Diabetes

Diabetes is a chronic metabolic disease affecting many Queenslanders. Undiagnosed or poorly managed diabetes increases the risk of cardiovascular and renal disease, limb amputation, and eye disease and can lead to lifelong health complications.

Diabetes was recognized as the 12th largest cause of disease burden in Australia in 2011, accounting for 2.3% of total burden. Complications of diabetes are a leading cause of potentially preventable hospitalisation and impact significantly on a person’s long-term health and wellbeing.

Prevention of lifestyle related chronic conditions including type 2 diabetes is a major commitment of the Queensland Government. The four-year Health For Life investment to commence in 2016 will offer integrated risk assessment and lifestyle modification interventions to targeted high risk populations across the state.

This factsheet is based on data from a range of sources, all of which are cited. Each data source is subject to limitations as described. Unless otherwise specified, diabetes refers to all types combined.

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<th>Prevalence (18+ years)</th>
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<td>In 2011–12, 5% of Queensland adults had diabetes based on blood measurement (FPG). Of these, 4% were known cases and 1% were diagnosed at survey (that is, for every four diagnosed cases there was one undiagnosed). An additional 5.6% were at risk of developing diabetes.</td>
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<td>In 2014–15, 4.6% of Queensland adults self-reported diabetes, an estimated 170,500 adults in 2016.8</td>
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<td>Prevalence: • was 55% higher in adult males (5.6%) than females (3.6%) • increased with age from 2.2% in 25–44 year olds to 14% in those aged 65 years and older.</td>
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<td>In 2015, there were 221,885 registered cases of diabetes in Queensland: • 10% had type 1 • 86% had type 2 • 3% had gestational • &lt;1% had other forms.</td>
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<td>About one-third of all registered cases in 2015 required insulin. Over 5 years (2011—2015) based on registrants, the number of new cases for: • type 1: remained stable • type 2: ↓ each year • gestational: ↑ each year.</td>
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Monitoring of diabetes is limited by gaps and complexities in data collection.

Measurement of blood glucose: Diabetes is a clinically defined disease, with prevalence based on biomedical assessment. Over the past 16 years there have been two blood measurement surveys:

- The Australian Health Survey (AHS) 2011–12 is the most recent national survey to clinically assess diabetes prevalence using the fasting plasma glucose test (FPG). It also assessed status using HbA1c test.
- The AusDiab Study commenced in 1999 and was designed as a longitudinal cohort study to monitor diabetes, obesity and risk factors for chronic disease, based on physical and biomedical measurements. Diabetes was diagnosed by blood test using both the glucose tolerance test (GTT) and fasting plasma glucose (FPG). The initial cohort was adults aged 25 years and older. As with all cohort studies, the longer the duration of the study, the less representative of the general population the sample becomes.

Self-report data may provide a more timely assessment of diabetes prevalence but it remains uncertain how accurately it reflects the true prevalence.

National Diabetes Register identifies insulin-dependent cases—all type 1 cases and those cases of type 2 that require insulin. The register is based on information from the National Diabetes Services Scheme (NDSS) and Australasian Pediatric Endocrine Group databases. It may not fully capture all cases of disease.

The NDSS establishes the minimum known number of diagnoses, but there are many people who are not on the NDSS as well as undiagnosed cases.
Prevalence by type

**All diabetes**
- 5% of Queensland adults had diabetes based on blood measurement (FPG) in 2011–12. 2
- 5% of Queensland adults were registered with NDSS as having type 2 diabetes in 2015. 7
- 7% of Queensland adults aged 25 years and older had diabetes based on blood measurement (GTT) in 1999. 6

**Type 1 (insulin-dependent diabetes)**
There were 21,870 registered cases of type 1 diabetes in Queensland in 2015 (NDR):
- adults (16+ years): 0.5%, 20,562 cases
- children (0–15 years): 0.2%, 1608 cases.

