



THE UNIVERSITY OF
MELBOURNE

Patient ID:

Practice ID:

Stepping Up Study Patient Booklet

Name: _____

Practice Name: _____

Stepping Up Study



Stepping Up Study

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Thank you for agreeing to participate in the Stepping Up Study.

This booklet contains some information regarding type 2 diabetes and insulin which you can refer to during your participation in this study. Please bring this book to all of your appointments, together with your blood glucose meter which we will give to you as part of this study.

Friends or family members may also like to read this information to learn more about your diabetes and its management.

Please remember to return this Booklet to your Practice Nurse at the end of the Study.

Other helpful sources of information include:

- Diabetes Australia (www.diabetesaustralia.com.au, Phone 1300 136 588)
- Local diabetes support groups



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General Practice Contact Details

GENERAL PRACTICE

Address:

Phone:

Fax:

Opening Hours:

PRACTICE NURSE

Name:

Days / time of work:

GENERAL PRACTITIONER

Name:

Days / time of work:

If this book has been lost, please return it to:

Dr Irene Blackberry
Department of General Practice
University of Melbourne
200 Berkeley St
Carlton Vic 3053



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My Appointments

Please fill in this appointment page with the assistance of the Practice Nurse

	Date	Time
Screening Visit with the Practice Nurse		
Baseline GP Visit		
Baseline Practice Nurse Visit 1		
Baseline Practice Nurse Visit 2		
Practice Nurse Phone Consultations		
Practice Nurse Visits at the Clinic		
Insulin Review Visit with the GP		
Insulin Review Visit with the Practice Nurse		
Patient 6 month Data Collection Visit		
Final (12 month) GP visit		
Final (12 month) Practice Nurse Visit		

Additional appointments

Reason	Date	Time

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General Information for People with Type 2 Diabetes

How much exercise should I do and why is it important for people with diabetes?

Talking diabetes No.27

physical activity & type 2 diabetes

Getting enough regular physical activity is important for maintaining good health and ensuring good diabetes management. While you may be thinking 'that's easier said than done', you may be surprised to learn that exercising isn't about 'no pain-no gain'. Regular physical activity can become an enjoyable part of your day with long-term benefits to your diabetes and your overall health.

Why do it?

Physical activity is essential to everyone to stay healthy. For people with diabetes, being regularly physically active has even greater benefits.

For the person with diabetes, physical activity helps to:

- Improve the body's response to insulin which can lower blood glucose levels
- Lower blood pressure and cholesterol levels, reducing the risk of heart disease
- Control weight
- Reduce the risk of developing diabetes complications

Other positives include:

- Stronger bones
- Improved mood
- Increased energy levels
- Reduced stress and tension
- Improved sleep

What activities are recommended?

Aerobic activities that get your large muscles moving such as walking, swimming or cycling are all recommended. Not everyone finds activity enjoyable, so choose activities you enjoy doing and get you moving.

Strength training activities that make you use your muscles against a resistance, such as squats or lifting weights, are also recommended.

Ideas to help you to 'get moving':

- Walking is easy, cheap and doesn't take any special skill – just a good pair of walking shoes. Up the pace and distance covered as you get fitter.
- Be creative and try something different – perhaps ballroom dancing, water aerobics, water walking or Tai Chi. Check with your local community centre about free programs.

Continued over...

Physical activity benefits everyone in many ways but for people with diabetes, being regularly physically active, eating well and not smoking are very important to their future health.



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physical activity & diabetes

- Stand and move about while on the phone rather than sitting.
- Consider buying a pedometer (step counter) and count your daily steps, aiming to increase to a level decided by you and your doctor.
- Think about things you do using a machine. Could you do them in a more active way?

How much is enough?

The length of time you spend will depend on the type of activity you choose and whether you need to lose weight.

Moderate intensity exercise

Aim to do at least 30 minutes of moderate intensity physical activity such as brisk walking or swimming every day. This can be two 15-minute sessions or even three 10-minute sessions. To achieve a level of moderate intensity physical activity, you need to notice your breathing and heart rate speeding up and perhaps a light sweat. If you are gasping and unable to talk, you are probably working too hard.

If you're trying to lose weight, you may need to aim for 60 to 90 minutes every day. This will depend on how active you are already and other things such as the food you eat. Discuss this with your doctor, dietitian and exercise physiologist.

Vigorous intensity exercise

As an alternative to moderate intensity exercise, you may choose to do three 20-minute sessions per week of vigorous intensity exercise such as jogging, running, aerobics classes or strenuous gardening.

Strength training

Aim to include strength training twice a week in addition to your moderate intensity or vigorous intensity exercise. Perform 8–10 different exercises using all the major muscle groups. Repeat each exercise 8–12 times, completing two sets for each exercise. Lift a weight that you can lift 8–12 times but find difficult to lift on the last few repetitions.

Strength training activities include body weight exercises such as wall pushups or sitting and standing from a chair, machine based exercises or free weight exercises such as lifting dumb bells. If you are unsure how to do strength training exercises safely, consult an exercise physiologist, physiotherapist or other appropriate health professional.

What should I do before starting an activity program?

Diabetes can put you at risk of certain conditions that could be affected by physical activity. This check list will help you to 'get moving' with safety.

- Before starting any new activity program, check with your doctor who will consider your blood glucose levels, any diabetes related complications and the condition of your heart and blood vessels.
- Your doctor may advise you to have a stress test as a precaution if you:
 - > are over 35
 - > have had type 2 diabetes for more than 10 years

“ aim for at least 30 minutes each day

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- > have high blood pressure
- > have/have had heart problems.
- As most physical activity involves using your feet, consider seeing a podiatrist before you start your program for advice on suitable footwear and other helpful information.

Is there anything I need to do before and during my physical activity session?

- Set yourself goals to stay motivated – and when you achieve your goals, reward yourself!
- For your first few sessions, it is a good idea to test your blood glucose level before, during and after exercise, especially if you're on insulin or certain diabetes tablets that can lower blood glucose levels. Always carry quickly absorbed glucose such as jellybeans or glucose tablets in case your blood glucose level drops too low. For more information refer to the *Hypoglycaemia and Diabetes* information sheet.
- Wear good quality, well fitting, closed-in footwear as recommended by your podiatrist.
- Start slowly, gradually increasing the pace and length of each session.
- Aim to do your activity sessions at regular times and on set days.
- Do not be physically active if you are unwell.
- Don't get dehydrated. Drink enough water to avoid thirst and remember you will need a bit more than usual while being active.
- Take short breaks along the way if being active for long periods.
- Wear diabetes identification (eg: Medic Alert®).
- Believe that physical activity is as vital to your health as the air you breathe. Each time you set out on your activity session, make a mental commitment: "This is forever".
- Doing your activity sessions with a friend or family member or as part of a regular group can help you to stay motivated and make it more fun.
- Wear sunscreen, protect your head and layer your clothing so you can add or remove clothes as needed.

