

# National Jewish Health<sup>®</sup> CONNECTION

A newsletter for healthcare providers



## Spirometry is the Key to Accurate COPD and Asthma Diagnoses CME Training Available

Studies show that spirometry in the primary care setting is crucial in early detection of Chronic Obstructive Pulmonary Disease (COPD), a leading cause of death in the U.S. One study showed that more than 60% of patients whose spirometric findings are consistent with COPD had no prior diagnosis of COPD. (*J Asthma*, 2006 Feb)

“Spirometry is extremely important for the diagnosis of COPD, and should be considered in any patient with dyspnea, chronic cough, and sputum production, or a history of exposure to risk factors for the disease,” said Barry Make, MD, Professor of Medicine and Co-Director of the COPD Program at National Jewish Health.

National Jewish Health is collaborating with The COPD Foundation and the National Medical Association (NMA) to produce and provide a series of continuing medical education (CME) activities entitled, *Making the Right Diagnosis: The Need for Spirometry*.

The learning objectives of this program relate to recognizing, diagnosing, and managing the heterogeneity of COPD. The program includes interactive lectures on differentiating between COPD and asthma, the treatment of COPD, a hands-on spirometry workshop and more. The faculty presenters are primarily National Jewish Health faculty who specialize in COPD. They utilize an Audience Response System during the lectures in which participants answer questions using a key pad and the results appear on a screen in real time. The presenters use these results to gauge the immediate understanding of the participants and adjust the presentation to address additional education needs and other issues.

### 2009 Sessions Offered

Over the winter, this program, made possible by unrestricted educational grants from GlaxoSmithKline and Pfizer, was presented to providers in underserved areas of the country. Two more training sessions will be offered this fall.

**“COPD is an emerging epidemic with a significant societal burden”** Adam Friedlander, MD

**Case Number:** NJH01-01

**Age:** 40 years

**Sex:** Female

**Description:**  
Janet, a 40-year-old woman who has been cared for by a physician who has just retired, presents for continuing treatment of asthma and to have her medications renewed.



## Online Case Simulator

We have partnered with TheraSim to transform our spirometry CME class to an online setting for easy access for all providers. The TheraSim Clinical Simulator is an innovative medical education tool in which clinicians can treat virtual patients just as if they were in an office setting. Patient case simulation includes:

- Reviewing patient history and exams
- Ordering tests
- Diagnosing illnesses
- Treating conditions

The simulator operates similar to sharing cases at a Grand Rounds while working in an electronic medical record and having concurrent access to online resources. Participants have access to thousands of sources including guidelines and pharmacological databases for evidence-based guidance, receive a closing commentary from clinical experts and may review peer-to-peer statistics.

Please visit [www.njhealth.org/proed](http://www.njhealth.org/proed) for a link to this program (available in September) and all other CME offerings.

## **Spirometry Training** continued from page 1

The first one is at the Westin Colonnade in Coral Gables, FL on September 26. The second is at National Jewish Health in Denver, CO on October 10. The course content is available online at [njhealth.org/proed](http://njhealth.org/proed).

"Over 12 million Americans have been diagnosed with COPD, but despite its impact, COPD continues to be under-diagnosed and misdiagnosed," said Byron Thomashow, MD, Chair of the COPD Foundation Board of Directors. "Checking lung health is just as important and easy as checking blood pressure, and this spirometry training program empowers individuals with COPD and educates healthcare providers to make a difference."

### **Live Program Outcomes To Date**

#### **This CME initiative has:**

- Satisfied participants
- Increased participant knowledge and clinical impact
- Enhanced understanding of the importance of using spirometry to distinguish COPD from asthma
- Improved recognition of need to treat these patients differently

#### **Participants**

- Recognized their knowledge limitations and need to close the gap
- Demand ongoing spirometry education regarding interpretation

### **Results to Date**

- 9/10 participants indicated that they would be likely to make changes in their practices based on the information presented
- 5/9 measures improved significantly between pre-test and delayed-post-test data
- 98% of participants gave this CME program the 2 highest ratings compared to other events



Adam Friedlander, MD



Barry Make, MD

**For more information or to register for an upcoming program, please call 1.800.844.2305 or visit [www.njhealth.org/proed](http://www.njhealth.org/proed).**

## **Pediatric Food Allergy Diagnostic Center Opens**

The NJ4kids program at National Jewish Health opened a dedicated Food Allergy Diagnostic Center in May. "Food allergies comprise a growing public health challenge with nearly eight percent of children in the U.S. having a food allergy," stated Erwin Gelfand, MD, Chairman of the National Jewish Health Department of Pediatrics.

