GENERAL NUTRITION PRINCIPLES

- Use whole grains cereals
- Eat more fruits and vegetables
- Use sugar and fats sparingly
- Limit the salt intake
- Prepare most foods e.g. meats, chicken without fat. Grilling, boiling, steaming, and baking are the best cooking methods
- Drink clean and safe water (8 glasses per day)
- Snack smart – avoid junk foods e.g. squashes and sodas, chips, crisps, chocolates etc
- Never skip meals, have three balanced meals every day.
- Increase fiber intake (fresh fruit and vegetables are the best sources)
- Avoid alcohol and smoking
- Physical activity; at least 30 mins exercise per day
- Consult a dietician or nutritionist for an individualized meal plan
The role of diet in diabetes management

In understanding the role diet plays in diabetes management one needs to understand the way the body functions.

The human body works much like a car that needs petrol to run. The ‘petrol’ the body uses is called glucose. All carbohydrates that are found in the foods that we consume are broken down to glucose after digestion.

The glucose travels through the blood stream to the body cells where insulin (a hormone) is needed to allow the glucose access into the cells.

People living with diabetes suffer from impaired insulin production and/or action, they need to pay special attention to their diets to maintain a stable blood glucose level and prevent diabetes complications.

The good news is that when you have diabetes, you still can eat most of the same foods you have always eaten.

But you have to change:

- How much you eat
- How often you eat
- When you eat

Components of a Healthy Diet

Food Pyramid as guide to meal planning

Dietary modification is one of the cornerstones of diabetes management, and is based on the principle of healthy eating.

A well planned diet comprises of the following foods:

**Starchy foods**

Choose 6-11 Servings per day (1 serving is the same as
1 Slice bread or 1/2 cup cooked rice, ugali or 1/2 cup pasta or 1 Medium potato)

(eat whole-grain, fortified or enriched starches, bread, and cereals)

**Fruits and Vegetables**

Choose 2-5 servings per day (1 serving is the same as
1/2 cup vegetables cooked
1 cup fruit juice)

(fresh, frozen or canned without sugar) 1 medium piece fresh fruit

**Milk and Milk Products**

Choose 2-3 servings per day (1 serving is the same as
1 cup skim / low fat milk / 1/4 cup plain or artificially sweetened yogurt)

**Meat and meats substitute**

Choose 2-3 servings per day (1 serving is the same as
30 g cooked lean meat, fish or poultry or 1 egg or 1/4 cup fish (Omena))

**Fats and Oils-Use sparingly**

(1 serving is the same as
1 teaspoon margarine or 1 teaspoon salad dressing or 1 teaspoon oil or mayonnaise or 1 tablespoon peanut-butter)

**WATER**

(8 Glasses per day)
What can a mother do to prevent health problems related to gestational diabetes mellitus?

- **Plan your pregnancy.**
  It is very important for you to get your body ready before you get pregnant.

- **Visit your doctor.**
  For preconception counseling and provision of supplements needed during pregnancy.

- **Weight management:**
  If overweight or obese, consult a nutritionist to help in weight reduction.

- **If you develop GDM:**
  It should be managed using diet, physical activity or insulin.

- **Diabetes education:**
  Consult your primary health care provider on diabetes prevention and control.

- **Screening:**
  Ensure you have regular blood glucose testing. Women with gestational diabetes need to be tested after delivery and every 1-3 years.
**Introduction**

Diabetes is a condition that occurs when your body is unable to control the amount of sugar in the blood either as a result of lack of enough insulin production, poor insulin action or both.

**Types of Diabetes**

Diabetes is classified into the following types

**Type 1**

It results from damage to the pancreas which leads in failure of insulin production. It occurs in young children and adolescents. Treatment involves daily insulin injection.

**Type 2**

This type of diabetes occurs due to reduced insulin production, resistance of body cells to insulin or both. It is the commonest type of diabetes. Treatment involves lifestyle modification and/or drug treatment.

