

PRACTICAL TIPS

for women with

GESTATIONAL DIABETES



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GESTATIONAL DIABETES

WHAT IS GESTATIONAL DIABETES?



Gestational diabetes is diabetes that occurs or is diagnosed during pregnancy. **Blood glucose levels rise**, which can be harmful to both the pregnant woman and the baby.



Good control of blood glucose (glycaemia) can largely prevent possible complications.

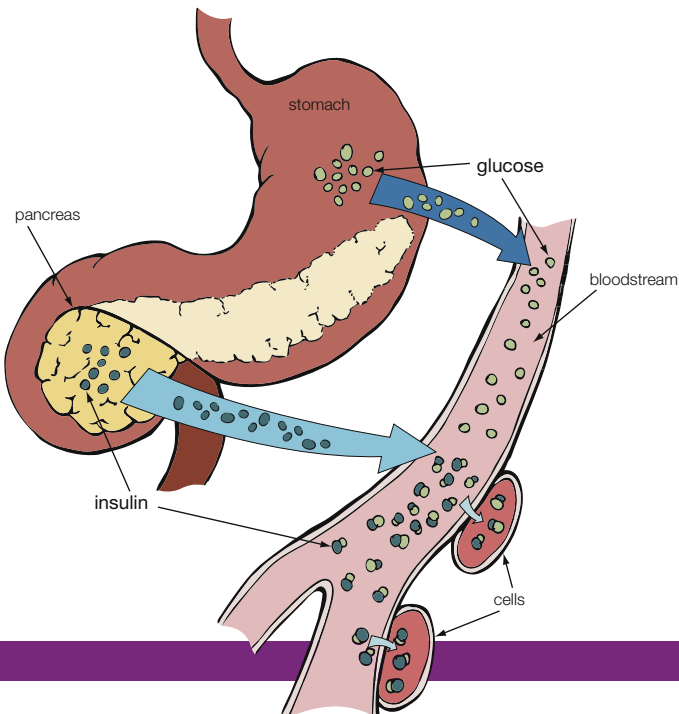




WHY DOES IT OCCUR?



Our body converts some of the food we eat into **glucose**. **Insulin** secreted by the **pancreas** allows glucose to enter cells and provide energy. When you have diabetes, you produce less insulin than your body needs.





As pregnancy progresses, more insulin is needed because placental hormones create a counter-insulin effect, forcing the pancreas to work harder. Therefore, gestational diabetes **mainly occurs in the second half of pregnancy.**

HOW COMMON IS IT?



Gestational diabetes is the most common metabolic disorder in pregnancy. It occurs in 5 to 15% of pregnant women, although it may occur in more women, depending on the geographical area and the criteria used for diagnosis.

WHAT CONDITIONS INCREASE THE RISK OF GESTATIONAL DIABETES?

- Having a family history of diabetes, especially in first-degree relatives (father, mother or siblings) and if there are multiple instances.
- Being of Hispanic-Latino, Black-African, Native American Indian, Southeast Asian or Pacific Islander origin.
- The risk increases with age.
- Being overweight or obese.

- Having high blood pressure.
- Having given birth to a baby weighing 4 kilograms or more at birth.
- Having had gestational diabetes in a previous pregnancy.
- Having had impaired fasting glucose or glucose intolerance prior to gestation.

HOW IS GESTATIONAL DIABETES DIAGNOSED?



Gestational diabetes usually has no symptoms, so it is necessary to test for it by measuring the blood glucose (**glycaemia**).

Diagnosis is usually made in two steps:

1st The O'Sullivan test:

- 50 g of glucose (sugar) is consumed.
- An analysis is done after 1 hour.
- If the result is 140 mg/dl (7.8 mmol/l) or higher, the test is considered positive and a further confirmatory test (3-hour blood glucose curve) is required.



Testing is recommended in the first trimester of pregnancy if risk factors are present. In Spain, all pregnant women are

tested in the second trimester of pregnancy (between 24 and 28 weeks).

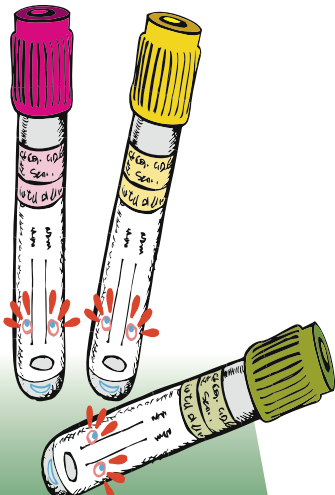
The first step can be a basal blood glucose measurement, using different cut-off points depending on the trimester of gestation.

