I'm a Junior Scientist

TEDDY

WILL AND EMMA MEET THE TEDDY SCIENTISTS

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TEDDY

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This book is dedicated to the children and families participating in the TEDDY Study.

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WILL AND EMMA
MEET THE TEDDY SCIENTISTS

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Chapter 1: The School Trip

Will and Emma are going on a class trip. One of their friends, Tom, recently found out he has diabetes. To learn more about how the body works, they are going to visit Scientists Steve and Sally at the TEDDY laboratory.

"I am really looking forward to visiting the TEDDY scientists and seeing what they do at work," Emma says.

"Me too," Will says. "You and I have been in TEDDY ever since we were babies, but we have never seen what the scientists do to find out why some kids get diabetes."

"And I heard that there is something really exciting at the TEDDY lab," Emma says with anticipation as the bus drives through town.

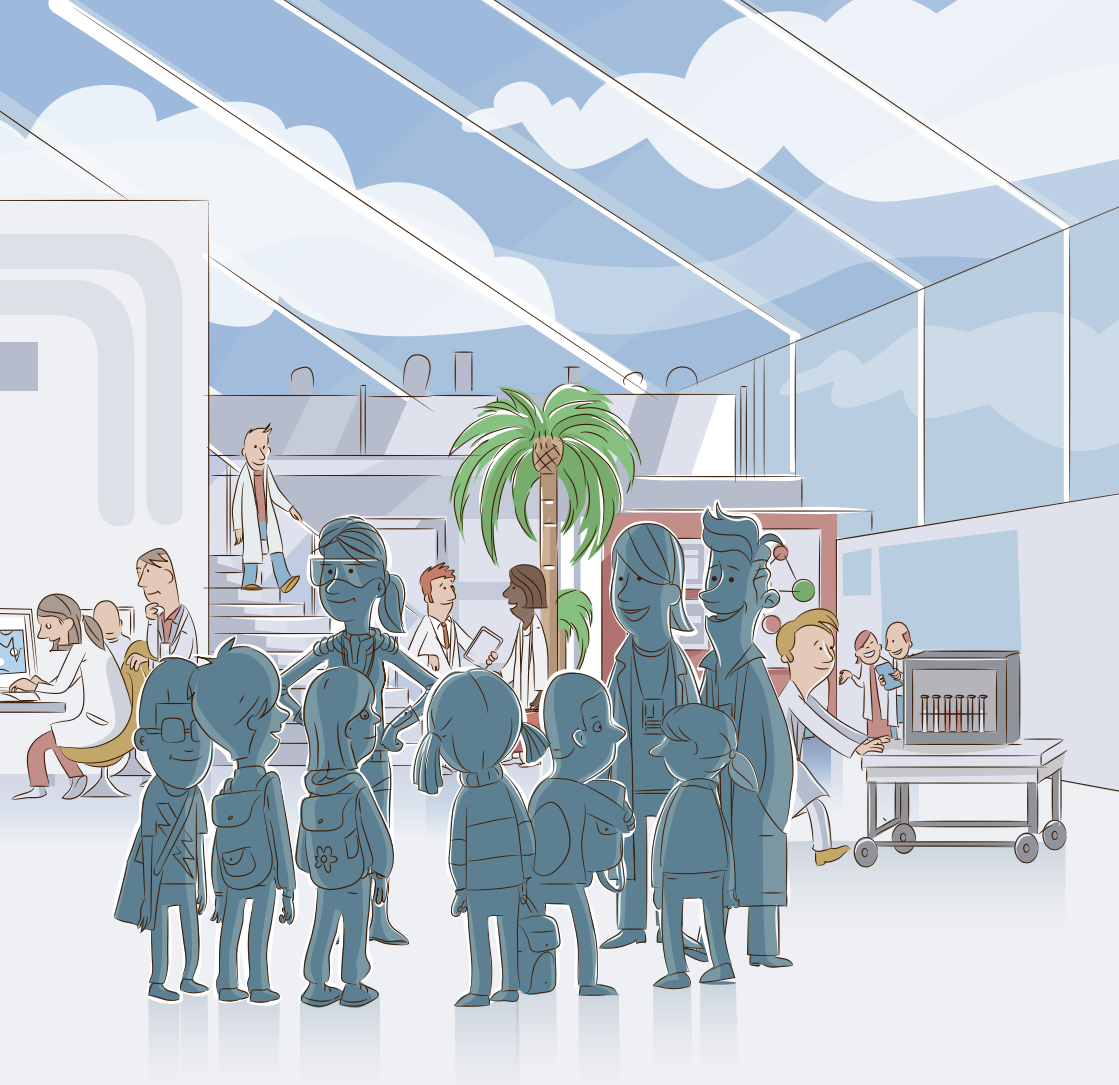
Soon they see a large building with big windows and a ceiling made of glass.

"Wow," Will thinks, "what a great looking building."

As the bus pulls up to the entrance, three people are waiting for them in front of the building. Will and Emma recognize two of them: Scientists Steve and Sally.

"Welcome to the TEDDY laboratory! It is so nice to see you all," Steve and Sally say. "Meet your guide today, Fiona. She is one of our special researchers here."

"Hi, and welcome! It is so nice to see you," Fiona says. "Come, let's go inside!"



They see the blue sky through the glass ceiling above them. Scientists are busy carrying containers with test tubes. Some are testing out activity monitors. Others are talking seriously while carrying books and laptops.

The children are given the same white lab coats that the other researchers around them are wearing. They also get special pass cards to hang around their necks. Not everybody is allowed to enter this building! The children's excited whispers echo from the corridor walls while they follow Fiona and the others to the library.

The children take their seats around a large oval table. There are bookshelves and pictures of the human body all around the room. A large projector hangs from the ceiling.

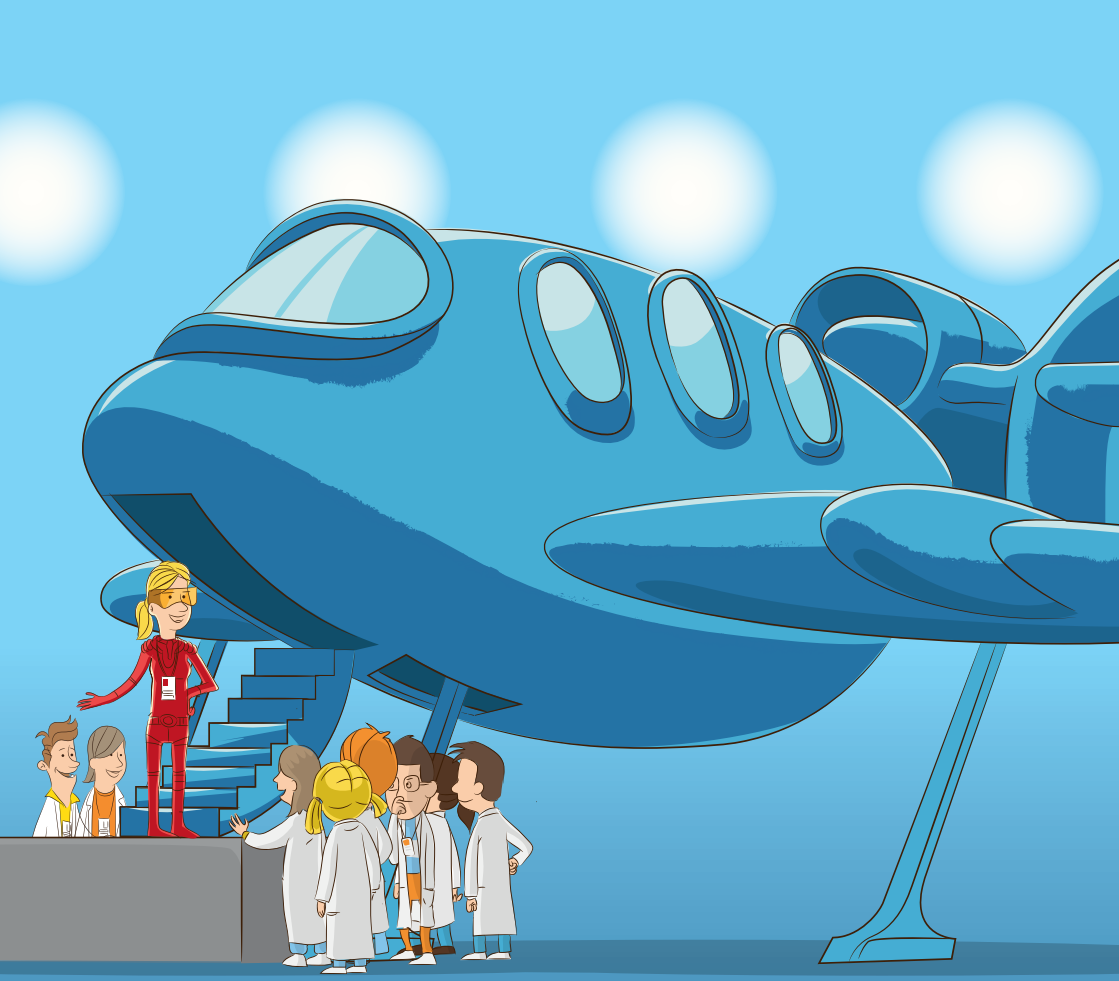
"Before we start, I would like to tell you a little bit about how the body works," Scientist Sally says. She turns the projector on, and after a few moments a picture of the body is shown on a big screen. "In this picture you can see the heart and the lungs," Sally continues.

"They have special jobs to make sure we stay healthy. One of the special things the heart does is pump blood all around our body through our blood vessels."

