

## **Bone Health and Cystic Fibrosis: Patient Information Part 2**

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### **Introduction:**

Many people with cystic fibrosis develop bone weakness due to poor nutrition, pancreatic insufficiency, glucose abnormalities or Cystic Fibrosis Related Diabetes (CFRD), recurrent or chronic illness, poor lung function, and use of steroids in treatment. This condition is referred to as low bone mass, osteopenia, or osteoporosis depending on the age and the extent of bone weakness. Possible consequences of bone weakness include fractures (broken bones), pain, and immobility (difficulty moving). The risk of developing bone weakness can be minimized through careful attention to CF management and nutrition. In some cases, medications to improve bone strength may be prescribed by your medical provider.

### **What can you do to prevent Cystic Fibrosis related bone health problems?**

There are many ways that you can promote bone health and reduce the risk of fractures, such as keep up with your nutrition, be compliant with pancreatic enzyme replacement and maintain a healthy weight. Work closely with your CF team to maintain healthy lung function and manage elevated blood sugar levels, including Cystic Fibrosis Related Diabetes (CFRD). Poor lung function and high blood sugars can prevent you from gaining weight and can affect bone health.

### **Can Physical Activity, vitamins, and calcium help?**

Physical activity in the form of walking, running, weightlifting, or resistance training done at least three days weekly promotes bone strength. Calcium is the building block of bone. Many people with CF need to take calcium and vitamin D supplements due to the malabsorption common in CF. Supplementation can overcome vitamin D deficiency with daily or weekly vitamin D supplements. Your CF team will determine if calcium and/or vitamin D supplementation is right for you.

### **Are There Medications That Can Strengthen Bones?**

Your CF team can use several medications to treat CF bone disease. The most frequently used medications are called bisphosphonates. There are different types of bisphosphonates, some are given by mouth and others by an infusion into the vein. The frequency of dosing will depend on the type of bisphosphonate. Denosumab is a different medication that is given as an injection into the skin every six months. Other medications include the anabolic bone therapies, which help with new bone formation. This group of medications is meant for adults with the highest risk for fractures. Anabolic treatments are given as a daily or once-a-month injection.

### **Do Medications for bone health have side effects?**

All forms of bone strengthening medications work best when taken with calcium and vitamin D. The pill forms of bisphosphonates can cause reflux. Another common side effect is transient flu-like symptoms such as body aches. Denosumab can cause immune suppression. A rare side effect is called osteonecrosis of the jaw or atypical femoral fractures. Let your dentist know that you are on bone-strengthening medicines.

### **Talking to Your CF Health Care Team:**

Bone health is important for the overall health of an individual with CF. If you are concerned about your bone health, please address this with your CF health team. Monitoring your bone health can help identify health concerns and improve your overall CF care.

### **For More Information:**

<https://www.cff.org/managing-cf/bone-disease-and-cf>

<https://www.cff.org/what-can-i-do-improve-my-bone-health>

<https://cystic-fibrosis.com/osteoporosis>