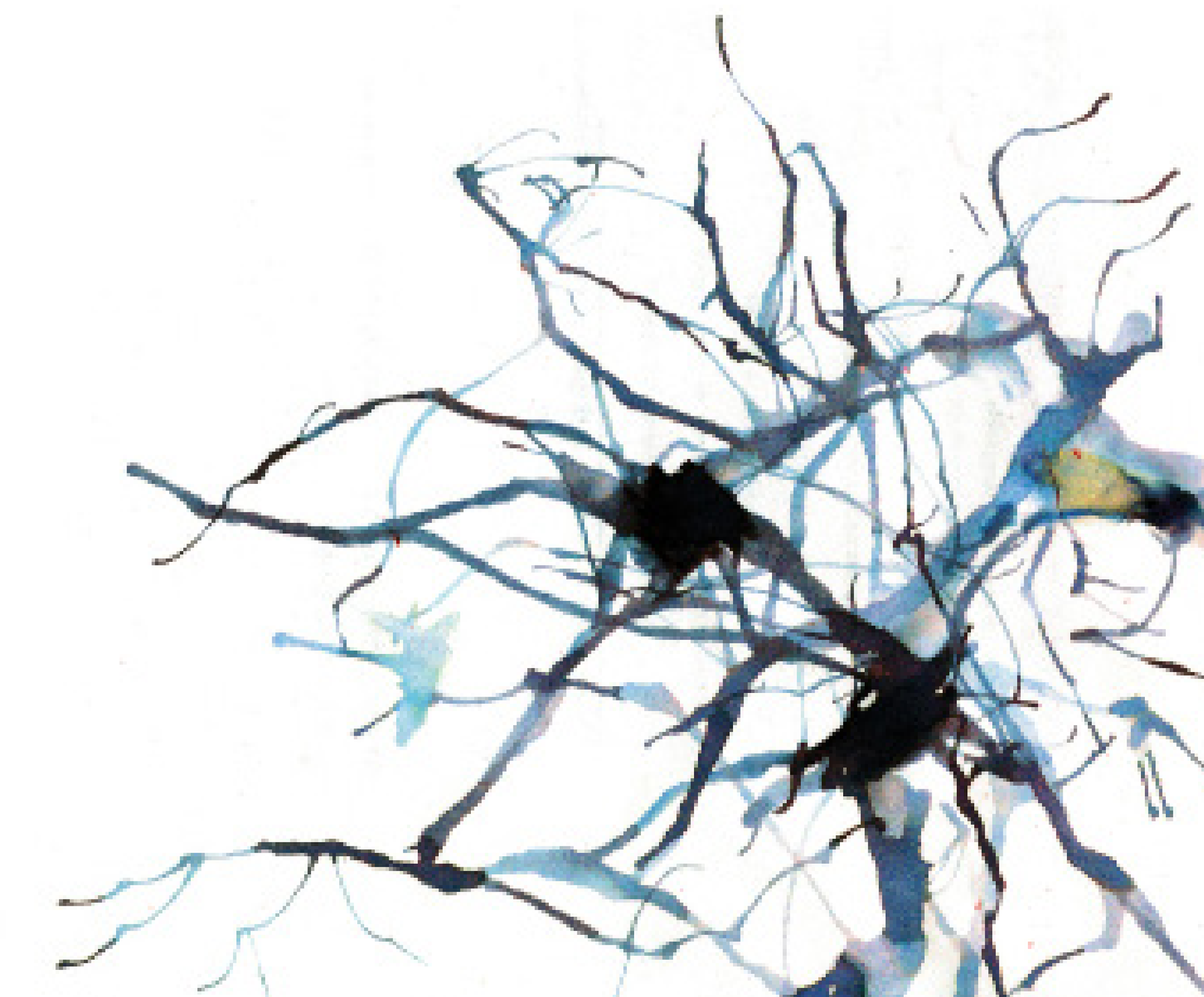
Cells of the Nervous System



steven j. barnes

1. Cells of the Nervous System
2. The Neuron

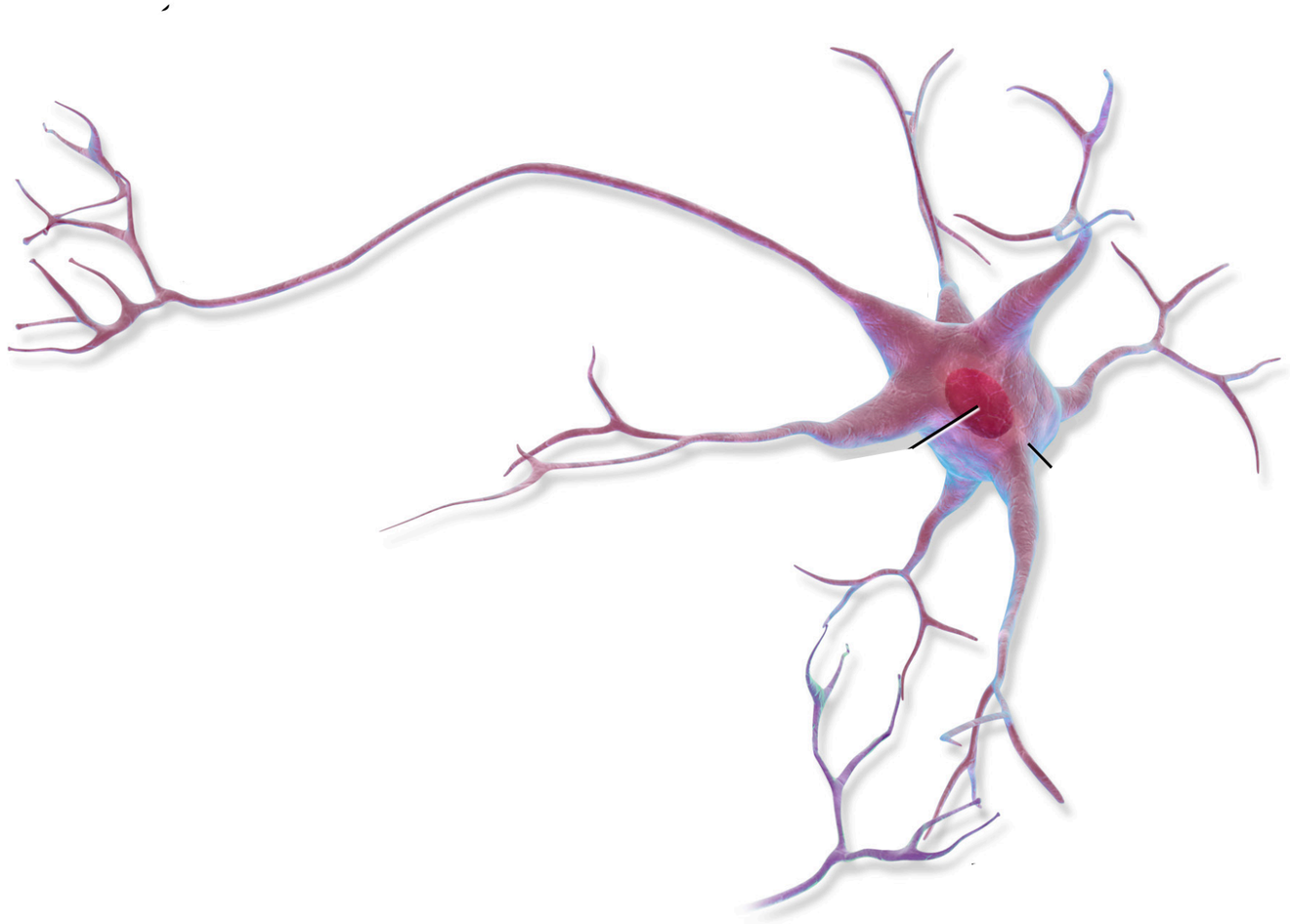
Topics