Sally shows the next picture: "Here you can see the red and white cells that make up our blood. The red cells are the Transporters – their main job is to carry oxygen from our lungs to all the other parts of our body. The white cells are the Defenders - defending us from germs. To do their work, all cells in our body need energy. This is easier to understand when you see it with your own eyes. Would you like to see how it all works - in real life?"

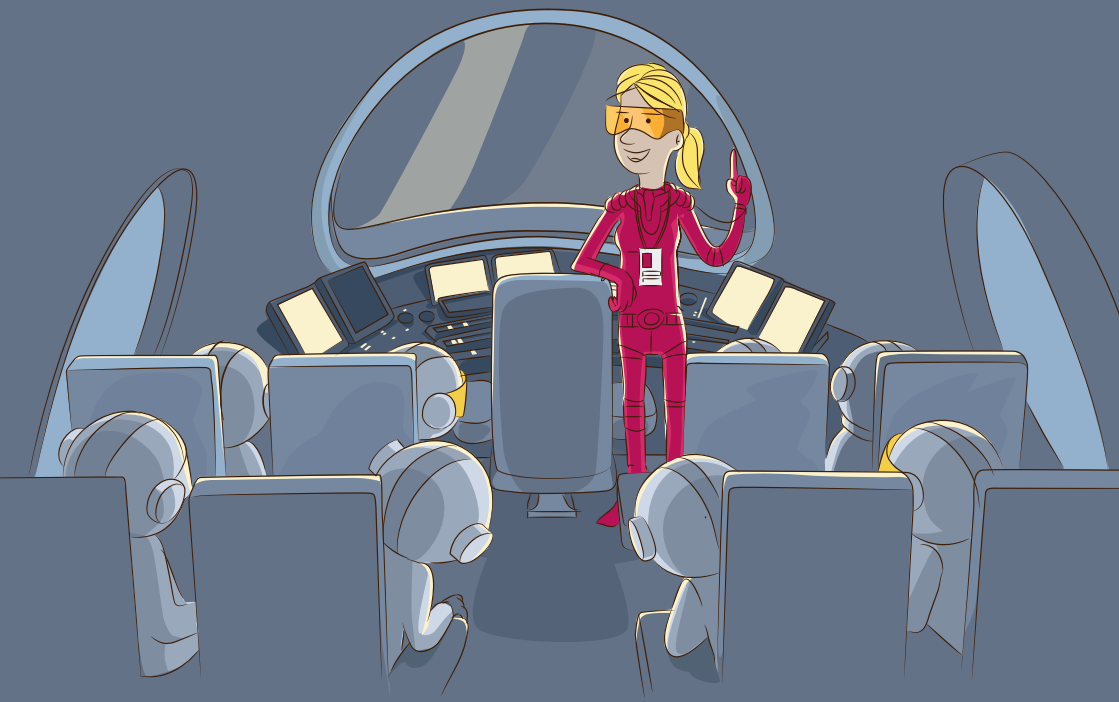
"Yes, we would!" the kids say unanimously.

"Great! Come on, let's go for a ride in the TEDDY Explorer!" Sally replies, smiling.



Chapter 2: The TEDDY Explorer

The kids follow Scientists Steve and Sally into a room where a fantastic looking vehicle stands. Emma can't decide if it looks more like a space ship or a submarine. The TEDDY Explorer is glowing dark silver-blue and has oval windows. They can see the engine at the back of the vehicle and rows of comfortable chairs inside.

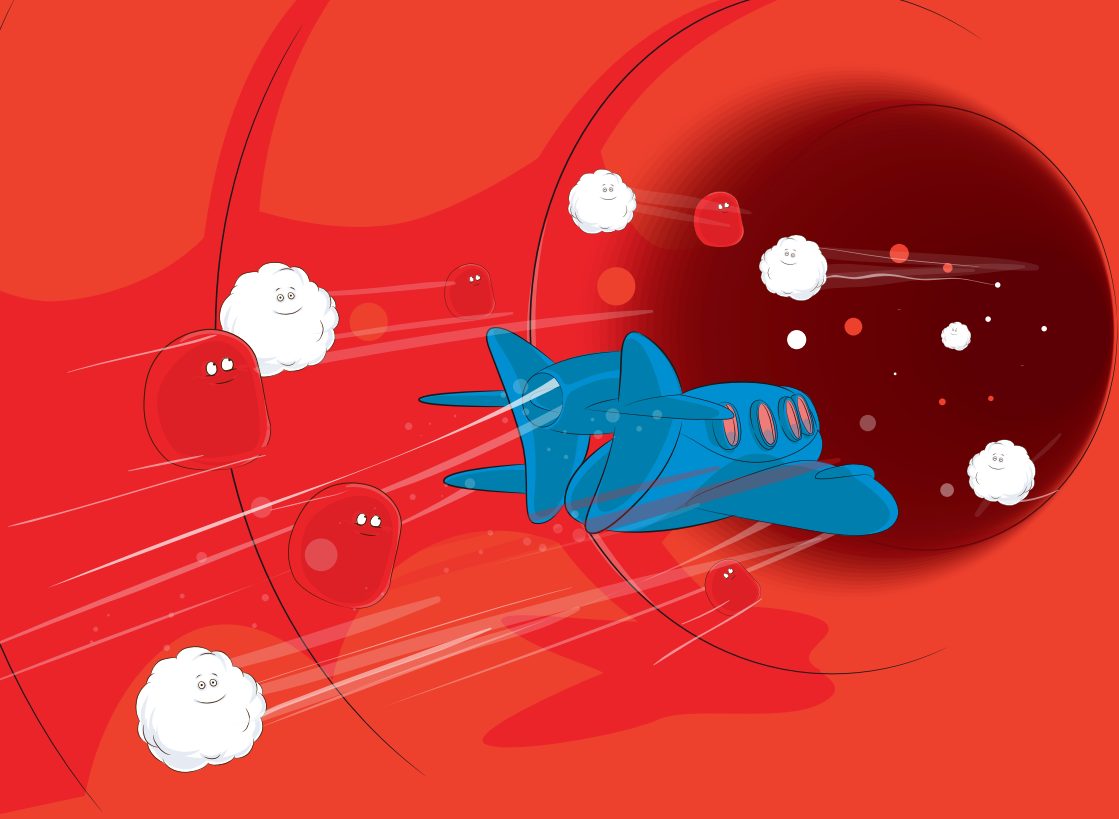


"Welcome aboard the TEDDY Explorer!" Fiona pops out and says. "This ship was designed and built here at the TEDDY lab." The kids look at the TEDDY Explorer with excited and wondrous faces – they have never seen anything like it before.

Fiona continues, "I hope you are ready for an adventure, because we are going on a trip inside the body! Climb in and make yourselves comfortable. Don't forget to buckle up and put on your helmets."

Will, Emma and their friends climb in, take their seats, and wait with anticipation.

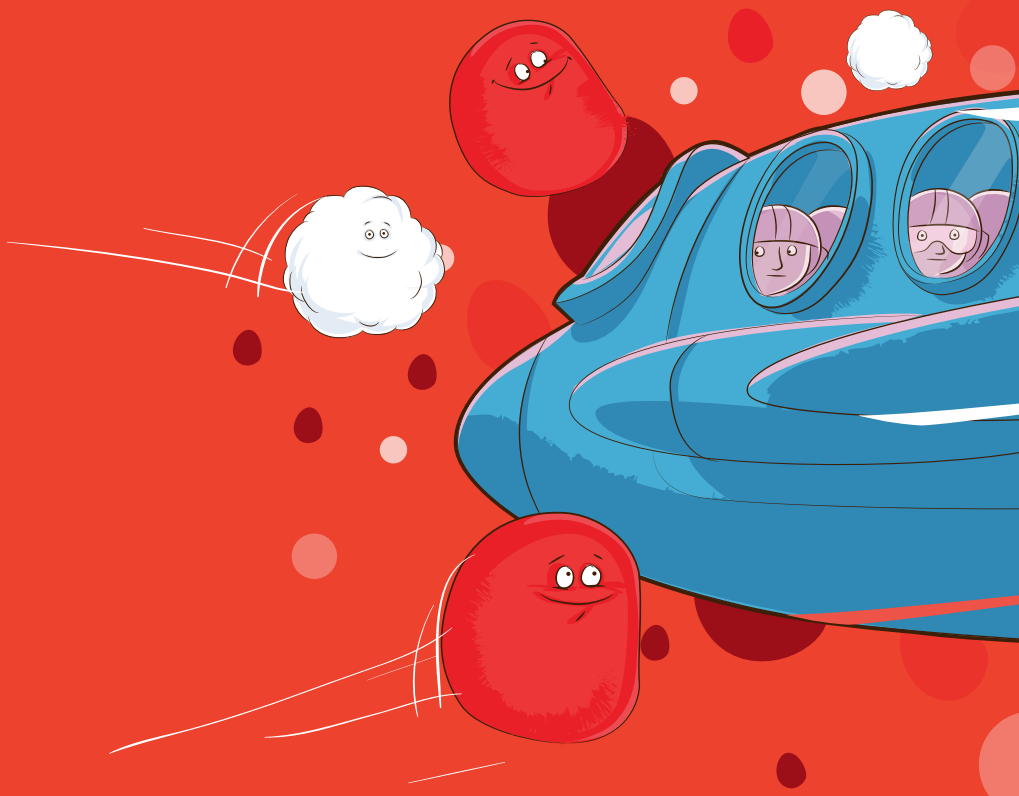
Fiona, sitting in the pilot seat, puts on her helmet and her glasses. "Let's go!" she says.



