

# B100 Vitamin B Complex Timed Release Tablets



## Product Summary:

Vitamin B100 Complex provides 100 mg of B vitamins. B vitamins play a key role in balancing the body's metabolism and are necessary for a healthy nervous system, healthy skin, eyes, liver, and mucous membranes. They are also essential for fighting the effects of stress. One tablet daily provides all the essential B vitamins, including choline and inositol.

## Properties/Uses:

The claim as approved by the *Natural Health Products Directorate* (NHPD): For the maintenance of good health. Helps the body metabolize carbohydrates, fats and proteins. A factor in the normal growth and development.



GENERAL HEALTH  
& WELLNESS



## Pharmacology:

Vitamins are required nutrients that must be obtained by diet or supplementation. They act as antioxidants, enzyme cofactors and hormones. Most people do not consume optimal amounts of the key vitamins through diet alone. The vitamin B100 complex is a combination of essential B vitamins. It also includes folate and lipotropic nutrients. Supplementation with this mutli B vitamin formula acts as a good health insurance to protect against disease.

The B-vitamins are so intimately involved in metabolism as coenzymes that their optimal tissue levels help to maintain effective robust metabolism. They help the body to metabolize carbohydrates, fats and protein. The B vitamins also help in tissue formation, normal growth and developments, as well as, the formation of red blood cells. Full-blown deficiencies are rare. However, marginal deficiencies do exist and contribute to many of the health problems seen today.

B vitamin complexes are also taken to relieve stress symptoms and increase energy levels. They are also important for healthy skin, hair and nails.

The addition of choline and inositol, while not technically classified as members of the B vitamins, are commonly provided in multiple B vitamin products as lipotropic nutrients involved in liver management of fat to prevent a fatty liver condition.



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MC

## Manufactured product information:

**Manufacturer:**

WN Pharmaceuticals® Ltd

**Size / UPC:**

120's ..... 7 77747 10312 6

**NPN:**

80035590

**Expiry Date:**

36 months from date of manufacture

**Active Ingredients:**

Each tablet contains:

Vitamin B1 (thiamine mononitrate) .....	100 mg
Vitamin B2 (riboflavin) .....	100 mg
Niacinamide .....	100 mg
Vitamin B6 (pyridoxine hydrochloride) .....	100 mg
Vitamin B12 (cyanocobalamin) .....	100 mcg
Biotin .....	100 mcg
Folic Acid (folate) .....	1 mg
Pantothenic Acid (calcium <i>d</i> -pantothenate) .....	100 mg
Choline (bitartrate) .....	40 mg
Inositol .....	100 mg

**Non-Medicinal Ingredients (in descending order):**

Microcrystalline cellulose, dibasic calcium phosphate dihydrate, carbohydrate gum, coating (carbohydrate gum, glycerin), magnesium stearate.

**Appearance:**

Off white to yellowish with orange speckles coated oval tablet.

**Packaging:**

300 cc white round bottle with safety seal under a 45 mm white induction sealed cap with vented interior seal and a label applied to the bottle. Lot number and expiry date are printed on the label applied to the exterior of the bottle.

**Storage:**

Store in tightly sealed container in a cool, dry place.





## Dose:

According to the NHPD, the daily-recommended dose for the included vitamins is:<sup>1</sup>

### ADULTS

Thiamine.....	0.07-100 mg/d
Riboflavin.....	0.08-100 mg/d
Niacinamide.....	1-500 mg/d
Vitamin B6.....	0.1-100 mg/d
Vitamin B12.....	0.14-1000 g/d
Biotin.....	1.8-500 g/d
Pantothenic acid.....	.04-500 mg/d
Folate.....	.30-1000 g/d
Inositol.....	0-650 mg/d
Choline.....	0-1000 mg/d

The practice of supplementing the B-vitamins at higher than RDA doses or at what is assumed to be optimal doses, has been criticized as unnecessary and a waste of money. This point of view fails to respect the value of tissue saturation favored by higher doses and the metabolic efficiency that obtains. Given the wide spread use of manufactured and highly processed foods, and the generally recognized high stress level in society that translates as metabolic stress, supplementation at higher than RDA values may be the wiser choice.

## Directions:

**(Adults):** 1 tablet daily or as recommended by a physician.

## Caution:

The caution as approved by the *Natural Health Products Directorate* (NHPD): KEEP OUT OF THE REACH OF CHILDREN. STORE AT ROOM TEMPERATURE IN A DARK, DRY PLACE. DO NOT USE IF SEAL UNDER CAP IS BROKEN OR MISSING.

## Deficiency Symptoms:

Vitamins are essential nutrients, and important factors in good health, growth and development. Therefore, their deficiency can cause a host of problems. While vitamin deficiencies are uncommon in Western societies, a suboptimal level of key vitamins is a risk factor for many chronic diseases.





A deficiency of B vitamins can lead to pellagra, the development of abnormal red blood cell precursors, beriberi, megaloblastic anemia, gastrointestinal lesions, and neurologic damage. Vitamin B deficiency is especially common in vegetarians.

