Ebenezer Scrooge may be the most memorable character from Charles Dickens’ *A Christmas Carol*, with his "Bah, humbug!" and his stingy ways. But medical sleuths are more interested in the book's biggest unanswered question: What exactly was wrong with Tiny Tim, Bob Cratchit's sickly son?

Online detectives have been debating this question for years, using clues taken from the book to form possible diagnoses.

Internist Dr. Daniel J. Glunk, president-elect of the Pennsylvania Medical Society, has examined all of these theories and determined that many seem to have merit in identifying Tiny Tim's ailment.

**The Symptoms**

We know that Tiny Tim was growing up in London in the mid-1800s, a time when heavy smog lay thick in the air, blocking sunlight.

From Dickens' descriptions of the lad, we know he was very small, used a crutch and was very sick. Because Scrooge was a well-known, well, scrooge, it is clear Cratchit's meager salary was not enough to buy good food and medicine for his son. From the scenes Scrooge sees while being visited by the ghosts, we see Cratchit carrying Tiny Tim from time to time, a possible sign of muscle fatigue. We also learn through Scrooge's time travels that Tiny Tim would soon die.

At the end of the book, readers are led to believe that the pay raise the changed Scrooge gives Bob Cratchit helps to save Tiny Tim.

**Rickets**

These clues, given in the text of the story, would suggest that it is most likely that Tiny Tim suffered vitamin D deficiency, commonly called rickets.

Rickets was a widespread problem in cities with heavy smog that blocked sunlight, as sunlight is a major source of vitamin D.

Without vitamin D, the body can't absorb calcium and has difficulty building and maintaining strong bones. Some signs of rickets include soft bones, muscular weakness, osteoporosis, and joint pain.

"Knowing London's environmental conditions at that time and knowing Tiny Tim used a crutch, it's reasonable to consider this disease, despite the fact that vitamin D wasn't discovered until the early 20th century," Glunk said. "At the time, they could have unknowingly treated this condition through better foods that Scrooge helped to buy."

Of course, it's nearly impossible to say for sure what was ailing Tiny Tim, but that won't keep people from looking at the clues to try to determine what was ailing Tiny Tim and how a change in fortunes (brought about by Scrooge's change of heart) might have changed the outcome for this sickly little boy.