

Celebrating 100 Years of Insulin

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ROCKFORD - There were several inventions in the 20th century that made a significant impact on how we live – wireless technology, personal computers, radio and television among them. There was no shortage of breakthroughs in medicine either. There's the artificial heart, magnetic resonance imaging (MRI) and insulin to name a few.

Insulin is a hormone that is responsible for allowing glucose in the blood to enter cells. The inability to make or effectively use insulin is the chief reason for the development of diabetes. People with diabetes didn't live long prior to the invention of insulin. Doctors had very few ways to treat diabetes.

“Patients who required insulin when there was none, were treated with starvation diets,” says Tanya Munger, a nurse practitioner for OSF HealthCare Endocrinology. “Low carbs, sometimes only 400 to 500 calories a day. It did extend their lives by a few years but, ultimately, a lot of those patients died from starvation or malnutrition.”

In 1910, Sir Edward Albert Sharpey-Shafer, an English physiologist and a founder of endocrinology, discovered one chemical was missing from the pancreas in people with diabetes. He called the chemical insulin, which comes from the Latin word *insula*, meaning “island.”

Then in 1921, a surgeon named Frederick Banting and his assistant Charles Best figured out that removing insulin from a healthy dog’s pancreas and giving it to a dog with diabetes extended his life. Later, they did the same thing with cattle, giving their insulin to people with diabetes.

“In 1922 is when we gave the first injection of insulin to a 14-year-old young man named Leonard Thompson,” says Munger. “His blood sugars were dangerously high and within 24 hours of receiving the insulin his blood sugars dropped to near normal levels. So it was very exciting.”

Insulin has come a long way in the past 100 years. It now comes in many different forms, from regular human insulin that the body produces on its own, to ultra-rapid and ultra-long acting synthetic insulins. Even the ways people can administer their insulin has made substantial progress over the years. No longer do patients have to re-sharpen needles or clean glass syringes.

“For a long period of time the only option of delivering insulin was with a vial and you would draw the insulin out of the vial with a syringe and administer it,” says Munger. “Now-a-days, we have insulin pens which are flex pens so they don’t have to do anything except take the cap off the pen, screw the needle on, dial up the dose in the window of the pen and administer it without worrying about dialing up the right amount. That’s been a wonderful thing for our patients who use insulin.”

Munger is encouraged about the future thanks to the research and clinical trials that are taking place around the world that could lead to more promising advances in diabetes care. It’s a good thing, too; more than 34 million people in the U.S., — which is about 11% of the population — have diabetes, and about 1.5 million Americans are diagnosed every year, according to the American Diabetes Association.

“I’m really excited to see how the quality of the insulin we use now-a-days has improved so much,” says Munger. “I think it’s great to see how we’re able to deliver and administer the insulin has improved and pens and moving away from vials and syringes.

I'm super excited about the innovation and technology and what the researchers are doing moving forward to try and make diabetes management much easier for our patients so they can have a better quality of life.”

For more information on diabetes care, visit [OSF HealthCare](#).