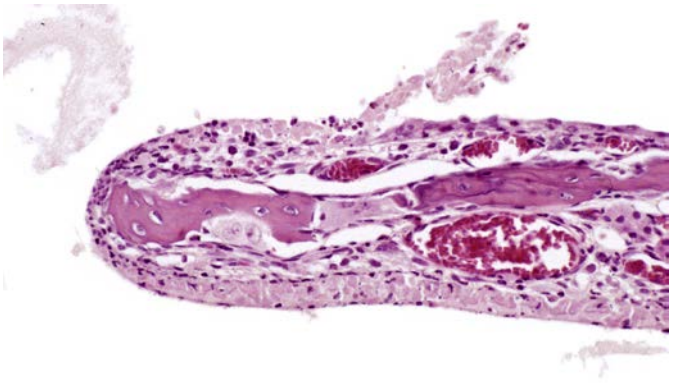
Nose, Epithelium – Necrosis



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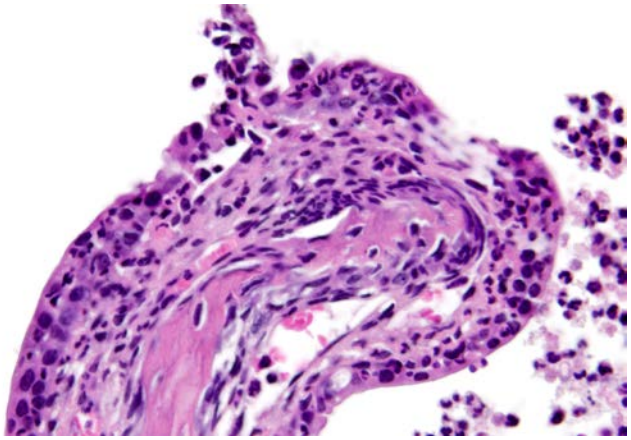

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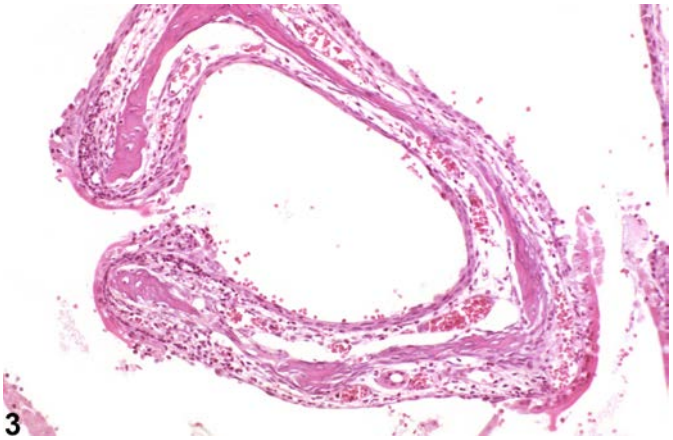

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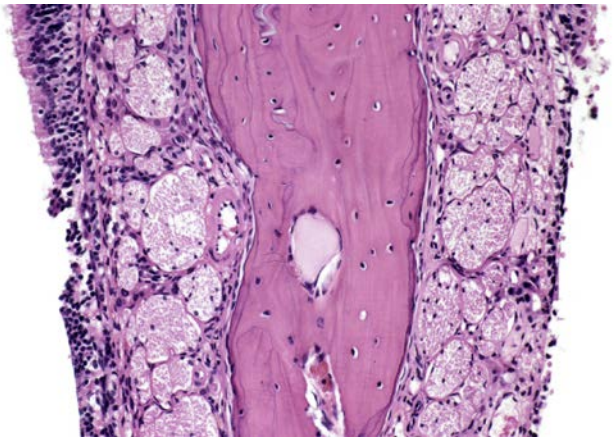

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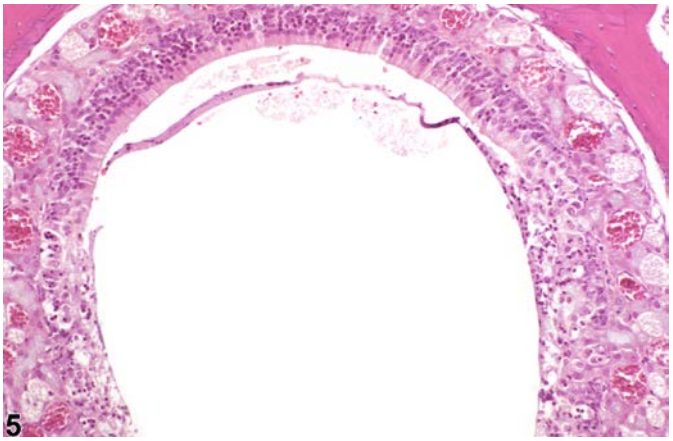

