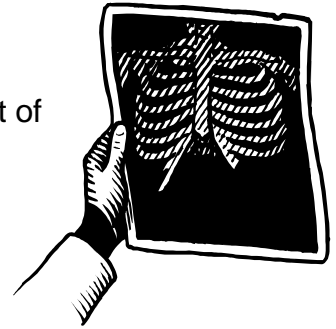


Cystic Fibrosis and Bone Health - Information for Patients

Having Cystic Fibrosis (CF) increases your risk of developing low bone mineral density.

What is low bone mineral density?

Low bone mineral density means that the structure and mineral content of the bones is reduced which is called **osteopenia**. If the bones become very thin making the bones more susceptible to fracture (break), the condition is called **osteoporosis**.



What causes low bone mineral density?

Usually our bones grow during childhood and continue to strengthen until early 30's when *peak bone mass* is achieved. After this time bones gradually become less dense as we get older. In CF sometimes the bones do not become strong enough in the first place (or achieve peak bone mass) and/or the thinning process is accelerated by certain factors.

The following factors can put people with CF at an increased risk of low bone mineral density;

- Low body weight
- Poor calcium intake
- Malabsorption (not digesting and absorbing food adequately)
- Low vitamin levels (especially vitamin D)
- Low physical activity level
- Steroids (Prednisolone)
- Alcohol and smoking

How can the risk of developing low bone mineral density be minimised? How can you prevent it becoming worse?

To minimise your risk factors there are a number of things you can do;

Maintain a Healthy Weight – try to ensure your weight is within the healthy range of BMI 20 - 25. You may need to increase your calorie intake, discuss the best way to do this with your dietician.

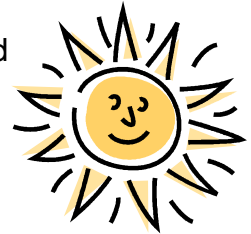
Have a High Calcium Intake – it is recommended that people with CF have almost twice the recommended daily amount of calcium (1300 – 1500mg/day). Try to have 2 pints of milk as well as other sources of high calcium foods everyday. If you dislike dairy produce and are unable to get enough calcium from your diet, your dietician or doctor may recommend a calcium supplement. See list of calcium containing foods at the end of this information sheet.

Information for Patients

Ensure you are absorbing your diet adequately -take your pancreatic enzymes with all your meals, snacks and milk drinks in adequate amounts. If you think you are not absorbing your food properly (symptoms of fatty stools) discuss your enzyme dose with your dietician.

Maintain healthy Vitamin levels – most people with CF are prescribed fat soluble vitamins including vitamin D as without them they would become deficient. Vitamin D is needed to help the body to absorb calcium from the diet and maintain the structure of the bones. Vitamin K is also required for healthy bones – you may be prescribed this if you are thought to be deficient or if you have osteopenia or osteoporosis.

Ensure you take your vitamin supplements regularly as prescribed, with food and enzymes. You can also make vitamin D from the action of sunlight on your skin, so try to be outside for short periods on sunny days to boost your vitamin D level (*do not exposure yourself to the sun long enough to cause sunburn*).



Increase the amount of exercise you take – regular weight bearing exercise such as walking, jogging, skipping, step aerobics and dancing can help to strengthen your bones. For an individual exercise programme, please discuss this with your physiotherapist.



Manual techniques (percussion) and physiotherapy – if you are told that you have low bone mineral density and perform percussion or manual techniques as a form of physiotherapy please speak to your physiotherapist about advised changes to your treatment.

Steroids (Prednisolone) – continue to take any steroids you are prescribed, stopping them abruptly is unadvisable. Steroids taken over a long period of time can increase the risk of osteoporosis; however they are an important and useful treatment. They help to reduce inflammation in the lungs and can aid recovery from infection. Often the benefit of taking them out weighs the risk of osteoporosis.

Avoid smoking and keep alcohol consumption to healthy limits – smoking and/or a high alcohol intake is associated with an increased risk of osteoporosis. Avoid smoking and keep your alcohol intake to healthy limits of a maximum of 2 -3 units per day for women and 3-4 units per day for men.

If you need any help with trying to stop smoking or reduce your alcohol intake, please talk to one of the CF team.

How is bone mineral density measured?




Bone mineral density is measured by a scan called a DEXA scan. All patients with CF should have a DEXA scan every 1 -3yrs to monitor their bone health.

How can low bone mineral density be treated?

If you develop low bone mineral density, you will be prescribed medication to reduce thinning of the bones and calcium supplements to help strengthen the bones. Also following the advice in this information sheet about reducing your risk can help.

Information for Patients

CALCIUM CONTAINING FOODS

<u>FOOD</u>	<u>CALCIUM CONTENT PER SERVING</u>	
1 pint of whole milk*	653mg	
Sardines (small can)*	460mg	
1 pot of yoghurt (150g)*	225mg	
Cheddar cheese (matchbox size)*	216mg	
Rice pudding (small can/pot)*	186mg	
Slice of pizza*	180mg	
2 scoops of dairy ice cream*	156mg	
Custard (1 serving 120g)*	156mg	
Chocolate – (standard bar)	123mg	
Baked beans (small can)	80mg	
Slice of white bread	36mg	
Carton of ready-made milk based supplement drink, e.g.; Fortisip	200mg	
High energy tube feed (1000ml), e.g.; Nutrison Energy	1000mg	

*HIGH CALCIUM FOODS

Information for Patients

Remember try to aim for at least 1300mg calcium each day

TASTY TIPS FOR TIP TOP BONES

1. Have breakfast every morning – cereal with milk, cheese on toast, milkshake and biscuits. You do not have to have cereal for breakfast – use it as a snack anytime.



2. Have a yoghurt or milk based dessert each day after a meal or as a snack – choose thick and creamy, Greek style or custard style yoghurts, milk puddings, dairy ice-cream, milk jelly, angel delight or custard.

3. Use cheese as a topping – on soups, in mashed potatoes or on jacket potatoes, on burgers and pasta dishes.



4. Make your drinks out of milk – milky coffee, hot chocolate, Ovaltine, Horlicks, milkshakes.

5. Add milk to meals – in sauces, e.g.; creamy pasta sauces, cheese sauce, macaroni cheese, parsley sauce with fish, lasagne.



Contact us:

If you have any questions or concerns regarding this information, please contact one of our CF Dieticians:- on 0121 424 1796 (direct line with answer phone) 0121 424 2000 Bleep 2425 or email: joanne.barrett@heartofengland.nhs.uk, toni.osborne@heartofengland.nhs.uk, elizabeth.glennon@heartofengland.nhs.uk, rebecca.jones@heartofengland.nhs.uk

Additional Information Sources:

For more information on all aspects of living with Cystic Fibrosis you can visit the Cystic Fibrosis Trust web site at : www.cftrust.org.uk.

For local news and events the West Midlands Regional Cystic Fibrosis Unit based at Heartland Hospital has its own website at: www.heartlandscf.org.uk .

Please use the space below to write down any questions you may want to ask: