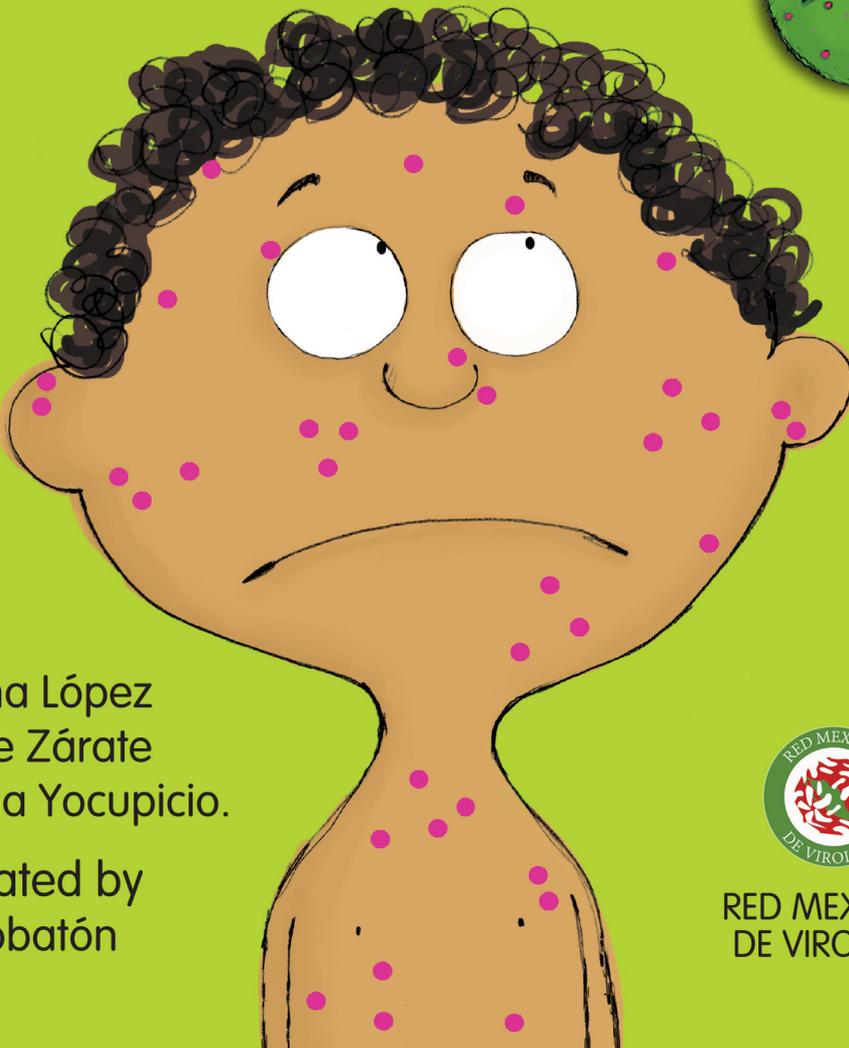


Paul has MEASLES



Susana López
Selene Zárate
Martha Yocupicio.

Illustrated by
Eva Lobatón



RED MEXICANA
DE VIROLOGÍA

Paul has **MEASLES**



Susana López
Selene Zárata
Martha Yocupicio

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Eva Lobatón



© Paul has measles.

Susana López Charretón
Selene Zárate Guerra
Martha Yocupicio Monroy
Illustration: Eva Lobatón

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México 2018.



Know what? Paul is not coming today.



Paul
has
MEASLES!!

MEASLES!!



MEASLES!! MEAAAASLEEEES!

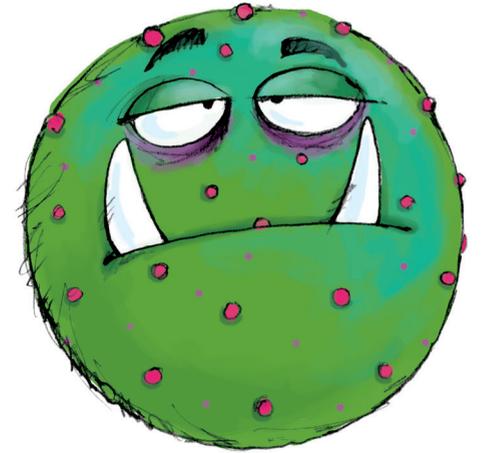
He will have to stay at home for two weeks because he feels very tired, has fever, headache and his body is covered with little spots.



What is MEASLES?



Measles is a disease caused by a virus.



Measles virus



A VIRUS!
VIRUS!



ViiiRUUUS!!

