

# Cystic Fibrosis Research News

**Title:**

Bone health outcomes in post-lung transplant patients with cystic fibrosis

**Lay Title:**

Bone health after lung transplantation in patients with cystic fibrosis

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**What was your research question?**

What happens to bone density in patients with cystic fibrosis (CF) after receiving lung transplants, and how many of them experience fractures? Are there any risk factors associated with poor bone health in these patients?

**Why is this important?**

Past studies found that many CF patients have low bone density and, as a result, experience a high number of fractures. Those who have severe CF may require lung transplants, which worsens bone health even further. However, very few studies have looked at the long-term trends in bone density, as well as risk factors for fractures in these patients. Understanding their long-term bone health may allow us to better treat and prevent bone disease in these patients.

**What did you do?**

We collected data from 59 lung transplant patients at UT Southwestern in Dallas, including 30 with CF and 29 without CF. We first looked for differences in pre-transplant characteristics between patients with and without CF. We then looked at their annual bone density scans at the hip and spine up to three years after their transplant and compared their year-over-year trends. We also compared clinical data between CF patients who did and did not experience fractures after transplant to identify differences.

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## What did you find?

Lung transplant patients with CF were much younger and had worse bone density before transplant compared to those without CF. In the year after lung transplant, bone densities in both groups dropped significantly, but those with CF had better recovery relative to their pre-transplant measurements in the following years. However, lung transplant patients with CF continued to have low bone density scores. We found that 9 (30%) of those with CF and 10 (34%) of those without CF experienced fractures after transplant. Among those with CF, poor lung function and lower bone density were associated with developing fractures.

## What does this mean and reasons for caution?

Although CF patients have good recovery of their bone density after lung transplant compared to non-CF patients, those with CF continue to have poor bone health and relatively high rates of fractures years after their transplant. This is significant, given that CF lung transplant patients are much younger than those without CF (and thus, are expected to have better bone health). Worse lung function and lower bone densities before transplantation can be used to predict post-transplant fractures. However, it's important to note that our study looked at a relatively small number of patients, and that larger studies are needed.

## What's next?

We hope larger future studies will examine trends that we see, and identify optimal ways to prevent and treat poor bone health in patients with CF after lung transplant. It is important for both patients and providers to understand the impact of CF on bone health, especially after lung transplantation.

## Original manuscript citation in PubMed

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