

Gestational *Diabetes*



Introduction

There are two distinct situations where complications from diabetes during pregnancy may occur. The first situation is when diabetes already exists prior to pregnancy. This type of diabetes amongst Maltese women of childbearing age occurs in about 1 per 300 women. As usually advised, consultation with the doctor during the pre-conception period is particularly important for these women to ensure good control of their blood sugar levels in addition to other health advice such as supplementation of folic acid and immunization against rubella.

The other and most common form of diabetes in pregnancy is known as 'gestational diabetes' and is first diagnosed during pregnancy. Gestational diabetes or impaired glucose tolerance are a common complication of pregnancy and occur in about 6% of Maltese women. This complication usually develops in the second half of pregnancy when hormones start to interfere with the body's ability to use its natural insulin.

Screening & managing gestational diabetes

There are a number of factors that place women at an increased risk of gestational diabetes. These include:

WOMEN AT 'HIGH RISK'	Age 35 years and older
	Obesity
	Family history of diabetes
	Past history of either repeated miscarriages or unexplained stillbirth
	A previous baby with a birthweight of more than 4kg
Repeated tests of glucose in urine	

A screening test in high-risk pregnant women is generally administered after the 24th week of pregnancy and is known as the 'oral glucose tolerance test'. The test involves taking 3 blood samples, before and at subsequent hours after consuming a glucose (a form of sugar) drink of 75 grams.

Once gestational diabetes is diagnosed, most women can control their blood sugar levels through a well-balanced diet and regular physical activity. If blood sugar levels do not stabilise after two weeks of good dietary and activity management, then insulin injections may be required on a daily basis for the rest of the pregnancy.

After delivery, blood sugar levels are expected to return to normal. However, women who required insulin are encouraged to make a further check-up a few weeks after the baby is born to ensure that their metabolism has really returned to normal.

The risk for complications in women with gestational diabetes is much lower than

those of women with a previous history of diabetes. Nevertheless, women with gestational diabetes are encouraged to follow the advice/instructions offered by the health-care team at the Diabetic Pregnancy Joint Clinic (DPJC) to keep blood sugar levels in as normal a range as possible.

Dietary & physical activity management for gestational diabetes

Adequate dietary management is vital for the treatment of gestational diabetes. It aims at shortening the period of high blood sugar levels, thus reducing the risks of affecting child and mother.



A nutritionally sound meal plan and regular physical activity should be established well before any woman becomes pregnant.

Check with your doctor/health professional about your planned meals and activity so that you can plan your periods of activity along with your food intake.

Before pregnancy (Pre-conception)

Weight loss is advised to those women with excess body weight from their correct weight range and height. However, a weight-reducing diet is not advised once pregnancy is started. It is prudent that women aged more than 35 years who are planning a pregnancy, check their metabolic status to exclude the chance that they already have a mild form of diabetes.

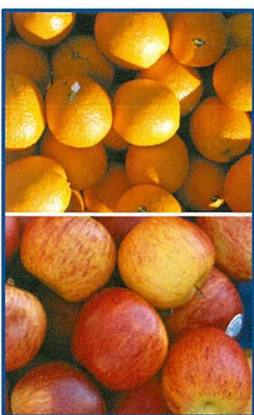


There is a high requirement for folic acid prior and during the first trimester of pregnancy. When planning a pregnancy, ensure an adequate intake of foods that are good sources of folic acid. These include: red kidney beans, soybeans, lentils, chickpeas, peas and peanuts as well as bread, fortified breakfast cereals, citrus fruits and dark green vegetables (spinach, Brussels sprouts and broccoli). Supplementation of folic acid should be advised by your doctor/health professional.

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What are the dietary changes necessary during pregnancy?

Once a good meal plan has been established before pregnancy, there are very few changes to be made to accommodate the increased nutritional needs for your baby. During pregnancy the expected total weight gain should not be more than 10-12 kgs. This amount of weight gained during pregnancy varies depending on the pre-pregnancy weight. This means that the heavier you were at the start of the pregnancy, the lower is the expected total weight gain throughout pregnancy.



Nutritional changes necessary to accommodate the increased pregnancy demands include:

▶ An increased energy intake of about 200-300 calories a day is needed during the 2nd and 3rd trimesters only. This value varies depending on your physical activity levels between days and

is the equivalent of about 2-3 slices of bread (50 grams each). These extra bread slices provide also the extra grams of proteins that are required during pregnancy.

▶ Meals should be spread out during the day so that a minimum of 3 regular meals a day should be taken.

Should pregnant women with gestational diabetes consume a particular diet?

The recommended diet for a pregnant woman with gestational diabetes is still based on the food pyramid for healthy eating by World Health Organisation (WHO).

