BONUS

THE TRUTH ABOUT INSULIN

CHOOSING THE WRONG TYPE OF INSULIN COULD COST YOU YOUR LIFE

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Introduction

If you, or someone you love is taking Insulin, you know how important it is to take your shots every single day. Since most diabetics are dependent on this drug, they are not given a lot of choice on what type to take.

You might have not have been aware there was different *types* of Insulin.

But I'm here to tell you that there is, and some are much safer than others. There are many reasons doctors only prescribe one type of Insulin, and as we'll soon find out, it all comes down to profit.

Of course, the best solution is not to take any Insulin at all. That's why it's never a bad idea to try some natural, diet induced changes to help regular your blood sugar levels.

But if for some reason you continue to taking Insulin, the information you'll find in this book may well save your life. So, read it carefully.

It's time to learn about the right type of Insulin – Natural Insulin!

What Is Insulin?

Approximately 422 million people in the world are living with diabetes right now. Type 1 diabetics require Insulin regularly to sustain their sugar level. Type 2 diabetic can sometimes manage their blood glucose levels with oral medication, but occasionally Insulin is also required to balance out their blood sugar levels.

In the United States alone, 6 million people use Insulin or a combination of Insulin and oral medication.

What is Insulin exactly and what does this "life-saving" drug do for diabetics?

Insulin

Insulin is a hormone. It acts as a chemical messenger produced by one part of the body to have an action on another. Its main job is to regulate blood glucose levels as part of metabolism.

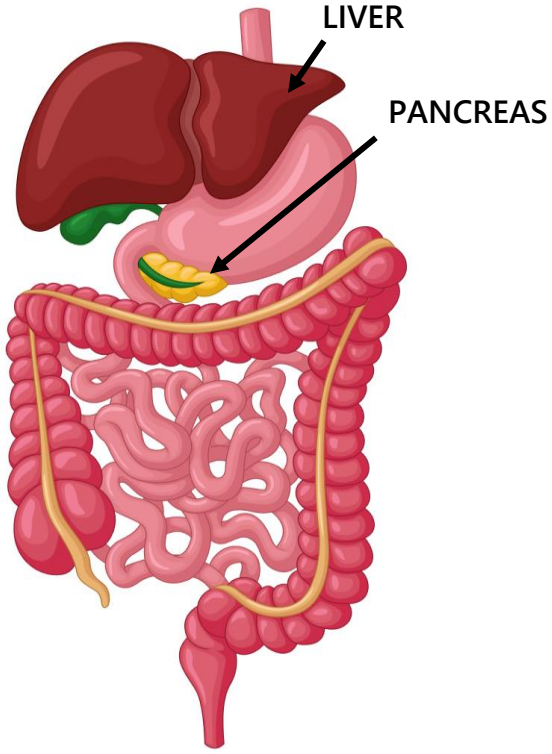
The body manufactures insulin in the pancreas in response to glucose. As glucose levels rise in the blood, uptake metabolism by the pancreatic cells are enhanced, leading to Insulin secretion.

The pancreas is the organ responsible for controlling sugar levels. It is part of the digestive system and located in the abdomen, behind the stomach.

How Does Insulin Regulate Glucose?

In healthy individuals, Insulin is used to keep a glucose level steady in your blood. The glucose in your blood is the primary fuel for all your cells.

If blood glucose levels are too low, you get tired and your cells don't have the fuel they need to survive.



If you blood sugar levels are too high, it becomes toxic to your cells. These fluctuations can be dangerous if they are too extreme.

That's where Insulin comes in. Your pancreas has specials cells that monitor blood glucose levels. If they get to high, your pancreas creates Insulin which tells your liver it's time to convert some of that glucose to fat. If blood sugar is too low, Insulin levels drop signaling your liver to create more glucose.

For thousands of years, your body regulated Insulin levels just fine. But something changed recently, and now we have an epidemic of diabetes.

Let's go over a brief history of the discovery of Insulin and how it was used to treat diabetes over the years.

The History of Insulin

The History of Insulin

If you had diabetes prior to the invention of Insulin in 1921, chances are you didn't live very long. Fortunately, diabetes wasn't very common back then. Fast forward 100 years and 1 in 4 Americans are at risk of diabetes. To understand how we got here, we need to learn a little more about the history of Insulin.

1909 – Two German researchers named Oskar Minkowski and Joseph von Mering discovered that if the pancreas was removed from dogs, the dogs would develop symptoms of diabetes and would soon die.

