

Mucus: A “Breathtaking” Troublemaker

Mucus... a simple word that can make the manliest of men groan and grimace. A popular medical dictionary defines it “as the clear viscid secretion of mucous membranes, consisting of mucin (a carbohydrate-rich glycoprotein), epithelial cells, leukocytes, and various inorganic salts suspended in water.” The majority of us know it as “junk,” “crud,” “goo,” or any number of descriptive nouns.

Described below are three of the body’s mechanisms that work together to protect and defend the respiratory system.

1) Mucociliary Clearance System: The respiratory system produces mucus consistently, day in and day out. Mucus is secreted by “goblet” cells that are embedded in the mucous membranes lining the respiratory tract. This layer of sticky fluid traps dirt, germs, and other irritants, before they can proceed further into the lungs. Underneath this layer, beating approximately 20 times per second, are cilia— tiny, hair-like structures that sweep all the debris up and out of the lungs to the next level of defense... the cough reflex.

2) Cough reflex: As waves of mucus move up the airways it travels to a point in the lungs that initiates a cough which helps propel the mucus further up the windpipe, where it is either swallowed or spit out. Generally, in normal situations,

we swallow mucus continuously throughout the day. However, when there is a tremendous amount of mucus produced (more about this later), swallowing such large quantities can cause nausea and even vomiting. Many of us try to spit these large amounts of mucus out, which is no small task since it has to bypass our gag reflex to be expelled.

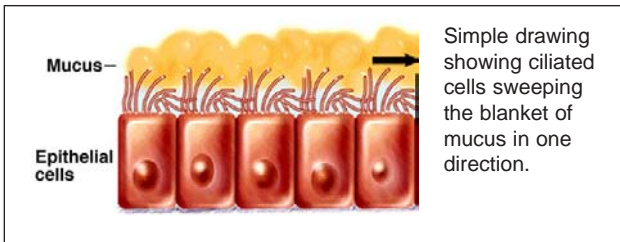
3) Alveolar clearance: Should dirt or microscopic particles reach the alveoli (air sacs) then another unique defense mechanism is called upon... alveolar macrophages. Macrophages are specialized defender cells that capture and engulf foreign material to eliminate them from causing any harm in the lungs.

Continued on page 2

IN THIS ISSUE

- **Mucus: A “Breathtaking” Troublemaker**
- **“Smooth Sailing” 12th Annual Cruise for Respiratory Patients**
- **A Breath of Hope: 100 Years**
- **New Year’s Resolutions for Breathing Partners**

Continued from Front page



The whole topic of mucus and its troublesome attributes centers around balance. In a healthy person, the amount of mucus secreted is balanced against the amount cleared. The consistency of the mucus is also balanced: it is thick enough to trap harmful material but thin enough to be moved easily by the cilia. That's why it is so important to drink at least 6-8 glasses of **water daily**. When events occur to upset these balances, we become more aware of this natural protectant and try to find solutions or ways to become rebalanced.

All of these processes basically go unnoticed until something triggers an overproduction of mucus. A cold, the flu, hay fever or other airborne allergens, inhalation of irritating substances including cigarette smoke, and lung diseases such as COPD, chronic bronchitis, asthma, or bronchiectasis are often the cause of overproduction of mucus.

In the case of a common cold, we often resort to taking a variety of cold remedies that ease the symptom of overproduction of mucus, whether it be a runny nose, productive cough, or sinus drainage. These "quick fixes" run the gamut from expectorants to cough suppressants— all acceptable for a healthy individual, but they need to be used cautiously when you have a known lung problem.

A vicious cycle leading to a chronic respiratory problem can begin when bacteria or other irritants invade lung tissue, triggering an inflammatory response. When airway clearance mechanisms are impaired, normal defenses fail. Bacteria gain a foothold, multiply, and cause infection. Mucus accumulates and inflammation intensifies. A tremendous amount of mucus is produced leading to airway obstruction and mucus plugging. By employing some type of *airway clearance therapy* (see *side bar*), this vicious cycle can be stopped or diminished.

