

GESTATIONAL DIABETES

The aim of this resource is to support you during your pregnancy, alongside the care that you receive from your physician.

INTRODUCTION

This resource contains important information about how, once you have been diagnosed with gestational diabetes, you can effectively manage your blood glucose levels. This information will help you decrease the health risks of gestational diabetes to you and your baby by focusing on glucose monitoring, diet, physical activity, stress management and sleep.

While you are waiting to see your physician:

- monitor your blood sugars
- begin to modify your diet
- incorporate physical activity into your life
- manage your stress levels
- try to improve your sleep



GLUCOSE MONITORING

Glucose monitoring is very important in the management of gestational diabetes! Testing and recording your blood glucose levels helps your doctor work with you to create the best management plan for you to control your blood sugars to promote a healthy pregnancy and delivery.



How do I get my glucose monitor?

You need a prescription from your family doctor for the blood glucose test strips which will allow you to visit the pharmacy and receive the free glucose monitor. The test strips are covered under most insurance programs. If you do not have insurance, please explore other options like the Trillium Drug Plan.

When do I test my glucose levels?



The most important test of the day is the fasting blood glucose, which is right when you wake up and before you eat breakfast. You also need to record your blood glucose 1 hour after you eat breakfast, lunch and dinner [2]. Below is an example log for a week to fill out and bring to your doctor!

Date Week:	Fasting (before breakfast)	1 hour after breakfast	1 hour after lunch	1 hour after dinner	Comments
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					

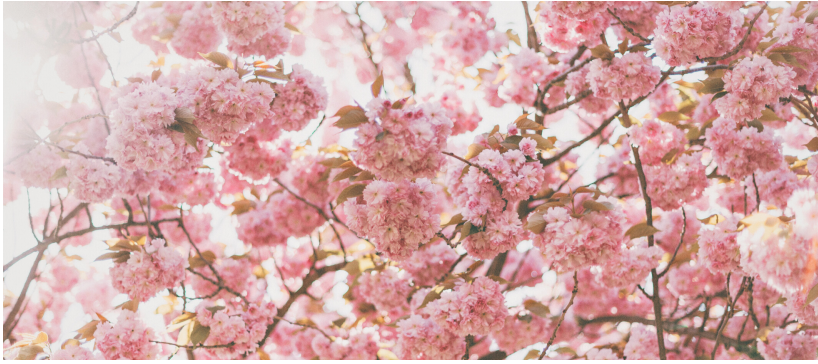
Blood glucose targets [2]

Fasting/before meal:
<5.3 mmol/L

1 hour after meal:
<7.8 mmol/L

The goal is to keep your blood glucose levels below these target numbers to prevent health risks to you and your baby.





The companies that make the blood glucose monitors have great videos on their websites demonstrating how to best use your monitor for accurate results.

Long Term Risks of Gestational Diabetes

People who develop gestational diabetes have a higher risk of developing Type 2 diabetes later in life, but there are things you can do to reduce this risk. Losing the weight you gained in pregnancy, maintaining a healthy weight, staying physically active, eating a healthy diet and getting enough good quality sleep all help reduce the risk of Type 2 diabetes [15]. Breastfeeding also helps reduce blood glucose levels and decreases the risk of Type 2 diabetes [15].



How do I test my blood glucose levels? [1]

1. Wash your hands with warm soapy water, and dry them well.
2. Put a clean needle in the lancet device.
3. Get a test strip from your bottle of testing strips.
4. Get your blood glucose meter ready.
5. Use the lancet device to stick the side of your fingertip with the lancet.
6. Put a drop of blood on the edge of the test strip, covering the test area well.
7. Using a clean cotton ball, apply pressure to the place where you stuck your finger to stop the bleeding.
8. Wait for the results. Record your results!

DIET

When should I eat?

Spread your eating throughout the day over 3 meals and 2-3 snacks [3]. Breakfast is really important for regulating your blood glucose levels. Listen to your body when it tells you that you are hungry or you are full! You have increased nutritional needs during pregnancy and your baby requires balanced nutrition so please do NOT skip meals.



What should I drink?

Your main drink of choice should be water! Avoid fruit juice and artificial sweeteners [4]. Although milk is a healthy choice, just have one cup at a time [4].

How many extra calories should I consume during pregnancy?

During your first trimester, you do not need to consume more calories than your healthy baseline. In your second trimester, it is recommended to consume 340 calories per day more than your healthy baseline. An example of ~340 calories is 1 cup of Greek yogurt with 1 Tbsp of honey and 1 Tbsp of assorted nuts. In your third trimester, it is recommended to consume 450 calories per day more than your healthy baseline. An example of ~450 calories is 60 grams of cheddar cheese and 10 crackers.



What if I'm vegetarian or vegan?