- Name two general types of cells within the nervous system.
- Draw, label, and define the major features of a neuron.

Learning Objectives

There are two general types:

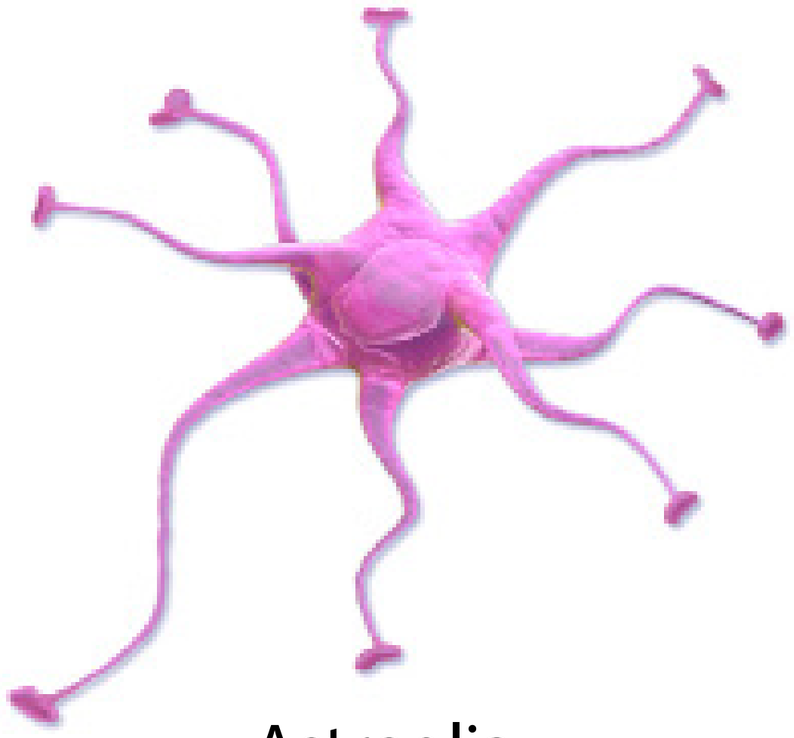
1. Neurons.



