

Riboflavin

Vitamin B2 - also called "riboflavin" after "ribose," the sugar which forms part of its chemical makeup, and "flavus," for its typical yellow color - is a water-soluble vitamin, necessary for human metabolic processes in the body including cell function, growth, and the production of energy. Vitamin B2 is needed for the formation of every single one of our red blood cells and antibodies. Riboflavin is essential for assuring proper growth and development of our reproductive systems, and for the necessary growth of all our body tissues such as skin, ligaments, eyes, nasal passages, nerves and our all-important immune system. Riboflavin also helps produce healthy skin, nails, and hair, and it aids in regulating thyroid activity (which controls how rapidly the body uses food energy and is a major factor in how energetic you feel). Riboflavin helps in the absorption of minerals like iron and folic acid and also helps the body absorb other Vitamins like B1, B3, B6 and others. Riboflavin also helps to enhance our bodies natural immune system by increasing our reserves of antibodies.

All the B vitamins - often referred to as the "B complex" of nutrients or vitamins - help the body metabolize protein and fat. They convert carbohydrates - food - into glucose - fuel - for our cells and as such are essential for life.

Riboflavin is necessary for the normal development and function of many bodily organs, especially the skin, the linings of the stomach and intestines, and blood cells.

According to the University of Maryland Medical Center, Riboflavin also has an "antioxidant" effect. Oxidants are harmful particles in the body sometimes called "free radicals." These particles cause damage to cells over time and are strongly implicated as one of the major factors in the degeneration of formerly healthy tissue and in the aging process itself. Free radicals can even damage DNA, and when they do, cells reproduce defectively, which can sometimes lead to cancer. As an antioxidant, Vitamin B2 is thought to help preserve youthful good health, both by itself and in synergy with other antioxidants and nutrients.

Since its water-soluble, it is not stored in body fats like some other nutrients and excess amounts are flushed out in the urine. So, to maintain health, we need not only a sufficient supply of riboflavin, we also need a regular supply. Trace amounts of riboflavin are found in the tissues of most animals and plants, so eating a natural, healthy diet usually gives us the necessary amount of B2 without supplementation.

Excellent riboflavin sources include milk (and dairy products generally), eggs, green vegetables (notably asparagus and broccoli), almonds, mushrooms, soybeans, yogurt, cereals and grains enriched with Vitamin B2, asparagus, popcorn, bananas, and most animal-based foods. Vegans and vegetarians especially should take care to get enough of this vital nutrient. Yeast extract is particularly rich in B2.

Riboflavin deficiency is called "ariboflavinosis" - and, naturally, adding Vitamin B2 in such cases is called for. Some symptoms of ariboflavinosis are anemia (low red blood cell count), weakness, dandruff, fatigue, dizziness, hair loss, loss of sleep, poor digestion, slowed mental response, swelling of the throat or tongue, sensitivity to light, skin irritation, and skin cracking or soreness at the edges of the lips. Though the full-blown deficiency is rare, it is sometimes seen among those with very poor diets, severe or chronic diseases, alcoholics, the poor, and elderly. Though often associated with the very poor diets of Third World countries, it is estimated that some 28 million Americans suffer from "sub-clinical" near-deficiency conditions.

For those who are anemic, it is often found that their riboflavin levels are also low, and the effectiveness of the iron therapy usually used in such cases is increased by restoring normal riboflavin levels via supplementation or diet changes.

Riboflavin supplementation along with light exposure (phototherapy) has been found helpful for infants with neonatal jaundice.

In a preliminary study of 31 patients afflicted with Parkinsons disease, every single individual showed, when tested, evidence of Vitamin B2 deficiency. All of those patients who were given 30 mg of riboflavin three times daily for six months showed definite improvements in motor skills and strength. The improvements were evident at three months and were maintained or even improved further at the end of the six month period. (One flaw in this study is that all participants also stopped eating red meat during the trial, and it is not known if this was a synergistic factor in combination with the Vitamin B2 supplementation.)

Some studies suggest that Vitamin B2 can have a positive role in the treatment and prevention of cataracts, and research is ongoing in this area.

Among patients being treated with tricyclic antidepressants, it has been found that boosting Vitamin B2 levels improves their scores for both cognitive function and depression. It is thought that the antidepressants themselves may partially suppress normal riboflavin levels, making supplementation a good idea. Some nutritionists believe that Vitamin B2 by itself can be helpful in preventing depression.

Among those suffering from anorexia or bulimia, it is often noted that their blood levels of vital nutrients are low - and nearly a third are deficient in Vitamin B2. While dietary changes are obviously called for in such situations, supplementation can have a role while a program of healthy eating is being instituted.

New research also suggests Vitamin B2 in high doses may help prevent migraine headaches. Taking 400 mg per day of riboflavin reduced the number of migraine attacks according to these studies, though it didn't reduce the perceived pain they caused when they did occur.

In high doses, Vitamin B2 can cause an increase in urine flow and will color the urine orange. It can also cause diarrhea. But it is considered otherwise safe. The body will regulate riboflavin levels itself with no ill effects. In the recommended dietary allowance range of 1.4 to 1.6 mg per day, it is also considered safe for pregnant and breastfeeding women - larger doses may be safe, too, but not enough studies have been done to allow certainty, so be careful.

The amount of Vitamin B2 you need will vary depending on your personal health and conditions you may be suffering. For most people, eating a healthy, natural diet rich in green vegetables will provide all the riboflavin you need for normal health.

Sufferers from migraine headaches typically take a daily dose of 400 mg of Vitamin B2 over a period of several months.

If you're dealing with low levels of riboflavin in your blood (Vitamin B2 deficiency) adults typically supplement with 5 to 30 mg every day, separated into several doses.

Those who are following the program for preventing cataracts suggested by some studies take 2.6 mg of riboflavin daily, some along with 40 mg of niacin too.

The official adult recommended dietary allowance (RDA) for Vitamin B2 are (daily figures) are 1.1 mg for non-pregnant or breastfeeding women, and 1.3 mg for men. These values are closely tied to energy expenditure - so those who are highly active may need more than these allowances for normal functioning.

If you use supplements to achieve the optimal levels of riboflavin, remember that increasing your intake of just one of the B complex vitamins can lead to an imbalance. As long as all safe dosage levels are maintained, its usually better to take a B complex supplement which maintains the natural balance between these beneficial nutrients. Its also thought that they have a synergistic effect when taken together - that is, the benefits of the entire complex are greater than the sum of those of the individual vitamins.