

Diabetes in Western Australia

July 2009

Diabetes is a serious health condition for which there is no cure.¹ It occurs when the pancreas does not produce enough insulin or, alternatively, when the body cannot effectively use the insulin it produces.² If left undiagnosed or poorly managed it can cause heart attack, stroke, kidney failure, blindness, amputation, impotency and premature death.^{1, 3}

It has been estimated that diabetes affects around one million Australians, a number which has substantially increased in the past 20 years and is expected to continue to rise.^{2, 4} Every day, approximately 275 adults are diagnosed with diabetes in Australia.⁵ The annual cost of diabetes to the Australian economy is estimated to be greater than \$34.6 billion, taking into account financial costs and lost wellbeing.⁶

This bulletin presents up to date information on diabetes and its complications in Western Australia, and illustrates the serious impact of diabetes on the individual and our community.

Diabetes in WA

In Western Australia in 2008, 6.6% of the population aged 25 years and older had been diagnosed with diabetes.⁷

This is over 90,000 adults in WA living with diabetes, and it is estimated that for each person diagnosed there is another person undiagnosed.⁴

The financial cost of diabetes to the WA economy is approximately \$1.2 billion per year, of which approximately a third is due to diabetes hospitalisations.⁶

Hospitalisations for Diabetes in WA

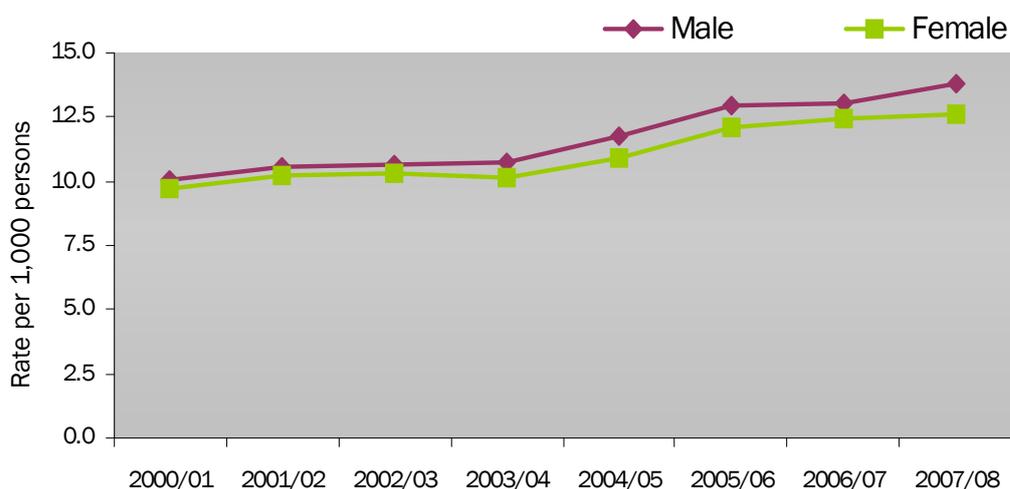
In the 2007/08 financial year, 28,138 people diagnosed with diabetes were admitted to hospital at least once. This represents approximately 30% of people currently living with diabetes.

There were:

- 8,887 hospitalisations where diabetes was indicated as the principal reason for admission.
- 42,233 hospitalisations where diabetes was indicated as an additional reason for admission.
- 44,655 same day hospitalisations for renal dialysis for individuals with diabetes.

This was 95,775 hospitalisations in total, representing 12.37% of all admissions to WA hospitals during this period of time.

Between 2000/01 and 2007/08, there was a significant increase in both the number of people hospitalised and the overall number of hospitalisations for diabetes in WA*. Within the next five years, it is expected that there will be an additional 12,000 people being admitted to hospital annually.



Age standardised rate for the number of people hospitalised per year for any diabetes admission by sex, WA, 2000/01-2007/08

Are you at risk of diabetes?

