



HAVING A BABY?

Now is the time to learn
more about
gestational diabetes



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TABLE OF CONTENTS

Introduction	4
Eating patterns and food intake	5
Weight gain during pregnancy	6
Healthy eating	8
General guidelines	9
Your plate	10
How much should I eat?	11
Physical activity	12
Keeping track of your activities	14
Monitoring your blood sugar	17
Insulin	19
If you need insulin	20
Preparing a single type of insulin	21
Injecting insulin	24
Where to inject?	26
Two kinds of insulin in one syringe	27
Hypoglycemia	29
During pregnancy	30
After the baby is born	32
The future	33
My appointments	34
Frequently Asked Questions	35
Notes	37

INTRODUCTION

Some women develop diabetes when they are pregnant.

Why do you need to know if you have diabetes?

- Diabetes means there is too much sugar in your blood. This may be harmful to you and your baby.
- There are things you can do to reduce the sugar in your blood.

What can you do to keep your sugar level safe?

There are several things you can do;

- Eat a healthy diet.
- Be physically active.
- Keep your appointments with your doctor and health team.

In the next pages we will find out more about you and what you can do to have a healthy baby.

EATING PATTERNS AND FOOD INTAKE

Let's talk about your eating patterns first. You can find out more about what you should eat and how much you should gain on [page 8](#).

TYPE OF FOOD

AMOUNT

For breakfast at:

I eat:

Mid morning at:

I eat:

At lunch at:

I eat:

Mid afternoon at:

I eat:

For dinner at:

I eat:

Before going to bed at:

I eat:

WEIGHT GAIN

DURING PREGNANCY

Almost all women should gain some weight during pregnancy but it is important not to gain too much weight.

The amount of weight you should gain is calculated from your weight before you got pregnant and is determined from your Body Mass Index (BMI).

STEP A:

Write your weight in kilograms here

Write your height in metres here
(Divide height in cms by 100)

To calculate your BMI:

$$\frac{\text{Weight (kg)}}{\text{Height in metres}^2} = \text{BMI}$$

$$\frac{\text{[Weight Box]}}{\text{[Height Box]} \times \text{[Height Box]}} = \text{[BMI Box]} = \text{BMI}$$

Circle the category you are in.

BMI	<18.5	18.5 - 24.9	25 - 29.9	Over 30
Weight category	Underweight	Normal weight	Overweight	Obese

In some Asian countries, the weights in each category are slightly lower.

STEP B:

In the table below circle the amount of weight you should gain in your pregnancy.

If your BMI is	Your recommended weight gain is
Less than 18.5	12.5 – 18 kg
18.5 - 24.9	11.5 - 16 kg
25 - 29.9	7 - 11.5 kg
Over 30	5 - 9 kg

HEALTHY EATING

WHAT KINDS OF FOOD SHOULD YOU EAT TO KEEP YOU AND YOUR BABY HEALTHY?

In order to get all the vitamins and minerals you and your baby need, you should try to eat food rich in vitamins and nutrients from different sources every day.

That means you should eat:

- Grains and starches, such as wheat, rice, oats and corn
- Vegetables and fruits
- Vegetable protein such as lentils, pulses, tofu and nuts
- Animal proteins such as egg white, chicken and fish
- Milk and milk sources such as yogurt and cheese

Note:

- Fish that may contain higher levels of methyl mercury should be limited such as fresh and frozen tuna, shark, swordfish, marlin, oranga roughy and escolar
- Try to eat 3 meals and 3 snacks a day. By spreading the food out over the day you will be better able to keep your blood sugar in the target range and you will not be hungry.

