

## **Self Interventional Module for Diabetes Mellitus**

**AUTHOR: Prof.C.JEGATHA .MSC. (N) PhD Scholar**

**BIHER, SREE BALAJI COLLEGE OF NURSING, CHROMPET, CHENNAI.**

**SUPERVISOR: Dr. V.Hemavathy Principal, BIHER,**

**SREE BALAJI COLLEGE OF NURSING, CHROMPET, CHENNAI.**

### **ABSTRACT**

Diabetes mellitus, commonly known as diabetes, is a metabolic disease that causes high blood sugar. The hormone insulin moves sugar from the blood into your cells to be stored or used for energy. With diabetes, your body either doesn't make enough insulin or can't effectively use the insulin it does make. Our body performs so many functions for which it needs lot of energy. This energy comes from the food we eat. The food is broken down, burned and utilized in the body. This take place with the help of many substances produced within the body. Insulin is one of them and this is produced in the pancreas. It is a gland located just below the stomach, and is responsible for converting sugars, starches and other foods into energy. Diabetes mellitus is treatable and controllable disease. The overall goal therapy is to control or regulation of blood sugar. When the blood sugar is successfully regulated, the complications of low and high sugar level can be prevented with minimal disruption to abnormal life style.

### **Key wards**

- Diabetes mellitus, Insulin, Diet, Exercise

### **DEFINITION**

Diabetes mellitus, commonly known as diabetes, is a metabolic disease that causes high blood sugar. The hormone insulin moves sugar from the blood into your cells to be stored or used for energy. With diabetes, your body either doesn't make enough insulin or can't effectively use the insulin it does make.

### **TYPES OF DIABETES MELLITUS**

Diabetes mellitus is mainly of two types, which are;

- **Insulin dependent diabetes mellitus: (type 1)**

It occurs in young age group (age up to 30 years) which can be use of insulin.

- **Non-Insulin dependent diabetes mellitus**

It found in age group above 30 years, which is managed by diabetes diet oral drugs, with or without insulin.

- **Prediabetes**

It occurs when your blood sugar is higher than normal, but it's not high enough for a diagnosis of type 2 diabetes.

- **Gestational diabetes**

High blood sugar during pregnancy. Insulin-blocking hormones produced by the placenta cause this type of diabetes.

### **General symptoms**

The general symptoms of diabetes include:

- increased hunger
- increased thirst
- weight loss
- frequent urination
- blurry vision
- extreme fatigue
- sores that don't heal
- Gynecological problems.

### **Causes of Diabetes Mellitus**

- Hereditary
- Virus
- Obesity
- Age
- Hormones
- Medication

- Illness

### **How Does Sugar Level is Increase and Decrease in Our Body**

Our body performs so many functions for which it needs lot of energy. This energy comes from the food we eat. The food is broken down, burned and utilized in the body. This take place with the help of many substances produced within the body. Insulin is one of them and this is produced in the pancreas. It is a gland located just below the stomach, and is responsible for converting sugars, starches and other foods into energy. Without the action of insulin to form sugar into energy, sugar increases in the blood stream called hyperglycemia and spills into the urine. In persons with diabetes, the pancreas produces no insulin, inefficient use of insulin or diminished sensitivity of cells to insulin.

### **.MANAGEMENT OF DIABETES MELLITUS**

Diabetes mellitus is treatable and controllable disease. The overall goal therapy is to control or regulation of blood sugar. When the blood sugar is successfully regulated, the complications of low and high sugar level can be prevented with minimal disruption to abnormal life style. The management of diabetes is mainly concentrated on these headings. Which are

- Exercise
- Diet
- Medicines
- Food care
- Relaxation technique

### **DIET**

#### **Carbohydrates**

Normally diabetes requires 200 to 300g carbohydrates. They are mainly derived from cereals like rice or wheat, whichever is routinely used. Refined sugar (simple) eg: sugar, honey, jams, cakes, pastries are totally prohibited because they produce sudden rise in blood sugar.

