

## Why Research Matters

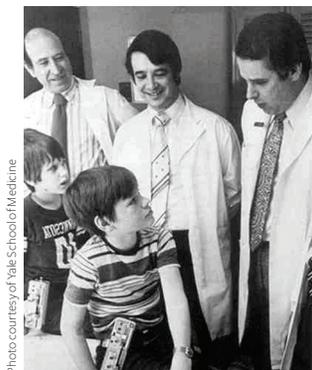


Photo courtesy of Yale School of Medicine

Diabetes researchers (from left):  
Myron Genel, MD,  
professor emeritus of pediatrics;  
William Tamborlane, MD,  
professor of pediatrics;  
Robert Sherwin, MD,  
CNH Long Professor of Medicine and  
section chief, endocrinology.

In 1979, Dr. Robert Sherwin and Dr. William Tamborlane developed the insulin pump to treat Type 1 diabetes. Today, it's used by more than 350,000 patients. Without volunteers like the children and their families who were willing to participate in clinical research, this groundbreaking discovery would not have been possible.

Discoveries like the insulin pump involve years of research in the laboratory, but they also involve people like you. Volunteering to take part in a clinical trial is an important and necessary step in the process of making sure new treatments are safe and effective. Besides helping bring new medicines to patients who need them, clinical trials may also offer an opportunity to try new or experimental treatment options and make a valuable contribution to the advancement of medical knowledge.

Yale's tradition of discovery continues through research to detect the causes of diabetes and obesity, as well as clinical studies to find better treatments for Type 1 and Type 2 diabetes and ways to prevent these diseases.

## Preventing Type 1 Diabetes

The Fergusson family is well aware of the benefits of clinical research. Their older daughter Kate, diagnosed with Type 1 diabetes when she was five, wears an insulin pump, a device that was originally developed and tested at Yale. She is also participating in a clinical trial to test a continuous glucose monitoring system. Kate's two siblings participate in studies for relatives of those with Type 1 diabetes aimed at preventing and treating the disease in its early stages. Tests showed that Anna, Kate's younger sister, had rising levels of antibodies that indicated she was at high risk of developing diabetes. She and her parents decided to enroll her in a study to test a new drug that has the potential to prevent the onset of the disease.

The study involves anti-CD3, an antibody Dr. Kevan Herold helped develop that quiets the T cells responsible for destroying insulin-producing beta cells in the pancreas. Anna, age 11, sees firsthand the challenges her sister faces in controlling her diabetes. "If there was something that could help prevent it then I wanted to take that chance," she said.

Anna and her mother Meg travelled to New Haven from their home in Maine for 14 days in order for her to participate in the study. "At 11 years old, if she doesn't have to cope with this for the rest of her life, it's worth juggling being away from home and work," said Meg. "To me it was more important than not doing it."

"I see my daughter Kate living a very good life with diabetes because of the advances, however it would be nice to throw that pump away," said Meg. "Diabetes doesn't stop us but we would love to stop it."

If you have Type 1 diabetes, November is a good time to have your family members screened to see whether they might qualify for studies to try to prevent the disease.

## Treating Type 2 Diabetes

Therapy for Type 2 diabetes has been around for almost 60 years, yet doctors still can't agree on the best treatment strategy after metformin, widely viewed as the best pill to use in newly diagnosed patients. Unfortunately, many patients will need another medication in addition to metformin to get their blood sugar levels down to their goal. There are plenty of options — traditional pills that stimulate the body to make more insulin, or insulin injections themselves. Newer options include insulin-sensitizing drugs and medicines that help gastrointestinal hormones increase the insulin released from the pancreas.

Each of these classes of medications has its own unique way to reduce blood sugar and its own additional benefits, but also certain side effects. There is a lot of debate about which drug is best, with strong arguments on either side. Unfortunately, we don't know enough about the the long-term effects of these medicines. The FDA approves diabetes drugs mainly based on their ability to lower blood sugar levels, but their effects on diabetes complications are uncertain. Experts have called for research that will allow physicians to learn more about the long-term effects of drugs for Type 2 diabetes. That's why Yale has an ongoing study designed to answer the important question of which medicine has a better effect on Type 2 diabetes in the long term and which is better tolerated by patients.