After a few moments they hear sounds from the ship's engine, panels light up and all kinds of strange instruments come to life. Suddenly, everyone feels the ship moving, and there is a bright flash! After a few seconds, they feel the TEDDY Explorer slowing down, and when they look out the windows they see red and white cells hurrying by.

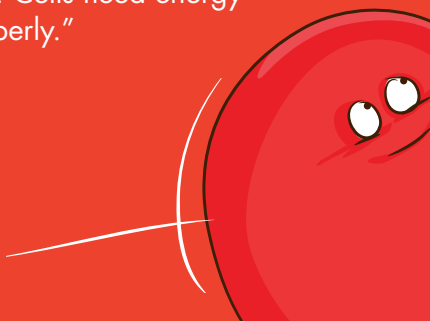
"Wow!" the kids exclaim. "We're inside the body!"

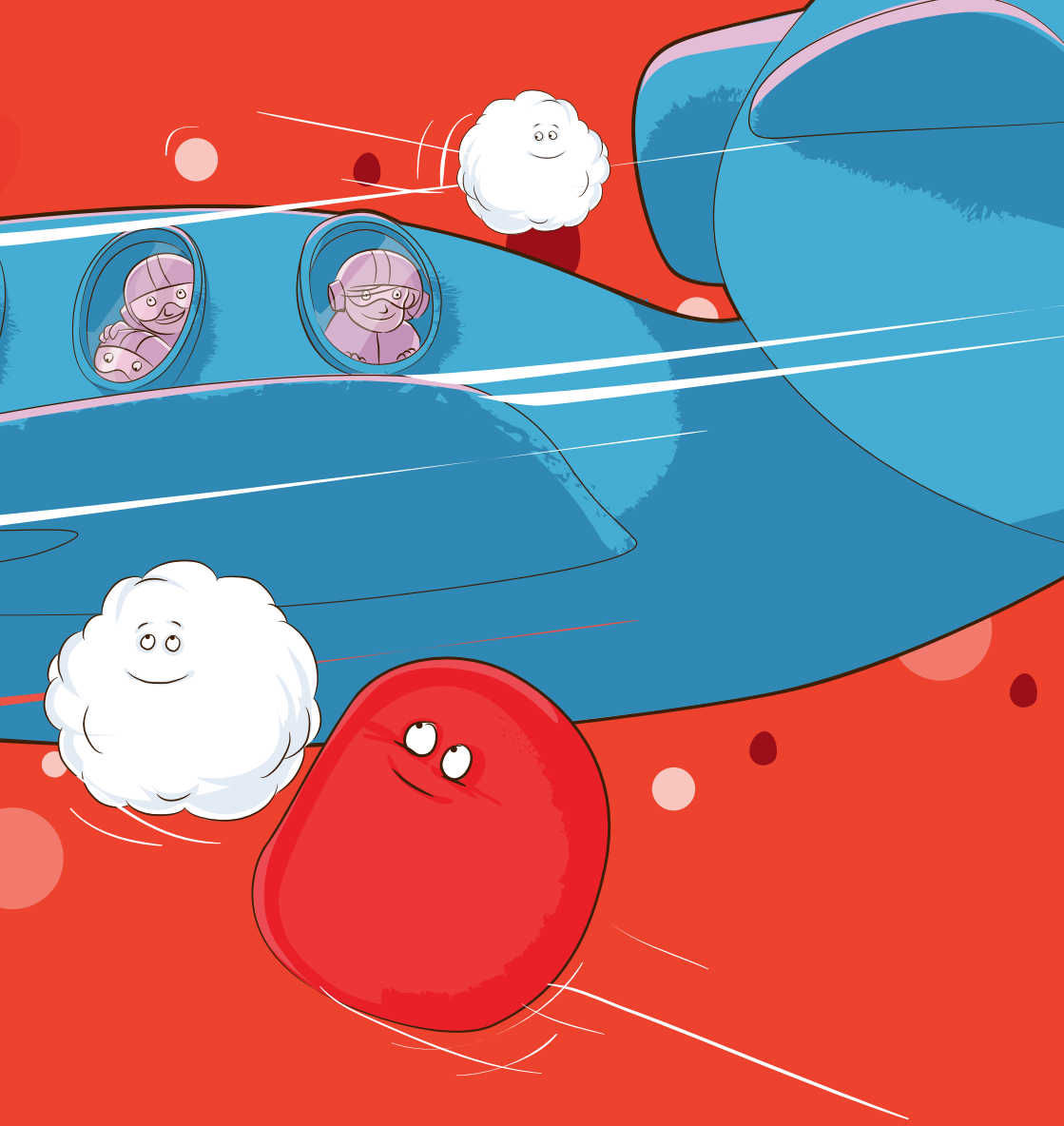
"Yes," Fiona says, "the engine on the TEDDY Explorer shrunk all of us to just the right size to explore the body."



"See all the cells around us?" Sally asks.

"Cells are found in every living thing – and there are lots of them. Your body has trillions of cells - a trillion is a 1 with 18 zeros after it! Cells work night and day to keep us healthy. They have different jobs depending on where they are in your body. Cells need energy – otherwise they get tired and stop working properly."





"We need energy, too," Emma says, "so we can run, play, go to school and learn things! Our teacher taught us that."

"You are absolutely right," Steve says.


Food
Insulin
Glucose
turned into
energy

"So how do the cells get energy – do they make it?" Will asks.

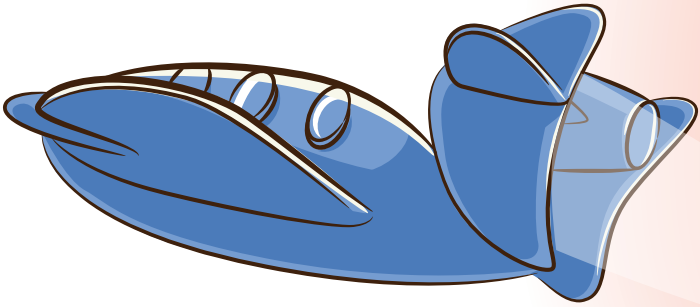
"Yes, they do. To make energy, cells need two things. One is glucose from food. The other is something called insulin. The cells make energy from the food you eat by using insulin," says Steve.

"What is insulin?" Emma asks.

"Insulin is a hormone. Insulin helps the cells to open so the glucose can get in – when glucose from food gets inside, the cell gets filled with energy. It works like the way you open the gas cap on a car to fill it with fuel," Steve says.

"Look at this picture," Steve continues. "Here you can see how it works." Looking at the picture, the kids see that the insulin is busy helping to open the cap of a cell to let in glucose from food. They see the cell is filled up with energy.

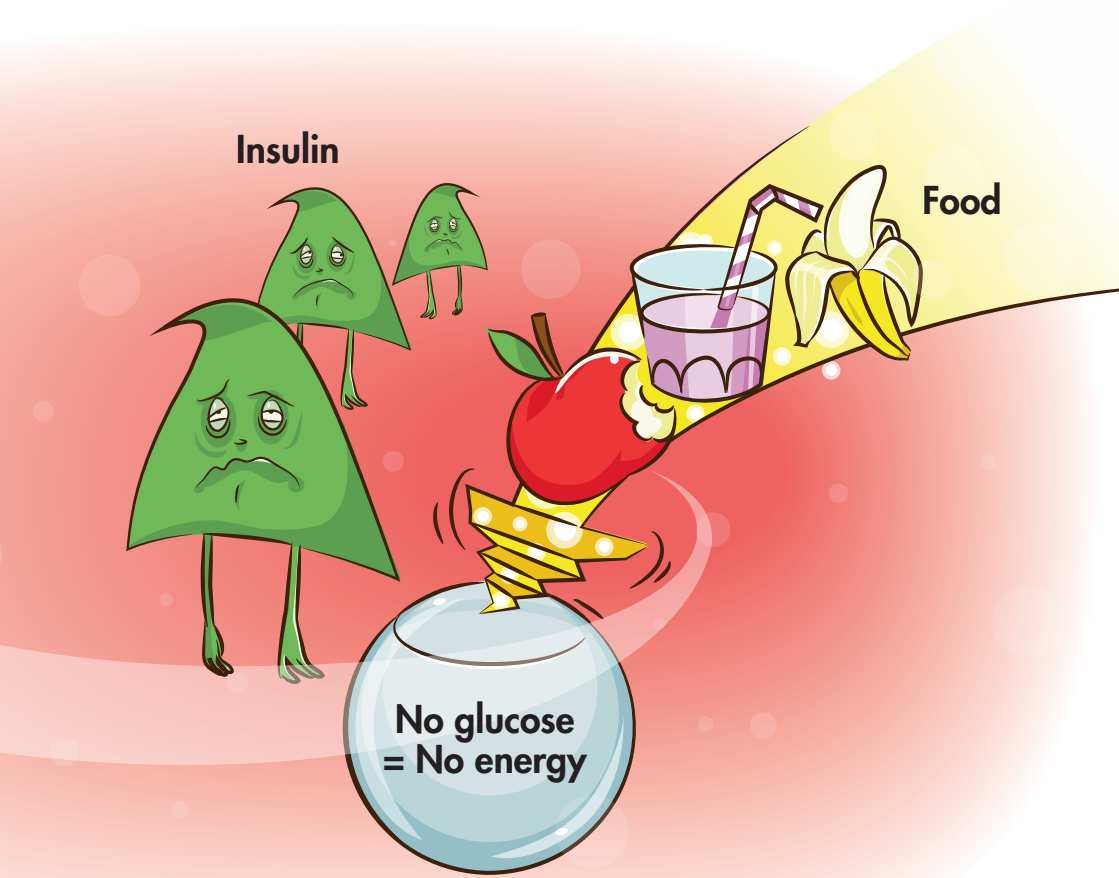
"If there is too little insulin, the cells will have problems opening and changing food to energy," Steve continues. "If there is almost no insulin at all, then the cells won't be able to open."



