

Supplementary Online Content

Colbeth HL, Genere N, Hall CB, et al. Evaluation of medical surveillance and incidence of post-September 11, 2001, thyroid cancer in World Trade Center–exposed firefighters and emergency medical service workers. *JAMA Intern Med*. Published online April 20, 2020. doi:10.1001/jamainternmed.2020.0950

eTable 1. Characteristics of WTC-Exposed Fire Department Rescue/Recovery Workers Diagnosed With and Without Thyroid Cancer From 09/12/2001 to 12/31/2018

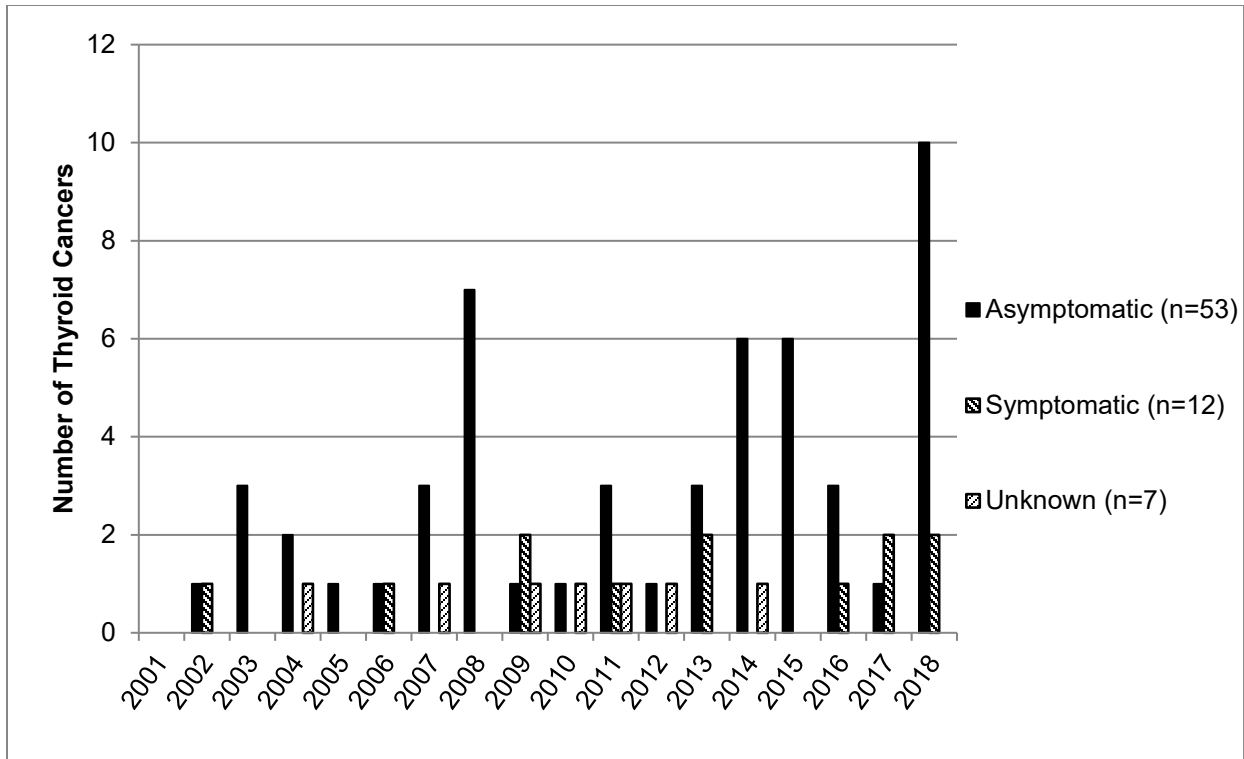
eFigure. Fire Department Male Thyroid Cancer Cases Diagnosed per Year by Detection Method, 2001-2018

eTable 2. Age-Adjusted Relative Rates for Secondary and Sensitivity Analyses

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Characteristics of WTC-exposed Fire Department rescue/recovery workers diagnosed with and without thyroid cancer from 09/12/2001 to 12/31/2018.

