Body Mass Index was the greatest predictor of reporting Type 2 diabetes. For every increase in BMI, there was an nine per cent increase in the likelihood of reporting Type 2 diabetes. Age came next with an average five per cent increase in the likelihood of reporting Type 2 diabetes with each additional year. Having high blood pressure and high blood cholesterol doubled the likelihood of reporting Type 2 diabetes. Socioeconomic disadvantage was a powerful predictor with more than twice as many people reporting Type 2 diabetes in areas designated as the most socially disadvantaged compared with the least disadvantaged. The relationship between social disadvantage and reporting Type 2 diabetes is close to linear.

Trends over time

The WA Health and Wellbeing Surveillance System has been continuously collecting information on Type 2 diabetes since 2002. Table 4 shows how trends have changed within that time.

Table 4 Changes in indicator trends over time, 2002 to 2005[13]

	Favourable trend	Little or no change	Unfavourable trend
Prevalence of reported Type 2 diabetes for males			✔
Prevalence of reported Type 2 diabetes for females			✔
Persons with Type 2 diabetes who report having excellent, very good or good health	n/a	n/a	n/a
Persons who report currently having high blood pressure		✔	
Persons who report currently having high blood cholesterol		✔	
Mean time spent doing sustained physical activity			✔
Mean body mass as measured by the Body Mass Index			✔

n/a: not available for 2002 and 2003.

■ The reported prevalence of Type 2 diabetes for both males and females has significantly increased since 2002.

■ The proportion of people who reported currently having high blood pressure has not changed since 2002 although the prevalence of people who reported having high blood pressure at some time in their lives did increase significantly since 2002.

■ The proportion of people who reported currently having high blood cholesterol has not changed since 2002 although the prevalence of people who reported having high blood cholesterol at some time in their lives did increase significantly since 2002.

■ The time spent doing sustained physical exercise has significantly decreased since 2002.

■ Mean body mass has significantly increased since 2002.

End Notes and References

1. Epidemiology Branch Analysis of ABS Mortality Data and Hospital Morbidity Data, Department of Health WA.
2. Department of Health and Ageing, National Health Priority Area: Diabetes. Internet address: http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pq-diabetes-index.htm
3. For more information on the WA Health and Wellbeing Surveillance System contact the Epidemiology Branch or visit the Epidemiology website: http://intranet.health.wa.gov.au/hic/epidemiology/new_epi/publications/index.asp
4. Department of Health and Ageing Website: http://www.health.gov.au/internet/wcms/Publishing.nsf/Content/health-pq-diabetes-ausdiab.htm
5. National Diabetes Strategy 2000—2004 (1999), Commonwealth Department of Health and Aged Care.
6. Western Australian Diabetes Strategy (1999), Department of Health, WA.
7. Based on 2004 estimated residential population for WA.
8. Current high blood cholesterol has been defined as currently having or being on treatment for high blood cholesterol.
9. Current high blood pressure has been defined as currently having or being on treatment for high blood pressure.
10. Overweight or obese based on Body Mass Index.
11. Little or no sustained physical activity is measured by using the Active Australia guidelines and is defined as doing less than 150 minutes of moderate exercise per week.
12. SEIFA quintile 1 is classified as most socio-economically disadvantaged and SEIFA quintile 5 classified as least socio-economically disadvantaged. Information about SEIFA can be found in the publication: Trewin, D (2003). Socio-Economic Indexes for Areas: Australia 2001, Canberra, Australian Bureau of Statistics.
13. Changes over time were assessed using SPSS V14.0 Time Series and Linear Regression.

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GOVERNMENT OF WESTERN AUSTRALIA
Department of **Health**

Monitoring National Health Priority Areas in WA — Type 2 Diabetes

WA Health and Wellbeing Surveillance System Epidemiology Branch

Key Implications from this bulletin

The results in this bulletin suggest there are opportunities for health gains to be made by continuing to reduce the prevalence of associates of diabetes. In particular by:

■ reducing the proportion of people who are overweight or obese

■ reducing the proportion of people with high blood pressure

■ reducing the proportion of people with high blood cholesterol

■ increasing the proportion of people who do regular sustained exercise.

The results suggest that there is a need to:

■ recognise the association between relative socio-economic disadvantage and Type 2 diabetes, and

■ increase the awareness of the impact of diabetes on general health and quality of life.

Bulletin No.2

Delivering a **Healthy WA**

Some facts about Type 2 diabetes

Diabetes has been identified as one of seven National Health Priority Areas because of the potential for improved health outcomes. This bulletin focuses on Type 2 diabetes, which is the most common form of diabetes with approximately 85 — 90% of all diabetes cases.

Type 2 diabetes has a huge impact on the Western Australian community with 27.7 deaths per 100,000 persons in 2003; 6,835 hospitalisations with Type 2 diabetes as the principal diagnosis; and a further 62,342 hospitalisations with Type 2 diabetes as an additional diagnosis in 2004—05.[1]

Although diabetes is genetically linked, Type 2 diabetes has a number of lifestyle factors associated with its development.[2] National indicators have been developed to assess the progress of strategies developed to reduce the incidence of diabetes and improve the quality of life of people who already have this condition.

This bulletin will report on the status of national indicators for the WA population, using information collected by the WA Health and Wellbeing Surveillance System.[3]

The Australian diabetes, obesity and lifestyle study (Ausdiab Study, 2000) used blood tests to estimate the prevalence of diabetes in Australia. The study found that for every known case of diabetes, one case was undiagnosed.[4] So while population-based surveillance systems provide up-to-date estimates of health conditions and indicators, and track changes over time, self-reported data will underestimate the prevalence of conditions such as diabetes.