The Food Allergy Diagnostic Center at National Jewish Health is a unique facility that enables our physicians to conduct allergy testing and diagnostic food challenges in a comprehensive and safe setting solely dedicated to children with food allergies.

## **Grant Launched Asthma CME Program Across U.S.**

National Jewish Health was awarded an unrestricted educational grant from Genentech-Novartis and AstraZeneca to produce "*Regaining Control of Difficult Asthma*," a series of Continuing Medical Education (CME) activities designed to update healthcare providers regarding the National Heart Lung and Blood Institute's Asthma Guidelines from the National Asthma Education and Prevention Program which were released in September 2007.

Co-chaired by Harold Nelson, MD, and Stanley Szeffler, MD, both of whom served on the Expert Panel Report (EPR) 3 Committee and were instrumental in developing the new Asthma Guidelines, the CME program included:

- 21 live dinner meeting lectures by a National Jewish faculty member or former Fellow, an Audience Response System and interactive Q&A session
- An online education tool created by TheraSim that simulates the diagnosis and treatment of a patient in an actual office setting.
- A condensed pocket guide of the 2007 Asthma Guidelines
- Pre and post test evaluations as well as follow-up surveys will be used to analyze the effectiveness of this program and to develop needs assessments for future programs.

**If you missed the live program, visit [www.therasim.net/njh01](http://www.therasim.net/njh01) to participate in the online version. Call 303-398-1000 or email [ProEd@njhealth.org](mailto:ProEd@njhealth.org) to request copies of the Asthma Guidelines pocket guide.**

## Asthma Study: New Dry Powder Inhaler Works on Cellular Level

### Clinical Research

The Weinberg Adult Clinical Research Unit at National Jewish Health is conducting a study for a new investigational dry powder formulation inhaler known as Aero-001.

This novel new inhaled treatment seeks to prevent asthma symptoms by addressing trigger mechanisms on a cellular level, blocking the inflammatory response before symptoms arise. These mediators have been widely used in clinical trials before, but this is the first attempt at delivering treatment via a dry powder inhaler as opposed to more invasive delivery methods.

### Study specifics:

- Participants 18+ years old, with moderate – severe asthma (FEV<sub>1</sub> % greater than or equal to 50% – less than or equal to 95%, with 12% reversibility)
- Non-smokers for at least 6 months, having less than a 10-pack year history of smoking
- Study duration – 4 months long
- 75% chance of receiving Aerovant drug
- Participants will receive \$575 for completing study in addition to many tests and study drug

For more information about this important new study contact the Weinberg Clinical Research Unit at 303.398.1911.

### New Tests Available from ADx – Immunodeficiency Disease

Primary Immunodeficiency Disease (PID) – represented by defects in humoral, cellular or combined, phagocytic, complement, or Toll-like receptor pathways – has a broad spectrum of severity and is significantly under-diagnosed. National Jewish Health has recently introduced important new laboratory tools for diagnosing PID. These include a written guide to aid in the laboratory diagnosis of PID and a simplified process for ordering screening tests.

### Other newly developed tests related to PID are:

Common variable immunodeficiency (CVID) diagnosis. This is a frequent form of PID that requires careful diagnostic steps to justify appropriate payer reimbursement for intravenous immunoglobulin therapy. Now available are: a new memory B cell phenotyping panel and individual tests for BAFF-R, CD40, ICOS, and CD40L. Together with the existing memory B cell panel, ADx provides the broadest available menu of tests to definitively diagnose CVID.

Defects in Toll-like receptors (TLR), are an important component of innate immunity. New ADx tests include a unique and simple approach to assessing TLR defects – a single screening test to identify a signaling defect in any of nine different TLRs. The test relies on stimulation of a patient's blood mononuclear cells with purified ligands for each TLR, and is available for both diagnostic use and clinical studies.

Contact the Advanced Diagnostics Laboratories (ADx) at 800.550.6227, option 6 for more information.

