

Gestational Diabetes Mellitus (GDM)

Information for Patients and Families



Disclaimer

This patient education resource is not medical advice. It shares common health facts, advice and tips. Some of the information provided in this resource may not apply to you. Please talk to your doctor, nurse or other health-care team member to see if this information will work for you. They can also answer any questions or concerns that you might have.

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Gestational Diabetes

What is it and how do I manage it?

Gestational diabetes is a type of diabetes that happens during pregnancy. It is caused by hormone changes that affect how your body's cells use sugar, which can raise your blood sugar.

Why is it important to manage my blood sugar?

By keeping your blood sugars within a target range, you can help reduce risks to both mother and baby.

Gestational diabetes can increase the mother's risk of:

- Having pre-eclampsia (high blood pressure during pregnancy)
- Needing a c-section
- Developing type 2 diabetes after pregnancy

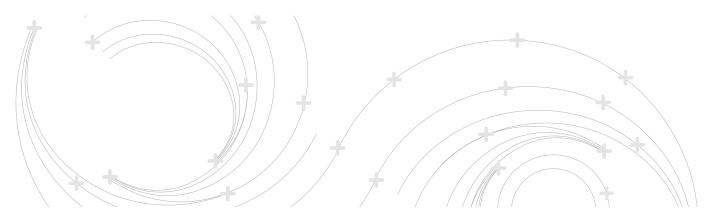
Higher blood sugars in the mother can increase the risk for the baby of:

- Growing bigger than expected which can make it more likely that
 a caesarean or C-section is needed
 or that there could be problems
 during birth
- Having low blood sugars at birth
- Being born too early
- Developing diabetes or obesity later in life

What can I do to lower the risk and have a healthy pregnancy?

- Monitor your blood sugar daily
- Eat healthy
- Stay active
- Take prescribed medications

Your health care team is here to help support you to manage your blood sugar and have a healthy pregnancy with gestational diabetes.



Monitoring blood sugars

Monitoring schedule

You will be shown how to check blood sugars using a glucometer.

Check your blood sugars at least three times per day;

- First thing in the morning before breakfast (fasting) every day
- 1 hour after the first bite of 2 meals each day

You can check your blood sugar after each meal if you'd like to see how the food you eat affects it.

	Breakfast		Lunch		Supper		Bedtime
	Before (fasting)	1 hr after	Before	1 hr after	Before	1 hr after	
Monday	\checkmark	\checkmark		√			
Tuesday	\checkmark			√		√	
Wednesday	√	\checkmark				√	
Thursday	√			√		√	
Friday	√	√		√			
Saturday	√			√		√	
Sunday	√	√				√	

Table 1. Schedule for blood sugar check Blood sugar targets



The recommended blood sugar levels during pregnancy are

- » Fasting (first thing in the morning): less than 5.3 mmol/L
- » 1 hr AFTER the first bite of a meal: less than 7.8 mmol/L
- » 2 hrs AFTER the first bite of a meal: less than 6.7 mmol/L

Medications and vitamins

Sometimes eating healthy and staying active aren't enough to manage blood sugars. In this case, your doctor may ask you to take pills or insulin injections to help control your blood sugar. These are safe to take during pregnancy and will help protect both you and your baby.

If you are pregnant or breastfeeding, take a prenatal vitamin every day. Look for a vitamin that has at least:

- Folic acid 1000 micrograms (mcg)
- Vitamin D 400 to 1000 units (IU)
- Iron 16 to 27 milligrams (mg)
- Vitamin B12 2.6 micrograms (mcg)

These vitamins help keep you and your baby healthy.

Healthy Eating with Gestational Diabetes

Meal patterns

Eat 3 meals and at least 2 snacks each day
Eat your first meal within 1 hr of waking up.
Try to eat every 3-4 hrs during the day.
Always have a snack before bed to make sure you are not going too long without food at night (no more than 10 hrs).
Eat 3 servings of calcium rich foods every day. These include milk, soy beverage, yogurt, or cheese. Calcium can help control blood pressure during pregnancy.
Limit sugary foods and drinks. This includes juice and pop, hot chocolate and sweetened coffee/tea. These can make your blood sugar go too high.

Meal planning

• Spreading your meals and snacks throughout the day helps to keep your blood sugar from going too high or going too low.

How much do I need each day?

- Pregnant women should aim for a minimum of:
 - » 175 grams of carbohydrates,
 - » 28 grams of fibre and
 - » 70 grams of protein per day.

