



LIVING WITH DIABETES

BECOME AN EVERYDAY STAR

SANOFI 

MyStar 
Care TM
Empowering Your Diabetes Journey

CONTENT

There are 4 things to do/think about on a daily basis and this is how this education book has been laid out:

1. TAKE YOUR MEDICATION AS PRESCRIBED

2. TEST YOUR BLOOD SUGAR REGULARLY

3. LIVE A HEALTHY LIFESTYLE

4. CHECK YOUR FEET

Welcome to the Sanofi Diabetes Family	2
What is diabetes?	3
Type 1 & Type 2 diabetes	4

4 Things to do/think about everyday - Become an Everyday Star

1. Take medication as prescribed	5
----------------------------------	---

2. Test blood sugar regularly	6
- Why test your blood sugar?	6
- When to test your blood sugar	6
- Paired testing	7
- Your HbA1c target	8
- HbA1c linked to blood glucose	8
- Hyperglycaemia	9
- Hypoglycaemia	10

3. Live a healthy lifestyle	13
- The healthy diabetes plate model	13
- Regular physical activity	15

4. Check your feet daily	17
- Basic foot care advice	17
- Other complications	18

WELCOME TO THE SANOFI DIABETES FAMILY

You have been diagnosed with diabetes, but there is support, guidance and assistance to help you along your journey. By applying basic principles, you can still have a full and healthy life - and live your life every day like an EVERYDAY STAR.

The **MyStarCare™ Patient Support Program** will assist you to understand your diabetes and will provide support to help you reach the goals set out by your doctor.

The full follow-up program is optional based on the consent provided.

	Initial Contact	Week 4, 8 & 16	Week 24
What happens?	The Diabetes Nurse Educator (DNE) will provide you with personal education regarding your diabetes and the correct use of the insulin as prescribed by your doctor	A phone call to assess how you are self-managing with regards your insulin usage and how you are adapting. You may be asked to send through blood glucose readings. They will assist you with any concerns you may have.	A phone call to evaluate your progress and your experience of the support program. You may be asked to send through final blood glucose readings. They will assist you with any concerns you may have.
Personal call/phone call	Face-to-face visit	Phone call	
Who contacts you?	The DNE in your area	Diabetes Nurse Educator (DNE)	

At any point along the support journey - the Diabetes Nurse Educator may refer you back to your doctor if the need arises and to do your scheduled HbA1c tests.

MyStarCare™ nurse contact: _____

Doctor: _____

Contact for doctor: _____

WHAT IS DIABETES'

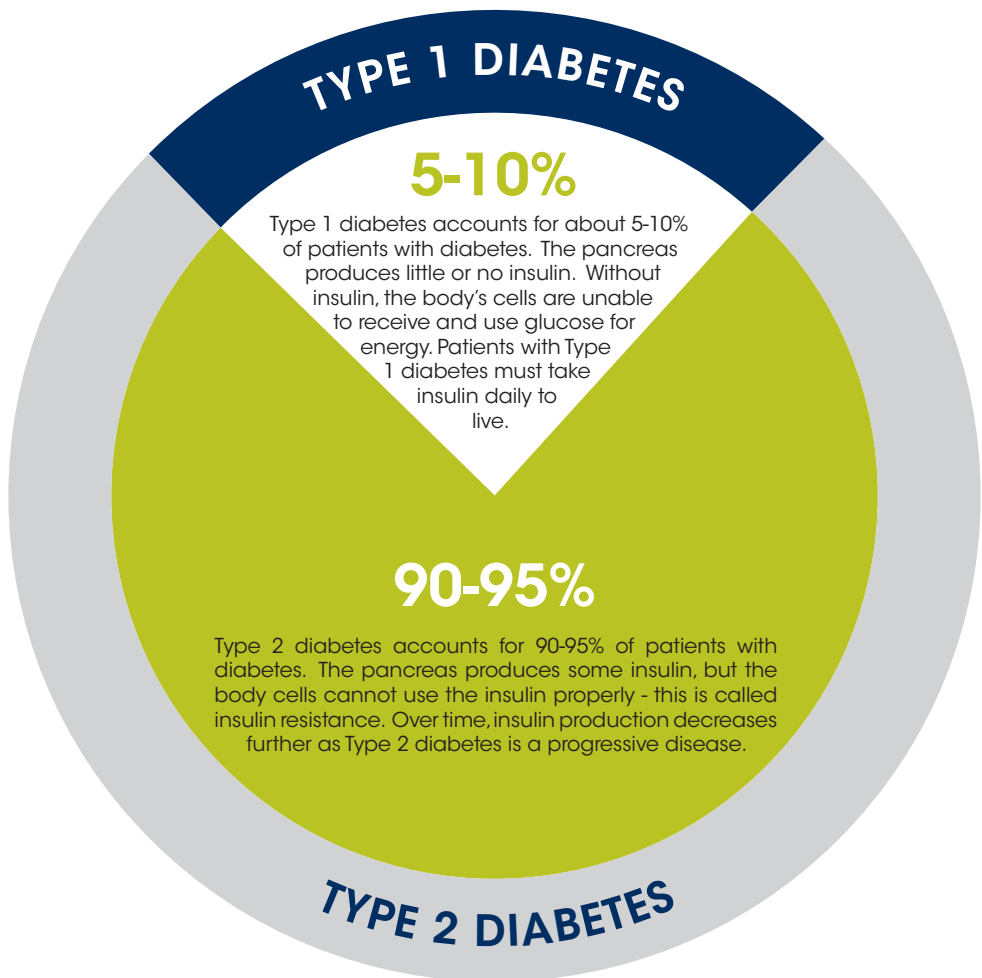
- ✦ Most of the food you eat is broken down into sugar (also called glucose) and released into your bloodstream.
- ✦ When your blood sugar goes up, it signals your pancreas to release insulin. Insulin acts like a key to let the blood sugar into your body's cells for use as energy.
- ✦ If you have diabetes, your body either doesn't make enough insulin or can't use the insulin it makes as well as it should. When there isn't enough insulin or cells stop responding to insulin, too much blood sugar stays in your bloodstream.