Are there times when I should stop my activity session?

- Stop and rest if you experience chest, abdominal, neck or arm pain or tightness, or even vague discomfort. Stop and rest if you feel breathless, faint or lightheaded or have any other unusual symptoms while exercising. These symptoms could mean heart trouble that requires urgent treatment.

If these symptoms – any symptoms – do not settle within 10 minutes, you or someone with you **MUST** call an ambulance to take you to the nearest hospital emergency department immediately. If the symptoms settle in less than 10 minutes, you should go to your doctor as soon as possible for a checkup. This must be done before you do more exercise.

of 'moderate-intensity' physical activity ”

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physical activity & diabetes

- If you experience leg pain, stop until the pain goes away then resume your activity. Make sure your doctor knows about the leg pain. Gradually you should be able to exercise longer without pain but treatment may be required.
- If you are experiencing symptoms of a hypo, stop, test blood glucose levels and treat your hypo. Wait 10 to 15 minutes, test again and follow up with longer acting carbohydrate such as a sandwich, glass of milk or two biscuits. Do not continue to exercise until your symptoms have disappeared. For more information refer to the *Hypoglycaemia and Diabetes* information sheet.

Is there anything I need to do after my activity session?

- Check your feet after exercise or at least once a day looking for signs of redness, blisters, cracks and calluses. If your feet perspire, change your socks after activity.
- Physical activity can lower your blood glucose level for up to 48 hours afterwards, so do a test. You might notice a temporary rise after activity. This rise varies between individuals and is due to the release of hormones during periods of intense muscle activity.
- Each time you reach your goal, reward yourself with a movie, a new shirt or a low fat latte, then set new goals to stay motivated.

Know how your body responds

As everybody reacts differently, it is important to know your own blood glucose response to activity. Many of the early signs of a hypo (eg: sweating, feeling faint and weakness) are also feelings you may have during physical activity and can therefore go unnoticed. Your diabetes educator, dietitian or doctor will advise if your medication, insulin or eating plan needs adjusting.

If you have concerns about any activity program, talk to your doctor or diabetes educator or contact your State or Territory Diabetes Organisation on 1300 136 588.

Would you like to join Australia's leading diabetes organisation?

- > Dietary services
- > Free magazines
- > Children's services
- > Educational literature
- > Product discounts
- > Support groups

For more information phone **1300 136 588** or visit your State/Territory Organisation's website:

ACT	www.diabetes-act.com.au	NSW	www.diabetesnsw.com.au
NT	www.healthylivingnt.org.au	QLD	www.diabetesqld.org.au
SA	www.diabetessa.com.au	TAS	www.diabetestas.com.au
VIC	www.diabetesvic.org.au	WA	www.diabeteswa.com.au

The design, content and production of this diabetes information sheet has been undertaken by:

- > Diabetes Australia – NSW
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- > Diabetes WA
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Some tips for healthy food choices for people with diabetes

Talking diabetes **No.15**
Revised August 2010

food choices for people with diabetes

Healthy eating, along with regular physical activity, can help you to manage your blood glucose levels, reduce your blood fats (cholesterol and triglycerides) and maintain a healthy weight. Refer to the *Physical Activity and Type 2 Diabetes* information sheet for more about how to be active every day.

What should I eat?

To help manage your diabetes, your meals need to be:

- > An appropriate size – not too large
- > Regular and spread evenly throughout the day
- > Lower in fat, particularly saturated fat
- > Based on high fibre carbohydrate foods such as wholegrain breads and cereals, dried beans, lentils, starchy vegetables and fruits.

On the following pages, we give information about different types of foods and their effect on our health:

Fats	page 2
Carbohydrates	page 3
Sugar/Alternative sweeteners	page 5
Protein	page 5
Alcohol	page 6

A typical one day meal plan:

Breakfast	page 7
Light meal	page 7
Main meal	page 7
Between meal snacks (if required)	page 8

Healthy eating for people with diabetes is no different to that which is recommended for everyone. There is no need to prepare separate meals or buy special foods, so relax and enjoy healthy eating along with the whole family!



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food choices

Fat

Fats have the highest energy (kilojoule or calorie) content of all foods. Eating too much fat may make you gain weight which in the long run may make it more difficult to manage your blood glucose levels. On the other hand small amounts of healthier fats add flavour to your food, may improve your health and reduce your risk of heart disease. Therefore, the type of fat you eat is important, as well as the amount.

Saturated fat and trans fat

It is important to limit saturated and trans fats because they raise your LDL-C ('bad' cholesterol) levels and lower good cholesterol.

Saturated fat is found in animal foods like fatty meat, milk, butter and cheese. Vegetable fats that are saturated include palm oil (found in solid cooking fats, snack foods or convenience foods) and coconut products such as copha, coconut milk or cream.

Trans fat occurs naturally in small amounts in meat and dairy food as well as in other foods during the manufacturing process such as margarine. Food sources of trans fats include hard margarines (usually cooking margarines), deep fried foods and commercial food products made with shortening such as pastries.

To reduce saturated and trans fats:

- > Choose reduced or low fat milk, yoghurt, ice cream and custard.
- > Choose lean meat and trim any fat off before cooking.
- > Remove the skin from chicken (where possible, before cooking).
- > Avoid using butter, lard, dripping, cream, sour cream, copha, coconut milk, coconut cream and hard cooking margarines.
- > Limit cheese, try reduced fat varieties.
- > Limit pastries, cakes, puddings, chocolate and cream biscuits to special occasions.
- > Limit pre-packaged biscuits, savoury packet snacks, cakes, frozen and convenience meals.
- > Limit the use of processed deli meats (devon/polony/fritz/luncheon meat, chicken loaf, salami etc) and sausages.
- > Avoid fried takeaway foods such as chips, fried chicken and battered fish. Choose BBQ chicken (without the skin) and grilled fish instead.
- > Avoid pies, sausage rolls and pasties.
- > Avoid creamy sauces or dressings. Choose sauces based on tomato or other low fat ingredients and low fat dressings made from small amounts of polyunsaturated or monounsaturated fats (eg: sunflower, grapeseed, olive or canola oils). Some sauces and dressings can be very high in salt, even if they are low fat. Choose lower salt varieties or make them yourself without any added salt.
- > Limit creamy style soups.

“ eating too much fat may make you gain it more difficult to manage

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Polyunsaturated and monounsaturated fat

Some fat is important for good health. Use a variety of polyunsaturated and monounsaturated types to achieve a good balance.

