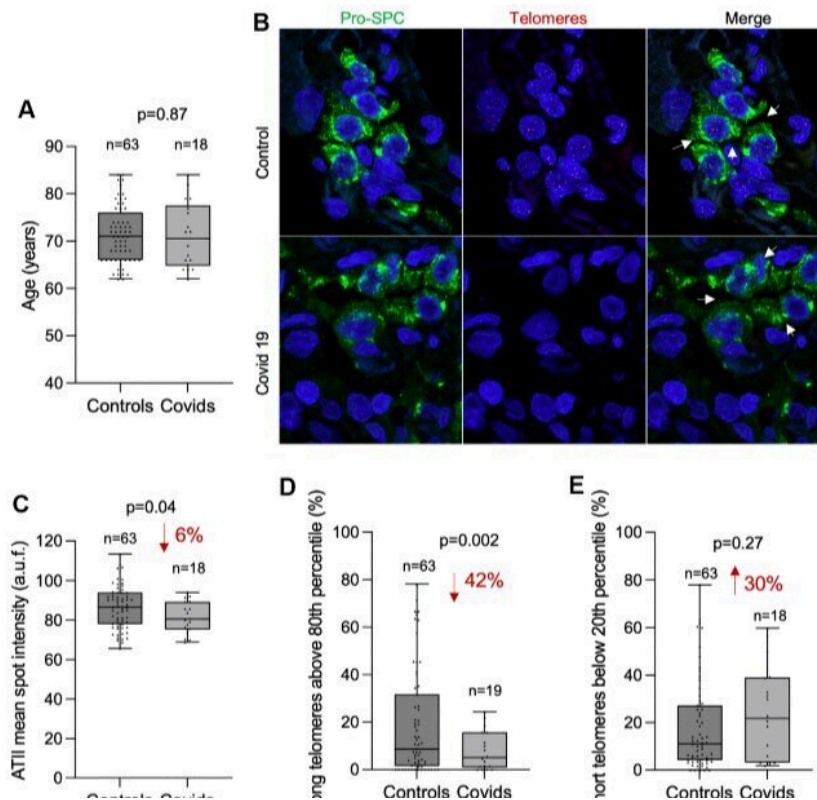


Short telomeres in alveolar type II cells associate with lung fibrosis in post COVID-19 patients with cancer

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COVID-19 patients present shorter telomeres in the alveolar type II cells than controls. Credit: *Aging* (2023). DOI: 10.18632/aging.204755

A new research paper titled "Short telomeres in alveolar type II cells

associate with lung fibrosis in post COVID-19 patients with cancer" has been published in *Aging*.

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is responsible for the coronavirus disease 2019 (COVID-19) pandemic. The severity of COVID-19 increases with each decade of life, a phenomenon that suggests that organismal aging contributes to the fatality of the disease. In this regard, researchers have previously shown that COVID-19 severity correlates with [shorter telomeres](#), a molecular determinant of aging, in a patient's leukocytes.

Lung injury is a predominant feature of acute SARS-CoV-2 infection that can further progress to [lung fibrosis](#) in post-COVID-19 patients. Short or dysfunctional telomeres in Alveolar type II (ATII) cells are sufficient to induce [pulmonary fibrosis](#) in mice and humans. In this new study, the researchers above analyzed telomere length and the histopathology of lung biopsies from a cohort of alive post-COVID-19 patients and a cohort of age-matched controls with lung cancer.

The team set out to address whether short telomeres in the lungs of post-COVID-19 patients could be at the origin of virus-induced pulmonary fibrosis. They found loss of ATII cellularity and shorter telomeres in ATII cells concomitant with a marked increase in fibrotic lung parenchyma remodeling in post-COVID-19 patients compared to controls. These findings reveal a link between presence of short telomeres in ATII cells and long-term lung fibrosis sequel in post-COVID-19 patients.

The researchers explain, "As short telomeres can be elongated by telomerase, and telomerase activation strategies have been shown by us to have [therapeutic effects](#) in diseases associated to short telomeres, such as pulmonary fibrosis, it is tempting to speculate that such telomerase activation therapies could improve tissue pathologies in post-COVID-19

patients such as lung fibrosis after overcoming the viral infection."

More information: Paula Martínez et al, Short telomeres in alveolar type II cells associate with lung fibrosis in post COVID-19 patients with cancer, *Aging* (2023). [DOI: 10.18632/aging.204755](https://doi.org/10.18632/aging.204755)

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