JDRF Juvenile Diabetes Research Foundation International
dedicated to finding a cure

FACTS

General Diabetes Facts

WHAT IS DIABETES?

Diabetes is a chronic, debilitating disease affecting every organ system. There are two major types of diabetes: type 1 and type 2. Type 1 diabetes is an autoimmune disease in which a person's pancreas stops producing insulin, a hormone that enables people to get energy from food. Type 1 diabetes usually strikes in childhood, adolescence, or young adulthood, but lasts a lifetime. People with type 1 diabetes must take multiple injections of insulin daily or continuous infusion of insulin through a pump just to survive. Type 2 diabetes is a metabolic disorder in which a person's body still produces insulin but is unable to use it effectively. Type 2 is usually diagnosed in adulthood and does not always require insulin injections. However, increased obesity has led to a recent "epidemic" in cases of type 2 diabetes in young adults. Taking insulin does not cure any type of diabetes nor prevent the possibility of its eventual and devastating effects: kidney failure, blindness, nerve damage, amputation, heart attack, and stroke.

THE SCOPE OF DIABETES

Nearly 21 million Americans have diabetes (7 percent of population):

- Diagnosed: 14.6 million
- Undiagnosed: 6.2 million

As many as 3 million Americans may have type 1 diabetes.†

194 million people have diabetes worldwide.

According to World Health Organization Estimates, this number will more than double by 2030.

In the U.S., a new case of diabetes is diagnosed every 30 seconds; more than 1.5 million people are diagnosed each year.

THE COST OF DIABETES

Diabetes is the single most costly chronic disease.

In 2002, diabetes accounted for $132 billion in health-care costs in the U.S.

Diabetes accounts for 32 percent of all Medicare expenditures.

The "National Bill" for hospital stays related to diabetes totaled $10.2 billion in 2003.

People with diabetes in the U.S. incur medical expenses that are approximately 2.4 times higher than people without diabetes.

The average length of hospital stays for diabetes with complications in 2003 was 5.5 days, at an average cost of $20,700.

THE DAMAGE CAUSED BY DIABETES

Attacks Many Organ Systems: Diabetes is the leading cause of kidney failure, adult blindness, and non-traumatic amputations and a leading cause of nerve damage, stroke, and heart attacks.

Increased Risk: People with diabetes are two to four times more likely to have a heart attack or stroke than someone without the disease.

Shortens Life: Diabetes kills one American every three minutes and is the sixth leading cause of death reported in the U.S. Life expectancy for people with diabetes is shortened by an average of 7-10 years, and the risk of death for people with diabetes is about two times that of people without diabetes.

† *Type 1 Diabetes, 2004*; KRC Research for JDRF, Jan. 2005

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Type 1 Diabetes Facts

AFFECTS YOUNG CHILDREN

Type 1 diabetes strikes children suddenly, makes them dependent on injected or pumped insulin for life, and carries the constant threat of devastating complications. While diagnosis most often occurs in childhood and adolescence, it can and does strike adults as well. Type 1 diabetes is an autoimmune disease in which the body's immune system attacks and destroys the insulin-producing cells of the pancreas. While the causes of this process are not yet entirely understood, scientists believe that both genetic factors and environmental triggers are involved.

NEEDS CONSTANT ATTENTION

To stay alive, people with type 1 diabetes must take multiple insulin injections daily or continually infuse insulin through a pump, and test their blood sugar by pricking their fingers for blood six or more times per day. 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 can be life-limiting and life threatening.

INSULIN DOES NOT CURE IT

While insulin allows a person to stay alive, it does not cure diabetes nor does it prevent its eventual and devastating effects: kidney failure, blindness, nerve damage, amputations, heart attack and stroke.

DIFFICULT TO MANAGE

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, periods of growth, physical activity, medications, illness/infection, and fatigue.

STATISTICS AND WARNING SIGNS

- As many as 3 million Americans may have type 1 diabetes.†
- Each year more than 13,000 children are diagnosed with diabetes in the U.S. That's 35 children each and every day.
- Warning signs of type 1 diabetes include: extreme thirst, frequent urination, drowsiness or lethargy, increased appetite, sudden weight loss for no reason, sudden vision changes, sugar in urine, fruity odor on breath, heavy or labored breathing, stupor or unconsciousness. These may occur suddenly.

WHAT IS IT LIKE TO HAVE TYPE 1 DIABETES?

Ask people who have type 1 diabetes. It's difficult. It's upsetting. It's life threatening. It doesn't go away.

"Both children and adults like me who live with type 1 diabetes need to be mathematicians, physicians, personal trainers and dieticians all rolled into one. We need to be constantly factoring and adjusting, making frequent finger sticks to check blood sugars, and giving ourselves multiple daily insulin injections just to stay alive."

— Actress Mary Tyler Moore, JDRF's International Chairman

"Diabetes is always there. There's never a vacation. It's like a bad dream that lasts all day, all year, for my entire life."

— Patrick Finan, 16, New York

"Every day, I have to endure up to six injections of insulin and more than ten finger pricks to keep me alive. When my blood sugar is high, my head hurts, I feel angry and sad, and it is hard to concentrate. When my blood sugar is low, I am dizzy, shaky, and in danger of becoming unconscious."

