
Pediatric Pulmonology and Sleep Consult and referral guidelines

*Helen DeVos Children's Hospital
Outpatient Center
35 Michigan Street NE*

*Outreach locations:
Lansing, Ludington, Traverse City*

About Pediatric Pulmonary and Sleep

We care for children and teens from birth to age 18.

Most common referrals

- Recurrent cough or wheeze
- Recurrent bronchiolitis or bronchitis
- Asthma
- Bronchopulmonary dysplasia
- Recurrent pneumonia
- Noisy breathing or tachypnea
- Cystic fibrosis (CF) and CF newborn screening
- Sleep apnea/sleep disorders

Notes

- We offer Multidisciplinary Clinics for Cystic Fibrosis, Home Ventilation, Neuromuscular Diseases and Aerodigestive Disorders. (For these clinics, patients are seen by a specialist at HDVCH and followed in these clinics). For the Aerodigestive Disorders clinic, a Spectrum Health ENT, Pulmonologist or Gastroenterologist can refer patients at one visit for all three services or if the primary care provider feels that their patient has combined lung, GI along with ear, nose and throat concerns, please send the referral to our Pediatric Pulmonary group and label "For Aerodigestive Disorders Clinic."
- CF Newborn Screening started in October of 2007 so any respiratory condition for patients born before that date should also undergo a sweat test at a Cystic Fibrosis Foundation Accredited Lab. If there are any significant concerns for a CF diagnosis for those born after October 2007, it is prudent to order a sweat test. Although very rare, there have been a handful of false-negative newborn screens statewide.

Pediatric Pulmonary and Sleep Appointment Priority Guide

Immediate	Contact HDVCH Direct at 616.391.2345 and ask to speak to the on-call pulmonologist and/or send to the closest emergency department.
Urgent	Likely to receive an appointment within 2-5 business days. Mark the referral as “urgent.”
Routine	Likely to receive an appointment within 7-21 days. Send referral via Epic Care Link, fax completed referral form to 616.267.2201, or send referral through Great Lakes Health Connect.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Recurrent Cough or Wheeze Recurrent Bronchiolitis or Bronchitis	<p>Chest X-ray: PA and lateral</p> <p>Consider trial of bronchodilators at any age</p> <p>If non-responsive to bronchodilators, consider trial of oral and/or inhaled corticosteroids</p> <p>Oral prednisone is typically dosed ~2mg/kg/day x 5 days</p>	<ul style="list-style-type: none"> • Hospitalization • Intubated/ICU admission • ER visits • Frequent need for oral steroid bursts • Age <2 years • Unresponsive to usual therapy with increasing medication use • Complicating conditions such as rhinitis, sinusitis, GE reflux and/or pneumonia • Abnormal spirometry or needs frequent monitoring with spirometry • History of chronic lung disease, prematurity 	<ul style="list-style-type: none"> • Chief concern • Summary of previous treatments and response • Respiratory history since birth • All lab results • All chest films
Asthma	<p>Chest X-ray: PA and lateral</p> <p>Consider upper GI and/or video fluoroscopic swallow study</p> <p>Consider allergy evaluation if signs of atopy especially for older childhood and adolescent patients.</p>	<ul style="list-style-type: none"> • Has been hospitalized • Intubated/ICU admission • ER visits • Frequent need for oral steroid bursts • Age <2 years • Unresponsive to usual therapy with increasing medication use • Complicating conditions such as rhinitis, sinusitis, GE reflux and/or pneumonia • Abnormal spirometry or needs frequent monitoring with spirometry • History of chronic lung disease, prematurity 	<ul style="list-style-type: none"> • Chief concern • Summary of previous treatments and response • Respiratory history since birth • All lab results • All chest films • Any allergy testing and evaluations