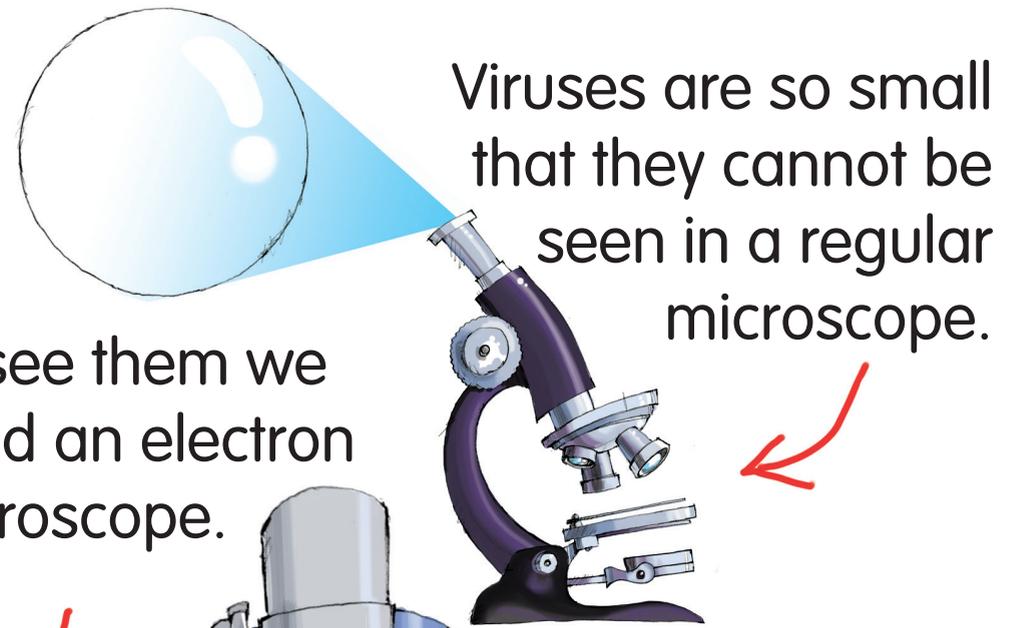
**What
is a
VIRUS?**



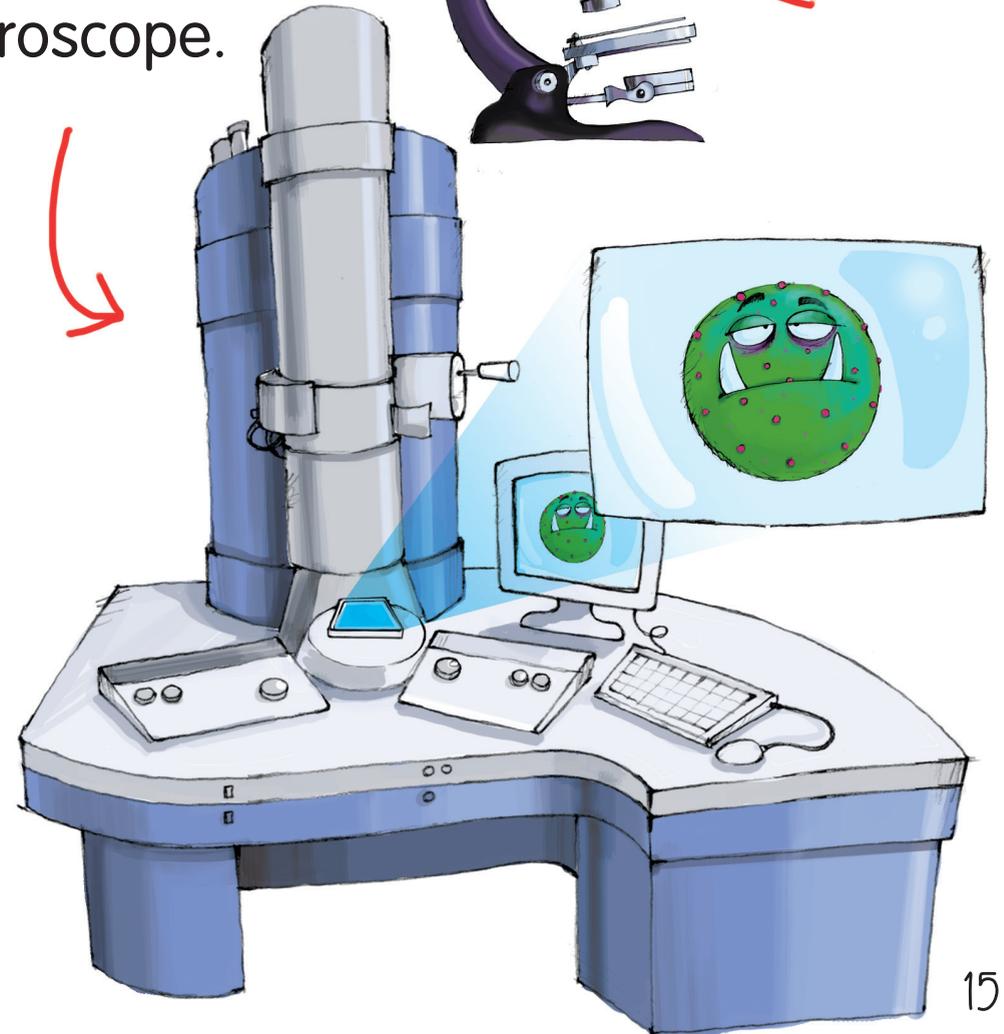
A virus is a very small microbe that can make us sick when entering into our body.



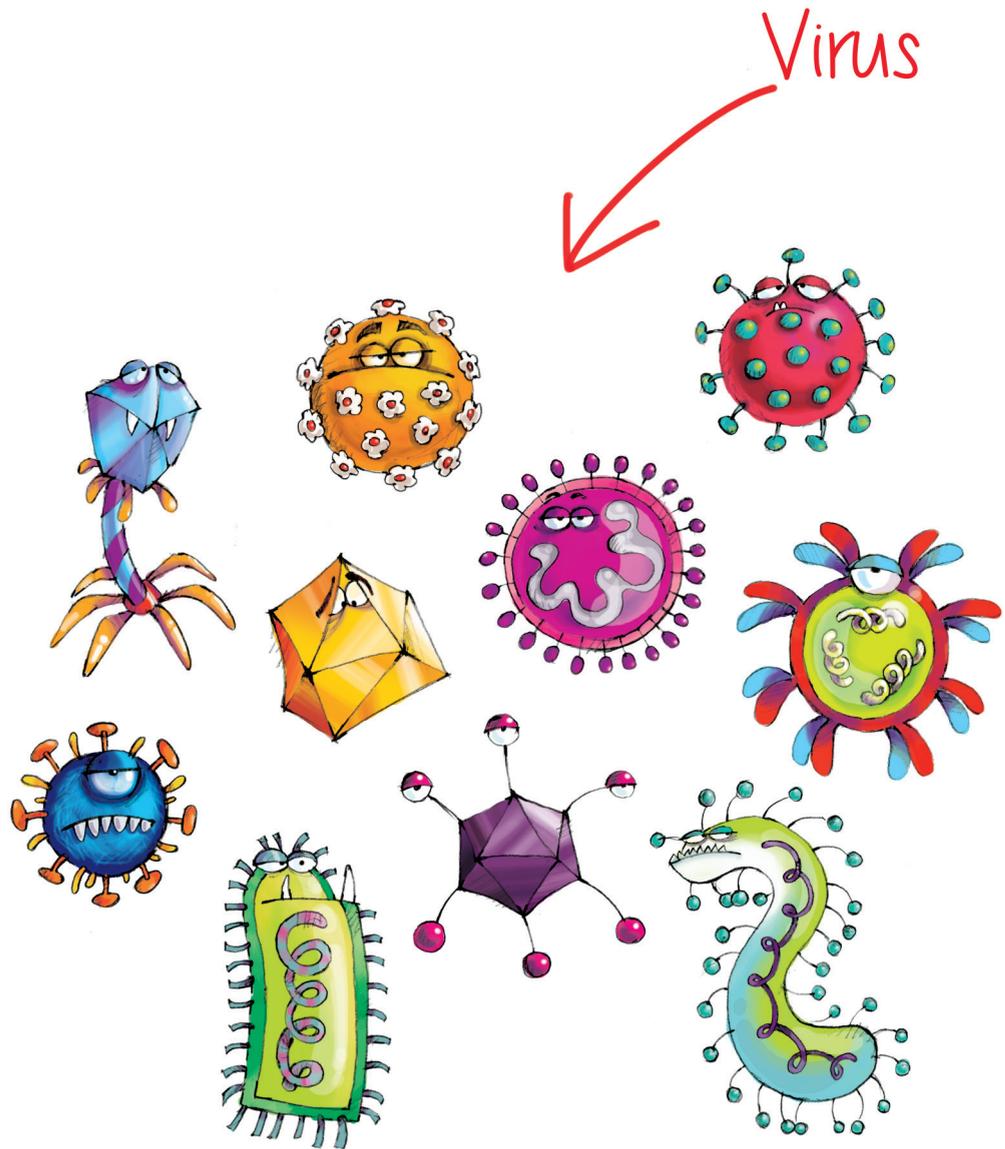
To see them we need an electron microscope.



Viruses are so small that they cannot be seen in a regular microscope.



