GESTATIONAL DIABETES MELLITUS

Ques. 1 - What is gestational diabetes?

Ans- Gestational Diabetes Mellitus (GDM) is defined as 'carbohydrate intolerance with recognition or onset during pregnancy', irrespective of the treatment with diet or insulin. The importance of GDM is that two generations are at risk of developing diabetes in the future. Women with a history of GDM are at increased risk of future diabetes, predominately type 2 diabetes, as are their children.

Ques. 2 - What causes gestational diabetes?

Ans- Changing hormones and weight gain are part of a healthy pregnancy. But both changes make it hard for the body to keep up with its need for a hormone called insulin. When that happens, your body doesn't get the energy it needs from the food you eat.

A pregnant woman who is not able to increase her insulin secretion to overcome the insulin resistance that occurs even during normal pregnancy develops gestational diabetes.

Ques. 3 - What is my risk of gestational diabetes?

Ans - To learn the risk for gestational diabetes, check each item that applies to the pregnant woman.

- I have a parent, brother, or sister with diabetes.
- I am American Indian, Asian American
- I am 25 years old or older.
- I am overweight.
- I have had gestational diabetes before, or I have given birth to at least one baby weighing more than 4.05 kg
- I have been told that I have "pre-diabetes," a condition in which blood glucose levels are higher than normal, but not yet high enough for a diagnosis of diabetes. Other names for it are "impaired glucose tolerance" and "impaired fasting glucose."

KNOW YOUR RISK OF DEVELOPING GESTATIONAL DM	
High risk	• Overweight (BMI > 30), • Have had gestational diabetes before, • Have a strong family history of diabetes, or • Have glucose in your urine
Average risk	• Checked one or more of the above mentioned risk factors
Low risk	• Did not check any of the above mentioned risk factors

Ques. 4 - When will I be checked for gestational diabetes?

Ans - Your doctor will decide when you need to be checked for diabetes depending on your risk factors.

- If you are at high risk, your blood glucose level may be checked at your first prenatal visit. If your test results are normal, you will be checked again sometime between weeks 24 and 28 of your pregnancy.
- If you have an average risk for gestational diabetes, you will be tested sometime between weeks 24 and 28 of pregnancy.

Due to high prevalence, screening is essential for all Indian pregnant women. DIPSI (Diabetes In Pregnancy Study group India recommends) that as a pregnant woman walks into the antenatal clinic in the fasting state, she has to be given a 75g oral glucose load and at 2 hrs a venous blood sample is collected for estimating plasma glucose. This one step procedure of challenging women with 75 gm glucose and diagnosing GDM is simple, economical and feasible. Screening is recommended between 24 and 28 weeks of gestation and the diagnostic criteria of ADA (American Diabetes Association) are applicable.

The recent data on the prevalence of GDM in our country was 16.55% by WHO criteria of 2 hr PG ≥
140 mg/dl. As such Universal screening during pregnancy has become important in India.

Ques. 5 - How is gestational diabetes diagnosed?

Ans- Depending on the risk and the test results, the pregnant woman may be advised to undergo one or more of the following tests:

1. Fasting blood glucose or random blood glucose test

- Before this test, the pregnant woman will be asked to fast, which means having nothing to eat or drink except water for at least 8 hours ***OR***
- Doctor may check your blood glucose at any time during the day. This is called a random blood glucose test.

Note: These tests can find gestational diabetes in some women, but other tests are needed to be sure diabetes is not missed.

2. Screening glucose challenge test

- For this test, the pregnant woman will be made to drink a sugary beverage and have your blood glucose level checked an hour later. This test can be done at any time of the day. If the results are above normal, you may need further tests.

With 75 gm OGTT (WHO criteria);		
	In Pregnancy	Outside Pregnancy

2 hr ≥ 200 mg/dl	Diabetes	
2 hr ≥ 140 mg/dl	GDM (Gestational Diabetes Mellitus)	Diabetes IGT (Impaired Glucose Tolerance)
2 hr ≥ 120 mg/dl	DGGT (Decreased Gestational Glucose Tolerance)	—

3. Oral glucose tolerance test

- American Diabetes Association (Carpenter and Couston) recommends 3 hour 100gm OGTT (Oral Glucose Tolerance Test) and Gestational Diabetes Mellitus is diagnosed if any 2 values meet or exceed FPG > 95 mg/dl, 1 hr PG > 180 mg/dl, 2 hr PG > 155 mg/dl and 3 hr PG > 140 mg/dl.