#### **Proteins**

Normal 30 to 50g fat required (preferably 30 un saturated) the type and quantity of fat play a vital role in the diet for a diabetic. Foods high in Saturated fats and cholesterol should be limited. The effect of fried prepared food should be taken less.

## **Fibre**

The role of dietary fibre is of great importance in the present day management of diabetes. The dietary fibre intake should be increased fibre increase. Fibre increase the transit time of food in gastro intestinal tract, hence delaying the passage through the stomach and small intestine, thus delaying the carbohydrate absorption. Fibre containing foods are fruits like, orange, apple, water melon; sweet lemon and vegetable like beans, bitter guard, and cabbage can be taken.



## **Diabetic Diet Guidelines**

- Fat at regular times
- Eat all the foods prescribed
- Never skip meals
- Avoid adding sugar to coffee or tea
- Drink 8 or 10 tumblers of water per day
- Eat foods that are raw and whole instead of chopped or pieced or cooked foods
- Eat piece fruit instead of juices.

## **EXERCISES**

Activity improves the effectiveness of other treatment,

1. It increase the utilization of sugar
2. It reduces insulin requirements
3. It lowers the blood sugar level.
4. It stimulates the heart and lung, and uses most of the body muscle.



### **Types of Exercise**

Aerobic exercises use repetitive contraction of muscle such as brick walking, swimming, jogging, dancing, cycling and climbing.

### **EXERCISE INCLUDES IN 3 PHASES**

#### **1. Warm up phase (5 minutes)**

- **Reach stretcher:** stand erect with your feet 12 inches apart. Raise and stretch your arms upwards. Count to 10 and bring your arms down.
- **Neck roller:** tuck chin in towards chest. Slowly turn head to left, pointing chin up and roll your head until you make a circle. Do three circles on each side.
- **Toe touchier:** stand straight with feet 12 inches apart. Slowly bend over, keeping knees slightly bent. Stretch down hold down for ten counts. Rises slowly and repeat three times( before attempting this exercise, consult yoOur doctor if you have back problem)

#### **2. Cardio Vascular Phase (20 minutes)**

Brisk walking is the best exercise for clients with diabetes mellitus. The client has to start by walking about 1 km in 20-minutes. Your pace should go up to 2 km in 20 minutes in about two months. Maintain this pace.

#### **3. Cool down Phase (5 minutes)**

Reduce the pace of your activity. You could repeat the exercise of the warm up phase.

## **MEDICATIONS**

It refers to the substance which relieves physical and psychological symptoms of diabetes mellitus. Those are oral hypoglycemic agents and insulin. Oral hypoglycemic agents are the drugs used to lower the blood glucose level.



### **Guidelines for Taking Oral Hypoglycemic Agents**

1. Strict diet regimen to be followed.
2. Should not take extra pills if over eating has occurred.
3. Should not take any dose later in the evening meal.
4. Take medication as prescribed.

## **INSULIN**

It is a hormone which controls the level of glucose in the blood.

### **Self-administration Insulin Injection**

It is a process of injection insulin by him or her in the body without any assistance.

### **Insulin Lowers the Blood Sugar Level by**

It takes away the glucose into the cells.

Thereby normalizes blood glucose.

### **The site of injection includes**

- Any 4 quadrants of abdomen
- Front or outer aspects of both thighs

- Upper outer area of buttocks
- Outer and rear surfaces of upper arms



### **PROCEDURE**

- Roll the vial between your palms
- Wipe the rubber plug with spirit, allow to dry
- Pull the plunger to draw in air equivalent to your dose.
- With vial upright inject the air into the vial.
- Upturn the vial with syringe and draw the dose of insulin slowly.
- Gently tap the syringe to remove air bubbles.
- Till you are ready, cap the syringe and place it on a horizontal surface.
- Wipe the injection area with alcohol swab, starting in the middle and moving outside
- Gather two inches of skin fold and inject the needle with the syringe as straight as possible. (90 –degree. Angle with the site).
- Now release the skin, push in the plunger full in 3 to 5 seconds.
- Keep the syringe capped for further use.
- Use disposable syringe only once.