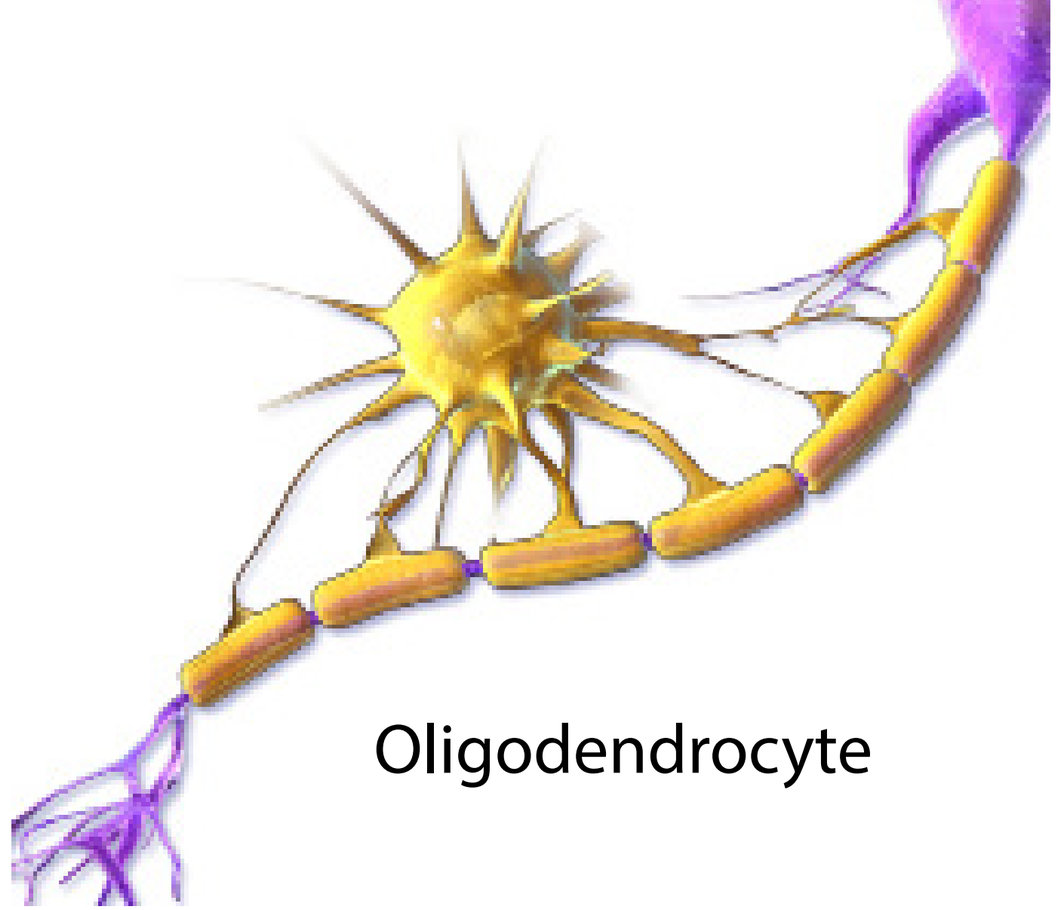
Cells of the NS

There are two general types:

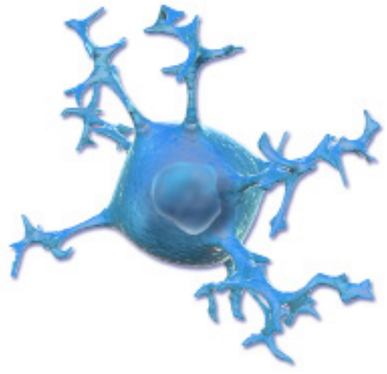
1. Neurons.
2. Glia.



