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# Bertha and medical research

The title is surrounded by several blue decorative icons: a molecular structure at the top, an atom symbol to the left of the word 'research', and several stars scattered around the text.

Once upon a time there was a small village far, far away, where children lived happily with their families and expressed their happiness by singing cheerful songs.



One fine day, Bruno, who was one of the happiest children in the village, became ill and couldn't sing like he used to. Every time he tried to sing, it was as if he'd been struck dumb, and not a sound would come out of his mouth.

Bruno was as happy as before, he just couldn't sing any more. Bruno's parents took him to the local doctor, who checked him from top to toe and did lots of tests, but couldn't find the source of Bruno's illness and couldn't cure him.



After a few days, some of Bruno's friends also became ill and could no longer sing.

They were all as happy as before, but simply couldn't make any sounds come out of their mouths when they tried to sing.

Bruno's friends went to the doctor, but, as with Bruno, the doctor couldn't find the cause of their illness or cure them.



Bruno's older brother, Daniel, who loved his younger brother very much, decided that things couldn't stay like this, and that he would do everything he could to find a cure for Bruno and his friends so they could sing again.

But what could he do? He wasn't a doctor, and the only doctor he knew was the one in the village, who didn't know how to cure the children.

One day, Daniel told his parents that he was leaving the village to search for a person or a **remedy\*** to cure Bruno and the rest of the children who were sick and couldn't sing.



(\* ) Learn the meaning of the scientific terms in the glossary (page 23).

Daniel visited lots of remote villages and explained the illness of Bruno and his friends to all the doctors he could find, but none of them had heard of the disease and they didn't know how to cure the children.



One day, Daniel met a very wise old man who told him that he should go and see Bertha, a sorceress who lived on the top of the mountain. The wise old man assured Daniel that Bertha the sorceress was the only person who could help him with such a difficult problem.

When Daniel reached the top of the mountain, he came across a woman on the riverbank and asked if she knew Bertha the sorceress.

The woman told him that she didn't know of any sorceress and that no one else lived up there, but that her own name was Bertha. She also told Daniel that she didn't practice magic, but that she had studied medicine and spent her time investigating new remedies for diseases that still had no cure.

Daniel was very happy to hear this news and told her what was happening to Bruno and his friends.

Bertha told him that she thought she could help because she had a syrup that might work, but that sometimes there were diseases that had no cure and that to find one you had to do [clinical research](#)<sup>\*</sup>.

Daniel didn't know what clinical research was and asked Bertha to explain it to him.



(\*) Learn the meaning of the scientific terms in the glossary (page 23).



Bertha explained that, in order to do clinical research, first of all you had to find a remedy that might have healing properties, and then you had to find people who were willing to try it out to see if it could really work. Bertha called these people **volunteers\*** and said that they would be asked to do several things.

First of all, they had to sign a piece of paper saying that they wanted to volunteer for the clinical research and that no one was forcing them to volunteer. Bertha called this piece of paper the **consent form\***.

(\* Learn the meaning of the scientific terms in the glossary (page 23).

She also explained that, in order to find out if a pill or syrup really worked, some volunteers would be given the remedy and others would be given something that would neither cure nor hurt them, which was called a **placebo\***. None of the volunteers would know whether they were taking the remedy or the placebo.

Finally, the volunteers would be asked to report everything that happened to them while they were taking the remedy or placebo, as this would help the researcher to know if the remedy could actually cure people without causing them any other harm or illness.



(\* Learn the meaning of the scientific terms in the glossary (page 24).

Daniel asked Bertha to accompany him back to his village. There they would find volunteers for the clinical research and they would find out if Bertha's syrup could cure Bruno and his friends.

When they arrived at the village, Daniel and Bruno's parents explained to Bertha that all the children in village had taken ill and now none of them could sing.

Daniel gathered all the villagers together in the square and introduced them to Bertha.

Between the two of them they explained what clinical research was and the villagers asked Bertha some questions, such as whether the volunteers had to be people who were ill or if people who weren't ill could also volunteer.



After she had answered all their questions, Bertha set up a clinic at Bruno's house and started to receive the volunteers who wanted to participate in the clinical research.

