Information and Insight

UNDERSTANDING TYPE 1 DIABETES

AFFECTS CHILDREN

Type 1 diabetes (T1D) strikes children suddenly, makes them dependent on injected or pumped insulin for life, forces them to check their blood several times a day and carries the constant threat of medical emergencies, devastating complications, even death.

WHAT IS TYPE 1 DIABETES?

T1D (also known as 'juvenile' or 'insulin-dependent' diabetes) develops in children and young people when their own body's immune system attacks and destroys pancreatic beta cells. These beta cells produce the life sustaining insulin required by the body to fulfill its most essential function of converting food into energy to fuel the body's organs. Type 1 diabetes typically appears during childhood or adolescence, but can develop at any age. There is no cure.

HOW IS TYPE 1 DIABETES TREATED?

Treatment for T1D is a lifelong challenge and commitment. To stay alive, people with T1D require daily insulin replacement therapy, blood sugar monitoring, a healthy diet and regular exercise. Intensive therapy consists of multiple daily injections of insulin or continually infuse insulin through a device called an insulin pump. To attempt to keep blood sugar levels in a safe range, people with T1 diabetes are required to prick their finger several times a day to monitor it. While trying to balance insulin doses with their food intake and daily activities, people with this form of diabetes must always be prepared for serious hypoglycemic (*low blood sugar*) and hyperglycemic (*high blood sugar*) reactions, both of which are dangerous and can be life threatening. The goal is to keep blood sugar levels as close to normal as possible to attempt to prevent or delay diabetes related complications. If they don't, cardiovascular complications begin, heart disease, organs begin to fail, eventually causing blindness, kidney failure and death. For a person with T1D, keeping blood sugar levels in a normal range is challenging.

DIFFICULT TO MANAGE

People with T1D overcome challenges on a daily basis. Despite rigorous attention to maintaining a meal plan and exercise regimen, and always injecting the proper amount of insulin, many other factors can adversely affect efforts to tightly control blood sugar levels including: stress, hormonal changes, times of growth, physical activity, medications, illness, infection and fatigue. T1D requires never ending vigilance.

INSULIN IS NOT A CURE FOR TYPE 1 DIABETES

While insulin injections or infusion of insulin through a pump keeps a person with T1D alive, it is not a cure. Nor, does insulin diminish the many daily routines of staying safe or prevent the potential devastating effects of kidney failure, nerve damage, blindness, amputations, heart attack, stroke, and pregnancy complications.

WHAT CAUSES TYPE 1 DIABETES?

The cause of T1D is not yet entirely understood. Scientists believe that both genetic factors and environmental triggers are involved. Onset of T1D has nothing to do with diet or lifestyle. There is nothing you can do to prevent T1D.

COMPLICATIONS

Type 1 diabetes complications can be disabling and life-threatening. This disease can affect every major organ in your body. The longer you have Type 1 diabetes, the earlier in life these complications can emerge.

Short term: People with Type 1 diabetes must concern themselves with these possibilities on a daily basis.

- *Hyperglycemia (High blood sugar)*
- *Diiabetic Ketoacidosis*
- *Hypoglycemia (Low blood sugar)*

These are immediate medical emergencies with rapid onset. Untreated, seizures or coma may occur.

Long term: (*Statistics based on CDC's diabetes fact sheet*)

- *Heart disease is the leading cause of diabetes related deaths*
- *60 to 70% of people with diabetes have a form of nervous system damage*
- *More than 60% of non-traumatic lower limb amputations occur among people with diabetes.*
- *Diabetes is the leading cause of end-stage renal (kidney) disease.*
- *Diabetes is the leading cause of new cases of blindness among adults aged 20-74.*
- *Dental (Periodontal/Gum) Disease is common among people with diabetes.*
- *Complications of pregnancy. Major birth defects occur in 5% to 10% of pregnancies, if diabetes is poorly controlled, and spontaneous abortions occur in 15% to 20% of pregnancies.*

Other Complications

People with diabetes are more susceptible to many other illnesses and if acquired, these illnesses often have a more serious prognosis.

For example, people with diabetes are more likely to die with pneumonia or influenza than people without diabetes.

Depression. A 2003 study by the CDC showed people with diabetes may be twice as likely to suffer from clinical depression.

COMMON MISCONCEPTIONS OF TYPE 1 DIABETES.

Some facts are:

- Type 1 diabetes is not preventable. Nothing a child or parent does causes Type 1 diabetes. They cannot prevent it.
- Type 1 diabetes is not caused by obesity, a sedentary lifestyle or eating too much sugar.
- While obesity has been identified as one of the 'triggers' for Type 2 diabetes, it has no relation to the cause of Type 1.
- Type 1diabetes cannot be controlled, only managed the best of your ability.
- Insulin is not a cure for Type 1 diabetes, but merely life support.

OTHER TYPES OF DIABETES

Type 2: Formerly called adult onset or non-insulin dependent diabetes is the most common form of diabetes. People can develop Type 2 at any age. This form of diabetes usually begins with insulin resistance, a condition in which fat, muscle and liver cells do not use insulin properly. Being overweight and inactive increases the chances of developing Type 2. Treatment includes taking oral diabetes medicines, making wise food choices, exercising regularly, controlling blood pressure and cholesterol.

Gestational: Some women develop gestational diabetes during the late stages of pregnancy. Although this form of diabetes usually goes away after the baby is born, a woman who has it is more likely to develop Type 2 diabetes later in life. Gestational diabetes is caused by the hormones of pregnancy or a shortage of insulin.

There is a great deal of confusion about diabetes, due to similar names. As a matter of science, the types of diseases are quite distinct.

STATISTICS

- As many as three million Americans may have T1D.[1]
- Each year, more than 15,000 children and 15,000 adults—approximately 80 people per day—are diagnosed with T1D in the U.S.[2] About 1 in 450 children/young people have Type 1 diabetes.
- Approximately 85 percent of people living with T1D are adults, and 15 percent of people living with T1D are children.[1]
- The prevalence of T1D in Americans under age 20 rose by 23 percent between 2001 and 2009.[3]

- The rate of T1D incidence among children under age 14 is estimated to increase by three percent annually worldwide.[4]

- T1D accounts for $14.9 billion in healthcare costs in the U.S. each year.[5]

1 Type 1 Diabetes, 2010; Prime Group for JDRF, Mar. 2011
2 NIDDK: diabetes.niddk.nih.gov/dm/pubs/statistics/index.htm#i_youngpeople
3 SEARCH for Diabetes in Youth data by the Centers for Disease Control and Prevention and the National Institutes of Health.
4 IDF: idf.org/diabetesatlas/diabetesyoung-global-perspective
5 The United States of Diabetes: Challenges and Opportunities in the Decade Ahead, 2010; United Health Group: unitedhealthgroup.com/hrm/UNH_WorkingPaper5.pdf