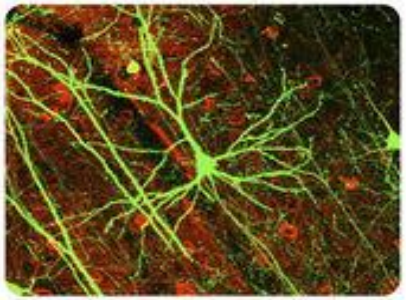
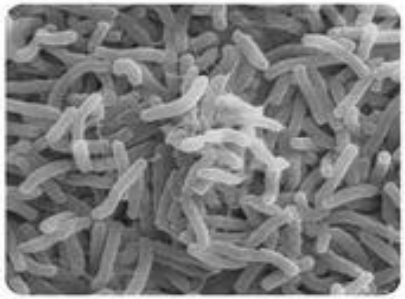
Cell diversity: shape

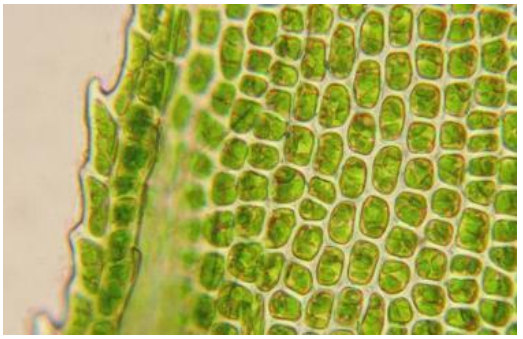


Nerve cell

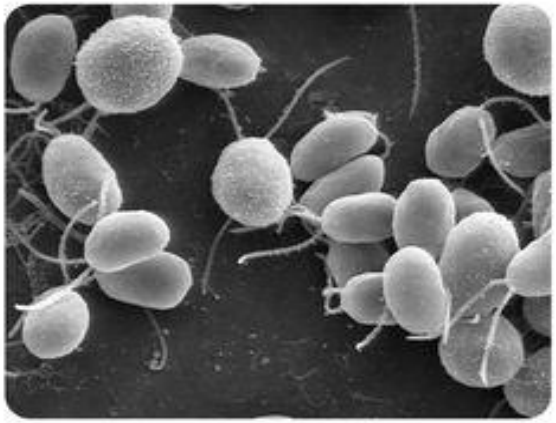
Red blood cells



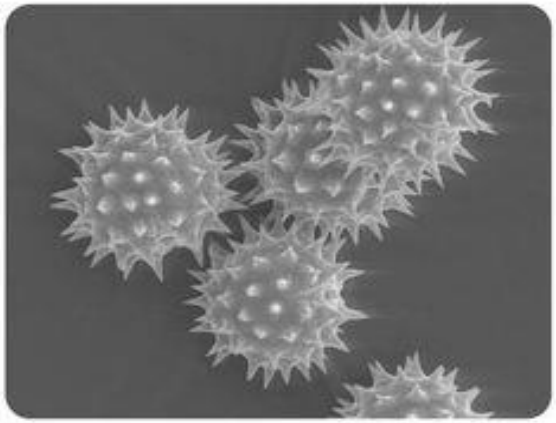
Bacteria



Plant cells



Algae



Pollen grains

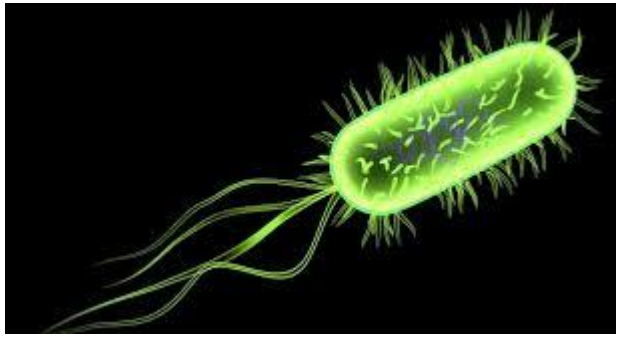
Yeast cells

Cells <u>differ widely</u> (and wildly!) in shape…

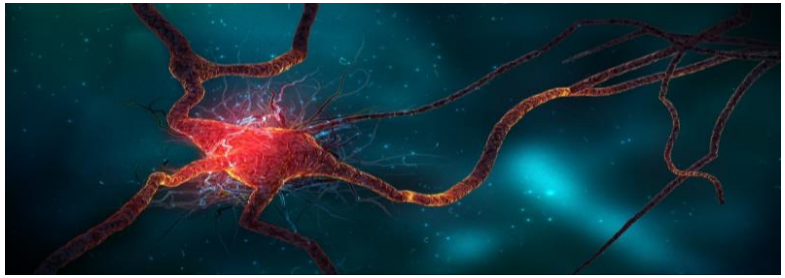
…but <u>most cells</u> are roughly cuboidal or spherical.

