



# Healthy Living for Women with **Gestational Diabetes**

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## ***What is Gestational Diabetes?***

Gestational diabetes:

- Is a type of diabetes that develops during pregnancy
- *Usually* develops in the second half of pregnancy
- *Usually* goes away after the baby is born

## ***What causes Gestational Diabetes?***

Gestational diabetes happens when the hormone called insulin doesn't do a good job of moving sugar out of the blood stream and into your body's cells.

Carbohydrate foods break down into sugar in our body. This sugar gets dumped from our digestive system into our blood stream.



Usually your body would make enough insulin to move that sugar from the blood into your cells for energy.



In pregnancy, the **placenta** creates hormones which can make it **harder** for your insulin to work properly (causing 'insulin resistance'). This means your body needs to make more insulin to keep up the body's cells to pull sugar out of the blood stream.

If the body is not able to make enough insulin, sugar can build up in your blood and your **blood sugars rise**.

## ***What are the risk factors for Gestational Diabetes?***

Some of the common risk factors include:

- Family history of Type 2 Diabetes
- Living with obesity before becoming pregnant
- Being from an ethnic group at high risk for developing diabetes (of Asian, South Asian, Arab, Hispanic, African or Indigenous descent)
- Being age 35 or older
- Having given birth to a baby that weighed more than 4 kg/9 lbs
- Having Gestational Diabetes in a previous pregnancy

## ***How can Gestational Diabetes affect baby?***

- When mom has high blood sugars, the baby will have high blood sugars too. Baby will make extra insulin to move the sugar out of his/her blood stream and stores the extra sugar as fat. This process makes your baby grow larger. This can make labour difficult for both baby and mother and may result in a C-section
- After birth, baby is no longer getting sugar from mom but baby may still have high amounts of insulin in his or her body. This can cause a low blood sugar in baby and he or she may need IV glucose temporarily
- Jaundice (or yellowing of the skin) occurs frequently in babies born to mothers with diabetes in pregnancy. This temporary condition is readily treated
- High blood sugars during pregnancy can cause early delivery. Certain organs such as the liver may not be fully developed yet

## ***How can Gestational Diabetes affect mom?***

- There is an increased risk of developing Type 2 Diabetes later in life
- Increased risk of urinary tract infections
- Increased risk for high blood pressure throughout pregnancy and result in a condition(s) called pre-eclampsia/eclampsia.

## ***How is Gestational Diabetes usually treated?***

Healthy eating habits and regular activity are important ways to help treat Gestational Diabetes.

For some women, healthy eating and physical activity are not enough to keep blood sugars in target range. If your blood sugars stay high, you may need to take insulin injections during your pregnancy.

## ***What happens after having baby?***

Gestational Diabetes usually goes away soon after your baby is born. If you took insulin in your pregnancy, you will usually be able to stop it around labour.

You may be asked to check your blood sugars here and there in the one-to-two weeks after delivery to ensure blood sugars are within target range. Between 6 weeks and 6 months after you deliver, you will be asked to complete a 'Glucose Tolerance Test' to show if you continue to have diabetes or not.

## **Will mom develop diabetes in the future?**

Having Gestational Diabetes makes it more likely that you will develop diabetes in your next pregnancy or later in life.

To lower the chance of getting diabetes in the future:

- Breastfeed your baby if able to
- Continue healthy eating (as outlined in this handout)
- Exercise regularly

You are also encouraged to:

- Have a yearly physical to make sure blood sugars are staying in the target range
- Talk to your doctor or diabetes educator if you are planning another pregnancy

## *Tools for managing diabetes during pregnancy:*



### *Blood Sugar Checking*

- Check **at least four** times per day
  - Check **first thing** in the morning, upon waking – this is your *fasting blood sugar* **AND**
  - Test **one hour *or* two hours** after each meal (depending on what your endocrinologist has instructed)

#### ***Blood Sugar Targets***

Upon waking (fasting blood sugar):	5.2 mmol/L or lower
1 hour after meals:	7.7 mmol/L or lower
2 hours after meals:	6.6 mmol/L or lower

### *Physical Activity*

*\*Check with your doctor before beginning any exercise or activity program during pregnancy\**

- **Regular** physical activity during pregnancy can help to:
  - **Lower** blood sugars
  - **Ease** labour and delivery
  - Speed up **recovery** after labour and delivery
  - Increase **energy** levels

Remember to start **slow** and don't push your body too hard!

