

# Neoplasia and Cancer

Uncontrolled Cell Division

# Cell Division and Neoplasia

- Normal differentiated cells:
  - cell division is highly controlled
  - typically remain in one location
- Loss of cellular controls leads to  $\uparrow$  cell replication (neoplasia)
- Neoplasia does not refer to normal cell division such as skin, epithelium, etc
- Neoplasm  $\approx$  tumor (mass of cells) or other abnormal cellular replication
- Neoplasms can be **benign** or **malignant** (= cancer)

# Benign and Malignant Tumors

Benign	Malignant
<ul style="list-style-type: none"><li>• hyperplasia</li><li>• slow growth rate</li><li>• slightly altered cell structure and function</li><li>• cell mass often encapsulated</li><li>• remains localized</li><li>• generally not lethal</li></ul>	<ul style="list-style-type: none"><li>• hyperplasia → dysplasia</li><li>• rapid growth rate</li><li>• loss of cytoplasm, more nucleus</li><li>• dysplasia → malignancy<ul style="list-style-type: none"><li>• loss of adherence and infiltration</li><li>• metastasis via blood and lymphatic system</li><li>• can cause serious disease and death</li></ul></li></ul>