At each meal or snack include:

- A carbohydrate (like bread, rice, fruit or milk) and
- A protein (like eggs, yogurt, chicken or tofu)

This helps give your baby the energy and nutrients they need to grow.

Use the Plate Method (image 1) to help you balance your meals:

- Fill a quarter or 25% of your plate with whole grains, starchy foods or fruit. Choose high fibre and low glycemic index options.
 See the glycemic index food guide for ideas.
- Fill a quarter or 25% of your plate with protein foods like meat, chicken, fish, beans and legumes, eggs, Greek yogurt, cheese or tofu
- Fill half or 50% of your plate with non-starchy vegetables like broccoli, peppers, carrots, spinach or cucumber.



Image 1. Plate method.

Which foods raise blood sugars?

Carbohydrates contain starch and sugar, either naturally or added to the food. Your body turns these into sugar and can raise your blood sugar levels.

Carbohydrates are found in many healthy foods. They provide energy, fibres and nutrients.

You find carbohydrates in:

- ☐ Grains: bread, rice, pasta, cereal
- Starchy foods: potatoes, corn
- Legumes: beans, lentils, chickpeas
- Fruits
- Milk and yogurt

These foods are healthy. Include these foods at every meal and snack. This way, your baby gets a steady supply of the nutrients needed for growth.

What about sugary foods?

Carbohydrates are also found in foods that are made with sugar, like sweets and treats. They have added sugar that can raise blood sugar quickly. Try to limit foods like:

- Sugar (white, brown, honey, maple syrup, jam)
- Sweets and treats (cookies, storebought muffins, granola bars, cake, ice cream, candy, ice cream, chocolate
- Sweet drinks (juice, pop, hot chocolate, and sweet coffee/tea

How many carbohydrates do l need each day?

If you are pregnant, Health Canada recommends eating at least **175 grams** of carbohydrates per day.

If you have gestational diabetes, it is best to spread your carbohydrates out throughout the day over 3 meals each day and 2–3 snacks.

Carbohydrate counting

Counting carbohydrates will help you to:

- Know how many carbohydrates you are eating and how much it raises your blood sugar
- Meet your carbohydrate and nutrient goals while controlling your blood sugars

Use the Nutrition Facts (table 2) on packaged foods or the <u>Carbohydrate</u> and <u>Non-Carbohydrate Foods</u> link to determine how many grams (or servings) of carbohydrates you are having at a meal.

What is a carbohydrate serving?

One carbohydrate **serving** has about **15 grams** of carbohydrates.

For examples of servings carbohydrate and non-carbohydrate foods and what counts for 1 serving, please check <u>Carbohydrate</u> and <u>Non-Carbohydrate Foods</u>.

Tip: use measuring cups or a kitchen scale to help at first until you get used to estimating portion sizes.

Reading labels

Check the Nutrition Facts (table 2) on packaged foods to see how many carbohydrates that food contains.

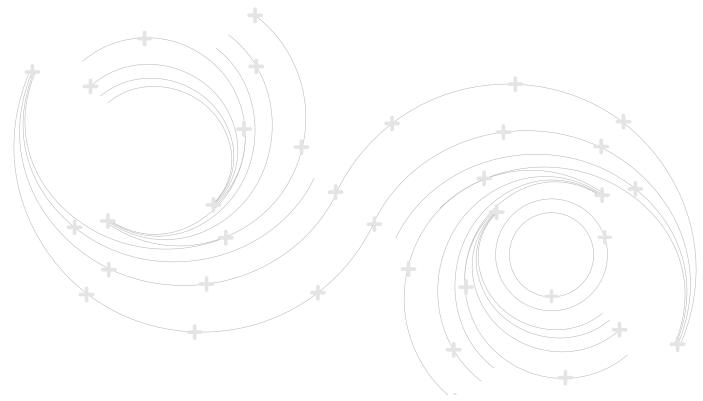
Finding carbohydrate values using the Nutrition Facts table

Nutrition Per 90 g serving			
Amount	% Daily Value		
Calories 170	_		
Fat 2.7 g	4 %		
Saturated 0.5 g + Trans 0 g	5 %		
Cholesterol 0 mg			
Sodium 200 mg	9 8%		
Carbohydrate	36 g 13 %		
Fibre 6 g	24 %		
Sugars 3 g			
Protein 8 g			
Vitamin A 1 %	Vitamin C 0 %		
Calcium 2 %	Iron 16 %		

Table 2. Nutrition facts

The amount of carbohydrate in a food is listed on the Nutrition Facts table.

