Woman and Diabetes

المعهد الوطني للسكري
والسمنة وأمراض الأيض
Qatar Metabolic Institute

حمد
Hamad

Content

What is diabetes?

Diabetes is a chronic disease that occurs when the pancreas is no longer able to make insulin, or when the body cannot make good use of the insulin it produces. Insulin is a hormone made by the pancreas that acts like a key to let glucose from the food we eat pass from the blood stream into the cells in the body to produce energy. All carbohydrate foods are broken down into glucose in the blood. Insulin helps glucose get into the cells.

Not being able to produce insulin or use it effectively leads to raised glucose levels in the blood (known as hyperglycaemia). Over the long-term high glucose levels are associated with damage to the body and failure of various organs and tissues.

Types of Diabetes

Type 1 Diabetes

It is usually caused by an auto-immune reaction where the body's defence system attacks the cells that produce insulin. People with type 1 diabetes produce very little or no insulin. The disease may affect people of any age, but usually develops in children or young adults. People with this form of diabetes need injections of insulin every day.

Type 2 Diabetes

It is characterised by insulin resistance and relative insulin deficiency, either or both of which may be present at the time diabetes is diagnosed. The diagnosis of type 2 diabetes can occur at any age. People with type 2 diabetes can often initially manage their condition through exercise and diet. However, over time most people will require oral drugs and or insulin.

Gestational Diabetes Mellitus (GDM)

Is a form of diabetes consisting of high blood glucose levels during pregnancy. It develops in one in 25 pregnancies worldwide and is associated with complications to both mother and baby. GDM usually disappears after pregnancy but women with GDM and their children are at an increased risk of developing type 2 diabetes later in life. Approximately half of women with a history of GDM go on to develop type 2 diabetes within five to ten years after delivery.

Pre-existing Diabetes and Pregnancy

Women with diabetes can have a healthy baby, but there are a number of extra risks associated with having diabetes during pregnancy as:

- Birth defects
- High blood pressure
- Hydramnios in this condition, there is an increased amount of amniotic fluid in the amniotic sac that surrounds the baby. Lead to preterm labor and delivery.
- Very large baby—the baby receives too much glucose from the mother and can grow too large.
- A large baby can make delivery more difficult.
- A large baby also increases the risk of having a cesarean delivery

Pre-gestational diabetes affect baby:

Babies born to mothers with pre-gestational diabetes may have:

- Problems with breathing.
- Low glucose levels.
- Very large baby—the baby receives too much glucose from the mother and can grow too large
- Jaundice.

Most babies do well after birth, although some may need to spend time in a special care nursery. With proper planning, and control of diabetes, can decrease the risk of these problems.

Planning and preparing for pregnancy

Pregnancy health care professional team

There are specialized services to support women with diabetes both when planning a pregnancy and during pregnancy.

During pregnancy, team of health professionals will follow to help plan healthy pregnancy.

- Endocrinologist (diabetes specialist doctor).
- Specialist obstetrician (pregnancy doctor).
- Diabetes educator.
- Dietitian.
- Ophthalmology doctor.
- Psychologist.
- Social worker.

Contraception

- Planning pregnancy is important.
- Contraception helps to plan pregnancy around personal circumstances, general health and diabetes management.
- No single method of contraception is perfect for everyone.
- Appropriate contraception for individual needs must discussed with health care practitioner, endocrinologist or obstetrician.

Blood glucose targets

- Managing blood glucose levels well at the time of conception and during the first two months of pregnancy will help to reduce the risk of miscarriage as well as birth defects in babies.

Diabetes pregnancy team discusses appropriate blood glucose targets with patient and recommended Hemoglobin A1c (HbA1c).

Folate

- Folate (folic acid) is very important to reduce the risk of certain birth defects of the brain and spine.
- Taking folate supplements at least one month before pregnancy, and continued throughout the first trimester (the first three months of pregnancy).

Insulin

- Discuss diabetes management with diabetes health professionals. This includes the types of insulin currently using, the advantages, and disadvantages of different treatment during pregnancy.

Review of Medications

- Many medications might need to be stopped or changed before pregnancy and then
- Re-start after pregnancy, sometimes not until after completion of breastfeeding, Such as medicine for lowering cholesterol and blood pressure.

Diabetes complications screening

- Before conceiving it is important to be checked for any diabetes related complications kidneys, eyes and nerves.

Blood Pressure Management

- High blood pressure, consult doctor before pregnancy, especially those on medicine.

Weight Management

- Recommended pregnancy weight gain depends on weight before conceiving.
- A healthy eating plan and regular physical activity can help with weight management.
- It is a good idea to have a review with a dietitian for some guidance on pregnancy-specific nutrition needs and personal weight gain target.
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Pre-Pregnancy BMI*	Weight range	Recommended Pregnancy Weight Gain
< 18.5	Underweight	12.5-18kg
18.5 – 24.9	Healthy weight	11.5-16kg
25 – 29.9	Overweight	7-11.5kg
> 30	Obese	5-9kg

*Calculated as weight(kg)/height(m)^2

Immunization

- Health care practitioner might arrange blood tests to check immunity to Rubella (German measles) and also to Varicella (chickenpox).
- In case blood is negative immune, women should be vaccinated at least one month before becoming pregnant.
- Flu and whooping cough vaccinations to be address with doctor.

