

# **Hypoglycemia (Low Blood Glucose)**

## **What You Should Know About It ?**

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Hypoglycemia means low blood glucose (sugar) level. In a normal person fasting And post meal blood glucose values are 60-110 mg % and below 140 mg % respectively. In hypoglycemia blood glucose values are below 50 mg%.

In untreated or inadequately treated persons with diabetes, blood glucose values are higher than normal(hyperglycemia). However in a person with diabetes taking insulin and/or blood glucose lowering tablets (pills), if he does not take proper precautions , blood glucose could be lowered to hypoglycemic range. In fact among the various conditions in which hypoglycemia develops, a person with diabetes taking insulin and/or pills is the commonest setting.

You should avoid hypoglycemic reactions because sometimes they could be dangerous and occasionally fatal. In order to avoid hypoglycemia or to recognize it early and to take prompt corrective action, you should gain a working knowledge on hypoglycemia.

In a person with diabetes , blood glucose is higher than normal and hence he is given medications to bring it down to normal level. When a diabetologist prescribes Insulin or pills, a patient's age, physical activity, weight,level of kidney function etc. are taken into consideration and along with the medications a detailed advice regarding diet,as regards what to eat,when to eat, how much to eat and how to divide total daily allowance etc. is also given. In short , diet and medications are planned in such a way, so as to avoid hypoglycemia as well as hyperglycemia. Hence you must meticulously follow the advice regarding the dosage and timing of medications as well as the amount and the type of food intake.

### **What are the Symptoms Of Hypoglycemia?**

The symptoms depend on the rate at which blood glucose is falling and the severity Of hypoglycemia. As blood glucose starts falling to below normal values,

the bio-feedback apparatus detects this fall and automatically the hormones having opposing action against insulin are secreted in blood circulation. The increased levels of these hormones in the circulation produces symptoms such as palpitations, tremors, sweating, giddiness etc.

These symptoms serve as warning signal. Every person does not get all the symptoms during hypoglycemia. He may get one or two of the above mentioned symptoms, but usually same symptoms are repeated everytime there is hypoglycemia. These symptoms are known as adrenergic symptoms. Even though mild hypoglycemia is automatically corrected, the adrenergic symptoms should be properly interpreted and corrective measures taken in order to avoid severe hypoglycemia. If this natural measure is unable to increase the blood glucose to normal level, brain will suffer from lack of glucose as it is the only fuel brain cells can utilize. As a result of deprivation of glucose to the brain, the following symptoms develop : headache, confusion , abnormal behaviour , deteriorating level of consciousness ultimately leading to coma. Some develop epileptic fits. In an occasional patient, symptoms may resemble paralytic stroke. These symptoms result from deprivation of glucose to brain and are known as Neuroglycopenic symptoms. It should be noted that in some persons with diabetes, particularly in elderly and longstanding diabetics, the warning adrenergic symptoms are absent and they straightaway develop one of the above mentioned neuroglycopenic symptoms.

### **How To Avoid Hypoglycemic Reactions**

In order to avoid hypoglycemia you should meticulously follow following instructions:

- 1) Always take food at fixed time. Never postpone food intake. Never reduce food Intake. If for some unforeseen reasons(such as non availability of fuel for cooking) food is not ready at specific time, you should take an equivalent quantity of ready to eat food (such as bread or biscuit).
- 2) When travelling always carry some food in personal baggage. This will help to prevent hypoglycemia in the event of non availability of food at usual time due to unforeseen reasons such as breakdown of vehicle in which you are travelling.
- 3) Always carry an identity card in your pocket or purse. This card should mention that you are a diabetic and if you are found drowsy or behaving abnormally,

you should be immediately given to eat or drink sugar or fruit juice. The card should also mention your name, address and telephone number, and your current medications.

### **Physical Activity**

Physical activity requires energy. Our body produces energy by burning glucose. If one carries out more activity more glucose is spent. Hence on a day of extra activity you should take an extra snack before the commencement of physical activity in order to prevent hypoglycemia.

### **Regular Monitoring**

Even when blood glucose is well controlled and steady , you should get it checked every 3 months and adjust the dose of insulin and/or pills as per the requirement in consultation with your doctor. If blood glucose is well controlled , your doctor may reduce the dosage of your medications in order to prevent hypoglycemia in future. You should get your kidney function tested every year ( more frequently if it is impaired ). One of the commonly used tests to evaluate kidney function is estimation of creatinine in blood. This test can be carried out along with blood glucose test. Impaired kidney function leads to slow elimination of antidiabetic pills from the body thus leading to their accumulation, which can lead to severe hypoglycemia. Impaired kidney function is not uncommon in longstanding diabetic persons. Remember that the pills are double edged weapons and they should never be taken lightly. In fact hypoglycemia following inappropriate use of some of the pills could be severe, prolonged and recurrent and more difficult to treat than that resulting from inappropriate insulin administration. In case of significant impairment of kidney function, it is advisable to discontinue pills and change over to insulin. Such a change over should be accepted and a doctor should not be pressurized to continue prescription of pills.

### **Alcohol**

As far as possible you should avoid alcoholic beverages. If you must take them they should be taken in small quantities ( not more than a peg daily ) and be followed with food to avoid Hypoglycemia .

## What Is To Be Done In Case Of Hypoglycemia

If and when you develop symptoms such as palpitations, sweating, tremors, hunger etc. which are suggestive of hypoglycemia, you should immediately consume some ready snacks such as bread, sandwich or biscuits. If symptoms are severe, you should consume two teaspoonfuls of glucose or sucrose (common sugar). A dramatic recovery within few minutes will confirm that you had hypoglycemia. Subsequently analyze the situation to identify the possible underlying cause, such as missing or reducing the quantity of food or not taking extra food before heavy physical activity, taking more than prescribed dosage of medications etc. If the mistake is identified correct it. If the symptoms occur repeatedly probably the dosage of your medications need to be reduced. In that case consult your doctor. If the symptoms remain static after eating or consuming sugar, you may not be suffering from hypoglycemia, consult your doctor.

However please note that whenever you have symptoms suggestive of hypoglycemia, it is advisable to confirm that you really had low blood glucose before reducing your medication dosage or before taking extra helping of food. Of course, in case of doubt and non-availability of equipment, for on the spot measurement of blood glucose you must take some snacks and reduce or avoid next dose of antidiabetic medication and then contact your doctor who will assess the situation and advise you accordingly. You should learn to self monitor your blood glucose with the help of dry strips with or without meter. Meter gives more accurate readings while visual readings give only very rough idea about prevalent blood glucose level. However it is sufficient to differentiate between hypoglycemia and high blood glucose level. In case you are on insulin injection you should keep a vial of glucagon injection handy. In case of severe hypoglycemia you or your family member can inject one ml. of glucagon just like you inject insulin. It will lead to immediate recovery from hypoglycemia. Failure to recognize hypoglycemia early and to take correct measures can lead to coma particularly in elderly long-standing diabetic patient and if it occurs during night relatives may not recognize it till next morning. Prolonged hypoglycemia is dangerous and can lead to permanent brain damage. Hence all diabetics should take small frequent meals and should periodically monitor blood glucose level even when everything is apparently fine.