

# Evidence-based Vitamin B2 (Riboflavin) Usage

**Name(s):** Riboflavin, riboflavin-5-phosphate

**Description:** Riboflavin is a water-soluble vitamin that is not sensitive to heat yet sensitive to light. The crystals of this vitamin are a beautiful greenish-yellow colour. Riboflavin is an important component to cellular respiration since it takes oxygen from the cells with the help of other enzymes. Vitamin B2 plays a part in the Krebb's cycle (a biological pathway that converts glucose (sugar) into energy). Free radicals are interfered with in the presence of riboflavin and an enzyme termed gluathione reductase. Since this vitamin is scarce in most foods, it is best to supplement the diet to insure an adequate amount.<sup>1</sup>

**Absorption/Storage:** The walls of the small intestine absorb riboflavin without a problem. This vitamin is then transported to all parts of the body depending on where it is needed via the bloodstream. The excess amounts are excreted through urination.<sup>1</sup>

## Recommended Dietary Allowance/Dietary Reference Intake:<sup>2</sup>

Persons	U.S. (mg)
Birth to 3 years of age	0.3-0.5
4 to 8 years of age	0.6
9 to 13 years of age	0.9
Adolescent and adult males	1.3
Adolescent and adult females	1.0-1.1
Pregnant females	1.4
Breast-feeding females	1.6

**Optimum Daily Allowance (Adult):** 15-50 mg.<sup>3</sup>

**Tolerable Upper Intake Levels:** None available.

**Principal Uses:** Canker sores (with vitamins B1, B6 and iron, if deficient),<sup>4-10</sup> cataracts (if deficient),<sup>11-15</sup> and migraine headaches (prevention).<sup>16-19</sup>

**Proposed Uses:** None.

**Traditional Uses:** Preeclampsia and sickle cell anemia.<sup>20</sup>

## Healthy Sources:

High (40%+ US RDA): Almonds, brewer's yeast, torula yeast, and wheat germ.<sup>16</sup>

Medium (25-39% US RDA): Mushrooms and wild rice.<sup>16</sup>

**Contraindications:** If you are taking this dietary supplement without a prescription, carefully read and follow any precautions on the label. For riboflavin, the following should be considered:

**Allergies--**Tell your health care professional if you are allergic to any substances, such as foods, preservatives, or dyes.

**Pregnancy--**It is especially important that you are receiving enough vitamins when you become pregnant and that you continue to receive the right amounts of vitamins throughout your pregnancy. The healthy growth and development of the foetus depend on a steady supply of nutrients from the mother. However, taking large amounts of a dietary supplement in pregnancy may be harmful to the mother and/or foetus and should be avoided.

**Breast-feeding--**It is especially important that you receive the right amounts of vitamins so that your baby will also get the vitamins needed to grow properly. However, taking large amounts of a dietary supplement while breast-feeding may be harmful to the mother and/or baby and should be avoided.

**Children--**Problems in children have not been reported with intake of normal daily-recommended amounts.

**Older adults--**Problems in older adults have not been reported with intake of normal daily-recommended amounts.

**Other medicines or dietary supplements--**Although certain medicines or dietary supplements should not be used together at all, in other cases two different medicines or dietary supplements may be used together even if an interaction might occur. In these cases, your health care professional may want to change the dose, or other precautions may be necessary. Tell your health care professional if you are taking any other dietary supplements or prescription or non-prescription (over-the-counter [OTC]) medicine.<sup>21</sup>

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## Interactions:

Decreases Vitamin Availability:	Anti-malarial drugs, <sup>16</sup> antipsychotic agents, charcoal, fibre supplements, supplementation of individual B vitamins, <sup>20</sup> tricyclic antidepressants, <sup>20,22</sup> oral contraceptives, tetracycline, <sup>20,24</sup> and doxorubicin. <sup>24</sup>
Increases Vitamin Availability:	Vitamins B complex and C, <sup>3</sup> and thiamin. <sup>16</sup>
Is Decreased By Vitamin Availability:	AZT and didanosine side effects, <sup>20</sup> magnesium, methotrexate, <sup>22</sup> and tetracyclines. <sup>22,25</sup>
Is Increased By Vitamin Availability:	Tricyclic antidepressant effectiveness, <sup>20</sup> tryptophan and vitamin B6. <sup>22</sup>

**Deficiency:** Lack of riboflavin may lead to itching and burning eyes, sensitivity of eyes to light, sore tongue, itching and peeling skin on the nose and scrotum, and sores in the mouth. Your doctor may treat this condition by prescribing riboflavin for you.<sup>21</sup>

**Toxicity/Side Effects:** No toxicity or side effects have been demonstrated.<sup>16,21</sup>

**Treatment for Overdose:** None.

**Storage:** To store this dietary supplement:

- Keep out of the reach of children.
- Store away from heat and direct light.
- Do not store in the bathroom, near the kitchen sink, or in other damp places. Heat or moisture may cause the dietary supplement to break down.
- Do not keep outdated dietary supplements or those no longer needed. Be sure that any discarded dietary supplement is out of the reach of children.<sup>21</sup>

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