Vitamin D and Calcium Supplementation to Prevent Fractures in Adults: U.S. Preventive Services Task Force Recommendation Statement

Who developed these guidelines?
The U.S. Preventive Services Task Force (USPSTF) is a group of experts that makes recommendations about preventive health care.

What is the problem and what is known about it so far?
Vitamin D and calcium are known to be important for strong, healthy bones. Both come from certain foods, and vitamin D is also produced in the body after exposure to sunlight. However, many Americans have lower intake or levels of these substances than recommended. This is concerning because low vitamin D and calcium levels put people at risk for osteoporosis and bone fractures. Fractures, especially hip fractures, are associated with pain, disability, loss of independence, and death. For that reason, many people take vitamin D and calcium supplements with the hope of preventing fractures. However, although vitamin D and calcium supplements are helpful for adults known to have osteoporosis, whether they are helpful in adults who do not have osteoporosis is not clear. It is important to note that the risk for osteoporosis and fractures is higher in women after menopause than in premenopausal women. This means that the same recommendations might not apply to both groups of women.

How did the USPSTF develop these recommendations?
The USPSTF reviewed studies about the benefits and harms of vitamin D and calcium supplementation when taken to prevent fractures in adults who do not have known osteoporosis.

What did the authors find?
Appropriate intake of vitamin D and calcium are essential to overall health. However, there is not enough evidence to determine the effect of combined vitamin D and calcium supplementation on fractures in men or premenopausal women. However, there is good evidence that daily supplementation with 400 IU of vitamin D₃ and 1000 mg of calcium has no effect on the incidence of fractures in postmenopausal women. The benefits and harms of higher doses taken to prevent fractures in postmenopausal women who do not live in institutions are not well-defined. Supplementation with 400 IU or less of vitamin D₃ and 1000 mg or less of calcium is associated with a small risk for kidney stones.

What does the USPSTF recommend that patients and doctors do?
It remains unclear whether men and premenopausal women who are not known to have osteoporosis or vitamin D deficiency should take vitamin D and calcium supplements to prevent fractures.

- It remains unclear whether postmenopausal women living outside of institutions, such as nursing homes, should take daily supplements containing more than 400 IU of vitamin D₃ and more than 1000 mg of calcium.
- Postmenopausal women who live outside of institutions, such as nursing homes, should not take daily doses of 400 IU or less of vitamin D₃ and 1000 mg or less of calcium.

What are the cautions related to these recommendations?
These recommendations do not apply to adults with known osteoporosis or vitamin D deficiency. There may be other reasons to take these supplements aside from fracture prevention. For example, the USPSTF recommends vitamin D supplements to prevent falls in older adults.