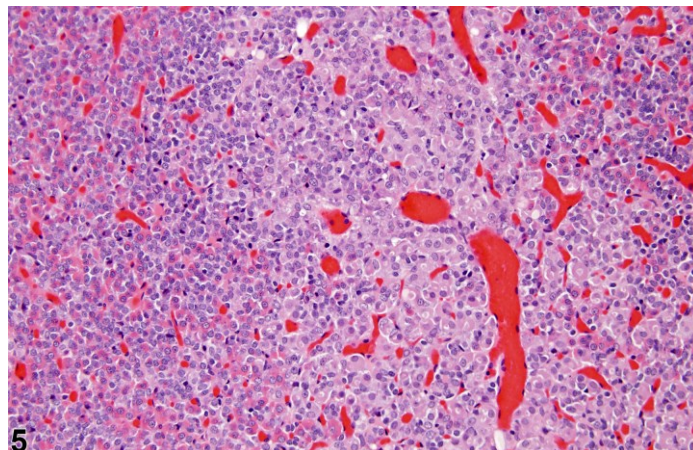
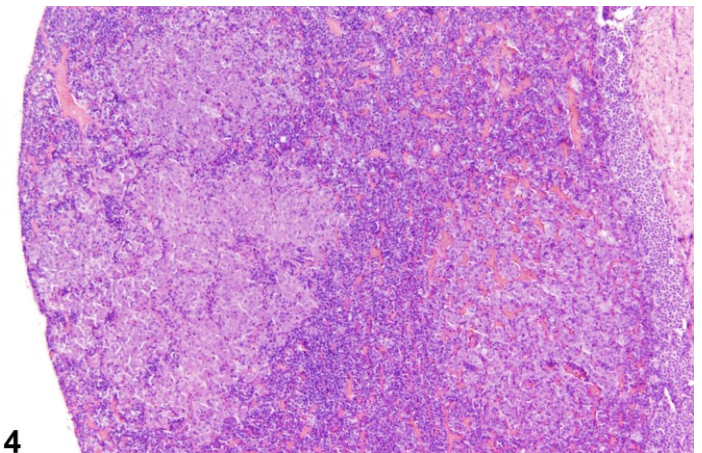
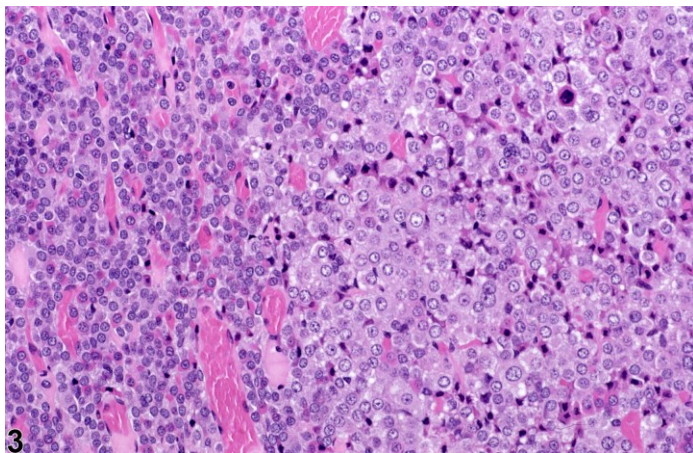
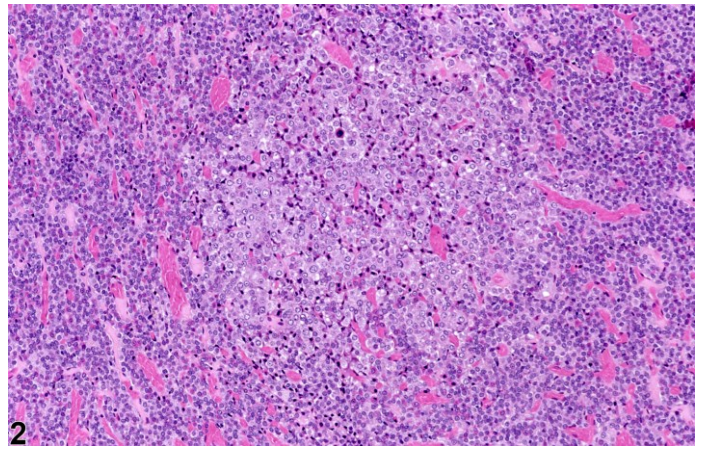
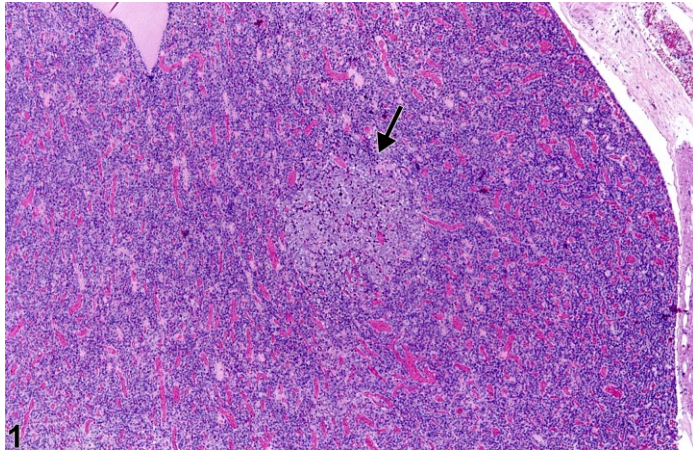