2nd The 3-hour blood glucose curve:



It is important carbohydrates are not restricted and that regular physical activity is undertaken for the 3 days prior to the test. A model diet may be recommended to you.

- The test should be performed after fasting for 10-12 hours.
- A fasting blood draw (analysis) is performed.
- 100 g of glucose (sugar) is consumed.
- A blood draw (analysis) is carried out 1, 2 and 3 hours after the blood is taken.



- After consuming the glucose, it is necessary to rest and refrain from smoking.
- Gestational diabetes is diagnosed when two or more of the following outcomes are present:
 - Basal glucose equal to or greater than 105 mg/dl (5.8 mmol/L).
 - Glucose after 1 hour equal to or greater than 190 mg/dl (10.6 mmol/L).

- Glucose after 2 hours equal to or greater than 165 mg/dl (9.2 mmol/L).
- Glucose after 3 hours equal to or greater than 145 mg/dl (8.1 mmol/L).
- **Diabetes** is diagnosed if basal blood glucose is equal to or greater than 126 mg/dl (7.0 mmol/L). With these basal blood glucose values, it is not necessary to perform a glycaemia curve for diagnosis.

HOW CAN GESTATIONAL DIABETES AFFECT THE MOTHER?



Although it does not produce symptoms, it can:

- Increase the risk of **arterial hypertension** during pregnancy
- Increase the likelihood of a **caesarean** section.
- Cause urinary tract **infections** and/or vaginal candidiasis (thrush).
- Cause **premature birth**, whether spontaneous or medically indicated.
- Increase the chances of **gestational diabetes** in a later pregnancy.
- Increase the chances of **diabetes, hypertension and circulatory problems** in the future.



HOW CAN GESTATIONAL DIABETES AFFECT THE BABY?



If the mother with gestational diabetes has high blood glucose, this can affect the baby. The problems that the child of a mother with gestational diabetes may have are:

In childbirth

- Premature birth and difficulties such as: foetal distress, need for caesarean section or forceps.

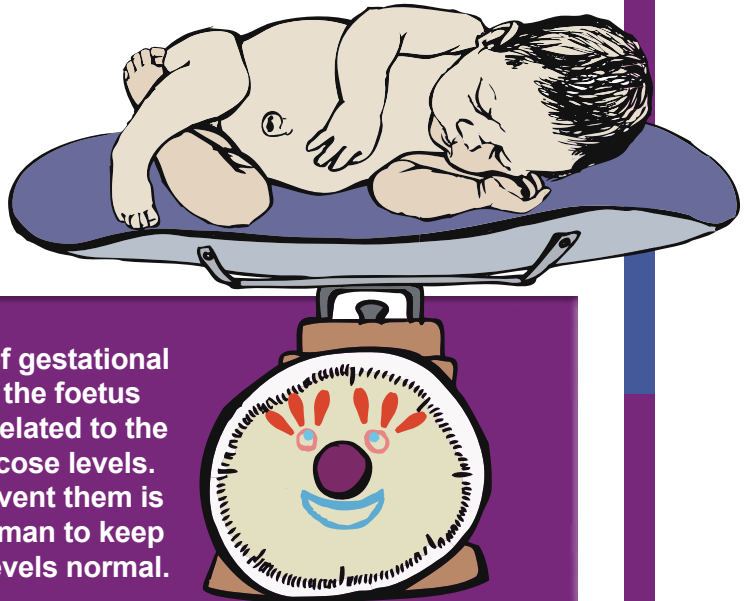
After childbirth, baby with


- **High weight** for gestational age.
- **Hypoglycaemia** (low blood glucose values).
- **Respiratory problems.**
- **Jaundice** (yellowing of the skin and mucous membranes).

- **Polycythaemia** (increased red blood cells).
- **Hypocalcaemia** (decrease in blood calcium levels).
- Higher risk of **death** than in the general population.
- Risk of birth **trauma** related to the baby's increased weight.

In the long-term

- Risk of developing obesity and type 2 diabetes.



 The complications of gestational diabetes affecting the foetus and pregnancy are related to the mother's blood glucose levels. The best way to prevent them is for the pregnant woman to keep her blood glucose levels normal.

WILL THE BABY NEED ANY SPECIAL CARE WHEN IT IS BORN?



The newborn baby of a woman with gestational diabetes will have extra monitoring in the first few days of life.



The first examination of the newborn baby will consider whether the weight and length are appropriate for the gestational age and whether there are signs of malformation or trauma during delivery. Measures will be taken to prevent and detect neonatal hypoglycaemia, including early initiation of feeding and monitoring of blood glucose levels.



Breastfeeding benefits both the newborn and the mother. Breastfeeding can give the baby a healthy start.

WILL MY CHILD HAVE DIABETES?