Polyunsaturated fats include

- Polyunsaturated margarines (check the label for the word 'polyunsaturated')
- Sunflower, safflower, soybean, corn, cottonseed, grapeseed and sesame oils
- The fat found in oily fish such as herring, mackerel, sardine, salmon and tuna

Monounsaturated fats include

- Canola and olive margarines
- Canola and olive oil
- Avocado

Seeds, nuts, nut spreads and peanut oil contain a combination of polyunsaturated and monounsaturated fat.

Ideas for enjoying healthy fats:

-
- > Stir-fry meat and vegetables in a little canola oil (or oil spray) with garlic or chilli

 - > Dress a salad or steamed vegetables with a little olive oil and lemon juice or vinegar

 - > Sprinkle sesame seeds on steamed vegetables

 - > Use linseed bread and spread with a little canola margarine

 - > Snack on a handful of unsalted nuts, or add some to a stir-fry or salad

 - > Spread avocado on sandwiches and toast, or add to a salad

 - > Eat more fish (twice a week) because it contains a special type of fat (omega 3) that is good for your heart

 - > Do more dry roasting, grilling, microwaving and stir-frying in a non-stick pan

Carbohydrate

Carbohydrate foods are the best energy source for your body. When they are digested they break down to form glucose in the bloodstream. If you eat regular meals and spread your carbohydrate foods evenly throughout the day, you will help maintain your energy levels without causing large rises in your blood glucose levels.

If you take insulin or diabetes tablets, you may need to eat between-meal snacks. Discuss this with your Accredited Practising Dietitian (APD) or Credentialed Diabetes Educator (CDE).

All carbohydrate foods are digested to produce glucose. The amount of carbohydrate you eat will affect how high your blood glucose levels rise after a meal. Too large a serve can mean too large a rise.

weight which in the long run may make
your blood glucose levels ”

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food choices

Although all carbohydrate foods break down into glucose, they do so at different rates – some slow, some fast. The glycemic index (GI) is a way of describing how a carbohydrate-containing food affects blood glucose levels. The GI of foods will also affect your blood glucose response.

The best combination is to eat moderate amounts of carbohydrate and include high fibre foods that also have a low GI. Your dietitian (APD) can give you an idea of how much you need to eat.

The foods listed below are high in carbohydrate and are healthy choices. Those in bold have a lower GI:

- > Bread or bread rolls – especially wholegrain and wholemeal varieties such as **Burgen® Breads**, Tip-Top **9 Grain Original**, **9 Grain Wholemeal®**, **9 Grain Original Mini Loaf**, **Wonderwhite® Lower GI**.
- > High fibre breakfast cereals such as rolled oats, **All-Bran®**, **Guardian®**, Weet-Bix® or untoasted muesli.
- > **Pasta**, rice (Basmati or **Doongara**) and other grains such as barley, **bulgur** and couscous.
- > **Legumes – baked beans, kidney beans, chick peas, lentils, 3 bean mix.**
- > Fruit – all types such as **apples, oranges, peaches, bananas**, melons. Fruit is a good source of fibre; try to eat the whole fruit rather than drinking the juice. Include at least 2 serves of fruit a day (1 serve = 1 medium piece apple, orange or pear OR 2 small pieces kiwifruit, plum).
- > Milk products or dairy alternatives – choose low fat varieties of **milk, soy drink** (calcium fortified), **yoghurt** and **custard**. Include 2–3 serves a day (1 serve = 1 cup of milk OR 200 g yoghurt).
- > Vegetables that contain a significant amount of carbohydrate – potatoes, orange sweet potato, **yams, corn**. Other vegetables (such as salad vegetables, green vegetables, and orange vegetables) are generally low in carbohydrate and therefore have little effect on your blood glucose levels. Include at least 5 serves of vegetables each day (1 serve = 1 cup salad vegetables OR ½ cup cooked vegetables OR 1 medium potato).
- > You also need to consider a food's other nutritional qualities such as fat, added sugar and salt content. While some high fat foods and many sugary foods have a low GI, such as chocolate, ice cream and toasted muesli, they are often not suitable for everyday eating.
- > Some occasional foods (such as dry or sweet biscuits, chocolate or chips) and sugary foods (such as jam, honey or sugar) are also carbohydrate foods. These can be eaten in small amounts.

“ the best combination is to eat
include high fibre foods

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Sugar

A healthy eating plan for diabetes can include some sugar. However, it is still important to consider the nutritional value of the foods you eat. In particular, high energy foods such as sweets, lollies and standard soft drinks should not be consumed.

Some sugar may also be used in cooking and many recipes can be modified to use less than the amount stated or substituted with an alternative sweetener. Select recipes that are low in fat (particularly saturated fat) and contain some fibre.

In general, foods with added sugars should be consumed sparingly (manufacturers sometimes use fruit juice or other sources of sugar to avoid using table sugar). If too much is eaten at one time, they may affect your weight, dental health and overall diabetes control. Discuss with your dietitian or diabetes educator about when and how frequently to include these types of foods/drinks.

Alternative sweeteners

While it is no longer necessary to always use alternative sweeteners instead of sugar, artificially sweetened products are suitable alternatives for foods and drinks that are high in added sugars, such as cordials and soft drinks.

Alternative sweeteners based on acesulphame K (950)*, aspartame (951)*, cyclamate (952)*, saccharin (954)*, sucralose (955)*, alitame (956)*, stevia (960)* or neotame (961)* are all suitable for people with diabetes. They don't provide kilojoules, won't affect blood glucose levels and are found in many low joule products. These have all been approved for use in Australia by Food Standards Australia New Zealand. However it is important to remember that many foods that use alternative sweeteners (such as soft drinks) are not everyday foods so should still be consumed in small amounts.

Protein

Most protein foods do not directly affect your blood glucose levels. They include lean meat, poultry without the skin, seafood, eggs (not fried), unsalted nuts and soy products such as tofu and legumes (dried beans and lentils). Legumes are a good source of fibre and should be included regularly. They are also a carbohydrate food so will affect your blood glucose levels.

Protein foods do provide important nutrients for good health. However most Australians already eat enough protein and do not need to eat more.

Other foods, condiments and drinks

You can use these foods to add flavour and variety to your meals:

- > Herbs, spices, garlic, chilli, lemon juice, vinegar and other seasonings
- > Products labelled 'low joule' eg: low joule/diet soft drinks, low joule jelly
- > Water, soda water, plain mineral water, tea, coffee, herbal tea

* This number may appear on the ingredient list in place of the name.

moderate amounts of carbohydrate and
that also have a lower GI ”

Stepping Up Study

food choices

Alcohol

If you enjoy alcohol, it is generally acceptable to have two standard drinks a day*. However, if you need to lose weight, you may need to limit your alcohol intake further. It's best to drink alcohol with a meal or some carbohydrate-containing food and aim to have alcohol free days.