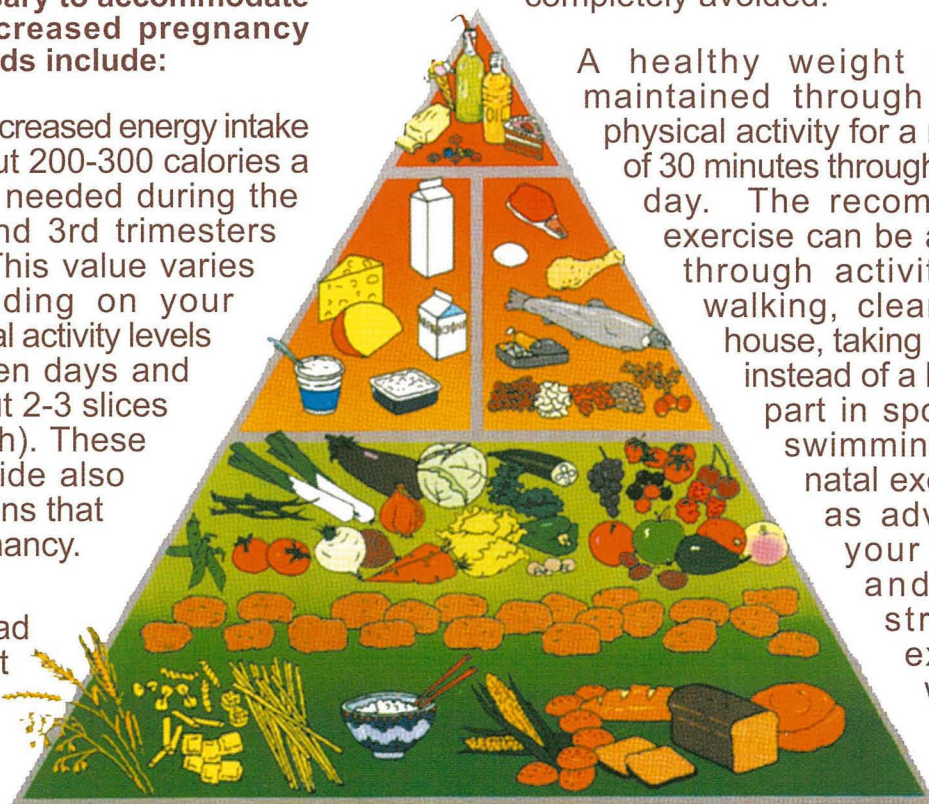
The food pyramid encourages to eat a greater proportion of complex carbohydrates such as bread, pasta, rice, potatoes, oats, and other cereals; fruits and vegetables (at least 5 servings a day), and legumes (beans, peas, lentils) compared to foods such as fish, chicken, lean red meat, eggs, nuts and low-fat dairy products. It also advises to keep the intake of refined sugars and animal fats to a minimum; though in the presence of gestational diabetes, sweets



and refined sugar-containing food items (e.g. biscuits, cakes, sweet pastries, syrups, ice creams and soft drinks) should be completely avoided.



A healthy weight can be maintained through regular physical activity for a minimum of 30 minutes throughout each day. The recommended exercise can be achieved through activities like walking, cleaning the house, taking the stairs instead of a lift, taking part in sports, e.g. swimming, antenatal exercises – as advised by your doctor, and doing stretching exercises while seated.



Food Pyramid for Healthy Eating (WHO)

Why are high-fibre foods so important?

The dietary fibre found in beans, lentils, apples, vegetables, oats and barley may help to control blood glucose levels. Fibre also helps to lower 'aftermeal' tryglycerides (a type of fat found in blood). Also, cereal-based foods such as wholemeal bread, pasta and rice guard against constipation. Having a breakfast daily ensures that you get sufficient carbohydrates in the morning (e.g. choose a fortified breakfast cereal with skimmed milk or toasted wholemeal sandwich, and a fruit or 100% pure fruit juice).



What else do protein foods provide?

Fish, meat, chicken and legumes also provide vitamin B complex, iron and zinc. Legumes provide soluble fibre which helps to control blood sugar levels. Fish such as tuna, sardines and salmon provide calcium and vitamin D for good teeth and bone health.

Monitoring of Blood Glucose Levels in Pregnancy

Good control of blood glucose is important as high levels interfere with the growth and development of your baby. In addition, women with high blood glucose are more likely to develop infections that may be difficult to treat during pregnancy.

Monitoring of glucose levels by a self-monitoring blood glucose test is recommended if on insulin therapy, since there is also a risk of hypoglycaemia (low blood sugar level). It is wise to keep ready-available sources of carbohydrates at all times – e.g. pieces of fruit and nutritious sandwiches prepared in advance to manage attacks of hypoglycaemia if they occur. Eating too large meals can push blood sugar to high levels whereas skipping meals can cause it to fall too low.

If blood sugar is difficult to control by eating three large meals a day, splitting daily food into 6 or 8 smaller ones, regularly spaced and carefully planned, maybe a better option.

Why are sugary foods to be avoided or kept at minimum?

Sugary foods also raise blood sugar levels to very high amounts, which persist for a longer time thus allowing effects on the developing baby to occur. Sugary foods often contain high amounts of fat and lack vitamins, minerals and fibre. A healthy alternative to sweets is a portion of dried non-sweetened fruit (e.g. prunes, apricots, figs, dates) for those busy days – a handful is considered a portion size. Note, however, that fruit intake should be limited to about 3-4 portions per day.