"Look outside!" Fiona suddenly says. "Here you can see, in real life, insulin is trying to help open the cell. But there are too few to do the job." The kids look outside the window. They see the insulin looking tired and they can't manage to open the cap of the cell.

"Is that what happened to you, Tom?" Will asks. "Not enough insulin to open the cells? Is that why you have to take shots of insulin so you don't lose energy?"

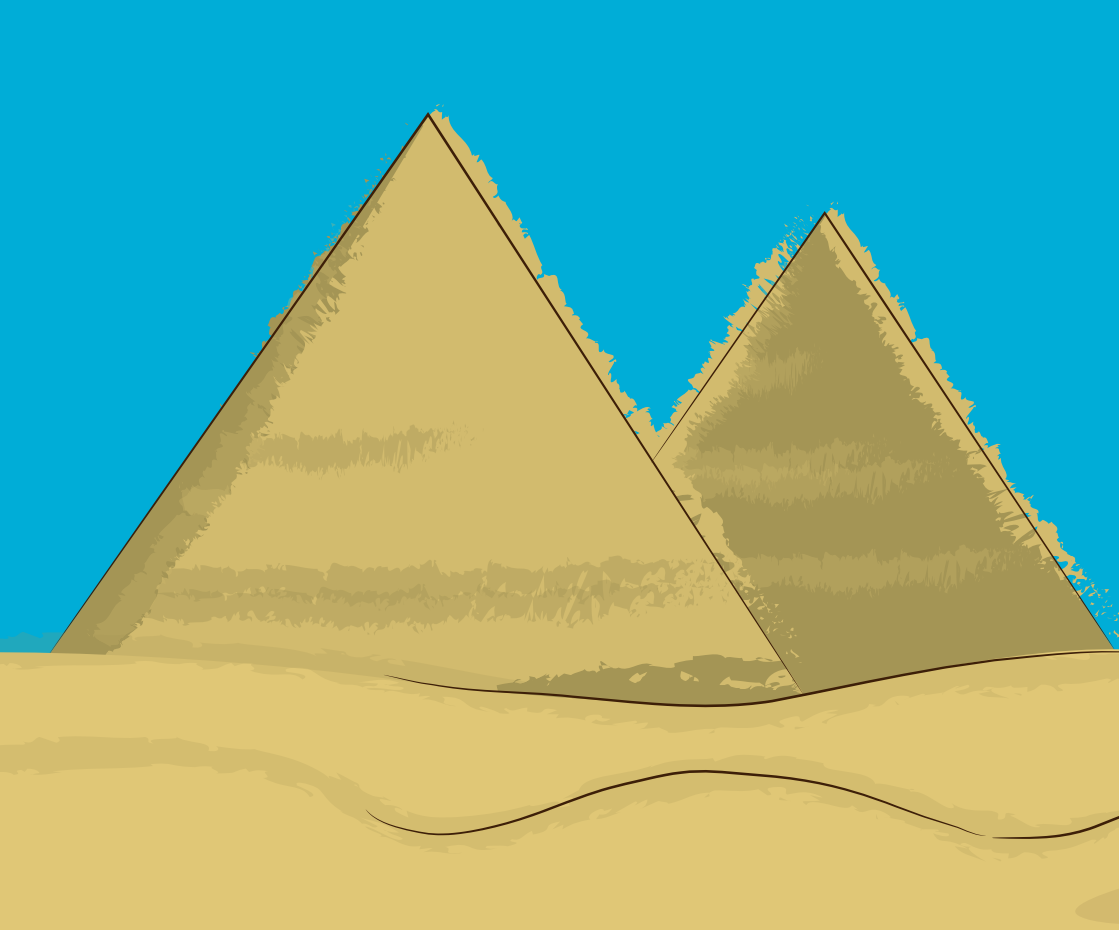
"Hey, that IS what happened to me!" says Tom. "I remember I didn't have any energy, and felt so tired. My mom said I was also very thirsty and drank lots of water, so I had to pee a lot, too."



"You are very smart!" Sally answers. "When the cells do not have enough insulin to make energy, kids might not feel well."

"But I feel all right now!" Tom says. "I have a lot of energy – just like before. I just have to take insulin and "fuel up", and also think more carefully about what and when I eat and drink. Mom and Dad help me with that."

Just then the ship makes a quick right turn and a fast left. As the class looks out the windows, it seems they are dodging things in the blood stream. Fiona calls back, "Don't worry, it's all clear!"



Chapter 3: The Big Mystery

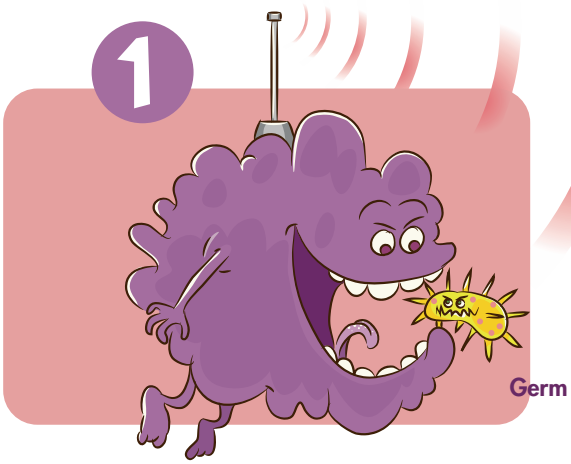
While gazing out through the window of the TEDDY Explorer, Emma has a thought. "What I don't understand is why do kids with diabetes have too little – or no - insulin?" she asks.

"That is a great question, Emma," Scientist Sally says. "The answer is we don't really know yet, even though diabetes has been around for thousands of years. There are stories from the time of the Egyptian pyramids about people having diabetes."

"If we could find WHY insulin disappears from some kids, it would help us understand why those kids get diabetes. We could then figure out a way to stop kids from getting diabetes. We need more clues before we can start to answer the big question and mystery: why do some kids get diabetes, but not others?"

Will, Emma, Tom, and all the other kids start whispering among themselves. "How exciting! A real mystery! And the scientists in TEDDY are trying to solve it!"

A



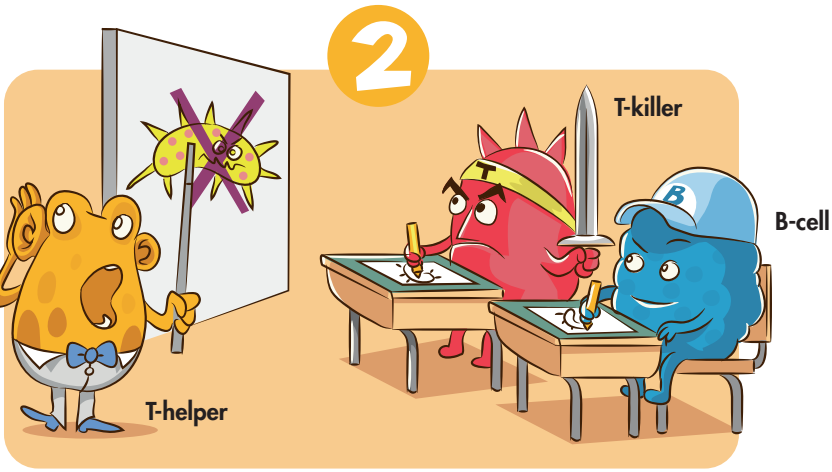
Scavenger cell

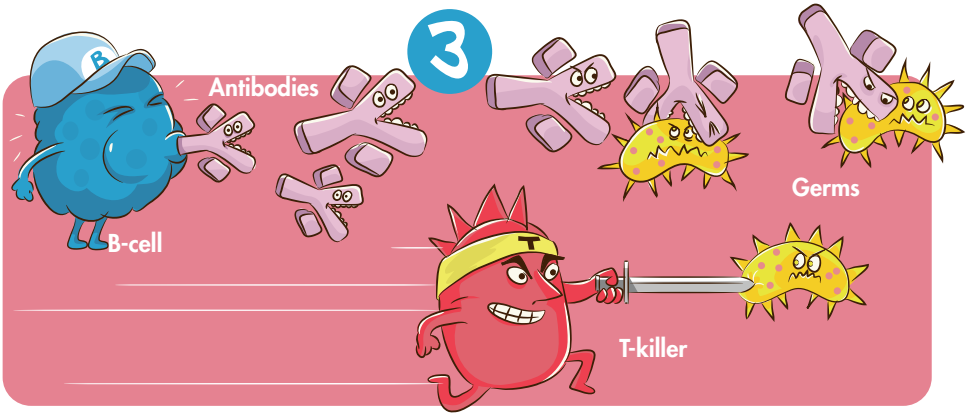
"We have some important clues that have to do with the immune system. Remember the white blood cells we saw among the red blood cells, the Defenders, as we called them?" Steve asks.

The children nod.

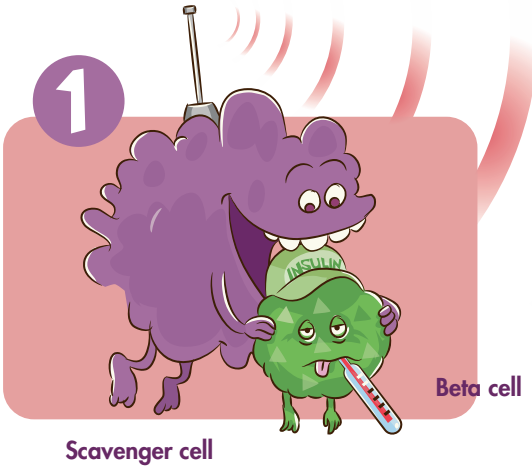
"Normally, the white blood cells get rid of germs, like viruses and bacteria that get inside our bodies," Steve says.