One standard drink is equal to:

- > 100 ml wine
- > 285 ml regular beer
- > 30 ml spirits
- > 60 ml fortified wine
- > 425 ml low-alcohol beer (less than 3% alcohol)

It is important to remember:

- > That all alcoholic drinks are high in kilojoules and can contribute to weight gain.
- > That low alcohol or 'lite' beers contain less alcohol than regular beers so a standard drink size is larger.
- > People with diabetes do not need to have diet or low carbohydrate beers. These beers may be lower in carbohydrate but they are not necessarily lower in alcohol.
- > When mixing drinks use low joule/diet mixers such as diet cola, diet ginger ale, diet tonic water.
- > That drinking a lot of alcohol can increase the risk of hypoglycaemia if you are taking insulin or certain diabetes tablets.
- > Some people may need to have less alcohol than generally recommended due to their age, medication or the need to lose weight. Discuss alcohol with your doctor or dietitian and refer to the *Alcohol and Diabetes* information sheet.

Weight management

Being overweight, especially around your waistline, makes it more difficult to manage your diabetes and increases your risk of heart disease.

A small weight loss (5–10% of body weight) can make a big difference to your health when you are overweight but if you need to lose more weight and can, you should certainly do so. Measuring your waistline is a great way of checking your progress rather than weighing yourself regularly. In general, if you are of Caucasian origin, women should aim for a waist circumference less than 80 cm and men should aim for less than 94 cm. Appropriate measurements for other ethnic groups can be checked with your doctor.

* NHMRC, Australian Guidelines to Reduce Health Risks from Drinking Alcohol (2009).

“ if you drink alcohol, it's best include alcohol-free

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If you are carrying excess weight around the middle, try to lose some of it by:

- Reducing your portion sizes and following a diet plan lower in kilojoules and total fat (particularly saturated fat). A dietitian (APD) can help you with specific advice on adjusting your food intake to help with weight loss.
- Doing regular physical activity such as walking, dancing, riding a bike or swimming.
- Seeking advice from your doctor, dietitian (APD), diabetes educator (CDE) or State or Territory Diabetes Organisation.

An example of a typical meal plan for one day

Choose foods you like and which satisfy you and remember to include carbohydrate foods in each meal or snack to help manage your blood glucose levels. Carbohydrate-containing foods are highlighted in italics in the menu below.

Breakfast – for example...

- $\frac{3}{4}$ cup of high fibre *breakfast cereal* with *low fat milk* OR
- 2 slices of *bread* or *toast*, preferably *wholegrain*, *wholemeal* or *high fibre white* with *thinly spread* margarine, peanut butter, jam, Vegemite® or try with *baked beans*, grilled tomato, or sardines **PLUS**
- 1 piece of *fruit*
- Tea, coffee or water

Light meal – for example...

- 1 sandwich made with 2 slices of *bread*, or 1 *bread roll* or 4 dry *biscuits* – preferably *wholegrain* or *wholemeal* – with *thinly spread* margarine
- Salad vegetables
- A small serve of lean meat, skinless poultry, seafood, egg, fat reduced cheese or a more generous serve of legumes (such as *beans* or *lentils*)
- 1 piece of *fruit*
- Water, tea or coffee

Main meal – for example...

- 1 *bread roll* or 2 slices of *bread* (preferably *wholegrain* or *wholemeal*) OR 1 cup of cooked *pasta* or *rice* OR 2 medium *potatoes* or 1 cup *sweet potato* or *corn*
- Other vegetables (include freely)
- A small serve of lean meat, skinless poultry, seafood, egg, fat reduced cheese or a more generous serve of legumes (such as *beans* or *lentils*)
- 1 piece of *fruit* OR small amount of low fat *yoghurt* or *custard*
- Water, tea or coffee

You can eat your main meal at lunch or dinner, whichever you prefer.

to have it with a meal and try to
days each week ”

Stepping Up Study

food choices

Between-meal snacks

People with diabetes on certain types of tablets or insulin may require one snack between each meal and for supper. However, most people aiming to control their body weight may not need a snack between every meal. To find out what is best for you, discuss this with your dietitian or diabetes educator.

Good snack ideas include 1 piece of *fruit*, 1 tub of low fat *yoghurt*, 1 cup of low fat *milk*, 1 slice of *wholegrain bread*, 1 slice of *fruit bread* or 2 high fibre *crispbreads*. See the information sheet *Healthy Snacks and Diabetes* for more snack ideas.

Your State or Territory Diabetes Organisation recommends that everyone with diabetes visit a dietitian (APD) for personal advice.

For more information

The example menu plan on page 7 is a guide only. For more personalised information, an Accredited Practising Dietitian will help.

To find an APD in your area, contact:

- The Dietitians Association of Australia on 1800 812 942 or www.daa.asn.au
- Your State or Territory Diabetes Organisation on 1300 136 588 or go to their website as listed below.
- Dietitians are based in many local hospitals, diabetes centres and community health centres and are also listed in the telephone directory.

Remember – good food and regular activity will help to keep you healthy!

Would you like to join Australia's leading diabetes organisation?

- > Dietary services
- > Free magazines
- > Children's services
- > Educational literature
- > Product discounts
- > Support groups

For more information phone **1300 136 588** or visit your State/Territory Organisation's website:

ACT	www.diabetes-act.com.au	NSW	www.australiandiabetescouncil.com
NT	www.healthylivingnt.org.au	QLD	www.diabetesqueensland.org.au
SA	www.diabetessa.com.au	TAS	www.diabetestas.com.au
VIC	www.diabetesvic.org.au	WA	www.diabeteswa.com.au

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- > **ACT** Diabetes ACT
- > **NT** Healthy Living NT
- > **SA** Diabetes SA
- > **VIC** Diabetes Australia – Vic
- > **NSW** Australian Diabetes Council
- > **QLD** Diabetes Australia – Queensland
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Blood glucose monitoring – when should I do it and why? And how can I tell if my diabetes is well controlled?

Talking diabetes **No.04**
Revised August 2010

blood glucose monitoring

Self-blood glucose monitoring is a valuable diabetes management tool, which enables people to check their own blood glucose levels as often as they need to or as recommended.

Why is it so important to test my blood?

Regular testing and recording of your blood glucose level can reinforce your healthy lifestyle choices as well as inform you of your response to other choices and influences.

Importantly, blood glucose level pattern changes can alert you and your health care team to a possible need for a change in how your diabetes is being managed.