Variable	All Cases ^a	Non-Cases
	(n=72)	(n=14,915)
WTC arrival group		
Morning of 9/11	13 (18.1)	2289 (15.4)
Afternoon of 9/11	32 (44.4)	6841 (45.9)
9/12/2001	12 (16.7)	2737 (18.4)
9/13/2001-9/24/2001	14 (19.4)	2606 (17.5)
After 9/24/2001	1 (1.4)	442 (3.0)
WTC work duration - months		
Median [IQR]	3.0 [1.0 – 6.0]	2.0 [1.0 - 5.0]
Sex		
Male	72 (100)	14,915 (100)
Age on 9/11		
Median [IQR]	38.9 [32.8 - 47.6]	40.0 [33.7 - 46.3]
Race		
White	64 (88.9)	13137 (88.1)
Nonwhite	8 (11.1)	1778 (11.9)
Current smoking status		
Never smoker	51 (70.8)	9132 (61.2)
Ever smoker	19 (26.4)	5514 (37.0)
Unknown	2 (2.8)	269 (1.8)
BMI at end of follow-up ^b		
Mean (SD)	30.6 (3.8)	30.4 (4.9)
Work assignment		
Firefighter	65 (90.3)	13178 (88.4)
Emergency medical service	7 (9.7)	1737 (11.7)
Deceased		
Yes	2 (2.8)	558 (3.7)
Age at diagnosis		
Median (IQR) [range]	50.0 (44.2, 58.2) [26.0, 76.3]	N/A
Years to diagnosis post-9/11		
Median [IQR]	11.5 [6.8 - 14.5]	N/A
Testing pre-diagnosis ^c		
Yes	38 (52.8)	N/A
Thyroid cancer histology		
Papillary	70 (97.2)	N/A
Follicular	2 (2.8)	N/A
Abbreviations: WTC=World Trade Center; BMI=Body Mass Index.		
^a Includes 7 cases in which no method of detection could be determined.		
^b BMI data only available for n=68 cases and n=14,579 non-cases.		
^c Includes chest computed tomography (CT), sinus CTs, sleep studies, gastrointestinal tests, echocardiograms, MRIs of the head and neck, stress tests, PET scans, cervical imaging, or surgery.		



eFigure. Fire Department male thyroid cancer cases diagnosed per year by detection method, 2001-2018. Diagnosis years of confirmed Fire Department of the City of New York thyroid cancer cases, separated by asymptomatic, symptomatic, and unknown detect method categorizations.

eTable 2. Age-adjusted relative rates for secondary and sensitivity analyses.

Model	RR	95% CI
<i>Secondary Analyses: World Trade Center Exposure</i>		
Arrival at WTC site morning of 9/11	2.7	1.5-4.8
Arrival at WTC site afternoon of 9/11 or later	2.2	1.6-3.1
High Duration (≥ 3 months WTC site)	2.4	1.6-3.6
Low Duration (< 3 months at WTC site)	2.1	1.4-3.2
Arrival at WTC site morning of 9/11 and High Duration	2.8	1.3-6.1
Arrival at WTC site afternoon of 9/11 or later and Low Duration	2.3	1.6-3.1
<i>Secondary Analysis: Primary analysis restricted to papillary thyroid cancer cases</i>		
Overall	2.4	1.7-3.2
Early period ^a	2	1.2-3.3
Late period ^b	2.5	1.6-3.9
Asymptomatic	3.2	2.1-4.7
Symptomatic	0.9	0.5-1.7
<i>Sensitivity Analysis: Primary analysis restricted to 30-79 years</i>		
Overall	2.3	1.7-3.2
Early period ^a	1.8	1.1-3.0
Late period ^b	2.5	1.6-3.8
Asymptomatic	3.2	2.1-4.8
Symptomatic	1	0.5-1.8
<i>Sensitivity Analysis: Primary analysis restricted to papillary thyroid cancer cases and 30-79 years</i>		
Overall	2.4	1.7-3.3
Early period ^a	1.9	1.2-3.3
Late period ^b	2.5	1.6-3.9
Asymptomatic	3.2	2.2-4.8
Symptomatic	1.1	0.6-2.1

^a9/12/2001-12/31/2009^b01/01/2010-12/31/2018