4. A1C/Glycosylated Haemoglobin

- A blood test that gives the average amount of glucose in the blood over the past 3-4 months.
- An A1C 5.6% or below is normal. In pre-diabetes, A1C levels range between 5.7%-6.4%. If the A1C is 6.5% or above, a person has diabetes.

Ques. 6 - How will gestational diabetes affect my baby?

Ans- Untreated or uncontrolled gestational diabetes can mean problems for your baby, such as

- being born very large and with extra fat; this can make delivery difficult and more dangerous for your baby
- low blood glucose right after birth
- breathing problems

If you have gestational diabetes, your health care team may recommend some extra tests to check on your baby, such as

- an ultrasound exam, to see how your baby is growing
- "kick counts" to check your baby's activity (the time between the baby's movements) or special "stress" tests

Working closely with your health care team will help you give birth to a healthy baby.

Both you and your baby are at increased risk for type 2 diabetes for the rest of your lives.

Ques. 7 - How will gestational diabetes affect me?

Ans - Often, women with gestational diabetes have no symptoms. However, gestational diabetes may

- increase your risk of high blood pressure during pregnancy
- increase your risk of a large baby and the need for caesarean section at delivery

- The good news is your gestational diabetes will probably go away after your baby is born. However, you will be more likely to get type 2 diabetes later in your life. You may also get gestational diabetes again if you get pregnant again.
- Some women wonder whether breastfeeding is OK after they have had gestational diabetes. Breastfeeding is recommended for most babies, including those whose mothers had gestational diabetes.
- Gestational diabetes is serious, even if you have no symptoms. Taking care of yourself helps keep your baby healthy.

Ques. 8 – What dietary guidelines needs to be followed during gestational diabetes?

Ans - Treating gestational diabetes means taking steps to keep your blood glucose levels in a target range. You will learn how to control your blood glucose using

Using a meal plan will help keep your blood glucose in your target range.

- a meal plan
- physical activity
- insulin (if needed)

Meal Plan

You will talk with a dietitian or a diabetes educator who will design a meal plan to help you choose foods that are healthy for you and your baby. Using a meal plan will help keep your blood glucose in your target range. The plan will provide guidelines on which foods to eat, how much to eat, and when to eat. Choices, amounts, and timing are all important in keeping your blood glucose levels in your target range.

You may be advised to

- limit sweets
- eat three small meals and one to three snacks every day
- be careful about when and how much carbohydrate-rich food you eat; your meal plan will tell you when to eat carbohydrates and how much to eat at each meal and snack
- include fiber in your meals in the form of fruits, vegetables, and whole-grain crackers, cereals, and bread.

Ques. 9 – What are the Calorie requirements during GDM?

Ans- The meal pattern should provide adequate calories and nutrients to meet the needs of pregnancy. The expected weight gain during pregnancy is 300 to 400 gm/week and total weight gain is 10 to 12 kg by term. Hence the meal plan aims to provide sufficient calories to sustain adequate nutrition for the mother and fetus and to avoid excess weight gain and post prandial hyperglycemia. Calorie requirements depends on age, activity, pre pregnancy weight and stage of pregnancy. Approximately 30 to 40 Kcal/kg ideal body weight or an increment of 300 kcal/day above the basal requirement is needed.

Pregnancy is not the ideal time for obesity correction. Underweight subjects or those not gaining weight as expected, particularly in the third trimester, require admission to ensure adequate nutrition to prevent low birth weight infants.

Ques. 10 – Is calorie counting recommended during GDM?

Ans – Yes, Calorie Counting is recommended during GDM.

As a part of the medical nutrition therapy, pregnant diabetic woman are advised to wisely distribute their calorie consumption especially the breakfast. This implies splitting the usual breakfast into two equal halves and consuming the portions with a two hour gap in between. By this the undue peak in plasma glucose levels after ingestion of the total quantity of breakfast at one time is avoided.