Testing your blood glucose levels will help you to:

- > Develop confidence in looking after your diabetes.
- > Better understand the relationship between your blood glucose levels and the exercise you do, the food you eat and other lifestyle influences such as travel, stress and illness.
- > Know how your lifestyle choices and medication, if used, are making a difference.
- > Find out immediately if your blood glucose levels are too high (hyperglycaemia) or too low (hypoglycaemia), helping you to make important decisions such as eating before exercise, treating a 'hypo' or seeking medical advice if sick. (Refer to the individual information sheets on *Physical activity and type 2 diabetes*; *Hypoglycaemia and diabetes*; *Sick days and type 1 diabetes*; *Sick days and type 2 diabetes*).
- > Know when to seek the advice of your diabetes health team about adjusting your insulin, tablets, meal or snack planning when blood glucose goals are not being met.

A diabetes health professional such as a diabetes educator can help you to choose the meter that's best for you. Your diabetes educator will also give you all the information you need about how, where and when to test your blood glucose levels and work with you in planning a routine that works for you and the life you lead.



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blood glucose monitoring

How do I test my blood?

You will need a blood glucose meter, a lancet device with lancets and test strips. The finger is pricked with the lancet to obtain a very small drop of blood which is then applied to a test strip placed in the meter. The results are displayed within seconds.

Blood glucose meters are usually sold as kits giving you all the equipment you need to start. There are many different types, offering different features and at different prices to meet individual needs. Most of these are available from your State or Territory Diabetes Organisation, pharmacies and some diabetes centres.

What do I aim for?

Successful management of diabetes is all about aiming for a careful balance between the food you eat, how active you are and the medication you take for your diabetes. Because this is a delicate balance, it can be quite difficult to achieve ideal control all the time.

For some people, the ranges will vary depending on the individual and their circumstances. While it is important to keep your blood glucose levels as close to a normal or non-diabetic state as possible to prevent complications, it is equally important to check with your diabetes educator or doctor for the range of blood glucose levels that are right and safe for you. Therefore the following information should be treated only as a general guide.

Targets for glycaemic control

Target ranges may differ depending on your age, duration of diabetes, the type of medication you are taking and if you have any other medical problems. Speak with your doctor about your individual target ranges.

Normal blood glucose levels are between 4.0–7.8mmol/L.

Type 1 diabetes ¹	
Target levels	4–6mmol/L before meals 4–8mmol/L two hours after starting meals
Type 2 diabetes ²	
Target levels	6–8mmol/L before meals 6–10mmol/L two hours after starting meals
People with type 2 diabetes who are not taking a sulphonylurea medication or insulin could aim for a blood glucose level as close to normal as possible.	
Risk of hypoglycaemia for both type 1 and type 2 (low blood glucose)	Less than 4mmol/L – if insulin or certain types of tablets are used, but does not apply to all tablets or for people who do not take any tablets for diabetes. Check with your doctor what applies to you.

¹ Targets are as recommended by the American Diabetes Association. NHMRC guidelines are currently under development.

² Targets are as recommended by the NHMRC, Blood Glucose Control in Type 2 Diabetes, (2009).

“ successful management of diabetes
food, activity and

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Who is at risk of LOW blood glucose (hypoglycaemia)?

- People who are using insulin or those taking diabetes tablets which increase their own insulin production **are** at risk as both medications have the effect of lowering blood glucose. They can therefore cause hypoglycaemia (low blood glucose) when blood glucose levels are less than 4mmol/L[†]. (Note: Hypoglycaemia can occur at higher blood glucose levels in children and people who have had elevated blood glucose levels for a long time).
- People whose diabetes is managed by lifestyle alone or with other types of diabetes tablets which do not increase their own insulin production, **are not** at risk of hypoglycaemia.

Are HIGH blood glucose levels dangerous?

Sometimes you may get a higher blood glucose reading than usual and you may not be able to figure out the reason. When you are sick with a virus or flu, your blood glucose levels will nearly always go up and you may need to contact your doctor, especially if ketones are present (more likely to develop in a person with type 1 diabetes). However, it is only when blood glucose levels are consistently higher than they ought to be over weeks or months that the damage-causing complications can occur.

What causes glucose levels to go up and down?

There are a number of common causes for glucose levels to increase or decrease. These include:

- | | |
|--|---------------------|
| > Food – time eaten, type and amount of carbohydrate (eg: bread, pasta, cereals, starchy vegetables, fruit and milk) | > Illness and pain |
| > Exercise or physical activity | > Alcohol |
| > Diabetes medication | > Other medications |
| > Emotional stress | |
| > Testing techniques | |

is all about careful balance between
your diabetes medication ”

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When should I test?

Your doctor or diabetes educator will help you decide how many tests are needed and the levels to aim for.

You will also be advised to record all your tests. Even though your meter may have a memory, it is important to keep a record of your readings in a diary and to take this with you to all appointments with your diabetes health team. Most meters on the market have software which allow you to download your records in different formats such as graphs and charts. Even if you can do this, it is still helpful to keep a diary, not only for your tests but also details of your daily activities, the food you eat and other relevant information. This will provide both you and your diabetes health team with important information in deciding if and how your treatment may need to be adjusted.

Ask your doctor or diabetes educator how you can use a diary to help you to better manage your diabetes.

General guidelines

- Frequency of testing may vary depending on your treatment. Check with your doctor or diabetes educator as to when it is suggested you test.

Possible times are:

- > before breakfast (fasting)
- > two hours after a meal
- > before bed

- Testing four times a day is usually recommended for people with type 1 diabetes. However many people test more often, such as those using an insulin pump (CSII – continuous subcutaneous insulin infusion).

Test more often when you are:

- > Being more physically active or less physically active
- > Sick or stressed
- > Experiencing changes in routine or eating habits eg: travelling
- > Changing or adjusting your insulin or medication
- > Experiencing symptoms of hypoglycaemia
- > Experiencing symptoms of hyperglycaemia
- > Experiencing night sweats or morning headaches

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What if the test result doesn't sound right?

If you're not convinced that a result is correct, here's a suggested check list:

- > Have the strips expired?
- > Is the strip the right one for the meter?
- > Is there enough blood on the strip?
- > Has the strip been put into the meter the right way?
- > Have the strips been affected by climate, heat or light?
- > Did you wash and thoroughly dry your hands before doing the test?
- > Is the meter clean?
- > Is the meter too hot or too cold?
- > Is the calibration code correct?
- > Is the battery low or flat?

All meters will give a different result with a different drop of blood. As long as there is not a big difference (more than 2mmol/L) there is not usually cause for concern.