## *Healthy Eating in Pregnancy*

- Take a Prenatal Vitamin/Mineral **supplement**
  - Ensure your supplement contains **1 mg of folic acid**
  - Continue taking prenatal supplements after you deliver if you are breastfeeding
- Eat **smaller, more frequent meals**
  - This can help to **prevent low or high blood sugars**, satisfy appetite and provide your body with the extra nutrients needed in pregnancy
- Eat foods with **carbohydrates** at each meal and snack
  - Carbohydrates give you **energy** and enough calories to support your baby's growth
- Have a **bedtime snack** that includes carbohydrate and protein
  - A bedtime snack may help to **lower your morning** (fasting) blood sugar
- Choose a variety of foods from the 4 food groups each day.

### Carbohydrate options (raise blood sugars):

- **Grains and Starches**
  - Choose **higher fibre** options such as whole grain breads, cereals and crackers, large flake oatmeal, whole wheat pasta, yams/sweet potatoes and brown rice.
  - Fibre helps to lower blood sugars following a meal, prevent constipation and help you to feel fuller for longer
- **Fruits**
  - You may find that you need to **avoid fruit at breakfast** as the morning blood sugar is often the hardest to control
- **Milk and Alternatives**
  - Important **calcium** sources and can be part of a meals or snack

### Non-Carbohydrate options (do *not* raise blood sugars)

- **Vegetables:**
  - Include plenty of vegetables throughout the day to help keep you full.
- **Meat and Alternatives:**
  - These foods are high in protein. Include these foods at every meal and at bedtime snack – they help to keep you full.
- **Fats**

## Meal Plan

	<b>Breakfast</b>	<b>Snack</b>	<b>Lunch</b>	<b>Snack</b>	<b>Dinner</b>	<b>Bed Time</b>
<b>Carb servings</b>	1-3	1	3-4	1-2	3-4	1-2
<b>Carb grams</b>	15 – 45 g	15 – 20 g	45 – 60 g	15 – 30 g	45 – 60 g	15 – 30 g

***\* Include protein at meals and evening snack, take vegetables throughout the day \****

### Label Reading for Carbohydrates

1. Look at the **servicing size** on the Nutrition Facts panel
2. Total carbohydrates is the sum of **fibre + sugars + starch**.  
Most labels do not list starch
3. **Subtract grams of fibre from total carbohydrate**; fibre is not broken down into sugar in your body

In this example, every 2 slices of bread has:  
**36g** carbohydrate – **6g** fibre = **30g net carbohydrate**

\*\* Remember, 15 g carbohydrate = 1 carbohydrate serving \*\*

<b>Nutrition Facts</b>	
Per 90 g serving (2 slices)	
Amount	% Daily Value
<b>Calories</b> 170	
<b>Fat</b> 2.7 g	4 %
Saturated 0.5 g + Trans 0 g	5 %
<b>Cholesterol</b> 0 mg	
<b>Sodium</b> 200 mg	8 %
<b>Carbohydrate</b> 36 g	13 %
Fibre 6 g	24 %
Sugars 3 g	
<b>Protein</b> 8 g	
Vitamin A 1 %	Vitamin C 0 %
Calcium 2 %	Iron 16 %

## Artificial Sweeteners

- Artificial sweeteners do not affect blood sugars
- Any sweetener found in ready-made food (i.e. diet pop, chewing gum) is safe in pregnancy

## A guide to getting enough Omega 3's

Omega 3's have been shown to be good for baby's brain and eye development. Fish can be a great source of omega 3's, however some fish contain higher levels of mercury and should be limited.