If you already follow a vegan or vegetarian diet, it is safe to continue to do so during pregnancy as long as you are take care of your nutrient needs. It is important to combine your carbohydrates with proteins and iron rich foods at meals and snacks.

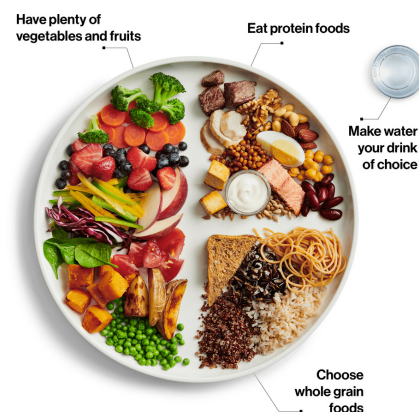


What if identify as Indigenous?

You can explore Canada's Healthy Food Guide to learn about including traditional foods in your diet while still reducing your blood glucose levels. There are a variety of languages available. See the resource list!



What should I eat?



A healthy diet contains a balance of carbohydrates, proteins, and healthy fats [4]. **Canada's Food Guide recommends that your plate should be ½ fruit and vegetables, ¼ protein foods and ¼ whole grain foods** [4]. In order to keep your blood glucose levels below your target levels, it is recommended to eat foods with a lower glycemic index. Please follow this link to explore foods with low, medium and high glycemic index scores! Link: <https://guidelines.diabetes.ca/docs/patient-resources/glycemic-index-food-guide.pdf>

Fruits and vegetables may include peas, sweet potatoes, cabbage, spinach, broccoli, carrots, tomatoes, strawberries, blueberries or apples [4]. Fruit is a healthy choice but because it is high in natural sugars just eat 1-3 fruit portions a day and only eat one portion at a time [5]. A serving of fruit is a small piece of fruit, half of a large fruit, or a half-cup of mixed fruit [5].

Protein foods may include eggs, lean meats and poultry (e.g. turkey, chicken), nuts and seeds (e.g. cashews, almonds), fish and shellfish (e.g. shrimp, salmon), beans, lentils, peas (e.g. chickpeas), tofu, soy products or lower fat dairy products [4]. Healthy ways to prepare protein foods are baking, grilling, poaching and roasting [4]. It is recommended to plan a couple of meatless meals each week [4].

Whole grain foods may include quinoa, whole oats, whole grain pasta, whole grain bread or whole grain brown or wild rice [4]. Starchy foods shouldn't be eaten in excess, but can be included in every meal. Examples of a serving of a starchy food is one cup of cereal or 2 slices of bread [5]. You can compare the nutritional facts to choose products that have more fibre and that are lower in sodium, sugars or saturated fats [4]. Healthy ways to prepare whole grain foods are baking, roasting, steaming and stir-frying [4].

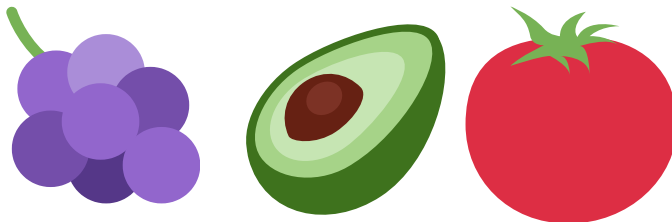
Foods that contain **healthy fats** may include nuts, seeds, avocado, fatty fish (e.g. salmon, trout, mackerel, herring), vegetable oils (e.g. canola, sesame) or soft margarine [4]. Try to choose foods with healthy fats instead of saturated fats.

Limit desserts and sweets because they offer almost no nutritional benefit and contain lots of fat and sugar [5].

Meal Examples [6]



Breakfast (2 carbs=30g)	1 slice whole wheat toast (1 carb) 1 egg 1 cup fat-free milk (1 carb)
Snack (1 carb=15g)	4-6 whole wheat crackers (1 carb) 1 ounce cheddar cheese
Lunch (3 carbs=45g)	2 slices whole wheat bread (2 carbs) 3 ounces turkey Lettuce and tomato 1 cup raw veggies 1 cup berries (1 carb) 1 cup fat-free milk (1 carb)
Snack (2 carbs=15-30g)	2 tablespoons peanut butter 1 small apple (1 carb) 3 cups popcorn (1 carb)
Dinner (3 carbs=45g)	4 ounces skinless chicken breast 1 medium baked potato (2 carbs) 2 tablespoons reduced-fat sour cream 1 cup broccoli salad 1-2 tablespoons salad dressing 1 cup fat-free milk (1 carb)
Snack _1-2 carbs-15-30g)	1/2 banana (1 carb) 2 tablespoons nuts 1/2 cup plain nonfat Greek yogurt (1/2 carb)



