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Type 1 diabetes is an autoimmune disease which is characterized by depletion of  $\beta$ -cells that results in lifelong dependence on insulin injections. Cause of development of diabetes in children is not yet known. It is important to realize that it is not caused by eating too much sugar, any specific food, toxins, infections or due to any fault of the parents and family and is also not specific to any socioeconomic class of society. Type 1 diabetes can happen to anyone. When managed properly children with type 1 diabetes can live long, healthy and near normal lives.

## Special needs of children with type 1 diabetes

- Children with type 1 diabetes always need insulin. Most often children need to take insulin 4-5 times in a day.
- They need to monitor blood glucose levels on daily basis along with undergoing other tests like eye and dental examination on regular basis.
- Child needs to visit doctor on regular basis and there may be few emergency hospital visits due to associated complaints or fluctuating uncontrolled blood glucose levels.
- Calorie restriction is required only when the child is overweight, but they need a healthy balanced diet which contains whole grains, vegetables and fruits
- Diabetes affects them socially and emotionally and strong motivation is required to take care on a continuous basis.

If the diagnosis or treatment is delayed, the severe lack of insulin can result in a life threatening condition called diabetic ketoacidosis (DKA).

## Type 1 diabetes - a disorder with many expenses

The direct expenses which includes basic human insulin, syringes or needles, glucose monitor, strips, other diagnostic tests, doctor visits costs more than 50,000 rupees per year. Newer treatment modalities which includes genetically engineered insulin and newer method of delivery like insulin pumps costs much more. Apart from that, if not managed properly it can lead to frequent hospitalization and various other complications adding to the discomfort and expenses. Along with this, there is additional cost related to parents taking day off from their work and transport expenses. This adds to financial burden of diseases.

## Children with the type 1 diabetes in poor socioeconomic class of society

In a country like ours, due to lack of universal health insurance, financial constraints affects people with diabetes from all strata of society. When a child from economically poor class of society is diagnosed with type 1 diabetes, it effects the whole family in multiple ways and may result in

- Inability to manage the overall cost of managing diabetes along with other day to day expenses like food for other children - Leading the child to die.
- Sub optimal doses of insulin - Using one or two vials of insulin for whole month. It may help the child to survive but it results in frequent ill health and appearance of chronic complications quite early.
- No monitoring - This leads to sub optimal management of type 1 diabetes
- Reuse of syringes - This is very common and leads to painful injections.

- Visit to doctor only in case of emergency - Leading to suboptimal treatment and early appearance of complications and even death for these children.
- No formal schooling - Lack of money, ill health and scarce school health facilities results in no or poor formal education for them and thus making them more dependent on society for rest of their lives.

## Ultimate goal for treatment

The ultimate goal of treatment is to ensure that every child with type 1 diabetes lives a normal, healthy and long life irrespective of economic class to which they belong. This is possible if every child with diabetes gets right treatment and education.

## Current Indian Scenario

Adequate management of type 1 diabetes requires intensive insulin treatment, monitoring, life style modification; proper diabetes education and regular follow up. Suboptimal health infrastructure and health coverage results in huge economic burden of treatment for the family of the child with type 1 diabetes. This financial burden results in suboptimal or even no treatment and thus uncontrolled blood glucose levels. Social stigma attached to the disease results in further damage.

## Changing Diabetes in Children (CDiC) program

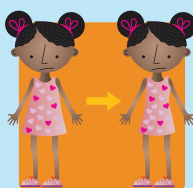
Novo Nordisk Education Foundation along with 21 specialized centres across India has tried to address the critical gap in the management of type 1 Diabetes through its CDiC program for the economically underprivileged children with type 1 diabetes. The 4000 children registered in the program are provided with free doctor consultations, human insulin, glucometer, strips,  $HbA_{1c}$  test, other essential diagnostic tests and diabetes education on regular basis. CDiC aims to support normal and healthy childhood in these children with type 1 diabetes, so that they grow into healthy adults. All our efforts are only focused at making these children become self reliant and be able to take care of their health going forward.

## Know the diabetes warning signs

Contact a doctor or nurse if your child exhibits any of these signs



Frequent urination



Weight loss



Lack of energy or very tired all the time



Excessive thirst

If you would like to have more information on type 1 diabetes you can write to us at:

## Diabetes Educator

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