# Evidence-based Vitamin B5 Usage

**Name(s):** Pantothenic acid, calcium pantothenate, dexpanthenol, calcium pantothenate and pantethine.

**Description:** Pantothenic acid is a water-soluble B vitamin. This vitamin is found in yeasts, moulds, bacteria, animal cells and everywhere in between. Pantothenic acid acts as a coenzyme, retrieving glucose from proteins, carbohydrates, and fats. The synthesis of cholesterol, steroids, and fatty acids is dependent upon this vitamin.<sup>1</sup>

**Absorption/Storage:** Pantothenic acid is present in the blood, especially in the plasma. Since this is a water-soluble vitamin, it is excreted and not stored.<sup>1</sup>

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

Persons	U.S.
	(mg)
Birth to 3 years of age	1.7-2
4 to 8 years of age	3
9 to 13 years of age	4
Adolescent and adult males	5
Adolescent and adult females	5
Pregnant females	6
Breast-feeding females	7

**Optimum Daily Allowance (Adult):** 100 mg.<sup>3</sup>

Tolerable Upper Intake Levels: None available.

**Principal Uses:** High cholesterol and triglycerides (pantethine).<sup>4-17</sup>

**Proposed Uses:** Adrenal support,<sup>18</sup> and rheumatoid arthritis.<sup>19,20</sup>

Traditional Uses: Acne (pantothenic acid) and lupus.<sup>20</sup>

#### **Healthy Sources:**

High (40%+ US DI): Brewer's yeast, torula yeast, peanuts, mushrooms, soybean flour and split peas.<sup>18</sup>

Medium (25-39% US DI): Pecans, soybeans, oatmeal, buckwheat flour, sunflower seeds, lentils, whole rye flour and cashews.<sup>18</sup>

**Contraindications:** If you are taking this dietary supplement without a prescription, carefully read and follow

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any precautions on the label. For pantothenic acid, 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 amount 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 nutritional supplement during 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 nutritional supplement while breastfeeding 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 prescription, non-prescription (over-the-counter [OTC]) medicine, or dietary supplements.<sup>21</sup>

### Interactions:

Decreases Vitamin Availability:	Individually supplemented B vitamins, charcoal and fibre supplementation. <sup>22</sup>
Is Increased By Vitamin Availability:	Vitamins A, C and E, <sup>3</sup> and tricyclic antidepressants. <sup>20</sup>

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On theoretical grounds, the manufacturers recommend that the drug not be given with or within twelve hours after administration of neostigmine or other parasympathomimetic drugs. Also, they recommend that it should not be given within 1 hour of succinylcholine.<sup>24</sup>

**Deficiency:** No problems have been found that are due to a lack of pantothenic acid alone. However, a lack of one B vitamin usually goes along with a lack of others, so pantothenic acid is often included in B complex products.<sup>21</sup>

**Toxicity/Side Effects:** Although pantothenic acid does not usually cause any side effects, check with your health care professional if you notice any unusual effects while you are taking it.<sup>2</sup> Very large doses (several grams per day) can cause diarrhoea.<sup>20</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>

#### **References:**

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