

Agent Orange exposure linked to Graves' disease in Vietnam veterans, study finds

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Vietnam War-era veterans exposed to Agent Orange appear to have significantly more Graves' disease, a thyroid disorder, than veterans with no exposure, a new study by endocrinologists at the University at Buffalo has shown.

Ajay Varanasi, MD, an endocrinology fellow in the UB Department of Medicine and first author on the study, garnered first prize in the oral presentation category for this research at the American Association of Clinical Endocrinologists annual meeting held in Boston in April.

"Our findings show that Vietnam veterans who came in contact with [Agent Orange](#) are more likely to develop Graves' disease than those who avoided exposure," says Varanasi.

"The autoimmune disorder was three times more prevalent among veterans who encountered the dioxin-containing chemical. We also looked at other thyroid diagnoses, but we didn't find any significant differences in thyroid cancer or nodules."

Agent Orange is a defoliant that was used in Vietnam to destroy crops and reduce jungle foliage that could shelter enemy combatants. The herbicide contains dioxin, which has chemical properties similar to the thyroid hormones.

Graves' disease is an autoimmune disease associated with overactivity of the [thyroid gland](#). This gland releases the hormones thyroxine (T4) and

triiodothyronine (T3), which control body metabolism and are critical for regulating mood, weight, and mental and physical energy levels.

Varanasi and colleagues assessed the prevalence of major thyroid diagnoses in the Veterans Administration electronic medical record database for upstate New York veterans born between 1925 and 1953, the age group that would have been eligible for military service during the Vietnam era. They conducted the research at the Buffalo VA Medical Center.

They compared the frequency of diagnoses of [thyroid cancer](#), nodules, hypothyroidism and Graves' disease in veterans who identified themselves as being exposed to Agent Orange (23,939) or not exposed to Agent Orange (200,109).

"Analyzing data on thyroid conditions, we found no difference in the prevalence of thyroid nodules or cancers between the exposed and non-exposed groups," says Varanasi. "Graves' disease, however, was three times more prevalent in the exposed group.

"Interestingly, hypothyroidism [lower than normal thyroid] was less common in the exposed group."

Varanasi says that in view of the known effects of dioxin on the immune system, further research should be conducted on the increased prevalence of Graves' disease in Vietnam veterans. His research group is planning to continue this investigation either in vitro or in animal models.

Provided by University at Buffalo

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