# NTP Nonneoplastic Lesion Atlas

## *Pituitary Gland – Hyperplasia*

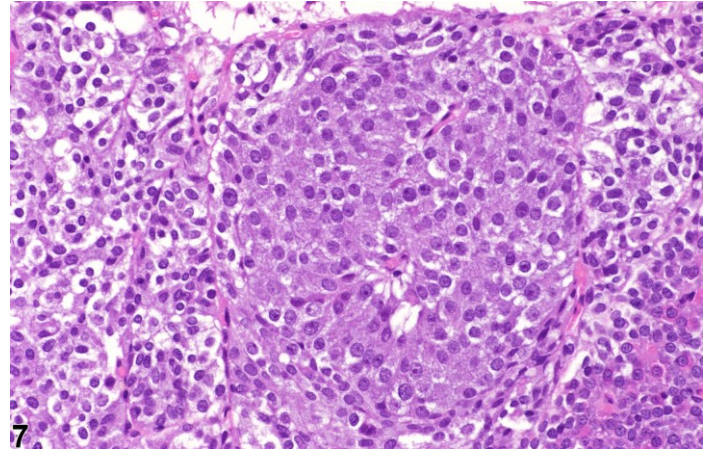
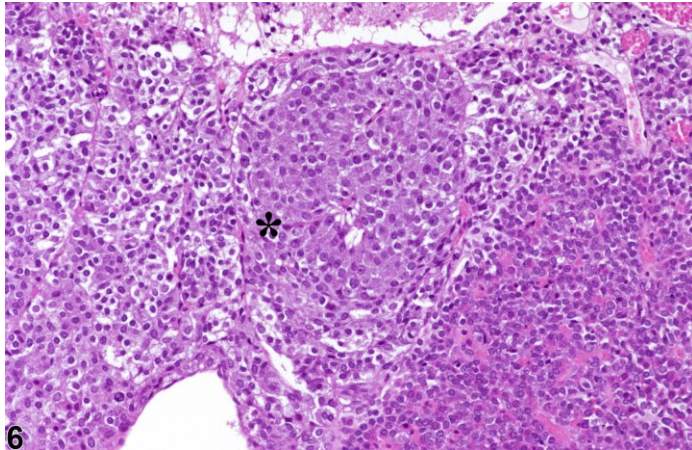




