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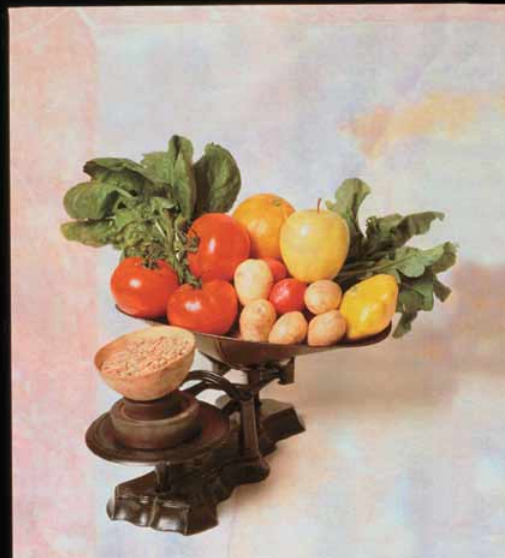
Health Report

SPECIAL REPORT

NO. 4



diabetes



diabetes

Diabetes is an increasingly common health problem in Australia. But not only can it be successfully treated if diagnosed early and properly managed it may sometimes be preventable.

What is diabetes?

Diabetes is a condition that arises when your body cannot process glucose (a sugar) entering your bloodstream from the food you eat. This causes a build-up of sugar in the blood which, untreated, can cause problems. A hormone, insulin, in the pancreas acts on cells as a key that permits glucose to leave the bloodstream and enter the body's cells where it is used for energy, growth and storage. People with diabetes either don't produce enough insulin and cannot meet their requirements with the insulin they do produce, or their cells do not respond properly to the insulin, so the glucose that is an end-product of digestion builds up to abnormal levels in their blood.

Types of diabetes and their symptoms

There are two types of diabetes –

insulin-dependent diabetes mellitus or type 1 diabetes, and non-insulin-dependent diabetes mellitus or type II diabetes. There is also a third form of the disease – gestational diabetes, which is really just type II diabetes in pregnant women.

Type 1 diabetes

In type 1 diabetes, the pancreas is unable to produce enough insulin.

This disease can strike at any age but is most commonly diagnosed in children and young adults and tends to be more dramatic in that symptoms come on extremely quickly. This form is to be treated with a controlled diet and regular exercise and usually requires one or more injections of insulin a day. Symptoms include.–

- excessive urination as the body tries to rid itself of its glucose



load in the urine

- excessive thirst because increased urination causes dehydration
- weakness and fatigue
- irritability
- unexplained weight loss

There appears to be a genetic predisposition to type 1 diabetes, which may then be triggered by exposure to an environmental trigger, possibly a virus. However, many people with the disease do not have a family history of it.

Type II diabetes

This is the most common type of diabetes, occurring in around 90 per cent of cases.

People with type II diabetes still produce insulin. However the body can't use it effectively. To compensate, the pancreas produces more insulin. Glucose levels rise and diabetes starts to become apparent.

A simple blood test and/or a two-hour Glucose Tolerance Test is used to diagnose type II diabetes

There may be no symptoms at all in type II diabetes, or they may be fairly subtle, such as a drop in energy levels, cramps, vision disturbance, or passing increased amounts of urine, says Dr Stephen Twigg, a diabetes specialist at Royal Prince Alfred Hospital in Sydney and a senior lecturer in medicine at the University of Sydney.

Other symptoms may include.–

- a sudden deterioration in eyesight
- recurring infections
- poor wound healing
- itching or numb skin
- shooting pain in the legs and feet

A simple blood test and/or a two-hour Glucose Tolerance test after drinking a sweet glucose

drink is used to diagnose type II diabetes.

You are more likely to develop type II diabetes if a close relative, such as a parent or sibling, has the disease. Women who have had gestational diabetes are also at greater risk of developing type II diabetes, and

so are members of certain ethnic groups, including Aborigines, Torres Strait Islanders, Indians and Pacific Islanders.

You also put yourself at risk if you're overweight or live a sedentary lifestyle. It doesn't help, either, that many of us have a diet high in sugar, saturated fats and processed foods, and that it is low in fibre, fruit, vegetables, and complex carbohydrates such as wholegrain breads or pasta.

Diabetes is also associated with high blood pressure and high cholesterol levels – if you have either of these conditions, you may be at higher risk of developing diabetes.

Twenty or 30 years ago, type II diabetes was seen as an older



PHOTO: PHOTOLIBRARY

people's disease. However, that perception has been changing with the increased incidence of type II diabetes in younger people. "We used to say that the age of onset was around 65 years of age," says Professor Paul Zimmet, director of the International Diabetes Institute in Melbourne. "Over the past 30 years, that's moved down about 10 years every decade. It's now not unusual to see 35-year-olds with type II diabetes and we're also seeing school children with it," he says. "We predict that, in the next five or 10 years, there will be more children with type II than type I diabetes."