Cell diversity: size

Tiny: Bacterium
~1 micrometer



Long: Giraffe nerve cell
up to 2 meters long



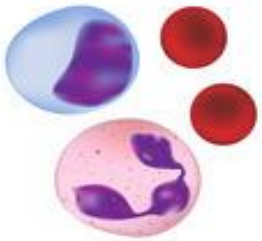
Huge: aquatic alga
Caulerpa taxifolia, 10 feet

Heavy: Ostrich egg
6x5 inches, 3 pounds

Cell diversity: specialization

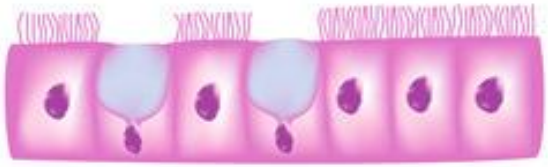
- **In complex multicellular organisms, cells specialize into different cell types that are adapted to particular functions.**

- **Cell types differ both in appearance and function yet are genetically identical (have the same DNA).**
- **In mammals, major cell types include skin cells, neurons, muscle cells, blood cells, stem cells, and others.**
- **Human body contains over 200 types of cells!**


Blood cells

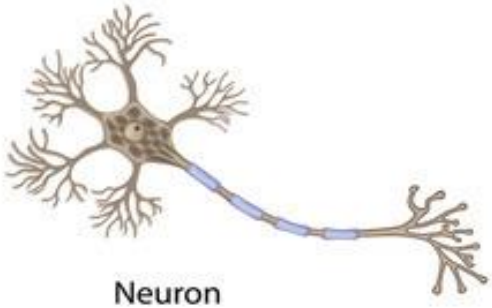

Surface skin cells

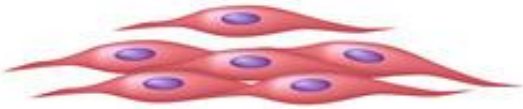

Bone cell


Columnar epithelial and Goblet cells

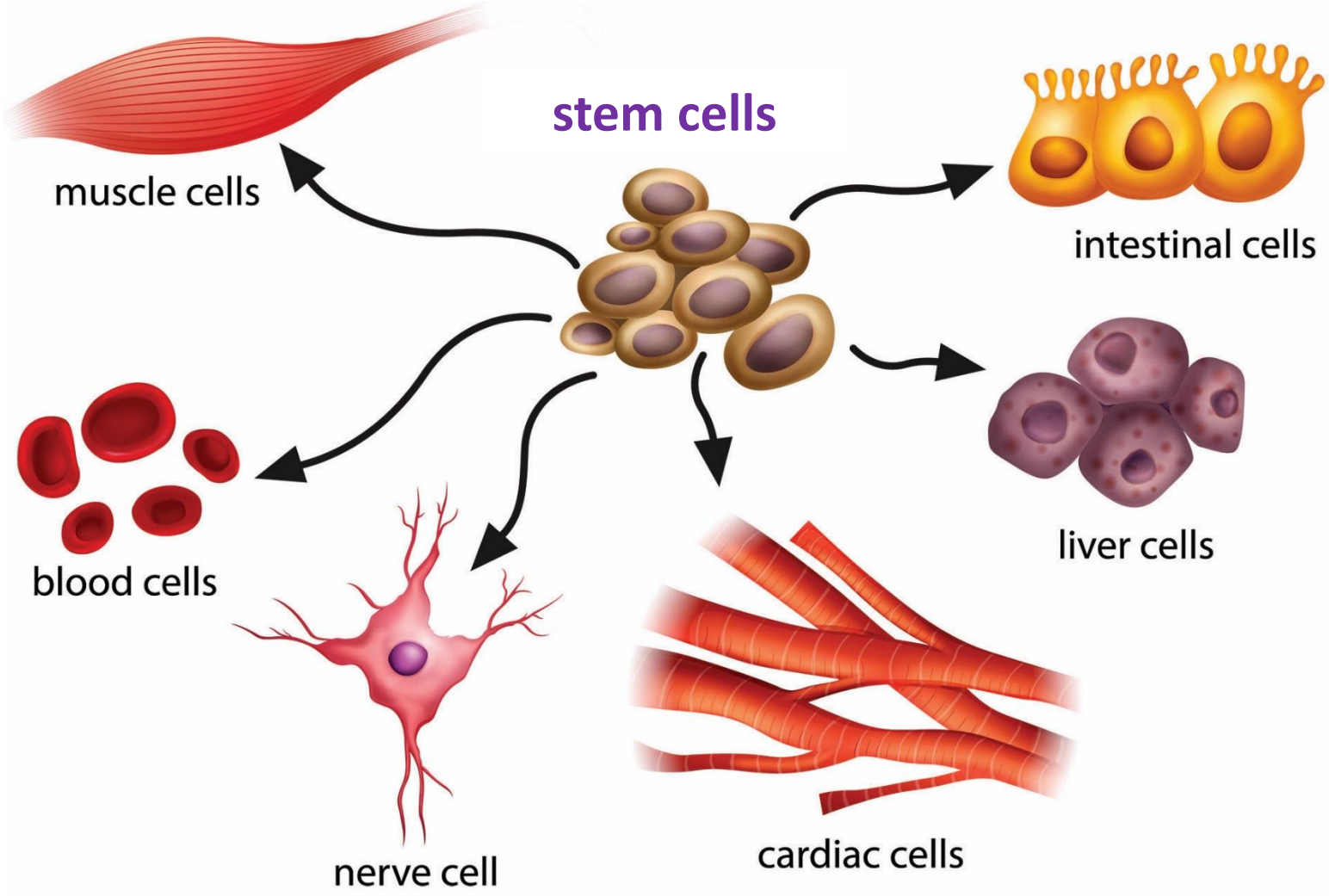

Cardiac muscle cell


Skeletal muscle cells


Neuron


Smooth muscle cells

Stem cells are *undifferentiated* cells that *can differentiate* into specialized cells.



10 largest single-celled organisms

https://listverse.com/2016/07/01/10-freakishly-large-single-celled-organisms/

Typical cell sizes

https://learn.genetics.utah.edu/content/cells/scale/