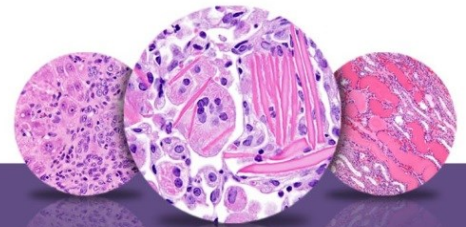


## NTP Nonneoplastic Lesion Atlas

### *Pituitary Gland – Hyperplasia*



**Figure Legend:** **Figure 1** Pituitary Gland, Pars distalis - Hyperplasia in a female Harlan Sprague-Dawley rat from a chronic study. A small focus of hyperplasia (arrow) in the pars distalis is recognized by the paler staining cells. **Figure 2** Pituitary Gland, Pars distalis - Hyperplasia in a female Harlan Sprague-Dawley rat from a chronic study. Higher magnification of Figure 1 shows the focus of hyperplasia in greater detail. **Figure 3** Pituitary Gland, Pars distalis - Hyperplasia in a female Harlan Sprague-Dawley rat from a chronic study. Higher magnification of Figure 2 highlights the larger, paler staining cells in this focus of hyperplasia in the pars distalis. **Figure 4** Pituitary Gland, Pars distalis - Hyperplasia in a female Harlan Sprague-Dawley rat from a chronic study. Multiple focal areas of hyperplasia consisting of paler staining cells compared with the surrounding parenchyma are present in the pars distalis. **Figure 5** Pituitary Gland, Pars distalis - Hyperplasia in a male F344/N rat from a chronic study. The focus of hyperplasia consists of paler staining cells (compared with the surrounding normal parenchyma) and dilated blood-filled vascular structures which are consistent with minimal to mild angiectasis. **Figure 6** Pituitary Gland, Pars intermedia - Hyperplasia in a male F344/N rat from a chronic study. This example of hyperplasia of the pars intermedia (asterisk) is characterized by a circumscribed focus of cells with abundant amphophilic cytoplasm without compression of the adjacent normal parenchyma. **Figure 7** Pituitary Gland, Pars intermedia - Hyperplasia in a male F344/N rat from a chronic study. Higher magnification of Figure 6 shows that the hyperplastic focus in the pars intermedia is characterized by a circumscribed collection of cells with abundant amphophilic cytoplasm without compression of the adjacent normal parenchyma.



## NTP Nonneoplastic Lesion Atlas

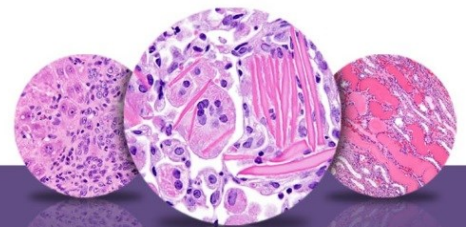
### *Pituitary Gland – Hyperplasia*

**Comment:** Focal hyperplasia is a frequent spontaneous as well as induced change and is seen more commonly in rats than in mice. The microscopic appearance is variable but consists primarily of a single cell type that blends into the adjacent parenchyma without compression (Figure 1, figure 2, Figure 3, and Figure 4). Hyperplasia is typically a combination of increased cell number and increased cell size and increases with animal age. On occasion there may be multiple foci of hyperplasia (Figure 4). Angiectasis may occur within a focus of hyperplasia (Figure 5) and may sometimes cause slight compression of adjacent parenchyma.

Focal hyperplasia of the pars intermedia (Figure 6 and Figure 7) is less common than hyperplasia of the pars distalis. The hyperplastic cells in the pars intermedia are similar to normal pars intermedia cells, and identification of a focal proliferative lesion may rely on alteration of growth pattern or asymmetrical enlargement of the pars intermedia since there may be no compression of the adjacent parenchyma. Diffuse hyperplasia may also occur and must be distinguished from a tangential section of the pars intermedia. Diffuse hyperplasia is usually of a specific cell type that can be confirmed by immunohistochemistry and typically represents a physiologic response.

There is a morphologic continuum between hyperplasia and pituitary neoplasia, with compression of the adjacent parenchyma being a primary diagnostic feature of neoplasia. Immunohistochemistry for pituitary hormones can be used to determine cell type.

**Recommendation:** Focal hyperplasia should be diagnosed and given a severity grade whenever present, and the part of the pituitary involved should be specified in the diagnosis (e.g., Pituitary Gland, Pars distalis - Hyperplasia). Any remarkable features of hyperplasia may be described in the pathology narrative. Angiectasis within the hyperplastic lesion should not be diagnosed separately.



# NTP Nonneoplastic Lesion Atlas

## *Pituitary Gland – Hyperplasia*

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