Summary:

Vitamins are a diverse group of organic compounds that are nutritionally essential micro-nutrients. Among the vitamins; ascorbic acid, thiamin, riboflavin, niacin, vitamin $B_{6,}$ folic acid, biotin, pantothenic acid and vitamin B_{12} are classified as water soluble vitamins. Most of the water soluble vitamins cannot be stored in the body and hence their regular intake is of utmost importance. They are structurally diverse in nature. The B-vitamins are involved mostly in the metabolism of macro-nutrients. Thiamin pyrophosphate is essential for the conversion of pyruvate to acetyl CoA to generate energy. It is a co-enzyme for transketolase in the oxidation of glucose by the hexose monophosphate shunt. Riboflavin is essential in tissue respiration, growth and is a transporter of hydrogen ions. It is essential in the initial oxidation of fatty acids and several intermediates of glucose metabolism. Niacin is essential in glycolysis, fat synthesis and tissue respiration. Pantothenic acid is an integral part of co-enzyme A which is involved in energy production from the macronutrients and acyl carrier protein which is used in synthesis reactions. Pyridoxine is involved mainly in the metabolism of proteins. The different forms of tetrahydrofolic acid act as enzyme co-substrates in synthesis reactions in the metabolism of amino acids such as methionine, formation and maturation of red and white blood cells; and for biosynthesis of RNA and DNA by single carbon atom donors or acceptors. Vitamin B_{12} plays a major role in metabolism of propionate, amino acids and single carbons. Biotin is mainly a carboxyl carrier and acts by addition or removal of CO_2 and is involved in the gluconeogenesis and fatty acid synthesis and ascorbic acid is involved in the oxidation-reduction reactions, synthesis and production of collagen, neurotransmitters serotonin and norepinephrine, interferons and carnitine. Their stability is affected during processing, handling, packaging, exposure to heat, pH, presence or absence of oxygen and cooking.