

The How and Why of 12 Medical Discoveries



By Rachel Bubb

The reason I wrote this is because I myself was interested in how these discoveries were made a few years ago. I thought I would write something to help other kids (and my own kids) learn about them and hopefully be just as curious as I was about them.



Copyright: June 2023 by Rachel Bubb (Writings and Drawings)

All rights reserved. This book or any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of the publisher except for the use of brief quotations.

Contact: Rachel Bubb
c/o 6443 El Camino Dr.
Redding, CA 96001

www.storiesfromchinaforkids.blogspot.com

Table of Contents

- I. History of Blood Transfusions**
- II. Discovery of Blood Types**
- III. DNA**
- IV. Discovery of Tetanus**
- V. Discovery of Vitamins**
- VI. The Bubonic Plague**
- VII. Vaccinations**
- VIII. X-rays**
- IX. Ultrasounds**
- X. Open Heart Surgery**
- XI. Anesthetics**
- XII. Organ Donations**
- XIII. Timeline of Medical Discoveries**
- XIV. Notes and Sources**
- XV. More Books From This Author**

Chapter I: History of Blood Transfusions

I am one of the most squeamish people so it's a bit strange that I am writing a book like this. However, the last few years I have been curious about how people discovered what they know about blood. The whole idea of blood types, Tetanus shots, and DNA- who would've thought that our blood would be so complicated?

How and when did they figure out how the human body works? Sometimes when I read the Old Testament, I'm amazed with passages about the sacrifices where they talk about different parts of animals: "Take from this ram the fat, the fat tail, the fat around the inner parts, the covering of the liver, both kidneys with the fat on them, and the right thigh." (Exodus 29:22). This was a long, long, long time ago, but they already knew what the liver and kidneys were and where they were in the sheep.

One of the more famous people who studied the human body was Leonardo da Vinci. He drew detailed drawings of the human body and tried to figure out how it all worked. In those days if someone wanted to study medicine and learn anything about the human body, he would steal or dig up freshly buried bodies. They would dissect them to try and discover how everything worked.

For thousands of years people knew that something important was in the blood. There are many times in the Old Testament that talks about "the life being in the blood." Somehow someone got a crazy idea that maybe one way to save someone's life (if they had lost a lot of blood) was to somehow give them some blood. I'm not so sure who the first person was to come up with this idea, but it's a crazy one! The first attempt to try something like this was in the 1600s. It all started in 1628 when William Harvey, a doctor from England, realized that blood flows around our bodies in a type of circle and that it's always moving. Almost forty years later another doctor from England (Richard Lower) tried to give blood from one dog to another dog. It worked and he was able to keep several dogs alive this way. Now, how did he do it? Did he develop needles like they have today? How was he able to store the blood? Today they have special needles, tubes and bags to store blood that's donated.

Two years after this work on dogs, two doctors in two different countries (France and England) tried to give blood from sheep to people. They said that this worked sometimes. How did they know that blood from sheep would be similar enough to even work for people? After this, nothing more was done for a while. Finally, in 1818, a British doctor (James Blundell) gave one of his patients blood. She had just had a baby and had lost a lot of blood. He used a syringe and got four ounces of blood (Nowadays if you donate blood they take a lot more than just four ounces; they take a whole pint, which is about sixteen ounces.) from her husband and then was able to use a type of small pipe to put it in his wife's veins. He did ten blood transfusions total (at least he wrote about ten of them anyway!) during his time as a doctor but only five of them were successful. He didn't know about something we know about today: blood types.

In 1901 there was a huge breakthrough: Karl Landsteiner, a doctor from Austria, discovered blood types. That's why sometimes blood transfusions worked and sometimes they didn't: the blood types had to be compatible for them to work.

