

Diabetes And Effect On Functioning Of Various Organs Of Human Body .

¹Dr.Siddharth Bindroo, ²Dr. S.K.Wamgoo DM Endocrinology

Abstract : After eating or drinking anything , body breaks down the sugars in blood and turns it into glucose. The glucose travels through bloodstream and provides body with energy. To accomplish this, pancreas needs to produce a hormone called insulin. In a person with diabetes (diabetes mellitus), the pancreas either produces too little insulin or none at all, or the insulin can't be used effectively. This allows blood glucose levels to rise while the rest of cells are deprived of much needed energy. This can lead to a wide variety of problems affecting nearly every part of body.



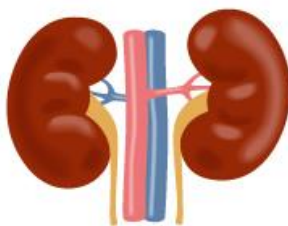
© JRPS International Journal for Research Publication & Seminar

There are two main types of diabetes. Type 1, also known as juvenile diabetes or insulin-dependent diabetes, is an immune system disorder. In Type 1 diabetes, the patient's own immune system attacks the insulin-producing cells in the pancreas, destroying the ability to manufacture insulin. In Type 2 diabetes is the presence of what is called insulin resistance. In this sort of diabetes, the pancreas starts off robust in its production of insulin. However, cells that need energy don't respond normally to the usual amounts of insulin. The pancreas has to produce much higher levels of the hormone in order to manage blood glucose levels. Over time, the insulin-producing cells in the pancreas can burn themselves out due to this overproduction.

Common symptoms of diabetes include excessive thirst, frequent urination, and sluggishness. Blood tests will reveal high sugar levels.

Key Words : kidney, eyes, heart, diabetes, reproductive system, circulatory system, Integumentary System, gums and teeth

Kidney and Digestive system : insulin to help make energy out little or no insulin, or if your are used to turn fat into energy. chemicals, including acids and condition called diabetic complication of the disease.



excessive urination, and fatigue. Your breath may have a sweet scent that is caused by the elevated levels of ketone bodies in the blood. High blood sugar levels and excess ketones in your urine can confirm diabetic ketoacidosis. Untreated, the condition can lead to loss of consciousness or even death. Diabetes can damage your kidneys, affecting their ability to filter waste products from your blood. Elevated amounts of protein in your urine (micro albuminuria) may be a sign that your

pancreas produces and releases of sugars. If your pancreas produces body can't use it, alternate hormones This can create high levels of toxic ketone bodies, which may le ad to a ketoacidosis. This is a serious Symptoms include extreme thirst,



kidneys aren't functioning properly. Kidney disease related to diabetes is called diabetic nephropathy. This condition doesn't show symptoms until it advances to later stages. People with diabetes should be evaluated for nephropathy in order to avoid irreversible kidney damage and kidney failure.

Diabetic hyperglycemic hyperosmolar syndrome (HHS) occurs in Type 2 diabetes. It involves very high blood glucose levels but without ketones. Symptoms also include dehydration and loss of consciousness. It usually happens to people whose diabetes is undiagnosed or who have not been able to control their diabetes. It can also be caused by heart attack, stroke, or infection.

High blood glucose levels can make it hard for your stomach to completely empty (gastroparesis). In turn, the delay causes blood glucose levels to rise. Diabetes is the leading cause of gastroparesis. Symptoms include nausea, vomiting, bloating, and heartburn.

Circulatory System :

The circulatory system is essentially the body infrastructure, providing the route ways for the blood to transport oxygen, nutrients and hormones to and from the cells and organs.

The heart plays a key role in the circulatory system, helping to pump blood around all the body.

Blood vessels range in size, from larger arteries into very small blood vessels called capillaries. Capillaries feed into the veins which carry blood back to the heart.

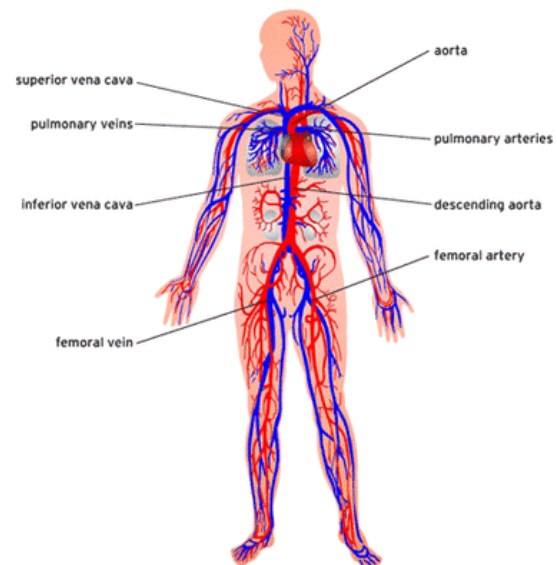
The circulatory system allows blood glucose levels to be regulated.