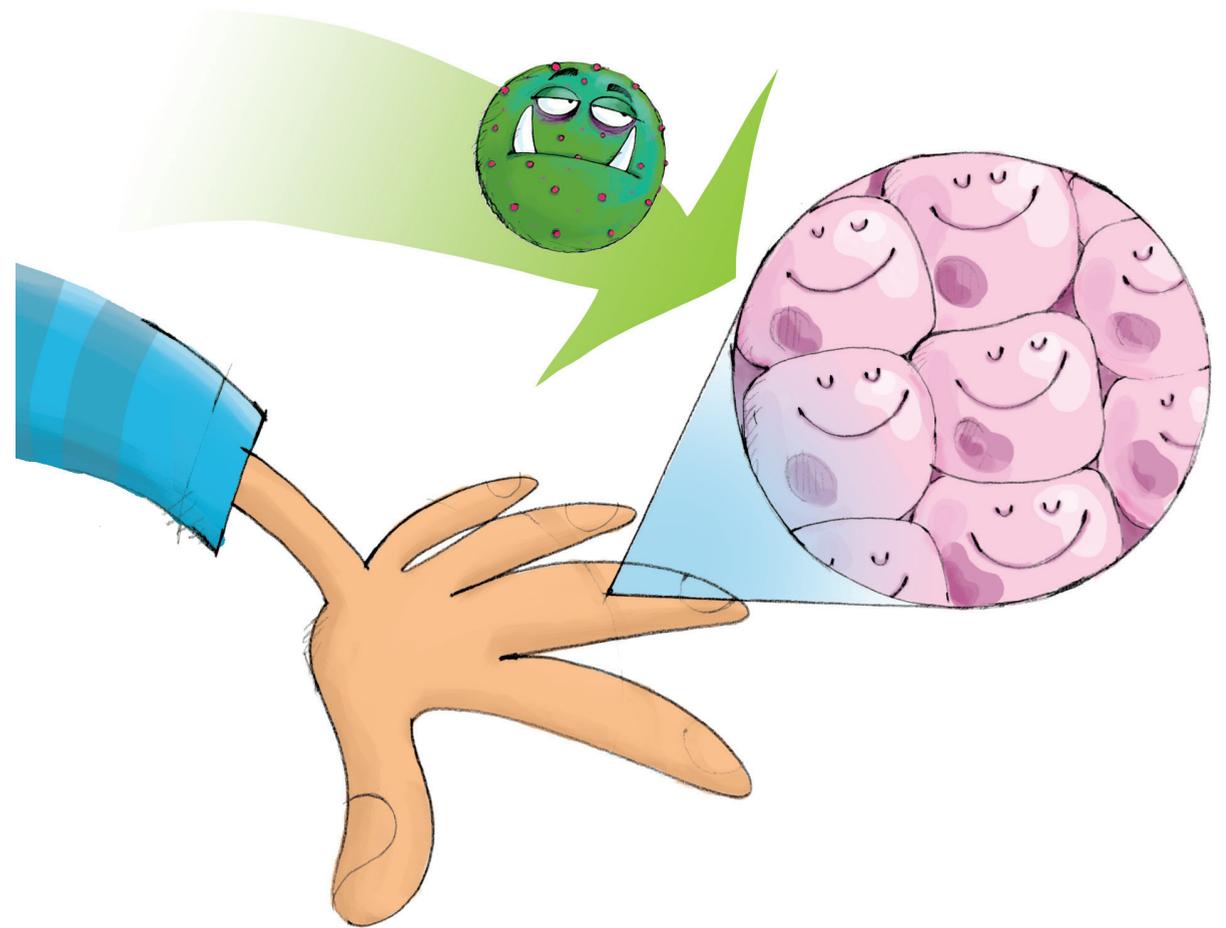
Viruses and bacteria are microbes that can make us sick when entering our body.



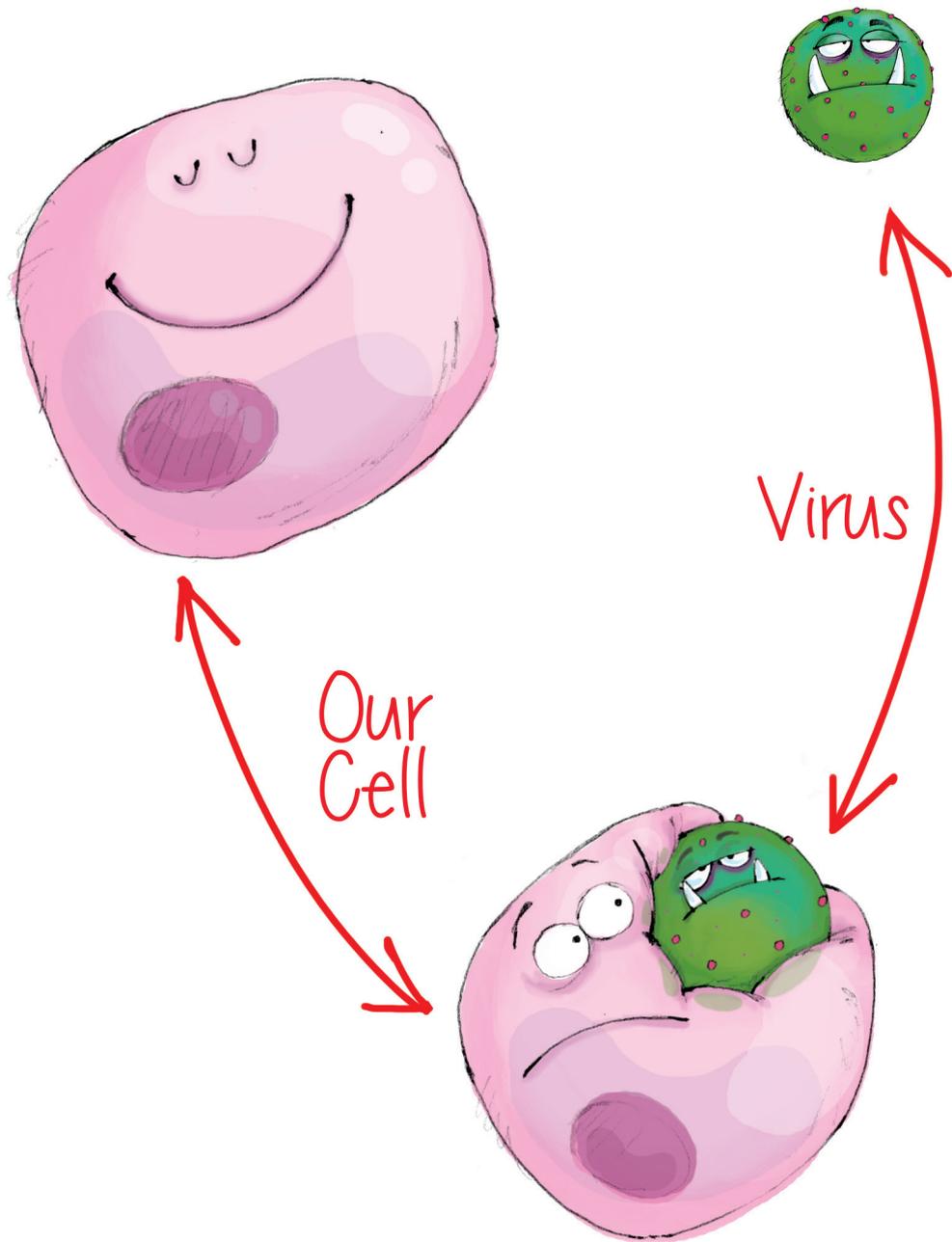
Why do
microbes
make us sick
?



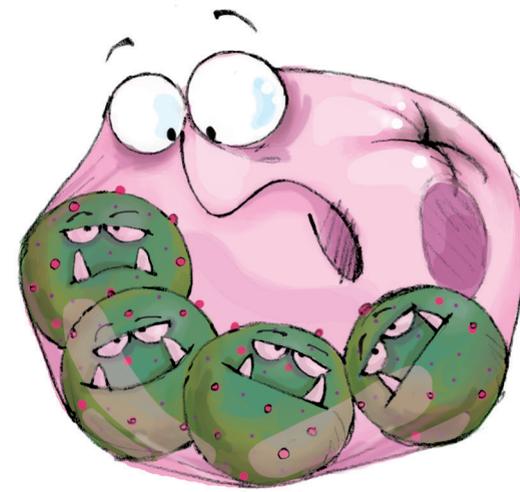
When a virus encounters our cells,
it begins to multiply.



