What is diabetes?
When a food containing carbohydrate is eaten, your body digests the carbohydrate into sugar (called glucose), which can then be used as energy by the cells in your body. Diabetes is a condition where your body can’t properly control the amount of glucose in your blood.

A hormone called insulin is needed for transferring glucose from the bloodstream to enter the body cells and be converted to energy. In people with diabetes, blood glucose levels are often higher than normal because either the body does not produce insulin (type 1 diabetes) or cannot use insulin properly (type 2 diabetes).

High levels of glucose in the bloodstream can lead to short term complications such as:

- passing large amounts of urine
- being extremely thirsty and drinking lots of fluids
- being tired
- having blurred vision
- having frequent skin infections and being slow to heal

Blood glucose levels are normally between about 4.0 and 8.0 mmol/L. People with diabetes should aim for blood glucose levels as near to normal as possible, but individual targets should always be discussed with your diabetes health care professional.

Controlling diabetes is important to prevent serious long term complications such as:

- heart and circulation problems
- infections
- kidney disease
- eye problems, which can lead to blindness
- nerve damage to the lower limbs and other parts of the body

Types of diabetes
There are three types of diabetes:

Type 1 diabetes
Type 1 diabetes affects less than 1% of all Australians. It can appear at any age, but most commonly in childhood and early adult life. People with type 1 diabetes cannot produce enough insulin, and therefore they must inject themselves with insulin several times a day.

Type 2 diabetes
Type 2 diabetes is the most common form of diabetes, affecting 7.1% of all Australians over the age of 25 years. This type of diabetes most often occurs in people over 40 years of age who are overweight and/or have a family history of type 2 diabetes. In type 2 diabetes, the body is unable to use insulin properly (they are insulin resistant) and the pancreas may not make enough insulin. Type 2 diabetes may be treated by diet, exercise and/or tablets. Insulin injections may be required.

Gestational diabetes
Gestational diabetes occurs in around 5% of all pregnant women in Australia, usually occurring between 24 and 28 weeks of pregnancy. The hormonal changes of pregnancy combined with a predisposition for poor insulin production or utilisation, results in increased blood glucose levels in the mother and the baby. For most women with gestational diabetes, the diabetes will disappear after the baby is born. However, 30-50% of women who have gestational diabetes go on to develop type 2 diabetes later in life.

Managing diabetes
For people using insulin, regular physical activity and a healthy diet that is well matched to insulin medication is key to well-controlled blood glucose levels. They also need to consider the timing, amount and type of carbohydrate foods they eat, as well as the timing, amount and type of insulin they take. Regular blood glucose testing will help you manage your diabetes. All people with diabetes should avoid smoking.

Healthy eating tips for people with diabetes
A healthy diet used in the treatment of diabetes is similar to the diet recommended for all Australians. To help manage your diabetes, Diabetes Australia recommend that you:

1. Eat regular meals and healthy snacks spread over the day
2. Base meals on high fibre carbohydrate foods such as wholegrain breads and cereals, beans, lentils, vegetables and fruits
3. Watch the amount of fat you eat and limit the amount of saturated fat by choosing lean meats and low fat dairy foods. Try to avoid fried takeaway foods, pastries and biscuits
4. Keep your weight within the healthy weight range by matching the amount of food you eat with the amount you burn up each day (see weight management fact sheet)
Carbohydrates and the glycaemic index

The amount of carbohydrate in a meal is the most important factor influencing blood glucose levels after a meal. Foods containing carbohydrate include breads, cereals, rice, pasta, grains such as barley and couscous, fruit and fruit juices, legumes and some vegetables such as potato, sweet potato and corn. Milk and yogurt are also a source of carbohydrate in the form of the milk sugar, lactose.

The glycaemic index (GI) is a useful tool to choose foods to help control blood glucose levels in people with diabetes. Carbohydrates in food are digested and absorbed at different rates. The GI is a way of ranking carbohydrate-containing foods (from 0-100) based on whether they raise blood sugar levels a lot, moderately or a little. Carbohydrate containing foods that are digested quickly will result in a high blood glucose level and have a high glycaemic index (high GI foods). Foods with a GI 70 and above are classified as high GI foods.

Carbohydrate foods that are digested more slowly raise blood glucose levels more slowly, and so have a lower glycaemic index (low GI foods). Foods with a GI 55 and below are low GI foods.

Eating foods with a low GI can help people with diabetes control their blood glucose levels. Eating moderate amounts of low GI carbohydrate foods regularly over the day will help you maintain consistent blood glucose levels. Low GI foods also stop you from feeling as hungry, which may help you to manage or lose weight.

Healthy, low GI food choices

- Milk and dairy foods – reduced or low fat varieties of milk and dairy foods are the best choices for people with diabetes.
- Bread – wholegrain, fruit loaf and sourdough.
- Breakfast cereals – traditional porridge, natural muesli and some high fibre varieties.
- Pasta and noodles – all varieties.
- Some varieties of rice – ‘Basmati’ and ‘Doongara’ varieties are moderate to low GI.
- Grains – barley, bulgur and semolina.

- Legumes – beans (e.g. baked beans, kidney beans, soy beans), peas and lentils.
- Fruit – apple, orange, pear, peach, grapes, kiwi fruit, banana, plums.
- Vegetables – most vegetables have low amounts of carbohydrate and therefore have little effect on your blood glucose levels. Vegetables with a significant amount of carbohydrate include potato, sweet potato, yams and sweet corn. Orange sweet potato, yams and sweet corn are the lower GI choices.

The role of dairy foods in diabetes

As one of the core food groups, dairy foods play a key role in a healthy balanced diet. Dairy foods (such as milk, cheese and yogurt) provide essential nutrients, including:

- Protein
- Carbohydrate
- Vitamins (A, D, B12 and riboflavin)
- Minerals (calcium, phosphorus, magnesium, potassium and zinc)

Because they have a low GI, dairy foods are an ideal food for people with diabetes. In addition, research suggests that including dairy foods as part of a healthy lifestyle might help reduce the risk of developing diabetes.

There is a wide range of reduced or low fat dairy foods which are ideal for calorie-controlled diets or people who need to limit their saturated fat intake.

Including the recommended 3 serves of dairy every day into your diabetes management plan is easy with dairy’s great taste and versatility. One serve is equal to:

- One glass (250mL) of milk
- A tub (200g) of yogurt
- 2 slices (40g) of cheese

We gratefully acknowledge the assistance of Diabetes Australia - Victoria in the preparation of this brochure. You can obtain further information about diabetes from their website www.diabetesvic.org.au or by phoning 1300 136 588