Risk factors for developing the most common form of diabetes (type 2) include: 5,7,8,9

Being overweight

37.8% of WA adults are overweight and 25.4% of WA adults are obese.

Doing little or no physical activity

48.2% of WA adults are doing less than the recommended amount of exercise.

Having pre-diabetes (Impaired Fasting Glucose or Impaired Glucose Tolerance)

10-20 times more likely to develop diabetes.

Smoking

16.7% of adults are currently smoking.

Being over 40 years of age

44.36% of the WA population are aged 40 or older.

Family history of diabetes

Having a brother, sister or parent with diabetes or having had gestational diabetes (diabetes when pregnant).

Being of Aboriginal or Torres Strait Islander descent

3.2% of the WA population are of Aboriginal or Torres Strait Islander descent.

Being of Asian, Middle Eastern, North African, Southern European, Pacific Islander or Maori descent

At least 7.9% of the WA population are of one of these descents.

Having high blood pressure or cholesterol

18.6% of adults have high blood pressure.

17.6% of adults have high cholesterol

Having cardiovascular disease

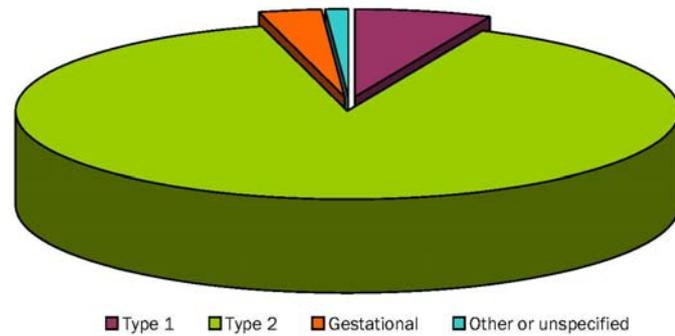
6.4% of adults have heart disease

2.4% of adults have had a stroke

Diabetes Type

In WA, patients with type 2 diabetes accounted for the majority of diabetes hospitalisations (89.0%) in 2007/08, follow by type 1 (6.8%), gestational (3.0%) and other or unspecified diabetes (1.2%).

- 24,520 people with type 2 diabetes were admitted to hospital an average of 1.9 times each. The average length of stay for each admission was 7.2 days.
- 2,023 people with type 1 diabetes were admitted to hospital an average of 1.7 times. The average length of stay for each admission was 5.0 days.



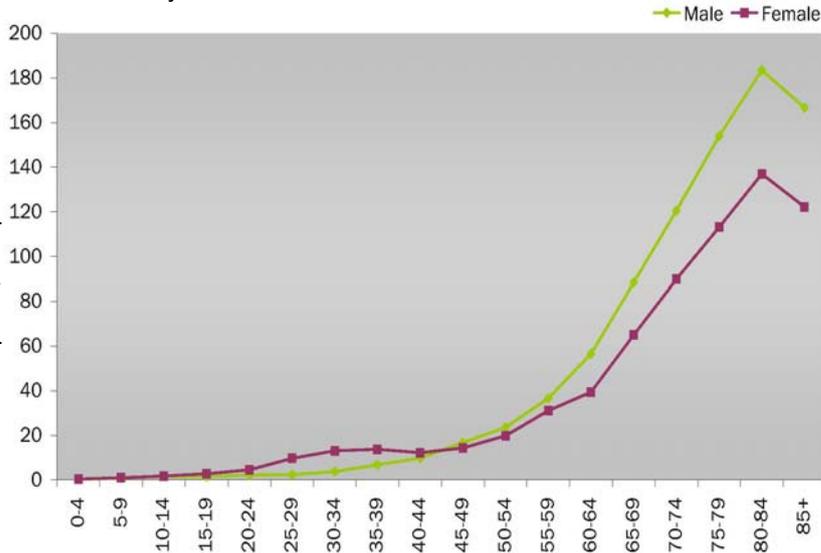
Age and Sex

The overall rate of admission to hospital is significantly higher for males with diabetes than females, but with age the rate increases significantly for both males and females.