The accuracy of all meters can be checked with meter-specific liquid drops called control solutions. These are expensive, have a short shelf life and only last a few months once opened. However, your diabetes health professional or pharmacy may be able to do this for you at no charge.

What is a glycosylated haemoglobin (HbA1c) test?

The HbA1c test shows an average of your blood glucose level over the past 10–12 weeks and should be arranged by your doctor every 3–6 months.

Is the HbA1c the same as testing your own BGLs?

No. The HbA1c test doesn't show the highs and lows that your home testing shows. Therefore it does not replace the tests you do yourself but is used as an added tool in giving the overall picture of your blood glucose management.

How does it work?

A glycosylated haemoglobin test is possible because red blood cells (RBC) are continuously being made by your long bones and released into your circulation. When these cells are released, they pick up glucose in the blood stream at that time.

Each RBC lasts about 120 days. Therefore any blood sample will have a range of cells released over the previous 120 days with different amounts of glucose attached. The HbA1c test gives a good guide to the average.

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blood glucose monitoring

What HbA1c do I aim for?

The goal for most people with diabetes will be in the 6.5–7% (48–53mmol/mol) range however this may need to be higher for children and the old and frail. Your doctor will advise.

How is HbA1c reported?

The way that HbA1c is reported is changing. HbA1c has been expressed as a percentage (%). From 2011 it will be reported in IFCC HbA1c units as mmol/mol. The new method is more accurate and consistent between laboratories. For some time both mmol/mol and % will be reported by pathology laboratories.

HbA1c %	6	7	8	9	10
HbA1c mmol/mol	42	53	64	75	86

More information

Many hospitals have a diabetes clinic where you can find out more about blood glucose monitoring. Contact your:

- > Local hospital for your nearest diabetes clinic or
- > State or Territory Diabetes Organisation on 1300 136 588

Would you like to join Australia's leading diabetes organisation?

- > Dietary services
- > Free magazines
- > Children's services
- > Educational literature
- > Product discounts
- > Support groups

For more information phone **1300 136 588** or visit your State/Territory Organisation's website:

ACT	www.diabetes-act.com.au	NSW	www.australiandiabetescouncil.com
NT	www.healthylivingnt.org.au	QLD	www.diabetesqueensland.org.au
SA	www.diabetessa.com.au	TAS	www.diabetestas.com.au
VIC	www.diabetesvic.org.au	WA	www.diabeteswa.com.au

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What is a 'hypo' and what do I do if I have one?

Talking diabetes No.23

hypoglycaemia & diabetes

Hypoglycaemia is a condition that occurs when the blood glucose level has dropped too low, usually below 4mmol/L, although this can vary. It is important to treat hypoglycaemia quickly to stop the blood glucose level from falling even lower. It is also commonly referred to as a 'hypo', low blood glucose or insulin reaction.

What are the main causes of hypoglycaemia?

Hypoglycaemia can be caused by one or a number of events such as:

- | | |
|-------------------------------|--|
| > Delaying or missing a meal | > Not eating enough carbohydrate |
| > Unplanned physical activity | > More strenuous exercise than usual |
| > Drinking alcohol* | > Too much insulin or diabetes tablets |

While these are known causes of hypoglycaemia, in many cases, no specific cause can be identified.

What are the symptoms?

While symptoms vary from person to person, common feelings are:

- | | |
|--|----------------|
| > Weakness, trembling or shaking | > Sweating |
| > Light headedness | > Headache |
| > Lack of concentration/behaviour change | > Dizziness |
| > Tearful/crying | > Irritability |
| > Numbness around the lips and fingers | > Hunger |

If you feel any of these symptoms, test your blood glucose level if time and circumstances permit. If you are unable to do so, treat as a 'hypo' just to be sure.

* The risk of hypoglycaemia increases, the more alcohol you drink. Refer to the *Alcohol and Diabetes* information sheet.

Hypoglycaemia is most common in people who inject insulin or are taking certain tablets to manage their diabetes. It is not a problem for those who manage their diabetes through a healthy eating plan alone.



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hypoglycaemia & diabetes

How is a 'hypo' treated?

The first thing to do is to be sure you're safe. For example, if you're driving a vehicle, pull over to the side of the road. Then:

STEP 1 – Most important!

Have some easily absorbed carbohydrate, for example:

- Glucose tablets equivalent to 15 grams carbohydrate **OR**
- 6–7 jellybeans **OR**
- 1/2 can regular soft drink (not 'diet') **OR**
- 3 teaspoons sugar or honey **OR**
- 1/2 glass fruit juice

Please Note: For those taking Glucobay® (Acarbose), hypoglycaemia must be treated with glucose.

If circumstances permit, re-test blood glucose levels to ensure they have risen above 4mmol/L. It may take 10–15 minutes to see a rise in blood glucose levels. If symptoms persist or your blood glucose level remains below 4 mmol/L, repeat Step 1.

STEP 2

If your next meal is more than 20 minutes away, you will need to eat some longer acting carbohydrate. This could be one of the following:

- A slice of bread **OR**
- 1 glass of milk or soy milk **OR**
- 1 piece of fruit **OR**
- 2–3 pieces of dried apricots, figs or other dried fruit **OR**
- 1 tub natural low fat yoghurt

For more individualised advice, please speak to your diabetes health professional.

“ it is important to treat a 'hypo' blood glucose level

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What happens if it's not treated?

If not treated quickly, the blood glucose level can continue to drop which may progress to:

- | | |
|------------------------|---------------------------------|
| > Loss of coordination | > Slurred speech |
| > Confusion | > Loss of consciousness/fitting |

You will need the help of others!

What to do if the person is unconscious, drowsy or unable to swallow:

THIS IS AN EMERGENCY!

They must not be given any food or drink by mouth.

Here's what needs to be done:

- Place the person on their side making sure their airway is clear.
- Give an injection of Glucagon if available and you are trained to give it.
- Phone for an ambulance (dial 000) stating a 'diabetic emergency'.
- Wait with the person until the ambulance arrives.
- When they regain consciousness, the person will require carbohydrate to maintain their blood glucose level.

Glucagon

Glucagon is a hormone which raises the blood glucose level and is injected in a similar way to insulin. Glucagon is recommended to reverse severe hypoglycaemia in people with diabetes. If you are able to treat your own 'hypo', you do not need Glucagon which is always given by another person. Your doctor or diabetes educator will recommend you have Glucagon on hand in case of a severe 'hypo' and will show you, your family and friends how to use it.

Hypoglycaemia unawareness

Some people feel no symptoms of a 'hypo', or only experience symptoms when the blood glucose level drops very low. This problem is more likely to occur in someone who has had diabetes for a number of years or in people who have 'hypos' frequently. People who have hypoglycaemia unawareness must check their blood glucose levels more frequently. It is strongly recommended they discuss their condition with a doctor or diabetes educator.

immediately to stop your
from falling lower ”

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hypoglycaemia & diabetes

What else should I do?