**Type 2 (non-insulin dependent diabetes)**
There were 140,276 registered cases of non-insulin dependent type 2 diabetes in Queensland in 2015 (NDSS). 7 This is an underestimate as not all cases of diagnosed diabetes are registered and undiagnosed cases are not included.

**Insulin-dependent type 2 diabetes**
There were 51,793 registered cases of insulin dependent type 2 diabetes in Queensland in 2015 (NDR).

**Gestational diabetes**
- There were 6798 registered cases of gestational diabetes in Queensland in 2015—11% of women who gave birth and of these, about 1400 (20%) required insulin.
- In 2014, of 62,807 Queensland women who gave birth, 5488 or 8.7% had gestational diabetes and 440 or 0.7% had pre-existing diabetes.

Hospitalisations
- In 2013–14, there were 8798 hospitalisations for diabetes based on principal diagnosis (excluding gestational diabetes):
  - 58% were males (5124) and 42% females, (3674)
  - 9.8% were Indigenous Queenslanders
  - 7.8% were children aged 0–14 years
  - 13% were aged 15–29 years
  - 25% were adults aged 30–54 years
  - 36% were adults aged 55–74 years
  - 19% were older adults aged 75+ years
  - 57 years was the median age of hospitalisation.
- There were an additional 176,737 hospitalisations where diabetes was associated with admission but not the primary cause (other diagnosis).
- Of the 155,000 potentially preventable hospitalisations (PPHs) in 2013–14, about 39,000 or 25% were for diabetes complications (Queensland Health definition of PPHs which includes all hospitalisations for diabetes).
- Trends in hospitalisations for diabetes cannot be assessed due to changes in coding over the past decade.

Deaths
- In 2014 there were 827 deaths due to diabetes (412 males, 415 females) which included:
  - 58 insulin dependent cases
  - 433 non-insulin dependent cases
  - 336 unspecified cases.
- 34% of diabetes deaths occurred in people aged 0–74 years in 2012 (183 males and 101 females). 11
- The lifetime risk of dying before age 75 years (2007–2011) was less than 1% (0.8% for males, 0.5% for females). 12
- The diabetes death rate did not change between 2002 and 2012. 11

Sociodemographic characteristics
- Prevalence and incidence were higher in males than females nationally—prevalence of 6.3% and 3.9% respectively and annual incidence rates of 0.8% per year and 0.6% per year respectively. 2,9
- Hospitalisation rates (2013–14) were:
  - 42% higher for males than females
  - 2.1 times greater in disadvantaged areas than advantaged areas
  - higher outside major cities: 12% higher in inner regional areas, 37% higher in outer regional areas and 2.3 times higher in remote and very remote areas.
Death rates (2010–2012) were:
- 2.3 times higher in disadvantaged areas than advantaged areas (2.2 females, 2.5 males).
- higher outside major cities: 22—28 % higher in regional areas and 2.2 times greater in remote and very remote areas (females 1.7 and males 2.5 times).

**Indigenous Queenslanders**

**Prevalence: 2012–13**

- 1 in 12 (8.2%) or 6600 Indigenous Queenslander adults had diabetes based on biomedical assessment (FPG).
- The Queensland rate (8.2%) did not differ from the national rate (11%).
- Queensland had the lowest prevalence of diabetes among five jurisdictions with available data.
- Compared with non-Indigenous and after adjustment for age differences, Indigenous Australians were 3.3 times as likely to have diabetes (16% compared to 5%).
- Greater awareness of diabetes is resulting in more complete diagnosis, resulting in fewer undiagnosed cases in Indigenous Australians than non-Indigenous (1:7 compared to 1:4).
- Diabetes prevalence in Indigenous Australians living in remote and very remote areas was 2.5 times that of Indigenous Australians living in major cities (21% compared to 8%).
- Indigenous Australians with diabetes were 5 times more likely to have chronic kidney disease compared to Indigenous Australians without diabetes (53% compared to 11%).
- Indigenous Australian adults experience diabetes 20 years earlier than non-Indigenous.