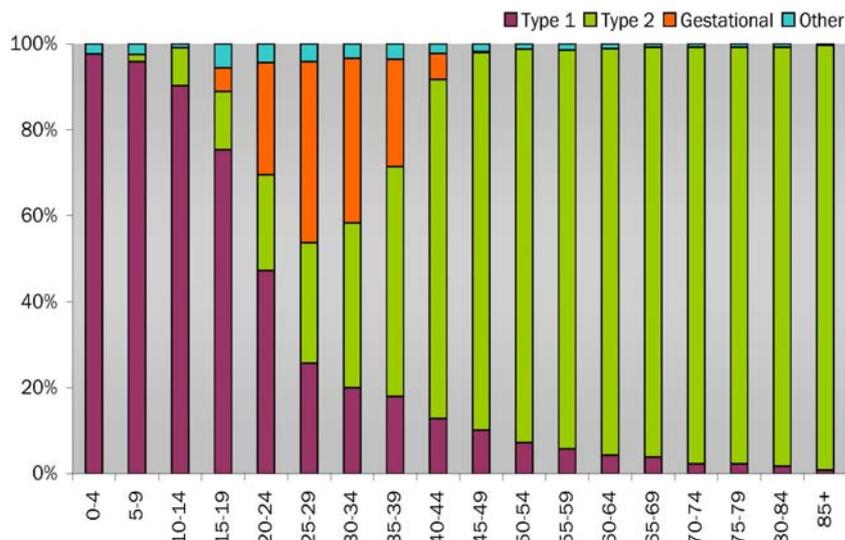
- Age-specific hospitalisation rates for males and females are highest at age 80-84 years, with the rate being 183.5 hospitalisations per 1,000 for males and 137.0 hospitalisations per 1,000 for females.

Hospitalisations for diabetes at different ages vary by diabetes type.

- Hospitalisation rates for type 2 diabetes increase with age, and are substantially greater than are hospitalisation rates for other types of diabetes from age 40-44 years onwards. The average age at admission to hospital for type 2 diabetes is 67 years.



Age specific hospitalisation rates for diabetes by age group and sex, WA, 2007/08



Proportion of hospitalisation at each age group by diabetes type, WA, 2007/08



What are the different types of diabetes? 1, 3, 10

Type 1:

Type 1 diabetes is an autoimmune condition, in which the pancreas does not produce insulin because the cells which make insulin have been destroyed by the immune system. People with type 1 diabetes therefore require insulin injections to control their blood glucose levels (BGLs). Type 1 diabetes accounts for approximately 10–15% of all diabetes cases.

Type 2:

In type 2 diabetes, the body does produce insulin but the insulin is ineffective or there is not enough insulin, or both. Type 2 diabetes is the most common form of diabetes (85-90%), and while this type of diabetes is usually seen in adults, it is now being seen increasingly in teenagers and children. Many of the risk factors for type 2 diabetes are modifiable conditions.

Gestational diabetes:

Gestational diabetes occurs when a woman first experiences higher than normal blood glucose levels during pregnancy. It develops if the body is unable to produce the larger amount of insulin that a pregnant woman requires. Gestational diabetes is present in 3-8% of pregnancies.

Other types of diabetes account for less than 5% of all diabetes. They are caused by specific genetic conditions, medications, malnutrition or other health conditions.

Complications of diabetes

In 2007/08, there were 51,120 hospitalisations for diabetes, of which 21,856 (42.8%) were for complications of diabetes. The majority, 94.6%, were associated with type 2 diabetes.

