

# Exposure to Agent Orange linked to risk of bladder cancer

June 29 2023, by Elana Gotkine

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Exposure to Agent Orange is associated with a small but significantly

increased risk of bladder cancer among male Vietnam veterans, according to a study published online June 27 in *JAMA Network Open*.

Steven B. Williams, M.D., from the University of Texas Medical Branch at Galveston, and colleagues examined the association between bladder cancer risk and exposure to Agent Orange among 2,517,926 male Vietnam [veterans](#) in a nationwide Veterans Affairs retrospective cohort study. Veterans exposed to Agent Orange were matched to unexposed veterans on age, race and ethnicity, military branch, and year of service entry in a 3:1 ratio (629,907 and 1,888,019 veterans, respectively).

The researchers found that exposure to Agent Orange was associated with a small, but significant, increased risk of bladder cancer (hazard ratio, 1.04). In stratified analyses, Agent Orange was not associated with bladder cancer risk among veterans older than the median age, while those younger than the [median age](#) had a significantly increased risk of bladder cancer (hazard ratio, 1.07). Agent Orange was associated with lower odds of muscle invasive bladder cancer among those with a diagnosis of bladder cancer (odds ratio, 0.91).

"These results support prior investigations and further support bladder cancer to be designated as an Agent Orange-associated disease," the authors write.

Two authors disclosed ties to the [pharmaceutical industry](#).

**More information:** Stephen B. Williams et al, Exposure to Agent Orange and Risk of Bladder Cancer Among US Veterans, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.20593](https://doi.org/10.1001/jamanetworkopen.2023.20593)

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