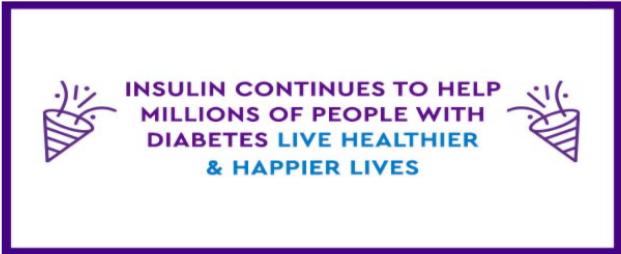




From Name: MannKind Corporation
From Address: marketing@mannkindcorp.com
Reply-to: marketing@mannkindcorp.com
Subject: Happy 100th Anniversary, Insulin!



Did you know, 100 years ago, on January 11, 1922, **insulin was first successfully used to treat a person with diabetes?** We're thrilled to celebrate the 100th anniversary of this important discovery made by Dr. Frederick Banting, medical assistant Charles H. Best, chemist James B. Collip and physiologist J.J.R.

This ground-breaking moment in medical history improved the lives of millions living with diabetes! And it paved the way for important advancements in diabetes research and treatment options.

Here's to 100 more years of continuing to improve and progress diabetes research and therapy!

[READ MORE >](#)

How has insulin improved in the last 100 years?

A century ago, a diabetes diagnosis could mean a death sentence. But thanks to the discovery of insulin as a treatment option in the 1920s, diabetes is now a manageable, treatable condition. Here are just a few of the top advancement moments in insulin history.

SPOILER ALERT: TODAY, INJECTING INSULIN ISN'T THE ONLY OPTION FOR TYPE 1 AND TYPE 2 DIABETICS. AFREZZA IS AN ULTRA RAPID-ACTING INHALED INSULIN



1930S
A slower-acting insulin was introduced. This dramatically improved the treatment of diabetes because longer-lasting insulin meant fewer injections (and happier patients).

1950S
Two unique variants of diabetes were discovered, type 1 and type 2. This led to better, more effective treatments for both types. And, plastic, disposable syringes were made widely available, improving insulin injection routines.



1960s

1960S

The first insulin pump was created, glucagon is introduced as a treatment for high blood sugar and glucose test strips were produced.

1980S

Human insulin becomes commercially available. And, the "mini" insulin pump and insulin pen were introduced.

1980s

2000s

2000S

Insulin therapy developed even more with the invention of long-lasting and fast-acting inhalable insulins, giving people with diabetes a variety of options to choose from! In 2014, Afrezza inhalable insulin received FDA approval.

What you need to know about Afrezza, the inhalable insulin...

Now there is a safe and effective way for those with type 1 or type 2 diabetes to get mealtime insulin without having to use a needle. Meet the only **ultra rapid-acting** inhaled insulin available on the market, Afrezza.

Afrezza enters through the large surface area of the lungs, which allows for ultra-rapid absorption. It then passes from your lungs to your bloodstream in **less than a minute**, and it can start **reducing blood sugar levels within about 12 minutes**. With other insulins, it may take longer for your blood sugars to start going down. Talk about an improvement!

[LEARN MORE AT AFREZZA.COM](https://www.afrezza.com) >

AfrezzaAssistSM

To find out more about AfrezzaAssistSM, check out our [Resources & Support](#) page.

Call Us (toll free): 1-844-3AFREZZA
1-844-323-7399

FIND US ON SOCIAL

We can't wait to share more about Afrezza with you. Follow us on social media to stay connected!



Important Safety Information

What is the most important information I should know about AFREZZA?
AFREZZA can cause serious side effects, including:

- **Sudden lung problems (bronchospasms). Do not use AFREZZA if you have long-term (chronic) lung problems such as asthma or chronic obstructive pulmonary disease (COPD).** Before starting AFREZZA, your healthcare provider will give you a breathing test to check how your lungs are working.