The following food items should be completely avoided:

- ▶ Sweetened breakfast cereals – instead choose unsweetened variety
- ▶ Tinned fruit with added syrup, honey, or sugar or dried fruit with added sugar
- ▶ Biscuits, sweet pastries, cakes, puddings
- ▶ All forms of sweets, toffee, chocolate
- ▶ Jam, marmalade, jelly – instead choose 'diet' jelly
- ▶ Ice-cream and sweetened (tinned) milk - instead choose frozen yoghurt and skimmed milk
- ▶ Soft drinks, sweetened juices and nectar drinks – instead choose 100% fruit juice

Diet, sweetened drinks or sweets with artificial sweeteners such as aspartame or saccharine should be taken in moderation since the effects of artificial sweeteners on the infants are still not fully known.

How can saturated fat (found in animal foods) be reduced?

Intake of saturated fat can be reduced by:

1. Eating lean meats and removing visible fat prior to cooking
2. Cooking methods such as grilling, steaming, boiling and baking are better than frying
3. Using skimmed milk and low-fat cheeses; small amounts of margarine instead of butter
4. Using modest amounts of olive oil (rich in monounsaturated fat)

Is alcohol allowed during pregnancy?

Alcohol should be avoided throughout pregnancy and lactation as it can cause diabetic nerve damage, worsen high blood pressure and affect the mental development and behaviour of your baby. It also has a high caloric value that raises blood sugar levels.

How can I maintain a good nutrition plan whilst 'dining out'?

It is still possible to keep your good nutrition plan whilst 'dining out' even throughout pregnancy. Safeguarding your healthy eating and lifestyle habits can be done by:

- Asking about the ingredients of a dish
- Eating the same portion-sizes as your normal home meals and eating slowly
- Asking for low-calorie items or replacing 'fatty' items e.g. replace potato chips with boiled potatoes or other vegetables (not cooked in oil)
- Ask for a low fat dressing - limit your intake
- Asking the chef to prepare something not on the menu – calling ahead to discuss possibilities is wise.
- Avoiding restaurants where tobacco smoking is allowed



Risks of Gestational Diabetes

Usually gestational diabetes does not give symptoms to mothers, though some may experience extreme thirst, hunger or fatigue. The absence of symptoms is the real danger of gestational diabetes as mothers are not usually aware of their uncontrolled blood glucose levels and do not seek medical attention. It is expected that about 70% of women who had gestational diabetes will develop diabetic problems in about 10 years after pregnancy, especially if obese.

Gestational pregnancy may affect the baby if the mother's blood sugar levels are poorly controlled. This may lead to a baby with a very high birthweight, making normal delivery difficult. Upon delivery, babies of women with gestational diabetes are more likely to have breathing difficulties, low blood sugar levels

and/or jaundice, all of which require monitoring at hospital. Some studies suggest that if a woman's gestational diabetes is severe enough to require insulin therapy, her baby may be at an increased risk of birth defects. This complication is more likely to arise if pre-existing mild and undiagnosed diabetes existed before the pregnancy. It is important that women at high risk wishing to become pregnant, check their blood sugar levels before. Lastly, poorly controlled gestational diabetes increases the risk of stillbirth though this is rare due to improved medical care.

It is important to note that babies of mothers with gestational diabetes may also be at an increased risk of developing obesity and/or diabetes in their teen years or young adulthood, therefore adequate follow-up medical care is necessary.

Long-term Management

To ensure that diabetes has disappeared, mothers with gestational diabetes are encouraged to carry out another glucose tolerance test about 6 weeks after the birth of their baby.

Mothers who experienced gestational diabetes during pregnancy have now an

To ensure that diabetes has not developed silently, it is recommended to check blood glucose levels at least once every year.

open window to the medical prospects of their future. They are now aware of the greater chance of suffering from diabetes. The risk of developing diabetes in the future is increased with:

- Another pregnancy
- Increasing age
- Excessive weight gain

To ensure that diabetes has not developed silently, it is recommended to check blood glucose levels at least once every year. In addition, you may reduce your risk of developing diabetes in the future by:

- Adhering to a healthy dietary plan
- Incorporating regular physical activity in your lifestyle
- Keeping your weight to the correct weight range for your height.

Services offered at the Pregnancy Clinic

The Diabetic Pregnancy Joint Clinic (DPJC) is a collaborative effort of the diabetologist and obstetrician specialist staff at St. Luke's Hospital. The DPJC staff is happy to work with your own primary obstetrician and diabetologist to co-ordinate care, if this is preferred. The DPJC team provides:

- ▶ Nutrition counselling and meal planning
- ▶ Instruction about home blood sugar monitoring and insulin adjustments
- ▶ Instruction in intensive diabetes therapy
- ▶ Information about managing diabetes when experiencing morning sickness and other difficulties
- ▶ Provides other tests (if necessary) to monitor the effects of pregnancy on organ systems related to diabetes. Referral to a specialist is made when appropriate.

For further information on diabetes in pregnancy, nutrition or how to stop smoking during pregnancy, please contact:

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