Astroglia



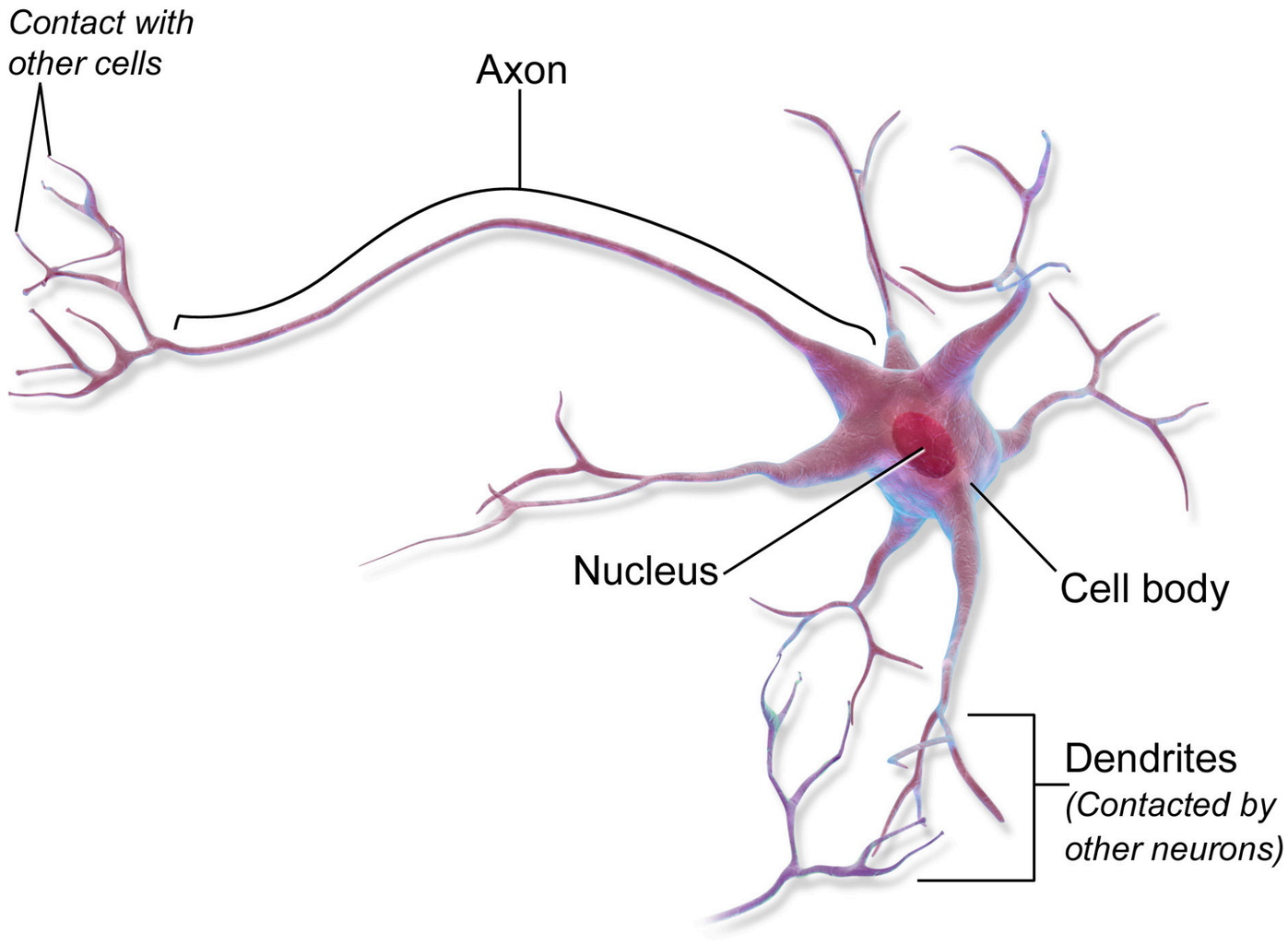
Oligodendrocyte



Microglia

Cells of the NS

Neurons



The Neuron

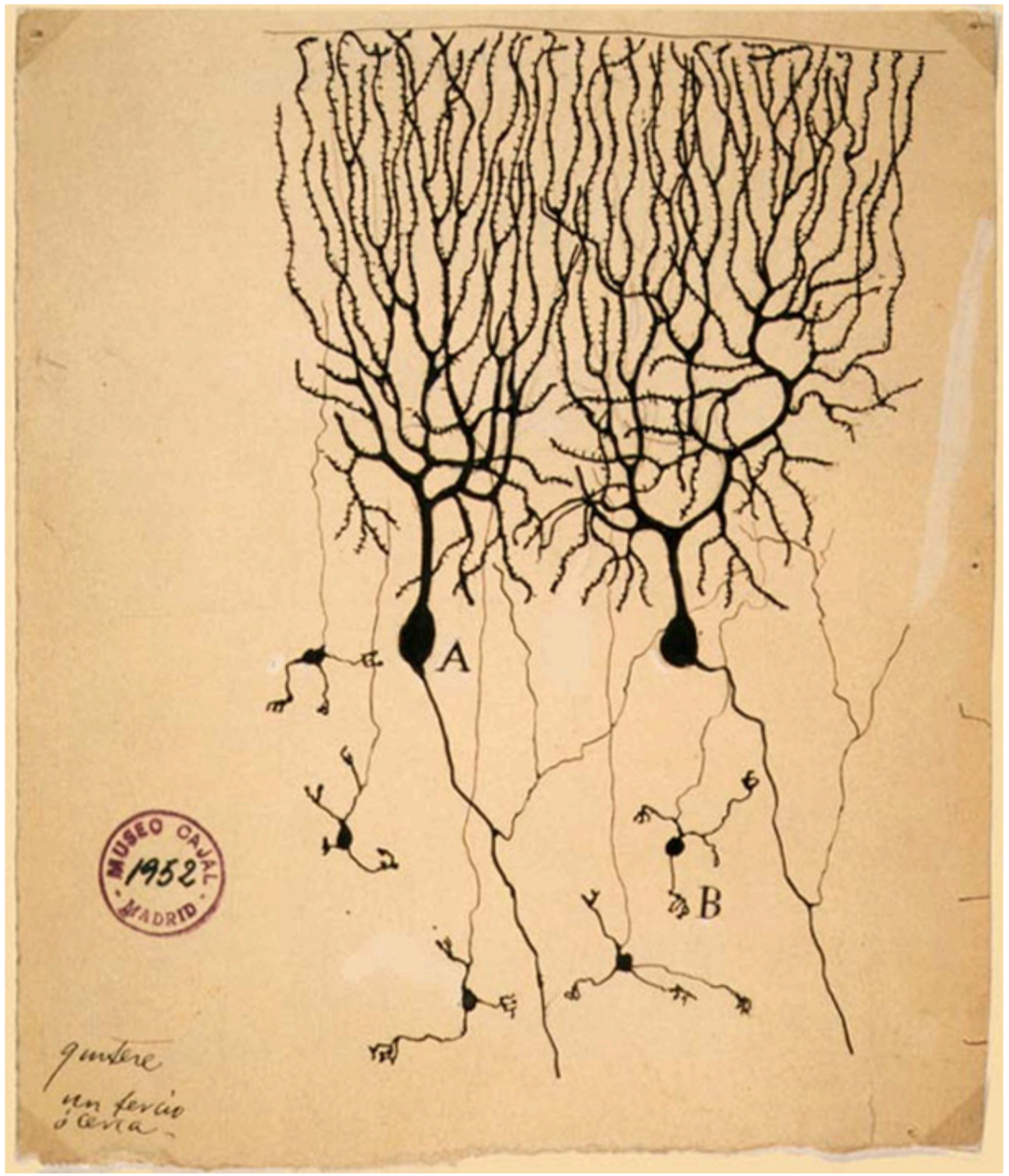
Neurons

In “real” neurons it isn’t quite so easy to distinguish the various parts.

