

Apoptosis	<b>causes</b>			
	<i>physiologic</i>		<i>pathologic</i>	
	<u>condition</u>	<u>mechanism</u>	<u>condition</u>	<u>mechanism</u>
	<i>During embryogenesis</i>	<i>-Loss of growth factor signalling</i>	<i>DNA damage (caused by: UV ,radiotherapy, chemotherapy ,extremes temp.)</i>	<i>-Activation of proapoptotic proteins by BH3-only sensors</i>
<i>Turn over of proliferative tissues</i>	<i>-Loss of growth factor signalling (as in: intestinal epithelium, thymus, lymphocytes in bone marrow)</i>	<i>Accumulation of misfolded proteins</i>	<i>-Activation of proapoptotic proteins by BH3-only sensors -May directly activating caspases</i>	
<i>Involution of hormone- dependent tissues</i>	<i>-Reducing survival signals because of decreased hormone levels (as in endometrium)</i>	<i>Infections (especially certain viral ones)</i>	<i>-Activation of mitochondrial pathway by viral proteins -killing infected cells by <u>cytotoxic T lymphocytes</u> → which activate caspases</i>	
<i>Decline of leukocytes # At the end of immune and inflammatory responses</i>	<i>-Eliminate the loss of survival signals (keep in mind that the loss of survival signals stimulate the leukocytes it receive it as indication of damage )</i>			
<i>Elimination of potentially harmful self- reactive lymphocutes</i>	<i>-Mitochondrial pathway -Death receptor pathway</i>			