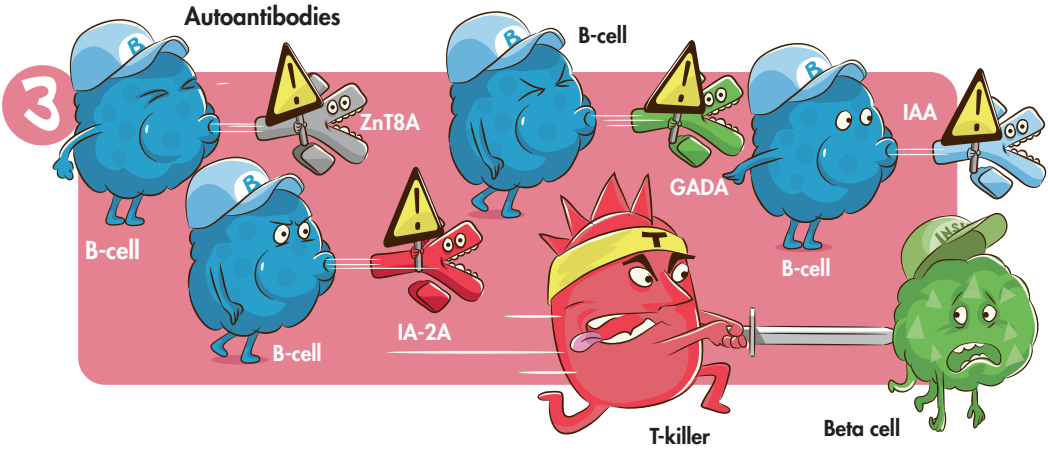
"They defend our body by killing the germs we encounter in our daily lives. When germs appear, Scavenger cells are the first to spot them. The Scavenger cells eat them, and then send out a signal to other white cells, called T-helper cells. The T-helper cells teach other white cells to go and destroy the intruders. Two types of cells are given instructions to destroy the invaders: B-cells and T-killer cells. The B-cells make antibodies to fight invading germs and the T-killer cells attack the cells that are sick from the germs. This is how the immune system normally works when it defends your body."


2
T-killer
B-cell
T-helper


3
Antibodies
Germs
B-cell
T-killer

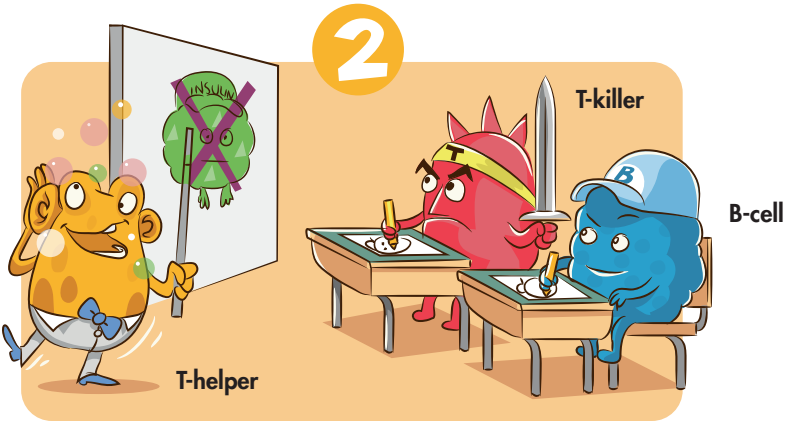
B





Steve continues, "But sometimes we find that the immune system is not working normally. Instead of only attacking the bad germs, it attacks the good insulin cells."

"But, why?" asks Emma.

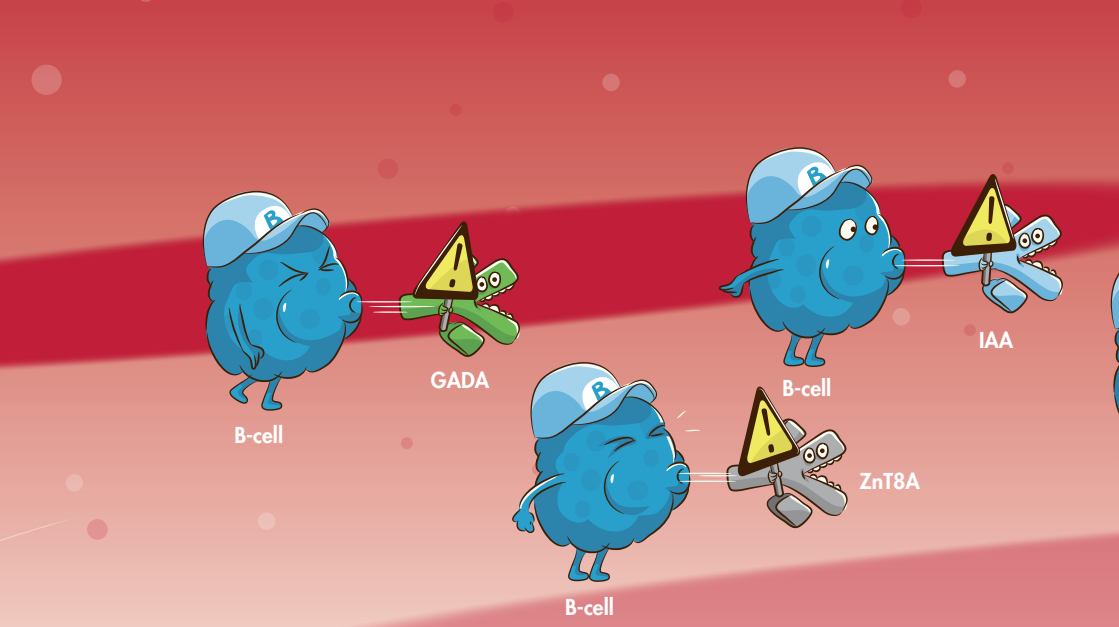


"Well," answers Steve, "we think, at first, the Scavenger cell detects a sick beta cell (cells that make insulin are called beta cells). The Scavenger cell signals this to the T-helper cell. But then the T-helper cell suddenly gets confused and teaches the B-cells and the T-killer cells to attack and destroy the good cells making insulin!"

"But why do the T-helper cells suddenly give instructions that the insulin cells are enemies? The insulin cells are doing a really important job helping cells make energy!" Emma exclaims.

"We don't know why, but there are warning signals telling us the immune system is not working properly, and that the insulin cells are in danger and under attack by T-killer cells," Steve says.

"What kind of warning signals?" the kids all wonder.

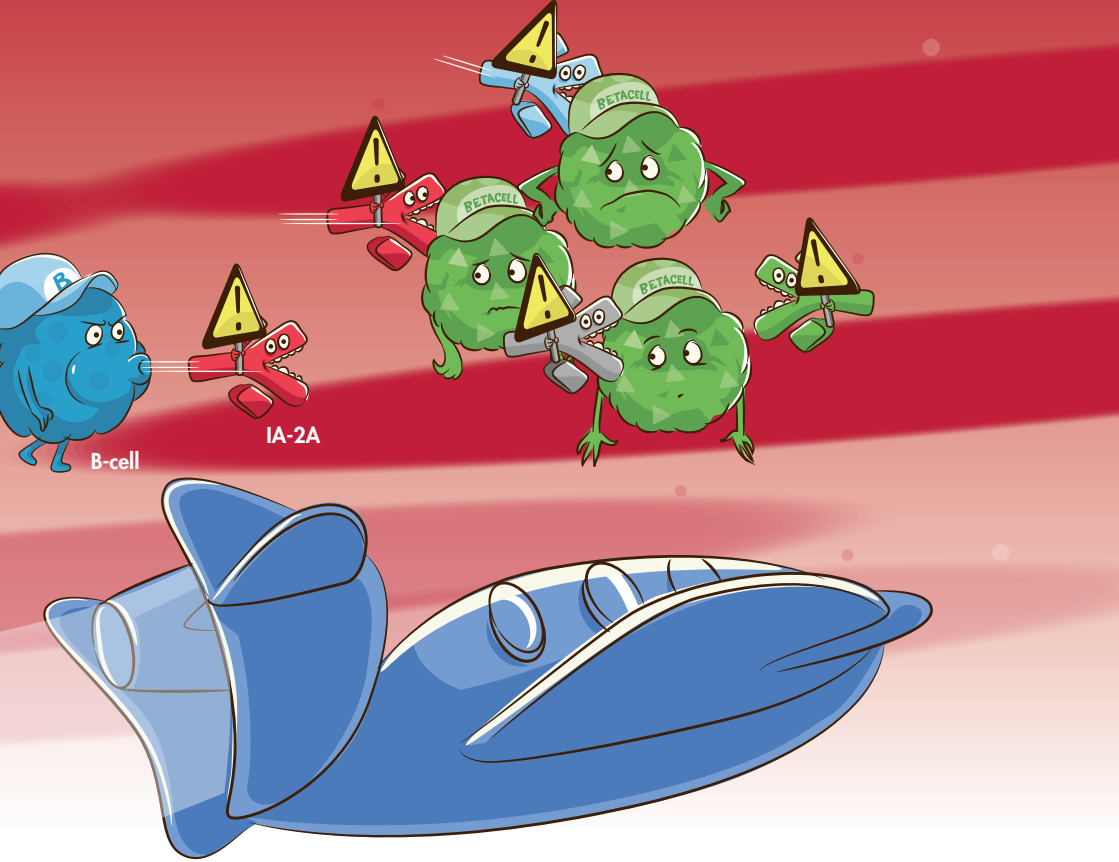


"The warning signals are the autoantibodies that we sometimes find in the blood. We think the autoantibodies try to get inside the insulin cells in order to attack them. But they can't get inside, so the autoantibodies stay in the blood and sound a red alert when the cells making insulin are under attack by the T-killer cells.

