

## Hi there!

Welcome to your VCUG bladder X-ray book.

Reading it can help you get ready for your VCUG bladder X-ray exam.



When you see this symbol, you can help the story along!

Whether tilting, searching, swiping or clapping, we invite you to actively join in.



This symbol lets you know there may be an audio book or song available.

Just scan the QR code to start listening!

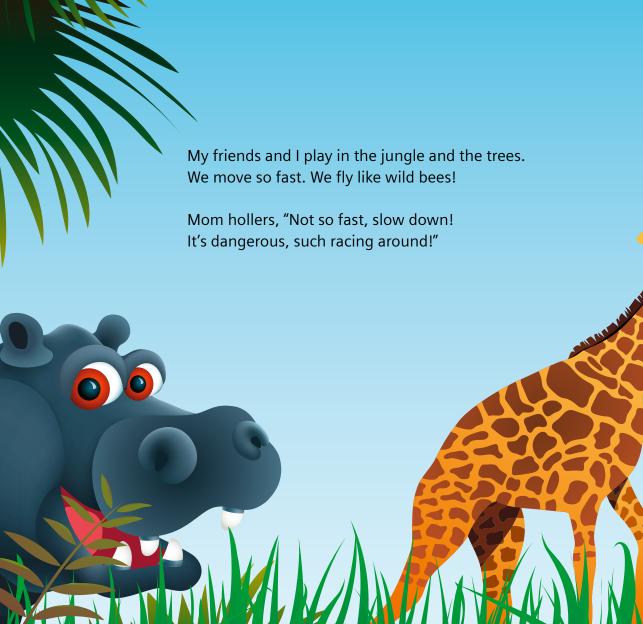


## Hello! I'm Gerda, the little giraffe.

I love to zip around the jungle all day, so much, that my mom likes to say: "Gerda, will you just stay in one place for dinner today?"

She wants me to grow big and tall, so she makes my favorite food of all. The thing I like most to help me grow, is very yummy, green Jell-O<sup>®</sup>!









But what is this?
On the toilet it hurts a lot!

It burns and now it just won't stop!

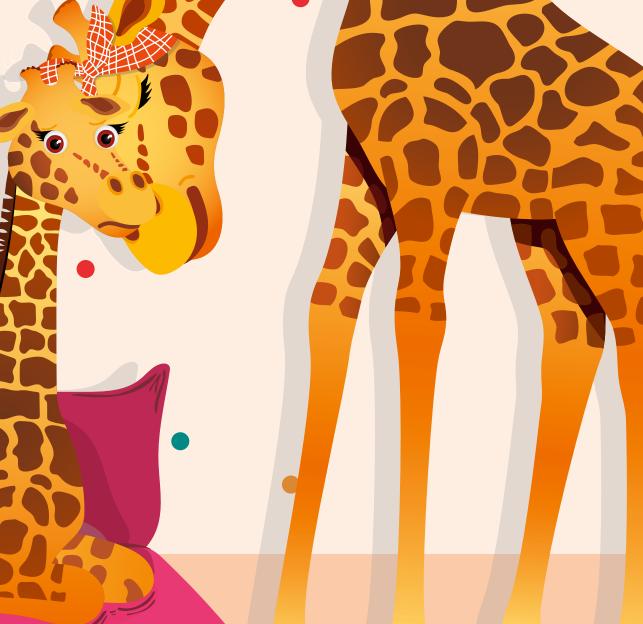
There's also a fever and pain, hurry to the hospital, use the fast lane!



## **JOIN IN!**

Rub Gerda's tummy! Maybe then she'll feel better? My tears begin to fall. I don't feel good at all. My mommy giraffe lovingly soothes me. But blowing and rubbing just aren't the key.





My mom takes me to see Dr. Grape.

She says he's like a superhero without the cape.

But Dr. Grape can't look inside my tummy with just his eyes, but I still trust him and take his advice. His medical skills are in demand, beyond the forest in the most distant lands.

> To find out what's wrong with me, there is a special jungle table, come and see.

> > Just take a look, you'll be so keen. It's jungle magic, like you've never seen.

On this table, pictures we take, with a camera, no mistake, like the one on the poster, for understanding's sake.