NORMAL SITUATION



You will be diagnosed with diabetes after confirmatory tests have been performed

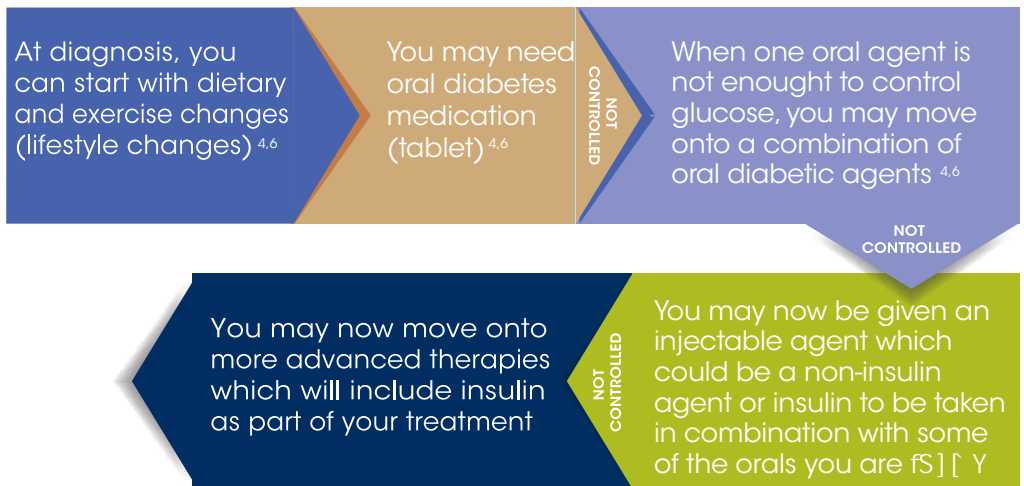
TYPE 1 & TYPE 2 DIABETES - THE DIFFERENCE³



4 THINGS TO DO/THINK ABOUT - BECOME AN EVERYDAY STAR

1. TAKE YOUR MEDICATION AS PRESCRIBED

- ✦ Diabetes is a chronic disease that is not reversible, which means that you have it for life. That means that you can never stop taking your diabetes medicine – even if you are feeling great²
- ✦ Diabetes is a progressive disease, which means that over time, diabetes changes and so too should the treatment options. You may require different types of treatment at different stages of your diabetes⁴



When people who take oral diabetes medications progress to needing insulin, they often feel as if they've done something wrong to prompt this transition. Unfortunately, it's just the progression of diabetes and can't be avoided in those instances. It is due to failure of the pancreas that insulin may need to be started – not due to failure of the patient.⁶

The diagram above is an illustration of a treatment plan. Your treating doctor will individualise your treatment plan according to your specific needs.