Because of this discovery, researchers became aware of the role the pancreas played in maintaining blood sugar levels. It later became known that the specific location of where the Insulin was produced, was in a cluster of specialized cells in the pancreas called "Islets of Langerhans".

1910 – Sir Edward Albert Sharpev-Shafer proposed that only one chemical was missing from the pancreas of people who had diabetes. He eventually went on to call this chemical "Insulin". Insulin comes from the Latin word *Insula*, meaning 'island'.

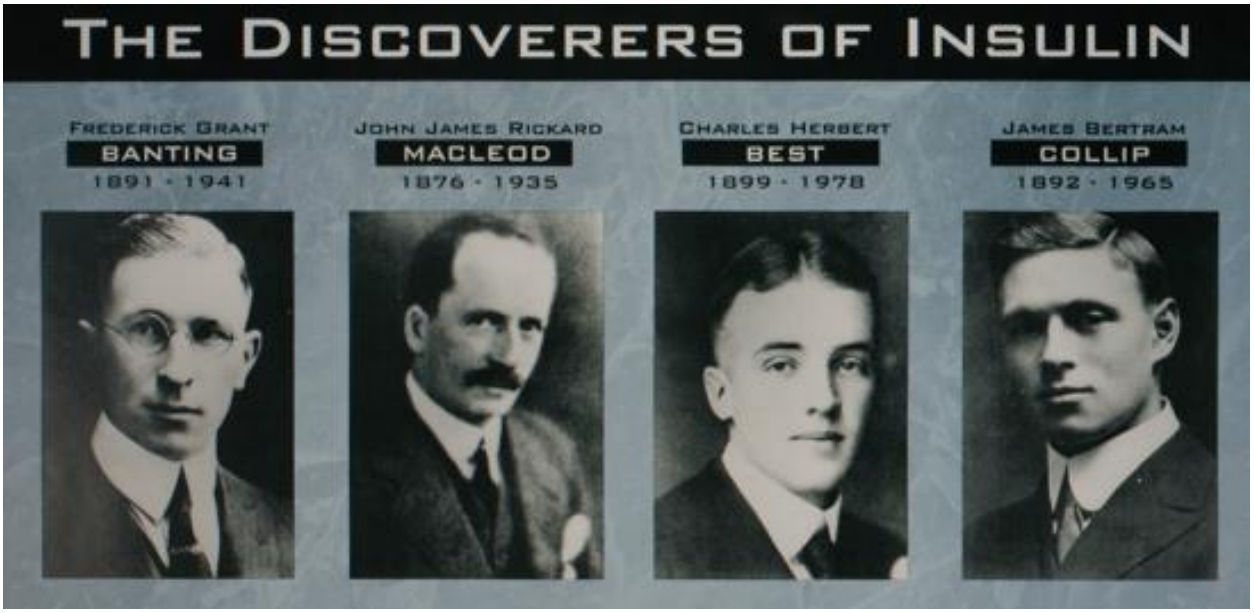
1921 – (Now this is where things get really interesting!) Fredrick Banting, a young surgeon and his assistant Charles Best discovered how to remove Insulin from a dog's pancreas.

Using this Insulin, Banting and Best could keep another dog, which had been suffering with severe diabetes alive for 70 days (The dog eventually died due to the lack of Insulin available at the time). Since the Insulin injections from the other dog were such a success, Banting and Best got the help of colleagues John Macleod and J.B. Collip and created a more refined and pure form of Insulin from the pancreases of cattle.

1922 – In January of 1922, a 14-year-old boy named Leonard Thompson was dying from diabetes in a Toronto hospital and became the very first person to receive an Insulin injection. It didn't take long, only 24 hours, before Leonard's high blood glucose levels dropped to near-normal.

1923 – Banting and Macleod received the Nobel Prize in Medicine. They shared this prize with their colleagues Best and Collip. Eli Lilly, a medical firm got the help of Banting and his colleagues and started producing Insulin to the public.

1936 – Novo Nordisk Pharmaceuticals Inc. became the first manufacturer to introduce a strain of slower-acting insulin.



The Switch From Natural To Synthetic Insulin

1978 – The first synthetic Insulin was produced. It was created by using genetically modified E.coli bacteria to produce Insulin. This was much cheaper to produce than natural Insulin that needed to be sourced from animals.

1982 – The Eli Lilly Company produced the first commercially available synthetic Insulin. It wasn't long before the "Humulin" (as they called it), became readily available to in North America.

And because synthetic Insulin was patented, sky was the limit in terms of price! Slowly but surely, Eli Lilly and other pharmaceutical Insulin manufactures convinced doctors to prescribe synthetic over natural Insulin.

