



Vitamin D Facts

Why do we need Vitamin D?

Vitamin D is an essential Vitamin required for the maintenance of good health. It is particularly important for maintaining bone strength. Many osteoporosis patients mistakenly assume that their prescription for osteoporosis drugs is all that they need. Without adequate amounts of Vitamin D, osteoporosis medications do not work as well or may even be dangerous. In a recent survey of patients on osteoporosis medication, fully 50% of them were Vitamin D insufficient.

How much Vitamin D do I need?

The need for Vitamin D changes with age. As infants, Vitamin D supplements are very important as there is little Vitamin D in breast milk. Babies are often protected from the sun, reducing their ability to manufacture Vitamin D in the skin.

As a young adult, there are usually adequate sources of Vitamin D from sun exposure and from Vitamin D-supplemented foods such as milk. MultiVitamin supplements contain around 400IU of Vitamin D and cost as little as \$0.01 per day. This provides good insurance that Vitamin D needs are being met.

After age 50 or in younger people with osteoporosis, Vitamin D supplements are essential to meet their increased needs. Osteoporosis Canada recommends 800IU of Vitamin D daily by supplement to be sure needs are met for optimal health

Why are Vitamin D supplements important?

As we age, our skin becomes less efficient at manufacturing Vitamin D. This is especially important in northern latitudes (such as Canada), where the sun's rays are filtered and have little ultra-violet required for the synthesis of Vitamin D. We also expose less of our skin to the sun. Cholesterol concerns may limit our intake of dairy products. This combination of factors makes Vitamin D supplements essential to meet our Vitamin D needs after age 50.

What are reliable sources of Vitamin D?

Sunlight can produce Vitamin D in the skin, but this is highly variable between individuals. Even in climates with much sun, Vitamin D deficiency is frequent. Supplements are easily and inexpensively obtained. Vitamin D is a fat-soluble Vitamin and can be well absorbed both with and without a meal. Vitamin D sources in milk products have been shown to be unreliable. This is likely due to the added Vitamin D being unavailable when it sticks to the container walls, especially in low-fat milk products. Vitamin D does not have to be taken with calcium supplements as the action of Vitamin D is through its presence in the bloodstream rather than directly in the stomach or intestine. There are two forms of Vitamin D: Vitamin D2 and Vitamin D3. Most supplements in Canada, including cod liver oil and halibut liver oil, are Vitamin D3. This is the

preferred form of Vitamin D, as it is identical to the Vitamin D produced in the skin and it tends to have a longer availability as it circulates in the bloodstream.

How much Vitamin D is safe?

The body regulates Vitamin D carefully, making it difficult to take too much of the Vitamin D supplements. Indeed, the far greater risk is the deficiency of Vitamin D, which can result in bone loss and osteoporosis. Although experts recommend limiting Vitamin D intake to less than 4000IU daily, just being in the sun on a tropical beach for half a day can result in the skin producing 10,000 – 15,000IU of Vitamin D. This means that the amount of Vitamin D supplements does not have to be exactly regulated each day, as any excess can be stored in the body's fat. Often once weekly, once monthly or once every 3 months, Vitamin D supplementation is given with equal effectiveness in maintaining blood levels and calcium absorption.

Are all Vitamin D supplements the same?

Vitamin D3 is preferred to Vitamin D2. Always check your supplement label for a "DIN" (Drug Identification Number). This is your assurance that the supplement has been registered with Health Canada and is likely to have the listed ingredients present as stated on the label.

How can I calculate my Vitamin D intake?

Vitamin D sources can be varied. Often calcium supplements have small amounts of Vitamin D, but this is usually not sufficient to meet your needs. MultiVitamins also frequently contain small amounts of Vitamin D. Alendronate comes compounded with Vitamin D as Fosavance (70 mg alendronate with 2800IU Vitamin D taken once weekly). This would supply the equivalent of 400IU daily or half of a senior adult's daily requirement. The combination has been proven to be adequately absorbed, and the Vitamin D does not interfere with alendronate absorption. It is available for the same cost as unsupplemented Fosamax.

A typical person might calculate their daily Vitamin D intake as follows:

Source	Vitamin D (IU per day)	Total intake Vitamin D (IU per day)
Mrs. Smith		
Fosavance	400	
Calcium + D supplement	$125 \times 3 = 375$	
MultiVitamin	400	1175 = adequate
Mr. Brown		
Milk	variable	
Sunshine	variable	
Calcium + Vitamin D supplement	$200 \times 2 = 400$	400IU = inadequate

This information sheet has been developed by the Osteoporosis Centre of British Columbia to benefit all patients wishing to maintain optimal bone health.

Alendronate Facts

Is all alendronate the same?

Recently, generic alendronate has become available in Canada at prices around 25% lower than the brand Fosamax. Patients are frequently given the generic product with advice that “it is the same as Fosamax.” Is this true?

Generic alendronate is currently marketed by six generic companies. These companies do not publish research, and it is therefore impossible to determine their equivalence to the Fosamax brand. There are, however, several concerns:

- Generic alendronate is alendronate sodium monohydrate, whereas Fosamax is alendronate sodium dehydrate.
- Fosamax has been documented to pass quickly and effectively through the esophagus into the stomach; if generic alendronate were to begin dissolving in the esophagus, it might cause irritation or ulceration.
- Fosamax tablets dissolve rapidly in the stomach, leading to reliable absorption; generic alendronate tablets have different ingredients (congeners), which may lead to the alendronate being unavailable for absorption or the undissolved tablet exiting the stomach.

Previously, South American copy drugs were demonstrated to have unfavourable tablet dissolution characteristics that may lead to poor tolerability or lack of safety (ref).

Why did my pharmacist say that the generic drug was the same?

Ask your pharmacist if he/she has seen published information showing the products to be the same. Ask for which of the six generic alendronate preparations the information has been obtained.

Many patients prefer to have the security of knowing that they are taking a proven product and find the small premium on the price to be worthwhile. In many cases, the cost of the brand Fosamax or Fosavance is picked up by an extended health benefits plan. Pharmacists may receive economic incentives from the generic manufacturers, leading them to favour dispensing generics.

If you have accepted a generic substitution, be sure to tell your doctor. If you have new stomach symptoms or if your follow-up bone density does not show the expected changes, consider going back to the proven Fosamax brand.

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