Insulin Changes during Pregnancy

The recommended targets for blood glucose levels during pregnancy are:

- Fasting and before meals less than 95 mg/dL (5.2 mmol/L)
- 2-hr after meal less than or equal 120 mg/dL (6.7 mmol/L)

Insulin requirements change constantly throughout pregnancy as the baby grows and different hormones take effect.
It is important to understand the action of insulin to adjust doses effectively.

Early Pregnancy Changes

In early stage of pregnancy, the body undergoing so many hormonal and physical changes.

- Women with type 2 diabetes taking tablets will need to adjust their diabetes tablets and may need insulin injections during pregnancy.
- Women with type 1 diabetes will need to adjust their insulin during all stages of pregnancy.

Mid-pregnancy Changes

From 20 weeks gestation, insulin needs begin to rise and women may need two or three times more than pre-pregnancy dose from about 30 weeks.

Changes after the Birth

a. Once baby is born, insulin requirements will reduce dramatically on delivery of the placenta.
b. b) Insulin requirements gradually increase to pre-pregnancy doses by about the third day after birth of baby.
c. Breastfeeding may cause insulin doses to decrease.
d. Review how to manage patient during sick days.
e. Check a glucagon script and current supply, and if partner/family knows how to use it.
f. Carry hypo treatment at all times and at bed side.
g. Plan for home glucose monitoring with diabetes team.

Risk for GDM

- previous elevated blood glucose level.
- Older women, especially over 30 years of age.
- women with a family history of diabetes.
- women who are overweight BMI >25.
- previous large baby more than 4500g.
- women with polycystic ovarian syndrome.
- Women taking certain medications e.g. corticosteroids, antipsychotics.

GDM Diagnosis

GDM can occur in women with no risk factors therefore it is recommended all women be screened in every pregnancy. At 28–24 weeks, a fasting oral glucose tolerance test (OGTT) should be offered. This test can be performed earlier if there are significant risk factors present or there is a clinical indication.

GDM management

Healthy Balanced meals

Following a healthy eating plan is an important part of diabetes management and will help to:

- Keep blood glucose levels within the target range advised by doctor or diabetes educator.
- Provide adequate nutrition for growing baby.
- Achieve appropriate weight changes during pregnancy.

Exercise

Here are some tips for being more active during pregnancy:

- Moderate exercise for 30 minutes/day, at least 5 days a week.
- Start walking with family or friends.
- Walk instead of driving.
- Take the stairs instead of the lift.

These actions will help to:

- Reduce insulin resistance.
- Keep pregnant women fit.
- Prepare for baby birth.
- Manage blood glucose levels.

Monitoring blood glucose levels

Regular testing of blood glucose level during pregnancy will help to better understand the effect of food, lifestyle and treatment on blood glucose levels and enables when to seek medical advice from health professional.

Medication

If blood glucose levels are too high, pregnant women may need diabetes medicine or insulin shots according to glucose results.

Breastfeeding and Diabetes

Breastfeeding help diabetic mother, and make diabetes easier to manage in the days after birth.

Breastfeeding Benefits for Baby

1. Protects Babies from low blood sugar episodes at early hours after birth and maintain their blood glucose level.
2. Colostrum is rich in nutrients and antibodies to protect baby.
3. It is easier to digest than regular market (formula) milk and reduce Tummy upsets
4. Fights disease, and reduce the risks of:
    - Type 1 and type 2 diabetes.
    - Lower respiratory tract infections
    - Ear infections
    - Urinary tract infections
    - Eczema
    - Asthma and Obesity.

Breastfeeding Benefits for Mothers

- Increase insulin sensitivity and improves glucose metabolism.
- Reduce the risk of developing type 2diabetes.
- need less insulin whilst breastfeeding.
- lower incidence of postnatal depression.
- Save money.
- Breastfeeding is free time.
- Lose pregnancy weight gain quickly.
- Uterus shrinks back to a normal size more quickly.
- Lower incidence of pre-menopausal breast and ovarian cancer.

Protection and prevention of type 2 Diabetes:

Risk factors for diabetes:

- Overweight or obesity.
- Family history.
- Sedentary life style.
- High blood pressure
- High blood cholesterol
- History of gestational diabetes or ovarian cyst.
- Smoking.

Diabetes diagnosis criteria:

	Fasting 8 hours	2 hours after meal	Random
Normal	Less than 100 mg/dl	Less than 140 mg/dl	
Pre-Diabetic	100-125mg/dl	140-199mg/dl	
Diabetic	More than or equal 126mg/dl	More than or equal 200mg/dl	More than or equal 200 mg/dl with sign and symptoms of high blood sugar.

How to prevent Type 2 Diabetes:

- Weight control
- Increase Physical activity
- Healthy food choice
- Smoking secession
- Use prescribed medication
- Check blood sugar early before being aware to signs and symptoms; consider this point for those who are at risk.

National Diabetes Centre

pateitneducation@hamad.qa

44394942

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