There is no mistaking the effects of Insulin on the human body and the life-changing effects it has on people with Type 1 diabetes, but was the switch to synthetic Insulin as good as the pharmaceutical companies what you to believe?

In the next chapter, we'll look at both and the effects they have on the body.

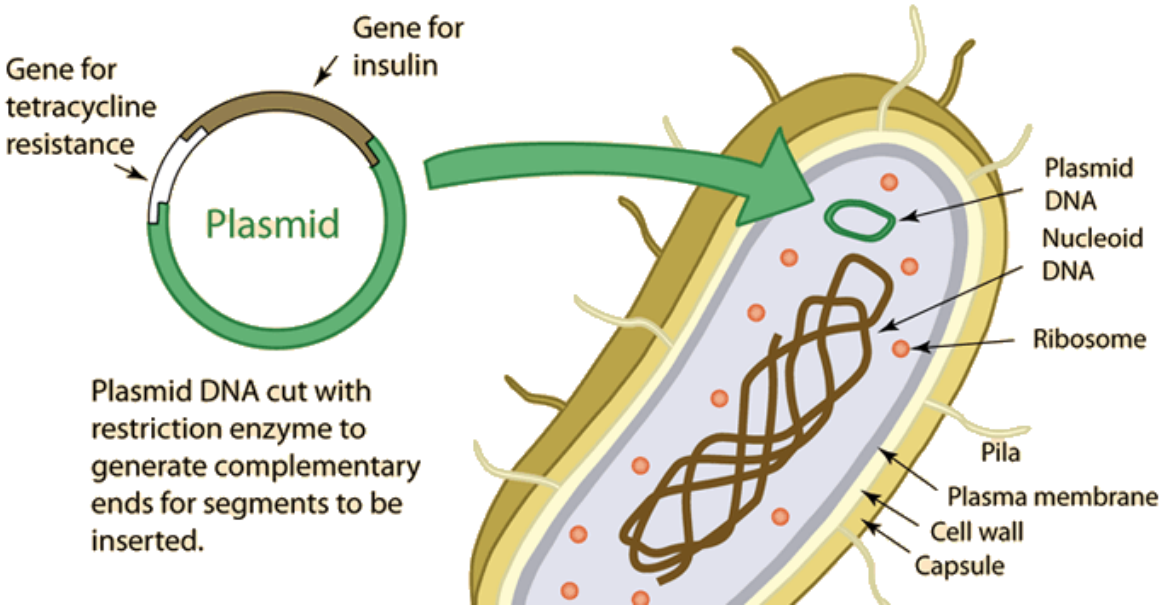
Chapter 3 Synthetic vs. Natural Insulin

Synthetic Insulin

Synthetic Insulin (or Humulin) is a laboratory grown Insulin that mimics the Insulin that is made in humans. Although this Insulin was developed throughout the 1960s and 70s, it wasn't until 1982 that it became approved for pharmaceutical use.

How Is It Produced?

Synthetic insulin is produced by growing Insulin proteins with E-coli bacteria or yeast in a laboratory. This process is complicated and has a lot of technical terms, but basically scientists replaced part of E-Coli's DNA with human DNA that is responsible for making Insulin.



Then, they grow this E-Coli in a fermentation tank and wait for the bacteria produce synthetic Insulin. Once enough has been made, the scientists remove the synthesized

Insulin and purify it to be sold as synthetic Insulin or “Humulin”. The chemical structure is similar but not the same as the Insulin your body makes.

Types of Synthetic Insulin

There are several types of Synthetic Insulin available. They are:

- **Short Acting -** Begins working within 30 minutes and is active about 5 to 8 hours
- **Intermediate Acting -** Begins working in 1 to 3 hours and is active 16 to 24 hours
- **Long Acting -** Begins working in 1 to 2 hours and is active about 24 hours
- **Ultra-Long Acting -** Begins working in 30-90 minutes and continues for 24 hours

Benefits and Disadvantages

The benefits of synthetic Insulin are that it can be easily produced in large quantities at a very low cost when compared to natural insulin. The disadvantages of synthetic Insulin are its terrible side effects. The most common are:

- Edema
- Heart failure
- Insulin resistance
- Hypoglycemia
- Vision problems or retinopathy
- Pain, hives, inflammation, bruising, swelling and itching as injection site
- Peripheral neuropathy
- Weight gain

Natural Insulin

Natural Insulin (or animal Insulin) is Insulin that is derived from cows and pigs. It works exactly like synthetic Insulin but with less side effects. It is the first type of Insulin to be used on humans to control diabetes and have several advantages.