**Pre diabetes**

This is a state where an individual has an abnormally high blood sugar that has not reached levels categorized as diabetes. People with pre diabetes are at risk of developing diabetes.

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**Gestational Diabetes**

This is a type of diabetes that is diagnosed or recognized for the first time in a pregnant woman. Gestational diabetes mellitus results when the body produces the right amount of insulin but its effects are partially blocked by a variety of pregnancy related hormones. This process is called insulin resistance and resolves with the birth of the baby.

**How can I know that I am at risk of developing gestation diabetes mellitus?**

A woman is at risk of developing GDM during pregnancy if she has some of the following factors.

- A previous diagnosis of gestational diabetes,
- A family history of a first degree relative with type 2 diabetes
- Maternal age over 35 years
- Being overweight or obese
- A previous history of big babies >4kg
- Previous complicated pregnancies.

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**How can uncontrolled gestational diabetes mellitus affect my health and the baby?**

- Increased chance of needing Caesarean section
- 50% lifetime risk of developing Type II diabetes mellitus
- 30-50% risk of recurrence of GDM in her next pregnancies.
- Miscarriage or stillbirth
- Early or preterm birth

**Baby’s health**

- Birth defects
- Extra large baby
- Low blood sugar in infant after birth
- Increased chance of obesity and diabetes in your child later in life.
GENERAL RULES OF INSULIN INJECTION

- If you have taken a bath with soap and water in the last 24 hour period, then the skin need not be cleaned with spirit or alcohol as this hardens the skin which reduces insulin absorption. If the person feels more comfortable with cleaning the area prior to injection, then this can be done with water.

- A skin fold should be supported and the needle slid into the loose tissue.

- The injection should be done at a 90-degree angle with the skin if the needle is short, i.e. 12 mm or less.

- If the person is very thin, very wasted or the needle is long, then a 45-degree angle for entry is recommended.

- The needle should be held in place for 10 seconds after injection before withdrawal.

- The injection site may bleed slightly if there are many surface capillaries.

- Do not use any insulin that appears cloudy or is expired.
DIABETES AND PHYSICAL ACTIVITY

Introduction
Physical activity and exercise is an important component of diabetes management with physiological and psychological benefits. Regular physical activity is beneficial in the management of type 1 and 2 diabetes.

The benefits of Physical activity and exercise
- Improves the functioning of the heart in both type 1 and 2 diabetes.
- Reduces the risk of developing hypertension and high cholesterol in the blood in type 1 and 2 diabetes.
- Contributes to the flexibility, endurance, and muscle strength.
- Improves glucose control in type 2 diabetes.
- Increases peripheral use of glucose.
- Increases insulin sensitivity and thus reduces the total dose required over a period of time.
- In addition to meal planning, exercises help in maintaining a healthy body weight and reduction of weight in overweight or obese patients.
- Gives the individual a sense of well being and a better quality of life.

Recommendations for exercising
- Drink enough fluids during and after exercises.
- Wear proper footwear for comfort and to avoid injuries to your feet.
- Wear an identification bracelet and if possible, exercise with a friend.
- Avoid exercising in extreme temperatures (heat or cold).
- Inspect your feet after exercises.

Tips for physical activity and exercises
- Identify activities that are enjoyable.
- Common recommended exercises include brisk walking, swimming, jogging, skipping and simple ball and indoor games.
- Common physical activity an individual may engage in includes digging, house cleaning, cutting the grass, pruning the hedge etc.
- Start slowly 5 to 10 minutes at a time.
- Increase the intensity and duration of your exercises slowly.
- Set realistic goals.
- Have varied activities.

Precautions to note before exercising
- If blood glucose is >14mmol/L, strenuous exercise is not recommended as it may cause your body to produce toxic products called ketones.
- If your blood glucose is <6mmol/L drink a glass of fruit juice or eat a snack before exercising.
- Intense exercise over extended period are not recommended unless under professional supervision.

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