.2 million obese Australians by 2025 (28.9% of the population).

People with Obesity (PWO) have increased overall risk of death, as well as higher Relative Risk (RR) of:

- Type II diabetes (RR up to 3.2);
- Cardiovascular Disease (CVD), including Coronary Heart Disease (CHD) RR up to 1.8, stroke (RR up to 1.8) and hypertension (RR up to 2.35), which in turn causes Hypertensive Heart Disease (HHD) and Peripheral Arterial Disease (PAD);
- osteoarthritis (RR up to 2.45);
- various cancers – colorectal, breast, uterine and kidney (RR up to 1.75); and
- other health conditions.

Where the RR for a disease is raised in obese people, a portion of the cases of that disease are directly *attributable* to obesity; the Attributable Fractions (AFs) are derived from RRs and used to estimate costs. This report estimates that in 2005:

- 102,204 Australians had Type 2 diabetes as a result of being obese (10.8% of all people with Type 2 diabetes);
- over 379,00 Australians had CVD as a result of being obese (obesity causing 14% of hypertension, 12% of CHD and 12% of stroke);
- over 225,000 Australians had osteoarthritis as a result of being obese (14% of all people with osteoarthritis); and
- 20,430 Australians had cancer as a result of being obese (obesity causing 13% of colorectal and kidney cancers, and 16% of breast and uterine cancers).

These health impacts have a number of cost impacts on the Australian economy, namely:

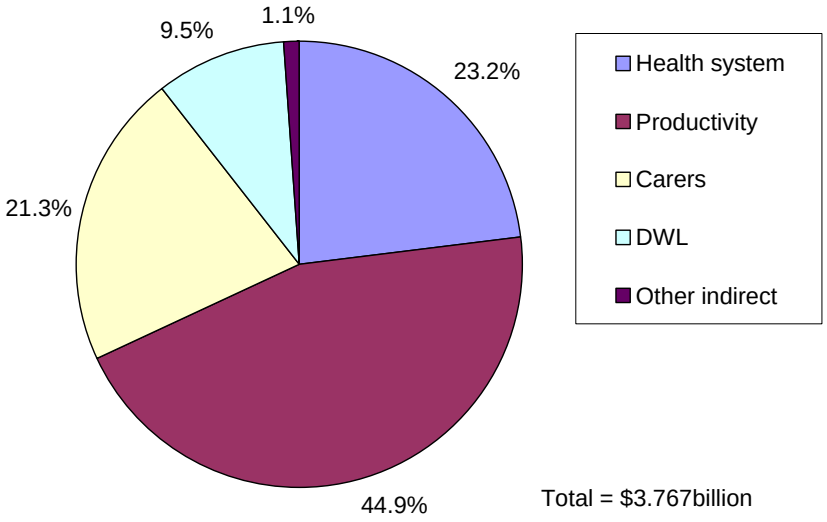
- **direct financial costs to the Australian health system** include the costs of running hospitals and nursing homes, General Practitioner (GP) and specialist services, the cost of pharmaceuticals, allied health services, research and other direct costs (such as health administration);
- **other financial costs,** which include:
  - **productivity losses** – short and long-term employment impacts and premature mortality;
  - **carer costs** – the value of community care services provided primarily by informal carers;
  - **Deadweight Loss (DWL) from transfers** – taxation revenue foregone, welfare and other government payments;
  - **other costs** – aids, equipment and modifications, transport and accommodation costs, respite and other government programs and the bring-forward component of funerals; and
- **non-financial costs** – the disability, loss of wellbeing and premature death that result from obesity and its impacts, measured in Disability Adjusted Life Years (DALYs), known as the Burden of Disease (BoD).

Different costs of diseases are borne by different individuals or sectors of society – the individual, their friends and family, Federal and State governments, employers, and other members of society. Costs were measured using a broad range of data sources.

Costs of obesity

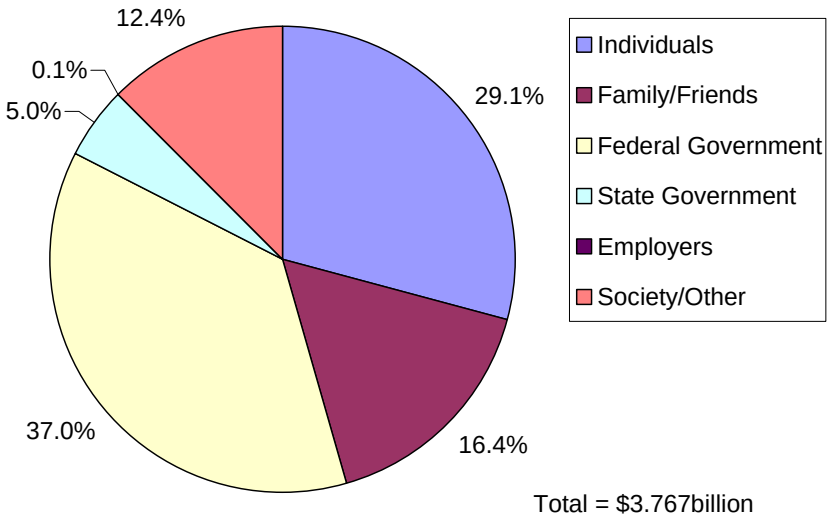
- The total financial cost of obesity in 2005 was estimated as $3.767 billion.
  - Of this, productivity costs were estimated as $1.7 billion (45%), health system costs were $873 million (23%) and carer costs were 804 million (21%).
  - DWL from transfers (taxation revenue foregone, welfare and other government payments) were $358 million (10%) and other indirect costs were $40 million (1%).
- The net cost of lost wellbeing (the dollar value of the burden of disease, netting out financial costs borne by individuals) was valued at a further $17.2 billion, bringing the total cost of obesity in 2005 to $21.0 billion.