What is AFREZZA?

- AFREZZA is a man-made insulin that is breathed-in through your lungs (inhaled) and is used to control high blood sugar in adults with diabetes mellitus.
- AFREZZA is not for use in place of long-acting insulin. AFREZZA must be used with long-acting insulin in people who have type 1 diabetes mellitus.
- AFREZZA is not for use to treat diabetic ketoacidosis.
- It is not known if AFREZZA is safe and effective for use in people who smoke. AFREZZA is not for use in people who smoke or have recently stopped smoking (less than 6 months).
- It is not known if AFREZZA is safe and effective in children under 18 years of age.

What should I tell my healthcare provider before using AFREZZA?
Before using AFREZZA, tell your healthcare provider about all your medical conditions, including if you:

- Have lung problems such as asthma or COPD
- Have or have had lung cancer
- Are using any inhaled medications
- Smoke or have recently stopped smoking
- Have kidney or liver problems
- Are pregnant, planning to become pregnant, or are breastfeeding. AFREZZA may harm your unborn or breastfeeding baby.

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins or herbal supplements.

Before you start using AFREZZA, talk to your healthcare provider about low blood sugar and how to manage it.

What should I avoid while using AFREZZA?
While using AFREZZA do not:

- Drive or operate heavy machinery, until you know how AFREZZA affects you
- Drink alcohol or use over-the-counter medicines that contain alcohol
- Smoke

Do not use AFREZZA if you:

- Have chronic lung problems such as asthma or COPD
- Are allergic to regular human insulin or any of the ingredients in AFREZZA.

What are the possible side effects of AFREZZA?
AFREZZA may cause serious side effects that can lead to death, including:
See “What is the most important information I should know about AFREZZA?”

Low blood sugar (hypoglycemia). Signs and symptoms that may indicate low blood sugar include:

- Dizziness or light-headedness, sweating, confusion, headache, blurred vision, slurred speech, shakiness, fast heartbeat, anxiety, irritability or mood change, hunger.

Decreased lung function. Your healthcare provider should check how your lungs are working before you start using AFREZZA, 6 months after you start using it and yearly after that.

Lung cancer. In studies of AFREZZA in people with diabetes, lung cancer occurred in a few more people who were taking AFREZZA than in people who were taking other diabetes medications. There were too few cases to know if lung cancer was related to AFREZZA. If you have lung cancer, you and your healthcare provider should decide if you should use AFREZZA.

Diabetic ketoacidosis. Talk to your healthcare provider if you have an illness. Your AFREZZA dose or how often you check your blood sugar may need to be changed.

Severe allergic reaction (whole body reaction). Get medical help right away if you have any of these signs or symptoms of a severe allergic reaction:

- A rash over your whole body, trouble breathing, a fast heartbeat, or sweating.

Low potassium in your blood (hypokalemia).

Heart failure. Taking certain diabetes pills called thiazolidinediones or "TZDs" with AFREZZA may cause heart failure in some people. This can happen even if you have never had heart failure or heart problems before. If you already have heart failure it may get worse while you take TZDs with AFREZZA. Your healthcare provider should monitor you closely while you are taking TZDs with AFREZZA. Tell your healthcare provider if you have any new or worse symptoms of heart failure including:

- Shortness of breath, swelling of your ankles or feet, sudden weight gain.

Get emergency medical help if you have:

- Trouble breathing, shortness of breath, fast heartbeat, swelling of your face, tongue, or throat, sweating, extreme drowsiness, dizziness, confusion.

The most common side effects of AFREZZA include:

- Low blood sugar (hypoglycemia), cough, sore throat

These are not all the possible side effects of AFREZZA. Call your doctor for medical advice about side effects.

You can click these links or visit www.afrezza.com to access the [Full Prescribing Information](#) and [Medication Guide](#) including **BOXED WARNING** and [Instructions for Use](#).

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