The hormone glucagon, carried in the blood, signals the liver to release glucose into the blood and the presence of insulin in the blood instructs the cells to take in glucose from the blood.

If blood glucose levels become too high for extended periods of time, damage can be sustained by the blood vessels.

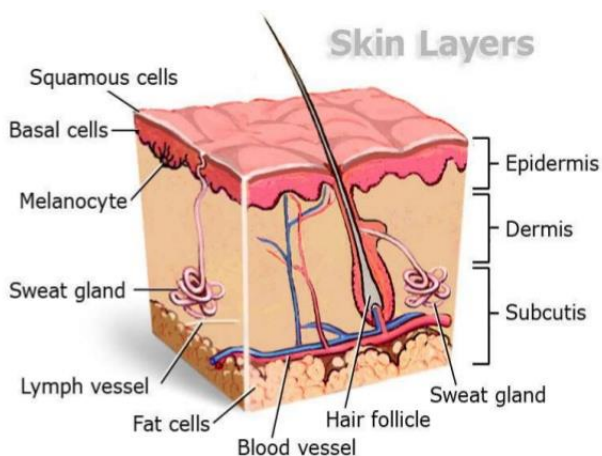
High blood glucose levels can contribute to the formation of fatty deposits in blood vessel walls. Over time, that can restrict blood flow and increase the risk of hardening of the blood vessels (atherosclerosis).

Lack of blood flow can affect your hands and feet. Poor circulation can cause pain in the calves while you're walking (intermittent claudication). People with diabetes are particularly prone to foot problems due to narrowed blood vessels in the leg and foot. Your feet may feel cold, and you may be unable to feel heat due to lack of sensation. A condition called diabetic neuropathy causes decreased sensation in the extremities, which may prevent you from noticing an injury or infection. Diabetes increases your risk of developing infections or ulcers of the foot. Poor blood flow and



nerve damage increase the likelihood of having a foot or leg amputated. If you have diabetes, it is critical that you take good care of your feet and inspect them often.

Integumentary System :



The integumentary system (better known as skin) is a system that is greatly affected by this disease. It is very important to take care of your skin when you get diabetes type 2. Nerve and blood vessel damage and dehydration from chronic high blood glucose can cause dry skin problems in people with diabetes. Diabetes may cause other diseases in skin that are worst for health. Some examples of skin problems caused by diabetes are: Acanthosis nigricans, bullosis diabeticorum, diabetic dermopathy, eruptive xanthomatosis and

necrobiosis lipoidica diabeticorum. Diabetes can affect your skin. Lack of moisture can cause the skin on your feet to dry and crack. It is important to completely dry your feet after bathing or swimming. You can use petroleum jelly or gentle creams, but be careful: creams or oils left between your toes can become so moist that it can lead to infection.

High-pressure spots under your foot can lead to calluses. If you don't take good care of them, they can become infected or develop ulcers. If you get an ulcer, see your doctor immediately to lower your risk of losing your foot.

You may also be more prone to boils, infection of the hair follicles (folliculitis), sties, and infected nails. People with diabetes have a higher incidence of bacterial infections, including staph (Staphylococcus), than the general population.

Moist, warm folds in the skin are susceptible to fungal or yeast infections. You're most likely to develop this type of infection between fingers and toes, the groin, armpits, or in the corners of your mouth. Symptoms include redness, blistering, and itchiness.

A condition called diabetic dermopathy can cause brown patches on the skin. There's no cause for concern and no treatment is necessary. Eruptive xanthomatosis causes hard yellow bumps with a red ring. Digital sclerosis causes thick skin, most often on the hands or feet. Both of these skin conditions are signs of unmanaged diabetes. They usually clear up when you get your blood sugar under control.



6. AMERICAN DIABETES ASSOCIATION
7. Effect of Insulin and Oral Glutathione on Glutathione Levels and Superoxide Dismutase Activities in Organs of Rats With Streptozocin-Induced Diabetes
Dean Loven, Harold Schedl, Helen Wilson, Tahia T Daabees, Lewis D Stegink, Mary iekus and Larry Oberley
8. Effect of Tulasi (*Ocimum sanctum*) leaf powder supplementation on blood sugar levels, serum lipids and tissues lipids in diabetic rats, V. Rai , U. Iyer , U. V. Mani
9. Diabetic Autonomic Neuropathy
Aaron I. Vinik, MD, Raelene E. Maser, PHD, Braxton D. Mitchell, PHD and Roy Freeman,
10. Diabetic Autonomic Neuropathy
Aaron I. Vinik, MD, Raelene E. Maser, PHD, Braxton D. Mitchell, PHD and Roy Freeman,
11. Microcirculation and diabetes, J E Tooke

