

WATER - SOLUBLE VITAMINS: VITAMIN B6 (PYRIDOXINE)

Patient Resource

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Functions of Vitamin B6

Other names for Vitamin B6

Vitamin B6 is also known as pyridoxine.

- **Regulation of**
 - sleep
 - mood
 - appetite
 - immunity
- **Aids in**
 - skin health
 - hair health
- **Helps in body processes**
 - producing insulin
 - protein metabolism

Sources of Vitamin B6

Animal Sources



Meat

- beef
- chicken
- liver
- pork

Fish & Shellfish

- fish
- wild salmon

Plants & Other Sources



Nuts & Seeds

- hazelnuts
- pistachios
- sunflower seeds
- peanut butter
- walnuts

Fruits

- avocado
- banana
- tomato juice

Vegetables & Beans

- spinach
- potatoes
- garbanzo beans (chickpeas)
- soybeans
- lima beans

Grains & Fortified Sources

- cereal
- oatmeal
- rice bran
- wheat bran



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How stable is vitamin B6

Vitamin B6 can be destroyed by high heat and prolonged cooking times. Some loss can also occur during food storage.

Plant sources of vitamin B6, such as spinach, tend to have minimal vitamin loss compared to animal sources.



The Bottom Line

Whole grains and vegetable sources are likely your best bet in incorporating more vitamin B6 into your diet. These foods are typical of an overall healthy diet as well, and contain many of the other B-vitamins and nutrients the body needs.

Vitamin B6 sources such as **meat** and **refined grains** tend to experience a loss of the nutrient due to processing, refining, and longer cooking and/or storage periods.



SUPPLEMENTATION & TREATMENT

Uses

Supplemental vitamin B6 can be prescribed for many reasons, **under appropriate medical direction and supervision**, for the following:

- Hyperhomocysteinemia
- Carpal tunnel syndrome
- Morning sickness
- Premenstrual syndrome (PMS)
- Depression
- Muscular fatigue

If you have these conditions, be sure to ask the advice of your doctors and healthcare team before supplementing.

Treatment

Treatment with vitamin B6 should be carefully considered as toxicity and misdosing can cause serious side effects.

Those with **Parkinson's disease** should be aware that even low levels of vitamin B6 supplementation can interfere with the effectiveness of L-dopa drug therapy.

The Bottom Line

B6 is an incredibly important vitamin with the ability to assist the body in powerful ways. However, treatment and supplementation should always be under medical supervision and with the recommendation of a knowledgeable and nutrient literate healthcare team. Depending on your health and other existing conditions, your vitamin B6 supplementation may need to be closely tailored to avoid adverse effects.



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Dietary Reference Intakes

The amount of vitamin B6 recommended for daily intake is based upon Recommended Dietary Allowance or the RDA developed by the Institutes of Medicine (IOM). This amount is the amount that meets the needs of most people.

Helpful Terms to Know

- **Recommended Dietary Allowance (RDA):** covers the needs of 97-98% of individuals in a group; the average amount of a nutrient a healthy person should consume daily. Vary by gender, age, and whether a woman is pregnant or breastfeeding. Developed by the Food and Nutrition Board at the Institutes of Medicine (IOM) of the National Academies.
- **mg** = milligram
- **Tolerable Upper Intake Level (UL):** the highest level of nutrient intake that is likely to pose no adverse health effects

Deficiency

VITAMIN B6 (PYRIDOXINE)

deficiency

Signs & symptoms can occur in as little as 2-3 weeks but can take up to ~2 1/2 months to become evident.

other symptoms



seborrheic dermatitis

Rash on areas such as

- face (cheeks and nose)
- neck
- shoulders
- buttocks



nervous system

- confusion
- peripheral neuropathy (especially in infants)
- seizures
- convulsions

- fatigue
- inflammation involving the mouth, tongue, or lips (*cheilosis, glossitis, angular stomatitis*)
- hypochromic, microcytic anemia (usually seen in infants)

Populations Particularly Prone to Deficiency



Infants



*Individuals
with
alcoholism*



*Older
Adults*



Other

- Individuals with poor intake or absorption
- Individuals with systemic inflammation, autoimmune disease, or other conditions
- Individuals on certain drug therapies or medications



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Dietary Reference Intakes, continued from previous page.

Recommended Dietary Allowance for Vitamin B6 (mg/day)	
Infants	
0-6 months	0.1
7-12 months	0.3
Children	
1-3 years	0.5
4-8 years	0.6
Males	
9-13 years	1.0
14-50 years	1.3
51- >70 years	1.7
Females	
9-13 years	1.0
14-18 years	1.2
19-50 years	1.3
51- > 70 years	1.5
Pregnancy	
Under 18- 50 years	1.9
Lactation	
Under 18-50 years	2.0

NOTE:

It can be helpful to bring in your supplements to a doctor's visit or your next appointment with your healthcare providers. Providing the actual containers of products you take can help your healthcare team to avoid under- or over-dosing you or your family members on supplements. It is also a helpful practice since there are many B vitamins and their variants can go by different names.



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Toxicity

Tolerable Upper Intake Levels for Vitamin B6 (mg/day)	
Infants	
0-1 year	
Children	
1-3 years	30
4-8 years	40
9-13 years	60
Adolescents	
14-18 years	80
Adults	
19->70 years	100
Pregnant & Lactating Women	
< 18 years	80
19-50 years	100

Excessive use of vitamin B6 (>~200 mg/day) has been known to cause the following symptoms:

- Sensory and peripheral neuropathy
- Unsteady gait
- *Paresthesias* in the extremities (burning or prickling sensation)
- Impaired tendon reflexes

High intakes of over 2 g/day can cause the following symptoms:

- Impaired motor control
- *Ataxia* (degenerative nerve disease)
- *Paresthesias* of the hands and feet
- Degeneration of neurons in the spinal cord

Needless to say, overdosing on vitamin B6 can be dangerous for a number of reasons. The upper levels (UL) of vitamin B6 are listed in the chart on this page, however the recommended intake is to stay within the accepted RDA amounts for your gender and age (see previous pages).

