

The Timing of Cell Division

Cells divide when:

- They have enough cytoplasm for two daughter cells
- They have replicated their DNA
- They have adequate supply of nutrients
- They are stimulated by **growth factor**
 - Chemical signals secreted by blood platelets, kidney cells, and other sources
- Neighboring cells die, opening up space in a tissue to be occupied by new cells

Cells stop dividing when:

- They snugly contact neighboring cells
- Nutrients or growth factors are withdrawn
- They undergo **contact inhibition**—the cessation of cell division in response to contact with other cells