Gestational diabetes

Gestational diabetes is type II diabetes that is diagnosed during pregnancy. Unless it is properly managed it increases the risk of pregnancy complications. After the birth of the baby, when the woman's size and hormone levels return to normal, her blood sugar levels usually settle down. However, she is at risk of developing type II diabetes in later life and should exercise, keep her weight within normal limits and monitor her blood sugar level.

What are the complications of diabetes?

Long-term complications can include an increased risk of

damage to kidneys, eyes and nerves, says Dr Twigg. As well, heart disease and stroke are approximately three to four times more common in people with type II diabetes than in the general population, says Professor Stephen Colagiuri from the Prince of Wales Hospital's Diabetes Centre in Sydney. Other side effects include poor circulation to the legs and feet. Treatment for this condition is crucial to prevent complications that can lead to permanent disabilities and reduced lifespan. The good news is that the risk of developing any of these complications is enormously reduced if the diabetes is kept under control.

How is diabetes treated?

The main aim of treatment for both type 1 and type II diabetes is to keep blood glucose levels as close as possible to normal to minimise the risk of developing complications.

Whereas part of the treatment for type 1 diabetes involves regular insulin injections, treatment for type II diabetes is generally achieved with the use of tablets as well as changes to lifestyle.

The tablets given to type II diabetics to lower blood sugar levels include the sulphonylurea drugs that stimulate the pancreas to produce more insulin and

Lifestyle changes include a healthier diet, high in fibre, low in refined carbohydrates and low in saturated fats as well as exercise

make the insulin work better once it gets to the cells; and the biguanide drug, metformin, that boosts the effectiveness of insulin in the body.

Lifestyle changes include a healthier diet, high in fibre, low in refined carbohydrates and low in saturated fats, as well as taking more exercise.

The outlook for anyone diagnosed with diabetes is much better than it was 15 or 20 years ago

Gestational diabetes is often controlled by diet. If this fails, women are put on injected insulin for the duration of their pregnancy. Even though they have a form of type II diabetes, they cannot take the biguanide or sulphonylurea tablets as these drugs cross the placenta and have been associated with birth defects. Women with type II diabetes on tablets before their pregnancy must transfer to insulin while pregnant.

It is important for women with diabetes to achieve best possible blood sugar control before becoming pregnant, to minimise problems for themselves and their baby.

Can you be cured of diabetes?

Unfortunately, at present, the answer to this question is no. However, serious complications

can be reduced or prevented.

For people with type I diabetes, lifelong daily insulin injections, regular blood glucose tests using a finger-pricking device, and a disciplined eating plan and regular exercise are usually required. Fortunately research continues on pancreas transplantation as well as the transplant of the specific insulin-producing cells.

Those with type II diabetes may go back to normal levels of blood sugar as they get back to normal weight and start to exercise regularly.

What's the best way to avoid developing diabetes?

Finnish and US studies in the last 18 months both clearly show that those who are susceptible to developing diabetes can dramatically reduce their risk with aggressive lifestyle intervention, aiming for seven per cent of body weight loss and 150 minutes of exercise per week, according to Dr Twigg.

Recently, a very common condition known as pre-diabetes, which affects around 16 per cent of Australians, has been identified. The blood glucose level in this group is higher than normal, but has not yet reached the level considered to be within the diabetic range. The 2 hour Glucose Tolerance test is normal, but cells in the body do not

respond adequately to the insulin produced. Blood cholesterol and triglycerides may be abnormal.

“If you have pre-diabetes, your risk of developing diabetes is roughly five to 10 per cent per year,” explains Dr Twigg. “Without aggressive intervention, after five years, up to half of the group will have developed diabetes. We know we can reduce the risk by more than half in this group with significant weight loss and regular exercise.”

How's the future looking for diabetes?

The focus is on prevention rather than cure, says Dr Twigg. “The earlier diabetes is diagnosed the better. We're also trying to detect tissue damage as early as possible to prevent complications.”

As far as treatment goes, there are new types of medication being developed, including a drug that tries to stop the adverse effect of glucose on cells. “There's also a new drug being trialled in Australia based on the saliva from the gila monster, a lizard found in the Arizona desert,” says Dr Zimmet. The saliva, it turns out, lowers blood sugar levels. Safer, more reliable forms of insulin are also being trialled, including inhaled insulin; while companies are trying to produce insulin in tablet form.