Hospitalisations for complications of diabetes, WA, 2007/08

	N	% of all diabetes hospitalisations	N people	Av. N of admissions	Av. length of stay	Av. age	% male	% type 2
Any diabetes complication	21,856	42.8	11,760	1.9	7.6	69.4	56.3	94.6
Cardiovascular disease:								
Coronary heart disease (CHD)	5,977	11.7	3,841	1.6	7.0	69.3	61.4	97.0
Stroke	1,228	2.4	724	1.7	18.8	71.2	58.0	96.8
Peripheral vascular disease (PVD)	2,700	5.3	1,584	1.7	11.6	71.4	66.5	92.9
Eye disease	5,541	10.8	4,016	1.4	3.7	72.0	48.3	93.2
Kidney disease (excluding renal dialysis):								
Kidney complications	6,703	13.1	3,409	2.0	8.8	69.8	56.2	95.8
Chronic kidney failure	7,437	14.5	3,186	2.3	8.8	69.4	57.6	94.7
Nerve damage	1,379	2.7	942	1.5	9.2	66.3	59.5	90.7
Lower limb complications:								
Lower limb ulcers	768	1.5	555	1.4	12.6	67.3	55.2	94.7
Lower limb amputations	335	0.7	294	1.1	25.2	65.3	70.1	92.8
Oral complications	27	0.1	26	1.0	21.7	57.6	55.6	96.3

Notes: Any diabetes complication includes any hospitalisations for one of the above complications. Hospitalisations for diabetes include diabetes as principle or additional diagnoses excluding hospitalisations for same day renal dialysis. Diabetes complication groups are not mutually exclusive.

Cardiovascular disease:

Cardiovascular disease is a major complication of diabetes, and is the leading cause of death in individuals diagnosed with diabetes.^{5, 11} Cardiovascular disease includes any diseases of the heart or blood vessels. Coronary heart disease (CHD), stroke and peripheral vascular disease (PVD) are the most common cardiovascular diseases in people with diabetes.¹⁰

Eye disease:

People with diabetes are at an increased risk of developing eye diseases, such as retinal disease, cataract and glaucoma, which can cause vision impairment or blindness.¹²

Kidney disease:

Diabetic nephropathy and chronic kidney failure are two kidney diseases most commonly associated with diabetes.¹⁰ These conditions impact on the kidney's ability to function and can be life threatening.

Nerve damage:

Nerve damage, or neuropathy, is a frequent complication of diabetes.¹³ It affects both the peripheral and autonomic nervous systems, which can lead to loss of feeling in limbs, muscle weakness, loss of bladder control and sexual or erectile dysfunction.¹⁰

Lower limb complications:

People with diabetes are at an increased risk of developing lower limb ulcers or lower limb infections.¹⁰ These conditions can in turn lead to amputations of the toes, foot or leg, which are associated with increased morbidity and mortality.¹⁰

Oral complications:

Diabetes can lead to oral complications such as periodontal disease, dental caries and oral infections. These conditions are often more severe in people with diabetes and can be fatal.¹⁰

Complications during pregnancy

Pregnancy can be complicated if the mother has diabetes. The diabetes can be pre-existing (pre-gestational) or can arise during pregnancy (gestational diabetes). Having diabetes during pregnancy can adversely affect both mother and baby. In 2007/08, there were 1,933 pregnant women with diabetes hospitalised in WA; nearly 80% of these being admissions for gestational diabetes.

Dialysis

Dialysis is a procedure required by people with kidney failure, of which diabetes is a key cause.¹⁴ It is the process of removing excess waste substances from the blood when the kidneys are not working effectively and is required to be performed on average 2-3 times per week. In WA in 2007/08, there were 44,655 hospitalisations for dialysis amongst people diagnosed with diabetes. This represents a total of 471 patients being admitted to hospital on average 95 times per year.

Diabetes Related Deaths

Diabetes is the sixth leading cause of death amongst Australians.

In 2006 in WA, there were 349 deaths where diabetes was the principal cause of death.

There were also 799 deaths where diabetes was a contributing factor.

In total, this represented 10.2% of all deaths during this time period.