- > Wear identification that says you have diabetes.
- > Make a note in your monitoring book of any 'hypos' you have and discuss it with your doctor or diabetes educator at your next visit.
- > Make sure your family, friends, co-workers, school staff and carers know how to recognise and treat hypoglycaemia.
- > Look for the cause of your 'hypo' so you can try to prevent the situation from occurring again.
- > Contact your doctor or diabetes educator if you are having 'hypos' often.
- > If on insulin or certain types of diabetes medication, always carry quick acting 'hypo' treatment with you.
- > If taking medication called Acarbose (Glucobay®), carry pure glucose with you such as glucose tablets, glucose gel or Lucozade.
- > Refer to the *Alcohol and Diabetes* information sheet for more advice about drinking alcohol and hypoglycaemia.
- > Eat carbohydrates if you are drinking alcohol.
- > Before driving a motor vehicle, test your blood glucose level and make sure it is above 4 mmol/L.

Would you like to join Australia's leading diabetes organisation?

- > Dietary services
- > Free magazines
- > Children's services
- > Educational literature
- > Product discounts
- > Support groups

For more information phone **1300 136 588** or visit your State/Territory Organisation's website:

ACT	www.diabetes-act.com.au	NSW	www.diabetesnsw.com.au
NT	www.healthylivingnt.org.au	QLD	www.diabetesqld.org.au
SA	www.diabetessa.com.au	TAS	www.diabetestas.com.au
VIC	www.diabetesvic.org.au	WA	www.diabeteswa.com.au

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- > Diabetes Australia – Victoria
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What should I do if I get sick?

Talking diabetes **No.33**
Revised August 2010

sick days & type 2 diabetes

Everyday illness or infections will nearly always cause a rise in blood glucose levels whether you have type 1 or type 2 diabetes. Therefore, at the earliest sign of any form of illness such as a cold or virus, it is important for you to take action.

What to do when unwell	When to call your doctor
1. Tell someone If you are alone, tell someone you are unwell so they can check on you.	If you need help and your 'carer' is unable to help you, ask them to call your doctor.
2. Test Check your blood glucose levels at least every 2–4 hours (ideal targets when well are 6–8mmol/L before meals and 6–10mmol/L after meals (2 hours after starting the meal)). Refer to the <i>Blood Glucose Monitoring</i> information sheet for more details.	
3. Keep drinking and (if possible) eating If you take insulin or diabetes tablets, it is important to avoid hypoglycaemia – see below. It is also important to avoid becoming dehydrated by drinking extra unsweetened fluids every hour such as water, diet soft drinks, diet cordial, weak tea, coffee, vegetable juice or broth.	
<ul style="list-style-type: none"> • If you CAN eat normally Continue to eat as normal and sip an extra ½–1 cup of unsweetened fluids (as listed above) every hour. 	Call your doctor. You will probably need to keep taking your diabetes tablets or insulin and will need advice about what to do.
<ul style="list-style-type: none"> • If you CAN'T eat normally Have some easy to manage carbohydrate drinks, snacks or small meals every 1–2 hours (see suggestions on page 2). 	
<ul style="list-style-type: none"> • If you CAN'T eat at all and your blood glucose level is: <ul style="list-style-type: none"> • More than 15mmol/L: Drink unsweetened fluids as listed above. • Less than 15mmol/L: Drink sweetened fluids as listed on page 2. 	Call your doctor if you can't eat at all. Call your doctor if your blood glucose level is consistently above 15mmol/L for more than 12 hours. Call your doctor if: <ul style="list-style-type: none"> • Vomiting or diarrhoea continues for more than 12 hours. • You continue to feel unwell or become drowsy.

When unwell, test your blood glucose levels often, keep drinking and, if possible, eating – and rest. Be aware that there may be times when you will need to contact your doctor or diabetes educator.



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Stepping Up Study

sick days & type 2 diabetes

It is very important to keep up your carbohydrate and fluids, even when you are ill. Here are some ideas to provide 15 grams of carbohydrate per hour if your blood glucose levels are under 15mmol/L, especially if you take insulin or tablets for your diabetes.

Drinks providing approximately 15 grams of carbohydrate	
Milk	1 cup (250ml)
Milk + flavouring	¾ cup milk + 1 tablespoon of Milo®, Actavite® or Quik®
Fruit juice*	¾ cup
Tea or coffee	Add 1 tablespoon of sugar or honey
Hot lemon juice	Add 1 tablespoon of sugar or honey
Herbal tea	Add 1 tablespoon of sugar or honey
Gastrolyte	4 sachets
Ordinary soft drink* or cordial* (not diet)	¾ cup
Sports drink (eg: Gatorade)	1 cup
Snacks providing approximately 15 grams of carbohydrate	
Crackers or crispbread	3 Sao®/Ryvita® etc
Dry toast	1 slice
Plain sweet biscuits	3 Milk Arrowroot/Morning Coffee etc
Mashed potato	½ cup
Rice	⅓ cup
Breakfast cereals	½ cup Special K®, 2 Weetbix®
Porridge (made with water)	⅓ cup
Ordinary jelly or custard	½ cup
Ice cream	3 scoops
Ice blocks	1½ sticks

* Care should be taken with these fluids if diarrhoea occurs. They may need to be diluted up to 1:5 for best absorption.

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VIC	www.diabetesvic.org.au	WA	www.diabeteswa.com.au

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Frequently Asked Questions about Insulin

It is normal to have questions and concerns about starting insulin.

Here we address some of the common concerns that people with diabetes have. Remember that your GP, practice nurse and other health professionals are available to discuss these with you further and answer any questions that you might have.

1. I am worried that injecting Insulin will hurt.

You will most likely be surprised to find out that the very short, fine needles in pre-filled disposable insulin pens make insulin injections quite comfortable. They are much less uncomfortable than finger-pricking for blood glucose readings.

Be sure to rotate the sites where you give your injections.

2. Taking insulin will be too inconvenient and difficult.

Pre-filled disposable insulin pens offer simple, adjustable dosing in an easy-to-carry, discrete pen-like delivery system. They do not need to be stored in the fridge, meaning you can go about your daily routine as normal and still take the insulin with you if needed. It can also allow you to adjust your insulin to your requirements giving you far more flexibility than tablets.

3. I will have a hard time remembering to take my insulin

Most people start insulin by taking a long-acting insulin at bedtime. This can be easily remembered for example by associating taking your insulin with something you already do at bedtime such as cleaning your teeth. Keeping your insulin with your toothbrush is a helpful reminder.

