

# Pulmonary Medicine, Allergy and Immunology

## INFANT PULMONARY FUNCTION TESTING (iPFT)

AT CHILDREN'S HOSPITAL OF PITTSBURGH OF UPMC, we believe parents and guardians can contribute to the success of this test and invite you to participate. Please read the following information to learn about the test and how you can help.

### Fast Facts About Infant Pulmonary Function Testing (iPFT)

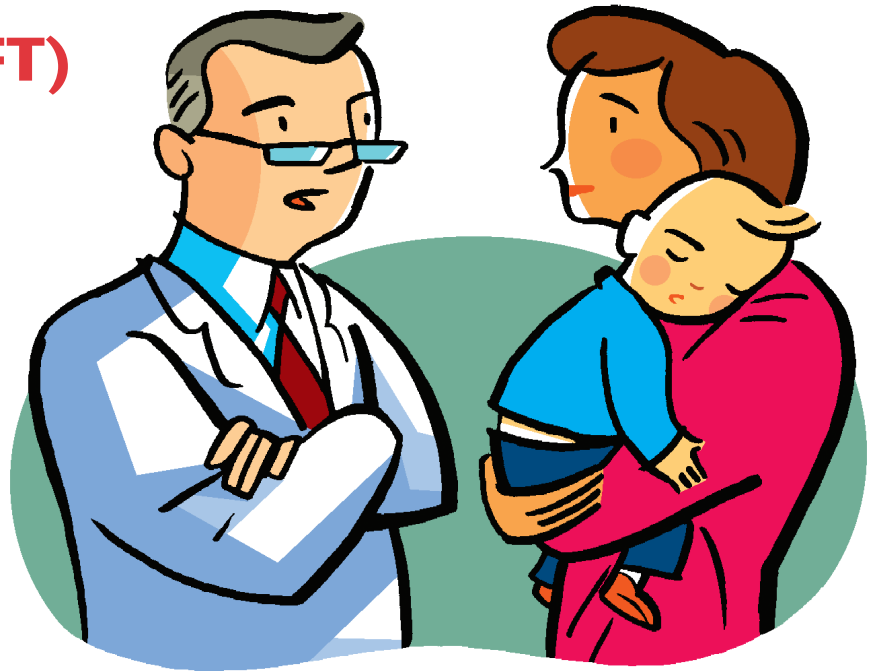
- Infant pulmonary function testing (iPFT) is a way to measure the breathing of babies and toddlers.
- The test is done by having your child breathe in a special machine to take measurements of how much air is in his or her lungs.
- The iPFT is done under sedation. That means that your child will receive medication to make him or her sleep through the test.
- When sedation medication is needed, there are special rules for eating and drinking that must be followed in the hours before the test.
- This test may be done as an outpatient test through the Same Day Surgery Center at Children's Hospital or while your child is a patient in the hospital.
- An iPFT takes a total of about 1½ hours, but recovery from sedation medication may take up to several hours.

### Fast Facts About Sedation

- Sedation means that medication will be given to your child to make him or her sleep through the entire test.
- Although not deeply asleep, your child will not remember the test at all afterwards.
- The doctor doing your child's test will give the sedation medication.

### What Is An Infant Pulmonary Function Test (iPFT)?

Pulmonary (*pool-mo-NARE-ee*) function tests measure how well your child's lungs are working. They measure how fast air can flow through the airways, how much air is in the lungs and how stiff the lungs are. This information is important in diagnosing breathing problems and checking to see if current treatments are working. The results of these tests can show if your child's lungs or airways are obstructed (blocked) in any way because of asthma or other conditions that affect breathing.



In older children who are able to follow instructions, lung function is checked through a test called spirometry, which measures breath capacity as a child blows out into a tube. When children are too young—or are unable—to follow instructions, lung function is measured with infant pulmonary function testing (iPFT). iPFT uses special equipment to measure lung function while the child is asleep. iPFTs are very safe and can be performed even on tiny babies.