GENERAL GUIDELINES

- Include 4-5 servings of yellow and green vegetables in the daily diet
- Include iron rich foods like brown rice and wheat germ
- Include fresh wholesome foods – whole fruits instead of fruit juices, whole grains/ multigrain flours instead of refined flours
- Include adequate intake of fluids – 2 litres/day unless your health team has advised lower quantities
- Include minimum of 650ml of milk allowances to meet the calcium needs
- Eat less junk food, bakery products, fried foods, salted foods
- Eat less oil
- Minimize sugars and artificial sweeteners
- Avoid alcohol and tobacco in all forms
- Avoid saccharin and cyclamate

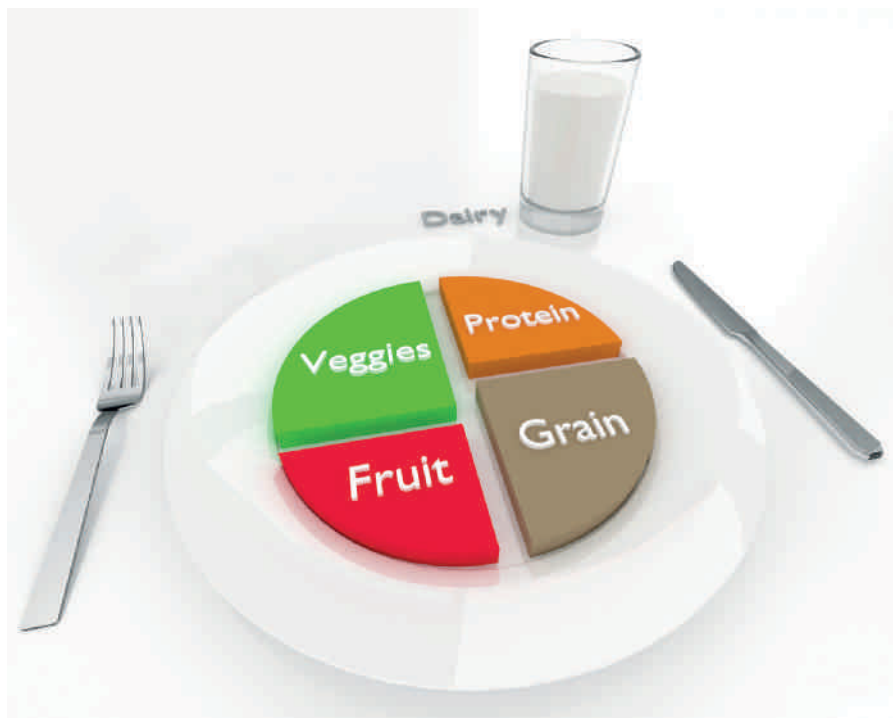
DO YOU NEED EXTRA VITAMINS?

Most women will take folic acid 0.4—1.0 mg, prior to and during pregnancy. You may also be asked to take iron and calcium supplements.

YOUR PLATE

One way to decide how much to eat is to divide your plate like the one below. Up to half the plate should contain vegetables and fruit, about one quarter of the plate should be starch or grains and the remainder protein and calcium rich foods.

Milk and fruit should be added to every meal.



HOW MUCH SHOULD I EAT?

If you are able to see a dietitian she will give you an exact calorie level to follow.

If you are not able to see a dietitian you should eat as usual for the first 3 months of your pregnancy.

At about the 4th month of the pregnancy you could add about 350 calories a day to the meal plans.

If you were overweight (BMI 25 and over) before you became pregnant you should likely not increase as much.

If you were underweight (BMI less than 18.5) before you got pregnant you could eat even more.

Be sure to weigh yourself during the pregnancy to see if you are gaining as on [page 7](#).



PHYSICAL ACTIVITY

HOW DOES EXERCISE HELP YOUR BLOOD SUGAR?

Exercise means being active. It helps to lower blood sugar. When you have gestational diabetes being active every day can help lower your blood sugar.

WHAT IS EXERCISE?

Walking is good exercise.

What else might you do to stay active?

Before starting exercise discuss with your healthcare team what you plan to do.

Start with light to moderate exercise, i.e. 10 minute walk after meals and upper body exercises while seated.

Work up to at least 30 minutes a day.

CAUTION...

- Do not do any exercises while lying flat on your back.
- Stop exercising if you feel contractions.
- Stop exercising if your heart rate goes over 140 beats per minute.
- If you are taking insulin and feel you are having a low blood glucose, stop exercising and treat it.

WHAT ACTIVITY DO YOU USUALLY DO DURING THE DAY?

