



**Key Words:** fat soluble: vitamins in fatty foods. Water soluble: found in foods with high water content  
**Antioxidant:** Vitamins that help protect the body from developing heart disease and other types of cancer

Vitamin	Function	Sources	Deficiency (not enough)
<b>Vitamin A</b> (Retinol) fat Soluble 	<ul style="list-style-type: none"> <li>Keeps the skin healthy</li> <li>Helps us see in dim light</li> <li>Helps children to grow</li> <li>Keeps mucous membranes moist and healthy</li> <li>An antioxidant</li> </ul>	<p>Animal (retinol); milk, cheese, butter, eggs, liver, kidney, oily fish, added to veg. fat spreads</p> <p>Plant (beta carotene): cabbage, spinach, kale, lettuce, peas, orange/red/yellow veg. + fruit</p>	<p>Dry + infected skin + mucus membranes</p> <p>Children don't grow properly</p> <p>Night blindness leading to total blindness</p> <p>Poisonous in excess e.g. in supplements, especially to unborn babies. Excess: Excess—Over time can weaken bones</p>
<b>Vitamin D</b> (Cholecalciferol) fat soluble	<p>Helps calcium to be absorbed in the body</p> <p>Helps calcium to strengthen the bones and teeth</p>	<p>Sunlight on skin; oily fish, meat, eggs, butter, added to veg. fat spreads, fortified breakfast cereals</p>	<p>Bones weaken + bend = Rickets in children + Osteomalacia in adults</p> <p>Excess can make you absorb too much calcium—this can lead to kidney damage</p>
<b>Vitamin E</b> (Tocopherol) fat soluble	<ul style="list-style-type: none"> <li>an antioxidant (helps prevent heart disease + cancer)</li> </ul>	<p>Soya, corn oil, olive oil, nuts, seeds, whole wheat, veg. fat spreads</p>	<p>A deficiency is rare</p>
<b>Vitamin K</b> (Phylloquinone) fat soluble	<ul style="list-style-type: none"> <li>Helps the blood to clot when the body is injured</li> </ul>	<p>Green leafy veg. liver, cheese, green tea</p>	<p>Babies sometimes lose some blood at birth</p>
<b>Vitamin B1</b> (Thiamine) water soluble	<ul style="list-style-type: none"> <li>Helps energy to be released from carbohydrate in the body</li> </ul>	<p>Meat, especially pork, milk, cheese, eggs, veg. fresh + dried fruit, whole-meal bread, fortified breakfast cereals, flour</p>	<p>Tiredness and weak muscles.</p> <p>(In severe cases) Beri-beri which affects heart, blood vessels and nervous system</p>
<b>Vitamin B2</b> (Riboflavin) water soluble	<ul style="list-style-type: none"> <li>Helps energy to be released from carbohydrate, fat and protein in the body.</li> <li>Repairs body tissues.</li> </ul>	<p>Milk + milk products, eggs, fortified breakfast cereals, mushrooms, cheese, leafy greens</p>	<p>Mouth gets sore at the corners .</p> <p>Dry skin and a sore throat.</p>
<b>Vitamin B3</b> (Niacin) water soluble	<ul style="list-style-type: none"> <li>Helps energy to be released from food in the body. Maintains a healthy nervous system and skin.</li> </ul>	<p>Beef, pork, wheat flour, maize flour, eggs, milk, nuts, fish</p>	<p>Pellagra (a disease causing fatigue, depression and loss of memory) diarrhoea, dementia, dermatitis.</p>
<b>Vitamin B9</b> (Folate or folic acid) water soluble	<ul style="list-style-type: none"> <li>Works with vitamin B12 to make healthy red blood cells</li> <li>Helps to reduce the risk of unborn babies developing spina bifida</li> </ul>	<p>Green leafy veg. , yeast extract (marmite), peas, liver, chickpeas, asparagus, wholegrain rice, fruits, added to some breads = breakfast cereals</p> 	<p>Anaemia, tiredness and nerve damage in extreme cases. Vegans are most likely to have too little.</p> <p>May lead to spina bifida in babies if there are low levels at conception.</p> <p>Megaloblastic anaemia (large red blood cells)</p>
<b>Vitamin B12</b> (Cobalamin) water soluble	<ul style="list-style-type: none"> <li>Works with vitamin B9 to make healthy red blood cells</li> <li>Keeps nerve cells healthy</li> </ul>	<p>Liver, meat, fish, cheese, fortified breakfast cereals, yeast</p>	<p>Pernicious anaemia</p>
<b>Vitamin C</b> (Ascorbic acid) water soluble	<ul style="list-style-type: none"> <li>Protects the body from infections and allergies.</li> <li>Helps the body absorb iron</li> <li>Keeps connective tissue, which binds the body cells together, healthy</li> <li>Heals wounds</li> <li>An antioxidant</li> </ul>	<p>Fruits + veg. especially citrus fruits (e.g. oranges, lemons, limes, grapefruit), blackcurrants, kiwi, Brussel sprouts, cabbage, broccoli, new potatoes, milk + liver</p>	<p>Scurvy (tiredness and bleeding gums)</p> <p>Anaemia (not enough iron absorbed)</p> <p>Bleeding under skin</p> <p>Loose teeth</p> <p>Wounds do not heal</p> <p>Increased risk of cancer</p> 