**Hospitalisations**

There were 198,000 hospitalisations for diabetes for Indigenous Queenslanders in 2013–14 and the crude rate was 2.4 times the non-Indigenous rate (4.2 times after adjusting for age).

**Deaths**

- There were 57 deaths of Indigenous Queenslanders due to diabetes in 2014 and the rate was 5.2 times the non-Indigenous rate.14
- Indigenous Queenslanders were more likely to die at an earlier age (before 50 years) due to diabetes in 2010–2011 (19% compared with 2.6% for non-Indigenous).14

**Trends**

The pattern of change for Indigenous Queenslanders shows some improvements, with death rates for diabetes decreasing by 6.0% per year between 2002 and 2011. These gains have largely been achieved for those aged 50 years and older.11

**Trends**

- Biomedical prevalence: there is insufficient data to assess trends because there is currently no national measured data for monitoring diabetes prevalence.
- Self-report prevalence: there has been a 25% increase in 12 years.15
- There is insufficient information to assess the population incidence of diabetes, including the stage of diagnosis and duration to requiring insulin.
- Incidence rates for type 1 diabetes have been steady for children and adults nationally over a decade.16
- It is not possible to reliably report trends of insulin dependent type 2 diabetes, due to changes in data collection methods over the past decade.
- Hospitalisations: due to coding changes over the past decade, trends cannot be reported.17
- Deaths: there has been no change in death rates over the past decade.11

**National comparisons:**

Queensland did not differ from national for:

- adult prevalence of diabetes based on blood measurement—Queensland 5.0% and Australia 5.1% in 2011–12.2
- prevalence of type 1 diabetes in children in 2013.16
- death rates for diabetes in 2014.18

**Costs**

The number of prevalent diabetes cases is projected to triple in the 30 years between 2002–03 and 2032–33, resulting in a five-fold increase in expenditure—the largest single cause of anticipated proportional increase in expenditure.11

Per capita state government spending for type 2 diabetes for Indigenous Australians was 3.9 times non-Indigenous spending.19

**Burden of disease**

The latest burden of disease and injury study for Australia was released in 2016 (2011 data).3 Gestational diabetes was not included in the data below.

**Total disease burden (DALYs):**

- Diabetes was ranked the 12th largest cause of disease burden, accounting for 2.3% of total DALYs in Australia in 2011, where fatal outcomes were slightly higher (53% YLL) than the disability burden (47% YLD).3
- Diabetes caused a greater burden among Australian males (ranked 8th) than females (ranked 14th).3

**Disability burden (YLD):**

- Diabetes was ranked the 14th largest cause of disability burden accounting for 2.1% of YLDs in Australia in 2011.
- The disability burden due to diabetes was ranked higher in males (13th) than females (16th) in 2011.3
Factors. Tobacco smoking and harmful use of alcohol burden (YLD): quite different changes in fatal burden (YLL) and disability burden (YLD). The relatively small changes in total burden conceal for Australian females by 5.8%, after adjusting for age. males by 1.0% between 2003 and 2011, and increased for obesity is a major risk factor for developing type 2 diabetes. The prevalence of diabetes among obese Queensland adults was 4 times that of non-obese in 2011–12 (11% compared with 2.6%).

About 90% of adults who had been measured as obese in 2011–12 did not have diabetes. Of those with diabetes based on blood measurement (most had type 2 diabetes), two-thirds were obese.

Diabetes management

In 2011–12, of Australians with diabetes: 41% checked their blood glucose daily and 21% weekly. 75% had an HBA1c test in the previous 12 months. 23% were taking insulin daily. 54% had a family history of diabetes. 66% were following dietary advice to manage diabetes. 17% had lost weight in the previous two weeks to manage diabetes. 30% had exercised on most days in the previous two weeks to manage the condition. 29% had consulted a diabetes educator in the previous 12 months.

12% had consulted a podiatrist/chiropodist in the previous 12 months. 11% had consulted a dietitian/nutritionist in the previous 12 months. 10% had consulted an optician in the previous 12 months. 27% checked their feet at least monthly.

References