

Gonadotropin (GnRH) Stimulation Test

Your child will have a gonadotropin (GnRH) stimulation test. It checks how well the pituitary gland works. It's ordered for children with early (precocious) or delayed puberty.

Hormones control many body functions. For puberty to happen on time, the brain makes a hormone called gonadotropin-releasing hormone (GnRH). It sends it to the pituitary gland.

GnRH triggers the pituitary gland to make 2 sex hormones: follicle-stimulating hormone (FSH) and luteinizing hormone (LH). The pituitary gland sends FSH and LH to the child's sex organs to start puberty.

- In children born male, FSH and LH cause the testes, or gonads, to make sperm and testosterone.
- In children born female, FSH and LH cause ovulation, menstrual periods, and the ovaries to make estradiol, the type of estrogen made at the start of puberty.

If the pituitary gland is not working right, the body may make too little or too much FSH, LH, testosterone, or estradiol.

How to Prepare

- If your child has a fever or is sick, call the Infusion Clinic to reschedule the test.
- Tell your child's health care provider if they have had any allergies or reactions to medicine, food additives (preservatives), or dyes in the past. Signs of a reaction can be a rash, hives, itching, shortness of breath, wheezing, coughing, and swelling of the face, lips, tongue, or throat.
- Your child should not take any medicine before the test unless their doctor or the clinic tells you it's okay to give it. You may bring their medicine to give after the test.
- Have your child wear a short-sleeved shirt.
- Bring books, toys, or games to occupy them. There will be a TV, a DVD player, and DVDs in the clinic to play movies, or you can bring your own DVDs.

How the Test is Done

- You can stay with your child during the test.
- A nurse will:
 - Start an intravenous (IV) line in your child's arm (Picture 1). This is a plastic tube that goes through the skin and into a vein. They can put numbing cream on their skin before starting the IV to decrease the pain.
 - Draw blood from the IV before the test starts for FSH, LH, and for either testosterone or estradiol.
 - Give your child a shot (injection) of leuprolide medicine in their upper arm and not in the IV. Leuprolide makes the pituitary gland release FSH and LH.
 - Draw blood from the IV after 30 minutes, and then 60 minutes for FSH and LH.
- Your child may need to go to a lab 24 hours later to get a blood test for estradiol or testosterone.



Picture 1 A nurse will start an IV.

Risks and Possible Problems

This is a simple and safe test. Problems are rare, but may include:

- Bleeding or bruising under the skin where leuprolide was given.
- Bleeding at the spot where the IV was put in.
- Infection at the IV or injection site.
- Fainting or feeling lightheaded.

After the Test

- Your child can eat regular foods and go back to their normal activities.
- It takes 1 to 2 weeks for the test results to come back. Your child's doctor or health care provider will call you about the results and explain the plan for your child's medical care.

How to Get to the T4D Infusion Clinic at Nationwide Children's Hospital

- Park in the Outpatient Care Orange Garage on 18th Street.
- Enter the outpatient building and follow the blue path to the main hospital. Crossroads Registration is where the blue and green paths meet.
- Once you register, you will then take the Tower elevators to level 4 and turn right into Suite D.

If you have any questions, call the endocrinology department.