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[Children's Hospital of Pittsburgh](#)

Children's Hospital studying drug with the potential to prevent/delay onset of type 1 diabetes

PITTSBURGH · Nov. 9, 2007 · Researchers at Children's Hospital of Pittsburgh of UPMC are participating in an international clinical trial currently underway to study the effectiveness of oral insulin in preventing or delaying the onset of type 1 diabetes in people at risk for the disease.

The researchers want to determine if one insulin capsule taken daily can prevent or delay the onset of type 1 diabetes in relatives of people who are found to be at risk for developing the disease, according to Dorothy Becker, MBBCh, chief of the Division of Pediatric Diabetes and Endocrinology at Children's and principal investigator of the study.

An earlier trial called Diabetes Prevention Trial 1, conducted at Children's and other centers around the world, suggested that oral insulin might delay type 1 diabetes by about four years in some people with auto-antibodies to insulin in their blood. Oral insulin has no known side effects.

Type 1 diabetes is a very difficult disease to manage. Because it typically begins in childhood or young adulthood, and if not properly controlled with insulin injections and diet and exercise, diabetes can lead to a lifetime of complications that can cause chronic disability and be life-threatening," said Dr. Becker. "If oral insulin could delay the onset or prevent the disease, we could spare these patients years of difficult management and potential complications such as heart disease and vision loss. "

The oral insulin study is being conducted at more than 150 sites throughout the world by TrialNet, a network of diabetes research centers of which Children's and UPMC are members. At Children's, researchers plan to enroll at least 30 relatives of patients with type 1 diabetes (parents, siblings, children, cousins, uncles and aunts) ages 3 · 45 to study the effectiveness of oral insulin.

The belief is that insulin introduced via the digestive tract may induce tolerance, quieting the immune system's attack on itself, said Dr. Becker, also a professor of Pediatrics at the University of Pittsburgh School of Medicine.

In type 1 diabetes, a person's own immune cells destroy the beta cells of the pancreas. Beta cells sense blood glucose and produce insulin, which regulates glucose and turns it into energy. This attack on beta cells begins well before a person develops diabetes and continues long after the disease is diagnosed. Scientists don't know what causes the attack, but the result is the insulin production decreases dramatically. When this happen, glucose builds up in the blood, but the body's cells starve to death.

About 5 to 10 percent of the nearly 21 million people with diabetes have type 1, formerly known as juvenile onset diabetes or insulin-dependent diabetes. Type 1 diabetes tends to arise in children and young adults but also is diagnosed in older people. Patients need three or more insulin injections a day or treatment with an insulin pump to maintain blood glucose control.

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The study is funded by the National Institute of Diabetes and Digestive and Kidney Diseases, a branch of the National Institutes of Health. The Juvenile Diabetes Research Foundation International and the American Diabetes Association also support this initiative. For more information about the Children's diabetes research, please visit www.chp.edu. For information about enrolling in the study, please call 412-692-5210 or visit www.diabetestrialnet.org.