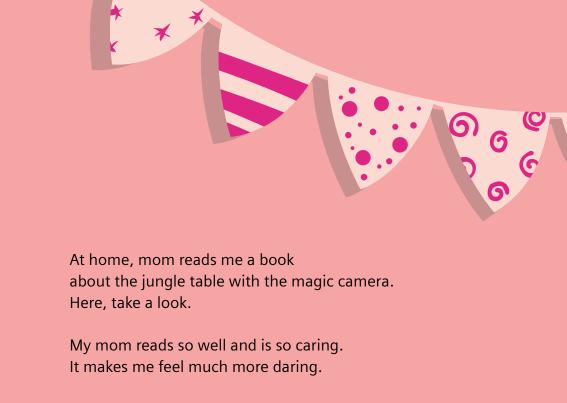
Through this camera, Dr. Grape will see into your body, clear as can be.

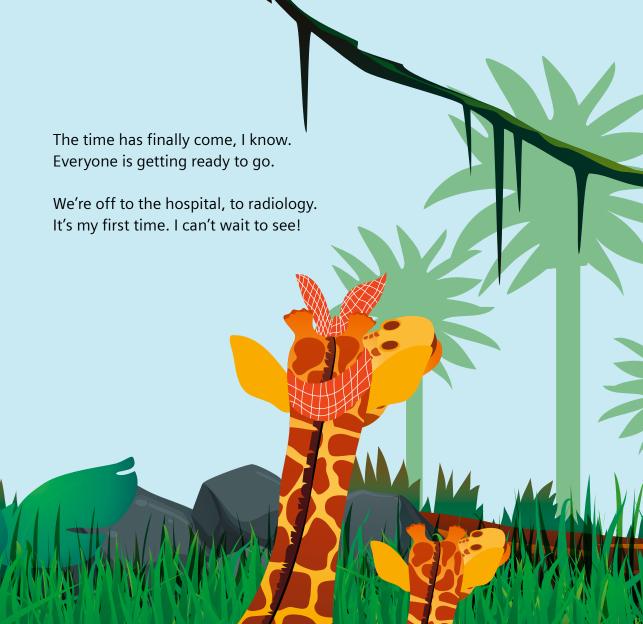
"Gerda, don't worry, no pain you'll feel, taking pictures is easy, it's part of the deal.

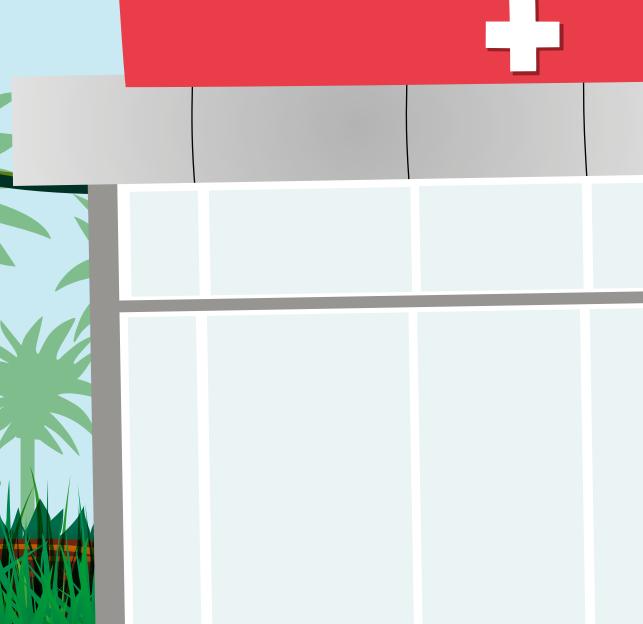
Soon you'll be back, drinking tea with your mom, happy and well, strong and calm."











"Now it's time to undress, just a step in the plan, you'll get a cool magic cape, like a superhero fan.

No need for shame, no need for fear, the doctors are here to help, that's clear.

For them, it's just routine, only a part of the day, don't worry a bit, you're going to be okay.

It's quite normal here, so don't despair, they're here to help, with expertise to spare."