In the case of diabetes, there are four special autoantibodies that may show up as warning signals. Some children only have one autoantibody that shows up, but some may have more than one.

If we find more than one of these autoantibodies in the blood of a TEDDY child, and they don't go away, then we know the child has a higher risk of getting diabetes."

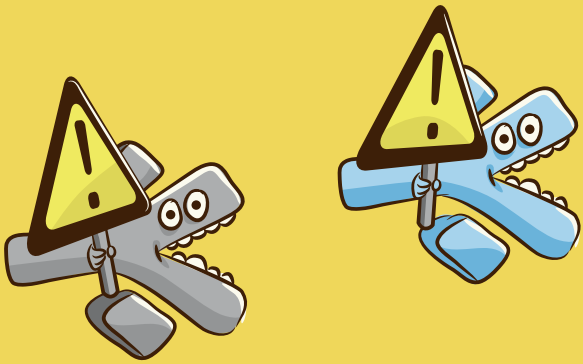
"How do you know that?" Will asks.



"Well, if there is more than one autoantibody, we know that there is a stronger attack on the insulin cells and a higher risk of getting diabetes," explains Steve.

Steve suddenly turns his head and looks outside the ship. "Look! Outside the window on your left – that is what it looks like when the B-cells send out all four autoantibodies."

All the kids look out and see four autoantibodies swirling around near a few insulin cells.



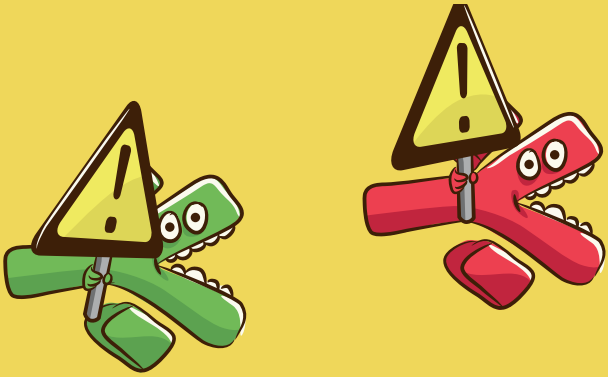
"What does "risk" mean? And what does "higher risk" mean?" Emma asks.

"Risk is a word that is difficult to explain. Let me give you an example. If your parents need to wear glasses to see properly, then you, Emma, have a higher likelihood, or "risk" that you will need glasses one day - compared to Will whose parents don't need glasses at all."

"I get it," Emma says. "My risk for needing glasses when I get older is higher than Will's risk. It doesn't mean I will DEFINITELY need glasses one day, but MAYBE I will."

"Correct!" Fiona says from the pilot seat. "In the case of diabetes, some kids have a higher risk of developing diabetes. Emma and Will, you are in TEDDY because you both have the special genes that are connected to diabetes. You, and most of the kids in TEDDY, may not develop autoantibodies at all.

BUT, there are some kids that get autoantibodies in their blood. Those kids have a higher risk because they have both the special genes AND autoantibodies. This does not mean that all kids who have more than one autoantibody in their blood will develop diabetes, but some will."



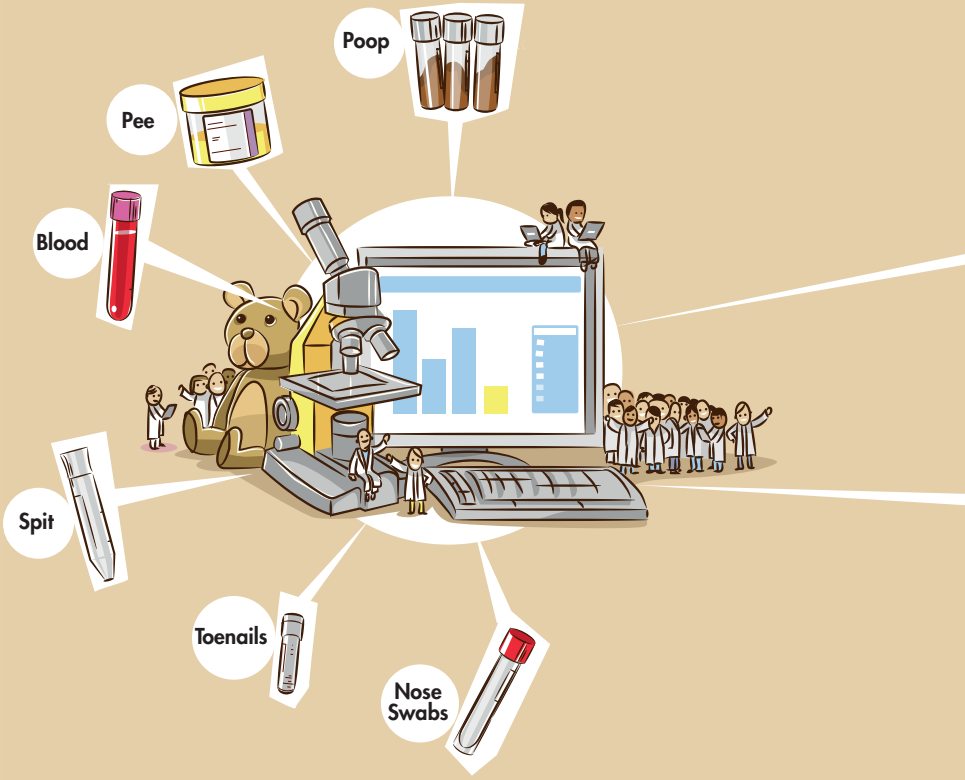
“Why can’t you stop the Scavenger cell and the T-helper cells from suddenly believing the insulin cells are the enemy?” Will exclaims, still thinking about the strange things that can happen in the body when “the good guys” get mistaken for “the bad guys”.

“We would if we knew how,” Steve replies. “But we learn a lot all the time – thanks to the warning signals from the autoantibodies. TEDDY scientists keep a close eye on all TEDDY children, especially the ones with more than one autoantibody. They are helping TEDDY with many important clues. Also, diabetes can be found before there are symptoms like the ones Tom had.”

“Ah, you mean being tired, without energy, peeing a lot, and drinking a lot?” Tom asks.

“Yes, that is correct,” Fiona says. “Doctors can take care of those children quickly and give them insulin, so they don’t lose too much energy and get really sick. Being a part of TEDDY means you can help other children, now and in the future. It would be great if fewer kids got diabetes thanks to TEDDY, wouldn’t it?”

Chapter 4: The TEDDY Junior Scientists



"But autoantibodies are only one of the clues that TEDDY scientists are looking at," Fiona continues while they slowly pass a group of red blood cells busy delivering oxygen to different parts of the body.

"As we said, we don't know what really happens in the body when insulin starts to disappear. To find this out, we need to look for clues everywhere. Do you remember all the things that we gather from TEDDY kids in Germany, Finland, Sweden, and the US?"

The kids nod because they all read the previous book *Will and Emma: Junior Scientists* during Science Week at school recently.

Parent Questions

Child Questions

"The clues may be different things: something children ate or drank, some bacteria or viruses that made them sick when they were young, or something else in the environment," she continues.

"We look for clues in blood, pee, poop, and in the nose swabs. We also took toenails and your parents gave us some water from your home. We look at all these samples under microscopes and other laboratory equipment. We also ask parents a lot of questions about what the kids eat, how they live, when they are sick, and many other things. Everything about the TEDDY kids is a clue!"

"When the TEDDY kids are about nine years old, we will ask them questions, too. TEDDY kids will tell us how they feel about being in TEDDY, about the things they do, and about what types of things happen to them."

"Oh," Emma says. "I can't wait to turn nine! Then I will feel even more like a Junior Scientist because I can help give clues, too!"