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Bronchopulmonary Dysplasia, Chronic Lung Disease of Infancy	<p>If patient is having recurrent respiratory illnesses or increasing oxygen need, consider:</p> <ul style="list-style-type: none"> • Chest X-ray: PA, lateral • UGI • Videofluoro swallow study • Cardiology evaluation • Referral to our office 	<ul style="list-style-type: none"> • Unstable respiratory status or is slow to improve • Oxygen requirement • Difficulty growing or feeding • Problem feeding or G-tube • Re-hospitalization after discharge • Inability to wean medications and/or oxygen 	<ul style="list-style-type: none"> • If obtained outside of Spectrum Health: SaO₂, echocardiograms, growth and development evaluations, all lab results post-discharge, chest films • Current treatments and response • Current oxygen requirements • NICU discharge summary (if outside NICU is not in Care Everywhere)
Recurrent Pneumonia	<p>Chest X-ray: PA and lateral, if ruling out cystic fibrosis</p> <p>Sweat chloride at an accredited CF Center*</p> <p>Consider upper GI and/or Pediatric Cardiology consult</p>	<ul style="list-style-type: none"> • Recurrent illness despite treatment • Increasing respiratory symptoms • Symptoms that interfere with daily activities • Respiratory symptoms/infections and problems with growth and/or development 	<ul style="list-style-type: none"> • Brief pre/postnatal history • Growth history • List of treatments and response • Current treatments
Noisy Breathing and Tachypnea	<p>Babies <1 year, with stridor should see an ENT first</p> <p>For non-stridorous noisy breathing and tachypnea, consider a chest radiograph and upper GI</p>	<ul style="list-style-type: none"> • If ENT feels a pulmonary consultation is necessary to add to the patient's care • If the patient is not improving after reflux therapy has been tried. 	<ul style="list-style-type: none"> • Brief pre/postnatal history • Growth history • List of treatments and response • Current treatments and other consultant evaluations
<p>Positive Cystic Fibrosis Newborn Screen</p> <p><i>From the State of Michigan: Elevated IRT plus 1 or more identified CF mutations</i></p>	<p>None needed</p> <p>In the rare circumstance of a suspected bowel obstruction or respiratory</p>	<ul style="list-style-type: none"> • As soon as the PCP receives a positive screen from the State of Michigan, please fax referral and newborn screen results to 616.267.2201. Sweat test order not needed. Pulmonary clinic will call family to schedule appointment and sweat test. 	<ul style="list-style-type: none"> • Referral to include request for consultation, pertinent history and physical.

Diagnosis/Symptom	Suggested Workup/Initial Management	When to Refer	Information Needed
Sleep Apnea/ Sleep Disorders <i>Including snoring, insomnia and hypersomnia</i>	Consider treatment for allergic rhinitis Consider ENT referral Sleep diary	<ul style="list-style-type: none"> Any symptom of sleep difficulties including sleep disordered breathing, daytime or nighttime symptoms Growth delay Nocturnal enuresis (only if associated with sleep disordered breathing) 	<ul style="list-style-type: none"> Chief complaint Pertinent history and physical, growth grid Treatments pursued and responses Any lab results Prior ENT evaluations Sleep evaluations/studies
Non-Invasive Ventilation with CPAP or BiPAP		<ul style="list-style-type: none"> Most primary care providers refer to our sleep clinic for CPAP or BiPAP (PAP) management 	<ul style="list-style-type: none"> Previous sleep studies Pertinent history and physical Previous PAP downloads Growth chart Any pertinent labs
Technology Dependent with a Tracheotomy <i>Ventilator/CPAP</i>		<ul style="list-style-type: none"> Please call HDVCH Direct for provider referral 	

**Accredited CF care centers include: Helen DeVos Children's Hospital (Grand Rapids), Sparrow Hospital (Lansing), Bronson Hospital (Kalamazoo), Children's Hospital of Michigan (Detroit) and University of Michigan (Ann Arbor).*

Pulmonary Function Tests (PFTs)

Our services are available for outpatient lung function interpretation at our Pediatric Pulmonary Function Laboratory at 35 Michigan in Grand Rapids, plus the Spectrum Health Pulmonary Function Laboratories in Big Rapids, Ludington and Greenville.

To request PFTs, please consider the following within your request:

- Baseline spirometry – minimum age 5 years
- Spirometry with pre and post bronchodilator – administer bronchodilator only if baseline can be performed
- Spirometry with lung volumes and airway resistance – minimum age 7 years
- Spirometry with pre- and post-lung volumes and airway resistance – minimum age 7 years

Note: For Methacholine Challenges and Exercise studies, we recommend a pulmonary clinic referral first. For the Methacholine Challenge tests, we must order drug prior to the appointment so if the patient cannot do lung function testing at baseline, the drug is unusable. For exercise testing, there are several types and the visit takes approximately 2 hours. In addition, we must make sure the patient can do lung function testing and that it is safe to perform the test based on potential underlying diagnoses.