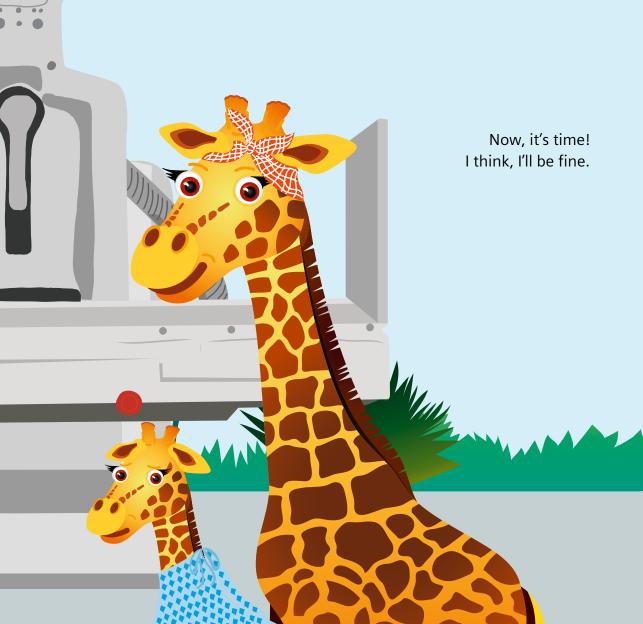












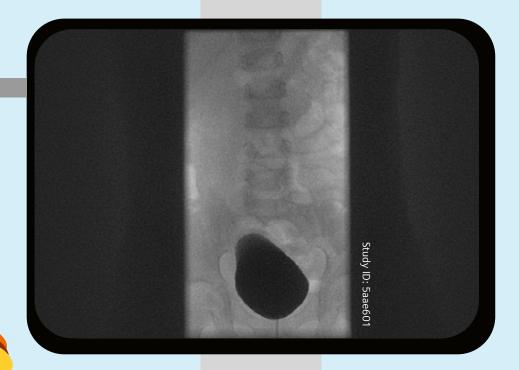


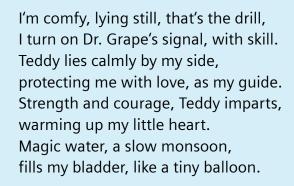


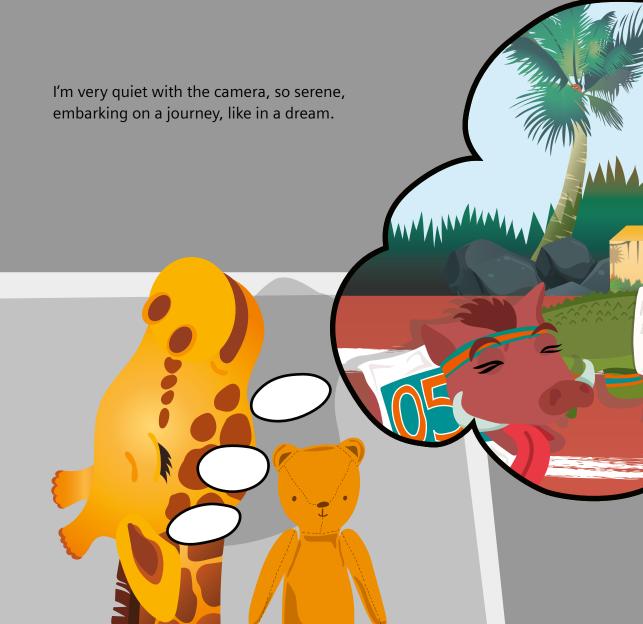






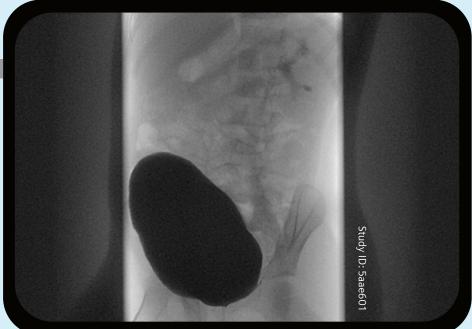














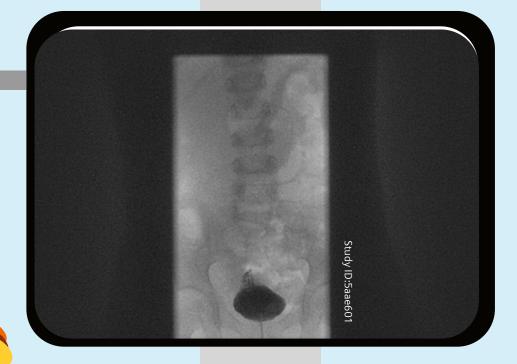
The balloon inflates, bigger and bigger it grows, a strange feeling, but quietly it goes.

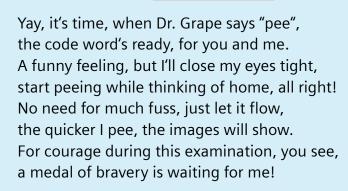
Dr. Grape starts the procedure so right, snapping pics of my balloon, oh, what a sight!

Soon, I'll get to pee, I can hardly wait, all the magic water will dissipate.