Our body is made
of millions of cells.



Viruses multiply inside the cell until it gets sick or breaks.



And if our cells are sick or get broken, we get sick.



How
can we get
infected by
a **ViRUS?**

How
do viruses
get into
our body?

Viruses can
spread from
person to person,
that is called

TRANSMISSION

Measles virus can
be transmitted
when we sneeze...



play...



or share cups or spoons with someone
that is already sick.

The virus can enter through our
nose or mouth.



Then...
are we
going to get
sick?



It is possible, but that depends
on many things.
The most important one is if we
have been vaccinated.

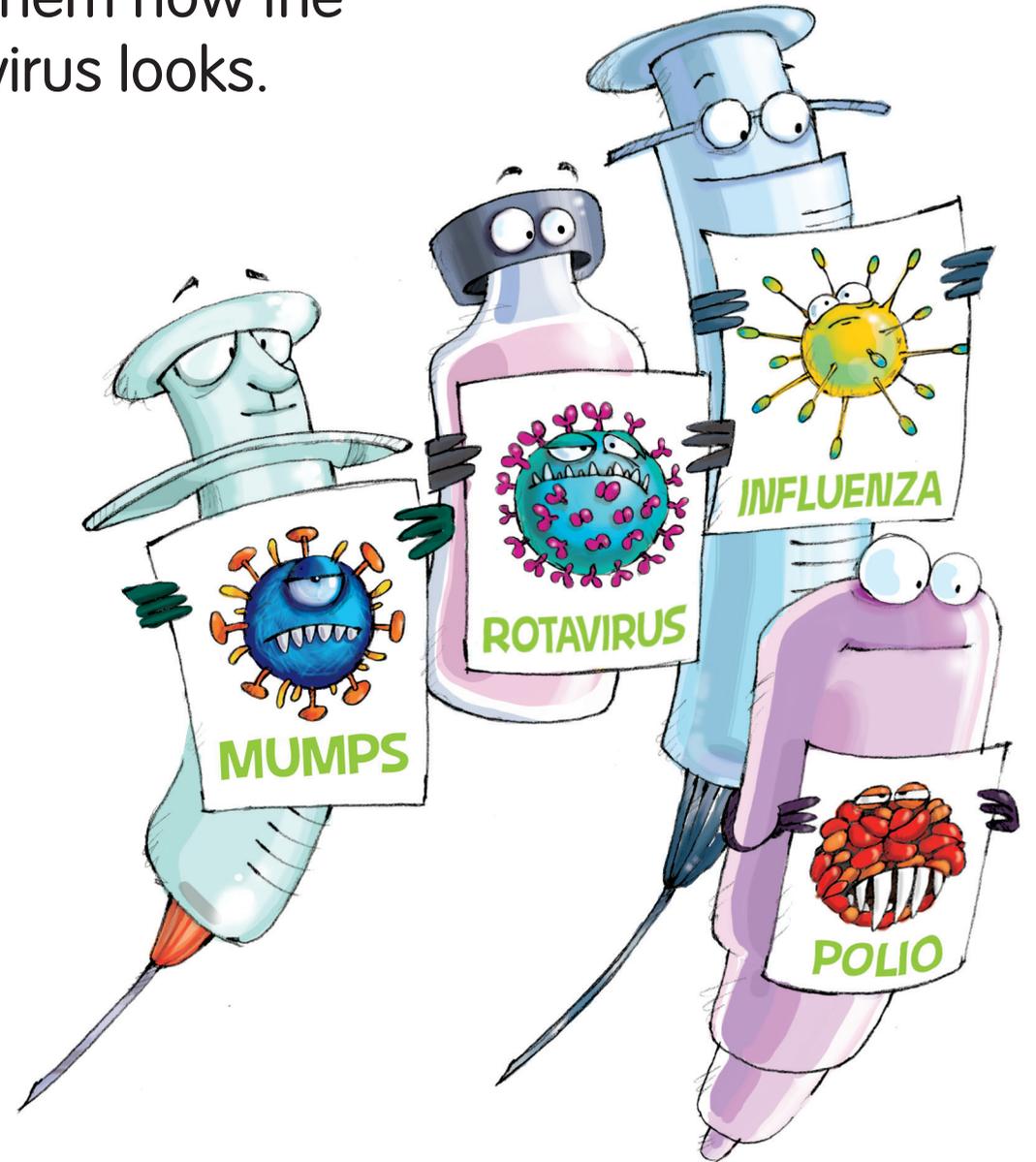


Vaccines! Vaccinees! VACCINES!

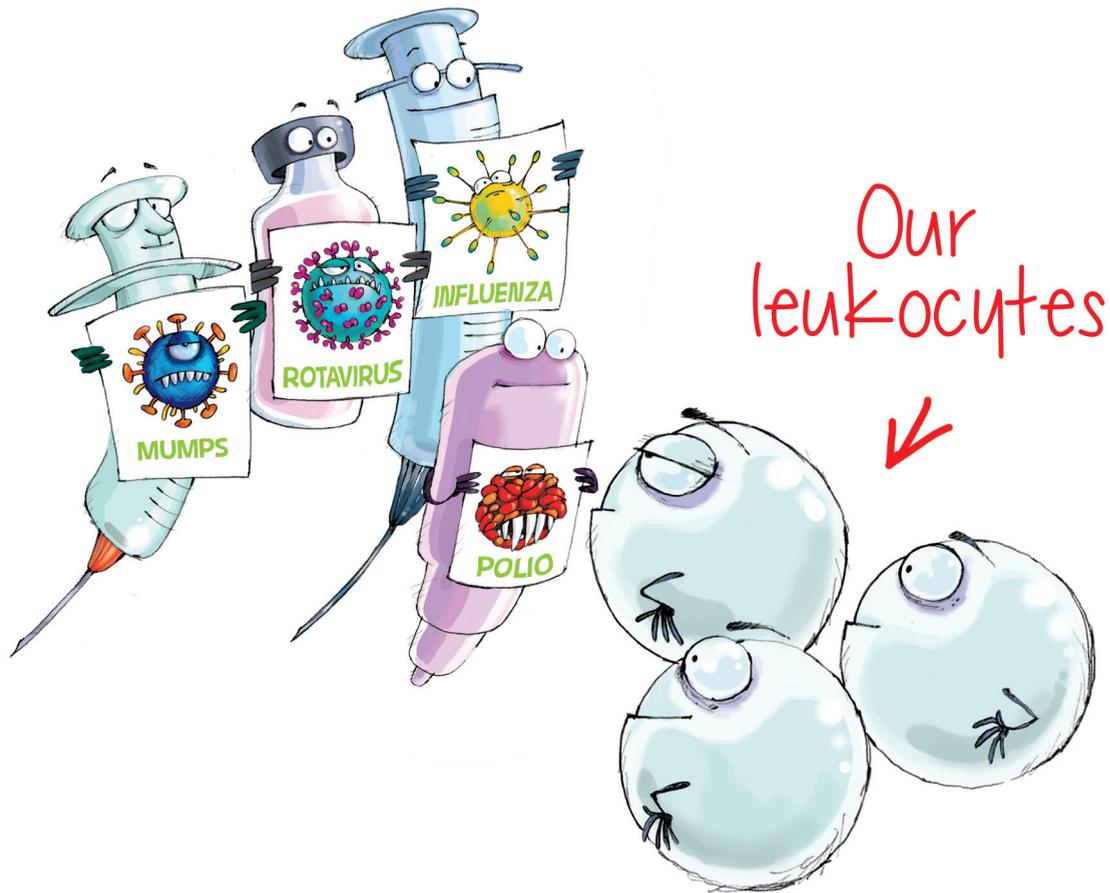


What are
VACCINES?