## Benefits of Referring Diagnostic Services to National Jewish Health

1. Detailed and quick reporting
2. Competitively priced
3. Ease of appointment availability
4. State-of-the-art technology
5. Unique testing capabilities
6. Highly trained and respected providers
7. Comprehensive services
8. Conveniently located in one location with ample free parking
9. Patient-focused approach
10. Diagnostic services tailored to each patient's needs

**Call 303.270.2420**

## Case Connection

We are pleased to introduce a new section, called Case Connection. Our goals are to illustrate the detailed care and collaboration included in our diagnosis and treatment.

## Asthma or Sarcoidosis?

Gregory P. Downey, MD, Pulmonologist

Ali Musani, MD, Interventional Pulmonologist

### Presentation:

A 50 year-old obese woman presented for evaluation of asthma and a pleuro-pulmonary mass. She has a history of anaphylaxis, asthma and a pleural-based mass was noted in the area of the right upper lobe on a recent CT scan of her chest. The patient is a lifelong nonsmoker who can walk 1 to 2 miles on a flat surface, but has difficulty with inclines, especially in hot and humid weather. She has no history of childhood asthma, atopy, or eczema, and no history of nasal polyps or aspirin sensitivity. She has not worked in any industrial setting, has not mined, sandblasted or used ceramics and has no history or asbestos exposure. The patient consumes 1 to 3 ounces of alcohol per week but has never used marijuana. She has stable vitals and no acute symptoms.

### Current medications:

Albuterol metered-dose inhaler 2 puffs q.u.i.d. p.r.n. Used prior to some exercise to improve symptoms. Monitors her asthma with a peak flow meter—best reading is 400, worst is 200.  
Pulmicort nebulas b.i.d.  
Formoterol by nebulizer b.i.d.  
Combination of albuterol and ipratropium by nebulizer q.i.d.  
Prednisone 10 mg p.r.n.  
Allegra p.r.n.  
Vitamin C 1,000 mg per day  
Calcium supplement dose unknown

### Environmental factors:

Patient lives on rural Midwestern organic farm in a house with baseboard electric heat and high-efficiency wood stove. The house has hardwood floors, but no problem with mold or dampness.

### Past medical history:

The patient has suffered from depression, vocal cord nodules, elevated liver function tests, neutropenia, obstructive sleep apnea (current treatment is CPAP 5 cm H<sub>2</sub>O) restless leg syndrome, gastroesophageal reflux disease – mild esophageal stricture and has a hiatal hernia.

In 1991 she was in a severe motor vehicle accident and sustained injury to the chest, no chest tube or hemothorax, but patient could not recall if she suffered rib fractures. She has gained 40 pounds over the last 3 to 4 years. Patient has no fevers, chills, or night sweats.



PET/CT 40 Slice High Definition Scan

### Family history:

Father – asthma and COPD.

Paternal grandmother – COPD, asthma, lung cancer.

### Assessment:

The patient experienced anaphylaxis after oral amoxicillin (edema of the lips and larynx), leading to severe respiratory distress. She was not intubated nor given a tracheostomy, but was treated in ED with epinephrine and IV steroids. She is now sensitive to strong odors, cleaning agents, and strong perfumes which causes a “throat closing sensation” and difficult breathing. She is successfully self-treated with Benadryl.

She was hospitalized with her first asthma attack and was treated with albuterol, ipratropium by nebulizer and oral prednisone. She was diagnosed with asthma and given a prescription for Advair 100/50 that she took regularly. Allergy skin tests were negative. She had another severe asthma attack requiring hospitalization and was treated with nebulized bronchodilators and corticosteroids. She was sent home on 60 mg of prednisone for 10 days with a slow taper. Two months later she had another severe asthma attack and was started on additional medications including nebulized formoterol, budesonide inhalers and a prednisone boost with a slow taper. She also had 1 injection of a parenteral corticosteroid. She has noticed that asthma attacks occur during periods of high stress and in hot, humid and dusty weather.

Her vitals are stable. The patient’s cardiac examination revealed S1-S2, no added sounds. Her respiratory exam revealed good bilateral sounds with no rales or rhonchi. She is obese; abdomen is benign, nontender, nondistended, no organomegaly. No cyanosis, clubbing or edema in extremities. No gross neurological deficits. No rashes, swollen joints, and no lymphadenopathy in the submandibular, cervical, clavicular or axillary areas.