The Neuron

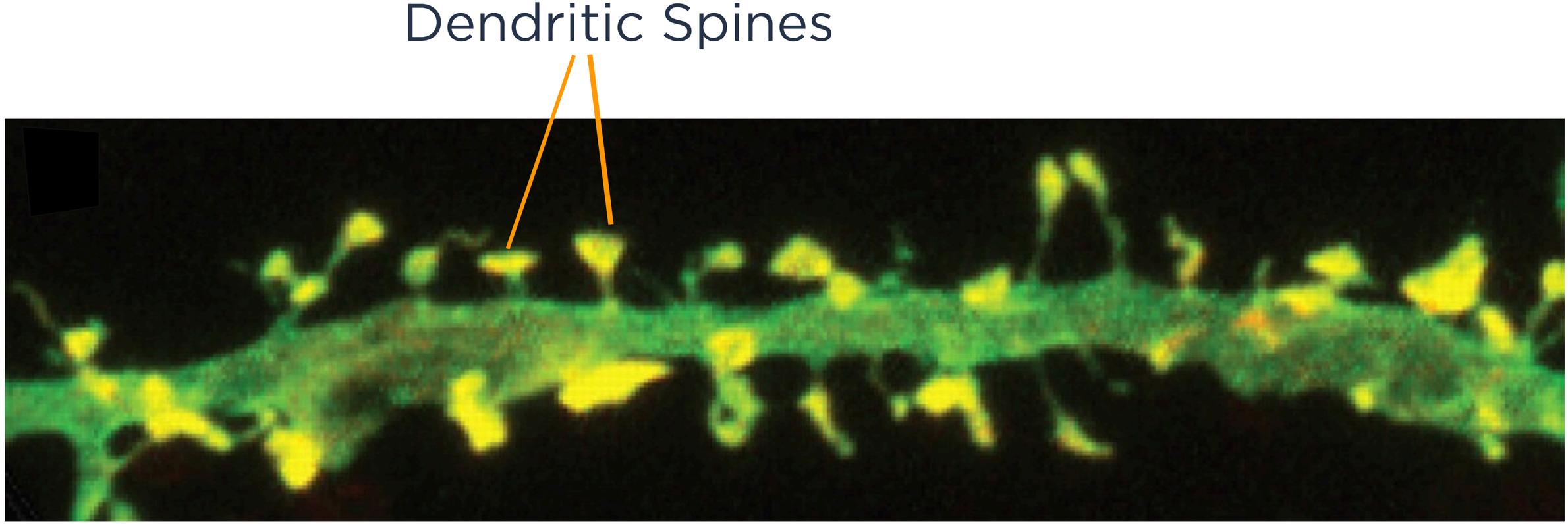
Neurons

Dendritic trees and axonal arborizations can be very complex --as this classic drawing of Purkinje cells by the neuroanatomist Santiago Ramon-y-Cajal (ray-MON ee ka-YAL) illustrates.