Vaccines teach some cells of our body to defend us from a virus, by showing them how the virus looks.



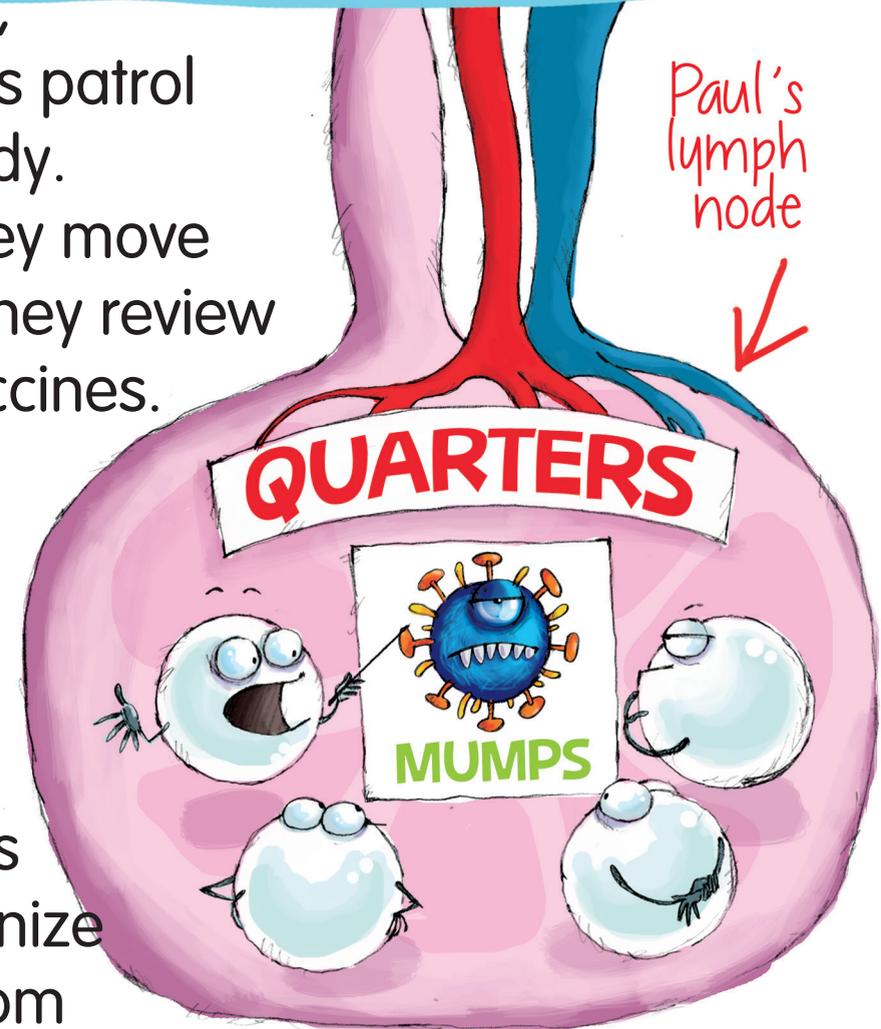
The cells in charge of defending our body are called leukocytes.



Leukocytes learn how to identify a virus to stop them before they begin to multiply and make us sick.

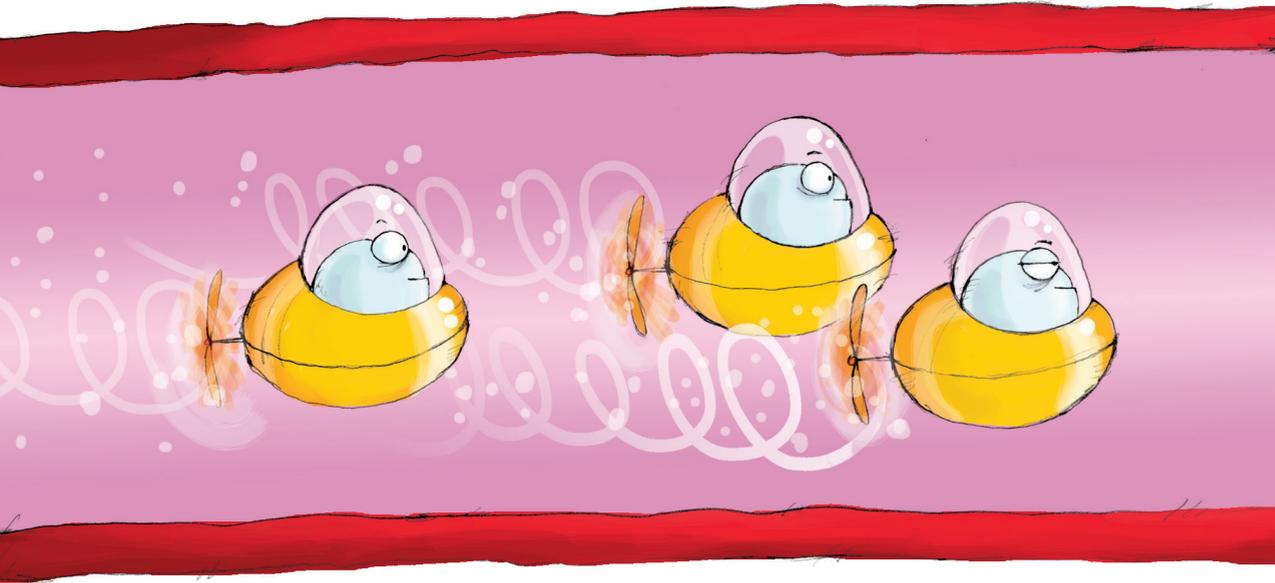
What is happening inside Paul's body?

Every day, leukocytes patrol Paul's body. Before they move around, they review Paul's vaccines.

