

The Stimulation Test



Knowledge
to grow by

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Introduction

Welcome to the office of your endocrinologist, a specialist in growth. If your child has slow or unusual growth, the doctor may recommend special testing for your child. A key test is the growth hormone stimulation test, or stim test. A stim test is used to check for a medical growth condition.

In some cases, a child is short because of a medical condition that affects growth. Medical conditions may either slow or stop growth in a child. A stim test may help identify these conditions.

A stim test may be done if:

- Your child has been shorter than average for a long period of time
- Your child's first medical tests show that he or she may have growth failure

Growth hormone, or GH, is a hormone in the body needed for growth. A stim test shows the amount of growth hormone your child's body makes. Not enough of it may cause your child to grow slowly. If the stim test shows that your child's body does not make enough growth hormone, there are medicines that can help.

The stimulation test

What is a stim test?

A stim test is used to test your child's pituitary gland. It helps the doctor see if this gland is working well. The pituitary gland makes growth hormone. The stim test shows whether your child's gland makes enough growth hormone.

During the stim test, your child will receive special medicines to trigger the pituitary gland to make growth hormone. In some children, the gland does not make enough growth hormone in response to the medicine. This could mean your child has growth hormone deficiency, or GHD.



Why are special medicines needed for the stim test?

The pituitary gland releases growth hormone in pulses or bursts, mostly while children sleep at night. During the day, not much growth hormone is produced. To see whether your child's body makes enough growth hormone, the pituitary gland must be triggered to make it. Then the doctor can see how much is made.

A stim test is not like most blood tests. A blood sample is not taken just once. Instead, the doctor measures growth hormone by taking many blood samples. This is done over a period of 2 1/2 to 5 hours.

After the test, the blood samples are sent to a laboratory. There, the amount of growth hormone will be measured.

What type of medicines will be used for the stim test?

There are several options. The doctor will use the medicines that he or she feels are best for your child. Many doctors choose two medicines to be used for the stim test. Some common medicines are:

- Arginine
- Clonidine
- Glucagon
- Insulin

Your child will receive the medicines in a vein by intravenous (IV) injection or in another form.

Some of these medicines may cause side effects. Be sure to talk to the doctor about this.

The next few sections discuss the steps to take before and during a stim test. Each medical center is different. Speak with your child's doctor or nurse to learn how the test is done at your center.

Discuss the test with your child

If the doctor recommends a stim test, discuss it with your child. Be truthful. Explain the test and why it must be done. This will help you gain your child's trust. Talking may ease some of your child's worries. Some parents wait until the day of the test. Others tell their children sooner. The timing is up to you.

Often, children want to know if the test hurts, how long it takes, and if a parent will be with them. Tell your child that the test is often done in the morning. It often takes about 2 1/2 to 5 hours. Reassure your child that parents may often stay with them during the stim test.

The day before the test

- Do not give your child anything to eat or drink after midnight on the night before the test. This could change the test results or make them inaccurate
- Sips of water may be allowed. Check with the doctor to make sure
- Tell the doctor if your child eats or drinks the day of the test. The test may need to be rescheduled
- Are there medicines your child must take between midnight and the day of the test? If so, ask the doctor whether to hold off on the medicines until after the test



The morning of the test

- Remember to bring the special medicine your child's doctor prescribed for the test
- Have your child wear comfortable clothes, like sweatpants and a T-shirt or pajamas. The outfit should have sleeves that can be pulled up. This will make it easy to insert the IV needle in your child's arm. The IV needle is used to draw blood samples
- Remember to bring something fun for your child to do. Books, quiet games, or coloring books can help to pass the time. Ask the test center if they have televisions, DVD players, or CD players available
- Arrive at the test site 20 to 30 minutes before the test. This gives you, your child, and the medical staff time to prepare and to begin the test on time
- Your child may be hungry or thirsty after the test. Bring a drink and quick-energy or protein snacks for your child to have after the test (for example, a banana, crackers, or a bagel)
- If your child is ill or has been exposed to a contagious illness, call the test center and ask the doctor what to do

What to expect during the test

- In most cases, a nurse will perform the test
- The test site may have facilities that let you stay with your child during the test. Discuss this with your child's doctor or nurse
- The test often takes 2 1/2 to 5 hours. Your child will be kept comfortable. He or she will lie in a recliner or on a hospital bed or couch-size exam table; pillows and blankets are often available
- The skin on your child's arm or hand—where the IV needle will be placed—will be cleaned with antiseptic. An elastic band, or tourniquet, will be placed around the upper arm. This is to temporarily restrict blood flow while the needle is inserted
- To take blood samples, the IV needle will be placed in the vein. It will then be removed, leaving a soft plastic tube in the vein. This tube is called a cannula. At this time, the first blood sample will be taken. When the cannula is taped in place, the stimulating medicine will be given
- The IV line may also be used to inject fluid in case your child has side effects from the medicines. This is not always needed, but may be done if necessary
- After the medicine is given, blood samples will be taken over the next few hours. Most children rest or do quiet activities during this time
- When the last blood sample is taken, and the test is over, the cannula will be removed. Pressure will be applied to the needle site to stop the bleeding and a bandage will be applied



What your child may feel during the test

When the needle is put into the vein, some children feel pain. Others feel a prick or a sting. Then, the needle is removed and the plastic tube is taped down. There may not be much pain for the rest of the test. This is because the blood samples are all taken from the IV line. No other needles are put into the skin. If the IV line becomes dislodged or clogged, the needle must be put in again.

Depending on the medicine, some children feel weak or have nausea for a short time during the test. This normally passes before the end of the test. Again, talk to the doctor about side effects of the medicines.

After the test

Your child may be hungry or thirsty. Check with the doctor before your child has the snack and drink you packed. Your child may feel sleepy or tired. Before you leave, discuss any special care and follow-up appointments with the doctor or nurse. Let your child decide how active to be after the test. Often, children are able to resume normal activities the same day.


Summary

When a child grows more slowly than average, a stim test may be done. This test measures the amount of growth hormone made by the pituitary gland. Special medicines are used during the test to trigger the child's gland to produce growth hormone.

During a stim test, blood samples are taken over several hours. One blood sample is not enough because not much growth hormone is made during the day. By studying the amount of growth hormone in your child's blood, the doctor can see if your child's body makes enough of it.

This section has reviewed how to prepare for and what to expect during a stim test. Remember to ask your child's doctor or nurse about the procedures of your medical center.

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