

Vitamin A (retinol) is a fat-soluble vitamin, present in liver, milk and eggs. It was the first vitamin to be identified (McCollum and Davis, 1915) which is why it was named after the first letter of the alphabet.

β -carotene and other provitamin carotenoids occur in green leafy and orange/yellow vegetables and fruits. They are converted to retinal by the mucosal cells of the small intestine, before being reduced to retinol, then esterified and stored in the liver as retinyl palmitate. Vitamin A is transferred round the body as retinol bound to retinol-binding protein and prealbumin (transthyretin). In the retina, retinol is converted to rhodopsin (a photoreceptor pigment), and is also used to regulate gene expression and to guide differentiation in a variety of other tissue.

Investigations:

- Serum retinol study is expensive. Serum retinol-binding protein study is easier to perform and less expensive.
- Zinc levels (as zinc deficiency interferes with the production of retinol-binding protein)
- Iron studies (iron deficiency can affect the metabolism of vitamin A).
- Full blood count (FBC) as anaemia and infection may occur.