## Assesment:

1. Possible asthma. Her history is consistent with asthma, but pulmonary function testing at present reveals evidence of gas trapping but no reversible airflow limitation. The prednisone taper may be masking airways reactivity. Repeat pulmonary function testing after she's been off systemic glucocorticoids for 4 to 6 weeks. Recommendations: regular use of inhaled budesonide and bronchodilators and follow-up treatment with local physician.
2. Vocal cord dysfunction (VCD) evaluation and laryngoscopy did not demonstrate classical vocal cord dysfunction. The patient made marked improvement in symptoms with speech therapy. She exhibits symptoms on exposure to smoke or strong odors. Recommendations: use speech exercises to minimize the use of prednisone and inhaled anti-asthma medications.
3. Gastroesophageal reflux disease was confirmed by pH probe. Recommendations: lose weight, elevate the head of her bed, use a proton pump inhibitor and avoid foods known to worsen reflux previously identified by her primary physician.

4. Right upper lobe pleural-based mass demonstrated noncaseating granulomatous inflammation via VATS lung biopsy. Bacterial cultures have been and remain negative. There is no evidence of mycobacterial or fungal infection. The histological pattern of the pleural-based mass is compatible with sarcoidosis. Diagnosis of exclusion is sarcoidosis due to the absence of additional symptoms or progression as documented by pulmonary function tests or radiography.

5. Patient education included asthma, vocal cord dysfunction, GE reflux, upper lobe mass, sarcoidosis, weight management and medications.

## Management:

There is no indication for immunosuppressive treatment with prednisone or methotrexate at this juncture without evidence of pulmonary parenchymal involvement or systemic disease including cutaneous, cardiac, renal, or neurological involvement. Continual clinical monitoring with intermittent pulmonary function tests and CT scans over the next few years. See local physician for close monitoring and plan a return to National Jewish Health for continued monitoring of sarcoidosis and potential need for treatment.

## Diagnosics

Chest x-ray for asthma evaluation showed an abnormality, prompting a CT scan. CT demonstrated right upper lobe pleural base mass and mediastinal adenopathy. Repeated CT in six months demonstrated no change.

Cultures of the lung and pleural-based mass were negative and remain negative six and 12 months later.

Bronchoscopy*	Confirmed pleural mass and suggested VATS
Lung biopsy	Negative
Chest x-ray	Lung abnormality
CT scan	Pleural based mass on right upper lobe, scarring and thickening
PET scan*	Right pleural-based mass is intensely positive with > 9 SUV and the right paratracheal lymph node is also positive with an SUV of > 5.5
Pulmonary function*	FEV <sub>1</sub> of 71% and FVC of 73%, ratio is 97%; total lung capacity is 97% of predicted; RV is 154% of predicted; diffusion is 86% of predicted; airway resistance is 328% of predicted, but reduced to 38% with bronchodilator.
Methacholine challenge test*	With the highest methacholine concentration of 25 mg/mL, her FEV <sub>1</sub> went down to 1.56 from baseline of 1.76 and her FVC went down to 1.94 from baseline of 2.38.
Video-assisted thoracoscopic surgery at Rose Medical Center (National Jewish Health partner)	Removed pleural-based mass, biopsy of mediastinal nodes, gross visual inspection showed fibrotic tissue, biopsy revealed evidence on non-caseating granulomas. No evidence of cancer, mesothelioma or lymphoma. Special stains for fungus and AFB were negative
Laryngoscopy*	Negative for VCD
24-Hour pH Probe* Laboratory testing	Significant gastroesophageal reflux disease

\* Performed at National Jewish Health

## Use a Combination of Tests to Diagnose Food Allergies

David Fleischer, MD, Assistant Professor, with the NJ4kids program at National Jewish Health, recently found that eczema patients were more likely to have a misdiagnosis of food allergies, probably due to an over reliance on simple screening tests leads to over-diagnosis of food allergy among a wider population.

A recent study evaluated 125 National Jewish Health pediatric patients with a combination of blood tests, skin tests, medical history and oral food challenges — the gold standard of food allergy diagnosis. The results showed that these evaluated children could safely consume 508 of the suspected 917 allergenic foods by the end of their stay at National Jewish Health; more than half the foods eliminated from the patients' diets had been done so unnecessarily.