## Drug Interactions/Contraindications:

The following interactions are the best known B vitamin interactions with well known drugs. However, this list is not offered as a complete list of potential interactions of the B vitamins and all drugs to date.

### **Thiamine (B1)**

Aluminium-based antacids may inactivate thiamine.<sup>2</sup>

Thiamine depletion plays a role in the development of Wernicke-Korsakoff syndrome, a neurological disorder associated with long term alcohol abuse.<sup>2</sup>

Alpha-lipoic acid may exacerbate an existing thiamine deficiency.<sup>3</sup>

### **Riboflavin (B2)**

Tetracyclines in long term use may deplete the body of riboflavin.<sup>2</sup>

Chlorpromazine, fluphenazine, and other major tranquillizers in long term use may deplete the body of riboflavin. Suggested minimum supplementation is 2-5 mg per day.<sup>2</sup>

### **Niacinamide (B3)**

Isoniazid (anti-tuberculosis) may deplete the body of niacin/niacinamide (B3), as well as vitamin B6, possibly requiring supplementation. Too much B6 could compromise the effectiveness of isoniazid. Suggested ranges are, 6-50 mg for B6, 15-25 mg for niacin/niacinamide.<sup>2</sup> Niacinamide is the predominate form of B3 circulating in the blood.<sup>4</sup>

Regardless of the form being used, niacin, niacinamide, or hexaniacinate, cholesterol and liver function should be evaluated every 3 months when high doses associated with lipid lowering are used, 2-6 grams per day.

High dose niacin or niacinamide may complement lipid-lowering medication.<sup>5</sup>

### **Pyridoxine (B6)**

Alcohol, regularly consumed, can retard B6 and B12 absorption and utilization.<sup>2</sup>

Penicillamine, long term may deplete the body of B6.<sup>2</sup>

Birth control pills are associated with depletion of B6, as well as folic acid. A B6 depletion can lead to depression.





Depletion of folic acid is associated with cervical dysplasia.<sup>2,5</sup> Routine supplementation should be discussed.

Estrogen replacement therapy can lower folic acid and B6. Risk of depression is associated with low B6 levels, while low folic acid levels is a risk of cervical dysplasia.<sup>2,5</sup>

Hydralazine containing drugs may deplete the body of B6. Supplementation is recommended.<sup>2</sup>

Corticosteroids in long term use can deplete the body of B6, B12, and folic acid.<sup>2,5</sup>

Epilepsy drugs like barbiturates and phenobarbitol can be adversely lowered in plasma concentration by B6 and folic acid, potentially leading to seizures.<sup>2</sup>

Phenytoin may cause depletion of folic acid as well as B6. However, supplementation must be directed by the physician since it can reduce the effectiveness of the phenytoin with resultant seizures. More than 2 mg of folic acid per day is a risk, while 80 mg per day of B6 will reduce the efficacy of phenytoin by 50 per cent.<sup>2,5</sup>

L-dopa effectiveness can be significantly lowered by B6 supplementation. Supplementation should only be prescribed by a physician.<sup>2</sup>

Isoniazid can deplete the body of B6, as well as niacin/niacinamide. Too much B6 or niacin/niacinamide supplementation can reduce the effectiveness of isoniazid. Recommended ranges are, 6-50 mg per day of B6, and 15-25 mg per day of niacin or niacinamide.<sup>2</sup>

### **Biotin**

Because alpha-lipoic acid is structurally similar to biotin, biotin deficiency may occur in those using more than 100 mg of alpha- lipoic acid per day.<sup>6</sup>

Alcohol inhibits absorption and utilization.<sup>5</sup>

Long-term use of antibiotics may reduce the level of biotin produced by intestinal bacteria. Supplementation with biotin or Lactobacillus acidophilus is recommended.<sup>5</sup>

### **Pantothenic acid (B5)**

None known.<sup>5</sup>

### **Folic acid**

Corticosteroids in long term use long term can deplete the body of B6, B12, and folic acid.<sup>2,5</sup>

Folic acid supplementation should always be complemented with vitamin B12 supplementation since folic acid can mask a B12 deficiency.<sup>5</sup>





Alcohol interferes with folic acid absorption.<sup>2,5</sup>

ASA lowers folic acid levels. Regular users of ASA should supplement with 400 to 1000 mcg or as directed by their physician.<sup>2</sup>

Methotrexate reduces the absorption of folic acid, as well as B12. Clinically important imbalances may result. This drug is finding a wider application to include arthritis and psoriasis. Supplementation should be discussed.<sup>2</sup>

Birth control pills are associated with reduced folic acid absorption, as well as B6. Cervical dysplasia can result from prolonged folic acid depletion.<sup>2,5</sup>

Triamterene-containing drugs deplete the body of folic acid. Supplementation is recommended at 400 to 1000 mcg per day.<sup>2</sup>

Questran and other bile acid sequestrants can interfere with folic acid absorption. Supplementation is recommended at 400 to 1000 mcg per day.<sup>2</sup>

Epilepsy drug blood levels like barbiturates and phenobarbital can be lowered by folic acid, as well as by B6, increasing the potential for seizures.

