

## **Vitamin B complex**

There are eight vitamins in this group, including Vitamin B12, which is the most common fraction measured by the blood tests.

The B group vitamins include – Thiamine (B1), Riboflavin (B2), Niacin (B3), Pantothenic acid (B5), Pyridoxine (B 6), Biotin (B7), Folic acid (B9), and Cyanocobalamin (B12)

The B group vitamins are essential for various metabolic processes in the body and keep the immune system healthy. Vitamin B12 and Folic acid deficiency lead to anemia and neurological symptoms. The body cannot store B group of vitamins, so have to be taken in the diet on a regular daily basis. The natural sources of the vitamin B complex except for B12 are:

- Whole grains
- Legumes and lentils
- Nuts and Seeds
- Wheatgrass and sprouted lentils/legumes
- Milk and dairy products including curds/Dahi
- Green leafy vegetables

Vitamin B12 content of vegetarian foods is low, and deficiency is frequent amongst the vegetarians. That is the reason doctors only check vitamin B12 levels and not the levels of other B complex vitamins. The deficiency of other B complex vitamins is rare and seen only in the most impoverished populations. Folic acid (vitamin B9) is another B complex vitamin which gets low during pregnancy. Normal levels of Folic acid and Vitamin B12 are essential during pregnancy to prevent neurological abnormalities in the newborn.

There are ways vegetarians can enhance the vitamin 12 content of their diets. Intestinal bacteria can synthesize Vitamin B12 when one eats fermented foods such as:

- Dahi rice with pounded mustard seeds.
- Idli, Dosa, and Dhokla
- Buttermilk
- Sprouted lentils, legumes, and whole grains - Sprouting process increases vitamins, minerals and proteins s by 30%
- Nutritional yeast

### **Factors which reduce vitamin B complex in the diet:**

- Commercial processing of foods (factory-made foods).

- Overcooked meals.
- Alcohol consumption – Alcohol destroys the nutrient value of the foods.
- Refinement of the grains – Destruction of husk and endosperm during commercial milling of the wheat destroys B vitamins.
- Long term metformin (diabetes medication) use leads to Vitamin B12 deficiency.
- Bowel and Stomach surgery leads to loss of intrinsic factor in the stomach necessary for Vitamin B12 absorption.
- Consumption of drugs for acid reflux disease and oral contraceptives can interfere with vitamin B absorption.

### **Signs and Symptoms of Vitamin B Complex deficiency**

Lethargy, fatigue, muscle weakness, skin rash, angular stomatitis, sore tongue, anemia, the feeling of pins and needles (B12 deficiency)

Vitamin B12 and B9 (Folic acid) deficiency in pregnant females can lead to severe neurological abnormalities in newborn. It is a safe practice to give the pregnant females B vitamins, especially B9 (Folic acid) and B12 as supplements.