No yelling or fuss, I'll do it with grace, as the water goes away at a steady pace.







Hooray! I've managed, let's give a big cheer! Happy and bright, with a smile so wide, I'm filled with pride!

Wow, the videos and pictures, what a view, a glimpse inside my belly, everything's true!

The magic water's gone, that's just great, Dr. Grape knows my stomach's current state.

To make me feel better, with expert precision, from my doctor's great health care decisions!





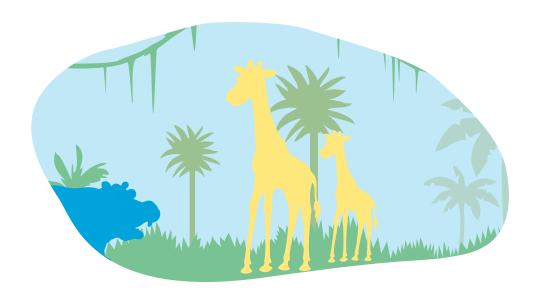
Dr. Grape says I am so brave. He gives me a medal I can save.











# For parents

# An explanation of your child's voiding cystourethrogram (VCUG) examination

The purpose of this book is to help children and their parents better understand how a voiding cystourethrogram (VCUG) examination works and get ready for their exams.

The voiding cystourethrogram (VCUG) also called bladder X-ray, is an special X-ray examination to examine the urinary bladder and urinary tract.

In order to visualize the function of the urinary bladder and urinary tract, a contrast agent is usually inserted via a urinary catheter. The filling of the bladder with contrast agent is observed by means of X-rays by a fluoroscopy system to identify any problems.

At the end of a filling phase, the contrast agent is then drained again by the patient urinating. During urination, several images are taken in quick succession to assess the release of the liquid. This procedure is then referred to as an (X-ray) fluoroscopy examination.

The examination is mainly used to diagnose the occurrence of "reflux". This is the backflow of urine from the bladder into the ureters and kidneys. Reflux can have various consequences, such as urinary tract infections or damage to kidney tissue.

### What is a fluoroscopy examination?

A fluoroscopy examination is an imaging process. It allows the treating doctors to view parts of the body from the inside. The real-time movement of organs like the esophagus, intestines, blood vessels, bladder, kidneys, bone marrow, fallopian tubes, tissue or other internal structures is shown. Standard X-ray images are like a static picture. Fluoroscopy is like a film. The radiation dosage has been reduced to a minimum over the past few years. The scanning device consists of a tube, a detector, a device base and a table. The patient either lays on the table or stands on a step in the system.

The table is mobile and can be tilted by plus/minus 90 degrees. The fluoroscopy examination is painless for the patient. Specific settings are available for pediatric patients that allow the lowest possible radiation exposure.

## Behavioral guidelines during X-ray procedures

As with a photo, the calmer the object being photographed, the better the image captured. The same applies to the use of X-rays for imaging. The patient should not move during the scan to ensure that the images are generated as accurately as possible and to make it easier for the doctor to make a diagnosis.

Usually, it is possible and even desirable for an accompanying person to remain with the child during the examination to have a calming and positive effect on the child. For this purpose, you as a parent or guardian will be given an X-ray apron to put on, which you must wear during the examination. The X-rays used for the examination are invisible and painless. Despite the very low radiation doses that occur to a patient today, the radiation exposure for everyone involved in an examination should always be reduced to a minimum. To be on the safe side, pregnant women should not be in the examination room.

### When is a contrast agent necessary?

Contrast agents are used to (better) visualize organs in the body that are otherwise hardly distinguishable by X-rays due to their similar density. Especially in the case of hollow organs such as the esophagus, intestines or bladder, it can be useful to use a contrast agent to make the organs visible in the X-ray image.

Contrast agents can be ingested, inserted via catheters or similar methods, or injected into blood vessels and joints. They represent an artificial contrast on the images, which can help or even be necessary for interpreting the images. When and whether a contrast agent is necessary is decided by the doctor depending on the patient and the question to be answered by the examination. The contrast agent is excreted by the body on its own within a short time.

### How long does the fluoroscopy examination take?

The average time is 15–20 minutes. Including preparation time, 45 minutes are to be expected. It is important that your child is relaxed during the examination and can follow the doctor's instructions.

### What does fluoroscopy/VCUG feel like?

The fluoroscopy of the urinary bladder and urinary tract is painless for your child. Your child is usually positioned in a supine position on the examination table by the medical staff and prepared for the following steps. If a catheter has not already been placed in advance, it will now be inserted for the examination. This can feel uncomfortable, especially for children.

