

**TOPIC:**

# **VITAMIN B5 & B6**

**PRESENTED BY :**

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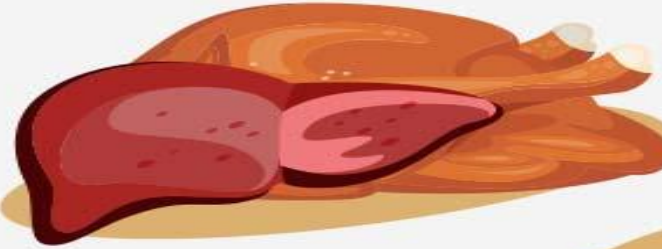
**SUBJECT :**

**BIOCHEMISTRY**



Sunflower Seeds

Chicken Liver



Avocado



# VITAMIN B<sub>5</sub>

## VITAMIN RICH FOODS

### BENEFITS



Mushrooms



Broccoli



Cauliflower

Tomatoes



Salmon





# VITAMIN B5 (PANTOTHENIC ACID)

- Vitamin B5, also called **pantothenic acid**, is one of the most important vitamins for human life
- The word pantothenic comes from the Greek word "pantou," which means 'everywhere', as almost all foods contain small quantities of pantothenic acid in them..
- It's necessary for making blood cells, and it helps you convert the food you eat into energy.

# ACTIVE FORMS

There are the two active Coenzymes forms of Pantothenic Acid.

1. Coenzyme-A(CoA – SH)
2. Acyl Carrier Protein (ACP)



# VITAMIN B5 (PANTOTHENIC ACID)

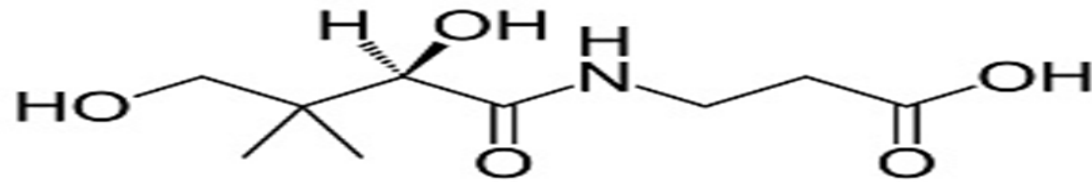
- B vitamins are also needed for:
  - Healthy skin, Hairs, Eyes
  - Proper functioning of the nervous system and liver
  - Healthy digestive tract
  - Making red blood cells, which carry oxygen throughout the body
  - Making sex and stress-related hormones in the adrenal glands

# SOURCES OF VITAMIN B5

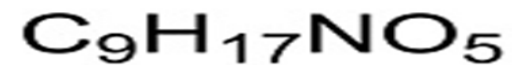
- The best way to make sure you're getting enough vitamin B5 is to eat a healthy, balanced diet every day.
- Vitamin B5 is an easy vitamin to incorporate into a good diet. It's found in most vegetables, including:
  - Broccoli, Members of the cabbage family
  - white and sweet potatoes, whole-grain cereals
- Other **Healthy sources of B5** include:
  - Mushrooms, Nuts, beans, peas
  - Lentils, meats, poultry, Dairy products, eggs



# MOLECULAR STRUCTURE OF VITAMIN B5



Pantothenic acid  
Vitamin B<sub>5</sub>



# How much vitamin B5 should we get?

As with most nutrients, the recommended intake of vitamin B5 varies by age. These are the recommended daily allowances :

Life Stage Group	Recommended Daily Intake of Vitamin B5
Infants 6 months and younger	1.7 mg
Infants 7 to 12 months	1.8 mg
Children 1-3 years	2 mg
Children 4-8 years	3 mg
Children 9-13 years	4 mg
14 years or older	5 mg
Pregnant or breast-feeding women	7 mg



# SYMPTOMS OF VITAMIN B5

Vitamin B5 deficiency is rare, but may include symptoms such as :

- Insomnia, Depression
  - Vomiting, Stomach pains
  - Burning feet, Upper respiratory infections.
  - Fatigue, Irritability
  - impaired muscle coordination
  - gastrointestinal problems
- Symptoms generally go away once you start getting enough vitamin B5.

## COSMETIC USES OF B5

Vitamin B5 is often added to hair and skin products, as well as makeup.

- **Dexpanthenol**, a chemical made from B5, is used in creams and lotions designed to moisturize the skin.
- In **Hair products**, B5 can help add volume and sheen. It's also said to *improve* the texture of hair that is damaged by styling or chemicals.
- One study Trusted Source found that the application of a compound containing *panthenol*, a form of vitamin B5, could help stop thinning hair.