**Avoid taking** Cod Liver oil in pregnancy as it can contain dangerously high levels of Vitamin A.

One fish serving is equal to 75 g **or** 2 ½ ounces **or** ½ c **or** ½ can

### High omega 3

Anchovy	Atlantic Mackerel	Atlantic Pollock	Char
Clams	Herring	Lake Whitefish	Mussels
Rainbow Trout	Salmon	Sardines	Smelt

### Other safe fish include:

Basa	Capelin	Cod	Flounder
Hake	Lobster	Mullet	Shrimp
Sole	Scallops	LIGHT Tuna	Tilapia

### Fish high in mercury (limit)

Escolar	Marlin	Orange Roughy	Sea Bass
Shark	Swordfish	WHITE Tuna	Whiting

\*\*Ensure all fish is cooked thoroughly\*\*

### Other good sources of Omega 3's are:

- Flaxseeds (ground) or flaxseed oil
- Hemp hearts
- Walnuts
- Omega 3-enriched eggs
- Chia seeds



## *Sample Menu for Pregnancy*

<b>Breakfast</b>	<p>2 slices whole grain bread <b>or</b> 1 whole wheat English muffin <b>or</b> ½ whole grain bagel</p> <p>Peanut butter, egg <b>or</b> cheese (including cottage cheese)</p> <p>1 c milk <b>or</b> soy milk <b>or</b> 100 g yogurt</p>
<b>Snack</b>	<i>See snack ideas list below</i>
<b>Lunch</b>	<p>Meat, poultry, eggs, fish, beans <b>or</b> tofu</p> <p>2/3 c rice <b>or</b> 1 c cooked pasta <b>or</b> 1 – 6" whole wheat pita <b>or</b> 2 – 6" whole wheat tortillas <b>or</b> 2 slices whole grain bread</p> <p>Lots of vegetables – raw <b>or</b> cooked</p> <p>1 c milk <b>or</b> soy milk <b>or</b> 100 g yogurt</p> <p>1 medium fruit (or save for afternoon snack)</p>
<b>Snack</b>	<i>See snack ideas list below</i>
<b>Supper</b>	<p>Meat, poultry, eggs, fish, beans <b>or</b> tofu</p> <p>2/3 c rice <b>or</b> 1 c cooked pasta <b>or</b> 2 – 6" whole wheat tortillas <b>or</b> 1 medium potato</p> <p>Lots of vegetables – raw <b>or</b> cooked</p> <p>1 c milk <b>or</b> soy milk <b>or</b> 100 g yogurt (<b>or</b> save for evening snack)</p> <p>1 medium fruit</p>
<b>Snack</b>	<i>See snack ideas list below (ensure protein is taken at this time)</i>

<b><u>Drink Options</u></b>	<b><u>Snack Ideas</u></b>
Water Crystal Light Diet pop Diet iced tea Sugar free flavoured water Club soda and lemon	<ul style="list-style-type: none"> <li>- 1 serving fruit and cottage cheese/nuts/cheese</li> <li>- 100 g (or ¾ c) Greek yogurt</li> <li>- 2-3 plain cookies (i.e. Arrowroot, Social Tea, Digestives)</li> <li>- 2-3 whole grain crispbreads (i.e. Rye Vita <b>or</b> Wasa)</li> <li>- 1 serving fruit and diet jello</li> <li>- Cheese and 7-10 multigrain crackers <b>or</b> 4 Melba toast</li> <li>- 1 slice whole grain bread with peanut butter</li> <li>- 1 c milk <b>or</b> soy milk</li> </ul>

***When should you call the Diabetes Centre?***

- If **blood sugars are high for 2-3 days:**
  - over 5.3 before breakfast and/or
  - over 7.8 one hour after a meal
- You feel **hungry** or are not having enough to eat on the diet plan
- You are **losing weight**

**Tips and Recommendations:**

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