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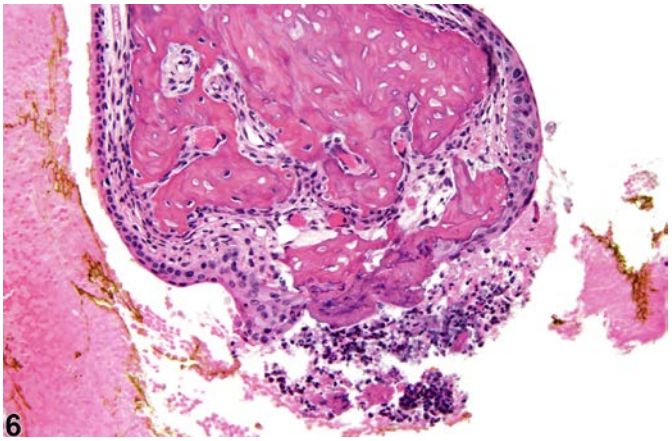

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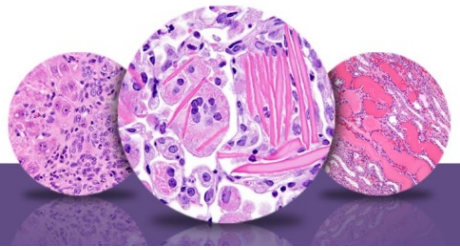
Figure Legend: Figure 1 Nose, Transitional epithelium - Necrosis in a female B6C3F1/N mouse from a subchronic study. The epithelial lining of a turbinate is necrotic, with evidence of exfoliation of necrotic cells. **Figure 2** Nose, Transitional epithelium - Necrosis in a female B6C3F1/N mouse from a chronic study. Necrotic epithelium is characterized by prominent pyknosis, with evidence of exfoliation; acute inflammation is also present. **Figure 3** Nose, Transitional epithelium - Necrosis in a B6C3F1/N mouse from a subchronic study. There is epithelial necrosis and loss of epithelium from the nasal turbinate. Image provided courtesy of Dr. R. Miller. **Figure 4** Nose, Olfactory epithelium - Necrosis in a male F344/N rat from a subchronic study. There is loss of cells in the olfactory epithelium. **Figure 5** Nose, Olfactory epithelium - Necrosis in a female B6C3F1/N mouse from an acute study. Loss of cells and cell debris is present in the olfactory epithelium. Image provided courtesy of Dr. R. Miller. **Figure 6** Nose, Olfactory epithelium - Necrosis in a male B6C3F1/N mouse from a subchronic study. Necrosis is present in the olfactory epithelium and turbinate bone (plus inflammation).

Comment: Epithelial necrosis (Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, and Figure 6) a common lesion in inhalation studies, particularly with strong irritants, but may also be seen in other types of studies. A number of changes may manifest with epithelial necrosis, including pyknosis or karyorrhexis of nuclei, karyolysis, cell fragmentation, increased cytoplasmic eosinophilia, the presence of cell debris, indistinct cell outlines, and exfoliation of cells. Any of the epithelial or other cell types may be affected, and the necrosis may extend into associated structures such as the nasal glands, nasolacrimal ducts, and nasal turbinate bone (Figure 6). Loss of sensory cells in the olfactory epithelium is frequently accompanied by atrophy of the nerve bundles in the lamina propria.

Recommendation: Epithelial necrosis should be diagnosed and graded whenever present. The necrotic cells, or remnants thereof, must be present if necrosis is to be diagnosed. If necrotic cells are not present, then ulcer or erosion should be diagnosed. A site modifier (e.g., respiratory, transitional, squamous, or olfactory epithelium, vomeronasal organ, lacrimal duct) should be included in the diagnosis to indicate the location of the lesion. If the lesion is present in more than one location, it should be diagnosed separately for each location in which it is a prominent change. Necrosis may occur in the presence of other olfactory changes and should be diagnosed when present as a distinct, clearly defined entity. Necrotic lesions that are secondary to other lesions, such as inflammation, should



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not be diagnosed separately unless warranted by severity but should be described in the pathology narrative. Associated lesions, such as inflammatory cell infiltrate, inflammation, turbinate bone necrosis, or hemorrhage, should not be diagnosed separately unless warranted by severity.

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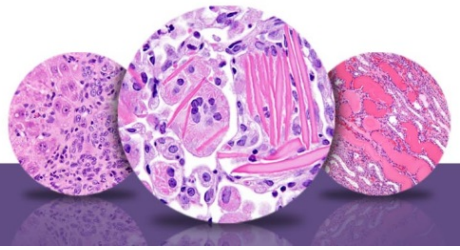

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