Lung-Transplant Evaluation: What You Need to Know

When you (or your child) come in for a lung transplant evaluation, you will have many medical tests done over the course of the evaluation. These tests help figure out whether a person is a good candidate for a lung transplant. In this handout, you will learn about the different tests that you (or your child) may need to have done. The lung-transplant care team will talk with you about which tests you (or your child) need.

**PROCEDURES**

- **Pulmonary function tests**
- **6-minute walk test.** This test measures the distance you (or your child) can walk in 6 minutes. It also looks at heart rate, blood pressure and **oxygen saturation** (how much oxygen is in the blood).

- **Electrocardiogram.** This is also called an **EKG** or **ECG**. For this test, electrode stickers (stickers with wires that attach to a computer) are placed on the chest to look at how the heart beats.

- **Right heart catheterization.** This procedure is done in a cardiac catheterization lab to directly measure the blood pressure in your heart and lungs. The pressure is measured with a small **catheter** (hollow tube) that is inserted in a vein in the neck or groin. The catheter is moved forward to the heart and lungs. The catheter is removed at the end of the procedure. Usually, teens and adults are mildly sedated but awake for this procedure. If a child is having this procedure, they will be asleep safely and comfortably during this test.

- **Dental exam**
- **Age appropriate health maintenance examinations.** Depending on your (or your child’s) age and gender, these may include a pap smear (cervical cancer screening), a colonoscopy (colorectal cancer screening) or a mammogram (breast cancer screening).

**IMAGING TESTS**

- **Chest x-ray**

- **Computed tomography (CT scan) of the chest and abdomen (belly area).** This is a more detailed chest X-ray. You (or your child) may be given intravenous (IV) contrast (a safe dye) to make the pictures clearer.

- **Bone-density scan.** A bone scan is also called a DEXA or DXA scan. This is an X-ray that measures bone density and looks for signs of bone loss or thinning.

- **Ventilation/Perfusion lung scan.** This is also called a V/Q scan. It looks at how well air and blood flow through the lungs. You (or your child) will receive a radioisotope (a type of radiation) through an IV. You (or your child) will also breathe in a radioisotope gas mixture through a mask. The radioisotope is given at the safest and lowest dose possible.

- **Echocardiogram.** This is an ultrasound of the heart. An ultrasound uses sound waves through a probe (wand) placed on the skin to make pictures of internal organs.

- **Abdominal ultrasound.** This is an ultrasound of the abdomen that will look at the abdominal organs.

- **Barium swallow.** For this study, doctors take a series of X-rays of the upper gastrointestinal (GI) tract (including the throat, esophagus, and stomach) to check for unusual areas or signs of trouble swallowing. To make the pictures clearer, you (or your child) will drink a chalky-white liquid called **barium** before the test.

**More imaging and other tests on the back >>**
MORE IMAGING TESTS

- **Gastric emptying study.** This test helps figure out how long it takes food to move through the stomach. You (or your child) will eat food that has small, safe amounts of radioactive material. A scanner over the abdomen takes images of the stomach and follows the movement of the food and radioactive material.

- **Esophageal motility study.** This test is also called ESMO. It checks how well the muscles in the esophagus (swallowing tube) work. A thin tube with a camera on the end is passed through the nose and back of the throat into the stomach. Then, doctors check the strength of the muscles in the esophagus. The camera is removed at the end of the study.

LABS

**Urine labs**

- **24-hour urine collection.** This test checks how well your (or your child’s) kidneys work over a full 24-hour period.

- **Urinalysis.** This test looks for blood, protein or signs of infection in the urine.

- **Urine drug screen.** This test looks for signs of substance use in the urine.

**Blood labs**

- **Complete blood count (CBC)**

- **Kidney and liver function panels.** These tests check how well the kidneys and liver work.

- **Arterial blood gas.** This tests measures the levels of oxygen and carbon dioxide in the blood.

- **Thrombosis (blood clot) risk panel.** This test checks your (or your child’s) risk for blood clots.

- **HLA molecular typing, HLA antibody screen and blood group type.** These tests best match a donor organ to your blood type and unique immune system.

- **Hemoglobin A1C and oral glucose tolerance test (OGTT).** These tests look at blood sugar levels over a certain period of time and after a meal.

- **Tests to look for previous or current infection with viruses, bacteria, or parasites.** Doctors most often check for the following: Human immunodeficiency virus (HIV), hepatitis B, hepatitis C, syphilis, herpes simplex virus, varicella-zoster virus, cytomegalovirus (CMV), Epstein-Barr Virus (EBV) and toxoplasmosis.

**Other labs**

- **Sputum culture.** This test checks for bacteria or fungi growth from your (or your child’s) airway mucus.

- **Tuberculosis (TB) test.** A TB test can be either a skin test or a blood test that checks for active or latent (inactive) TB (a serious lung infection).

CONSULTS

- You (or your child) may also meet with providers from Infectious Disease, Psychiatry and Social Services at MassGeneral Hospital for Children (MGHfC).

Need ideas on how to prepare for or explain these tests to your child?

If you would like ideas on how to explain these tests to your child in developmentally-appropriate and child-friendly terms or prepare your child for their appointment, please call John Hancock Child Life and Wellness Program at MGHfC at 617-724-5839.

List of studies adapted from: Morrell MR, Pilewski JM. Lung Transplantation for Cystic Fibrosis. Clin Chest Med. 2016;37:127-138. Rev. 5/2019. Reviewed by the MGHfC Family Advisory Council. MassGeneral Hospital for Children and Massachusetts General Hospital do not endorse any of the brands listed on this handout. This handout is intended to provide health information so that you can be better informed. It is not a substitute for medical advice and should not be used to treatment of any medical conditions.