

Diagnosis and Treatment

The center offers many types of testing and treatment -- some specialized, some general. Many techniques or methods used in the center are scrutinized through ongoing research by the center's staff. This enables the continuing improvement of existing methods as well as the development of new techniques. Examples of the tests offered include:

- **Sweat testing:** This sensitive test determines if symptoms are caused by cystic fibrosis by measuring the level of chloride (salt) in the child's sweat. Performing approximately 300 tests per year, UNMC's Pediatric Pulmonary Center is considered a regional resource laboratory for this test.
- **Spirometry:** This non-invasive technique involves measuring exhaled air to determine evidence of airways disease. This technique can be performed on infants, as well as on children, though it has limited applications for children between the ages of two and four years. Challenge tests are also performed for asthma diagnosis.
- **Allergy testing:** A variety of tests determine the existence of allergies that may contribute to the child's respiratory problems.
- **Skin testing:** Tests are also performed for non-allergic diseases such as tuberculosis and immune system deficiencies.
- **Bronchoscopy:** Using a flexible bronchoscope with fiber optics, the airways within the lungs can be visualized directly to observe for structural abnormalities. Secretions can also be collected to study for a large number of abnormalities, such as infection or aspiration (when foreign matter such as food gets into the lungs). This procedure is frequently carried out under light sedation on an outpatient basis. More advanced adaptations of the technique allow for biopsy sampling of the lungs (to assess for rejection in the transplanted lung, for example) or even the occasional removal of a foreign body from the airways.
- **Comprehensive overnight polysomnography (Sleep Studies)** Includes evaluation of sleep architecture and sleep associated breathing disorders.

Examples of the center's services include:

- **Bronchoscopy:** This procedure involves inserting a tube into the lungs and is occasionally performed for treatment purposes.
- **Medications:** Medications prescribed at the center, including aerosol drugs, help improve a child's symptoms and lung function.
- **Environmental Recommendations:** Results of a patient's history and allergy testing provide the basis for recommendations to minimize such factors as house dust, mites, smoke, strong odors and pets. These exposures can contribute to nasal and lung problems.
- **Nutritional Recommendations:** Particular attention is paid to nutrition, especially with certain chronic illnesses. A dietitian is present as part of the health care team.
- **Exercise programs and prescriptions** are also incorporated in our comprehensive treatment. Allergy injections, in consultation with allergists, are occasionally recommended to reduce allergy symptoms when more conservative treatments have not been effective.
- **The Pediatric Pulmonology Diagnostic Center:** An area of innovation, UNMC's pediatric pulmonary diagnostic center provides a comprehensive method of assessing children with lung disease. Using non-invasive methods such as spirometry, oscillometry and exercise testing, physicians can:
 - monitor lung function
 - assess response to treatment
 - monitor disease progress
 - determine disease severity