

Reflexology footnotes

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Diabetes and Reflexology

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At the outset it may be mentioned that diabetes is a chronic incurable condition, but it is controllable. If not controlled it can cause serious complications and become fatal. If controlled one can enjoy normal health and full life. The control measures, however, will have to be a life long program.

The full name for diabetes is Diabetes Mellitus. It is distinct from two more conditions whose names are prefixed with the word 'diabetes'.

Diabetes Insipidus – It is a rare disease of pituitary gland caused by inadequate secretion of anti-diuretic hormone vasopressin. Out put of urine increases to 5 to 10 litres in 24 hours.

Diabetes Bronze - It is also a rare disease, a disease of iron metabolism, characterized by enlargement of liver and pigmentation of skin that takes a bronze hue.

Both of these conditions are totally different from diabetes mellitus. Usually when some one talks of diabetes, he means diabetes mellitus, which is the subject of the article.

What is Diabetes Mellitus?

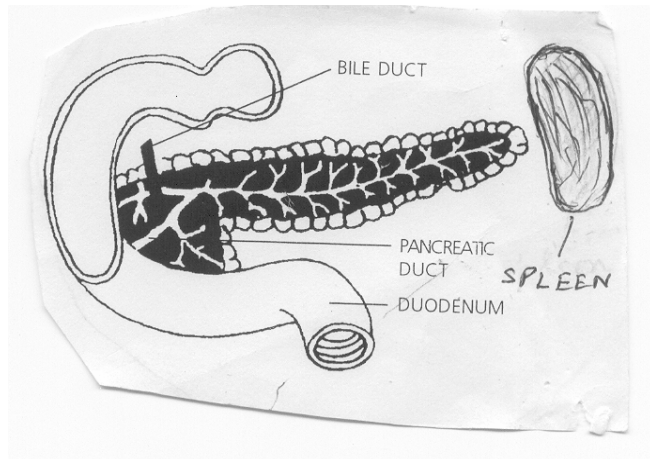
It is a chronic disorder of carbohydrate metabolism, characterized by hyperglycemia (excessive sugar in blood) and glycosuria (sugar in urine), resulting from inadequate

production of insulin by body tissue. Insulin plays an important role in carbohydrate metabolism. Lack of insulin decreases the efficiency of cells to absorb sugar from the blood. This increases the quantity of sugar in the blood (hyperglycemia), and excessive sugar in the urine, (hyperglycosuria.)

These hormones help to regulate the level of sugar, which is the main source of energy in the cells. Insulin stimulates body cells to absorb the sugar. Insulin also helps the liver to store the excess sugar in the form of glycogen. When blood sugar level goes glucagon makes the liver to convert glycogen back to sugar and release into blood stream to restore blood sugar level. Working of insulin and glucagon is endocrine action of the pancreas.

As an exocrine gland, the pancreas secretes pancreatic juice, which contains digestive enzymes. This juice is released into the duodenum through a duct. It helps to break down the food, which comes out of stomach in a semi fluid form known a chyme.

Pancreas: It is a compound gland, both endocrine and exocrine. It is a large Gland lying horizontally in front of 1st & 2nd lumbar vertebrae. It is of fish shape with its head attached to duodenum and the tail reaching the spleen. The body of gland between the head and the tail has scattered through out differentiated masses of cells known as Islets of Langerhans. Their production includes two important hormones; **glucagon**-produced by alpha cells and **insulin**-produced by beta cells.



All said and done, management of diabetes is a tough job, so many do's and don'ts. To be influenced by temptations is a natural weakness, but to resist and overcome temptations is great. You can do it if you are intelligent to understand the implications and are a person of strong mind.

Pregnancy and Diabetes

If a woman is diabetic and conceives, she should bring it to the notice of her doctor who will do special management of diabetes along with that of pregnancy so that the delivery is as successful as of a non-diabetic.

Some non-diabetic women develop diabetes during pregnancy. It is due to hormones produced by placenta, which reduce insulin sensitivity. It is a secondary diabetes and disappears after pregnancy. Repeated pregnancies, may, however, increase the chance of permanent diabetes.