Airway Clearance Therapies:

Chest Physiotherapy (CPT or Chest PT)
Manual percussion and vibration
Postural Drainage or Autogenic Drainage
Positive Expiratory Pressure Assistive Devices:

Flutter®
Acapella®
TheraPEP®

Quake® (see Ed. Note)

Mechanical Devices

The Vest™ Airway Clearance System
Intrapulmonary Percussive Ventilation Device

CoughAssist Mechanical Insufflation-Exsufflation Devices

Pharmaceutical Strategies

Ed. Note: The Quake® offers comprehensive and convenient secretion clearance therapy in a portable, easy-to-use, handheld device. It is available from the Respiratory Alliance for \$35.00, which includes shipping.



A Breath of Hope: 100 years

In celebration of our Centennial Anniversary, a compelling multi-media exhibit was produced and housed at the Senator John Heinz History Center from December 28, 2004 through July 4, 2005.

The exhibit chronicled the history of tuberculosis in Pittsburgh and highlighted the work of the American Respiratory Alliance, once known as the Tuberculosis League of Pittsburgh.

The viewpoint of the physicians and nurses, as well as the patients and their family members who benefited from the dedicated efforts of the TB League were captured in a video documentary especially produced for the exhibit. To borrow a DVD or VHS copy of the documentary, please call us at 1-800-220-1990.

Smooth SailingSM

12th Annual Cruise for Respiratory Patients

coordinated by

American Respiratory Alliance of Western Pennsylvania



St. Thomas, Tortola, and Samana, Dominican Republic aboard the Norwegian Spirit from New York City Saturday, September 2 through Sunday, September 10, 2006

Trip includes:

- 8 nights aboard the *Norwegian Spirit*
- 3 Ports of Call: St. Thomas, USVI; Tortola, BVI; and Samana, Dominican Rep
- All on-board meals featuring Norwegian's "Freestyle Dining"
- Shipboard gratuities (an \$80 value/person)
- Port and Departure taxes including security fees
- Oxygen and Equipment, if needed
- Educational seminars (optional)
- Volunteer Medical Staff
- All baggage handling

Inside stateroom (Deck, Category JJ) is \$1,299.00 per person/double occupancy (pp/do); Balcony/Oceanview stateroom (Deck, Category BD) is \$1,499.00 pp/do. Oxygen, other respiratory equipment (except vents, BiPAP and CPAP), and standard wheelchairs will be provided free of charge. Trip cancellation insurance is offered (\$91.00 per person) and we strongly encourage you to enroll when you make your reservation to qualify for the waiver of the pre-existing medical conditions clause.

The above fares do **NOT** include roundtrip motorcoach transportation from Western Pennsylvania to New York City. Estimated cost for roundtrip ground transportation is \$125-\$150 per person, depending on the number of travelers from our area.

To receive a cruise packet with reservation and insurance forms, please call:

1-800-220-1990



New Year's
Resolutions
 for Breathing Partners

“Time flies” as the saying goes, and with each New Year we get an opportunity to start fresh. The New Year focuses our attention on the things we’ve accomplished and the things we haven’t. We get a new chance to make some changes that will be positives in the coming New Year.

- If I haven’t stopped smoking yet, I will make quitting my priority in 2006! I can get some guidance from the Alliance by calling for “Ways to Quit” and “Keys to a Smoke Free Life.”
- Even though I’m short of breath, I will try to get some exercise each day— NO EXCUSES! Even during bad weather, I can still walk around the house or do simple chair exercises.
 (**Ed. note:** Watch “Sit and be Fit” on PBS(WQED/Pittsburgh), Monday, Wednesday, and Friday at 2:30 PM.

- I’ll order my cold weather mask from the Respiratory Alliance, so that I can breathe a little easier when I’m outside in the cold.
- I won’t procrastinate any longer by getting my affairs in order. I’ll start by writing my health care directives (also known as a living will). I will also write, review, and/or revise my will so that my wishes will be followed without confusion or frustration for my family or friends. A copy of “Advance Medical Directives” is available from the Respiratory Alliance... just call.
- I will check out the new Medicare Part D (prescription coverage) plans. I can call 1-800-MEDICARE (1-800-633-4227) 24/7 or Apprise, the state’s free health insurance counseling program for older residents at 1-800-783-7067 for more information. In addition, I will try to take my medicines as prescribed and not skip doses to save some money.

- _____
- _____
- _____



Cranberry Professional Park
 201 Smith Drive, Suite E
 Cranberry Township, PA 16066

Non-Profit
 U.S. Postage
 PAID
 Pittsburgh, PA
 PERMIT NO. 25