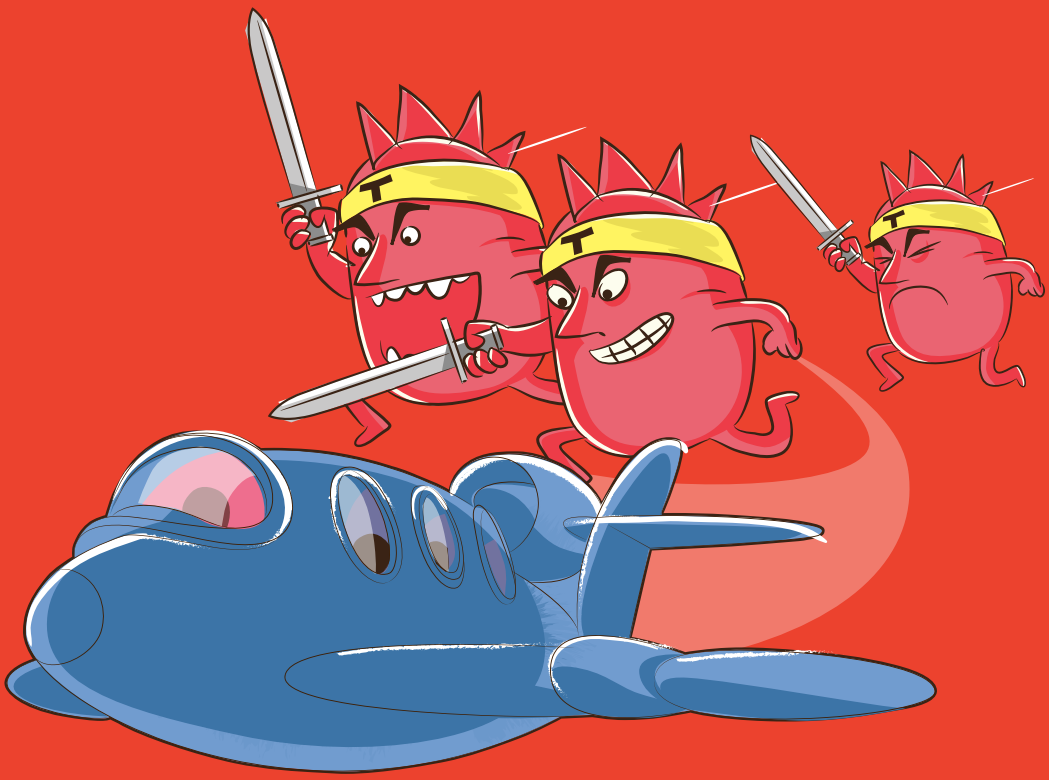
"That would be helpful, Emma," Steve says. "We need to get clues from as many TEDDY kids as we can, since EVERY kid in TEDDY is so important."

"Why don't you get clues from ALL children? Lots of kids at school are not in TEDDY," Tom asks.

"Yes, why can only SOME kids participate in TEDDY?" Lucy adds. "I would like to help the TEDDY scientists."

"Well," Steve says, "that is a good question. You see, one of the clues is in kids' genes. When Will, Emma, and all the other TEDDY children were born, we looked to see if they had the special genes that are connected to diabetes. The children with these genes were invited to participate in TEDDY. As a result, more than 8,000 children from 4 different countries joined TEDDY!"


TEDDY
KIDS



"Wow," the children exclaim, "that is a lot of kids!"

Then Tom notices another danger: a T-killer cell is coming towards the ship. Suddenly there is a jolt as it hits the ship. Tom asks, "Why did that angry looking cell hit us?"

Sally says, "The immune system has discovered us!"

"The body thinks we are an invader, like a virus, and it's doing its job," Steve explains.

Fiona suddenly says, "Let's return to normal size and get out of here. I don't think I can get the cell to leave us alone." Fiona hits a button on the dashboard, but nothing happens.

Steve looks outside and says, "More T-killer cells! They are blocking the engine!"

Everyone on board is watching out the windows. No one dares to breathe. "Can we shake them off somehow? Maybe we can get away then," Sally says.

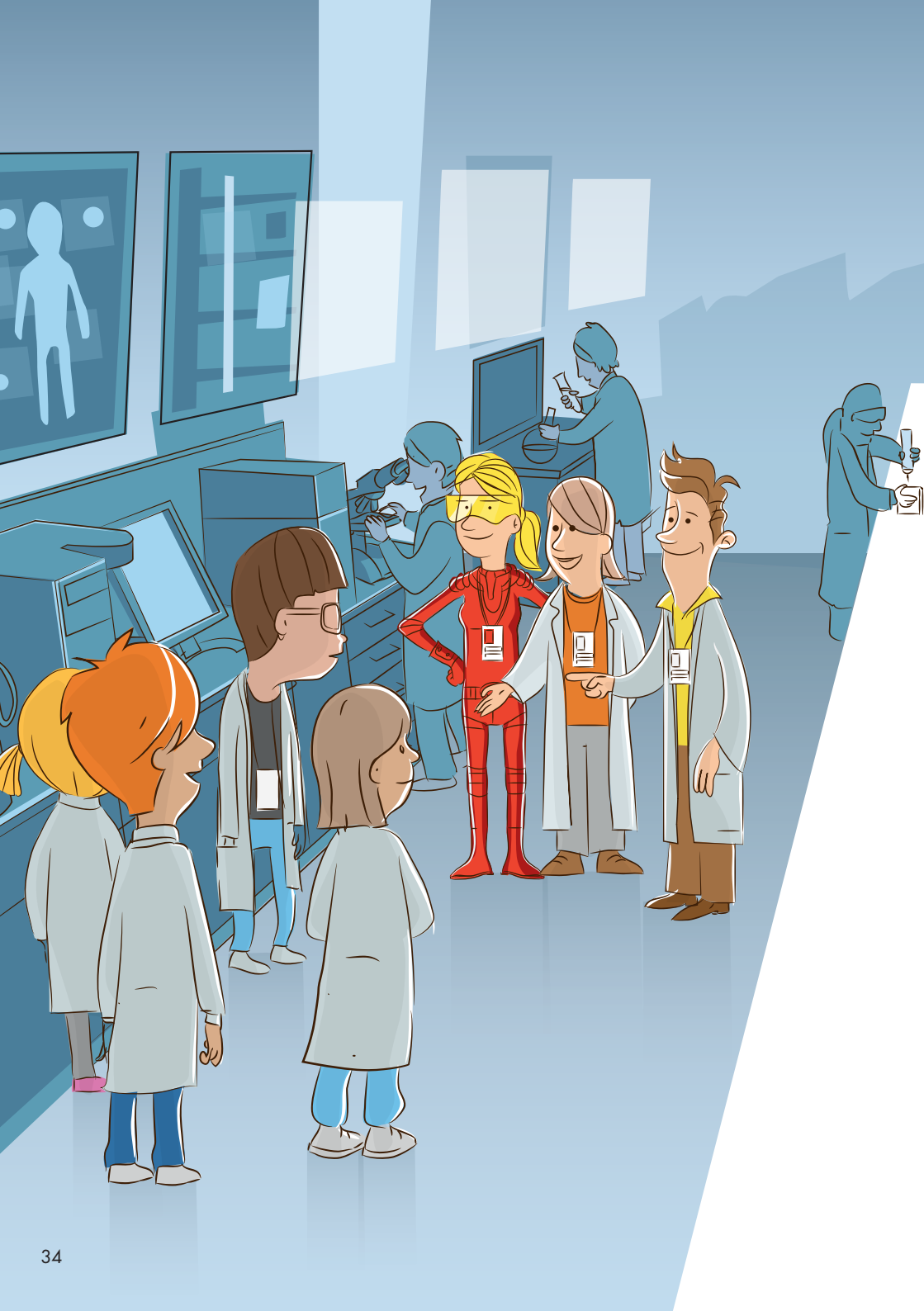
"Great idea! I'll try!" says Fiona. Fiona takes the ship's controls and swerves right, then left, then right again.

Steve calls, "You've got it, Fiona! Now, hit the button while it's all clear!"

Fiona presses the large button in the middle of her console and they see a bright flash and feel their ears pop. Outside the TEDDY Explorer, they suddenly see the docking station where they started their journey. Everyone takes a deep breath.

"Wow, that was close," Will says. "I don't want to think about what could have happened if Fiona hadn't been such a good pilot."

The kids leave the Explorer, their heads full of all the fantastic things they've experienced and learned.



Chapter 5: Back at the TEDDY Lab

"Follow me to the laboratory where the TEDDY scientists are searching for clues. I would like to show you what we do with all the clues we get from the TEDDY kids and parents – and what we look for," Fiona says while collecting helmets and glasses.

"We'd like that!" all the kids exclaim.

The children are brought to an area full of lab benches, microscopes, different containers, computers, and other scientific gadgets. Researchers are carefully examining boxes of samples.

Steve continues his story: "As I said, when you, Will and Emma, and all the other 8,000 TEDDY kids were born, we looked at the genes in your blood. A baby gets 30,000 genes from the mother and 30,000 genes from the father. The genes work as a set of instructions for who you will be and what you will look like. For example, genes decide the color of your eyes and hair."

"Oh, is that why mom and I look a lot alike?" Emma thinks to herself while listening to Steve. "And why we have a similar personality..."

"But genes don't tell the whole story. Other things contribute to who we are, too. Let me give you an example: even though 8,000 kids in TEDDY have similar genes, only some of them will get diabetes," explains Steve.

"Ah, does that depend on other things - other clues than genes?" Will asks.

"That's right!" Steve says. "We believe there are other clues and they can be found in the environment. By "the environment" we mean what you eat, drink, and what happens to you in life - all the way back from the time before you were born."

"OK," Will says. "Let's see if I understand this correctly. Only some of the TEDDY kids will get diabetes. But, because all of the TEDDY kids have similar genes, the scientists know that when a TEDDY kid gets sick with diabetes, it isn't just because of their genes, it's because of something else. And that is what you try to find? Otherwise we will never solve the mystery of diabetes?"

"That is absolutely right," Sally adds.

Tom continues, "I have a question - why are only kids in TEDDY?"

"More children than adults get type 1 diabetes," Fiona explains. "So we need more help from children."

"Why over such a long time?" Will asks. "I know the TEDDY scientists want Emma and me to be in TEDDY until we are 15 years old!"

"That's right," Steve says. "We need to keep asking questions and gathering samples from the TEDDY kids for many years. We may find clues to the mystery before they were born or as they grow older."

"We have to look everywhere and at many points in time - otherwise we might miss something important. Strangely enough, fewer kids get diabetes after 15 years of age."

"Wow, this is all very interesting," Emma says. "I've learned a lot today that I didn't know before. NOW I see why I am a Junior Scientist! Without Will and me, and all the other TEDDY kids, the TEDDY scientists can't solve the mystery!"

