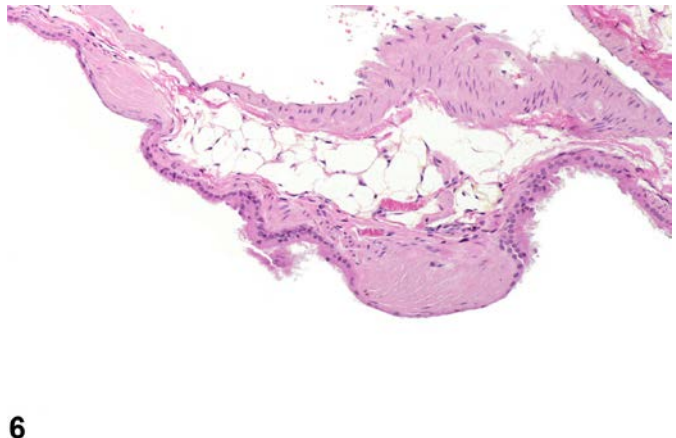
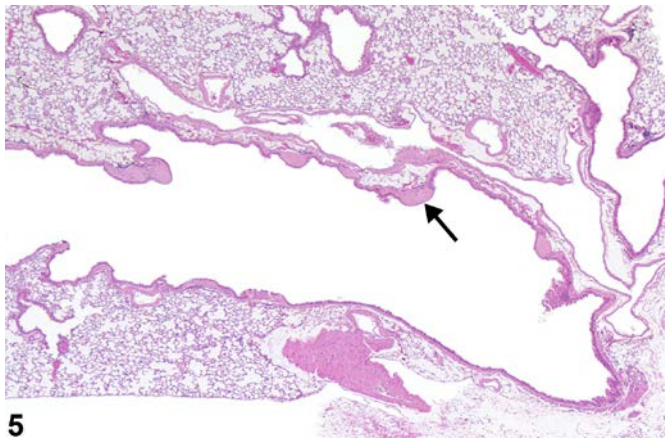
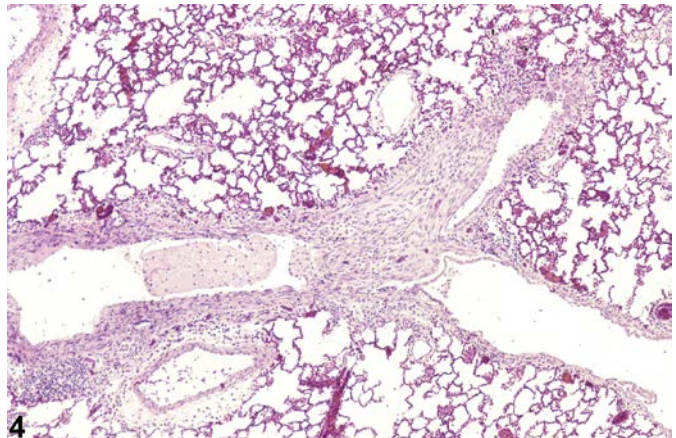
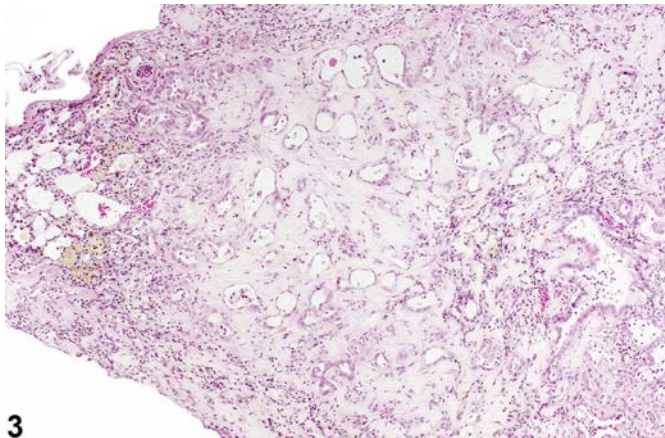