- The amount listed is for the serving size given.
 Are you eating more, less, or the same amount?
 Compare your serving size to figure out the amount of carbohydrate you are eating.
- The total amount of carbohydrate in grams is listed first. This number includes starch, sugars and fibre. (Starch is not listed separately.)
- Fibre does not raise blood sugar and should be subtracted from the total carbohydrate (i.e. 36 g carbohydrate 6 g fibre 30 g available carbohydrate).



Gestational diabetes meal plan example

This is an example of how to spread your carbohydrate intake throughout the day.

Chose the lower range of carbohydrate servings (or grams) if you have a smaller appetite, or the larger range if you have a larger appetite.

It is important to have a bedtime snack. This will help keep the blood sugars stable overnight and helps to manage the morning (fasting) sugar levels

Table 3 - Meal plan

Meal	Carbohydrate servings	Grams of Carbohydrate
Breakfast	1-2	15-30 g
Snack	1-2	15-30 g
Lunch	2-3	30-45 g
Snack	1-2	15-30 g
Dinner	2-3	30-45 g
Snack	2-3	30-45 g

Role of fibre

Choose high fibre foods more often. They are absorbed slowly, preventing rapid spikes in blood sugar. They also help to prevent constipation.

High fibre foods include:

- Whole grains like brown or wild rice, oats, quinoa, barley, bulgur or whole grain pasta, breads, wraps
- Fruit and vegetables

- Legumes like black or kidney beans, chickpeas, lentils
- Nuts and seeds, including adding flax seed, chia or hemp hearts

Glycemic Index

Glycemic Index (GI) is a scale that shows how fast a food raises blood sugar. High GI foods raise the blood sugar quickly, while lower GI foods will take longer to be absorbed, and raises blood sugars slowly and not as high.



Eating low or medium GI foods helps keep your blood sugar from going too high.

Tips to help lower the glycemic index of a meal or snack:

- Make sure at least half of the carbohydrates at your meal are low glycemic index. Try mixing white and brown rice, or add legumes like lentils or cauliflower rice to your grains
- Add a protein (like meat, eggs, yogurt, beans or tofu) to each meal and snack.
 Protein slows down digestion
- · Add healthy fat with meals and snacks like cheese, nut butters, nuts/seeds, olive oil
- Eat your protein and vegetables first before eating the carbohydrate. This slows how quickly your body absorbs the sugar from the meal.
- Do not overcook your pasta! Al dente (or under-cooked) pasta has a lower glycemic index.
- Use sweet potatoes (low GI) instead of white potatoes (high GI). Or have cold potatoes, like in potato salad- they raise blood sugar less.
- Add vinegar or lemon juice to meals. These sour foods may help lower the glycemic index. Try lemon juice in your water or homemade salad dressing with vinegar, lemon juice and olive oil.

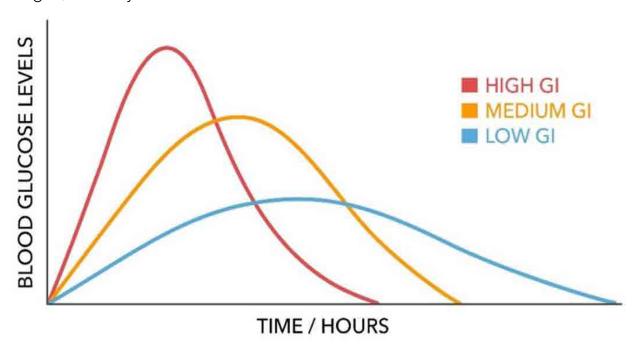


Image 2. Glycemic Index

Use tables 4 to 7 to help you pick low and medium glycemic index foods more often than high GI ones.