Two syndromes classify diabetes mellitus:

Type I- Insulin Dependent Diabetes Mellitus (IDDM)

or

Juvenile onset diabetes

Type II-Non-Insulin Dependent Diabetes Mellitus (NIDDM)

or

Maturity onset diabetes

Comparative features of Type I & Type II Diabetes are tabulated below:

Feature	Type I	Type II
Age of Onset	Usually under 30	Usually over 40
Type of Onset	Abrupt	Gradual Many times, not noticed for long time.
Body Weight	Normal	Mostly Obese –About 80%
Does pancreas produce Insulin	Little or nil	It does
Insulin in blood	Little or nil	Some usually present
It is hereditary	Generally not	In a number of cases
Prevalence	Roughly 10% cases	Roughly 90% cases
Control	Insulin + Diet +Reflexology +Exercise	Diet + weight control + exercise+ Reflexology may be sufficient. Oral medicine in a number of cases. Insulin in some cases.
Vascular and Neural Changes	May eventually develop with good control may not	Often develop, but not in all cases
Stability of condition	Fluctuates, difficult to control	Fairly stable usually easy to control
Symptoms	Excessive urination, Enormous thirst. Feel great hunger, but weight loss despite gluttonous eating, Acetone, is present in urine; there may be depletion of salt and water in the body; reduced blood pressure and increased heart rate.	Excessive urination. Enormous thirst. Itching, more about the genitals. Peripheral neuropathy; chronic malaise or fatigue; many have high blood pressure may have increased blood cholesterol.

Complications

Two emergencies, which Type-I Diabetics should know.

I. **Hyperglycemia** (High blood sugar)

If severe it can lead to diabetic coma.

When the body cannot obtain energy from glucose, it begins to break down fats. The presence of ketones in urine is a signal of severe deficiency of insulin.

Causes - Lack of insulin dose, in the presence of emotional or physical stress, infection, or major illness.

Symptoms - Symptoms include: flushed dry skin, drowsiness, fruity smell in breath, deep laboured breathing, vomiting and abdominal pain. If these symptoms appear, the patient should be taken to the physician immediately.

II **Hypoglycemia** (Low blood sugar)

Causes- Excess of insulin, too much exercise, or lack of food intake.

Symptoms- Symptoms are: acute fatigue, restlessness, malaise, marked irritability and weakness. In severe cases mental disturbance, delirium, coma and possibly death. Fortunately, the condition is easily reversible. The patient should recognize the symptoms and take sugar, glucose, sweet juice, or other sweet drinks (not diet drink). If there is no relief in 10/15 minutes, the patient should be taken to the physician. Apart from the above two emergencies, there can be a number of other serious complications. Old sickness and neglected control have more complications.

- In many diabetics, complications occur in blood vessels. They are more prone to atherosclerosis (disease of arteries in which fatty plaques develop on the inner walls of blood vessels with eventual obstruction of blood flow). Vascular problems cause other complications of circulatory system including heart attacks, strokes, peripheral circulatory disturbances especially in the legs, which may lead to gangrene.
- Diabetics have more kidney disease than non-diabetics, because the blood vessels serving the kidneys are affected, causing recurring infections of urinary tract.
- Vascular changes cause high blood pressure (hypertension).
- Blood vessels serving the eyes are very tiny and fragile. Retinopathy, causing loss of vision is more of diabetics. There are also more cases of cataract and glaucoma amongst diabetics.
- Neuropathy (disease of peripheral nerves) commonly affects the legs causing numbness, tingling and some times severe pain.
- Diabetic feet are vulnerable to any kind of injury. They need special attention. Corns, calluses, ingrown nails, or fungus should be treated by a podiatrist. Shoes should not be too loose or too tight, and socks should always be clean.
- Diabetics also experience joints and skeletal muscle problems.
- Diabetes also affects gastrointestinal tract.

Most diabetics suffer from additional one or two or more chronic problems that may be related to heart - blood pressure - kidneys - vision - gastrointestinal systems – or others.

In summation, diabetes is not a disease of blood sugar alone, but it can involve the whole body, all organs, all glands, all systems, and the mind.

Treatment

As soon as your diabetes is detected, you must consult a specialist to assess the current state of the disease and to start regular treatment.

Key to the treatment is:

- Proper diet.
- Ideal weight.
- Adequate exercise.
- Adequate medicine.
- Regular pathological check ups.
- Stable mental attitude, free from tensions.
- Regular Reflexology treatment.

Diet

For Type II (NIDDM) patients, diet therapy is the initial approach. If diet therapy along with exercise, weight control and reflexology is found result producing no medication is required.