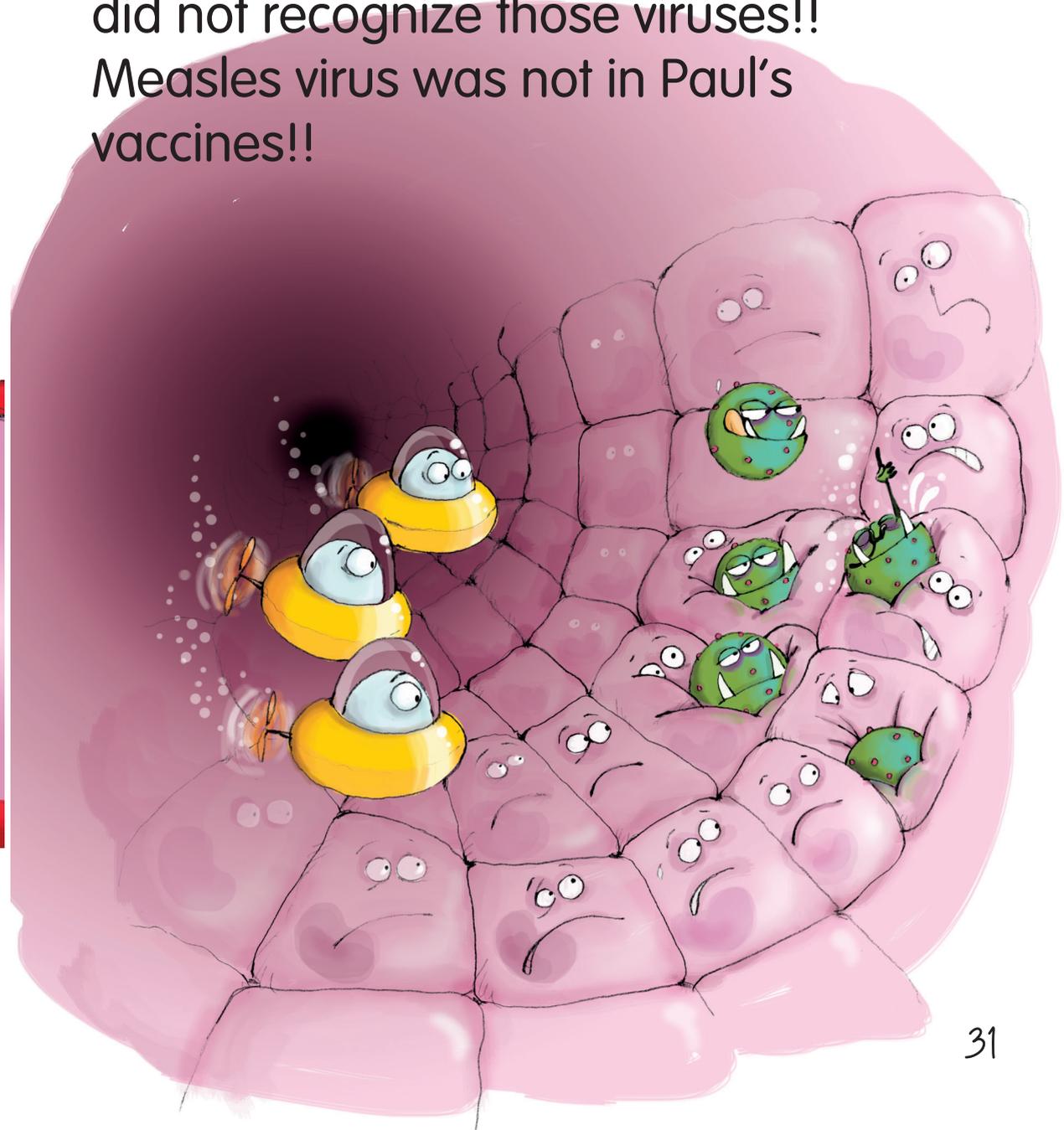


Paul's leukocytes will recognize viruses from Paul's vaccines.

The leukocytes left their general quarters in the lymphatic nodule, to patrol inside Paul's body.



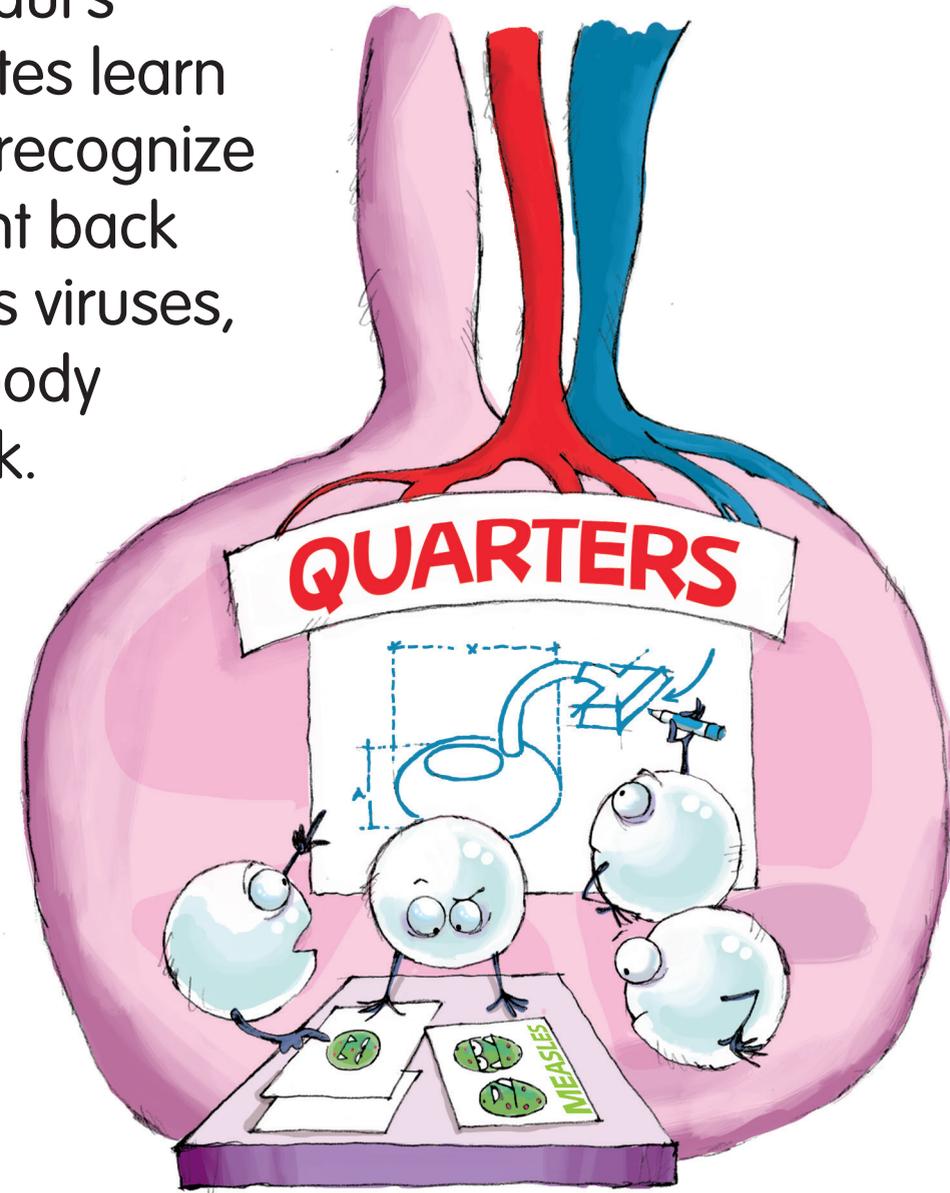
Along the way they found measles viruses infecting Paul's cells, but they did not recognize those viruses!! Measles virus was not in Paul's vaccines!!



Then, they called their quarters in Paul's lymph node, to ask how to fight those invaders.



While Paul's leukocytes learn how to recognize and fight back measles viruses, Paul's body gets sick.



Paul is going to get better when his leukocytes start fighting the virus.

To recover, Paul will have to rest, eat very well, and follow his doctor's instructions.

He will also have to stay home to prevent spreading the virus to his friends or other people.



The bell rang!

iRiiiiiiiiing!