2. TEST YOUR BLOOD GLUCOSE REGULARLY

WHY TEST YOUR BLOOD SUGAR?⁷

Blood sugar testing – or self-monitoring blood glucose (SMBG) can help you:

- ✧ Monitor the effect of diabetes medications on blood sugar levels
- ✧ Identify blood sugar levels that are high or low
- ✧ Track your progress in reaching your overall treatment goals
- ✧ Learn how diet and exercise affect blood sugar levels
- ✧ Understand how other factors, such as illness or stress, affect blood sugar levels



WHEN TO TEST YOUR BLOOD SUGAR⁷

Your doctor will advise you on how often you should check your blood sugar level.

- ✧ **Type 1 diabetes.** Your doctor may recommend blood sugar testing three or more times a day if you have Type 1 diabetes.
- ✧ **Type 2 diabetes.** If you take insulin to manage Type 2 diabetes, your doctor may recommend blood sugar testing one or more times a day, depending on the number of insulin doses you take. Testing is commonly done in the morning before breakfast (fasting), before meals and sometimes after meals.

Know your target range - Your doctor will set individual blood sugar targets.

GIVE THIS A TRY – PAIRED TESTING⁸

This is a simple, easy and structured way to perform glucose testing. This approach to testing has been shown to be better than just random free testing.

It's called paired testing because you test in pairs – before and after a specific meal. Benefits of paired testing:

- ✦ Helps you to understand the effects of your meals on your blood sugar
- ✦ Assists your doctor to identify when your glucose (sugar) is high after a meal
- ✦ Helps to guide your doctor to decide about your medication dose adjustments

Days	Pre-Breakfast	2 Hours Post-Breakfast	Pre-Lunch	2 Hours Post-Lunch	Pre-Dinner	2 Hours Post-Dinner
Monday	✦	✦				
Tuesday						
Wednesday			✦	✦		
Thursday						
Friday						
Saturday					✦	✦
Sunday						

This is an example of how you could do paired testing. The test involves testing just before a meal – and then 2 hours after a meal – preferably three times a week – and testing a different meal each time.

Please speak to your doctor to get the values that your glucose should be	mmol/L
Fasting (before you have eaten in the morning)	
Pre-meal	
Post-meal (2 hours)	

In addition to blood glucose monitoring (which tests your glucose at a specific point in time) it is important that you have your HbA1c measured every 3-6 months – this test gives an indication of what your blood glucose levels have been over a longer period of time.^{5,9}

WHAT IS HbA1c?

When the body processes sugar, glucose in the bloodstream naturally attaches to haemoglobin, a molecule on red blood cells.

Because red blood cells in the human body survive for 8-12 weeks before renewal, measuring glycated haemoglobin (or HbA1c) can be used to reflect average blood glucose levels over about 3 months, providing a useful longer-term gauge of blood glucose control.

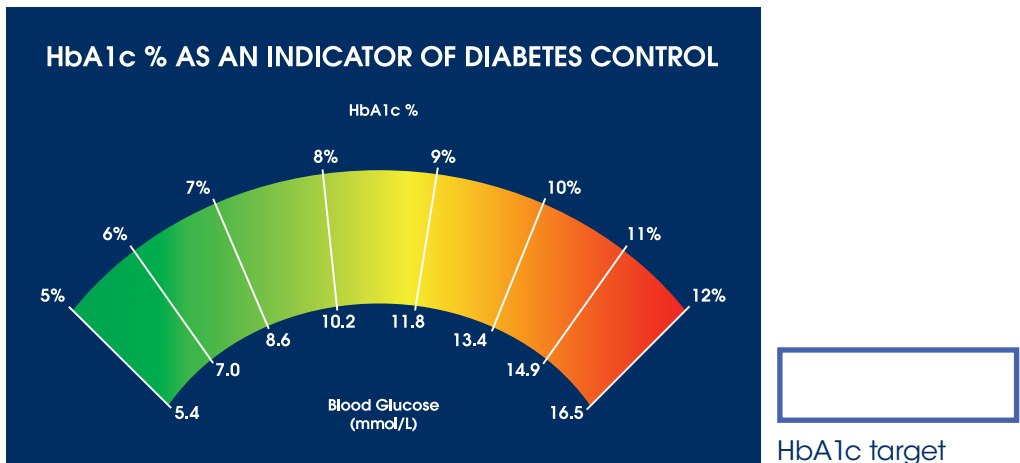
DO YOU KNOW WHAT YOUR HbA1c TARGET IS?