> The WA Health and Wellbeing Surveillance System annually surveys over 6500 Western Australians of all ages. Information is collected on a wide range of health and wellbeing issues, health conditions, lifestyle risk factors, protective factors and socio-demographics.

National diabetes indicators reported in this bulletin:[5,6]

■ Self-reported prevalence of people with Type 2 diabetes

■ Self-reported prevalence of risk factors for Type 2 diabetes, among people with and without diabetes

■ Self-reported health status of people with Type 2 diabetes.

Self-reported prevalence of Type 2 diabetes

The prevalence of doctor—diagnosed Type 2 diabetes for adults aged 16 years and over was 4.4 per cent.

The prevalence of Type 2 diabetes across age groups and gender with the estimated number of people affected is presented in Table 1.

- The prevalence of Type 2 diabetes was 15 times higher for people aged 65 years and older compared with people aged 16 to 44 years.
- The prevalence of Type 2 diabetes in WA increased with age for males and females.

Table 1: Self-reported prevalence of risk factors for diabetes by status, persons aged 16 years and over, WA, 2004—05

Indicator	Prevalence %	Estimated no. of people[7]
Male		
16 to 44 yrs	0.8	3,165
45 to 64 yrs	7.3	17,689
65 yrs & over	17.0	17,323
Female		
16 to 44 yrs	0.9	3,774
45 to 64 yrs	3.8	8,979
65 yrs & over	13.1	16,289

The term prevalence is equal to the percentage or proportion of the population who have a condition.

Self-reported prevalence of risk factors associated with Type 2 diabetes

Risk factors that have been designated as national indicators for monitoring diabetes include high blood cholesterol, high blood pressure, overweight and obesity, and non-participation in regular sustained physical activity. Table 2 shows the prevalence of these risk factors for people who reported Type 2 diabetes compared with people who did not report having Type 2 diabetes, and the estimated total number of the population with each risk factor.

Table 2 Self-reported prevalence of risk factors for diabetes by status, persons aged 16 years and over, WA, 2004—05

Risk factor	Persons who reported having Type 2 diabetes %	Persons who did not report having Type 2 diabetes %	Estimated number of people
High blood cholesterol[8]	46.5	11.0	182,275
High blood pressure[9]	52.6	12.8	217,410
Overweight[10]	42.0	33.8	499,423
Obese[10]	40.0	15.5	241,118
Little or no sustained physical activity[11]	69.7	50.8	633,621

In 2005, a higher percentage of people with Type 2 diabetes reported having high blood cholesterol and high blood pressure compared with people who did not have diabetes. A higher percentage also reported being overweight or obese, and doing little or no sustained physical activity compared with those who did not have Type 2 diabetes (Table 2).

Health status of people with reported Type 2 diabetes

Two indicators of quality of life reported in this bulletin are self-rated general health status (Figure 1) and mental and physical functioning, as measured by the SF8 scale (Figure 2). The general health indicator comprises a single question, which rates general health status. The SF8 measure consists of a set of eight questions, which estimate the effects of physical and mental health on daily functioning.

Figure 1 Percentage of persons with and without self-reported Type 2 diabetes, by general health status, persons aged 16 years and over, WA, 2005
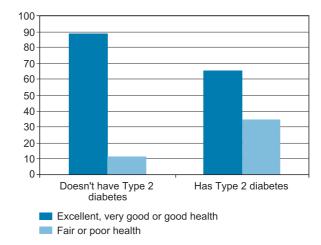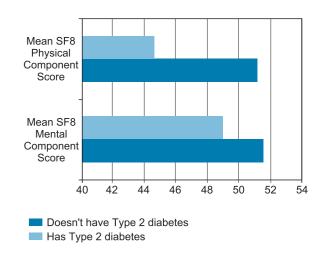

Figure 2 Mean scores for mental and physical functioning, by Type 2 diabetes status, persons aged 16 years and over, WA, 2005

People who reported having Type 2 diabetes also reported a less favourable health status compared with people who did not report having Type 2 diabetes:

- A higher proportion of people with diabetes reported having fair or poor health (Figure 1).
- Mean scores for physical and mental functioning were significantly lower for people who reported having Type 2 diabetes (Figure 2).

Associates of self-reported Type 2 diabetes

People share characteristics. For example, a person can be male, be within the normal body weight range, have high blood pressure and live in a socially disadvantaged area.

Table 3 shows what characteristics are associated with an increased likelihood of reporting Type 2 diabetes. These are age, sex, level of relative socio-economic disadvantage,[12] current high blood pressure, current high blood cholesterol and Body Mass Index.

Table 3 Personal characteristics associated with reporting Type 2 diabetes, persons aged 16 years and older, WA, 2005

Characteristics	Odds Ratio
Age	1.05
Body Mass Index	1.09
Is male	1.37
Currently has or is being treated for high blood pressure	2.28
Currently has or is being treated for high blood cholesterol	2.71
Living in an area classified as having the lowest level of socioeconomic disadvantage	2.41
Living in an area classified as having lower-middle level of socioeconomic disadvantage	2.24
Living in an area classified as having middle level of socioeconomic disadvantage	1.72
Living in an area classified as having upper-middle level of socioeconomic disadvantage	1.80

The 'odds ratio' reported in Table 3 indicates how much more (or less) likely a person was to have reported having Type 2 diabetes. Odds ratios greater than one indicate an increased likelihood of reporting Type 2 diabetes.