Resources

1. Dietitian
2. Healthy Eating for a Healthy Baby by Best Start: <https://nutritionconnections.ca/wp-content/uploads/2021/01/Healthy-Eating-for-a-Healthy-Baby-Booklet-1DEC2020Final.pdf>
3. Your Guide to a Healthy Pregnancy by Health: <https://www.canada.ca/en/public-health/services/health-promotion/healthy-pregnancy/healthy-pregnancy-guide.html>
3. The Pregnancy Weight Gain Calculator by Health Canada: <https://health.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/prenatal-nutrition/pregnancy-weight-gain-calculator.html>
4. General info on Gestational Diabetes from Diabetes Canada: <https://www.diabetes.ca/about-diabetes/gestational>
5. Tips for Healthy Eating based on Aboriginal culture from Diabetes Canada: <https://www.diabetes.ca/DiabetesCanadaWebsite/media/Managing-My-Diabetes/Tools%20and%20Resources/just-the-basics-aboriginal-english.pdf?ext=.pdf>

Tips for Healthy Eating [4]

Take time to enjoy what you're eating

Cook more often, try to limit processed food or eat them less often and in smaller portions

Cook and eat meals with friends and family

PHYSICAL ACTIVITY

Physical activity is a safe and effective way to help control blood glucose levels and reduce health risks. Exercise helps with blood glucose control, weight management and fitness. You should do **aerobic and resistance exercise at moderate intensity, a minimum of 3 times a week for 30-60 minutes each time** [7]. Aerobic exercise is anything that increases your heart rate, like jogging and swimming, and resistance exercise is anything that builds muscle, like weightlifting. Aerobic and resistance exercise can be paired with recreational physical activity like soccer, basketball or soft ball. Warm ups and cool downs with stretching are also recommended [7]. People who have not participated in much physical activity before pregnancy should begin with 15 minutes of continuous aerobic exercise 3 times a week and **gradually increase to 30 minutes 5 times a week** [7].



Exercise helps control glucose levels and can prevent, reduce or delay the need for insulin, a medication that is sometimes used in gestational diabetes [7]. Consistent exercise during pregnancy decreases the health risks associated with elevated glucose levels [7,9]. Regular physical activity helps regulate your blood glucose and helps your baby build a healthy metabolism [10].



Pregnancy puts many demands on your body so be kind and patient with yourself as you begin or continue incorporating exercise into your daily life.



Target Exertion Levels [8]

HEART RATE RANGES FOR PREGNANT WOMEN

MATERNAL AGE	FITNESS LEVEL or BMI	HEART RATE RANGE (beats/minute)
Less than 20	-	140-155
20-29	Low Active Fit BMI>25 kg m ⁻²	129-144 135-150 145-160 102-124
30-39	Low Active Fit BMI>25 kg m ⁻²	128-144 130-145 140-156 101-120

In order to really experience the benefits from exercising, it is important to try to reach the target heart rate ranges in the chart below. However, you don't want to exert excessively, so try the talk test [8]! If you can't hold a conversation while exercise, you are pushing yourself too hard.



Tips for Exercise During Pregnancy [11]

General Guidelines for Physical Activity

Do	Don't
Moderate and regular physical activity unless your health care provider tells you not to.	Get too tired while working out or doing physical activity.
Choose activities like swimming, that do not require a lot of standing or balance.	Do any activity while lying on your back when you are in your 2nd or 3rd trimester of pregnancy.
Wear loose, light clothing that will not make you sweat too much or get too hot.	Perform activities in very hot weather.
Drink a lot of water before, during, and after your activity.	Perform activities that may bump or hurt your belly, or that may cause you to lose your balance.
Eat a healthy diet and gain the right amount of weight.	Fast (skip meals) or do physical activity when you are hungry.
Watch your level of exertion (Can you talk easily?).	Over-exert yourself.

Examples of Exercise Activities

Lower intensity: yoga, tai chi, walking, swimming

Higher intensity: jogging, rope skipping, rowing, hiking, dance, aerobic exercise classes, weightlifting



STRESS MANAGEMENT

Stress can have significant adverse effects on pregnancy, as well as maternal and fetal health. Pregnancy may be a stressful time in your life and the diagnosis of gestational diabetes may add to the uncertainty you are experiencing. It is okay to feel anxious but we encourage you to use this time to connect with your body and develop healthy stress management techniques. Using effective techniques to alleviate stress during pregnancy promotes good maternal and baby health [12].

