

Radiation and pulmonary fibrosis

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Radiation-induced pulmonary fibrosis—tissue scarring that can permanently impair lung function—limits the delivery of therapeutic radiation doses to non-small cell lung cancer.

To develop strategies for preventing or reducing [fibrosis](#), Michael Freeman, Ph.D., and colleagues are exploring the cell types and factors that contribute to the radiation-induced fibrotic response.

The investigators previously showed that loss of the transcription factor Nrf2 increases susceptibility to pulmonary fibrosis. They now show that thoracic (chest) radiation of mice causes a loss of alveolar type 2 cells and that this loss is enhanced in mice lacking Nrf2.

The researchers found that a specific stem/progenitor cell population was inhibited following radiation in mice missing Nrf2, and that alveolar type 2 [cells](#) in these mice were more likely to change into myofibroblasts—a cell type implicated in fibrosis.

The findings, reported in the November *Free Radical Biology and Medicine*, demonstrate that Nrf2 participates in stem cell mobilization and helps maintain the alveolar type 2 cell reparative process in injured lungs.

More information: Geri Traver et al. Loss of Nrf2 promotes alveolar type 2 cell loss in irradiated, fibrotic lung, *Free Radical Biology and Medicine* (2017). [DOI: 10.1016/j.freeradbiomed.2017.08.026](https://doi.org/10.1016/j.freeradbiomed.2017.08.026)

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