

CF and Bone Health

What is cystic fibrosis bone disease?

Osteoporosis and osteopenia are two common bone diseases that can affect people living with CF (pwCF). **Osteopenia** occurs when there are not enough essential minerals, like **calcium, vitamin D, and vitamin K**, in your bones, so they become less dense and more susceptible to fractures and breaks. Osteoporosis happens after osteopenia progresses and the naturally-occurring holes in your bones become too big, leaving your bones brittle and prone to injury.

What causes bone disease in people with CF?

PwCF can have trouble absorbing key nutrients like calcium, vitamin D, and vitamin K, which are all minerals that support bone health. PwCF can also have **low body mass**, which is a risk factor for bone disease. Weight-bearing physical activity increases the muscular load on bones and strengthens them. **Respiratory distress** and **reduced mobility** can cause low activity levels for pwCF, which can contribute to bone disease. **Inflammation** from **pulmonary exacerbations** can also weaken bones and is a risk factor for bone disease.

Why is it important?

Bone disease can lead to broken or fractured bones, which are not only painful, but can impact lung health. **Rib fractures** can make it painful to complete airway clearance and to breathe. Bone disease can impact **transplant eligibility** and fractures can lead to **transplant complications**.

What helps to prevent bone disease?



CFF recommends that beginning at 18 years of age, all pwCF should be screened for bone disease through a **dual-energy X-ray absorptiometry (DEXA) scan**.

Leafy greens, fruits, nuts, dairy products, fish, beans, and soy are all high in calcium, as well as fortified products like **plant milks** or **orange juice**.



Sunlight and **fatty fish** are both sources of vitamin D, which your body needs to absorb calcium.

Regular, weight-bearing exercise like **walking, running, and racket sports** can help to build bone strength, as well as **resistance training** (using free weights or resistance bands).



Resources

[Bone Disease and CF](#)
[Essential nutrients your body needs for building bone](#)

DISCLAIMER: The Boomer Esiason Foundation provides information and guidance to adults living with cystic fibrosis for educational purposes only. The advice offered, including recommendations such as bone disease screening, dietary suggestions, sunlight exposure, exercise routines, and vitamin intake, is not intended to replace professional medical advice, diagnosis, or treatment. Please consult your healthcare provider before implementing any new regimen as individual medical conditions and needs vary, and only a healthcare provider can provide tailored advice based on a comprehensive understanding of the individual's health status and medical history.