AROUND THE HOUSE

- sweeping or cleaning inside
- sweeping or cleaning outside
- gardening
- standing while washing or cooking

AT WORK

- walk to work? How far (in Km)?
- pedal bike to work
- sitting all day
- standing all day
- walking around all day
- lifting

LEISURE ACTIVITY

- play with children
- go for a walk, for how long?
- other activity?

KEEPING TRACK OF ACTIVITY

It helps to keep track of your activity and gradually try to increase the time you are active.

Start by recording how many minutes a day you are physically active - this could be going for a walk, cleaning the house, working in the garden etc. Do this for three days and then see what is the usual amount of activity you do by adding up all the minutes and dividing by 3.

Day 1 _____minutes

Day 2 _____minutes

Day 3 _____minutes

Total _____minutes for 3 days

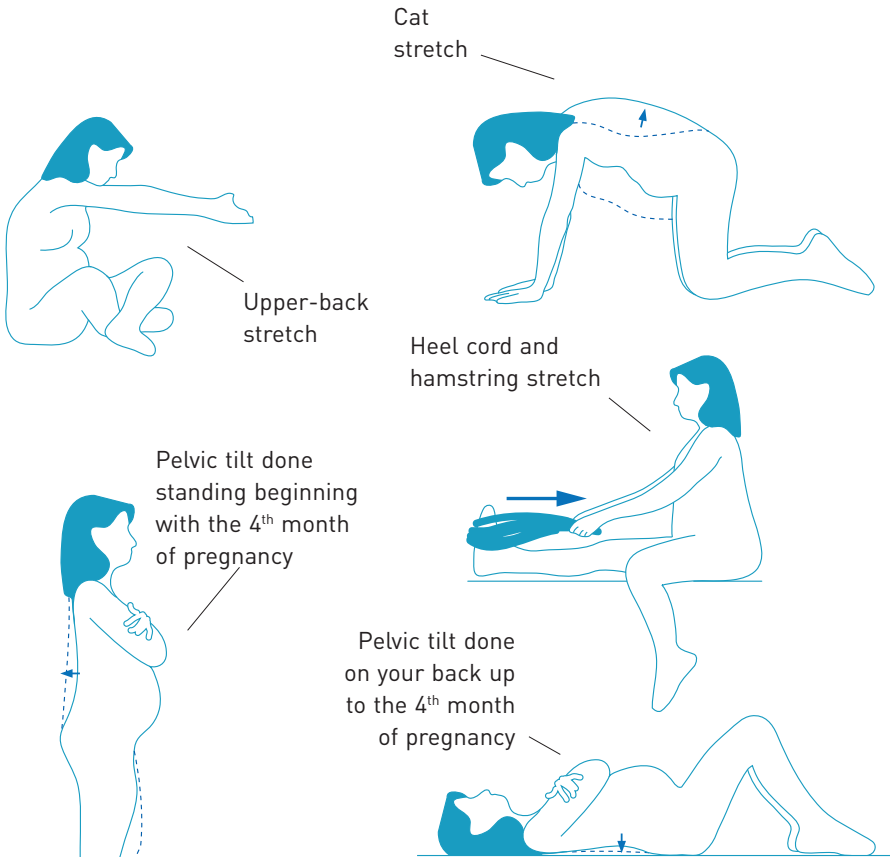
Divide by 3 = _____average minutes per day

Now keep a record of your activity in the chart on page 15. Try to do the average or better every day.

Another option is to wear a pedometer or device that counts your steps. Track your steps daily and gradually increase the number you take every day.

EXERCISES TO IMPROVE FLEXIBILITY

Do these exercises once a day. Try to do each one six times. Do them slowly and stop if you experience pain or discomfort.



MONITORING YOUR BLOOD SUGAR

Your blood sugar will need to be checked several times during your pregnancy.

You might do this at home if you have a blood glucose meter, or you might need to go to the clinic to have the test done.

Ask your health provider how often you should check your blood glucose or go to the clinic to have it checked.

Your numbers should be:

Before eating	less than 5.3 mmol/L (95 mg/dl)
1 hour after a meal	less than 7.8 mmol/L (140 mg/dl)
2 hours after a meal	less than 6.7 mmol/L (120 mg/dl)

Record your results in the table on the next page.



