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NEWS

# RSNA Press Release

## CT Helps Find Cause of Puzzling Cough in WTC Rescue Workers

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### At A Glance

- "WTC cough" is an uncharacterized ailment of rescue workers at the World Trade Center site who were exposed to airborne toxins on or after Sept. 11, 2001.
- Specialized CT scans identified WTC cough as air trapping, which causes shortness of breath, dry cough or wheezing.
- WTC cough is being studied for the possibility of other adverse health effects.

CHICAGO - Radiologists are one step closer to solving a mysterious condition affecting World Trade Center (WTC) rescue and recovery workers.

Air trapping, a manifestation of obstructed lung airways often seen in smokers and the elderly, was identified in 25 of 29 rescue and recovery workers suffering from "WTC cough," according to early research results presented today at the annual meeting of the Radiological Society of North America (RSNA).

"Our research further corroborates that people at the World Trade Center site on Sept. 11, 2001, and the days after were exposed to environmental toxins that initiated airway problems," said lead author David S. Mendelson, M.D., associate professor of radiology at the Mount Sinai School of Medicine in New York City.

The diagnosis was made using end-expiratory high-resolution CT, a rarely used test that is performed after patients have expelled their breath. In a typical chest CT, the scan is performed during a deep breath hold. Twenty-nine rescue and recovery workers whose respiratory complaints could not be clearly characterized by routine pulmonary function tests were evaluated with standard CT and end-expiratory CT. The end-expiratory CT revealed abnormalities not detected on the standard CT.

These patients had been referred by the WTC Health Effects Treatment Program, a dedicated clinical effort for World Trade Center rescue and cleanup workers that has evaluated about 900 patients since January 2003. Approximately 40 percent of these patients have been identified as having new or exacerbated respiratory problems since their work at Ground Zero. Researchers speculate that small-airway disease has resulted from exposure to large amounts of toxic dust particles found at the WTC site.

Many of the impairments are clearly obstructive, but there also appears to be a patient subgroup with definite symptoms in whom conventional tests fail to show the nature and extent of the obstruction. The term "WTC cough" was coined to describe ailments that


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could not be clearly characterized in this group, but the addition of end-expiratory CT revealed abnormalities beyond the mild changes that can be seen in smokers and the elderly.

Although thought to be benign, air trapping is symptomatic — causing shortness of breath, dry cough or wheezing — and is treated as a variant of asthma, with inhaled steroids and bronchodilators.

"We remain attentive to the possibility of other adverse health effects that still may occur," said co-author Rafael de la Hoz, M.D. "We have seen evidence of improvement in some patients, but certainly not in all. We are hoping to secure enough funding to systematically continue the characterization and treatment of these effects."

The U.S. Centers for Disease Control and Prevention (CDC) estimates that 10,000 Fire Department of New York personnel and 30,000 other workers and volunteers were exposed to environmental stress, toxins and other physical hazards during rescue and recovery efforts.

Co-authors of the paper being presented by Dr. Mendelson are Dr. de la Hoz, Mark Roggeveen, M.D., Stephen Levin, M.D., and Robin Herbert, M.D.

| **Abstract:** | • Air Trapping Detected on End-Expiratory High Resolution CT in Symptomatic World Trade Center (WTC) Rescue and Recovery Workers |
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Images (.JPG format)

Air Trapping Grade 3 (0–4)

Air Trapping Grade 0 (0–4)

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