

ODS Update: Dietary Supplement Use Among Military Personnel

National Institutes of Health (NIH) Office of Dietary Supplements (ODS) sent this bulletin at 05/15/2024 01:00 PM EDT

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ODS Update A NEWSLETTER FOR HEALTH PROFESSIONALS

Strengthening Knowledge and Understanding of Dietary Supplements

May 15, 2024

Recent Developments in Dietary Supplement Science



National surveys provide valuable data on the use of dietary supplements by the U.S. population. However, they leave a critical gap when it comes to supplement use by subpopulations such as military personnel. Military service members are among the highest users of dietary supplements, and they are more likely than civilians to use products that raise safety concerns, such as those promoted for bodybuilding, performance enhancement, or weight loss.

In this issue of *ODS Update*, we feature a series of publications by Joseph Knapik, Sc.D., Dan Trone, Ph.D., Harris Lieberman, Ph.D., and colleagues from the U.S. Department of Defense that assesses dietary supplement use by service members and associated adverse effects. This research was conducted as part of a program to assess dietary supplement use in all military services, detect adverse effects associated with specific supplements, and determine the reasons for supplement use. This program could provide an early signal of potential safety concerns associated with the use of specific products or ingredients in multiple supplements.

Prevalence of dietary supplement use among military personnel: The U.S. Military Dietary Supplement Use Study is a comprehensive survey of military personnel to monitor dietary supplement use. To conduct the study, researchers surveyed a stratified random sample of 26,681 military service members from all military services. The initial study results were published in the November 2021 issue of [The Journal of Nutrition](#) and showed that 74% of service members used a dietary supplement at least once a week, with 40% of users taking five or more dietary supplements per week. About 45% of service members took multivitamin/mineral supplements, 44% took combination products (most often products marketed for bodybuilding or weight loss), 42% protein/amino acids, 31% individual vitamins or minerals, 20% herbs, 9% joint health products, and 5% purported prohormones. In addition, about 31% of service members reported taking “other” dietary supplements, including fish oil. Females, and those who were older, had a higher education level, and higher body mass index, were among those more likely to use dietary supplements. The findings from this study demonstrate that dietary supplement use among military service members is higher than the civilian population and is more likely to include supplements promoted for enhancement of physical performance. This underscores the need for ongoing research in this population.

Adverse effects associated with dietary supplement use among military personnel: In addition to assessing the use of dietary supplements among military personnel, it is important to track adverse effects associated with supplement use. Adverse effects can be caused by the presence of declared or undeclared harmful ingredients, medication interactions, and other factors. Another paper, which also used data from 26,681 participants of the U.S. Military Dietary Supplement Use Study, examined the adverse effects associated with dietary supplements. This paper was published in the October 2022 issue of [Journal of the](#)

[Academy of Nutrition and Dietetics](#), and it found that 18% of dietary supplement users reported one or more adverse effects, including heart palpitations, abdominal pain, nausea, vomiting, diarrhea, muscle cramps, sleep disturbances, and lightheadedness. Adverse effects were most often associated with the use of combination products, followed by purported prohormones, protein/amino acids, multivitamin/mineral supplements, individual vitamins or minerals, herbs, and joint health and other products. Many of these are supplements taken by military personnel for their purported ability to enhance physical performance. In addition, the prevalence of reported adverse effects increased with the number of supplements consumed. The results from this survey highlight the importance of continued surveillance of military personnel to ensure the safe use of dietary supplements since many of the supplements they take are associated with adverse effects. Furthermore, such studies may provide an early signal of safety concerns associated with certain types of dietary supplements and specific ingredients in supplements.

Changes over time in dietary supplement adverse effect reporting among military personnel: Although military service members using supplements may experience adverse effects associated with the use of these products, it is not known whether these adverse effects influence a service member's subsequent use of dietary supplements or the likelihood of reporting adverse effects in the future. An April 2024 study published in [Food and Chemical Toxicology](#) investigated these questions using data from the U.S. Military Dietary Supplement Use Study described above. In addition to the baseline survey, a follow-up survey was completed by 5,778 service members about 16 months later. At follow-up, 15% of service members who took dietary supplements reported at least one associated adverse effect. Surprisingly, service members who used any dietary supplement and reported adverse effects at baseline were more likely, rather than less likely, to use dietary supplements at follow-up. Similarly, these service members were more likely to report adverse effects at follow-up than those who did not report adverse effects at baseline. These findings suggest that experiencing adverse effects does not deter service members from continuing to use dietary supplements in the future, nor does it influence the likelihood of reporting adverse effects from subsequent dietary supplement use.

Conclusion: The authors of these reports have demonstrated that members of the military services are much more likely than their civilian counterparts to use dietary supplements. In addition, military service members frequently use multiple supplements concurrently, a practice known colloquially as “stacking,” and use supplements that are often associated with noticeable adverse effects. Therefore, regular surveys of military populations may provide an optimal surveillance system for early detection of dangerous dietary supplements in the marketplace. They also provide valuable insight into the use of dietary supplements that may provide benefits for service members, such as vitamins, minerals, and essential amino acids.

For more information about research involving dietary supplement use, safety, and efficacy among military personnel, please visit the [Military Nutrition Division of the U.S. Army Research Institute of Environmental Medicine](#).

Upcoming ODS Seminars (virtual meetings)



Wednesday, May 22, 2024, 11:00 a.m. (ET)

[Effects of Soluble Corn Fiber on Bone Metabolism in Children](#)

Cristina Palacios, M.S., Ph.D.—Florida International University, Miami, FL

Wednesday, June 12, 2024, 4:00 p.m. (ET)

[Botanical Dietary Supplement Safety](#)

Joanne Barnes, Ph.D.—Faculty of Medical and Health Sciences, Pharmacy; Auckland, New Zealand

Coming Soon

June ODS Director's Message: ODS at the American Society for Nutrition, #Nutrition2024



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