INSULIN

WHY DO SOME WOMEN TAKE INSULIN?

Some women do not make enough of their own insulin as the baby grows. Also their insulin may not work well.

Wise food choices + being active + a healthy body weight all help to lower blood sugar. If this is not enough, taking insulin helps get your blood sugar to a healthy level.

IS INSULIN RECOMMENDED FOR YOU?

Yes No (If no, go to [page 30](#))

HOW WILL YOU TAKE INSULIN?

Insulin is injected using a syringe and a needle. Some people use an insulin pen.

Be sure that your syringe matches the strength of the insulin you take. Insulin strengths are U40 or U100.

WHAT WILL YOU NEED TO INJECT INSULIN?

Syringes with needle or an insulin pen - Insulin may come in a bottle (vial) or in a cartridge that fits in the pen.

IF YOU NEED INSULIN

WHAT KIND OF INSULIN WILL I TAKE?

Date	Name of insulin	Amount (dose)	Time	Time it works best

WHAT SHOULD MY INSULIN LOOK LIKE?

NPH insulin or premix 70/30 insulin is cloudy.

Detemir and regular or rapid acting insulin are clear.

Name of my insulin	What it looks like

WHERE CAN I KEEP MY INSULIN?

- Keep it in the fridge but not in an area where it might freeze.
- Mark the date you start using the insulin on the vial. After one month start a new vial.
- Keep insulin out of sunlight.

PREPARING A SINGLE TYPE OF INSULIN INJECTION

HOW TO PREPARE INSULIN USING A SYRINGE?

First you need to get the insulin into the syringe. Here is how you do it:

1. Wash your hands.



2. Get a syringe with a needle and your insulin.



3. Make sure you have the right insulin. Check the name on the bottle.



4. If the insulin is cloudy roll the bottle upside down between your hands to mix. Do not shake it.



5. Take the cap off the needle.



6. Pull the plunger back to draw in air equal to the amount of insulin you take.



7. Put the needle through the rubber top.



8. Inject the air into the bottle and leave the needle in the bottle.



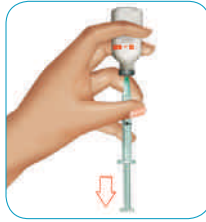
9. Turn the bottle upside down.



10. Keep the tip of the needle in the insulin.



11. Pull back on the plunger until you have the right amount of insulin in the syringe.



12. If there are bubbles, tap the syringe with your finger. The bubbles should go to the top. Push them back into the bottle.



13. Recheck that you have the right dose of insulin.



14. Pull the needle out of the bottle and lay the syringe carefully on a table. Do not let the needle touch anything.



INJECTING INSULIN

HOW TO INJECT INSULIN

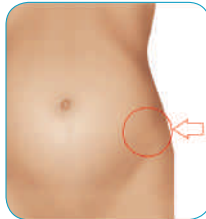
1. Wash your hands.



