



Watch What We Eat: Avoid the Sugar Trap

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Oh no! What am I going to eat now? This is a common reaction when we learn we have diabetes. Yet, eating right for diabetes is not difficult as we think. Diabetes is a metabolic disorder characterised by decreased ability or total inability of the tissues to utilize carbohydrates (glucose). The disorder is due to the absence of insulin, its deficiency or ineffectiveness. In the moderate and severe cases of long duration it is associated with the abnormality of the body organs such as heart, kidney, brain, eyes and even nervous system. Excess food, lack of exercise, familial tendency, stress, infections, imbalance of hormones in the body, some diseases of pancreas, all these factors are responsible for diabetes. Symptoms of diabetes are poly urea, poly phagia, poly dipsea, loss of weight in spite of eating a lot, blurring of vision, lack of energy, delay in wound healing and a tingling sensation in hand and feet. Diabetes can lead a normal and healthy life if there is a good synchronization between diet, drugs and physical activity.

We know that in diabetes, blood sugar levels go haywire. Normally sugar and starch in food are absorbed as glucose into our blood. Insulin, the hormone produced by pancreas, clears up glucose from the blood by directing it into the cells. In diabetes, *nimboo pani* because cells become resistant to insulin, glucose is unable to enter the cells and blood glucose levels remain high. Eating foods especially high in sugar or starch such as burgers, chips, cookies, coke, *aloo-poori* and *jalebisi* complicates the situation. Eating the right foods in the right amount at the right time is important to maintain blood sugar levels through the day. This will help we feel better and stay mentally sharp. We will have better moods, less depression, and less fatigue than those who don't. This will also reduce the risk of complications such as high blood pressure, heart ailments and some forms of cancer.

- **SUGAR IN DIET:** Ideally, sugar has no place in a diabetic's diet. Sugar has loads of calories but no nutrients or fibre. It is quickly absorbed into the blood and raises blood glucose levels dangerously. We Indians like to add sugars to milk, tea, coffee, cold drinks (*nimboo pani*, *thandai*, iced tea *sherbets*,

even fresh juices). This increases the sugar load considerably. Avoid adding sugar to food and drink as such. Sugar also disguises itself as honey, lactose, glucose, sucrose, maltose, dextrose, fructose, molasses, corn syrup, maple syrup, corn sweetener, and juice concentrate in most processed foods. Read food levels carefully before buying processed foods. We can safely opt for a sugary treat once a while. It is far wiser to eat some dessert now and then rather than deprive ourselves for weeks only to binge later. However, portion control is the key. So, don't feel guilty if we eat a slice of our favourite cake or a bowl of ice cream once in a while. But keep the portion small. We may compensate by foregoing the same amount of calories from other foods so that the total caloric intake remains the same. Also, change concept of dessert. A dessert need not always be buttery, creamy, or floating in thick syrup of sugar. Most Indians desserts are very sweet. Cultivate taste for delicately sweetened desserts Try:

- Serving cut up fresh fruit for dessert
- Adding dates, raisins, figs liberally. Cinnamon, cardamom and other spices add a zestful tang.
- Gelatine-based desserts like jelly with fresh fruit are a healthy option.

Most diabetics happily give up sugar and start using sugar substitutes. Instead of regular coke, we go in for the diet variety. We can now make sugar-free *halwa*, *kheer* and *mithai*...Sadly, these sugar substitutes have far worse health effects upon the body than sugar itself.

SUGAR SUBSTITUTES: Aspartame, the chemical used in sugar substitutes, has been linked with slow and silent damage to health. Used instead of sugar, aspartame can be found in more than 6,000 products including diet sodas, juices, jams, chewing gum, candy, sweets, chocolates and even fibre supplements, vitamins and some drugs! Prolonged use has been known to cause Alzheimer's disease, brain tumours and Parkinson's disease in young people. Aspartame can cause depression, anxiety, dizziness, panic attacks, nausea,

irritability, loss of memory, lack of concentration and difficulty in reading and writing. Sucralose, the latest artificial sweetener, has been linked with poor blood sugar control, enlarged liver and kidneys, decreased red blood corpuscles count, abortion, extended pregnancy and accelerating aging. Other harmful sugar alternatives contain chemicals such as neotame, acesulfame-K or saccharin. Sadly, these sugar substitutes have far worse health effects upon the body than sugar itself.

Moreover, artificial sweeteners being 200 times sweeter than sugar do not reduce our natural craving for sugar or the “sweet tooth”. Ironically, they increase our craving for sugar and carbohydrates and may actually promote obesity. It is best to avoid artificial sweetener totally. While controlling our sweet tooth may be the best, though difficult, solution health experts strongly recommend *Stevia*, a naturally found sweetening herb, as an ideal sweetener. It can be used in cooking, baking and frying.

SOME DIETARY GUIDELINES FOR DIABETES TO BE FOLLOWED:

- Avoid being overweight.
- In general, the best type of diet is to follow a low fat, moderate protein, moderate energy and high fibre diet.
- More emphasis should be on complex carbohydrates as whole wheat products, whole pulses (sprouts), beans, oats and vegetables (low starch) like bottle guard, gwarfali, bitter guard, tinda and all green leafy vegetables.
- Restrict simple carbohydrates like glucose, sweets, candies, cakes, chocolates, toffees, sweet drinks, jams, jellies etc..
- Avoid alcohol consumption. If can't drink moderately (not more than 2 small drinks a day) and drink with food only.
- Walk for at least 30 to 50 minutes daily. Take special precautions to prevent infections of the feet.
- Prefer jaggery (gur or shakkar)-based mithais over the refined sugar-based ones as the nutritional value of jaggery is higher than sugar. It contains carotene, vitamin-B, iron and magnesium.
- There are various low calorie sugar free sweets available in the market, which offer some nuts rich and low sugar options. Make judicious choice of less fattening sweets such as rasgullas rather than gulab jamuns. Other less fattening sweets include sandesh and pedas.
- Make salted munchies such as mathris, shakarpalis, chalkies, kachories, etc. using high-fibre flour such as finger millet or bajra, ragi or soya flour along with wheat flour. Add green leafy vegetables such as methi (fenugreek), palak (spinach), kothmir (coriander) or mint to salted snacks.

