

steroid hormone called Calcitriol. It then travels throughout the body to the intestines, bones, and other tissues — effecting the expression of a myriad of genes and a multitude of metabolic pathways.

Vitamin D's active form interacts with almost every cell in the body directly or indirectly. It has a dramatic impact on the health and function of your cells. It reduces cellular growth and improves cell differentiation (which puts cells into an anti-cancer state). But what's even more fascinating is how vitamin D regulates and controls genes. Vitamin D hooks onto cells and then sends messages to our genes. That's how vitamin D controls so many different functions like reducing inflammation, boosting mood, activating the immune system, easing muscle aches and fibromyalgia, and building bones.

In a study of Finnish soldiers, those with vitamin D levels higher than 40 ng/ml had fewer respiratory infections than those with lower levels. In another trial involving school girls, researchers found that supplementation with 1200 IU/d of vitamin D3 reduced influenza.

Eighty to 100% of the vitamin D we need comes from the sun. The sun exposure that makes our skin a bit red (called 1 minimum erythemal dose) produces the equivalent of 10,000 to 25,000 international units (IU) of vitamin D in our bodies. The problem is that most of us aren't exposed to enough sunlight throughout the year to maintain healthy vitamin D levels.

One reason that we don't get enough sun is the overuse of sunscreen. While sun-blocks help protect against burning and skin cancer — they block a whopping 97% of your body's vitamin D production. Other known factors that affect vitamin D production include body weight, body fat percentage, age, skin pigment, the latitude of where you live, individual reactions to sun exposure, and our overall health. The average 70-year-old person creates only 25 percent of the vitamin D that a 20 year-old does. Dark skinned people need two to three times more sun exposure than light skinned people to maintain their vitamin D levels. As a general rule, older people need more vitamin D than younger people, large people need more than small people, overweight people need more than thin people, people living in the north need more than people living in the south, dark-skinned people need more than fair-skinned people, winter people need more than summer people, sun-phobes need more than sun worshipers, and ill people may need more than almost anybody.

Walk
barefoot
in the
grass
and FEEL the
sunshine
on your
shoulders.

For healthy people, moderate sun exposure (2 to 4 times a week for 15 to 30 minutes) is not a problem. Just as important as not avoiding the sun all together, it is important to not just bake away. Rather follow healthy sunbathing tips (see our list). Because there are so many variables to consider, it is always a good idea to talk with your medical provider before you embark on more sun-time. Depending on your unique medical history, your primary care physician may not want you exposed to more sun. If that is true, talk with your provider about supplementing with vitamin D.

While you do get some vitamin D from food sources, you can't get enough from your diet. Fortified vitamin D foods such as milk and cereals provide the vitamin D2 form which is much less well utilized by the body. Dietary sources that provide vitamin D3 include eggs, salmon, tuna, mackerel and sardines, all of which are also good sources of calcium, iodine, and vitamin E which work together with Vitamin D.

If you do choose to supplement, look for one that provides D3 (the active form of cholecalciferol) rather than D2 (ergocalciferol). Vitamin D3 is better absorbed and better utilized in our bodies. Research indicates that it is probably a good idea to take a vitamin D supplement that contains vitamin K2 as well. While vitamin D is vital for the absorption and transport of calcium in the blood stream, vitamin K2 works with vitamin D to direct how and where the calcium is used. Vitamin K is synthesized in our gut by bacteria and because of our modern day diets, most of us are probably low in vitamin K as well. If you are on blood thinners, do not take any vitamin K without talking to your physician first (vitamin K is a potent de-coagulator and thins blood as well). Lastly, research shows that taking your vitamin D supplement with a meal that has some healthy fat sources, like avocado, olives, nuts, etc. increases absorption of the vitamin D.

The benefits we receive from the sun have focused primarily on its ability to stimulate vitamin D production, but there may be other benefits we get from the sun that are not yet well understood. Even if you supplement with vitamin D, it's still a good idea to get some sunshine as well. If your medical provider gives you an okay, follow the healthy sunbathing tips on the following page to help you sunbath safely.