HbA1c targets must be individualised and agreed upon by your doctor. The SEMDSA (Society for Endocrinology, Metabolism and Diabetes of South Africa) recommends a target of less than 7% for most patients. If you have other diseases, are elderly or prone to low blood sugar, your doctor may recommend a different target for you.

SOMETHING INTERESTING - HbA1c AND BLOOD GLUCOSE LINK?

This diagram shows the relationship between your HbA1c and average glucose readings.



HYPERGLYCAEMIA (HIGH BLOOD SUGAR)^{5,11}

High blood sugar happens when the body has too little insulin or when the body can't use insulin properly.

What causes high blood sugar?

- ✦ If you have Type 1 diabetes, you may not have given yourself enough insulin.
- ✦ If you have Type 2 diabetes, your body may have enough insulin, but it is not as effective as it should be.
- ✦ You ate more than planned or exercised less than planned.
- ✦ You have stress from an illness, such as a cold or flu.
- ✦ You have other stress, such as family conflicts or school or dating problems.

What are the symptoms of hyperglycaemia?

- ✦ Weight loss
- ✦ Frequent urination
- ✦ Blurred vision
- ✦ Fatigue
- ✦ Trouble concentrating
- ✦ Increased thirst

What happens if hyperglycaemia goes untreated?

Hyperglycaemia can be a serious problem if you don't treat it, therefore it is important to treat as soon as you detect it. If you fail to treat hyperglycaemia, a condition called *ketoacidosis* could occur. *Ketoacidosis* develops when your body doesn't have enough insulin. Without insulin, your body can't use glucose for fuel, so your body breaks down fats to use for energy.

When your body breaks down fats, waste products called *ketones* are produced. Your body cannot tolerate large amounts of *ketones* and will try to get rid of them through the urine. Unfortunately, the body cannot release all the ketones and they build up in your blood, which can lead to *ketoacidosis*.

Ketoacidosis is life-threatening and needs immediate treatment. Symptoms include:

- ✦ Shortness of breath
- ✦ Nausea and vomiting
- ✦ Breath that smells fruity
- ✦ Very dry mouth

Talk to your doctor about how to handle this condition.

HYPOGLYCAEMIA (LOW BLOOD SUGAR)¹²

Hypoglycaemia is a condition characterised by abnormally low blood sugar levels, usually less than 4 mmol/L. However, it is important to talk to your healthcare provider about your individual blood sugar targets, and what level is too low for you.

Each person's reaction to low blood sugar is different, so it's important that you learn your own symptoms .

The only sure way to know whether you are experiencing hypoglycaemia is to check your blood glucose, if possible. If you are experiencing symptoms and you are unable to check your blood glucose for any reason, treat the hypoglycaemia. Severe hypoglycaemia has the potential to cause accidents, injuries, coma and death.

What are the symptoms of hypoglycaemia?



- ✧ Shakiness
- ✧ Nervousness or anxiety
- ✧ Sweating, chills and clamminess
- ✧ Irritability or impatience
- ✧ Confusion, including delirium
- ✧ Rapid/fast heartbeat
- ✧ Lightheadedness or dizziness
- ✧ Hunger and nausea
- ✧ Sleepiness
- ✧ Blurred/impaired vision
- ✧ Tingling or numbness in the lips or tongue
- ✧ Headache
- ✧ Weakness or fatigue
- ✧ Anger, stubbornness or sadness
- ✧ Lack of coordination
- ✧ Nightmares or crying out during sleep
- ✧ Seizures
- ✧ Unconsciousness

Treating hypoglycaemia^{5,12}.

1



Consume 15-20 grams of glucose or simple carbohydrates

2



Recheck your blood glucose after 15 minutes

4



Once your blood sugar is back to normal, eat a meal or snack to make sure it doesn't lower again.

3



If hypoglycaemia continues, repeat step 1

15 Grams of simple carbohydrates is equivalent to:

- ✧ 15-20 g of glucose powder or glucose tablets
- ✧ 2.3 to 4 teaspoons of sugar /sucrose (glucose + fructose)
- ✧ dissolved with a little water.
- ✧ ¾ cup or ½ a can (175 ml) of fruit juice or soft-drink
- ✧ 6 to 8 Lifesavers or 2 to 3 Super-C sweets
- ✧ 1 to 1½ tablespoons (15 to 20 ml) of honey



3. LIVE A HEALTHY LIFESTYLE

TRY TO EAT RIGHT, EXERCISE AND MANAGE YOUR STRESS ON A DAILY BASIS

The healthy diabetes plate¹³

The plate model is effective for both managing diabetes and losing weight.

- ✦ Fill half of the plate with a variety of non-starchy vegetables, such as spinach, carrots, lettuce and other greens, cabbage, green beans, broccoli, cauliflower, tomatoes, cucumber, beets, mushrooms and peppers



✦ Vegetables

- ✦ Fill one of the quarter sections with starchy foods, such as whole-grain breads (e.g. whole-wheat or rye), whole-grain high-fibre cereal, cooked cereal (e.g. oatmeal), brown or long-grain rice, pasta, baby potatoes, green peas, sweet potatoes, whole-grain crackers and fat-free popcorn

✦ Starch/Grains/Bread



Fruit

- ✦ Add 2-3 servings of fruit per day. One serving is a medium portion of fruit (e.g. oranges, apples, pears or small bananas), or two small fruit (e.g. plums or peaches), or three quarters of a cup of fresh fruit salad. Instead of eating fruit with meals, these can be used as snacks between meals



HOW TO USE THE PLATE MODEL¹³

- ✧ Mark a line across the centre of your plate
- ✧ Divide the one half of this plate into two equal sections



Dairy

- ✧ Add 2 servings of dairy per day e.g. a glass (240 ml) of non-fat or low-fat milk, or 180 ml of low-fat yoghurt

✧ Proteins



- ✧ Fill the last quarter of the plate with meat substitutions, such as skinless chicken and turkey portions, fish and other seafood, lean cuts of beef and pork (e.g. sirloin, fillet or pork loin), tofu, soya, eggs and low-fat cheese. Avoid processed meats (e.g. salami, vienna sausages and polony), which are high in fat and salt

✧ You need to see your dietician with regards the timing of your meals and snacks – according to the treatment you are on. It is best to consult a dietician to assess your individual dietary needs

REGULAR PHYSICAL ACTIVITY⁵



When you exercise regularly, you may reap the following benefits:

- ✧ Increased fitness
- ✧ Improved glucose control
- ✧ Decreased insulin resistance
- ✧ Improvements in your lipid profile (cholesterol)
- ✧ Improved blood pressure
- ✧ Maintenance of weight loss
- ✧ Reduced body fat percentage
- ✧ Improved wellbeing
- ✧ Decreased stress and anxiety

AEROBIC EXERCISE RECOMMENDED FOR INDIVIDUALS WITH TYPE 2 DIABETES

Definition	Intensity	Frequency	Examples
Activities that consist of rhythmic, repetitive and continuous movement of the same large muscle groups for at least 10 minutes at a time	Moderate: 50-70% of maximum heart rate	Minimum 150 minutes per week	Cycling, brisk walking, continuous swimming, dancing, water aerobics, raking leaves
	Or		
	Vigorous: >70% of maximum heart rate	Minimum 75 minutes per week	Brisk walking up an incline, jogging, aerobics, hockey, basketball, fast swimming, fast dancing
	Or	Equivalent combination of moderate and vigorous aerobic exercise	

RESISTANCE EXERCISE RECOMMENDED FOR INDIVIDUALS WITH TYPE 2 DIABETES

Definition	Frequency	Examples
Activities that require muscular strength to move a weight or work against a resistant load	Two to three times per week: Start with one set of 10-15 repetitions at moderate weight. Progress to two sets of 10-15 repetitions. Progress to three sets of heavier weights	Exercise with weight machines, free weight lifting, Thera-Band® exercise

®Resistance exercises should only be attempted if there are no contraindications to this kind of activity

✦ It is recommended that you consult your doctor before starting any exercise program

HOW TO WORK OUT YOUR MAXIMUM HEART RATE

MAXIMUM HEART RATE = 220 - AGE

e.g. If you are 45 years old:
220 - 45 = 175

4. CHECK YOUR FEET EVERY DAY

WHY IS THIS IMPORTANT?¹⁴

- ✦ Foot ulcers and their complications are serious complications in patients with diabetes, and can lead to death
- ✦ 5% to 10% in patients with diabetes suffer from from foot ulcers
- ✦ About 50% of patients who have lower-limb amputations have diabetes

WHAT ARE DIABETIC FOOT ULCERS?¹⁵

Foot ulcers are a common complication of diabetes that is not being managed through methods such as diet, exercise, and insulin treatment. Ulcers are formed as a result of skin tissue breaking down and exposing the layers underneath. They're most common under your big toes and the balls of your feet, and they can affect your feet down to the bones.

All people with diabetes can develop foot ulcers, but good foot care can help prevent them.