TRAFFIC DRIVEN DIABETES

Stress, frustration, rising blood pressure and breathing problems are common in motorists who spends hours in traffic

jams. Researchers from German Diabetes Centre and the institute of Environmental Medical Research at Heinrich Hein University, Germany, claim traffic-related air pollution could raise a developing type 2 diabetes. The study, led Wolfgang Rathmann, stated in 1985. It included 1,775 healthy women, all 55 years old. They were from the industrialized Rhur district of West Germany and nearby non-industrialized towns. The researchers examined the participants again between 1990-2006 and found that 187 of them had developed diabetes. Data from environmental agencies was collected to determine each woman's exposure to air pollution. Living within 100 meters of busy roads more than doubled the risk of diabetes. Components of traffic pollution, particularly nitrogen dioxide and fine particulate matter, were significantly associated with a higher risk of the disease. The more pollution, a woman encountered, the greater her chance of developing diabetes, the researchers concluded in the September 2010 issue of *Environmental Health Perspectives*.

CURRY LEAF CONTROL TYPE 2 DIABETES

Curry leaves do more than lend spice to food. People who cannot digest fat-containing foods have high levels of free fatty acids (FFAs) in the blood. Increase in blood FFAs reduces glucose uptake and leads to type 2 diabetes. Insulin initiates the entry the entry of glucose into cells with the help of insulin receptors (IRs) – a protein which sites on cell surfaces. In type 2 diabetes, this does not happen. When curry leaf extracts showed promise in countering the disease, researchers were excited. But they could not lay their hands on the elusive compound. Researchers from the Visva Bharti University (VBU) in Santiniketan and the Indian Institute of Chemical Biology (IICB) in kolkata tested each chemical present in curry leaf extract and finally hit on one. “The molecule was identified as mahanine. Its anti-diabetic role was not known and the report is a novel one”, stated lead researcher of VBU. The group tested the effect of mahanine on cultured muscle cells derived from rats and on diabetic hamsters. When the muscle cells were treated with insulin plus palmitate (a FFA) in the presence of mahanine, the effects of the FFA reversed. The team then treated the cells with insulin plus palmitate without mahanine and saw the opposite happen. Owing to a fat-enriched diet for a prolonged period there was a two-fold increase in blood sugar levels in the hamsters, these levels were controlled by mahanine treatment. The October 14, 2009 issue of *Molecular and Cellular Biochemistry* reported the find. The FFAs hamper the activity of a gene that directs the production of the IR proteins. Hence even though insulin is released in sufficient quantities, there is not enough IRs to facilitate the entry of glucose into cells. Mahanine restores the IR gene's activity. Mahanine is destroyed when curry leaves are cooked. So how the curry would leaves help? Tuhin K Biswas of J B Roy State Ayurvedic Medical College in Kolkata said:

“The finding would help find new drugs. It would be better to have detailed clinical trials”.

Conclusively, it is obvious to mention that a silent, sweet epidemic is underway the world around. Diabetes, literally a sweet disease is slowly but surely spreading around the world. From an estimated 30 million diabetics in 1985, there were nearly 135 million diabetics in the world just a decade later. According to the WHO estimate in 2000 the number was 171 million affected and it is estimated that by 2030 at least 366 million people worldwide will be diabetics. India today is home to not only one of the world’s fastest growing population but is also home to one of the world’s fastest growing diabetic population. With an identified 50 million Type 2 diabetics in the country, the country needs to gear itself up for a massive epidemic. It is estimated that by 2030 India will be home to 79.4 million diabetics.

Aretus the Cappadocian physician, named the disease diabetes, Greek for “a siphon” because of one of its most common side effects, very frequent urination. Diabetes is essentially the body’s inability to deal with sugar in the blood stream. Either the pancreas does not produce enough insulin to break down

the sugar in the body or the insulin being produced is insufficient. The former is called Type 1 diabetes or insulin dependent diabetes whereby the patient has to inject insulin into his body. It is caused by an auto immune reaction, where the body’s defence system attacks the insulin-producing cells. Type 2, also known as adult onset diabetes is when the body does not or cannot use the insulin effectively. More common, Type 2 diabetes is often related to lifestyle and eating patterns. While technically the result of a single organ’s mal-function, diabetes is capable of affecting all the body’s functions and ultimately becoming a cause of death. Hyperglycaemia, or raised blood sugar levels is the common condition of uncontrolled diabetes. As a result of the steady percolation of sugar rich blood the functioning of the nearly all the vital organs is impacted and over time, diabetes begins to dramatically impact and invariably damage the heart, blood vessels, kidneys, eyes and nervous system. The most common type of the disease, Type 2, is more often than not thought to be the result of unwittingly made unhealthy choices. Studies establish an increased prevalence of Type 2 diabetes in patients whose lifestyle choices are sedentary, leaning towards obesity and more heavily dependent upon processed foods.