

Gestational diabetes

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You have been referred to the gynaecologist because you have been diagnosed with gestational diabetes. This folder explains what gestational diabetes is, which appointments you will have, and what you can do yourself.

Order of appointments

The gynaecologist will refer you to the Internal Medicine outpatient clinic.

A blood glucose meter will be ordered for you, which you can then pick up. At ETZ Elisabeth, you can pick it up at Medipoint. At ETZ TweeSteden, you can pick it up at De Donge pharmacy. Patients from ETZ Waalwijk may choose from either of the above locations. You may begin measuring your blood glucose as soon as you get home. Page 5 explains when to measure.

You will receive a letter (through MijnETZ or by post) containing an Internet link and a QR code. The link will take you to an instructional video on gestational diabetes recorded by a diabetes nurse and a dietician from the ETZ.

An appointment for a phone consultation will also be made for you for the next Tuesday. It is important to watch the instructional video before your telephone appointment. If you have any questions regarding the instructions, you can discuss them with the diabetes nurse or dietician on Tuesday.

An appointment will also be made with the internist around two weeks from now.

What is gestational diabetes?

Gestational diabetes is usually a temporary type of diabetes which develops in the second half of the pregnancy. It is caused by the hormones produced during pregnancy, which temporarily reduce the body's response to insulin.

The body uses insulin to keep the blood glucose level stable. During a normal pregnancy, the body produces extra insulin, which is necessary to compensate for the temporarily reduced insulin sensitivity. Gestational diabetes prevents or impedes this process, resulting in an elevated blood glucose value.

Diagnosis of gestational diabetes is based either on the Oral Glucose Tolerance Test or the fasting blood glucose value.

Gestational diabetes presents in around 1 out of 20 pregnancies. The following conditions pose an increased risk of developing gestational diabetes:

- diabetes in the family;
- children from previous pregnancies with a birth weight above 4,500 grammes or >p90 preterm;
- gestational diabetes during a previous pregnancy;
- obesity in the pregnant woman.

In 95% of cases, this type of diabetes goes away after birth. However, there is an increased risk of developing diabetes at a later age, which is why it is important to ensure healthy eating habits, sufficient exercise and healthy body weight after pregnancy. There is also an elevated risk of developing gestational diabetes again during a subsequent pregnancy.

Consequences of an elevated blood glucose level

An elevated blood glucose level results in the unborn child ingesting too much glucose. The excess glucose is converted to fat, which is why newborn children of mothers with untreated gestational diabetes are often large and heavy.

Because gestational diabetes usually develops in the second half of the pregnancy, the risk of congenital disorders is not increased.

At 36 weeks of pregnancy, women with gestational diabetes receive a consultation with the gynaecologist to discuss the delivery. After birth, your child may suffer from a low blood glucose level (hypoglycaemia), as it no longer receives an increased blood glucose supply from you, but still produces a high amount of insulin. Your child's blood glucose level will be monitored for 24 hours after birth as a precaution. If necessary, they may receive extra glucose to reach the right blood glucose level.

Treating gestational diabetes

24-Hour glucose curve

To establish a clear view of your blood glucose level, you are asked to test your blood glucose levels with a blood glucose meter at home.

Testing will provide insight into your blood glucose levels and help determine whether following dietary recommendations are sufficient to maintain your blood glucose levels.

You will need to test your blood glucose levels at the following moments:

- on an empty stomach;
- 2 hours after breakfast;
- 2 hours after lunch;
- 2 hours after dinner;

It is important that you adhere to these times for a proper assessment of the values.

Contact the diabetes nurse if your blood glucose level:

- is higher than 5.3 mmol/l two times, or
- is higher than 6.7 mmol/l **after a meal** three times.

The diabetes nurse is available at;

- MijnETZ (www.mijnetz.nl)
- the phone consultation on workdays from 11:00 to 12:00.

ETZ Elisabeth: +31 13 221 25 21

ETZ TweeSteden: +31 13 221 56 34

After watching the instructional video, report your blood glucose values to the diabetes nurse once a week through MijnETZ. The diabetes nurse will assess the values within three workdays and provide advice.

Diet

Initially, an attempt will be made to achieve the desired blood glucose levels by following dietary advice. In some cases, the diabetes nurse may recommend an extra appointment with the dietician. If despite the dietary advice, your blood glucose levels are still too high, insulin will be administered in consultation with the internist.

After childbirth

Gestational diabetes usually goes away after childbirth. To test this, we recommend having blood taken on an empty stomach six weeks after delivery. You will have one

more check-up with the internist after that. This appointment will be made for you after the delivery.

Dietary advice

Diet provides various kinds of nutrients:

- proteins;
- fats;
- carbohydrates;
- vitamins/minerals;
- moisture.

Carbohydrates play an important role in gestational diabetes, as they affect your blood glucose level.

Carbohydrates

Carbohydrate is the collective name for all types of sugars/starch found in food. Carbohydrates can be found in a variety of foods, which can be divided into four groups:

- starch: potatoes, rice, pasta, bread and legumes;
- fructose (fruit sugar): fruit, fruit juice, apple sauce and tinned fruit;
- lactose (milk sugar): milk, buttermilk, quark, yoghurt, custard and other dairy products;
- glucose (sugar): honey, sugar, sweet spreads, candy, soda, squash, pastries, cakes and ice cream.

