



GIG
CYMRU
NHS
WALES

Bwrdd Iechyd Prifysgol
Caerdydd a'r Fro
Cardiff and Vale
University Health Board

FAT SOLUBLE VITAMINS

Authors:

David Proud (RD)
Meenu Rezaie (RD)

All Wales Adult Cystic Fibrosis Centre
Llandough Hospital

Initial document: Apr 2014
Review date: Apr 2017

ARE YOU TAKING YOUR VITAMIN SUPPLEMENTS?



Everyone needs vitamins to allow the body to function properly. In cystic Fibrosis some vitamins are needed in greater amounts.

1) Which vitamins will you need more?

The **fat-soluble** vitamins **A**, **D**, **E** and **K**.

2) Why are they necessary?

These vitamins are found within the fat in our food. Although absorption of fat is controlled by taking pancreatic enzymes, some fat and fat-soluble vitamins will still be passed in your stools. To ensure you have adequate levels of these vitamins in your blood, you must take vitamin supplements.

3) How much of these vitamins you need?

You must take the amount that your doctor has prescribed.

4) When should you take your vitamins?

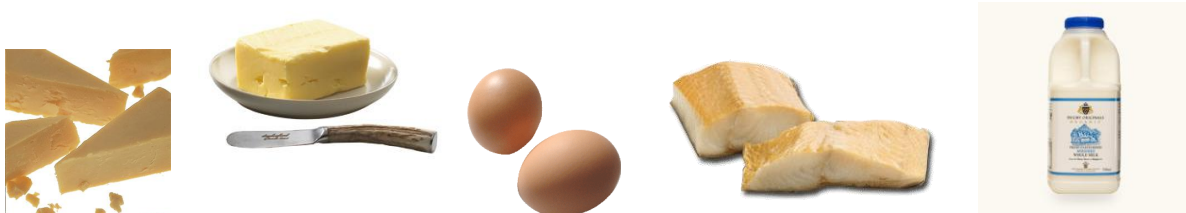
Anytime of the day, but ideally with food and enzymes, this will help the absorption. You can take all your vitamins at the same time.

5) How do you know if you are taking enough?

We will check your vitamin levels once a year at annual review and if levels are not within the normal range we will advise you to change the number of vitamin capsules you take.

What do these vitamins do?

Vitamin A: It is important for healthy skin, mucous membranes and normal growth in children. Is also needed for hair and eyes, it is especially important for good vision in dim light.
Good sources include: Cheese, butter, eggs, oily fish + full fat milk:

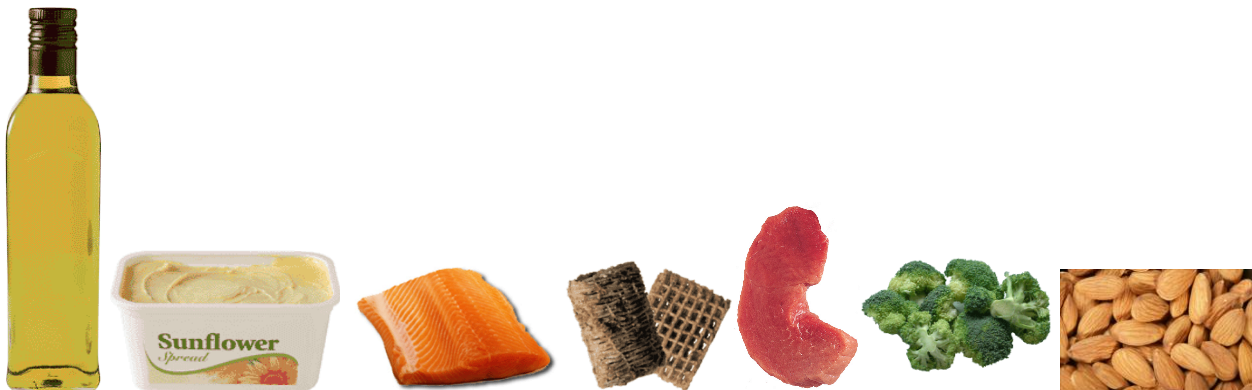


Vitamin D: Helps the body absorb calcium from the diet and is important for the growth and maintenance of healthy bones and teeth. It also helps maintain heart action and the nervous system. Most of our Vitamin D comes from exposure of bare skin to sunshine - 20 minutes in the sun from April to September (10am-3pm) will boost levels.
Good sources include: Exposure to sunlight, oily fish + fortified margarines.



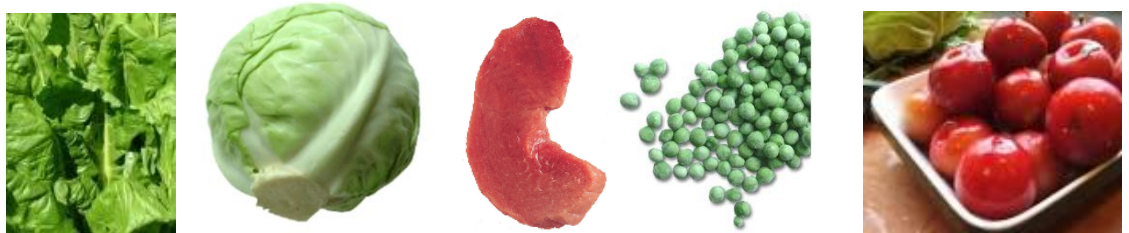
Vitamin E: Is needed for the production of red blood cells and is important for maintaining a healthy immune system, healthy skin and hair; This vitamin acts as an antioxidant and catches free radicals and destroy them before they can cause damage.

Good sources include: Vegetable oils, margarines, oily fish, wholegrain cereals, red meat, green leafy vegetables, nuts and seeds.



Vitamin K: Vitamin K is necessary for the normal clotting of blood and plays an important role in the prevention of osteoporosis.

Good sources include: Green leafy vegetables (i.e. spinach, cabbage + cauliflower), red meat, peas + cereals.



6) What will happen if you do not take your vitamins?

Your vitamin levels may become low and you may be vitamin deficient. This can cause:

Low levels of Vitamin A: Night blindness, difficulty seeing when the light is dim + skin problems.

Low levels of Vitamin D: Babies and children to get rickets, adults can get an increased risk of thin or brittle bones (osteoporosis) or soft + painful bones (osteomalacia).

Low levels of Vitamin E: Can cause poor muscle co-ordination, increased risk of disease from free radicals, decreased levels may also contribute to anaemia in infants.

Low levels of Vitamin K: Can lead to osteoporosis and the inability of blood to clot.

Do you need other vitamin supplements?

Some 'over the counter' supplements may contain vitamins A, D and E. As these vitamins are stored in the body it is important that you do not take more than recommended by your doctor. If you are taking any additional vitamins or health supplements, inform your doctor so he / she can advise you if it is safe to continue taking them.