## B5 CHEMICALS

It can also be applied to the skin to relieve itchiness and promote healing from skin conditions, such as:

- Eczema
- Insect bites
- Poison ivy
- Diaper rash

## VITAMIN B6 (PYRIDOXINE)

- ❖ **Vitamin B6**, also known as **pyridoxine**, is a water-soluble vitamin that your body needs for several functions.
- Vitamin B<sub>6</sub> is one of the B vitamins, and thus an essential nutrient. The term refers to a group of six chemically similar compounds, i.e., “**Vitamers**” which can be interconverted in biological systems.



# VITAMIN B6 (PYRIDOXINE)

- ❖ Vitamin B-6 (pyridoxine) is important for **normal brain development and for keeping the nervous system and immune system healthy.**
- It's significant to protein, fat and carbohydrate metabolism and the creation of red blood cells and neurotransmitters.

# SOURCES OF VITAMIN B6

## **Food Sources:**

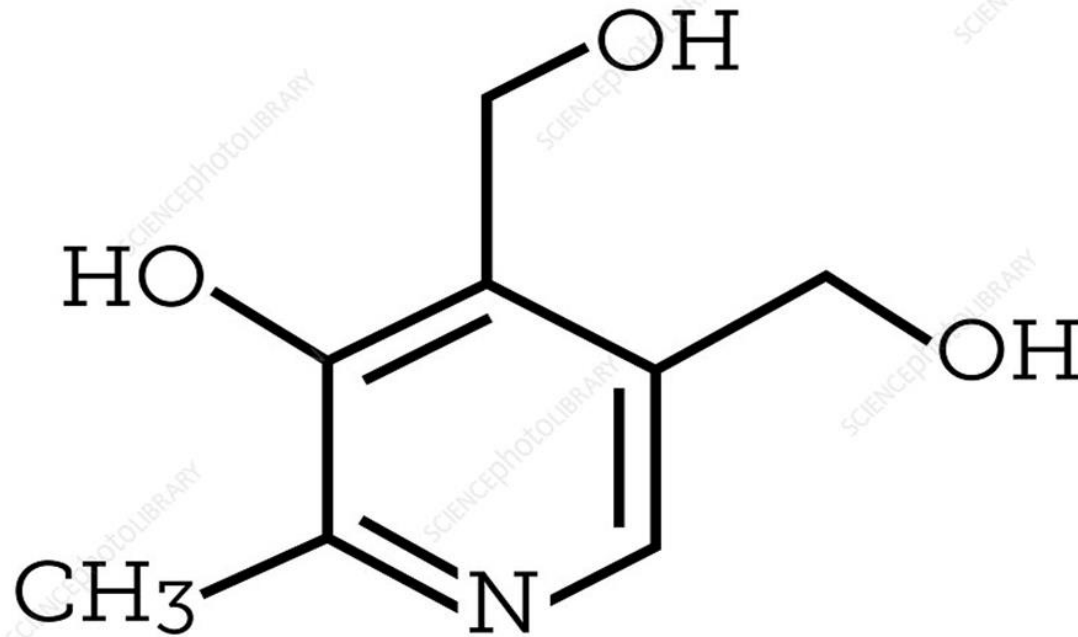
Food Sources of Vitamin B6 is found in a variety of animal and plant foods.

- Fish, Potatoes, Chickpeas,
- Bananas and Fortified Cereals
- Beef liver, Tuna
- Salmon, Fortified cereals
- Chickpeas Poultry

□ Some vegetables and fruits, especially Dark leafy greens, Banana, Papayas, Oranges.



# MOLECULAR STRUCTURE OF VITAMIN B6



Vitamin B<sub>6</sub>  
C<sub>8</sub>H<sub>11</sub>NO<sub>3</sub>  
pyridoxine

# SIGNS OF DEFICIENCY

## ***DEFICIENCY :***

A vitamin B6 deficiency most often occurs when other B vitamins in the body are low. A mild deficiency may have no symptoms, but a more severe or prolonged deficiency can exhibit the following:

- Microcytic anemia
- Skin conditions
- Depression
- Confusion
- Lowered immunity



# TOXICITY AND SYMPTOMS OF B6

## ***Toxicity :***

It is quite unlikely to reach a toxic level of vitamin B6 from food sources alone. Vitamin B6 is a water-soluble vitamin so that unused amounts will exit the body through the urine.

## ***Symptoms:***

Symptoms include:

- Neuropathy in feet and hands
- Ataxia (loss of control of body movements)
- Nausea

**STAY HEALTHY IN YOUR LIFE  
TAKES VITAMINS IN YOUR DIETS!**

**THANK YOU!**