2. Prepare the syringe.



3. Choose the spot where you will give yourself insulin.



4. Gently pinch up a fold of skin between the thumb and index finger of one hand (as shown in the picture)



5. With the other hand hold the needle at 45-90 degree angle to the skin and push the needle through the skin quickly.



6. Push the plunger all the way down.



7. Make sure all the insulin has gone in.



8. Count to 10 while the needle is still inserted.



9. Pull the needle out and apply a little pressure on the spot.

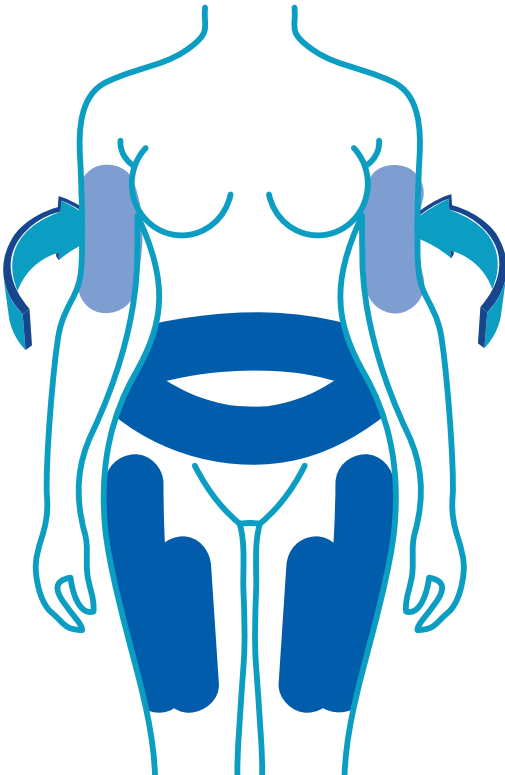


WHERE TO INJECT?

Change spots where you inject. You might inject into your upper arms in the day and into your upper leg in the evening. Move 2 inches from the spot you injected into the last time.

The blue areas in the diagram below show the spots where you can inject your insulin. You may not want to use your abdomen during pregnancy, arms and legs are preferred.

COMMON INSULIN INJECTION SITES



TWO KINDS OF INSULIN IN ONE SYRINGE

DO YOU NEED TO MIX NPH AND REGULAR INSULIN IN ONE SYRINGE?

Yes No (If no, go to [page 30](#))

IF YOU MIX NPH AND REGULAR INSULIN IN ONE SYRINGE, HERE IS WHAT TO DO:

1. Wash your hands.
2. Get the syringe with a needle and both bottles of insulin.
3. Be sure you have the right kinds of insulin. Check the names on the bottles.
4. Roll the cloudy insulin bottle upside down between your hands to mix. Do not shake it.
5. Write down the name of the insulin you take and the strength:

U40 or U100

Clear insulin: Name _____ Dose _____

Cloudy insulin: Name _____ Dose _____

Total insulin: _____

6. Take the cap off the needle.
7. Pull the plunger back to draw in air equal to the amount of clear insulin you take.

8. Put the needle through the rubber top of the clear insulin bottle.
9. Inject the air into the clear insulin bottle and pull out the needle.
10. Pull the plunger back to draw in air equal to the amount of cloudy insulin you take.
11. Put the needle through the rubber top of the cloudy insulin bottle.
12. Inject the air into the cloudy insulin bottle and leave the needle in the bottle.
13. Turn the bottle upside down.
14. Keep the tip of the needle in the insulin.
15. Pull back on the plunger until you have the right amount of cloudy insulin in the syringe.
16. If there are bubbles, tap the syringe with your finger. The bubbles should go to the top. Push them back into the bottle.
17. Recheck that you have the right dose of insulin.
18. Pull the syringe out of the bottle and put the needle into the bottle with the clear insulin.
19. Turn the bottle upside down.
20. Keep the tip of the needle in the insulin.
21. Pull back on the plunger until you have the total amount of insulin needed.
22. If you mix some of the cloudy insulin in with the clear insulin throw out the bottle of clear insulin . Use a new bottle for the next injection.

HYPOGLYCEMIA

When you take insulin it is possible that your blood glucose might drop too low.

If this happens you might feel:

- Shaky
- Sweating
- Heart pounding
- Hungry
- Dizzy

If you feel any of these you need to eat something sweet right away, such as:

- 3 teaspoons of sugar sugar or honey
- 3/4 glass of juice
- 3/4 can of regular soft drink
- 4-6 hard candies, chewed
- 15 grams glucose in the form of glucose tablets

If your blood glucose goes low before a meal, treat the low then eat the meal. If your next meal is more than 1 hour away, have a snack.

You can prevent your blood sugar from dropping too low by eating your meals on time and eating a little extra if you are going to be very active.