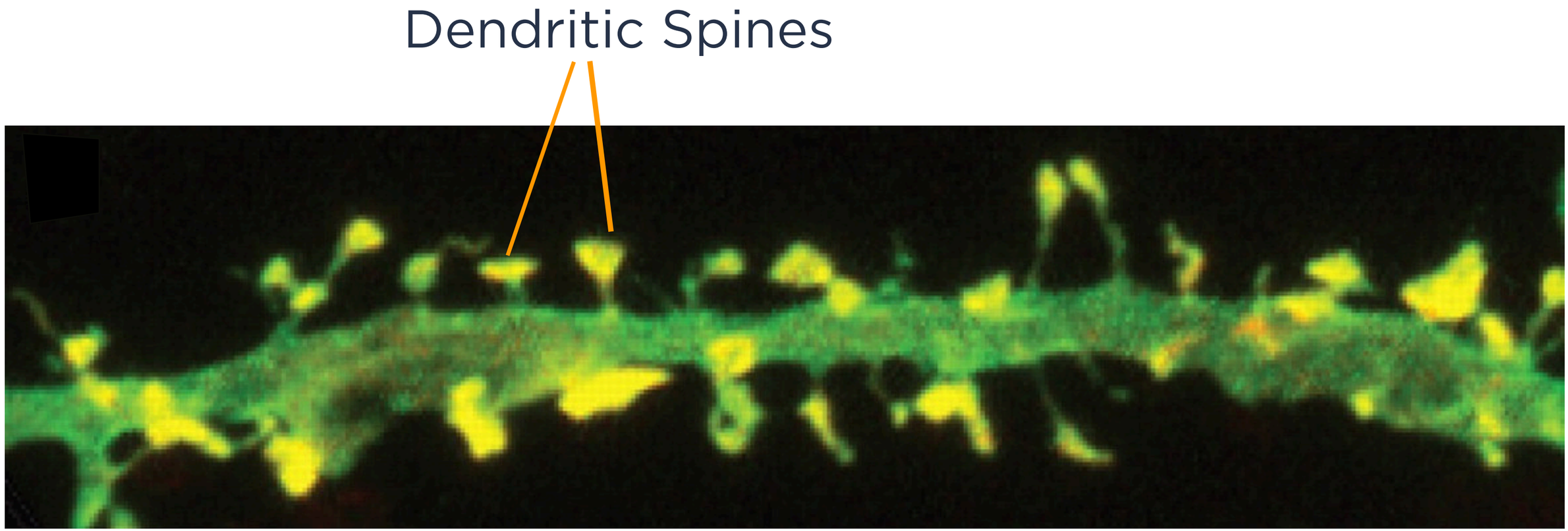


The Neuron

Neurons

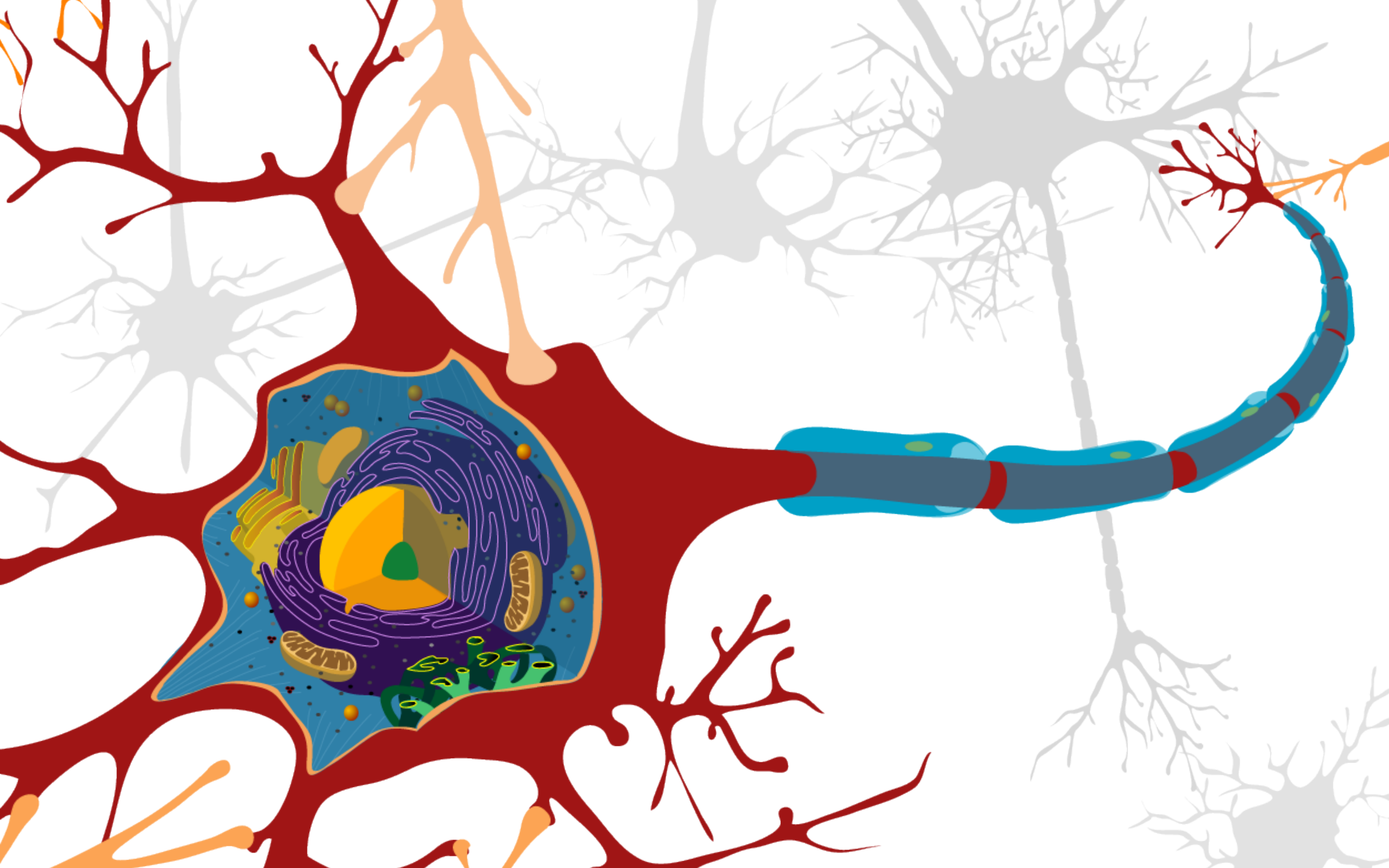


