Use of Dietary Supplements by Military Personnel

The use of dietary supplements has become increasingly popular in recent years among members of the U.S. military. While some supplements may provide benefits to health, others may carry the risk of adverse effects that could compromise the readiness and performance of service members. The tasks and environments for the majority of the military population are similar to those of the general population; however, specific military populations such as Special Forces endure riskier tasks and harsher environments and therefore face heightened physiological demands. Previous Institute of Medicine (IOM) reports have noted that the nutritional needs of specific military populations differ from those of civilians.

While efforts by the military to identify potential benefits of dietary supplements should continue, detriments to health that might seem of little consequence to a civilian could compromise the readiness or performance of a military service member. For example, a deployed service member does not have the option to retreat from a mission and wait until symptoms subside. Guidelines to manage the use of dietary supplements need to be tailored for the military due to the different circumstances that can occur relative to the general civilian population. The methods used to evaluate these products in the general population might not be directly applicable to the military facing special conditions such as extreme heat and cold or risks such as injury or bleeding.

Currently, the military does not have integrated, service-wide policies to guide service members or their commanders on how to use dietary supplements safely. Similarly, there is no formal military pathway by which to report adverse events possibly associated with the use of dietary supplements. There are concerns that, without guidance, the health and performance of those military subpopulations could be compromised.

To address these issues, the U.S. Department of Defense (DoD), the Samueli Institute, and the National Institutes of Health, with additional support from the Food and Drug Administration, requested that the IOM convene an ad hoc Committee on Dietary Supplement Use Among Military Personnel. The IOM committee was charged with reviewing and addressing the use of dietary supplements by military personnel. While recommending the continued evaluation of potential benefits of supplements, the report, Use of Dietary Supplements by Military Personnel, proposes three critical components to successfully manage the safe use of supplements:

- A system to monitor the use of dietary supplements by military personnel
- A framework to determine the level of concern for dietary supplements in a military context
- A system to report adverse events associated with dietary supplements

Guidelines to manage the use of dietary supplements need to be tailored for the military due to the different circumstances that can occur relative to the general civilian population.
Key activities to ensure the success of this approach are information sharing as well as educational and outreach efforts. The committee also recommends that the DoD designate a committee to be responsible for the oversight and coordination of activities related to dietary supplements and to provide guidance to military leadership about other activities related to the management of dietary supplement use such as research, education, and adverse event reporting.

**IMPROVING THE SYSTEM FOR MONITORING USAGE**

Data from well-designed surveys are a key component in the committee's approach to managing the use of dietary supplements. These data could serve as a signal to apply the recommended framework to determine the level of concern about a particular supplement. For example, increased use of a new supplement among military personnel will serve as a signal to apply the framework. After assessing questionnaire designs and results from eight military surveys, the committee concludes that the quantity and quality of data currently collected on dietary supplement use through surveys needs to increase.

The committee recommends that in addition to continuing the current service-wide periodic surveys, additional surveys about dietary supplement use should be conducted at select military bases among service members who might face heightened health risks due to their task or environment. In order for the data to be of significant value, the surveys need to include questions related to both adverse events and beneficial outcomes as well as the use of specific dietary supplements that might be of concern.

**APPLYING A FRAMEWORK TO DETERMINE THE LEVEL OF CONCERN**

Determining the effects of dietary supplements on military personnel is important, particularly because of the extent to which their vulnerabilities and needs can differ from the general population. The committee recommends that the military initiate reviews on those dietary supplements that raise an initial concern. The proposed designated oversight committee should provide guidance to the DoD on when to begin a review based on the following criteria: the severity of reported adverse events and prevalence of use. To conduct a review and characterize the level of concern, the committee adapted the framework recommended in *Dietary Supplements: A Framework for Evaluating Safety*, a 2005 IOM report on the general population. The procedure, revised to apply specifically to military personnel, includes signal detection, identification of the level of concern during an initial safety review, and integrative evaluation. The committee recognizes the need to address three challenges in applying this framework to determine the level of concern:

- Insufficient data on safety
- Dietary supplements that contain multiple ingredients
- The potential presence of contaminants

The committee also recommends that the level of concern (i.e., high, moderate, low, or minimal) should be determined based on current reviews of the dietary supplements, by analyzing bioactivity and the potential for drug interactions and focusing on optimal performance and risk of injury.
In addition, the committee recommends that the military’s decisions on dietary supplement policy—including rules, education, and monitoring of use—be based on conclusions about safety, the potential for benefits, and the conditions associated with a specific type of mission, location, and environment.

IMPLEMENTING AN ADVERSE EVENT SURVEILLANCE SYSTEM

Even minor detriments to health, which may cause only minimal discomfort to a civilian, such as mild dehydration, might compromise a service member’s performance and the success of the military operation under certain circumstances. Therefore, the committee believes it is important to have a system to report, analyze, and identify concerns associated with the use of dietary supplements within the military. The military should expand its current reporting system for medications to include dietary supplements. This system will help the military make management decisions when adverse effects linked to dietary supplement use, such as bleeding, occur. For example, it will serve as a signal to initiate the review of a dietary supplement or restrict use. The surveillance system should include

- the implementation of an adverse reporting system for military personnel,
- the establishment of a forum or coalition to share and exchange data and information related to dietary supplements, and
- an increase in the reporting of adverse events through broadening outreach activities and educational programs.

This report suggests that the DoD ensure that future electronic health records adequately describe dietary supplement use as well as any applicable adverse events data. This will allow for an integrated data analysis that will be critical to the effectiveness of this system, so that the distribution of information about dietary supplements to key public health officials and commanders is timely.

CONCLUSION

The committee’s findings indicate that a systematic approach to managing the safe use of dietary supplements by military subpopulations is prudent, especially for those facing the greatest risks. The DoD has the responsibility to guide service members on optimal health and nutrition. Therefore, it is important that the DoD implement a system to learn how dietary supplements affect military personnel and to ensure their safe use. Such an approach needs to be tailored to the needs and vulnerabilities of military subpopulations. Until such a system or approach is in place, our service members will continue to make decisions about their own health without knowing the risks and benefits associated with supplements under military contexts, potentially compromising their performance and the resulting success of military operations.
FOR MORE INFORMATION . . .

Copies of *Use of Dietary Supplements by Military Personnel* are available from the National Academies Press, 500 Fifth Street, N.W., Lockbox 285, Washington, DC 20055; (800) 624-6242 or (202) 334-3313 (in the Washington metropolitan area); Internet, www.nap.edu. The full text of this report is available at www.nap.edu.

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