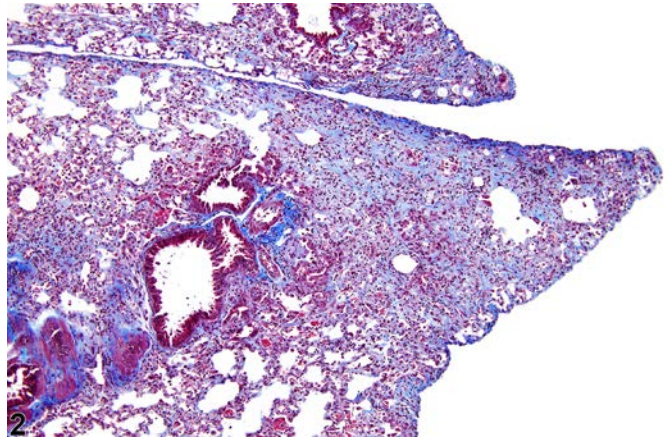
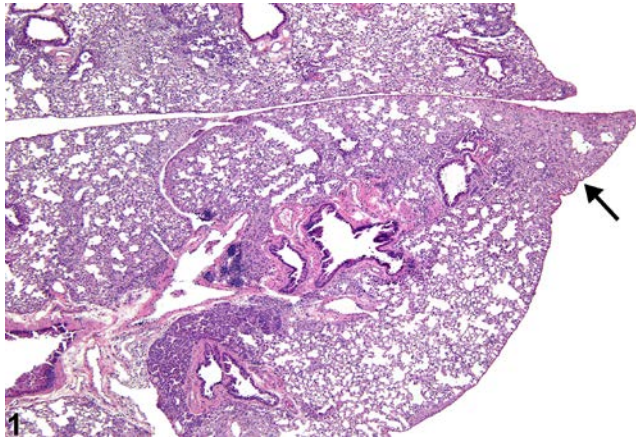
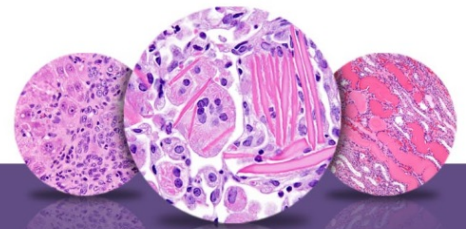