Even when you are on insulin (Type I) or on oral medicine (Type II), paying attention to diet is a must. Your physician will give you guide lines on this, on the basis of your age, weight, occupation and activity level, etc. Diet does not mean eating less. Diet is your source of fuel for your body. It should be nutritious, having carbohydrates, proteins, fats, vitamins and minerals. You will be mostly eating what the non-diabetic eats. Your diet will be special in the sense that you will make sure that you eat at the right time, eat only the amount necessary and a following a few don'ts. Avoid simple carbohydrates (examples-table sugar, honey, jams, jellies, cakes, pastries and sweets), which break down quickly and flood the blood stream with sugar. Complex carbohydrates break down into glucose slowly and do not affect the diabetics in the same way as simple carbohydrates. There is so much unnecessary scare about carbohydrates. In fact, according to modern thinking, 50% or more of your daily intake of calories should be from complex carbohydrates (examples – grains, legumes (daals), vegetables and fruits). Fruits with high sugar content like mangoes, grapes, and cheekoos should be avoided. Low-fat carbohydrates are recommended. Fried foods like purees, parathas, pakoras and samomas should be avoided.

Fiber Consumption

Dietary fibers are plant constituents that are not metabolized in stomach or small intestines. They reach the large intestines unchanged. Fibers absorb water and are essential for normal function of the digestive tract. Fiber adds bulk to the stools and soften them to enable them to move through the bowels and slows down the waste movement. It helps to - avoid constipation, decreases after meal blood glucose and also cholesterol level in the blood. Foods rich in fiber include: whole grain foods, bran flakes, beans, fruits, leafy vegetables and their skins and prunes (which are also laxatives).

Importance of Weight Control

There are insulin receptor sites on the walls of the cells. Insulin receptor sites act as doors through which glucose can travel into the cells for oxidation and production of energy. Glucose can travel into the cells only when insulin is attached to the receptor sites. Persons who are overweight have fewer insulin receptor sites. If sites are fewer, more insulin is required to keep the doors open for glucose. This increased demand of insulin causes the insulin producing cells in the pancreas to work overtime, with less effectiveness, and a decrease in output of insulin. This results in greater need of insulin and a deficiency of it. When you reduce your weight you increase the number of insulin receptor sites on the cell walls. With more sites, the need for insulin decreases and insulin producing cells in the pancreas are under less stress, thereby recovering some of their function and begin to release more insulin. This revitalization of glucose controlling mechanism can reduce the severity of diabetes.

Exercise

The biggest advantage of exercise is that it can help you to control weight. Exercise can make insulin more effective in lowering blood sugar levels and will help the entry of sugar into the cells.

Exercise also helps in many ways:

- It boosts the pumping of blood by the heart.
- It increases the number of red blood cells.
- It increases oxygen supply to muscles.
- It toughens the muscles fibers.
- It improves the availability of oxygen to the pulmonary system to make the lungs function effectively.
- It is a preventive medicine against diseases.

Exercise on regular basis must be included in the diabetes control programme both by Type I and Type II patients. For Type I patients, you have to carefully balance insulin with food you eat and the time and amount of exercise you do. For example, after insulin you need food - not exercise. After exercise your appetite improves. It may be more beneficial to reduce the insulin dose instead of increasing the food intake. Walking, jogging, swimming, bicycling, tennis, badminton are examples of useful exercises.

Another precaution is that those who are not used to physical activity should start exercise gently and day-by-day increase the amount and briskness of exercise.

Vigorous exercise within two hours of heavy meal should be avoided as it may cause indigestion or abdominal cramps.

Regularity in exercise is essential. It should be done 5 to 7 days a week, preferably 7 days. Weekend exercise once or twice a week is neither here nor there. Incidentally, I give below a gist of report published in Hindustan Times of 6 September 2004. It may be of some interest to the diabetics. "According to a scientific study they have found that eccentric muscle training via hiking down hill improves glucose tolerance more than accentric muscle training via hiking up hill".

Reflexology Treatment

The aim of diabetes treatment is to maintain normal blood glucose levels and to minimize complications. For Type I (IDDM), as the name suggests insulin is a must. Production of insulin in 1921 was a providential boon, as before that Type I patients would not live long. The physician has to fix the dose of insulin after necessary tests and examination.

For Type II (NIDDM) patients, the initial approach should be diet control, exercise weight control and reflexology. If symptoms disappear, medication is not required, but control measures will continue. If you stop them, blood sugar will again appear. Reflexology is recommended as an adjunct to the conventional treatment.