The body converts carbohydrates to glucose. Glucose is a source of energy for the body and is transported through the blood to the body's cells. Using insulin, glucose from the blood is absorbed into the cells to supply energy there.

Your blood glucose level depends on your carbohydrate intake. To keep your blood glucose level as stable as possible, you should distribute your carbohydrate intake throughout the day as much as possible.

The following are general recommendations to help you get started. There is an example 1-day menu further on in the folder. You will receive more dietary information and practical advice during the group meeting.

General recommendations

- The diet is based on a healthy basic diet with sufficient nutrients for the mother and child.

- Ensure regularity by eating three main meals and three snacks. Do not skip any meals; this allows you to distribute your carbohydrate intake throughout the day.
- Opt for non-sweet drinks: water, tea (up to three cups a day due to the amount of caffeine) or coffee (one cup a day due to the amount of caffeine). You can use sweeteners if desired.
- Replace regular soda with sugar-free versions (Light, Zero, Max). Do not drink more than seven glasses (150 ml) of sugar-free soda per day due to the permitted amount of sweetener.
- Fruit juice is high in fructose, which causes your blood glucose level to rise quickly, even if the package says "unsweetened" or "no added sugar". That only means that no sugar has been added, but it is naturally high in fructose.
- Avoid sweet snacks such as candy, cakes, ice cream and sweet spreads. Instead, opt for fruit, a dairy product or a slice of bread.
- Use savoury toppings such as meat, cheese, eggs, fish, peanut butter, tapenade, salads and sandwich spread.
- Choose fibrous products such as whole wheat bread, whole-wheat pasta, brown rice and vegetables as much as possible. These products cause a slower increase in blood glucose levels than their white counterparts and encourage a healthy bowel movement.
- Eat two pieces of fresh fruit a day, distributed throughout the day.
- Vegetables are low in carbohydrates and can be used generously. Salsify, peas, corn, red cabbage with apple, and legumes are higher in carbohydrates. We recommend having smaller portions of these foods.
- Potatoes, mashed potatoes, rice, and pasta are high in carbohydrates and should be eaten in small portions with a large serving of vegetables. Choose whole-wheat macaroni and brown rice whenever possible.
- Limit yourself to one starch product with your hot meal: potato, rice, pasta, legumes, bread or couscous.
- For a better distribution of carbohydrates, have your dessert two hours after the meal.
- Avoid pizza, french fries and pancakes. These products are high in carbohydrates and cause a rapid elevation of blood glucose levels.
- Avoid products aimed at diabetics (e.g. cookies, cakes, chocolate, ice cream). They do not have regular sugar but are high in carbohydrates from other sources, as well as fat.
- Exercise improves blood glucose levels. Try to stay active during pregnancy.
- On average, women put on 10–15 kg during pregnancy. Women with obesity should strive for a weight gain of around 7 kg.

Example 1-day menu

Breakfast

- 2 slices of whole wheat or brown bread;
- spread with halvarine or margarine;
- savoury toppings: meat, cheese, eggs, fish, peanut butter, tapenade, salads or sandwich spread.
- 1 cup of skim milk or plain yoghurt;
- unsweetened drinks.

In the morning

- 1 piece of fruit;
- or 1 slice of bread with savoury toppings.

Lunch

- 2–3 slices of whole wheat or brown bread;
- spread with halvarine or margarine;
- savoury toppings;
- 1 cup of skim milk or plain yoghurt;
- unsweetened drinks.

In the afternoon

- 1 piece of fruit;
- or 1 slice of bread with savoury toppings.

Dinner

- A generous serving of cooked or raw vegetables;
- 2 serving spoons (110 g) of rice or couscous, or 3 serving spoons (130 g) of pasta;
- or 4 small potatoes (200 g);
- 1 piece of meat, fish or meat substitute;
- 1 spoon of sauce or gravy;
- unsweetened drinks.

In the evening

- 1 bowl of plain yoghurt or quark sweetened with sweetener or sugar-free squash;
- a handful of unsalted nuts.

Before bed (optional)

- 1 slice of bread with savoury toppings;
- 1 cracker with savoury toppings.

Variation

Replace 1 slice of bread with:

- 2 whole wheat rusks;
- 2 whole-wheat crackers;
- 2 tablespoons of plain muesli.

More information

For more information on nutrition during pregnancy, please visit the Nutrition Centre's website.

The website also provides information about the amount of carbohydrates in various foods, which you can access through *My Nutrition Centre* and *My Diary*.

The nutrition centre also offers an app: *My Food Meter*. You can use the app after registering with the nutrition centre.

Conclusion

Carbohydrate lists are available from the ETZ website.

- Visit www.etz.nl
- Click on *Search*.
- Type *Carbohydrate list* in the search bar.



Notes and personal recommendations

Important telephone numbers

(Elisabeth-TweeSteden Hospital): +31 13 221 00 00

Internal Medicine outpatient clinic: +31 13 221 01 70

Monday to Friday 08:30–17:00

ETZ Elisabeth:

Route 25

ETZ TweeSteden:

Outpatient clinic building, Waiting room 1

ETZ Waalwijk:

Waiting room 5, Number 26

Interne Geneeskunde, 41_1596 07-20

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