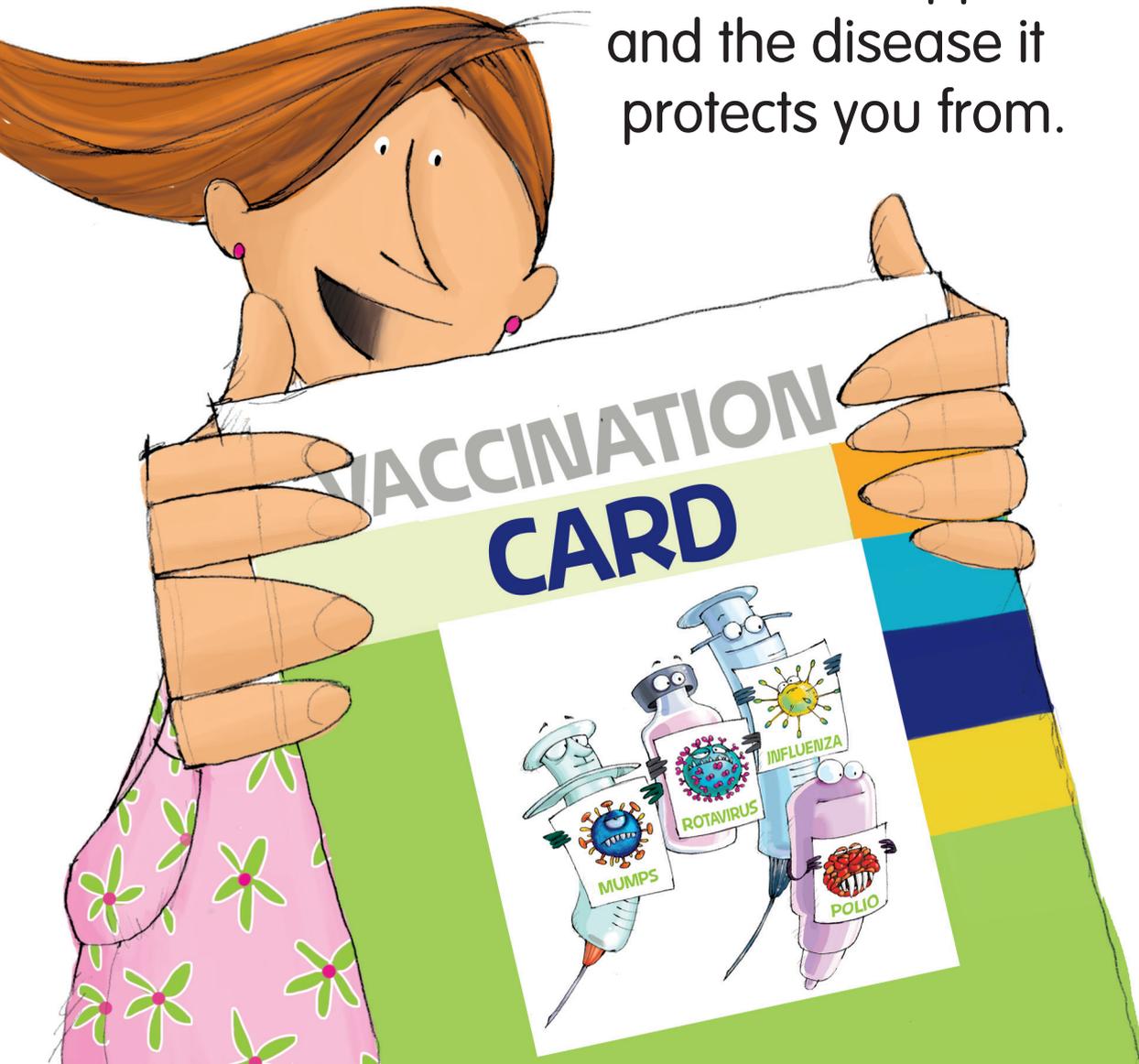
Do not leave yet!
Your homework for tomorrow is to ask your parents which vaccines you had.
Then you will know which viruses cannot hurt you.



Sophie and Luis
ran out of school to
ask her mother:



Of course you are!
Here is your vaccination card.
Here the doctor registers every vaccine
that you get. It also says the age at
which each vaccine needs to be applied
and the disease it
protects you from.



You are already vaccinated against
all these diseases:

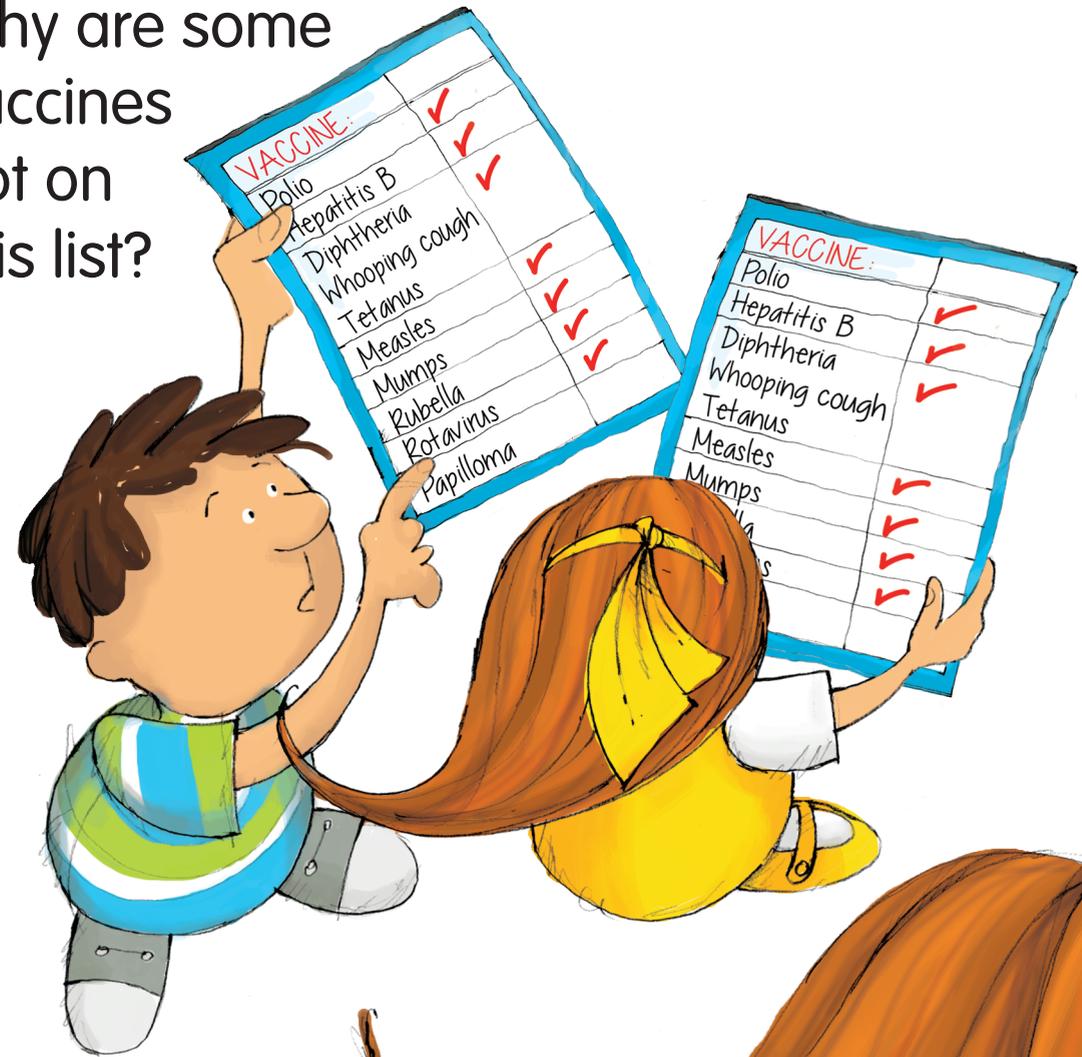
VACCINE:	
Polio	✓
Hepatitis B	✓
Diphtheria	✓
Whooping cough	
Tetanus	✓
Measles	✓
Mumps	✓
Rubella	✓
Rotavirus	✓
Papilloma	

Some
vaccines
need to be
given more
than once,
so that you will always be protected. 39

It is very unlikely that you will get sick like Paul, since you are already vaccinated against measles.