Tables 4-7. Glycemic index

Grains & starches		
Low Glycemic Index (55 or less) Choose MOST Often	Medium Glycemic Index (56 to 69) Choose LESS Often	High Glycemic Index (70 or more) Choose LEAST Often
Breads:	Breads:	Breads:
English Muffin (Whole Wheat, Multigrain)	Chapati (White, Whole Wheat)	Bread, Bagel, Baguette (White, Whole Wheat)
Dosa (Foxtail Millet + Dhal)	Gluten-free Bread (Sourdough, Buckwheat, Quinoa, Oat, Pulse)	Dosa (Rice Flour, Finger Millet + Dhal)
Idli (Brown rice + Dhal)	Milk Bread	English Muffin (White)
Flaxseed/Linseed Bread	Oat Bread	Gluten-free Bread (White, Rice, Corn)
Mixed Grain Heavy Breads	Paratha	Idli (White rice + Dhal)
Multigrain, Seeded Bread	Pita Bread (White, Whole Wheat)	Matzo
Pumpernickel Bread	Spelt Bread	Naan (White, Whole Wheat)
Sprouted Grain Bread	Sourdough (Whole Wheat, Rye)	Rice Bread
Tortilla (Whole Wheat, White, Corn)	Roti (White, Whole Wheat)	Rice Cakes
Cereal:	Rye Bread (Light, Dark, Whole Grain)	Sourdough (White)
All-Bran™ Cereal	Whole Grain Whole Wheat Bread	Cereal:
All-Bran Buds™ With Psyllium Cereal	Cereal:	Cheerios [™] Cereal
Red River Cereal	All-Bran Flakes™ Cereal	Corn Flakes™ Cereal
Oats (Steel Cut)	Cornmeal porridge	Cream of Wheat™ (Instant)
Oat Bran™	Cream of Wheat™ (Regular)	Puffed Wheat Cereal
Grains:	Granola	Rice Krispies™ Cereal
Adlay, Job's Tears, Chinese Barley (Boiled, Flaked)	Muesli	Shredded Wheat™
Barley	Oats (Large Flake, Rolled, Old Fashioned)	Special K [™] Cereal
Buckwheat	Oats (Quick)	Oats (Instant)

Bulgur	Raisin Bran™	Grains:
Chickpea flour	Grains:	Millet (Finger, Pearl)
Egg Noodles	Amaranth	Ramen (Instant)
Kamut	Cornmeal	Rice (Instant)
Mung Bean Noodles	Couscous (Regular, Whole Wheat)	Rice (Jasmine)
Pasta (Wheat - Al Dente, Firm)	Gluten Free Pasta	Rice (Sticky, Sushi, Short Grain)
Pulse Flours	Millet (Foxtail, Little, Kodo, Proso, Barnyard)	Rice Porridge (Congee)
Quinoa	Ramen Noodles (Fresh, Buckwheat, Whole Wheat)	Sorghum
Rice (Brown)	Rice (Basmati)	Other:
Rice (Wild)	Rice (Parboiled)	Cassava (Peeled, Boiled, Steamed)
Other:	Rice (Long Grain)	Corn Starch
Carrots (Cooked)	Rice Noodles	Gnocchi
Melba Toast (Whole Grain, Rye, Oat)	Soba (Buckwheat) Noodles	Plantain (Ripe, Fried)
Green Peas**	Spelt	Potato (Instant Mashed)
Plantain (Green, Boiled)	Tapioca	Potato (Cooked Hot)
Popcorn (Air-popped)	Teff	Pretzels
Sunflower Oat Crisp Crackers (e.g. Ryvita Crispbread™)	Udon Noodles	Rice Cakes
Sweet Potato (Boiled, Steamed)	Other:	Rice Crackers
Winter Squash	Ancient Grain Cracker	Soda Crackers
	Beets (Cooked)	Sweet potato (Fried, Baked)
	Breton™ Wheat Crackers	Yam (Roasted, Mashed)
	Chestnuts (Roasted, Steamed)	
	Corn	
	French Fries*	
	Parsnip	
	Potato (Cooked Cooled)	
	Pumpkin	
	Rye Crisp Crackers (e.g. Ryvita Rye Crispbread™)	
	Semolina	
	Taro, Eddoe (Boiled)	
	Triscuit™ Original Crackers	
	Yam (Steamed, Boiled)	

^{**}Snow and snap peas are considered non-starchy vegetables so are not included in the chart.

Fruits		
Low Glycemic Index (55 or less) Choose MOST Often	Medium Glycemic Index (56 to 69) Choose LESS Often	High Glycemic Index (70 or more) Choose LEAST Often
Apple	Banana (Ripe, Yellow)	Banana (Brown, Overripe)
Applesauce (Unsweetened)	Cherries (Canned)	Breadfruit (Roasted)
Apricots (Fresh, Dried)	Cranberries (Dried)	
Banana (Green, Unripe)	Figs (Dried)	
Berries	Grapes	
Breadfruit (Boiled)	Lychee (Fresh)	
Cantaloupe	Jackfruit	
Cherries (Fresh)	Pineapple	
Dates (Fresh, Dried)	Persimmons	
Durian	Raisins	
Figs (Fresh)	Watermelon	
Guava		
Grapefruit		
Honeydew Melon		
Kiwi		
Longan		
Mandarin		
Mango		
Nectarines		
Orange		
Papaya		
Passionfruit		
Peach		
Pear		
Plum		
Pomegranate		
Pomelo		
Prunes		
Starfruit		

Some fruits have not been assigned a GI because they contain less than 15 g of available carbohydrate per serving (e.g. lemon and lime).