Comparing the age standardised rate of diabetes deaths in 2006 to previous years (1999-2005), there has been a significant upward trend of 3.2% per year.



Population groups at risk:

Some population groups in WA are at a higher risk of developing diabetes than others.¹⁰

Aboriginal and Torres Strait Islanders

In 2008, 9.0% of Indigenous Western Australians had been diagnosed with diabetes compared with the State average of 6.6%.⁷

For diabetes hospitalisations in 2007/08 Indigenous people were seven times more likely to be hospitalised, were on average 14 years younger at admission to hospital, and were eight times more likely to be admitted for a diabetic complication when compared to non-Indigenous people.

Hospitalisations for renal dialysis were 25 times higher for Indigenous people than non-Indigenous people in 2007/08.

Diabetes-related deaths were eight times higher in Indigenous people than in non-Indigenous people in 2006. Deaths related to diabetes account for 21.3% of all deaths among Indigenous people, compared to only 10.2% of all deaths in the non-Indigenous population.

Socioeconomic Status

In Western Australia, the proportion of people with diabetes increases with decreasing socioeconomic position.⁷ In 2008, 8.0% of people resident in areas classified as the most disadvantaged were diagnosed with diabetes, compared to 5.3% for those from the least disadvantaged areas.⁷

For diabetes hospitalisations in 2005–2007, people from the most disadvantaged areas were 2.4 times more likely to be hospitalised for diabetes and were three years younger than those from the least disadvantaged areas.

Diabetes related deaths were 3.1 times higher amongst persons from those areas classified as the most disadvantaged when compared to people from the least disadvantaged areas.

Geographical Location

Diabetes occurs more often in people living in regional and remote areas of Western Australian than the Perth metropolitan area.¹⁰

For diabetes hospitalisations in 2005–2007, people living in regional WA were 1.2 times more likely to be hospitalised for diabetes than those living in the Perth metropolitan area, and people living in remote areas of WA were 2.1 times more likely to be hospitalised for diabetes than those living in the Perth metropolitan area.

Diabetes-related deaths also increased in relation to remoteness of geographic area. People from regional and rural areas were 1.4 and 3.4 times more likely, respectively, to die from diabetes than people from major city areas.

For further information about diabetes, visit www.diabeteswa.com.au or phone 1300 136 588.

References

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Glossary

Hospitalisation: the formal record of every time a WA hospital provides treatment and/or care to an admitted patient.

Age standardised rate: weighted average of age specific rates according to standard distribution of age (standard is 2001 Australian population).

Age specific rate: based on 5 year age groups and are calculated by dividing the number of cases by the population of the same sex and age group. It is an actual rate.

Socioeconomic status: a measure of disadvantage as defined by the index of relative social disadvantage (ABS 2006).

Geographic location: a measure of remoteness as defined by ARIA (GISCA 2006).

Sources

Western Australian Hospital Morbidity Data System

Australian Bureau of Statistics Mortality Data

WA Health and Wellbeing Surveillance System

Diabetes Coding

ICD-10-AM codes used in the data analysis:

- Diabetes for hospitalisations includes principle or additional code E10-14; O24.0-24.4; O24.9.
- Diabetes for deaths includes principle or additional cause code E10-14.
- Diabetes complications includes a diagnosis of diabetes plus relevant complication in principle or additional code (CHD I20-25, stroke I60-64, PVD I70-79, kidney complications E10.2, E11.2, E12.2, E13.2, E14.2, chronic kidney failure N18, eye complications E10.3, E11.3, E12.3, E13.3, E14.3, nervous system complications E10.4, E11.4, E12.4, E13.4, E14.4, oral complications E10.63, E11.63, E12.63, E13.63, E14.63, lower limb ulcers L97, limb amputation (procedure codes) 44338-00, 44358-00, 44361-00, 44364-00, 90557-00, 44361-01, 44364-01, 44367-00, 44367-01, 44367-02).

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