Why are some vaccines not on this list?



That is because you are not old enough to receive those vaccines.

The next day, Sophie and Luis handed in their homework to their teacher, who said:

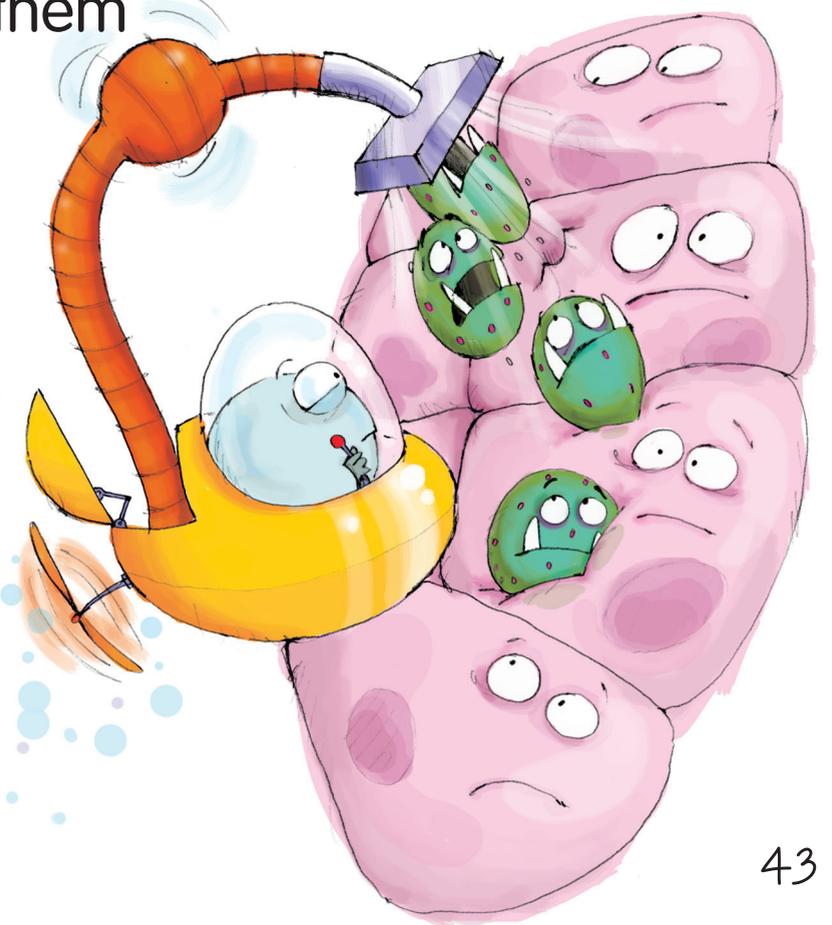
you are vaccinated against all these diseases.

So, what's happening inside your body?



What is happening inside Sophie and Luis bodies?

Luis and Sophie are vaccinated against measles, so when their leukocytes find these viruses, they immediately recognize them and can get rid of them before they cause the disease.



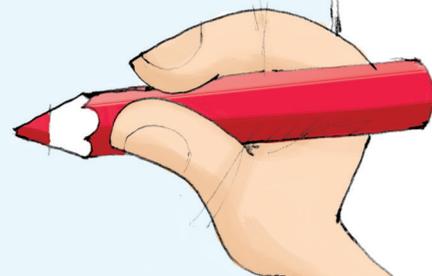
Then we
are not going
to get sick
ever?



Unfortunately scientists have not been able to make vaccines for many diseases. Like Zika, chikungunya, or AIDS, but we can do many things to prevent them.



Lets make a poster that says what
can we do to protect ourselves from
getting sick!



Don't get Sick

Always wash your hands before eating,
or after going to the bathroom.

Do not share spoons or candies
with someone else.

Sneeze and cough in your elbow.

Wash the fruits and vegetables that
you plan to eat.

Where there are mosquitoes, use
repellent and sleep with a net.

If you get sick, stay home to recover,
and prevent spreading infection
to others.

Two weeks later, Paul was back!!!
A little skinnier, and with some marks in
his arms, but happy to see his friends
Sophie and Luis again.



When he saw the poster that his friends
made, he said...
I will make one too!!!



But Paul did not make a poster,
he made a
big canvas!



And we all
thought that his
advice was
the most
important
of all!!!!

Who made this book?



Susana López

She works at the Institute of Biotechnology in Mexico and studies rotaviruses, which cause gastroenteritis in small children, because she wants to find new ways to protect children against the disease caused by these viruses. She uses microscopes and special equipment. When she is not working she likes to read books or to cook, using regular pots and pans.



Martha Yocupicio

She works with very special scientific equipment. She tries to understand what is happening when viruses infect our cells, and how the cells fight back. In her free time, she likes to read books of detectives that use their reasoning to resolve interesting mysteries.

Selene Zárate

Besides being a mom, this scientist studies how viruses evolve and escape from the immune system and from drugs, and how to prevent this from happening. When she is not working, she takes care of her two naughty little ones and rediscovers with them how the world works.



Eva Lobatón

She was born in Mexico City in 1959. She has a big colorbox and a computer, that she uses to write and color books and magazines. Besides having fun, she thinks that her drawings can communicate many messages. When she is not working she likes to observe things around her.



What is the Mexican Virology Network?

It is a network that brings together most professors, researchers and students, with the aim of learning about viruses to understand how they make us sick, and how we can fight against them. Besides, this network works to support students to specialize in virology, encourage researchers to develop new methodologies to detect viruses, and new treatments to prevent the diseases caused by viruses. The Mexican Virology network is also very interested in communicating clearly and truthfully facts about viruses, the diseases they cause, and the way to prevent them to keep the Mexican society well informed about viruses, emergent diseases, vaccines, etc. The Mexican virology network (RMV) was initiated in April 2015. This network is financially supported by the **National Council for Science and Technology (CONACyT).**

Martha, Selene and Susana are members of this Network and making this book with the help of Eva, has the intention to teach children and their parents and teachers how important it is to prevent infectious diseases.

If you want more information about the Mexican Virology Network, and learn about viruses, you can enter into our webpage:

www.redvirologia.org

And follow us in our Facebook, and twitter accounts, and in our YouTube channel.



 /redmexvirología
 @RedMex Virologia
 Red Mexicana de Virología



Paul is sick, he has measles.
He cannot go to school or go out to play with
his friends until his cells learn how to defend him
against the virus that made him sick.
But, what is a virus? Why do we catch a virus?
And, why vaccines are important?



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