DURING PREGNANCY

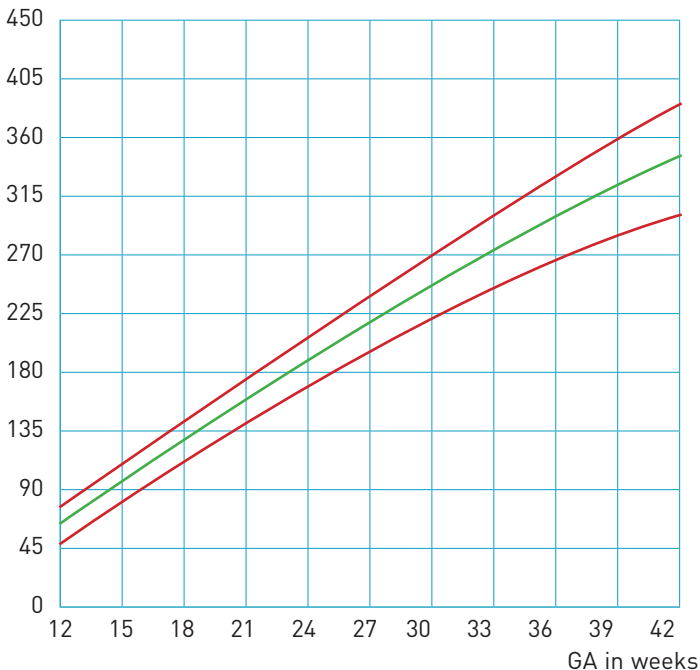
Your doctor will measure the size of your baby at every visit. By keeping your blood sugar at normal levels it is likely your baby will not become too large.

If your blood sugars are too high during the pregnancy,

- the baby may be bigger than normal.
- the baby may have trouble breathing after birth.
- the baby may have a low blood sugar immediately after birth.

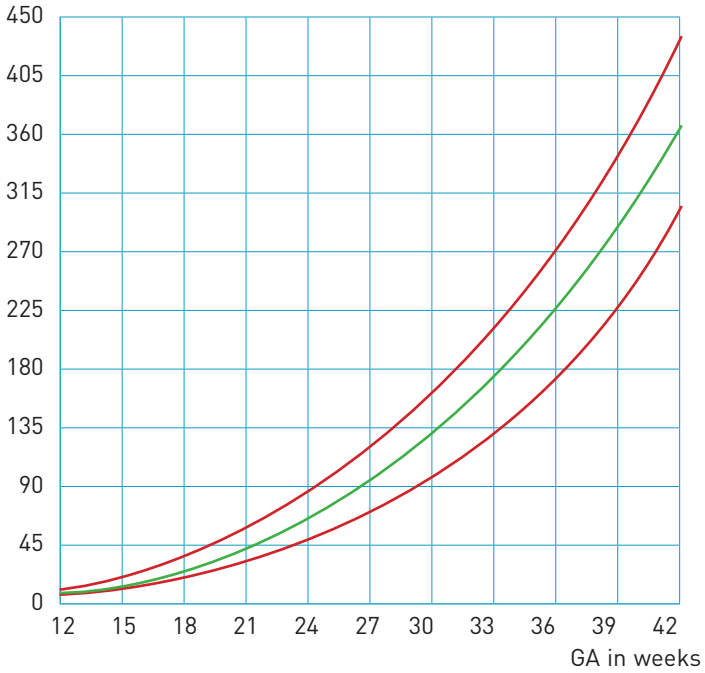
Ask your doctor to mark on these graphs where your baby is at every appointment. The green line shows the average abdominal circumference. Most babies will be between the two red lines.

AC in mm



Ask your doctor to mark on these graphs where your baby is at every appointment. The green line shows the average weight. Most babies will be between the two red lines.

WEIGHT BPD AC in gms*10



AFTER THE BABY IS BORN

Your blood sugars will likely return to normal and you may not need insulin. You may have another blood test done a day after delivery just to make sure your level has returned to normal.

Your baby will not have diabetes.

Your baby may have slightly low blood sugar levels in the first hours after birth. This may require the baby be given some sugar water.

You should breast feed your baby. Breast feeding improves blood sugars and has been shown to reduce the chances of developing diabetes in the future.

You should get back to a healthy weight by eating healthy meals and getting some regular physical activity.

BIRTH CONTROL

Your next pregnancy should be planned. Breast feeding offers some protection against getting pregnant but is not a guaranteed birth control method. Speak to your doctor about birth control until you are ready to get pregnant again. You should not rely on breast feeding as a contraceptive.

