

**Enduring Mental Health Morbidity and Social  
Function Impairment in World Trade Center  
Rescue, Recovery and Cleanup Workers:  
The Psychological Dimension of an  
Environmental Health Disaster**

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Enduring Mental Health Morbidity and Social Function Impairment in World Trade Center  
Rescue, Recovery and Cleanup Workers: The Psychological Dimension of an Environmental  
Health Disaster

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Running title: World Trade Center Rescue Worker Mental Health Morbidity

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**ABBREVIATIONS USED:**

CI	Confidence interval
MSP	Worker and Volunteer Medical Screening Program
NIOSH	National Institute for Occupational Safety and Health
OR	Odds ratio
PCL	PTSD Symptom Checklist
PHQ	Patient Health Questionnaire
PTSD	Post-traumatic stress disorder
WTC	World Trade Center

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## **ABSTRACT**

**BACKGROUND:** The World Trade Center (WTC) attacks exposed thousands of workers to hazardous environmental conditions and psychological trauma. In 2002, in order to assess the health of these workers, Congress directed the National Institute for Occupational Safety and Health to establish the WTC Worker and Volunteer Medical Screening Program. This program has established a large cohort of WTC rescue, recovery and cleanup workers. We have previously documented extensive pulmonary dysfunction in this cohort related to toxic environmental exposures. **OBJECTIVES:** To describe mental health outcomes, social function impairment and psychiatric comorbidity in the WTC worker cohort, as well as perceived symptomatology in workers' children. **METHODS:** Ten to 61 months after the WTC attack, 10,132 WTC workers completed a self-administered mental health questionnaire. **RESULTS:** 11.1% of workers met criteria for probable PTSD; 8.8% - probable depression; 5.0%- probable panic disorder; 62% - substantial stress reaction. PTSD prevalence was comparable to that seen in returning Afghanistan war veterans and much higher than in the US general population. Point prevalence declined from 13.5% to 9.7% over the five years of observation. Co-morbidity was extensive and included extremely high risks for impairment of social function. PTSD was significantly associated with loss of family members and friends, disruption of family, work and social life and higher rates of behavioral symptoms in their children. **CONCLUSIONS:** Workers' service in 9/11 recovery operations is associated with chronic impairment of mental health and social functioning. Psychological distress and psychopathology in WTC workers greatly exceed population norms. Surveillance and treatment programs continue to be needed.