### Home Preparation

**When sedation medication is needed, there are important rules for eating and drinking that must be followed in the hours before the test.** One business day before your child's test, you will receive a phone call from a nurse between the hours of 1 and 9 p.m. (Nurses do not make these calls on weekends or holidays.) Please have paper and a pen ready to write down these important instructions.

The nurse will give you specific eating and drinking instructions for your child based on his or her age. Following are the **usual** instructions given for eating and drinking. No matter what age your child is, you should follow the specific instructions given to you on the phone by the nurse.

#### **For children older than 12 months:**

- After midnight the night before the test, do not give any solid food or non-clear liquids. That includes milk, formula, juices with pulp, coffee and chewing gum or candy.

# INFANT PULMONARY FUNCTION TESTING *cont'd*

## For infants under 12 months:

- Up to 6 hours before the **scheduled arrival time**, formula-fed babies may be given formula.
- Up to 4 hours before the **scheduled arrival time**, breastfed babies may nurse.

## For all children:

- Up to 2 hours before the **scheduled arrival time**, give only clear liquids. Clear liquids include water, Pedialite®, Kool-Aid®, ice, jello, ice pops, clear broth and juices you can see through, such as apple or white grape juice.
- In the 2 hours before the **scheduled arrival time**, give nothing to eat or drink.
- If these instructions are not followed, your child's test may have to be postponed or rescheduled for a different day.

## Medications

- You should not give your child a breathing treatment using a bronchodilator for at least 6 hours before the iPFT. **Bronchodilators include albuterol, Proventil and Atrovent.**
- If your child takes other medication by mouth, ask the doctor if your child may take it and how close to the testing time it should be taken.

## Other

- Your child should be somewhat sleepy when he or she arrives for the test. Put your child to bed later than usual the night before the test, and wake him or her at 6 a.m. on the day of the test. Please try to keep him or her awake until the test.
- The iPFT should be done when your child is well. If he or she is congested, wheezing or has a fever the day before or the day of the test, please call 412-692-5452. The test may need to be rescheduled for another day.
- Please bring 1-2 bottles of clear liquids with you to the test so you can feed your child after the test.
- Please allow time for travel and parking before the test so that you arrive on time for your appointment. If you are late, your child's test may have to be postponed or rescheduled for a different day.
- If your insurance company requires a referral for this test, please bring one with you to the test.

## Before the Test

Infant pulmonary function testing (iPFT) is done through the Division of Pulmonary Medicine, Allergy and Immunology at Children's Hospital. This test may be done on its own, as part of another appointment, or while your child is a patient in the hospital.

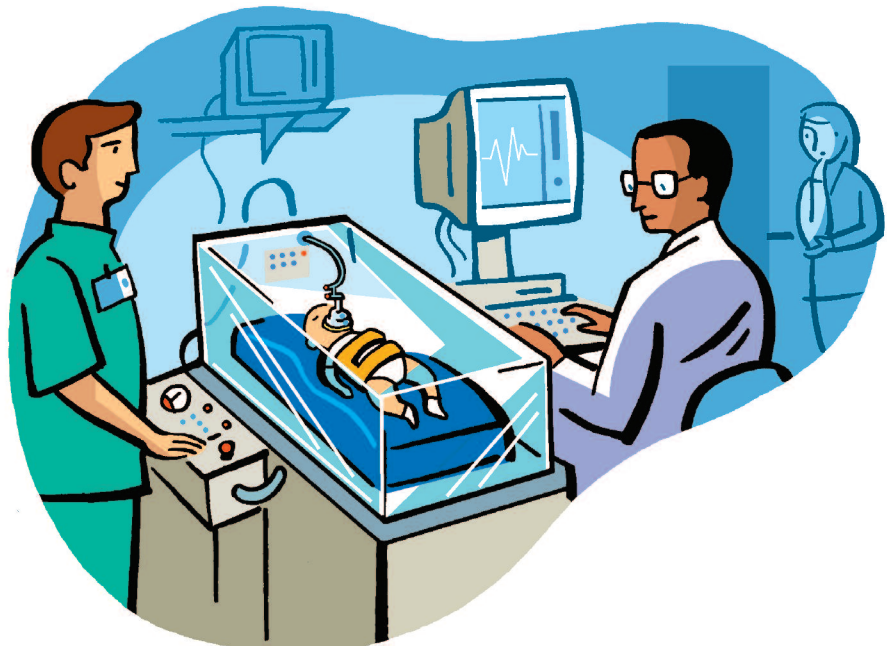
After you have signed your child in at the Same Day Surgery registration desk, you will be asked to sit in the waiting area.