VERY IMPORTANT

Between 6 – 12 weeks after your baby is born you need to return to the clinic for a blood test. Your blood will be tested before you eat and then after you have had a 75 gm glucose drink.

This test will determine if you have developed pre-diabetes or diabetes.

THE FUTURE

ANOTHER PREGNANCY?

Yes you can have another baby, but your risk of developing gestational diabetes again is very high. Be sure to get your blood sugar checked before you get pregnant. Once you are pregnant go to see your doctor early in the pregnancy and be sure to tell the doctor you had gestational diabetes mellitus.

RISK OF TYPE 2 DIABETES

Women who have had gestational diabetes mellitus are at high risk of developing type 2 diabetes. You should have a blood test done every year to see if you have developed diabetes.

The best way to prevent diabetes is to eat a healthy diet and to be physically active.



FREQUENTLY ASKED QUESTIONS (FAQ'S)

1. HOW DO I KNOW I HAVE GESTATIONAL DIABETES?

You had a number of blood tests and the result show that you have gestational diabetes. Ask your doctor to tell you what your results were.

2. WHY DID I GET GESTATIONAL DIABETES?

There are some risk factors for gestational diabetes, such as being overweight, having a family history of diabetes, being of Asian, South Asian, Hispanic, Aboriginal, Middle Eastern, African descent, having had a large baby previously or being over 25 years old. But sometimes we don't know why some women get gestational diabetes.

3. WHY DON'T I FEEL ANY DIFFERENT?

You don't feel any different because your blood sugars are not very high. They are just a little bit above normal, not high enough to cause symptoms but high enough to cause problems for you and the baby if they are not lowered.

4. WHAT DO I HAVE TO DO?

Most women can manage their gestational diabetes by following a healthy meal plan, gaining only the recommended amount of weight and getting some regular exercise. A dietitian can help you with a healthy meal plan, but in simple terms it means eating 6 small meals a day and being careful about portion sizes. Read the pages in this booklet about meal planning.

Regular exercise means simply being active every day - going for a walk or a swim - doing something that gets you blood circulating and muscles moving. Pregnancy is a time to be active and please check with your obstetrician if you are planning to start a new activity. Yoga and meditation can also be added to regular exercise.

5. WHEN SHOULD I CALL THE DOCTOR?

You should call the doctor if you have contractions, if you have any bleeding or discharge or if you are not feeling the baby move as much as usual. If you are using a blood glucose meter to check your blood sugar, you should call if your results are higher or lower than your target.

6. WILL MY BABY BE OK?

Gestational diabetes does pose some risks for your baby if it is not well managed. For instance your baby might get too big making delivery difficult. Also, the baby may have some problems like low blood sugar, jaundice and low calcium. But if you follow the advice of the doctor and the health team your baby should be healthy.

7. WILL MY BABY HAVE DIABETES?

No, babies are not born with diabetes. Your child may be at higher risk of being overweight and developing diabetes as he or she gets older. Healthy eating and regular physical activity will help prevent your child from being overweight and developing diabetes.

8. WILL GESTATIONAL DIABETES GO AWAY?

Yes, in most women blood sugars go back to normal as soon as the baby is born. In those women where diabetes does not go away, it means they probably had diabetes before they became pregnant but likely did not know it.

9. CAN I HAVE ANOTHER BABY?

Yes you can! But the chances are very high that you will get gestational diabetes again. You should have regular blood tests before you get pregnant to be sure you don't already have diabetes, and then you should be tested regularly during the pregnancy. Remember that maintaining a healthy weight and doing regular exercise will help to prevent gestational diabetes from developing again.

10. WILL I ALWAYS HAVE DIABETES?

Probably not. In most women the blood sugars become normal as soon as the baby is born. But the risk of diabetes coming back within a few months to a few years is quite high. You can help to prevent that by staying at a healthy weight, getting regular exercise and breast feeding.

MY BABY

Name of baby

Date of birth

Weight at birth

Length of baby

Amount of hair

Colour of eyes

Paste a picture of your baby here:



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