The children of a woman with gestational diabetes are not born with diabetes, but the risk of developing diabetes later in life is higher than in the general population. Part of this risk depends on glycaemic control during pregnancy. Therefore, pregnant women should be aware that controlling their

blood sugar during pregnancy is also important for the future health of their baby.



Learning healthy eating and exercise habits from infancy will help prevent obesity and diabetes.

HOW IS GESTATIONAL DIABETES TREATED?



A diagnosis of gestational diabetes requires more frequent obstetric monitoring to detect possible problems. To reduce your risk, it is necessary to maintain blood glucose levels within the recommended range.

This is achieved by

- Healthy, balanced and personalised **eating plan.**
- **Exercise.**
- **Optimal weight gain.**
- **Self-testing of blood glucose (glycaemia),** with regular checks to monitor results.



Therapeutic education is essential to achieving glycaemic targets. When they are not achieved, **pharmacological treatment** is added. Insulin is usually prescribed and therapeutic education will also be required. It is important to be consistent in your care and to attend regular appointments. As the pregnancy progresses, treatment will be adjusted as necessary.



WHAT SHOULD I EAT?



The nutritional needs are the same as for any pregnant woman without diabetes.



Your diet should be balanced and a variety of foods should be eaten. The health team will help develop an eating plan for **what** to eat, **how much** to eat and **when**. Food choices, amounts and timing are important to keep blood glucose levels within target range.

- **Carbohydrates or sugars** must be present in the diet because if they are scarce, ketone bodies (harmful to the foetus) are produced.



Diet plays an indispensable role in the management of diabetes and can be used to modify the glycaemic profile and even out glucose levels.



Do not stop eating to try to control blood glucose, as this can be harmful to both mother and baby.



- Foods containing carbohydrates are the ones that raise blood glucose levels in the body, which is why they must be controlled. It is a good idea to weigh them, measure the amount with spoons, cups or portions and, if the product is packaged, read the labelling. The balance between the sugars you eat, the insulin you take and the exercise you do determines your post-meal blood sugar level.
- Foods containing carbohydrates are: starchy foods (bread, biscuits, cereals, rice, pasta, flour, potatoes, pulses); fruit; milk and dairy products and vegetables. Starchy foods are the ones that contain the highest amounts of sugar and therefore need to be controlled the most.
- Foods rich in natural sugars such as honey, or those containing refined sugar (jams, chocolate, sweets, cakes, pastries, pastry cream, caramel, ice cream, milkshakes, chocolate milk, soft drinks) should be limited. It should also be remembered that many of these foods provide additional calories.
- Sweeteners (saccharin, aspartame, stevia) can be used, but it is advisable to limit their consumption.

“Diabetic foods” do not control blood sugar levels better.



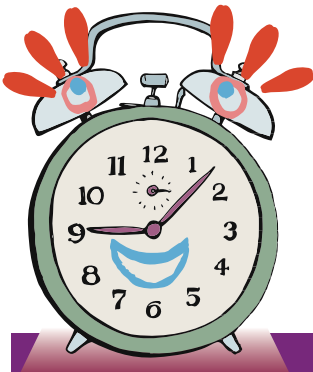
- Foods rich in **fibre** slow the entry of glucose into the blood and delay the emptying of the stomach, causing a feeling of fullness. Therefore, eating these foods will be beneficial. Some foods rich in fibre are: fresh or cooked vegetables, pulses, fruit and wholemeal products.

- High **fat** intake promotes weight gain. It is recommended to preferably use olive oil and oily nuts and limit other fats (butter, whole milk, fatty meat).
- **Protein** is essential for the baby's growth and it is very important that a pregnant woman's diet includes protein. Protein-rich foods include meat, fish, eggs, dairy products and legumes. While trying to eat them several times a day, it is important to limit protein foods with a high fat content (fatty meats, sausages or fatty cheeses).

Meal times

In general, it is recommended to eat every 2-4 hours. Frequent intakes in small amounts reduce variations in blood sugar levels during the day and the formation of ketones.

A typical distribution is: breakfast, mid-morning snack, lunch, afternoon snack, dinner and a small snack before bedtime.



WHAT CAN I DRINK IF I HAVE GESTATIONAL DIABETES?



Like any pregnant woman, a pregnant woman with gestational diabetes can drink water, herbal teas, and tea or coffee in moderation. Always limit the use of sugar, sweeteners and *diet drinks*.



Likewise, as with all pregnant women, alcohol consumption is not recommended.



It should be remembered that high-calorie drinks (juices, milkshakes, milks, soft drinks that are not diet) provide carbohydrates and cannot be drunk freely.

WHAT EXERCISE IS RECOMMENDED?



