DIABETES / DIABETES INSIPIDUS / JUVENILE DIABETES

It is a metabolic disorder in which utilization of blood glucose by the cells of the body is impaired, leading to high levels of glucose in blood and excessive excretion of glucose in the urine.
The main cause of high blood glucose levels in the body is decreased production of insulin (hormone produced by pancreas) or the body does not properly utilize insulin.
Normal glucose levels:
Fasting: 80 - 110 mg/dl.
Post meals up to 140 mg/dl.
Bed time glucose levels should be between 100 and 160 mg/dl.

TYPES OF DIABETES

1) Type I diabetes:
2) Also known as insulin dependent diabetes and is usually diagnosed in children and young adults. It is an autoimmune disease. An autoimmune disease results when the body's immune system attacks the body part. Immune system is the system that protects our body from infections and diseases (resistance power). In type I diabetes, the immune system (that protects our body) attacks the insulin producing beta cells in the pancreas, thus pancreas produce little or no insulin (it is an enzyme which helps in glucose). Type I diabetes present in some people since birth is termed as Juvenile diabetes.
3) Type II diabetes:
4) It is also known as non-insulin dependent diabetes and is usually present in adults. It is the most common type of diabetes, about 90-95% of people with diabetes have type II diabetes. In this type of diabetes the body cells are incapable to process insulin, condition called insulin resistance.
    - Pre-diabetes: is a condition in which a person's blood glucose levels are higher than the normal but not high enough to diagnose type II diabetes.
5) Gestational diabetes (diabetes during pregnancy):
6) Gestational diabetes appears in about 2-5% of all pregnant women who never had diabetes. It is temporary and fully treatable. About 20-50% of these women develop type II diabetes within 5 - 10 years.
7) Other types of diabetes - there are several types of diabetes which do not fit in to gestational, type I and type II diabetes.
8) Genetic defect in beta cells.
9) Genetically related insulin resistance.
10) Disease of pancreas.
11) Caused by hormonal defects.
12) Caused by chemicals or drugs.
13) Malnutrition-related diabetes mellitus (MRDM)

CAUSES

1) Family history of diabetes.
2) Genetic.
3) Pregnancy.
4) Severe illness.
5) Severe infection.
6) Virus.

7) Chronic Pancreatitis.
8) Stress.
    i. Dietary factors - too much of fats, little or no fruits, very little vegetables and minimum fibers.
    ii. Sedentary life.
    iii. Obesity.
    iv. Ethnic groups :
    v. Whites have greater chances of getting type I diabetes.
    vi. Native Americans, Hispanic Americans, American Indians, American Asians, African Americans, Pacific Islander Americans, Alaska Natives, Native Hawaiians have greater chances of getting type II diabetes.

COMPLICATIONS OF DIABETES

1) Hypoglycaemia - due to improper management of the disease, over exertion or over medication.
    i. Gestational diabetes: macrosomia (high birth weight) and birth defects.
    b. Develop type II diabetes.
    i. Blindness - diabetic retinopathy, macular oedema.
    ii. Heart - hypertension, heart attack, ischemic heart disease.
    iii. Blood vessel disease - arteriosclerosis
    iv. Stroke,
    v. Kidney failure - diabetic nephropathy
    vi. Necrosis, gangrene - amputations,
    vii. Nerve damage - diabetic neuropathy.
    viii. Diabetic coma.
    ix. Liver failure.
    x. Secondary infections - tuberculosis.

DIETARY MANAGEMENT

Your blood sugar level in your blood is closely connected to what you eat, so good and balanced nutrition is most important for living a healthy life with diabetes. Correct choice of food and in appropriate amount will help you to control your blood sugar levels, thus further preventing or delaying the complications. There is no particular diet that will suit everyone; it depends on the treatment, individual sensitivity and on the complication of the disease. So consult your physician before implementing any diet plans.

DO'S

i. Follow your doctor's instructions.
ii. Do not stop or take any medications on your own.
iii. Monitor your blood glucose by regular blood Glucose checking.
iv. Do regular exercise and practice yoga.
v. Walk for at least 45 minutes regularly (follow advice of your physician).
vi. Take extra care for your foot if you get a cut or a bruise, blister or swelling, see your doctor immediately.
vii. Maintain your optimum weight.
viii. Always carry a packet of biscuits, candy, juice or sugar along, if you feel giddy have one or two biscuits or one sweet. You may be hypoglycemic, see your physician Immediately.

2) •Loose weight if obese as with diabetes the risk of developing heart disease increases. Loose weight gradually, one or two pounds a week.