"That's absolutely right," Fiona replies. "Without the TEDDY kids the mystery may never be solved. Until now we have talked mostly to the TEDDY parents, but as the TEDDY kids get older we want to involve them more so they understand why they are so important for solving the BIG MYSTERY OF DIABETES. When children in TEDDY get older and can understand more, we ask each of them if they want to continue in TEDDY. Their parents agreed to be in TEDDY when they were born, but now the TEDDY children themselves need to agree to be in TEDDY, too. We also want to involve children more in TEDDY as they grow older."

Chapter 6: Bye for Now!

"Now we have reached the end of our tour," Fiona concludes while walking the children through the hall to the bus.

"I hope you have a better understanding of what we do in TEDDY and how important Will, Emma, and ALL the other TEDDY children and parents are for the study. We know we ask them to do many things and we really try to make it as easy as we can. We also know that some things can be hard at times, like giving a blood sample."

"Yes, we had a great time," Tom says. "I didn't know there was anything as amazing as the TEDDY Explorer! It's so much easier to understand everything that goes on inside the body when you can see it with your own eyes!"

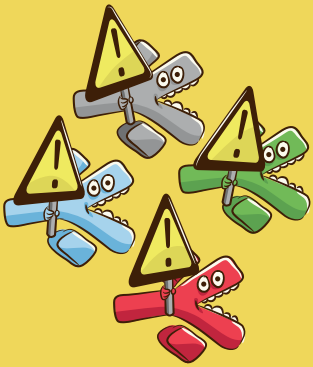
"You and your friends are welcome back any time," Scientists Steve and Sally reply, standing next to Fiona. "Maybe next time we can take you on a new tour showing you what we have learned. Bye for now! Have a safe ride back to school."

"Bye, bye!" the children shout, waving from the bus. "See you again!"

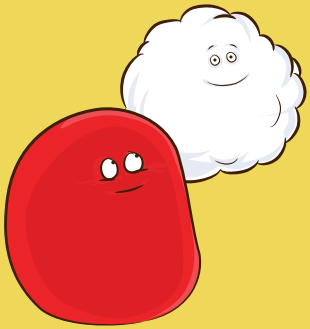
In the evening, in her bed, while falling asleep, Emma thinks to herself, “I want to be a scientist when I grow up... I want to find out why kids get sick and find a way to stop them from getting sick.”

DID YOU KNOW?
THE TEDDY DICTIONARY

Autoantibodies
Autoantibodies are warning signals from the immune system. They indicate that the immune system is on red alert and that the cells that make insulin are under attack. In diabetes there are four different autoantibodies, called GADA, IA-2A, IA-A, ZnT8A (see illustrations on pages 22-23 and 24-25). In celiac disease the autoantibodies are called TGA.



Cells
Tiny things that make up every part of your body. Each type of cell has a different job to do to keep your body healthy. For example, certain cells carry oxygen (red blood cells), and other cells fight off enemies in your body (white blood cells) (see page 11–13).

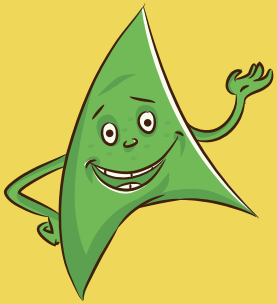


Environment
The surroundings in which you live. In TEDDY the scientists try to understand all parts of your environment: where you live, what you eat and drink, when you are sick and why, what happens in your life, and many other things - from the day you were born.

Genes
There are up to 60,000 genes in the human body. A baby gets 30,000 genes from its mother and 30,000 genes from its father. Genes work as a set of instructions about how your body acts and how you look, like if you have blond or brown hair. Genes, together with the environment, make you what you are, and who you will be when you grow up.

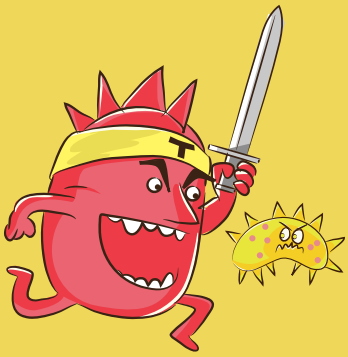
Glucose
In the body, food is turned into glucose in the blood. All cells in the body use glucose to make energy (see page 14).

Insulin
A hormone produced by special insulin cells (beta cells). Insulin helps the body to turn food into energy. Insulin does this by opening the cap on the cells so that glucose from food can get in and be turned into energy. If there is not enough insulin the cells will not be able to make energy (see page 14 and 17).



Insulin Cells
Cells that make insulin. Also called beta cells. Insulin cells are made in the pancreas (see also page 22–23).

Immune System



The body has a built-in immune system, which protects it from diseases and germs. The immune system is made of different kinds of white blood cells. The white cells have different tasks: some identify enemies (Scavenger cells), some send out signals (T-helper cells), and some attack and destroy enemies like germs, bacteria, and viruses (T-killer cells and B-cells). The illustration on page 20–21 (Picture A) shows a good functioning immune system. On pages 22–23 (Picture B) you see the immune system when it gets confused. Some of the cells send out wrong instructions saying that the good insulin cells are enemy cells. T-killer cells and B-cells then start attacking them.

Research Study

A process where researchers (scientists) collect and analyze information to answer a question. In TEDDY, researchers collect information from you (blood, poop, pee, activity monitors, and other things) and your parents (questionnaires, food diaries) to answer the question: why do some kids get diabetes and not others?

Risk

The likelihood that something may, or may not, happen.
For example: if parents have glasses, their children have a higher risk for needing glasses, too. But that does not mean they WILL need glasses, only that they MIGHT need glasses when they get older.

Risk for Diabetes
Some children have a higher risk of getting autoantibodies. Some children with autoantibodies develop diabetes. If you are in TEDDY, you have a higher risk of getting autoantibodies (and diabetes) through the genes you inherited from your parents.

Having risk for diabetes does not mean that you (or any other child with the same genes) will get diabetes FOR SURE, only that you MIGHT.

In TEDDY, a child's risk of getting autoantibodies and diabetes is based on a number of things:
1) Does the child have the special genes related to diabetes?
2) Have we found autoantibodies in their blood? If yes, how many?
3) Does the child have a parent or sibling with diabetes?
If the answer is yes to all 3 questions, then that child has a higher risk for diabetes (but it still doesn't mean that he or she will get diabetes for sure).

TEDDY
An abbreviation for "The Environmental Determinants of Diabetes in the Young". TEDDY collects clues from thousands of kids so they can find out why kids get autoantibodies and diabetes (see the next page for some more facts about TEDDY).

Type 1 Diabetes
A disease in which the body lacks insulin. The body needs insulin so that cells can make energy from the food you eat. Insulin helps to control how much glucose (sugar from the food) there is in the blood. Kids with type 1 diabetes need insulin shots because the immune system has killed the cells that make insulin.

DID YOU KNOW?
FUN FACTS ABOUT TEDDY

How did the scientists come up with the name TEDDY?
One of the TEDDY scientists thought of the name after her daughter was given a teddy bear. It occurred to her that the letters in the word "TEDDY" described what we want to do and learn: to study **T**he **E**nvironmental **D**eterminants (causes) of **D**iabetes in the **Y**oung.

How many people work in TEDDY?
Scientists Steve and Sally are only 2 of 604 researchers working on TEDDY. TEDDY researchers include scientists, lab technicians, nurses, dieticians, clinicians, administrators, computer programmers, and statisticians.

How many children are in TEDDY?
You are part of a special group of more than 8,000 children in TEDDY. The TEDDY children come from 4 different countries: Finland, Germany, Sweden, and the United States. In the US there are children from Georgia, Florida, Colorado, and Washington State.

TEDDY collects samples from kids almost every day. Each TEDDY child contributes as many as 30 samples each year. That means that you may have given as many as 180 clues (blood, poop, pee, nose swabs, toenails) by the time you are 9 years old.

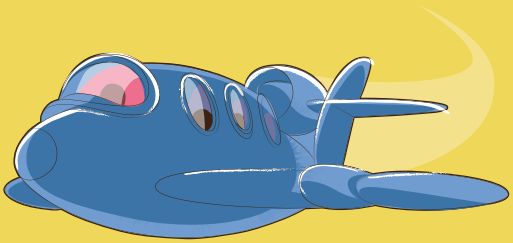
All of these samples are stored in special freezers, and then analyzed first in labs and then computers. There are already more than 2 million samples stored for TEDDY, and the number increases every month. There are 33 labs working on TEDDY samples in 4 different countries.

How long does TEDDY go on?
TEDDY follows kids from birth to 15 years of age. But even after all the TEDDY kids have turned 15, TEDDY will go on for years looking at all the important clues the TEDDY kids have given.

How long will I be in TEDDY?
The TEDDY study follows kids from birth until they reach 15 years of age. When you reach 15 you will have been part of TEDDY for 5,475 days or 131,400 hours or 7,884,000 minutes. Of course, you probably did other things during that time, too!

What do TEDDY scientists hope to find out?
TEDDY wants to know why some kids get diabetes and others don't. TEDDY scientists believe that diabetes is caused not only by the genes you inherit from your parents, but also by something in the environment. When we know what causes diabetes, we can work out how to stop it.

How can I help TEDDY?
You are already doing a great job for TEDDY. Every TEDDY child is a very important TEDDY Junior Scientist – giving us clues from samples and questions. Now that you are older we will start asking you more questions about things that happen to you, so you can help us even more!



Do you want to know more about TEDDY or diabetes?
Visit http://teddy.epi.usf.edu
for more information about TEDDY. Or ask your TEDDY clinician.

If you want to get more information about diabetes, cells, genes or other things that have to do with your body,
visit http://www.medikidz.com