Dr. Fleischer is part of the NJ4kids allergy and immunology team who see patients in Denver, Highlands Ranch, Aspen Valley and Vail Valley.

Contact our Physician Line at [1.800.652.9555](tel:1.800.652.9555).

## National Jewish Pediatric Care Comes to Vail

The second Friday of each month, the National Jewish Health NJ4Kids Program physicians see patients at the Shaw Pavilion, 320 Beard Creek Road, Edwards, Colorado—for allergies, asthma, atopic dermatitis, recurrent infections, sinusitis and pulmonary conditions.

David Fleischer, MD, Pediatric allergy/immunology

Gary Larsen, MD, Pediatric pulmonology

To schedule an appointment, patients and physicians may call [1.800.621.0505](tel:1.800.621.0505), Option 4.

## East Denver Pulmonary Now Located at National Jewish Health Denver

East Denver Pulmonary physicians, Susan Kotake, MD, William Pluss, MD, and Jerry Pluss, DO, have relocated their practice to National Jewish Health. You may continue to refer directly to them by calling—[1.800.652.9555](tel:1.800.652.9555). They continue to provide pulmonary consultations at Rose Medical Center.

## Direct Patients to Denver's Channel 7 for Health Tips from National Jewish Health

National Jewish Health teamed up with 7News in Denver to provide community health tips twice a month. The tips developed by National Jewish Health physicians air on 7News *this Morning* during the 5am and 6am newscasts. Copies of the broadcast segments are available on the National Jewish Health Web site and the National Jewish Health YouTube page. Topics have included:

- Tips for Quitting Smoking
- Tips for Dealing with Childhood Obesity
- Tips for Maintaining Good Sleep Habits
- Steps to Get Ahead of the Spring Allergy Season
- Don't Let Relapse Sabotage Your Resolution
- Tips to Keep a Healthy Heart

Look for National Jewish Health on [Facebook](#), [Twitter](#) and [YouTube](#).



## Online Medical Education

### Some asthma patients present unique challenges.

This online program is designed to update your knowledge of the NHLBI EPR-3 Asthma Guidelines in relation to the control of severe, persistent asthma and improve the health outcomes of your patients.

The **TheraSim® Clinical Simulator** is an exciting online medical education tool that allows clinicians to treat a virtual patient as if they were in a clinical setting. During a patient case simulation, clinicians will have the opportunity to:

- Review patient history and exam notes
- Make diagnoses
- Order tests
- Prescribe therapies

With every decision made, the **TheraSim® Clinical Simulator** will provide evidence-based clinical guidance from thousands of sources including guidelines and pharmacological databases. At the end of the simulation, closing commentary from experts in the field solidifies the main points of the case and peer to peer statistics will be shared on an aggregate level to participants.

#### Cases Developed by National Jewish Health Faculty:

Harold Nelson, MD, and Stan Szeffler, MD

**Target Audience:** Pulmonologists, Allergists, Nurse Practitioners and Physician Assistants.

**2 CME Credits**

## Regaining Control of Severe Asthma

TheraSim® Clinical Simulator



**National Jewish Health®**

Science Transforming Life®

**Visit [www.therasim.net/njh01](http://www.therasim.net/njh01) to participate!**

The screenshot displays the TheraSim Clinical Simulator interface. At the top, there is a navigation bar with tabs for INTRO, HISTORY, ORDER TESTS, GRAPHS, DIAGNOSIS, ORDERS, and RESULTS. Below the navigation bar, the patient's name 'Janet S.' is shown next to a 'Meet the Patient' link. A patient profile section includes a photo of Janet S. and the following information:

Patient ID:	NJH01-01
Age:	40 years
Gender:	Female
Weight:	81 Kg
Height:	170 cm
BMI:	28

Below the patient profile, there is a 'Patient Profile' section with a detailed description of the patient's medical history and symptoms. The text describes Janet as a 40-year-old woman with chronic nasal congestion and post-nasal drip, experiencing heartburn and acid regurgitation. It also mentions her respiratory symptoms and her inability to participate in more vigorous activities due to her asthma.

Sample patient case simulation.

This program was made possible by educational grants from Genentech and Novartis and from AstraZeneca.

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