**Information sheet gestational diabetes**

**What is gestational diabetes?**

When you have diabetes, the regulation of your blood sugar levels is disturbed. The amount of sugar in your blood is regulated by insulin, which is a hormone. Your body needs insulin to transport sugar, which enters your bloodstream via food, to your cells. If your body is unable to do this properly because it doesn't produce enough insulin, you have diabetes.
When you are pregnant, your body produces different hormones than usual. These hormones make the body temporarily less responsive to insulin. During a normal pregnancy the body produces extra insulin to sustain blood sugar levels. With gestational diabetes, this doesn't happen, or doesn’t happen sufficiently. As a result your blood sugar levels will remain too high.

**Is gestational diabetes dangerous?**

Untreated gestational diabetes can have serious consequences for both you and your baby. Because sugar stays in your blood, your baby receives a large amount of sugar via the placenta. This causes the baby to produce more insulin to break down the sugars, and convert them into fat. This fat is stored in the tissues and therefore your baby grows too fast and becomes too heavy. If your baby is overweight, it is more likely that you will be in labour longer and chances of having an artificial delivery (vacuum pump delivery or caesarean section) or complications increase.

Large fluctuations in blood sugar levels can cause the baby's lungs to mature more slowly. Furthermore, children with a high birth weight appear to have a greater risk of developing diabetes themselves later in life.

Because the baby also receives blood sugars via the placenta, it will produce more insulin to lower these sugar levels. After delivery, the baby has to sustain sugar levels on its own. This is often difficult for babies born to mothers who have had untreated gestational diabetes. Because the blood supply from the placenta to the baby stops, the high blood sugar levels in the blood drop, but the extra insulin the baby has produced will not drop as quickly. Because the baby has more insulin, even more sugar is broken down, causing the sugar levels in the blood to become too low. If the baby's blood sugar is too low, this can harm the baby's brain.

Gestational diabetes is a temporary form of diabetes and usually disappears immediately after delivery. However, it is important to remain vigilant. In the first 5 years after pregnancy the chance of developing permanent diabetes is 40 to 50% higher than for women who have not had gestational diabetes. If you have had gestational diabetes, there is also a chance that you will develop it again in subsequent pregnancies.

**Research and treatment**

Gestational diabetes is detected by a blood test. This test is called Oral Glucose Tolerance Test (OGTT). In this test you drink a drink with a high sugar content, after which your blood is tested. Usually the first test takes place in the 24th to the 28th week of pregnancy. If you have had gestational diabetes previously, a test will also be done before the 16th week. In some cases, the test is also done or repeated later in pregnancy. If the blood sugar levels on an empty stomach or the blood sugar levels after the OGTT are too high, you have gestational diabetes. If you have been diagnosed with this, you will receive nutritional and exercise advice to bring blood sugar levels back to normal. You will need to measure your blood sugar levels with a glucose meter several times a day. The growth of the baby will also be monitored by ultrasounds. When you follow this advice, blood sugar levels often return to normal. If, despite dietary and exercise advice, blood sugar levels do not remain at the right level, it may be necessary to inject insulin.

**Nutritional and exercise advice**

The sugar in your blood comes mainly from the food you eat. During digestion glucose (sugar) is formed from carbohydrates. Carbohydrates is the collective term for:

1. Starch: bread, potatoes, rice, couscous, legumes and pastas contain starch.
2. Lactose (milk sugars): all types of milk (and milk products), including unsweetened types such as regular milk, buttermilk, yogurt and cottage cheese/soft cheese.
3. Fructose (fruit sugars): these are found in fruits, juices and purees, even the unsweetened varieties.
4. Sugar: cake, pastry, ice cream, sweets, liquorice, soft drinks, etc.

To ensure that your blood sugar levels do not get too high, it is important to distribute the amount of carbohydrates you eat evenly over the day. Allow about 1.5 to 2 hours between meals and carbohydrate snacks. This way, a small amount of sugar always enters your blood and thus preventing spikes in your blood sugar levels. The target values ​​are <5.3 mmol/l before breakfast and <7.8 mmol/l 1 hour after the start of the meal. Aim for 3 main meals a day and 3 to 4 snacks in between.

* Only take one product that contains starch with a hot meal: potatoes OR brown rice OR wholemeal pasta OR couscous OR plantain OR beans/legumes OR roti OR bread, and so on.
* Choose drinks without sugar: water, tea or coffee (in moderation).
* Unsweetened or fresh fruit juices contain fruit sugars and are not a good alternative to soft drinks.
* Choose savoury sandwich fillings: low-fat cheese or cold cuts, peanut butter, salads, sandwich spread, olives, tapenade, fish, vegetable spreads, nut spreads, avocado, etc.

It is NOT a good idea to consume minimum carbohydrates per day! Your diet might then become unbalanced.

