

## *Vitamin C – Ascorbic Acid*

### **Functions of Vitamin C**

1. It helps to form collagen/connective tissue – (collagen/connective tissue holds all body cells together)
2. It helps promote wound healing
3. It has a direct impact on growth in the body
4. It is important for the absorption of non-haem iron
5. It prevents scurvy
6. It acts as an antioxidant
7. It helps the body fight infection – has a good effect on the lymphocytes in the immune system
8. It is necessary for the manufacture of thyroxine

### **Vitamin C deficiency**

1. General weakness of body tissues due to lack of collagen/connective tissue
2. Wounds take longer to heal
3. Iron absorption is reduced which could lead to anaemia
4. An individual would be more prone to illness and infection
5. A severe deficiency could cause scurvy

### **Sources of Vitamin C**

Rosehips  
Blackcurrants  
Citrus fruits  
Strawberries  
Spinach  
Cabbage  
Peas  
Bean Sprouts

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Rich in Vitamin C

### **Properties of Vitamin C**

Highly soluble in water

Vitamin C is destroyed by the following:

- ◆ Heat
- ◆ Light
- ◆ Metal
- ◆ Oxygen & Alkalis – cause oxidation of Vitamin C
- ◆ Oxidase – an enzyme present in the cell walls of plants destroys Vitamin C

### **RDA's for Vitamin C**

Children – 45 mg/day

Adults - 50-60 mg/day

Pregnant & Nursing Women – 80mg/day

## *Vitamin B12 – Cobalamin*

### **Functions of Vitamin B12**

1. It plays a part in the maintenance of the myelin sheath – surrounds nerve fibres in the nervous system
2. It plays a role in the growth and formation of red blood cells
3. It plays an important role in the metabolism of folate

### **Vitamin B12 deficiency**

1. The nervous system is affected when the diet lacks vitamin B12 – symptoms include loss of smell, taste and difficulty in walking
2. Deficiency leads to tiredness and shortness of breath which may develop into anaemia
3. A lack of Vitamin B12 contributes to folate deficiency – during pregnancy this may cause neural-tube defects in the newborn infant

### **Sources of Vitamin B12**

Offal

Meats

Cheese

Milk

**Vegans are strongly advised to take supplements**

### **Properties of Vitamin B12**

Unaffected by

- ◆ Light
- ◆ Acids
- ◆ Alkalis
- ◆ Soluble in water
- ◆ Heat stable up to 100 C

## ***Folic Acid - Folate***

### **Functions of Folic Acid**

1. It works with vitamin B12 in the formation of red blood cells
2. It helps to protect the baby in the womb from developing neural-tube defects (NTD's)
3. It plays an important role in the formation of RNA and DNA – genetic material controlling growth
4. It helps support the functions of the immune system

### **Folic Acid deficiency**

1. Severe deficiency can cause anaemia
2. There is an increased risk of NTD's in the developing foetus

### **Sources of Folic Acid**

**Folate** – occurs natural in the following foods

- ◆ Green leafy Vegetables
- ◆ Liver
- ◆ Kidney
- ◆ Nuts
- ◆ Wholegrain Cereals
- ◆ Fortified Cereals
- ◆ Bread
- ◆ Milk

**Research suggests that folic acid supplements, when taken 8 weeks before pregnancy and during the early months of pregnancy can greatly reduce NTD's in the developing foetus**

### **Properties of Folic Acid**

- ◆ Water Soluble Vitamin
- ◆ Unaffected by acids
- ◆ Sensitive to light and oxygen
- ◆ Destroyed during cooking

### **RDA's for Folic Acid**

Children – 100-200 ug/day

Adults – 300 ug/day

Pregnant & Nursing women – 500 ug/day