Phenytoin may cause depletion of folic acid as well as B6. However, supplementation must be directed by the physician since it can reduce the effectiveness of the phenytoin with resultant seizures. More than 2 mg of folic acid per day is a risk, while 80 mg per day of B6 will reduce the efficacy of phenytoin by 50 per cent.<sup>2,5</sup>

Estrogen replacement therapy can lower folic acid and B6. Risk of depression is associated with low B6 levels, while low folic acid levels is a risk of cervical dysplasia.<sup>2,5</sup>

Sulfasalazine interferes with folic acid absorption. Supplementation is recommended at 400 to 1000 mcg per day.<sup>2,5</sup>

Para-aminosalicylate may deplete the body of folic acid as well as B12. Supplementation may be necessary.<sup>2</sup>

Nitrofurantoin long term can interfere with folic metabolism. Consultation with the physician may be necessary.<sup>2</sup>

Metformin may interfere with the absorption of folic acid and vitamin B12. Measurements of serum vitamin B12 and folic acid are advised at least every 1 to 2 years in patients on long term use. (CPS)

### **Cobalamin (B12)**

Corticosteroids in long term use can deplete the body of B6, B12, and folic acid.<sup>2,5</sup>

Folic acid supplementation should always be complemented with vitamin B12 supplementation since folic acid can mask a B12 deficiency.<sup>5</sup>





Potassium supplementation can interfere with B12 absorption. This is not a widely realized interaction. Long term use in older patients has been associated with cognitive and neurological deficits before blood levels deficiencies were apparent.<sup>2</sup>

Omeprazole can dramatically reduce the absorption of B12. Cimetidine and ranitidine may also have this adverse interaction. Supplementation may be appropriate.<sup>2</sup>

Metformin may interfere with the absorption of folic acid and vitamin B12. Measurements of serum vitamin B12 and folic acid are advised at least every 1 to 2 years in patients on long-term use. (CPS)

Alcohol interferes with B12 absorption.<sup>2</sup>

Methotrexate reduces the absorption of B12, as well as folic acid. Clinically important imbalances may result. This drug is finding a wider application to include arthritis and psoriasis. Supplementation should be discussed.<sup>2</sup>

Questran and other bile acid sequestrants can interfere with B12 absorption. Supplementation is recommended at 400 to 1000 mcg per day.<sup>2</sup>

Colchicine impairs B12 absorption. Long term use may warrant B12 supplementation.<sup>2</sup>

Chlorpromazine, fluphenazine, and other major tranquilizers in long-term use may deplete the body of B12. Supplementation may be appropriate.<sup>2</sup> B12 depletion is associated with cognitive and neurological problems.

Para-aminosalicylate may deplete the body of B12, as well as folic acid. Supplementation may be necessary.<sup>2</sup>

#### **Choline**

None known.<sup>5</sup>

#### **Inositol**

None known.<sup>5</sup>

## **Toxicity/Adverse Reactions:**

No particular adverse effects are associated with daily supplementation of the B-vitamins at the strengths represented in this product.

The adverse flushing that has become associated with high dose niacin for cholesterol control is not typically seen







## Allergen Content/Ingredient Sensitivity:

NO	YES
Artificial Colors	Corn Products
Artificial Flavors	Starch/Modified Starch
Artificial Sweeteners	
Egg Products	
Fish	
Gluten	
Hydrolyzed Plant Protein	
Lecithin	
Milk Products	
Peanuts	
Preservatives	
Sesame Products	
Shellfish	
Soy Products	
Sulphites	
Tartrazine	
Tree Nuts	
Wheat Products	
Yeast	

### ACCEPTABLE FOR THE FOLLOWING DIETARY RESTRICTION:

Free of animal products

### NOT ACCEPTABLE FOR THE FOLLOWING DIETARY RESTRICTION:

Kosher





#### References:

1. Health Canada, *Multi-vitamin/Mineral Supplements Monograph*, Accessed October 2013 [Available from: <http://www.hc-sc.gc.ca>]
2. Graedon, J. & Graedon, T. (1995) *Deadly Drug Interactions*. New York: St. Martin's Griffin.
3. Gal, E.M. (1965) Reversal of selective toxicity of (-)- $\alpha$ -lipoic acid by thiamine in deficient rats, *Nature*, 205: 535.
4. Linder, M.C. (1991) *Nutritional Biochemistry and Metabolism With Clinical Applications*. New York: Elsevier.
5. Murray, M. T. (1996) *The Encyclopedia of Nutritional Supplements*. Rocklin, CA: Prima Publishing.
6. Packer, L. & Colman, C. (1999). *The Antioxidant Miracle*. New York: John Wiley & Sons.

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