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New Prevention Guidelines for Falls and Fractures—Looking Beyond the Letters

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In this week's issue of *JAMA* are the updated US Preventive Services Task Force (USPSTF) recommendations on vitamin D, calcium, or combined supplementation for the primary prevention of fractures in community-dwelling adults¹ and for falls prevention in community-dwelling adults,² as well as accompanying evidence reports.^{3,4} Overall, the



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summary recommendations have not changed much compared with previous recommendations released in 2013 and 2012. The major change is the downgrade of the vitamin D supplementation recommendation for preventing falls from being a B grade (recommended based on high certainty of moderate benefit or on moderate certainty of moderate to substantial benefit) to a D grade (recommended against based on moderate or high certainty of no benefit or that harms outweigh the benefit). For falls prevention, exercise remains a B grade recommendation, and multifactorial interventions remains a C grade (selectively offer) recommendation. Both falls prevention recommendations are consistent with a 2017 meta-analysis of falls prevention interventions.⁵ Recommendations for fracture prevention have not changed, including insufficient evidence to make recommendations on calcium and vitamin D to prevent fractures in men and premenopausal and postmenopausal women. Although it is unclear whether supplementation with more than 400 IU of vitamin D and more than 1000 mg of calcium in postmenopausal women is beneficial for preventing fractures, the USPSTF recommends against (D grade) supplementing postmenopausal women with doses of 400 IU or less of vitamin D and 1000 mg or less of calcium. Of note, the USPSTF supplementation recommendations do not apply to those with previous osteoporotic fracture, with osteoporosis, or who are at risk of falls.

At first blush, these recommendations seem to be straightforward deductions based on the evidence and should be easy for clinicians to follow. However, further evaluation shows how complicated the issues truly are. In contrast with other USPSTF recommendations for screening (eg, breast cancer, osteoporosis) that rely on a 1-time action by clinicians (of course, patients can opt not to have the tests), these preventive services also require ongoing action by patients. Therefore, they rely on adherence and raise the question as to whether efficacy (outcomes under ideal conditions) or effectiveness (outcomes under usual conditions) should be the basis of the recommendations. Usually, USPSTF recommendations are based on traditional randomized clinical trials, prespecified end points, and intent-to-treat analyses. However, these stan-

dards may overlook some important findings. For example, in the Women's Health Initiative, the intent-to-treat analysis demonstrated no effect of calcium and vitamin D supplementation, but as-treated analyses (restricted to those who took at least 80% of the supplements) showed a 29% reduction in hip fracture (hazard ratio, 0.71; 95% CI, 0.52-0.87).⁶ Although it is possible that women who take their medications may engage in other preventive measures that lower fracture risk, if adherence could be increased to 80%, then effectiveness of supplementation might reach the threshold of benefit. Accordingly, perhaps the Task Force's recommendation should be for calcium or vitamin D supplementation that includes an intervention to promote high levels of adherence.

The other side of the adherence conundrum applies when participants accrue benefits in randomized clinical trials from interventions (eg, exercise) that are closely monitored by research staff to boost adherence, which declines after the study is completed.⁷ In this situation, participants have higher adherence and achieve better outcomes in a research study than they would if clinicians followed the recommendations and prescribed the same set of exercises in usual care, which does not include research staff coaching. This is an example of an efficacy-based recommendation that is likely to be less effective in clinical care. Pragmatic trials integrated into clinical care settings^{8,9} may provide better evidence of effectiveness.

Research on multifactorial interventions for falls prevention are even more complicated to translate into clinical practice. Many of these studies advise the participant to implement 1 or more interventions, depending on the specific risk factors identified (eg, exercise, correction of visual impairment, reduction of fall-risk-increasing drugs) that vary in difficulty. Participants then need to prioritize which of these are most important and which they are willing to do. For example, if a patient has 4 risk factors for falls and chooses to address only 2 of these, is the intervention ineffective or is partial implementation the problem? Again, as-treated analyses and pragmatic trials may provide valuable information in generating recommendations.

These considerations suggest that the current approach to recommendations for preventive services that require substantial patient adherence may be too simplistic. Merely prescribing a supplement or a behavior is not enough. Preventive strategies must recognize the importance of engaging patients in their health care as proactive partners who will implement the requisite, often long-term, behavioral changes. Techniques such as motivational interviewing^{10,11} help determine preferences and level of commitment, which may result in higher adherence and better outcomes.

Maybe it is time to reconsider how USPSTF recommendations for some services are formulated and graded. Rather than a summary letter indicating the level of evidence supported by intent-to-treat results, perhaps there should be modifiers that account for effectiveness results. These modifiers might

indicate the range of outcomes that could be achieved when patients have embraced the recommendation and implemented preventive behaviors. Doing so would also help recommendations for preventive services transition from being clinician-prescribed to being patient-centered.

ARTICLE INFORMATION

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