- We invite one parent or guardian to stay with your child during the test. Other adults and siblings must stay in the waiting room during the test.
- You and your child will be called to the examining room and you will be asked some screening questions by a nurse or one of the doctor's assistants. The assistant will take your child's vital signs, weight and medical history. As the parent or legal guardian, you will be asked to sign a consent form for testing.
- You may ask any questions or discuss concerns about your child's test at this time.
- Your child may wear normal clothes or pajamas to the test. Before the test begins, you will be asked to take off your child's clothes down to a diaper.

## The Infant Pulmonary Function Test (iPFT)

The iPFT will take place in a special procedure room. The nurse or assistant will be joined by the doctor and a respiratory therapist. The nurse will apply monitors to continuously watch your child's heart rate, breathing rate, blood pressure and oxygen level during the test. These monitors will not hurt.

- Your child will be given medication by mouth to make him or her drowsy. This medication takes effect in about 15 to 20 minutes. You may stay with your child as he or she falls asleep and throughout the entire test.
- After your child falls asleep, he or she will be placed into a clear plastic device in which the lung measurements will take place.
- A thin strip of medical putty, similar to Silly Putty®, will be rolled into a cigar shape and pressed around the edge of a soft plastic mask, which will be placed over your child's mouth and nose. The putty will create an airtight seal and give the mask a custom fit to your child's face.



## INFANT PULMONARY FUNCTION TESTING cont'd

- The mask will be connected to a computer, which will measure the airflow. As your child breathes into the mask, the computer will measure how much air is in your child's lungs.
- A vest will be wrapped around your child's chest. The vest will inflate very quickly to give your child's chest a "hug" that will help your child blow all the air out of the lungs. Before the "hug," the doctor may inflate the lungs with extra air through the mask. The computer will measure how fast air can flow into and out of your child's lungs.
- Your child will be given a breathing treatment, such as albuterol, through the mask to open your child's lungs and breathing tubes. The tests will be repeated to measure improvement.
- The breathing tests will not hurt your child.

### Waking Up/Going Home

- When the test is done, your child will be moved to the recovery area until the sedation medication wears off and he or she is awake. The length of time it will take the medications to wear off will vary, as some children take longer than others to become alert.
- Children coming out of sedation may react in different ways. Your child might cry, be fussy or confused, feel sick to his or her stomach, or vomit. These reactions are normal and will go away as the medication wears off.
- Your child will have no memory of the test when he or she wakes up.
- When your child is discharged, he or she may still be groggy and should take it easy for the day.
- Your child may resume normal activities, eating and drinking at the rate he or she is comfortable with when you get home.



### A Parent's/Guardian's Role During the iPFT

The most important role of a parent or guardian during the test is to help your child stay calm and relaxed. The best way to help your child stay calm is for you to stay calm.

- You may stay with your child through the entire test.
- Feel free to ask any questions, but please ask them before or after the test.
- You may bring along a "comfort" item—such as a favorite stuffed animal or "blankie"—for your child to hold during the test.

### Special Needs

If your child has any special needs or health issues you feel the doctor or nurse performing the test needs to know about, please call the Division of Pulmonary Medicine, Allergy and Immunology at Children's Hospital of Pittsburgh **before the test** and ask to speak with a nurse. It is important to notify us in advance about any special needs.

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To see the list of all available patient procedures descriptions, please visit [www.chp.edu/procedures](http://www.chp.edu/procedures).