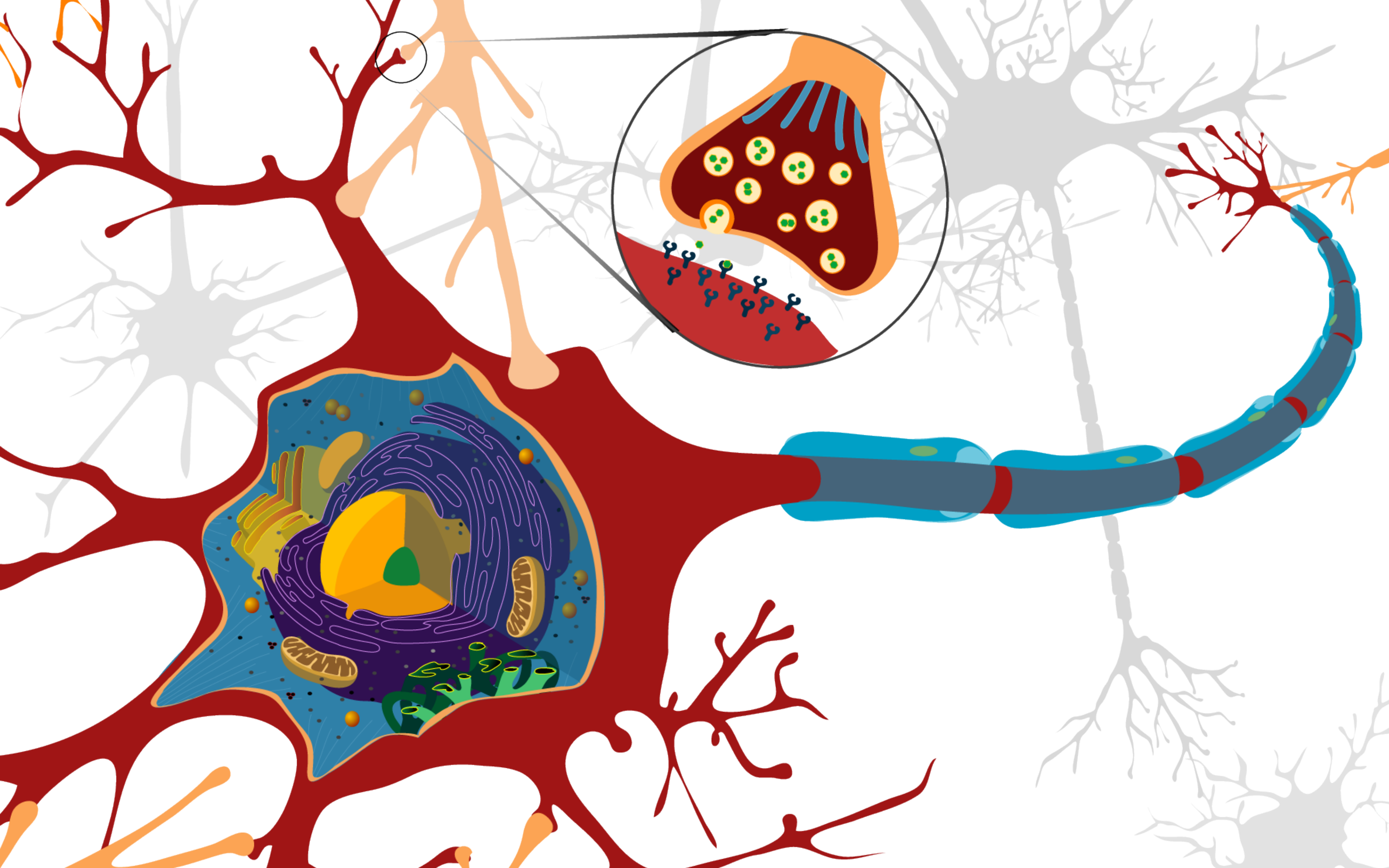
The Neuron



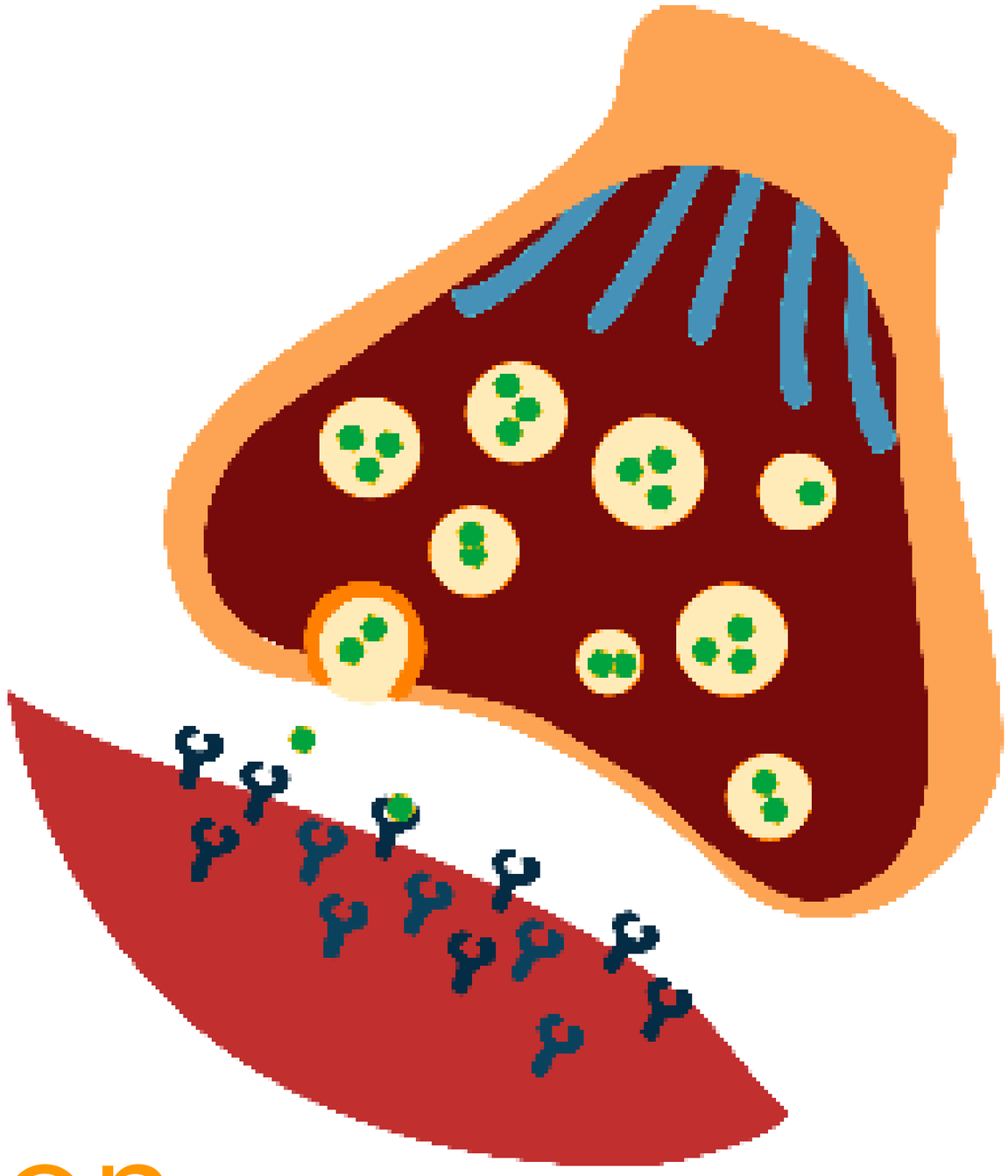
Dendritic spines display considerable plasticity.

