# World Trade Center rescue, recovery workers have had increased incidence of certain types of cancer

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Among rescue and recovery workers exposed to the dust, debris, and fumes following the World Trade Center terrorist attack, there was an increased incidence of prostate and thyroid cancers and multiple myeloma, although it is not clear how big a factor medical screening and non-WTC risk factors contributed to these increases, according to a study in the December 19 issue of *JAMA*. The authors did not find a statistically significant increased incidence for all cancer sites combined, and note that the findings on the three cancers that did increase should be viewed with caution for several reasons, including that they were based on a small number of cancers, multiple comparisons, and a relatively short follow-up time.

"The terrorist attacks on the World Trade Center (WTC) on September 11, 2001, claimed more than 2,700 lives and exposed hundreds of thousands of people to dust, debris, pulverized building materials, and potentially toxic emissions, resulting in short- and medium-term health effects," according to background information in the article. The dust, smoke, and aerosols were complex mixtures of volatile chemicals and respirable particulate matter and contained known and suspected carcinogens. "The presence of carcinogenic agents raises the possibility that exposure to the WTC environment could eventually lead to cancers."

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conducted a study to evaluate cancer incidence among WTC rescue/recovery workers and volunteers and those not involved with rescue/recovery work. The observational study included 55,778 New York State residents enrolled in the World Trade Center Health Registry in 2003-2004, including rescue/recovery workers (n = 21,850) and those not involved in rescue/recovery (n = 33,928), who were followed-up from enrollment through December 2008. Within-group comparisons using various models also assessed the relationship between intensity of World Trade Center exposure and selected cancers.

Cancer cases were identified through linkage with 11 state cancer registries. Standardized incidence ratios (SIRs) adjusted for age, race/ethnicity, and sex were computed with 2003-2008 New York State rates as the reference, focusing on cancers diagnosed in 2007-2008 as being most likely to be related to exposure during September 11 and its aftermath. The total and site-specific incidence rate differences between the study population and the New York State population in 2007-2008 also were calculated.

Through December 31, 2008, 1,187 incident cancers were reported among the 55,778 eligible enrollees. Of these 1,187 cancers, 439 (37 percent) were diagnosed among rescue/recovery workers and 748 (63 percent) were among participants not involved in rescue/recovery. The median (midpoint) age at diagnosis across all cancer sites was 57 years. For all sites combined, cancer incidence was not significantly different from that in the reference population during either the early period (enrollment through 2006) or the later period (2007-2008). The researchers found that of the 23 cancer sites investigated, 3 had significantly elevated incidence during the later period: prostate, thyroid, and multiple myeloma. Of these 3, thyroid cancer also was significantly elevated during the early period.

"No increased incidence was observed in 2007-2008 among those not

involved in rescue/recovery. Using within-cohort comparisons, the intensity of World Trade Center exposure was not significantly associated with cancer of the lung, prostate, thyroid, non-Hodgkin lymphoma, or hematological cancer in either group," the authors write.

"Given the relatively short follow-up time and lack of data on medical screening and other risk factors, the increase in prostate and thyroid cancers and multiple myeloma should be interpreted with caution. The etiological role of WTC exposures in these 3 cancers is unclear. Longer follow-up of rescue/recovery workers and participants not involved in rescue/recovery is needed with attention to selected cancer sites and to examine risk for cancers with typically long latency periods."

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