# NTP Nonneoplastic Lesion Atlas

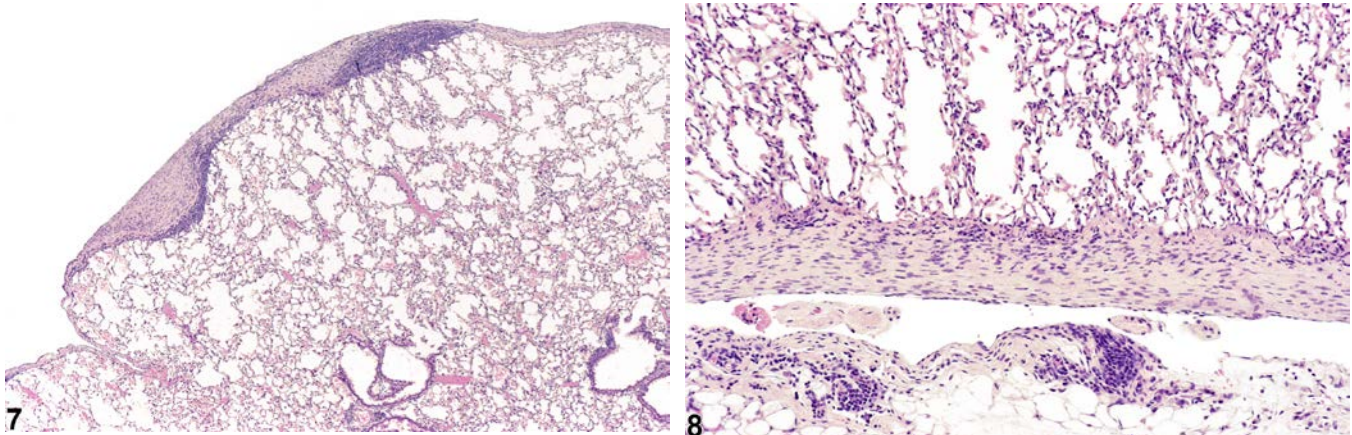
## Lung – Fibrosis





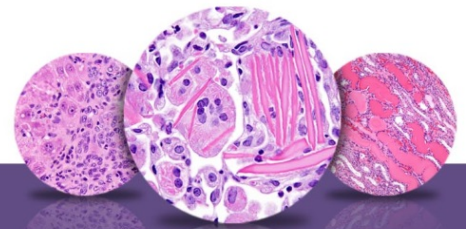
# NTP Nonneoplastic Lesion Atlas

## Lung – Fibrosis



**Figure Legend:** **Figure 1** Lung - Fibrosis in a mouse. The airspaces have been obliterated at the tip of the lung lobe (arrow). **Figure 2** Lung - Fibrosis in a mouse (same animal as in Figure 1). The blue staining indicates interstitial fibrosis. Masson's trichrome stain. **Figure 3** Lung - Fibrosis in a male F344/N rat from a chronic study. Severe interstitial fibrosis replaces the lung parenchyma. **Figure 4** Lung, Bronchiole - Fibrosis in a female F344/N rat in a subchronic study. There is intraluminal and mural bronchiolar fibrosis. **Figure 5** Lung, Bronchus - Fibrosis in a male B6C3F1/N mouse from a chronic study. There is multifocal subepithelial bronchial fibrosis (arrow). **Figure 6** Lung, Bronchus - Fibrosis in a male B6C3F1/N mouse from a chronic study (higher magnification of Figure 5). There is a focus of mature subepithelial bronchial fibrosis with epithelial atrophy. **Figure 7** Lung, Pleura - Fibrosis in a female B6C3F1/N mouse from a chronic study. The pleura is thickened by fibrosis and inflammation. **Figure 8** Lung, Pleura - Fibrosis in a female B6C3F1/N mouse from a chronic study. The pleura is diffusely thickened by fibrosis and inflammation.

**Comment:** Fibrosis appears microscopically as an increase in the amount of fibrous tissue that either replaces or expands normal structures. Fibrosis can occur anywhere in the lung, including alveolar septa or interstitium (Figure 1, Figure 2, and Figure 3), airways (Figure 4, Figure 5, and Figure 6), and pleura (Figure 7 and Figure 8), depending on the site at which a particular agent produces damage. Fibrosis generally consists of mature, dense collagen, although areas of loose immature collagen may also be present. In airways, the fibrosis commonly occurs as focal projections of fibrous tissue into the airway lumen that may partially occlude the lumen (Figure 4) but may also occur as circumferential thickening of the airway wall (Figure 5 and Figure 6). Because fibrosis is often a response to tissue



# NTP Nonneoplastic Lesion Atlas

## *Lung – Fibrosis*

damage (it is meant to replace damaged tissue when repair is not possible), it is often associated with inflammation. Fibrosis can be confirmed with special stains for collagen. With the Mason's trichrome staining technique, mature collagen stains blue (Figure 2).

**Recommendation:** Lung - Fibrosis should be diagnosed and graded whenever present. The location of the fibrosis (alveolus, bronchus/bronchiole, pleura) should be included in the diagnosis as a site modifier. The preferred terminology for fibrosis involving the interalveolar septa (alveolar walls) is Lung, Interstitium - Fibrosis. If fibrosis occurs in conjunction with inflammation, it should be diagnosed separately, though if the degree of fibrosis is very minimal or sporadic (occurring in only a few animals), it may be described in the pathology narrative in lieu of a separate diagnosis.

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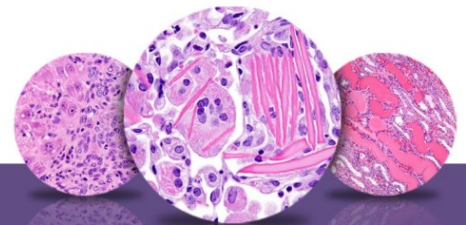
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## *Lung – Fibrosis*

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