It is recommended that all pregnant women (unless medically contraindicated) should be active and get 30 minutes or more of moderate exercise per day on most days.



In women with gestational diabetes, exercise after meals will help control blood glucose levels after eating.



In childbirth preparation classes, information about other exercises will be given; consult a health professional. If you do any sport, discuss it with your health care professional.

The recommendations will be the same as for any pregnant woman.



Physical activity can help to achieve target blood glucose levels.



A step counter can help you to be more aware of your daily exercise.



SHOULD I LOSE WEIGHT?



Pregnancy is a bad time to lose weight. It is normal to gain weight appropriately and gradually, according to your previous weight.



In a woman of ideal weight, a weight gain of between 11 and 16 kg is recommended. In an overweight woman, a lower gain is recommended.

IS IT NECESSARY TO MEASURE GLUCOSE AND KETONES?



In order to know blood glucose (blood sugar) levels, capillary glucose measurements will be necessary. You will be taught how to use a small device called a blood glucose meter and how to prick a finger to obtain a drop of blood. If each time you test your blood glucose, you record the result in a diary along with the accompanying circumstances, it will help you to understand what affects your blood glucose values. Blood glucose monitoring at different times of the day (some before and some after meals) will be necessary to assess the trend and development of blood glucose levels day after day, week after week. The assessment of these results will be used to modify the diet plan (food and/or quantities) and/or exercise plan in pursuit of the targets. Depending on the glucose (sugar) levels, the number of measurements can be increased or decreased.



Urine will be checked for ketones at different times of the day, always before a meal. During pregnancy, frequent ketonuria (ketone in urine) is not advisable, because its presence may affect the psychomotor development of the foetus. Ketonuria occurs when:

- Not enough food is eaten or there are long periods of fasting (accompanied by low blood glucose levels).
- Insulin deficiency (accompanied by high blood glucose levels).

WHAT BLOOD GLUCOSE VALUES SHOULD BE AIMED FOR?



Most guidelines on gestational diabetes recommend the following capillary blood glucose targets:

- Glucose levels before a meal, less than 95 mg/dl.
- One hour after starting a meal, less than 140 mg/dl.
- Two hours after starting a meal, less than 120 mg/dl.
- In some centres there are small variations in targets.



Further tests will be done every one to two months to check the degree of glycaemic control.



The further we move away from normal glycaemic values, the more the risk of complications increases.



The glucose levels that are considered normal are different during and outside of pregnancy. You cannot compare those of a pregnant person with those of a non-pregnant person.



CAN THE TREATMENT BE A PILL? IF I AM PRESCRIBED INSULIN, DOES THAT MEAN I AM IN A SERIOUS CONDITION?



If, despite changes in diet and exercise, blood glucose levels are not within the target range, this will probably indicate the need for insulin. Insulin treatment is started during pregnancy at blood glucose levels that would be acceptable outside pregnancy.



Taking insulin does not imply greater severity. If the mother gets her blood glucose levels right, so will the baby and it will help prevent pregnancy complications. Insulin is not foreign to the body and does not reach the foetus directly, but it changes the amount of glucose it receives. It does not harm the mother, but it can cause hypoglycaemia or low blood sugar, which she must learn to recognise and treat. Your health professional is the one who will provide appropriate information.



WILL DIABETES CONTINUE AFTER DELIVERY?



The good news is that **gestational diabetes usually goes away after childbirth**. Once the baby is born, blood glucose (sugar) levels are likely to return to normal. In the absence of the placenta, the hormones that had a counter-insulin action disappear and carbohydrate metabolism returns to normal.



However, two out of three women may develop gestational diabetes in a new pregnancy.



Inadequate diet, excess weight, sedentary lifestyle and smoking are factors that influence the risk of future diabetes, hypertension and circulatory problems.

HOW CAN I PREVENT TYPE 2 DIABETES IN THE FUTURE?

WHAT IS THE FOLLOW-UP?



A glucose curve will be performed two to three months after childbirth to re-evaluate whether the glucose metabolism is normal or still impaired. Along with glucose, other risk factors such as weight, blood pressure, cholesterol and lifestyle habits will be assessed.



You can prevent or delay the onset of diabetes by eating a healthy, balanced diet (rich in fibre and low in refined sugars), taking regular physical exercise (at least 30 minutes most days or 3 times a week) and avoiding toxic substances such as tobacco.



To detect early whether a woman who has had gestational diabetes has diabetes or is at risk of diabetes, either a fasting blood test or an oral glucose tolerance test is recommended at least every three years.



Your health care team can give you more information and support.

CAN I USE CONTRACEPTION AFTER GESTATIONAL DIABETES?



Contraception can be used after childbirth, including oral contraception. Your doctor will recommend the most suitable method for you.

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