What does Reflexology Do?

- It stimulates pancreas and liver and helps in maintaining blood sugar level.
- It reduces blood sugar fluctuations.
- It minimizes complications. Complications are numerous and serious; they grow gradually and are more common in old cases. You cannot start medication in anticipation of complications. However, Reflexology can take care of vulnerable organs. It is a holistic treatment. As the complications grow, with Reflexology, they will be nipped in the bud. With regular Reflexology treatments, the patient may be saved from drastic situations.
- Reflexology reduces stresses and tension, which are responsible for causing large number of problems. Tensions can aggravate diabetes. The antidote for stress and tension is relaxation. Reflexology treatment gives immense relaxation and thus save you from tension related complications.

Reflexology Treatment

On the first session of the treatment, you evaluate the whole body through the reflexes in the feet. Whichever body part is below normal, it will be given due attention in the reflexology treatment. The main areas of stimulation through the reflexes in the feet are as shown below, in order of relevance.

- | | |
|---|--|
| 1. Pancreas - Produces insulin and glycogen | } Directly involved
in maintaining blood
sugar levels |
| 2. Liver - Stores and releases glucose when needed | |
| 3. Thoracic Spinal Cord – Innervations of liver is T-5
and of pancreas in T-7 | |

In addition we work on prophylactic basis on the vulnerable areas mentioned under “Complications” They are:

4. **Endocrine glands**

- 4.1. Pituitary
- 4.2. Thyroid
- 4.3. Adrenals
- 4.4. Ovaries/ Testes
- 4.5. Thymus

5. **Hypothalamus**

6. **Heart/ Lungs**

7. **Diaphragm**

8. **Solar Plexus**

9. **Brain**

10. **Whole Spine**

11. **Kidneys**

12. **Eyes**

13. **Knee/ Hip/ Leg**

14. **Digestive System:** Esophagus, Stomach, Duodenum, Liver, Gall Bladder, Small Intestines, Ileocecal Valve, Large Intestines, Sigmoid, Rectum

Frequency of Treatment

Twice a week Reflexology session is optimum.

Management

In all chronic ailments, the patient has to involve himself in day-to-day management of his problem. In diabetes, the involvement of the patient is more than in many other problems because:

1. It is a life long incurable problem. It can only be controlled.
2. If not properly controlled, the complications can be drastic.

In the management of diabetes the most important of all things is to learn as much as you can about your condition and take personal charge of the management which will include.

- Medication and Reflexology.
- Pathological Tests and Medical Check Up.
- Diet.
- Exercise.
- To keep a watch on problems to which diabetics are prone.
- Life Style.
- To lead a positive and cheerful life to keep tensions away.

Some guidelines are given below:

Medication and Reflexology - Regularity is essential.

Pathological Tests and Medical Check Ups –Draw up a time schedule with the help of your physician.

Diet

You have to take care of both quality and quantity. You have to be calorie conscious. For instance, there's not much wrong with taking a drink or two, but it should be a part of your calorie quota. Avoid excessive eating due to increase in appetite. Timing in food intake is also important. If you are on insulin, make sure you have eaten in the previous two hours before going for a drive.

Exercise

Regular exercise is good, but vigorous exercise may not suit you. Do not exercise after your medication, unless you've eaten and waited two or more hours.

Life Style

The aim of management is to keep your blood sugar levels within normal limits. If there is anything, which deviates you from this goal, it should not be a part of your life style. For instance, there are some people who are always munching some thing like chewing gum, paans, Paan masala, sweet drops, etc. This is not a good habit. You need to work out calories instead of adding small bits all the time.

Stress free life

Stress can be physical or emotional. Physical stress is caused by infections or accidents, etc. Stress tends to raise the blood sugar level, which may call for increase in medication by a consultation with the physician.

Emotional stress usually arises from matters of every day life - like dissatisfaction with work, financial difficulties, problems with children or parents and problems in dealing with others persons. With a positive and cheerful outlook, face stresses as a part of life. However, when stresses are excessive, frequent and prolonged, they do cause chemical imbalance in the body and cause various kinds of sicknesses. According to experts, the chemical imbalance is controlled by hormones produced by three tiny glands in the body: one pituitary and two adrenals. Reflexology helps to stimulate the glands. Follow the Reflexology treatment mentioned above for stimulation of these glands.



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