The Neuron



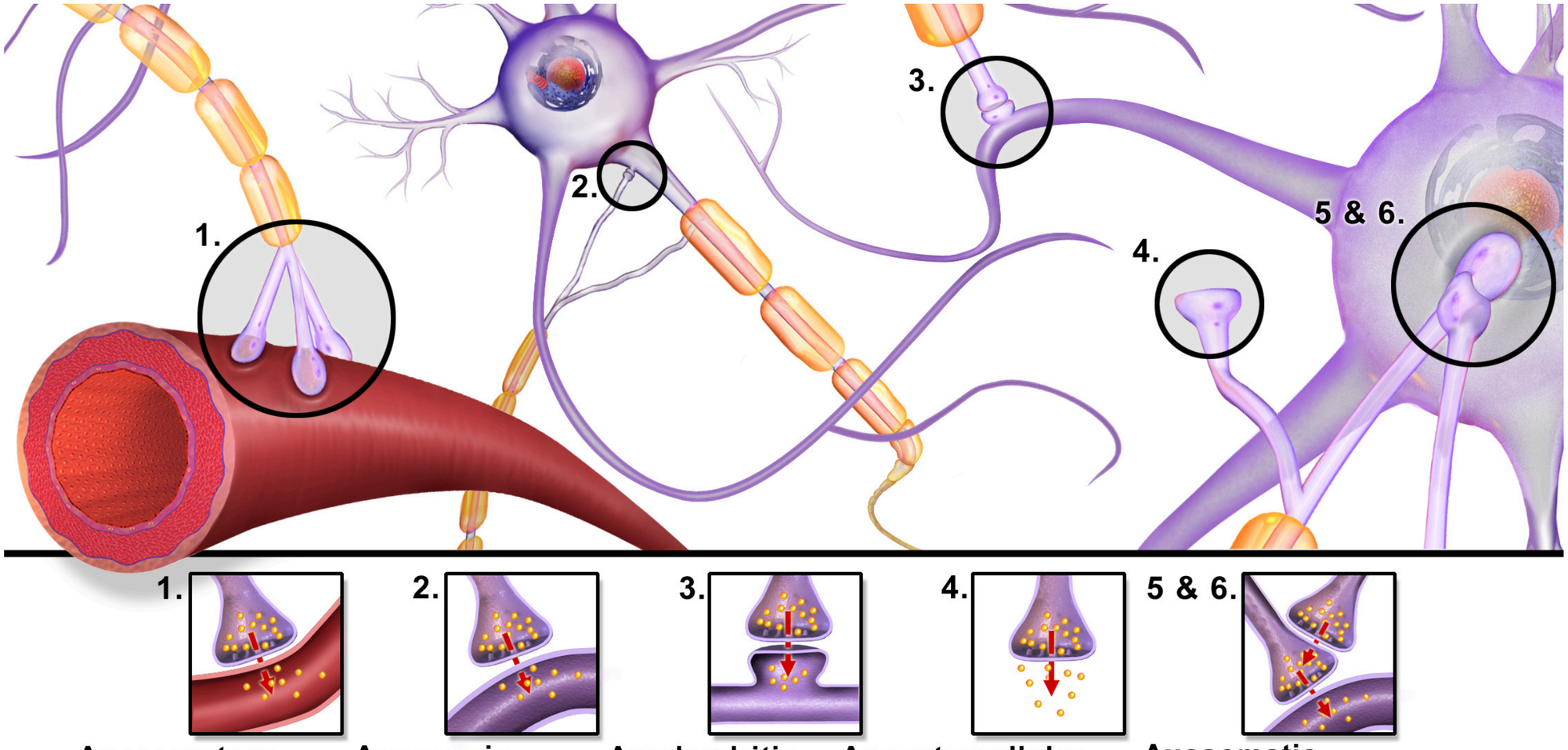


Neurons: The Synapse



The Neuron

Types of Synapses



Axosecretory
Axon terminal secretes directly into bloodstream

Axoaxonic
Axon terminal secretes into another axon

Axodendritic
Axon terminal ends on a dendrite spine

Axoextracellular
Axon with no connection seccretes into extracellular fluid

Axosomatic
Axon terminal ends on soma

Axosynaptic
Axon terminal ends on another axon terminal

The Neuron

Types of Neurons

There are three general types:

1. Sensory neurons
2. Motor neurons
3. Interneurons

The Neuron