BASIC FOOTCARE ADVICE

- ✦ Stay off your feet to prevent pain from ulcers. This is called off-loading, and it's helpful for all forms of diabetic foot ulcers. Pressure from walking can make an infection worse and an ulcer expand

You can also help prevent foot problems by:

- ✧ washing your feet every day
- ✧ keeping toenails adequately trimmed, but not too short
- ✧ keeping your feet dry and moisturized
- ✧ changing your socks frequently
- ✧ seeing a podiatrist for corn and callus removal
- ✧ wearing proper-fitting shoes

BE AWARE OF OTHER COMPLICATIONS¹⁶

People with diabetes have an increased risk of developing a number of serious health problems. Consistently high blood glucose levels can lead to serious disease affecting the heart and blood vessels, eyes, kidneys, nerves and teeth. In addition, people with diabetes also have a higher risk of developing infections.



Eye disease: most people with diabetes will develop some form of eye disease (retinopathy) causing reduced vision or blindness. Consistently high levels of blood glucose, together with high blood pressure and high cholesterol, are the main causes of retinopathy.



Cardiovascular disease: affects the heart and blood vessels and may cause fatal complications such as coronary artery disease (leading to heart attack) and stroke.



Kidney disease: caused by damage to small blood vessels in the kidneys leading to the kidneys becoming less efficient or to fail altogether. Kidney disease is much more common in people with diabetes than in those without diabetes.

References

1. CDC. What is diabetes? <https://www.cdc.gov/diabetes/basics/diabetes.html>. Accessed November 2021
2. International Diabetes Federation (IDF) Diabetes Atlas. 2019 9th Edition:
3. National Diabetes Information Clearinghouse. Diabetes Overview. Nov2008:1-2.
4. ADA. How Type 2 Diabetes Progresses. <https://www.diabetes.org/diabetes/how-type-2-diabetes-progresses>. Accessed November 2021
5. Barnett A. Dosing of Insulin Glargine in the Treatment of Type 2 Diabetes. *Clinical Therapeutics*. 2007;29(6):988.
6. The 2017 SEMDSA Guideline for the Management of Type 2 Diabetes.
7. Mayo Clinic. Blood sugar testing: Why, when and how. www.mayoclinic.org/diseases-conditions/diabetes/in-depth/blood-sugar. Accessed: 4th December 2014
8. Wayne H. Shue. Addressing self-monitoring of blood glucose: Advocating paired glycemic testing for people with type 2 diabetes. *Journal of Diabetes Investigation*. 2004;3(4).
9. A Guide to HbA1c. <http://www.diabetes.co.uk/what-is-hba1c.html>. Accessed 8 December 2014; pg 2.
10. Nathan DM, et al. Translating the A1C Assay Into Estimated Average Glucose Values. *Diabetes Care* 2008;31(8):1473-1476.
11. [www.diabetes.org/Living with Diabetes/Treatment and Care/Blood Glucose Testing](http://www.diabetes.org/Living-with-Diabetes/Treatment-and-Care/Blood-Glucose-Testing). Accessed 24 February 2015.
12. Hypoglycemia (Low blood glucose). American Diabetes Association. [http://www.Digital/Diabetes Website/Hypoglycemia..](http://www.Digital/Diabetes-Website/Hypoglycemia..)
13. Create your plate. In: www.diabetes.org American Diabetes Association. Available at: <http://www.diabetes.org/foodand-fitness/food/planning-meals/create-your-plate/>
14. Probal K. Moulik. Amputation and Mortality in New-Onset Diabetic Foot Ulcers Stratified by Etiology. *Diabetes Care* Feb 2003, 26 (2) 491-494
15. <https://www.healthline.com/health/diabetic-foot-pain-and-ulcers-causes-treatments>
16. <http://www.idf.org/complications-diabetes>. Accessed

For the full prescribing information refer to the professional information approved by the Medicines Regulatory Authority.
sanofi-aventis south africa (pty) ltd, Floor 5, Building I, Herford Office Park, 90 Bekker Road, Midrand, 2196. Tel: (011) 256 3700. Fax: (011) 256 3707. Reg. No. 1996/10381/07.

For Medical Information Enquiries kindly contact ZA.Medinfo@sanofi.com

MAT-ZA-2100821-12/2021-V1

Go to www.sanofi.co.za
and search "Diabetes",
the Diabetes and Cardiovascular
page is the first pop up.



MyStar
CareTM
Empowering Your Diabetes Journey