Limit or avoid sugar and foods containing sugar, like:

* Sweet spreads such as jam, honey, sprinkles, syrup (jam with reduced sugar content or sugar-free jam can be used in moderation)
* Pastry, cake, sweets, ice cream, chocolate
* Fruits in syrup
* Custard and fruit yogurts with sugar
* Drinks from syrups/cordials/ (light) soft drinks
* Fruit juices and fruit purees
* Tea or coffee with sugar or honey
* Do not use chemical sweeteners too often. Examples of chemical sweeteners are saccharin, aspartame, sorbitol and cyclamate. These can be found in sweeteners that are used in coffee and tea and in diet soft drinks. Do not consume more than 4 glasses a day that contain an artificial sweetener.

**Exercise**

When your blood sugar levels are too high, extra exercise helps you to burn sugars faster. Your muscles need more fuel during activity and the first thing that is burned are the sugars present in your blood. So when you do extra exercise, your sugar levels also drop faster. We therefore advise you to exercise for at least 30 minutes every day (active walking/cycling) and follow these rules for extra exercise:

* Take the stairs instead of the elevator.
* Use your bike or walk instead of using public transport.
* Go for a walk after meals.
* Try to swim once or twice a week and do at least 15 to 20 laps.

Practical tips
You can vary your meals by eliminating a carbohydrate rich food item from your daily menu and replacing it with another dish or food that provides approximately the same amount of carbohydrates. A number of varieties are included in this folder.

Bread
Do not take more than 2 slices of wholemeal bread with meals. Instead of 1 slice of wholemeal bread (about 16 grams of carbohydrates), you can take:

* 2 wholemeal rusks
* 2 slices of wholemeal crispbread
* 3 pieces of wholemeal baguette (10 grams each)
* 1 bowl of low-fat yogurt or semi-skimmed milk with 2 tablespoons of wholegrain muesli

Savoury fillings
Savoury fillings such as cheese and meat products provide virtually no carbohydrates and therefore hardly increase blood sugar levels.

Milk and milk products
As an alternative for 1 glass of semi-skimmed milk of 150 ml (8 carbohydrates) you can take:

* 1 glass of buttermilk
* 1 bowl of low-fat yogurt
* 1 bowl of low-fat cottage cheese/soft cheese

Potatoes and substitutes
Potatoes and their substitutes such as rice, legumes and pasta are the main carbohydrate suppliers of a hot meal. Instead of 4 small potatoes (200 grams, about 32 grams of carbohydrates) you can take:

* 3 large spoons (150gr) of cooked pasta such as wholemeal pasta
* 3 large spoons (150gr) of cooked legumes such as kidney beans, white beans, lentils, marrowfat peas, chickpeas
* 2 large spoons (100 gr) of cooked brown rice
* 2 slices of brown bread
* 6 pieces of wholemeal baguette of 10 grams each

With this food group, it is especially important to choose the variety that is rich in fibres.

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| **Replace** | **With** |
| White rice, pandan rice, basmati rice, etc. | Brown rice |
| White pasta, noodles, rice noodles | Wholemeal pasta, wholemeal noodles, wholemeal rice noodles |
| Wraps | Wholemeal wraps |
| Crackers | Wholemeal/high fibre crackers |

\*A large spoon refers to a normally filled serving spoon (about 50 grams).

Fruit
Take a maximum of 2 pieces of fruit per day and a maximum of 1 piece per meal. A serving of fruit is about 100-150 grams.

Desserts
Take the dessert at least 1.5 hours after the meal. For 1 bowl of 150 ml custard (12 g carbohydrates) you can take:

* 1 bowl of low-fat yogurt / cottage cheese/soft cheese / semi-skimmed milk
* 1 bowl of ready-made low-fat fruit yogurt without added sugar
* 1 bowl of low-fat yogurt / cottage cheese/soft cheese / semi-skimmed milk

Snacks
Allow 1.5 hours between snacks and meals. As a snack (about 16 g carbohydrates) you can take:

* 1 slice of wholemeal bread with low-fat margarine and savoury fillings
* 2 tablespoons of trail mix (mixed nuts with raisins and oats)
* Uncooked green salad vegetables
* Homemade soup
* Nuts
* Olives
* Pickled onions

Drinks
Some drinks do not contain carbohydrates. These are tea and coffee without sugar, water from the tap, spring and mineral water, diet soft drinks (be careful with added artificial sweeteners). You can use these drinks freely. A glass of tomato juice or vegetable juice, without added sugar, per day can be used extra without leaving out anything else.

Freely allowed
You can use the following products without leaving out anything else and therefore have little or no effect on your blood sugar levels:

* Uncooked green salad vegetables (wash well)
* Sugar-free drinks
* Sugar-free chewing gum
* Eggs (hard boiled, poached or fried well done)
* Cheese (no raw milk)
* Meat and cold cuts (those which are allowed during pregnancy)
* Unsalted nuts