

DIABETES MELLITUS

(Diabetes flow through *Mel*—honey)

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It is a chronic metabolic disorder. It has a strong hereditary basis, but it is preventable and controllable by adopting proper measures at the right time. There is high blood sugar level which is usually associated with passage of sugar in urine.

Unfortunately it can be symptomless in the earlier stages. Cases are usually discovered at a routine physical check up or a physical check up for life insurance policy, entrance to service etc., or for ailments like carbuncle, crop of boils, recurrent infections or when urine is examined preoperatively. In addition to defective carbohydrate metabolism, fat and protein metabolism are defective as well. Metabolic defects result from lack of insulin which is secreted by the beta cells in the islets of Langerhans in the pancreas.

The classical symptoms of the disease when established are frequent passing of urine with high specific gravity containing sugar, excessive thirst and excessive appetite.

It is no longer a dreaded disease with modern methods of dietetics and therapy; but neglect leads to complications which are many and very serious sometimes. A well managed case has a good expectancy of useful life. Most of the complications are due to continued and irreversible damage to cardiovascular system. These may lead to apoplexy, coronary infarction, kidney disease, gangrene and blindness.

The disease has relatively high incidence in our country because population lives mostly on carbohydrate food which is the cheapest source of energy. It affects both sexes and all age groups. It is a major community health problem. Prevention and effective control lies in early detection of cases in the community. Any person with diabetic father/mother, should take more than usual care to detect it in its earliest stage. Urine should be got examined for sugar at least twice a year and more often if: (i) There is a sudden increase in weight or if an unexplained loss of weight occurs. (ii) Recurrent skin infections occur or a wound does not heal in routine way. (iii) An overweight child is born.

Insulin regulates carbohydrate, fat and protein metabolism. Diet is the most important single factor from point of view of control of the condition. From

the dietetic point of view, diabetes is classified by age as juvenile, adult and senile. Juvenile cases are primarily deficient in insulin. They require a high calorie diet and insulin to maintain the blood sugar level. Adult diabetics are usually obese and most of these improve if not cured by reduction of weight. Elderly cases require normal calories and a small amount of insulin.

All diabetics do well on a balanced diet providing minimum calories which will maintain his body weight at 5% below his ideal weight for age, sex, build, occupation etc. Most diabetics consume more calories than they need.

The assumption that carbohydrates intake only is to be regulated is erroneous. The total intake of calories is more important. About 200 gm. carbohydrate should be given to a patient of normal weight. The amount is increased in a thin diabetic and decreased in an obese.

A diet high in protein is good because it does not raise the blood sugar during absorption and has less calories than fat. It also helps tissue repair. One gram of protein per kilogram body weight should be the minimum but more is preferable; while carbohydrates and fats are proportionately reduced.

Fats are more satisfying and cannot be oxidized as readily as carbohydrates. But, these are costly source of heat and energy and interchangeable with carbohydrates. 30 to 60 gms. of fats is allowed. A diabetic also requires supplements of Vitamin B because carbohydrates are not completely metabolized when it is deficient. It is also advisable to supply Vitamin A because liver which is storehouse of vitamin A, is damaged in diabetes.

A Sample Menu for Normal Weight Diabetic

(1800 Calories)

Vegetarian diet.

Protein	70 g.
Fat	60 g.
Carbohydrate	235 g.

Mixed diet.

Protein	90 g.
Fats	60 g.
Carbohydrate	215 g.

Breakfast

Milk	1 cup	Egg one, half-boiled or poached.	
Cereal (dry)	30 g.	Toast	2
Orange	One	Butter	1 t.s.f.
Tea	One cup with 2 table spoons of milk and one teaspoon of sugar.		One cup with 2 tablespoons of milk and one teaspoon of sugar.

Lunch

Mixed vegetable soup	1 cup	Meat soup	1 cup
Cooked vegetable	1 cup	Mutton	3 ozs
Thin Dal	1 cup	Cooked vegetable	1 cup
Salad vegetable green.		Chapatis thin (30 g. each dry flour).	2
		Salad vegetable green.	

Afternoon tea

Milk	1 cup	Tea with a table-spoon milk and sugar one tea-spoon.	1 cup
Apple or apricot or other fruit.	1 serving	Fruit	1 serving

Dinner

Cooked vegetable	1 cup	Fish baked	3 ozs
Potato boiled/mashed or baked.	1 medium.	Bread	2 slices.
Dal thin	1 cup	Cooked beans or lentils.	1 serving
Chapatis 30 g. flour each.	2	Milk	1 cup
Dahi/Raita.	1 cup		

Precise calculations of calories is not possible and all that is assumed is an approximation. Patient has to follow diet for his life and therefore instructions must be simple.

Except for potatoes, sweet potatoes, jam, banana, plantain, vegetables with seed; other vegetables can be freely taken (cooked or raw) so that the diet can vary to make it more attractive and palatable and suit the financial condition of the patient. Foods listed in following Exchange lists can be substituted.

Exchange list I.

Breakfast cereal (30 g) or sweet biscuits medium	One helping
or banana	3
or chapatis wheat (ata 30 g).	1
or bread slice	1
or rice cooked	2
	4 table-spoons

Exchange list II.

Cow's milk	1 cup
or skim milk powder	3 table-spoons
or meat/fish	3 ounces
or peanuts	20
or almonds	15

Exchange list III.

Apple	1
or grapes	20
or orange/guava/apricot	1
or plums	1
or figs	3

Exchange List IV

Butter/oil	1 tea spoon
Vanaspatti/ghee	-do-

Other measures which help in treatment are proper exercise and rest, avoidance of stress and strain (physical and mental) and proper medicinal treatment with insulin and/or oral drugs (sulphonylurea and guanide compounds) when indicated.

Nurse plays a vital role in the successful prevention and maintenance of health of the patient throughout his life period. In the achievement of these objectives, she has the following duties and responsibilities.

1. Detection of cases in the early stages by search in the families of diabetics or those likely to be predisposed to disease (thin, obese etc.).
2. Education of the patient regarding his diet, general hygiene specially of the skin, nails, feet, clothing (that interfere with blood circulation).
3. Constant watch for likely complications to enable physician to take remedial steps in time.
4. Education of the community about this disease and its management.
5. To prevent and if not possible then to delay the onset, and modify the course of the disease in the children of known diabetics; so that they can live useful life with least restriction of diet and life activities.