Trials are underway at Sydney's Westmead Hospital to

transplant insulin-producing cells into people with type 1 diabetes. “It's early days with this one, but the results are looking quite hopeful,” says Dr Twigg. “Down the track, it may be possible to infuse insulin producing cells into people with type II diabetes as well.”

The International Diabetes Institute and Deakin University have discovered a gene that may have enormous implications for not only diabetes, but also ageing, cancer and a number of chronic diseases. “That's very exciting,” says Professor Zimmet. “We're the only group in the world working on that.” The group is also looking at the role of potato toxin and other food toxins in causing type 1 diabetes.

All in all, the outlook for anyone with diabetes is much brighter than it was 15 or 20 years ago. “We used to be pretty negative about diabetes because there weren't good studies to show that good control reduced the risk of complications, and we didn't have the ways of treating diabetes that we do now,” says Professor Zimmet.

But rather than viewing it as purely a chronic condition, type II diabetes can be seen as a wake-up call, as an opportunity to ditch or improve your bad habits, so leading to a much better quality of life as well as a longer life.

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directory of health services

Alcohol & Drug Information Services

Australian Drug Foundation	(03) 9278 8100
Alcoholics Anonymous	
Sydney	(02) 9799 1199
Canberra	(02) 6249 1340
Melbourne	(03) 9429 1833
Adelaide	(08) 8346 4044
Hobart	(03) 6234 8711
Brisbane	(07) 3857 0160
Perth	(08) 9325 3566

Alzheimer's Association

Helpline	Freecall 1800 639 331
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Arthritis Foundation

ACT	(02) 6257 4842
NSW	(02) 9281 1611
Queensland	(07) 3831 4255
South Australia	(08) 8379 5711
Tasmania	(03) 6234 6489
Victoria	(03) 9530 0255
Western Australia	(08) 9388 2199

Asthma Foundation

NSW	(02) 9906 3233
Queensland	(07) 3252 7677
South Australia	(08) 8362 6272
Tasmania	(03) 6223 7725
Victoria	(03) 9326 7088
Western Australia	(08) 9481 1234

Australian Cancer Society

ACT Cancer Society	(02) 6262 2222
NSW Cancer Council	(02) 9334 1900 or 131 120
Cancer Council of NT	(08) 8927 4888
QLD Cancer Fund	(07) 3258 2200
Anti-Cancer Foundation of SA	(08) 8291 4111
Cancer Council of Tasmania	(03) 6233 2030
Anti-Cancer Council of Victoria	(03) 9279 1111
Cancer Foundation of WA	(08) 9381 4515

Diabetes Australia

ACT	(02) 6288 9830
NSW	(02) 9552 9900
Northern Territory	(08) 8927 8488
Queensland	(07) 3846 4600
South Australia	(08) 8234 1977
Tasmania	(03) 6234 5223
Victoria	(03) 9654 8777
Western Australia	(08) 9325 7699

Juvenile Diabetes Foundation of Australia

ACT	(02) 6230 8225
NSW	(02) 9966 0400

Queensland	(07) 3227 1475
South Australia	(08) 8201 7666
Victoria	(03) 9696 3866
Western Australia	(08) 9426 2111

National Association for Loss and Grief

NSW	(02) 9988 3376
Queensland	(07) 3822 2633
South Australia	(08) 8294 7811
Victoria	(03) 9331 3555
Western Australia	(08) 9321 3553
ACT	(02) 6239 7011

National Heart Foundation of Australia

Heartline	1300 362 787
ACT	(02) 6282 5744
Sydney	(02) 9219 2444
Newcastle	(02) 4952 4699
Northern Territory	(08) 8981 1966
Brisbane	(07) 3854 1696
Cairns	(07) 4031 5544
Gold Coast	(07) 5592 3039
Rockhampton	(07) 4922 2195
Toowoomba	(07) 4632 3672
Townsville	(07) 4721 4686
South Australia	(08) 8223 3144
Tasmania	(03) 6224 2722
Victoria	(03) 9329 8511
Western Australia	(08) 9388 3343

Poisons Information Centre

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Relations Australia

NSW	(02) 9418 8800
Queensland	(07) 3217 2900
South Australia	(08) 8223 4566
Western Australia	(08) 9470 5108

St John Ambulance Australia

ACT (National Headquarters)	(02) 6295 3777
NSW	(02) 9212 1088
Northern Territory	(08) 8922 6200
Queensland	(07) 3252 3450
South Australia	(08) 8274 0465
Tasmania	(03) 6223 7177
Victoria	(03) 9696 0000
Western Australia	(08) 9334 1222

Sudden Infant Death Association

24-hour help line	
Sydney	(02) 9360 0099
Outside Sydney	1800 651 186