

Research sheds new light on cause of deadly lung disease

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New research could shed light on the mystery cause of a lung disease that is a major killer, and potentially unlock new treatments.

Idiopathic pulmonary fibrosis (IPF) affects at least 32,000 people in the UK, and accounts for one per cent of all UK deaths, with patients having a life expectancy of three to five years once diagnosed. The disease involves scar tissue developing abnormally in the lungs, which progressively reduces the ability to breathe.

Up to now, the cause has been unknown—however, a new largescale research study led by the University of Exeter and published in *The Lancet Respiratory Medicine* has found that short telomeres—a protective component found on the ends of DNA—are linked to higher risk of having IPF.

Moreover, using a complex genetic analysis approach called Mendelian randomisation, researchers found evidence that it's likely that the short telomeres cause IPF, as opposed to the disease itself causing [telomere](#) shortening.

The Exeter-based research team collaborated with the Royal Devon & Exeter NHS Foundation Trust, and the universities of Bath and Leicester, as well as patients affected by IPF. They examined data from 1,300 participants with IPF in UK Biobank, and compared it with similar cohorts to ensure their results were replicated.

Senior researcher Dr. Chris Scotton, of the University of Exeter Medical School, said: "The cause of [idiopathic pulmonary fibrosis](#) has always been difficult to pin down, and it's proven hugely challenging to develop effective treatments. Our research provides the strongest evidence to date that having short telomeres may contribute to the cause of this terrible disease. This means we can look for new ways to prevent or treat IPF, and it's another reason to adopt a healthier lifestyle—because reducing stress and increasing exercise may help keep telomeres longer."

In healthy people, telomeres naturally get shorter as we age. But if this

shortening is accelerated, it is thought to be one of the contributing factors to the health issues that we may encounter as we get older. Having less protection at the ends of our DNA can impair our bodies' ability to heal or fight off infection.

More information: Anna Duckworth et al, Telomere length and risk of idiopathic pulmonary fibrosis and chronic obstructive pulmonary disease: a mendelian randomisation study, *The Lancet Respiratory Medicine* (2020). [DOI: 10.1016/S2213-2600\(20\)30364-7](https://doi.org/10.1016/S2213-2600(20)30364-7)

Provided by University of Exeter

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