**Yale conducts clinical trials to prevent and develop treatments for Type 1 and Type 2 diabetes and obesity.**

**To learn more about participating in clinical research and find clinical trials that may be right for you, visit [www.yalestudies.org](http://www.yalestudies.org) or call 1-877-978-8343.**



Photo by Robert Lisak

Meg Fergusson with her daughter, Anna, who enrolled in a study to test a new drug that may help prevent Type 1 diabetes.

# November is American Diabetes month

To find out more about clinical trials at Yale, visit our website at [yalestudies.org](http://yalestudies.org) or call 1-877-978-8343

## Tips for Controlling Diabetes

When you take care of your diabetes, you'll feel better. You'll reduce your risk for problems with your kidneys, eyes, nerves, feet and legs, and teeth. You'll also lower your risk for a heart attack or a stroke. Your doctor may prescribe medication, but you can also take care of your diabetes by being physically active and following a healthy meal plan.

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### Healthy Eating

Learning what to eat, how much to eat and when to eat plays an important role in taking good care of yourself if you have diabetes. Making wise food choices can help keep your blood glucose — also called blood sugar — under control, help you lose weight if you need to, and lower your risk for heart disease, stroke and other problems associated with diabetes.

You should eat a variety of foods and know how they may affect your blood sugar:

- Starches, which include bread, cereals, grains, pasta and starchy vegetables like corn and potatoes, have the highest amounts of carbohydrates. These foods have the greatest effect on your blood sugar levels. You should eat starches at every meal, but stick to reasonable portions and choose healthy alternatives, such as whole grains.
- Vegetables also contain carbohydrates but much less than starches. The healthiest way to eat vegetables is raw or cooked with little or no fat, sauces or dressings. You can add flavor with lemon juice, broth, herbs and spices. If you do use fat, choose canola or olive oil.
- Fruits contain carbohydrates, but like vegetables, provide vitamins, minerals and fiber. Avoid fruits or juices with added sugar, buy smaller pieces of fruit, and choose fruit instead of juice because it is more filling and contains more fiber.
- It's important to include milk products in your diet. Besides carbohydrates they contain calcium, protein, vitamins and minerals. Choose fat free or low fat dairy products.
- Meat, poultry, eggs, cheese, fish and tofu are great sources of protein. Healthy portions of these foods are one to three ounces. Three ounces of cooked meat is about the size of a deck of cards.
- You should limit the amounts of fats and sweets you eat. Serving size is especially important with these foods. Keep in mind that a little goes a long way: one strip of bacon equals one serving of fat! Sweets should be eaten sparingly. Try sharing a dessert in a restaurant or ordering a child-size portion of ice cream or frozen yogurt.

### Get Moving

Being physically active can help lower your blood glucose, improve your body's ability to use insulin, lower your risk for heart disease and stroke, and help you lose weight.

There are a number of ways you can incorporate physical activity into your lifestyle. You can do aerobic exercise, such as walking briskly or riding a bike. Strength training with hand weights, elastic bands or weight machines will help build muscle, while stretching increases flexibility and lowers stress.

One of the easiest ways to be more physically active is to fit more activity into your daily life. For instance:

- At work, walk over to see a co-worker instead of calling or emailing.
- Stretch or walk around instead of taking a coffee break and eating.
- Walk around while you talk on the phone.
- Walk down every aisle at the grocery store.
- Get up to change the TV channel instead of using the remote control.
- Park at the far end of parking lots.
- Some medications can cause low blood glucose levels, especially during exercise. Always check with your health care provider before beginning a new exercise program and find out if you should check your blood glucose level before exercising.

**For more information on nutrition, exercise and diabetes, visit the National Diabetes Information Clearinghouse.**

Courtesy of NIDDK

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*Medical research changes lives.  
You can change the course  
of medical research.*

To find out more about diabetes and obesity research please visit [yalestudies.org](http://yalestudies.org) or call 1-877-978-8343