For example if 4 idlis / chappathi / slices of bread (applies to all type of breakfast menu) is taken for breakfast at 8 am and two hours plasma glucose at 10 am is 140mg: the same quantity divided into two equal portions i.e., one portion at 8 am and remaining after 10 am, the two hours post prandial plasma glucose at 10.00 am falls by 20 – 30 m

This advice has scientific basis as the peaking of plasma glucose is high with breakfast (due to Dawn phenomenon) than with lunch and dinner. Further in a normal person, insulin secretion is also high with breakfast than with lunch or dinner. GDM mothers have deficiency in first phase insulin secretion and to match this insulin deficiency the challenge of quantity of food at one time should also be less

Ques. 11 - How will I know whether my blood glucose levels are on target?

Ans - Your health care team may ask you to use a small device called a blood glucose meter to check your levels on your own. You will learn
how to use the meter

- how to prick your finger to obtain a drop of blood
- what your target range is
- when to check your blood glucose
- You may be asked to check your blood glucose
- when you wake up
- just before meals

- 1 or 2 hours after breakfast
- 1 or 2 hours after lunch
- 1 or 2 hours after dinner

The following chart shows blood glucose targets for most women with gestational diabetes. Talk with your health care team about whether these targets are right for you.
Blood glucose targets for most women with gestational diabetes

On awakening	**not above 95**
1 hour after a meal	not above 140
2 hours after a meal	not above 120

Each time you check your blood glucose, write down the results in a record book. Take the book with you when you visit your health care team. If your results are often out of range, your health care team will suggest ways you can reach your targets.

Ques. 12 - Will I need to do other tests on my own?

Ans - Your health care team may teach you how to test for ketones (KEE-tones) in your morning urine or in your blood. High levels of ketones are a sign that your body is using your body fat for energy instead of the food you eat. Using fat for energy is not recommended during pregnancy. Ketones may be harmful for your baby.

If your ketone levels are high, your health care providers may suggest that you change the type or amount of food you eat. Or you may need to change your meal times or snack times.

Ques. 13 - After I have my baby, how can I find out whether my diabetes is gone?

Ans - You will probably have a blood glucose test 6 to 12 weeks after your baby is born to see whether you still have diabetes. For most women, gestational diabetes goes away after pregnancy. You are, however, at risk of having gestational diabetes during future pregnancies or getting type 2 diabetes later.

Ques. 14 - How can I prevent or delay getting type 2 diabetes later in life?

Ans - You can do a lot to prevent or delay type 2 diabetes.

- Reach and maintain a reasonable weight. Even if you stay above your ideal weight, losing 5 to 7 percent of your body weight is enough to make a big difference. For example, if you weigh 200 pounds, losing 10 to 14 pounds can greatly reduce your chance of getting diabetes.
- Be physically active for 30 minutes most days. Walk, swim, exercise, or go dancing.
- Follow a healthy eating plan. Eat more grains, fruits, and vegetables. Cut down on fat and calories.
- Women who have had gestational diabetes should continue to be tested for diabetes or prediabetes every 1 to 2 years. Diagnosing diabetes or prediabetes early can help prevent complications such as heart disease later.

- Your child's risk for type 2 diabetes may be lower if you breastfeed your baby and if your child maintains a healthy weight.

Ques. 15 – What is the role of Patient education in GDM?

Ans - The compliance with the treatment plan depends on the patient's understanding of:

- ✓ The implications of GDM for her baby and herself
- ✓ The dietary and exercise recommendations
- ✓ Self monitoring of blood glucose
- ✓ Self administration of insulin and adjustment of insulin doses
- ✓ Identification and treatment of hypoglycaemia (patient and family members)
- ✓ Incorporate safe physical activity
- ✓ Development of techniques to reduce stress and cope with the denial. Care should be taken to minimise the anxiety of the women.

References:

Web links:

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http://diabetes.niddk.nih.gov/dm/pubs/gestational/index.aspx

http://www.babycenter.in/search?cx=partner-pub-2748970240774480%3Abwffs1-7rqw&cof=FORID%3A9&ie=ISO-8859-1&safe=off&q=gestational+diabetes