The X-ray tube of the fluoroscopy system is aligned and adjusted to the bladder, and then the doctor begins to fill the bladder with a contrast agent. The increasing volume of filling can create an uncomfortable feeling for your child. The system, which is very large, especially for small patients, can potentially frighten your child. Thus, empathetically supporting your child is key to easing their anxiety and ensuring the procedure's success.

If necessary, the medical staff will rotate your child for further images to show the bladder and urinary tract from different angles.

Yo<mark>u will be inf</mark>ormed in detail about the exact examination, the procedure and its risks in an informed consent discussion.

# The procedure of a fluoroscopy examination

The patient is asked to undress and is given a hospital gown.



The patient is then helped to position themselves for the examination. The examination table is usually heightadjustable so that the child can climb onto it easily and safely. Additionally, the device can be moved into different positions.



During a voiding cystourethrogram (VCUG) the emptying of the patient's bladder is examined. Before the examination, a thin catheter is inserted through the urethra. This can be done either on the ward or directly before the examination in the examination room. Inserting the catheter can feel uncomfortable, especially for children.



During a VCUG examination, parents, guardians or accompanying persons of the patient are welcome to remain present, provided that they are not pregnant or have other extenuating circumstances that put them at risk. In order to protect themselves from radiation, parents and accompanying persons are given lead aprons.



The bladder is then filled with a contrast agent through the catheter. A specific contrast agent is selected depending on the patient's diagnosis.



The radiologist releases X-rays to illuminate the bladder. Several images are taken to check the level of the contrast medium. If the bladder is sufficiently filled with contrast agent, the child will be asked to urinate to empty the bladder. Further fluoroscopic images are also taken at this point. This allows the doctor to observe the contrast agent distribution on the monitor.



The doctor may ask your child to turn to the left, right or onto their stomach to take pictures of the bladder and contrast agent distribution from different perspectives. You are welcome to help your child turn.

Often, the catheter is then removed again during urination.
Once all images have been taken, the examination is
complete, and the child can get dressed again.



# The most important points, in brief

A fluoroscopy examination is a safe and effective method to diagnose conditions and changes in the body, so the best possible treatment can be provided.



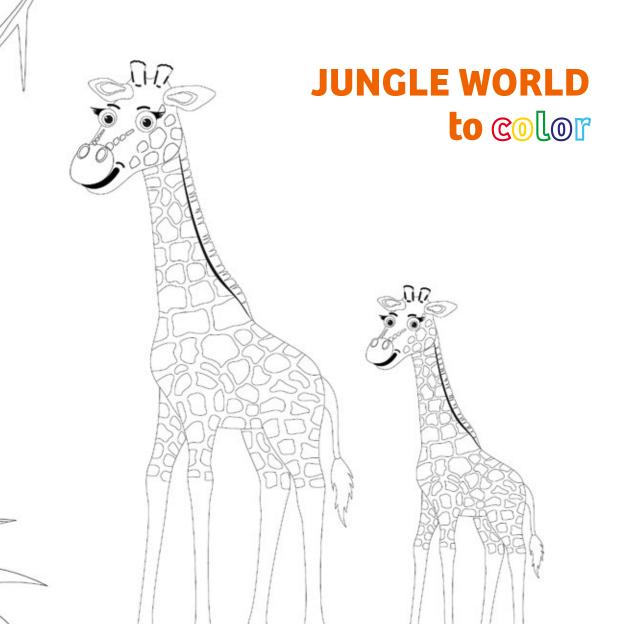
Scan the QR code and start listening!



### Tips for a positive experience

- **1.** Wear comfortable clothing. Children should wear clothes without metal buttons, zippers, or decorations that contain metal.
- 2. Bring a favorite stuffed animal (without metal parts).
- **3.** Ask if audio books or music you bring with you can be played during the examination.
- Be sure to follow instructions regarding eating and drinking before the examination.
- 5. Explain to your child that the purpose of the examination is to look into the body from outside so the doctor can see exactly what is wrong. It is a noninvasive examination that can be interrupted at any time and will not hurt at all!
- 6. If your child is to be given a contrast agent, you will be provided with comprehensive information in advance and asked for your informed consent. Please notify the doctor immediately if your child has an allergic reaction to the contrast agent. Explain to your child why the contrast agent is needed.
- 7. Parents, be confident and relaxed. Your attitude will rub off on your child.
- **8.** Praise your child after the examination.









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