Bruno and other children from the village signed up for the clinical research. Bertha asked them to sign the consent form and they all did so voluntarily.

After signing the consent form, Bertha gave them a medical check-up and then a dark bottle filled with a sweet liquid, but she didn't tell them if it was the remedy or the placebo.

She instructed them to take a spoonful every morning and night for two weeks and to call her every day to tell her if they'd taken the spoonful of syrup and whether they were feeling well or had experienced any problems.



After two weeks, Bertha gathered all the volunteers into her office and asked them to sit round in a circle. She played the song "Old McDonald" and asked them to try to sing along.

Some of the children sitting in the circle were able to, while others still couldn't sing the song. Bertha asked the children who could sing to show her their syrup bottles so she could check whether they contained the remedy or the placebo.



As Bertha suspected, everyone who could sing "Old McDonald" had taken the remedy.

Now she needed to find out whether those who couldn't sing had taken the remedy or the placebo. If the children who couldn't sing had taken the placebo, that would mean the remedy worked.

But, if the children who couldn't sing had taken the remedy, that would mean it hadn't worked well and the syrup wasn't actually a cure for the illness. In that case, further research would have to be done.



When Bertha checked the bottles of the children who couldn't sing, she saw that they all contained placebo. This meant that the remedy had worked! And, most important of all, during the two weeks of the clinical research, none of the children who'd taken part had been ill or suffered any health problems, which meant the remedy could now be given to the other ill children.

Daniel was very happy that Bruno and the other children in the village could sing again and he thanked Bertha for her help in healing them. Daniel told her that he wanted to be a **clinical researcher**\* like her when he grew up. Bertha replied that she would be very happy to have an assistant as smart as he was, but that he must remember that clinical research does not always give good results and that you had to keep on researching.

So snip, snap, snout,  
this tale's told out.

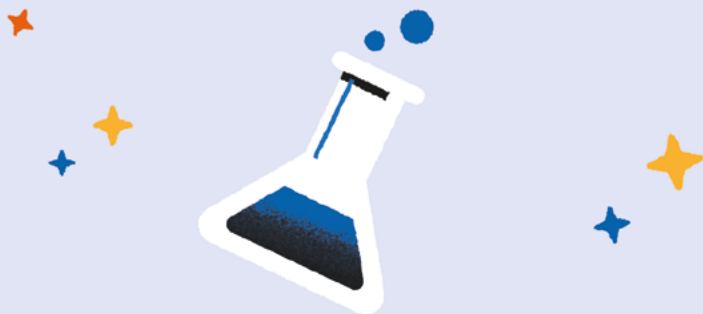


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# GLOSSARY



1. **Remedy:** a substance, element, or other product that serves to cure, improve or alleviate a disease or any of its symptoms.
2. **Clinical research:** the branch of health sciences concerned with obtaining the evidence necessary to establish whether it is possible to use a new drug.
3. **Volunteers:** people who freely offer to do something. In the case of clinical research, they freely agree to participate in clinical trials.
4. **(Informed) Consent:** is a process between the investigator and a potential participant in a clinical study, in which the former tells the latter about the risks, benefits, consequences and problems that may arise from taking part in this research. The objective of the process is to provide the participant with all the necessary information and to ensure that he or she adequately understands what is involved, in accordance with the capabilities of the potential participant, so that they may freely make a decision as to whether or not to participate. The consent is accepted by means of the signature of both the volunteer and the investigator.



5. **Placebo:** a substance that has no curative action but produces a therapeutic effect if the patient takes it while believing that it is a medicine.
6. **Clinical researcher:** a healthcare professional who performs tasks related to clinical research, and especially clinical trials.



Dedicated to all patients and their relatives, to all researchers, and nurses, and to everyone who has or is participating in clinical trials in one way or another, as clinical research could not advance without them.

We are also especially grateful to the Kids Team at the Sant Joan de Déu Hospital for all their help in editing and proofreading this story, and to all the people who have encouraged and helped us to turn this project from a pleasant personal experience into a magnificent story that we would like to share with all of society.