If the site is bleeding you can apply pressure on the site with the alcohol wipe. No rubbing of skin with swab is required.

## FOOT CARE

Foot ulceration is a usual finding in patients with Uncontrolled diabetes and those who neglect feet care. The diabetic patient develop nerve weakness and reduced blood flow, consequently their leg is insensitive to temperature, pressure and trauma or injury follows infection and delayed healing because of the presence of high blood sugar, which act as a medium for micro bacteria to grow and multiply.

### Guidelines for Foot Care

- Examine the feet daily under lighting using mirror to see the bottom of the feet
- Check the temperature of the water with inner aspect of forearm and not with the toes.
- Use mild soap for washing the feet and use lotion only to wash the bottom of the feet to clear the cracks, but not between the toes, dries the feet with a soft towel.
- Cut the nails straight across and not at an angle a shower or bath.



- Do not go bare foot, and wear socks to keep feet warm during cold days.
- Do not sit with legs crossed and do not use any hot application on feet.
- Do not walk in dark places.
- Avoid tight shoes and socks, wear correct fitting shoes without high and pointed heel.
- Buy leather shoes with thick rubber soles and soft toes, one that has plenty of spaces for toes.
- Avoid shoes with thick seems or binding that can cause blisters.
- Change socks daily (if you use) observe socks for bleeding / pus.



- Always check the inner part of your shoes with your hand each time before putting them on to avoid injuries due to small object, which accidentally may have got into your shoes.

## **THE BENEFITS OF RELAXATION TECHNIQUES**

### **Relaxation**

Autogenic means something that comes from within you in this technique; you use both visual imagery and body awareness to reduce stress. You repeat words or suggestions in your mind to help you relax and reduce muscle tension. You may imagine a peaceful place and then focus on controlled, relaxing breathing, slowing your heart rate, or different physical sensation, such as relaxing each arm or leg one by one.

### **Visualization**

In this technique, you form images to take a visual journey to a peaceful, calming place or situation. Try to use as many senses as you can, including smells, sights, sounds and textures. If you imagine relaxing at the ocean, for instance, think about the warmth of the sun, the sound of crashing waves, the feel of grains of sand and the smell of salt water. You may want to close eyes, sit in a quiet spot and loosen any tight clothing.

### **Yoga**

Yoga therapy helps to treat human in dispositions as naturally as possible, to alleviate pain and suffering through set of exercise, both physical and mental. Ideally, Yoga therapy is preventive in nature, as is yoga itself, while being curative in many instances, soothing in others, and restorative in most.

### **Asanas**

A set of postures that tone up the muscles and internal organs, revitalize the system, create overall awareness of the body and its function and help tranquilize the mind they also energizes and stimulates the body's major endocrine glands. By toning up the internal organs, they also prevent and cure many illnesses.

### **Music Therapy**

Listening to music does wonder to alleviate stress. Listen to the music that you feel comfortable. Music is a significant mood - changer and reliever of stress. Everyone has different tastes in music.

### **Meditation**

It is a way to balance a person's physical, emotional and spiritual state and everyone can benefit. It has been used forever. So whenever you are praying you are meditating. Meditation is ways of getting you separated of the frills and calms yourself to be at peace

and to get away from the stress. You are finding a way to calm the mind and being focused in the present, being in the here and now.

### **Laughter Therapy**

Laughter is an expression or appearance of merriment or amusement. Laughter is a sound that can be heard. Clients laughter trigger are identified such as people in their lives that makes them laugh, things from childhood, situations, movies, jokes, comedians, basically anything that makes them laugh. Based on the information provided by the client; the clinician creates a personal humor profile to aid in the laughter therapy. Therapeutic laughter clubs extension of laughter yoga, but in a formalized club format. The structured format includes several laughter exercises for a period of 30 - 40 minutes facilitated by a trained individual.

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