Dairy & alternatives					
Low Glycemic Index (55 or less) Choose MOST Often	Medium Glycemic Index (56 to 69) Choose LESS Often	High Glycemic Index (70 or more) Choose LEAST Often			
Almond Milk	Oat Milk, unsweetened	Rice Milk			
Chocolate Milk (1%, 2%)*	Processed Cheese (e.g. processed cheese slices, cream cheese)*				
Cheese (Natural, e.g. cheddar)					
Cottage Cheese					
Cow's Milk (Skim, 1%, 2%)					
Frozen Yogurt (Reduced Fat)*					
Greek Yogurt (Plain, 0%, 2%, Reduced Sugar)					
Ice Cream (Reduced Fat)*					
Kefir (Plain, Unsweetened)					
Soy or Nut Cheese					
Soy Milk (Unsweetened, Reduced Sugar)					
Yogurt, (Plain, Reduced Sugar-0%, 2%)					

Protein sources				
Low Glycemic Index (55 or less) Choose MOST Often	Medium Glycemic Index (56 to 69) Choose LESS Often	High Glycemic Index (70 or more) Choose LEAST Often		
Baked Beans	Lentil Soup (ready-made)	Broad Beans		
Black Beans	Split Pea Soup (ready-made)			
Black Eyed Peas				
Chickpeas				
Hummus				
Kidney Beans				
Lentils				
Mung Beans				
Nuts, Seeds				
Romano Beans				
Soybeans/Edamame/Tempeh				
Split Peas				

Sugar substitutes

Figure 1. Sugar substitutes



What about sugar substitutes? What about sugar substitutes? Sugar substitutes do not raise your blood sugar. You can use sugar substitutes and foods with sugar substitutes in small amounts. These sweeteners may also be used in medications. Read labels to find out what kind of sugar substitutes are in the foods or medications you buy.

These sugar substitutes are safe when you're pregnant:

- Acesulfame potassium (Ace-K)-added to packaged foods
- Aaspartame-Nutrasweet®, Equal®, store brands
- Cyclamate-Sucaryl, Sugar Twine, Sweet N° Lowe, Weight Watchers®, store brands
- Saccharin-Hermesetas@
- Stevia-Sugar Twin, Truvia@, Pure Via@, store brands
- Sucralose-Splenda®, Sugar Twin®, store brands
- For nutritional reasons, pregnant women should not consume excessive products containing artificial sweeteners, since such foods could replace more nutritious foods. Visit Sugars and Sweeteners for more information.

Visit <u>Sugars and Sweeteners</u> for more information.



Stay active

Staying active is good for your blood sugar, body and mood.

- Aim for 30 minutes of moderate activity on most days of the week.
- Even a 10 minutes' walk after meals can keep your blood sugar from going too high
- Talk to your health care team about what kind of exercise that is best for you during pregnancy.

In Summary

Check your blood sugars at least three times per day; first thing in the morning (fasting) and 1 hour after 2 meals each day.
Take all prescribed medications and a prenatal vitamin each day.
Eat 3 meals and 2 snacks daily, eating within 1 hr of waking up and every 3-4 hrs throughout the day.
Include a bedtime snack every night to help manage fasting blood sugars.
Plan balanced meals and snacks that includes grains or starches, protein, vegetables and fruit.
Limit foods and drinks high in sugar.
Be active for 30 minutes a day.

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For more information on Prenatal Nutrition and Gestational Diabetes, please visit:

Diabetes Canada Gestational diabetes https://www.diabetes.ca/about-diabetes/gestational Health Canada Your Guide to a Healthy Pregnancy https://www.canada.ca/en/public-health/services/health-promotion/healthy-pregnancy/healthy-pregnancy-guide. html

Notes			



Do you have any feedback about this education resource?

Is it welcoming and respectful of your background, culture, and identity? Your opinion is important to us. Please fill out this <u>survey</u> or contact the Patient Education team at <u>patienteducation@toh.ca</u>





Do you need this information in a different format?

Please tell a member of your health-care team so that they can provide you with this information in a format that works for you. This resource is available in English and in French. Cette ressource est disponible en anglais et en français.



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