FINANCIAL COSTS OF OBESITY BY TYPE OF COST, 2005 (% TOTAL)



Of the financial costs, 29.1% are borne by individuals, 16.4% by family and friends, 37.0% by Federal Government ($1.4 billion per annum), 5.0% by State Governments, 0.1% by employers and 12.4% by the rest of society. However, if the cost of lost wellbeing is included, the individual's share rises markedly to 87.3% of the total.

FINANCIAL COSTS OF OBESITY: BY WHO BEARS THEM, 2005 (% TOTAL)



COST SUMMARY, OBESITY ($M) 2005

	Individuals	Family/ Friends	Federal Gov't	State Gov't	Employ-ers	Society/ Other	Total
Type 2 diabetes							
BoD	1,269	0	0	0	0	0	1,269
Health System	23	0	54	25	0	15	116
Productivity	277	0	162	0	3	0	442
Carers	0	456	23	0	0	0	479
DWL	0	0	0	0	0	76	76
Other indirect	6	1	0	0	0	0	7
Transfers	0	-18	18	0	0	0	0
Total financial	**305**	**439**	**257**	**25**	**3**	**90**	**1,119**
Total inc. BoD	**1,574**	**439**	**257**	**25**	**3**	**90**	**2,389**
CVD							
BoD	11,263	0	0	0	0	0	11,263
Health System	84	0	198	93	0	54	428
Productivity	334	0	138	0	0	0	472
Carers	0	217	90	0	0	0	306
DWL	0	0	0	0	0	184	184
Other indirect	0	0	0	0	0	0	0
Transfers	-16	-39	55	0	0	0	0
Total financial	**402**	**178**	**480**	**93**	**0**	**237**	**1,390**
Total inc. BoD	**11,665**	**178**	**480**	**93**	**0**	**237**	**12,653**
Osteoarthritis							
BoD	1,172	0	0	0	0	0	1,172
Health System	44	0	102	48	0	28	221
Productivity	164	0	397	0	0	0	561
Carers	15	0	0	0	0	0	15
DWL	0	0	0	0	0	47	47
Other indirect	9	0	0	0	0	0	9
Transfers	0	0	0	0	0	0	0
Total financial	**233**	**0**	**499**	**48**	**0**	**75**	**855**
Total inc. BoD	**1,405**	**0**	**499**	**48**	**0**	**75**	**2,027**
Cancer							
BoD	3,542	0	0	0	0	0	3,542
Health System	21	0	50	23	0	13	107
Productivity	136	0	80	0	2	0	218
Carers	0	2	1	0	0	0	3
DWL	0	0	0	0	0	51	51
Other indirect	19	2	2	0	0	1	24
Transfers	-21	-2	24	0	0	0	0
Total financial	**154**	**2**	**157**	**23**	**2**	**66**	**403**
Total inc. BoD	**3,696**	**2**	**157**	**23**	**2**	**66**	**3,945**
Total							
BoD	17,246	0	0	0	0	0	17,246
Health System	172	0	403	189	0	109	873
Productivity	911	0	777	0	5	0	1,693
Carers	15	674	114	0	0	0	804
DWL	0	0	0	0	0	358	358
Other indirect	34	3	2	0	0	1	40
Transfers	-37	-60	97	0	0	0	0
Total financial	**1,095**	**618**	**1,393**	**189**	**5**	**468**	**3,767**
Total inc. BoD	**18,340**	**618**	**1,393**	**189**	**5**	**468**	**21,013**

There has been much speculation regarding the causes of obesity in the population, and ways to address it. There is no case for a 'fat tax', which would be inefficient and inequitable due to inelastic demand, and little evidence that mandatory regulatory approaches would be either effective, worthwhile given their regulatory burden or superior to voluntary codes developed in partnership with industry. Subsidised programs offer more hope of efficacy and cost effectiveness, although a number of factors make it difficult to evaluate the best interventions. The limited number of randomised controlled trials with long term follow up and the paucity of cost effectiveness data constrain the evaluator's ability to clearly identify and compare the relative value and effectiveness of individual and combined weight loss programs over substantial periods (five years or more). Combined lifestyle modification in severely obese adults can achieve weight loss and a reduction in comorbidities in some patients but does not always achieve sustained significant long-term weight loss, while many patients regain weight. There is some evidence that workplace weight management programs are effective substitutes for physician-directed programs.

Pharmacotherapy combined with lifestyle modifications have been shown effective to achieve weight loss and improve comorbidities, but longer term cost effectiveness has not yet been fully established, although it appears promising. Surgery for selected patients, with appropriate follow-up care, has achieved weight loss and improvement of some comorbidities and quality of life at five years, but risks are higher. Bariatric surgical technology has improved, stimulating new consumer demand which is expected to increase. Surgery has been shown to be cost effective, although riskier than pharmacotherapies.

Access Economics
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