Stress Management Techniques



Activities

- o Prenatal yoga
- o Exercise
- o Meditation and mindfulness
- o Explore self-care (baths, cooking, time with friends and family)
- o Journaling

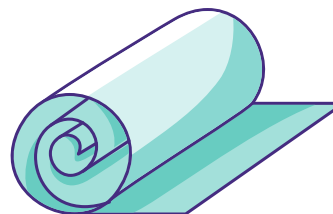


Education

- o Childbirth classes



Speak to a healthcare professional



Recommended Resources

Apps:

Headspace
Mind Beacon
MindShift

Calm

-Among many more apps

Website:

Wellness
Together
Canada

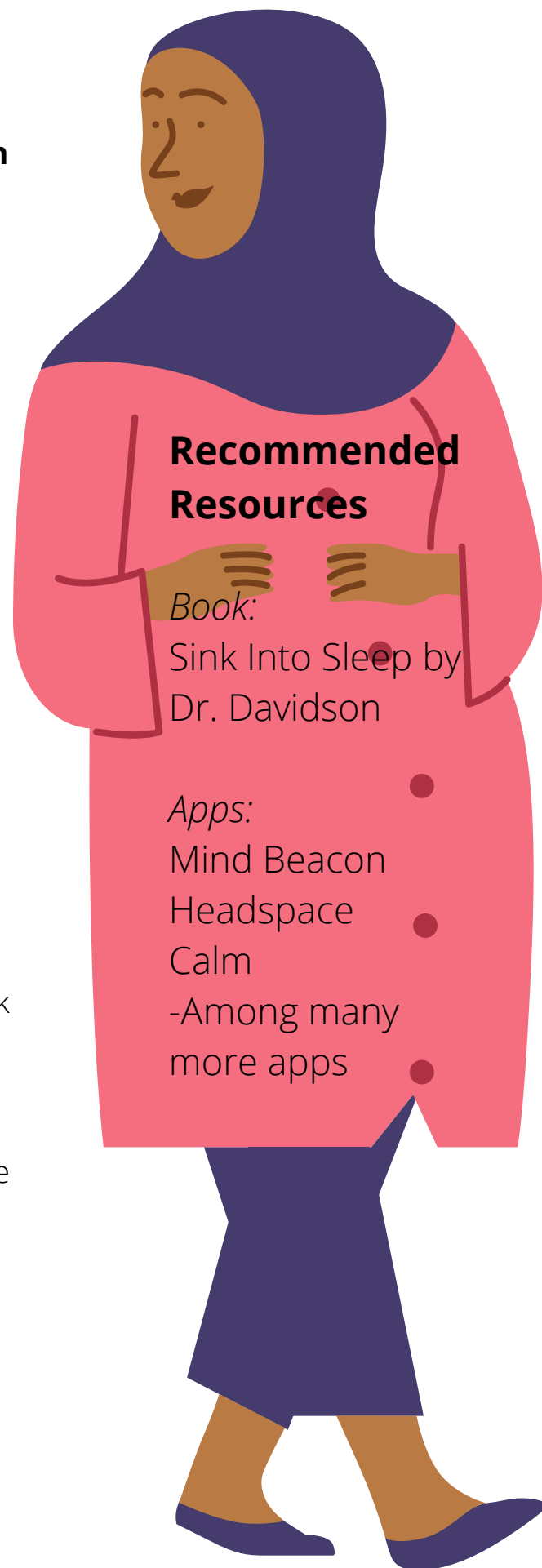


SLEEP

There are lots of **benefits to getting adequate, high quality sleep** during pregnancy! Along with boosting your energy, reducing stress, preparing your body and mind for the delivery and reducing pregnancy discomfort, sleep is crucial to keeping blood glucose levels in a healthy range. Regular, adequate sleep promotes a good metabolism and therefore helps optimize glucose control during pregnancy for people with gestational diabetes [13].

It is normal that sleep during pregnancy may be challenging so be patient with yourself. **Many people find it harder to fall asleep or your sleep may be disrupted throughout the night.** Fluid restriction (e.g. not drinking any liquids 2 hours before bed) may help if you are waking up because of your bladder. Try to create the time and space for adequate sleep during your pregnancy and speak to a healthcare professional if you are struggling to sleep well.

If your job requires **shift work**, you may want to speak to your physician about your sleep schedule and whether shift work is appropriate during pregnancy. The sleep changes associated with shift work can increase your blood glucose levels and the need to use insulin to manage your gestational diabetes [14].



Recommended Resources

Book:

Sink Into Sleep by
Dr. Davidson

Apps:

Mind Beacon

Headspace

Calm

-Among many
more apps



Sleep Hygiene Tips

Throughout the day

- o Regular physical activity
- o Limit or avoid daytime napping unless your sleep is inadequate at night
- o Maintain blood glucose targets

At bedtime

- o Put screens away one hour before bed
- o Avoid caffeinated beverages at night
- o Drink water strategically (do not drink water for the 2 hours before bed)
- o Maintain consistent sleep times
- o Keep to a bedtime ritual, including relaxing activities
- o Create an environment conducive to sleep (e.g. temperature, light, mattress)

During sleep

- o Experiment with comfortable positions
- o Practice mindfulness or meditation

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