

# Infant Lung Function Testing

Your doctor has recommended infant lung (pulmonary) function testing for your child. This test is sometimes called infant PFTs. This handout describes the test and its risks. Before we begin the test, we will go over this information with you in person and answer any questions you have.

## What is a lung function test?

A lung function test is a breathing test to find out how well your baby moves air in and out of their body.

## What happens the day of the test?

The test will be done in the Pulmonary Function Lab. Your child will be given a sleep medicine called chloral hydrate. The medicine is given by mouth or rectally. The medicine will make your child fall into a deep sleep during the lung function test.

Starting 6 hours before the test, your child will not be able to eat solids or drink milk or formula. Starting 4 hours before the test, your child will not be able to breast-feed. Your child can continue to have water or clear juice until 2 hours before the test. Starting 2 hours before the test, your child can have nothing more to eat or drink until the test is over.

You will need to keep your child awake for 4 hours before the test so that they are sleepy for the test. Otherwise, the sleep medicine will not work well. It is important to try to keep your child awake in the car on the way to the test. If your child falls asleep during the car ride, we will need to reschedule the test for a different day.

The first part of the test measures your child's lung volume. Once your child is asleep, they will be placed on top of a blanket inside a clear box. We will monitor the heart rate, respiratory rate, oxygen level and carbon dioxide level throughout the study. We will place a face mask around your child's nose and mouth. Your child will breathe into the mask while sleeping. There is soft putty around the outside of the mask, which helps seal it to your child's nose and mouth.

Next, we will close the clear box and watch your child's breathing. We will take measurements as your child breathes against a slight resistance, or pressure. This helps us measure the amount of air in your child's lungs. This part of the study takes 5 to 10 minutes. We will open the clear box for the rest of the study.

The second part of the lung function test involves placing a special vest, which inflates like a balloon, around your child's chest. Your child will continue to breathe into the face mask. During this part of the test, a small amount of air pressure is delivered to your child's lungs to help fill their lungs, like taking a sigh breath. After their lungs are full, your child breathes out. This inflation and breathing out cycle is repeated several times. Then the small amount of air pressure is delivered again. After the pressure, the vest around your child's chest is inflated to help your child blow out hard. We will repeat this a few times until your baby produces the highest flows they can. Flow measurements tell how much air your child can blow out. This part of the study will take 10 to 20 minutes.

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### What happens when the test is over?

After the test is over, your child will be monitored until fully awake. They will be given something to drink. Then you may take your child home. Your child may not be able to crawl or walk steadily for the rest of the day because of the effects of the sleep medicine. You will need to carry your child and protect them from falls and other injuries for 4 to 6 hours after the test.

### What are the risks of a lung function test?

The main risk is the sedation. We will monitor your child's heart rate, breathing rate and oxygen level while sedated. Experienced respiratory therapists will be with your child, and a doctor will be available during the test. Chloral hydrate can cause your child to be upset and fussy before going to sleep. They may be unsteady for several hours after the medicine is given. The medicine can sometimes cause temporary disorientation, nervousness and excitement. Rare side effects include nausea, vomiting, diarrhea, rash and itching.

Other risks of infant PFTs include blocking of the airway and vomiting. The airway blockage is most likely to happen in infants with enlarged tonsils. Vomiting is most likely to happen in children who experience frequent vomiting after meals (reflux).

We will not do infant lung function testing in children who have recently eaten, who have large tonsils, who snore or who have problems with frequent vomiting. Your child's oxygen level may drop during the test because of shallow breathing while asleep. Oxygen will be given if needed.

#### TO LEARN MORE

- Pulmonary Medicine (206) 987-2174
- Your Child's Health-Care Provider

*Children's will make this information available in alternate formats upon request. Please call the Family Resource Center at (206) 987-2201.*

*This handout has been reviewed by clinical staff at Children's Hospital. However, your child's needs are unique. Before you act or rely upon this information, please talk with your child's health-care provider.*