— Emma Melton, 16, Massachusetts

"I already have problems with my kidneys, and I take medicine every day so my kidneys won't fail. I worry about what will happen if a cure isn't found soon. I don't have time to wait.

— LaNiece Evans-Scott, 11, Ohio

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About the Juvenile Diabetes Research Foundation

DEDICATED TO FINDING A CURE

The Juvenile Diabetes Research Foundation International (JDRF) is the world's largest charitable funder and advocate of type 1 diabetes research. The mission of JDRF is to find a cure for diabetes and its complications through the support of research. Type 1 diabetes is a disease which strikes in childhood, adolescence, or adulthood, but lasts a lifetime. It requires multiple injections of insulin daily or a continuous infusion of insulin through a pump. Insulin, however, is not a cure for diabetes, nor does it prevent its eventual and devastating complications which may include kidney failure, blindness, heart disease, stroke, and amputation.

BUILDING UPON RESEARCH SUCCESSES

JDRF funding and leadership is associated with most major scientific breakthroughs in type 1 diabetes research to date. In fact, JDRF funds a major portion of all type 1 diabetes research worldwide, more than any other charity. JDRF provided more than $122 million to diabetes research in FY 2006, and is responsible for more than $1 billion in direct funding since it was founded. Our research review process not only includes leading research scientists from around the world, but lay reviewers who either have type 1 diabetes or have family members with type 1 diabetes, ensuring that JDRF funds research with the greatest impact throughout the world, leading to results as soon as possible.

MOVING RESEARCH FROM BENCH TO BEDSIDE

JDRF is driven to be a leading catalyst for development science that delivers therapeutics to improve the lives of people with diabetes in the near term, ultimately leading to a cure. Working toward this goal, JDRF has taken the lead in translating basic research breakthroughs into cure therapies in such areas as restoring autoimmunity, preventing and reversing complications, islet replacement, beta cell regeneration, and achieving metabolic control. The Foundation creates multidisciplinary programs that bring together diabetes researchers from both academic institutions and industry to find a cure for diabetes and its complications.

EFFICIENTLY ORGANIZED FOR SUCCESSFUL RESULTS

JDRF is structured on a business-world model that efficiently and effectively directs resources to research aimed at finding a cure as soon as possible. More than 80 percent of JDRF's expenditures directly support research and research-related education. Because of its unwavering focus on its mission to find a cure, JDRF annually receives top rankings from independent sources that rate charitable giving. JDRF leverages its research impact by partnering with and stimulating increased research spending on the part of public and private medical organizations and other entities throughout the world.

A BACKBONE OF DEDICATED AND ACTIVE VOLUNTEERS

JDRF was founded in 1970 by the parents of children with type 1 diabetes. As a result, JDRF volunteers have a personal connection to type 1 diabetes, which translates into an unrelenting commitment to finding a cure. These volunteers are the driving force behind more than 100 locations worldwide that raise money and advocate for government spending for type 1 diabetes research.

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Research Funding Facts

Since its founding in 1970 by parents of children with type 1 diabetes, JDRF has awarded more than $1 billion to diabetes research, including more than $122 million in FY2006. More than 80 percent of JDRF's expenditures directly support research and research-related education. In FY2006, the Foundation funded more than 500 centers, grants, and fellowships in 20 countries.

AREAS OF SCIENTIFIC INVESTIGATION

- Artificial Pancreas
- Beta Cell Development
- Beta Cell Function
- Beta Cell Regeneration
- Clinical Trials
- Environmental Triggers
- Gene Therapy
- Genetics
- Hypoglycemia
- Immunology
- Islet Transplantation
- Nephropathy
- Neuropathy
- Retinopathy
- Stem Cells
- Technological Interventions
- Tolerance
- Wound Healing

JDRF'S RESEARCH GOALS

JDRF plays a unique role in setting the global direction of diabetes research resources, to ensure that they are used as effectively as possible as a "cure enterprise" to bring about a world without diabetes and its complications. To that end, the organization has identified a set of cure therapeutic goal areas on which it will focus its research funding efforts. JDRF believes some combination of these areas of research focus currently holds the best potential to lead to breakthrough cures and treatments for type 1 diabetes and its complications. JDRF will continue to actively pursue research within the framework of the following goals while remaining flexible enough to quickly respond to new opportunities as they arise:

- Stopping the immune system response that causes type 1 diabetes and restoring autoimmunity in new-onset patients
- Perfecting islet replacement strategies without chronic immunosuppression, including the creation of a renewable islet cell source
- Creating novel therapeutics for predicting, preventing, and reversing complications
- Regenerating the body's own beta cells without transplantation
- Achieving metabolic control through mechanical intervention, including the development of a closed-loop artificial pancreas

FY 2006 JDRF RESEARCH FUNDING

Autoimmunity:	$41 million
Complications:	$26 million
Islet Replacement	
Transplantation:	$21 million
Renewable Cell Source:	$20 million
Regeneration:	$8 million
Metabolic Control:	$6 million