AVOID

i. Do not undertake strict diet to loose weight without consulting your physician or a registered dietician.
ii. Avoid sugars and any thing, which is high in sugar content.
iii. Avoid artificial sweeteners.
iv. Avoid canned fruits.
v. Avoid alcohol, smoking.
vi. Avoid high calorie diet - fried, oily or buttered food.
vii. Do not take appetite suppressants to control weight, they increase blood sugar levels.
viii. Avoid chocolate, pastries, jams, honey and sweets.
ix. Avoid potatoes, sweet potato, yam and other "underground vegetables".
x. Avoid fruit like chickoo, mango and bananas, or just consume a single slice a day.
xi. Avoid sleeping in the day time.

CONSUME

i. consume frequent small meals at regular intervals through out the day, instead of eating heavy meals once or twice a day. This will help to avoid extremes of high or low blood glucose levels.
ii. Consume snacks high in protein before sleeping, prevents hypoglycemia at night.
iii. Consume about 2000 calories a day of which 50-60% calories coming from carbohydrates, 20% from proteins and less then 30% from fats.
iv. Pregnant woman needs 300 calories more from second trimester and extra 10-12 gm of protein for the growth of the baby.
v. Have plenty of salads before you start your meal.
vi. Carbohydrates:

a. Consume complex carbohydrates (high fiber foods) then the simple carbohydrate diet, both will provide similar amount of calories, but complex carbohydrates are high in fiber which helps in lowering the blood glucose levels.
b. Avoid sugar as every food contains little sugar, and they are of no nutritive value and considered as empty calories.
c. Consume bitter gourd (karela), string beans (Chaulee), cucumber (kakadi), onions and garlic which are very beneficial for diabetics.
d. Consume lots of green leafy vegetables, beans and legumes.
e. As much as possible eat raw fruits and vegetables then cooked ones, cooked food increases blood glucose levels as compared to raw food.

•Fiber:

- Consume high fibre diet (between 30 to 50 gm a day), it helps lowering the blood glucose levels - fruits, vegetables, peas, beans and whole- wheat breads, bran, brown rice, oats, seeds, nuts, barley are good sources of fibre.
- Note: do not exceed more then 60 gm of fibre a day it can lead to nutrition deficiencies.

• Proteins:

- Patients with diabetic kidney need to consume less protein.

- Consume protein more from plant sources then animal sources.
- Prefer fresh fish or soy protein to poultry or meat; consume fish not more then 2 servings per week.

- Fats:

- Consume low fat diet - avoid fried food or mayonnaise based food except if non-fat mayonnaise is used, avoid egg yolk, bacon, butter etc.,
- Cholesterol intake should not exceed 200 mg per day.
- Consume Polyunsaturated fats (PUFA), and monounsaturated fats instead of saturated fats and cholesterol.
- Monounsaturated fats are mostly present in olive, canola, and peanut oils and in most nuts.
- Consume not more then 5gm of fats, as PUFA, monounsaturated fats or saturated fats they all provide same amount of calories, though they are different in kind.

- Consume 3-4 nuts regularly as they are high in proteins, fibers and also PUFA
- Consume bitter gourd (karela) or have 1/2 cup or more of bitter gourd juice every day.
- Before buying any products from the market check its label for amount of fats, carbohydrates and proteins.
- Consume less of salt, not more then 2gm (2,000 mg sodium intake) a day.
- Add garlic, onions and herbs to your food.
- Also add turmeric to food, it lowers the glucose levels.
- Vitamins:
- Include foods that are rich in vitamin A, C, E as they have antioxidant property and thus protect from heart diseases.
- Include adequate amount of B vitamins in your diet, certain B vitamins like folate, Vitamin B6 and Vitamin B12 lowers the levels of homocysteine.
- Magnesium deficiency is usually seen in diabetics. The best sources of magnesium are dark green vegetables, legumes, cereals, wheat bread, fish, and nuts.
- Chromium deficiency is observed to be a risk factor for diabetes type II. Shellfish, fish, eggs, wholegrain cereals, nuts are good sources of chromium.
- Zinc deficiency is also observed in patients with diabetes Type II. Zinc is abundant in certain seafood, and whole grains.
- Moderate alcohol intake is beneficial, especially red wine. One should limit to 1 drink per day for women and 2 drinks per day for men. Pregnant women and people at the risk of alcoholism should not consume alcohol.
- Tea has proved to have beneficial effects on the heart, as it is rich in flavanoids and thus protects from damage from LDL, green tea as well as black tea are beneficial for arteries.

NOTE

- Diet low in protein and salt along with high intakes of fluids can lead to hyponitremia, which can cause fatigue, confusion and can be life threatening.
- One gram of carbohydrates equals four calories.
- One gram of fat is equal to 9 calories, whether it's saturated or unsaturated.
- One gram of protein contains four calories.

NOTE : PLEASE CONTACT WITH YOUR DOCTOR FOR EXACT DIET FOR THE HEALTH PRBLEMS YOU HAVE.THIS A SAMPLE DIET CHART TO GET THE IDEA OF YOUR DAILY ROUTINE FOOD INTAKE TO MAKE YOUR LIFE HEALTHY .