**Vitamin D in Older Patients With Cancer**

**Janine A. Overcash, PhD, ARNP, BC**

Vitamin D insufficiency has been found to be as high as 75% among community-dwelling adults aged 65 and older. The purpose of this article is to provide a review of published literature focused on the benefits of vitamin D and calcium supplementation in older patients with cancer. Insufficient vitamin D levels may have considerable effects on cancer-related diagnosis and treatment. Patient education should include information concerning vitamin D and calcium administration to reduce falls and injury from falls and enhance functional status. This article will consider the issue of vitamin D levels related to cancer prevention, diagnosis, treatment, functional status, and falls in older patients with cancer. Dosing and serum measurement information will be discussed.

At a Glance

- Vitamin D tends to diminish with age and insufficiency may be as high as 75% in older community-dwelling adults.
- Vitamin D insufficiency is assessed by serum 25-hydroxy and is defined as levels below 20–25 nmol/L.
- Those with insufficient vitamin D levels are at risk for falls and poor functional status.

Vitamin D is manufactured in the skin after sunlight exposure; cholecalciferol (D2) and ergocalciferol (D3) are made in the skin of animals and people (Holick, 2005). Vitamin D is manufactured in the skin after sunlight exposure; cholecalciferol binds to the vitamin D binding protein and is transported to the liver where it is hydroxylated into 25-hydroxy vitamin D (25 OH D) (Wootton) (see Figure 1). The 25 OH D then travels to the kidney where it is hydroxylated to 1,25 OH2D (Mosekilde). Ergocalciferol is a plant form of vitamin D3 (Holick) that goes through the same hydroxylation as cholecalciferol (Wootton); 25 OHD often is referred to as calcidiol and 1,25 OH2D is known as calcitriol (Boonen, Vanderschueren, Haentjens, & Lips, 2006; Wootton). When comparing supplementation with calciferol (D2) or calcitriol (D3), calciferol was shown to be less potent and have a shorter duration of action when compared to calcitriol (Armas, Hollis, & Heaney, 2004).

Vitamin D generally is obtained in the diet by consuming fish, fish oils, and egg whites. D2 and D3 generally are used as supplementation in milk, bread, and multivitamins (Holick, 2005). The daily requirement of vitamin D is 600 IU (American Dietetic Association [ADA], 2006). However, higher doses of D3 seem to be necessary to reach the desirable health benefits.