However, it can be taken at any time of the day – so choose a time that is best for you.

4. Taking insulin will mean I have failed to manage my diabetes.

All people with type 2 diabetes will require insulin eventually. Type 2 diabetes occurs because your pancreas can no longer produce enough insulin for your needs. Replacing this insulin is the most logical approach to treatment.

It is important to realise that type 2 diabetes is a progressive condition, and starting insulin is a normal and expected part of living well with diabetes. Most people who have type 2 diabetes – even if they follow their diabetes care plan closely – will eventually need to advance to insulin therapy. Starting insulin helps protect your body from complications from poor glucose control and will help you to stay healthy and well and able to enjoy life. Don't assume the change to insulin means you did something wrong. The most important thing you can do now is to integrate this change in treatment with your daily life and make insulin a part of your new daily routine

5. I'm afraid of the side effects of insulin

Insulin has been used for many years and is the longest known treatment for diabetes. Over these years it has been shown to be a safe way to treat diabetes.

Weight gain can be an issue if your HbA1c is more than 7.5%. The weight can be prevented by paying special attention to your diet and increasing your activity.



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People who have had diabetes for a while and whose blood glucose remains high are at a greater risk for serious health conditions such as heart disease, kidney disease, and amputations. The long-term uncontrolled blood glucose levels lead to these problems, not starting insulin. Keeping your blood glucose levels as close to normal as possible can help to reduce your risk of developing complications of diabetes. When you take insulin according to your diabetes-care plan, it is a safe and effective way of treating your diabetes.

The most common side effect of insulin therapy is hypoglycaemia or low blood glucose. Severe hypoglycaemia is rare and it is more common in people with type 1 diabetes. People with type 2 diabetes generally experience severe hypoglycaemia very rarely, even when taking insulin. This is even less likely when starting using the once daily injection of very long acting insulin. Checking your blood glucose frequently can help you avoid hypoglycaemia. Knowing the warning signs of hypoglycemia and treating it quickly can help you avoid severe hypoglycaemia.

6. I am confused about how and when to take my insulin.

Insulin is now simpler to use than ever. The plan for starting insulin in this project is extremely simple: just a once daily injection! There will be plenty of written material available to help you if needed and your practice nurse and GP are available to help you monitor and adjust your dose very easily or answer any questions. Don't hesitate to ask questions until you understand what to do.

7. Taking insulin means I have to give up activities I enjoy.

Using insulin allows you more flexibility than tablets. If you are going to do something and you think your glucose levels will go low – you can reduce the amount of insulin that you take.

In most cases, you can continue to take part in any and all of the activities you enjoyed before you started insulin therapy. You just may need to monitor your blood glucose a little more frequently and add some snacks to make sure your blood glucose stays as close to normal as possible. Talk to your GP and Practice Nurse about any specific activities you are involved in that you would like to know more about

Source: Hayes RP, Bowman L, et. al. Understanding diabetes medications from the perspective of patients with type 2 diabetes. Prerequisite to medication concordance. *The Diabetes Educator* 2006;32(3):404-414..

Stepping Up Study

A 'How to' Guide to Using SoloStar Insulin Pens

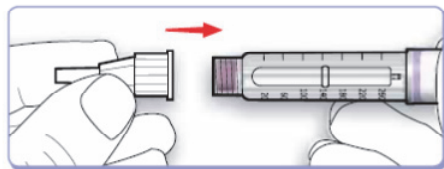


QUICK REFERENCE GUIDE

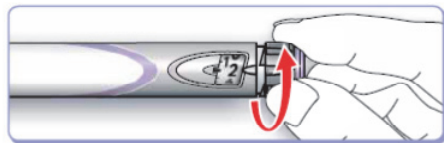
These instructions are supplied as a guide only. Always read the full instruction leaflet before you use SoloSTAR® for the first time. If you have any questions, ask your healthcare professional or call 1800 LANTUS (1800 526 887).

Before you start, check you have the right insulin

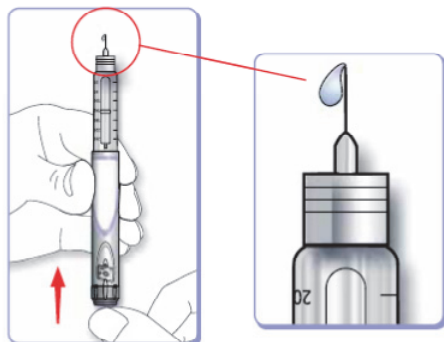
- 1 Attach a new needle**
Keep the needle straight as you attach it.



- 2 Perform a safety test**
This removes air bubbles and ensures that the pen and needle are working properly. Select a dose of 2 units.

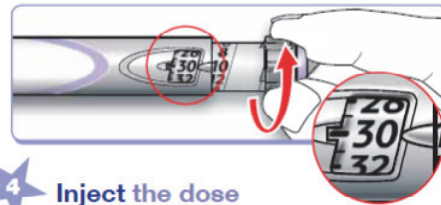


Remove the needle caps.
Hold the pen with the needle pointing upwards and press the injection button all the way in. Check if insulin comes out of the needle.

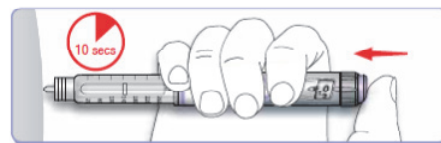


If insulin does not come out, you must repeat the test until it does.
If no insulin comes out after doing the test 3 times, replace the needle with a new needle and try again.

- 3 Select the dose**
Check the dose shows "0". Select your required dose. (This example shows 30 units).



- 4 Inject the dose**
Using the injection method instructed by your healthcare professional, insert the needle into the skin. Press the injection button in all the way. Keep the injection button pressed and slowly count to 10. Then withdraw the needle.



- 5 Remove the needle**
Replace the outer needle cap and use it to unscrew the needle from the pen. Dispose of the needle safely. Put the cap on the pen.

IF YOU CAN'T dial to the dose you want, check if you have enough insulin in the reservoir.
IF YOU HAVE any other problems with the pen, first try replacing the needle and repeating the safety test.
EACH SoloSTAR® is for use by one person only.

SANOFI DIABETES

sanofi-aventis australia pty ltd trading as
Sanofi, 12-24 Talavera Road, Macquarie Park NSW 2113
ABN 31 008 558 807 AU.DMP:12.01.001

Remember to check you have the right insulin:

- › Lantus (long acting insulin) is in a **GREY** pen
- › Apidra (short acting insulin) is in a **BLUE** pen



Stepping Up Study

If you require more information about the Stepping Up Study please contact the following:

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