Unfortunately, it has become harder to obtain natural Insulin, as synthetic Insulin or "Humulin" has taken over the market.

How Is It Produced?

Natural Insulin is produced by taking Insulin from the pancreas of animals and then purifying it to pharmaceutical grade standards.

Types of Natural Insulin

There are 3 different types of Natural (animal) Insulin available. These 3 types are:

- **Short Acting -** Short Acting insulin starts to act in the body after 30 minutes of injecting. The peak action occurs between 3 and 4 hours after injecting and can last up to 8 hours.
- **Intermediate Acting -** Intermediate Acting insulin takes about 4 - 6 hours to start acting. The peak action occurs between 8 and 14 hours and can last up to 24 hours.
- **Long Acting -** Long Acting insulin unlike short and intermediate acting insulin starts to work shortly after injecting. The peak action occurs between 6 and 10 hours and can last up to 16 hours.

Benefits and Disadvantages

The main benefit of natural Insulin is its chemical structure. It's much closer to the structure of Insulin created by the human body. This mean far fewer side effects.

Also, it's effects act slower, so hypoglycemia can be treated in a much safer way. Synthetic Insulin acts too fast, so if you accidently give a diabetic too much synthetic Insulin, there blood sugar will drop to quickly causing a coma.

Here are the disadvantage:

- It cost more to manufacture (Although, since it's not patentable, your actual costs would be lower)

- It acts slower so you need to take your Insulin a few hours before you eat

Synthetic or Natural: Which Is Better?

Natural Insulin works just as well if not better than synthetic Insulin but without any of the nasty side effects. Natural Insulin is more gentle on your body and gives you longer warnings if you've taken too much. Unlike synthetic Insulin that can quickly put you in a coma.

Natural Insulin works in concert with your other hormones that seem to get out of balance with the synthetic version. The benefits of natural Insulin over synthetic are too numerous to list. And the side effects of synthetic are so troubling I have no idea why anyone uses them.

The reality is that pharmaceutical companies can't make money of natural Insulin because it isn't patentable. This means drug companies can't charge top dollar and make outrageous profits. It's sad that these companies choose profit over ending suffering.

The choice is now in your hands.

Although it can be hard to get a hold of, natural Insulin is out there, and the first step is to find a doctor that will prescribe it to you.

In the next chapter, I show you how to get Natural insulin.

Chapter 4 How To Get Natural Insulin

If you're going to take Insulin, natural Insulin is a great option. It's much safer than synthetic Insulin and has few side effects.

There is a lot of pressure from profiteering companies on the Diabetes industry to virtually eliminate natural Insulin because it threatens their profits. But just because it's not readily available doesn't mean it's not an option.

If you live in the UK or Canada, consider yourself lucky. You are one of the few to be able to easily get natural Insulin in your country for personal use.

If you live outside the UK or Canada, obtaining natural Insulin can be tricky. Since manufactures and laws change all the time, the best way to get information on how to obtain natural Insulin is to search the web.

Keep in mind the FDA has strict rules regarding importing of natural Insulin in the United States. For more information on the FDA guidelines and what is required to obtain natural insulin, check out their website at:

http://www.fda.gov/Drugs/ResourcesForYou/Consumers/QuestionsAnswers/ucm173909.htm

In the UK and Canada, you can order directly from the supplier:

UK	Canada
WOCKHARDT UK LIMITED Ash Road North, Wrexham Industrial Estate Wrexham LL13 9UF, Wales United Kingdom Email: export@wockhardt.co.uk Telephone: 011-44-1978-661261	**WOCKHARDT UK LTD**. 2000 Ellesmere Road Scarborough, Ontario M1H 2W4, Canada Website: www.nucro-technics.com Telephone: 1-416-438-6727

As of January 2019, there is a shortage of raw material for Bovine Insulin, however this has not affected the Procine Insulin variety, which is as effective. If you choose to seek out natural Insulin, it's best to start with search of Porcine Insulin, specifically since you will not be able to easily acquire Bovine Insulin in the near future. .

No matter what you decide to do regarding your Insulin, it's important to have the choice. Just because one doctor tells you it's not available doesn't mean it's true, so do some research and establish what your options are so that you can be informed and educated.

Just like any other health concern, it's important to get a second option. If your doctor won't give you a prescription for natural Insulin, you can opt to seek out one that is willing to help you.

If you're concerned about synthetic insulin, or about what you're putting in your body, consult your physician or primary health care provider and come armed with information so you know all your options and can make an educated decision.