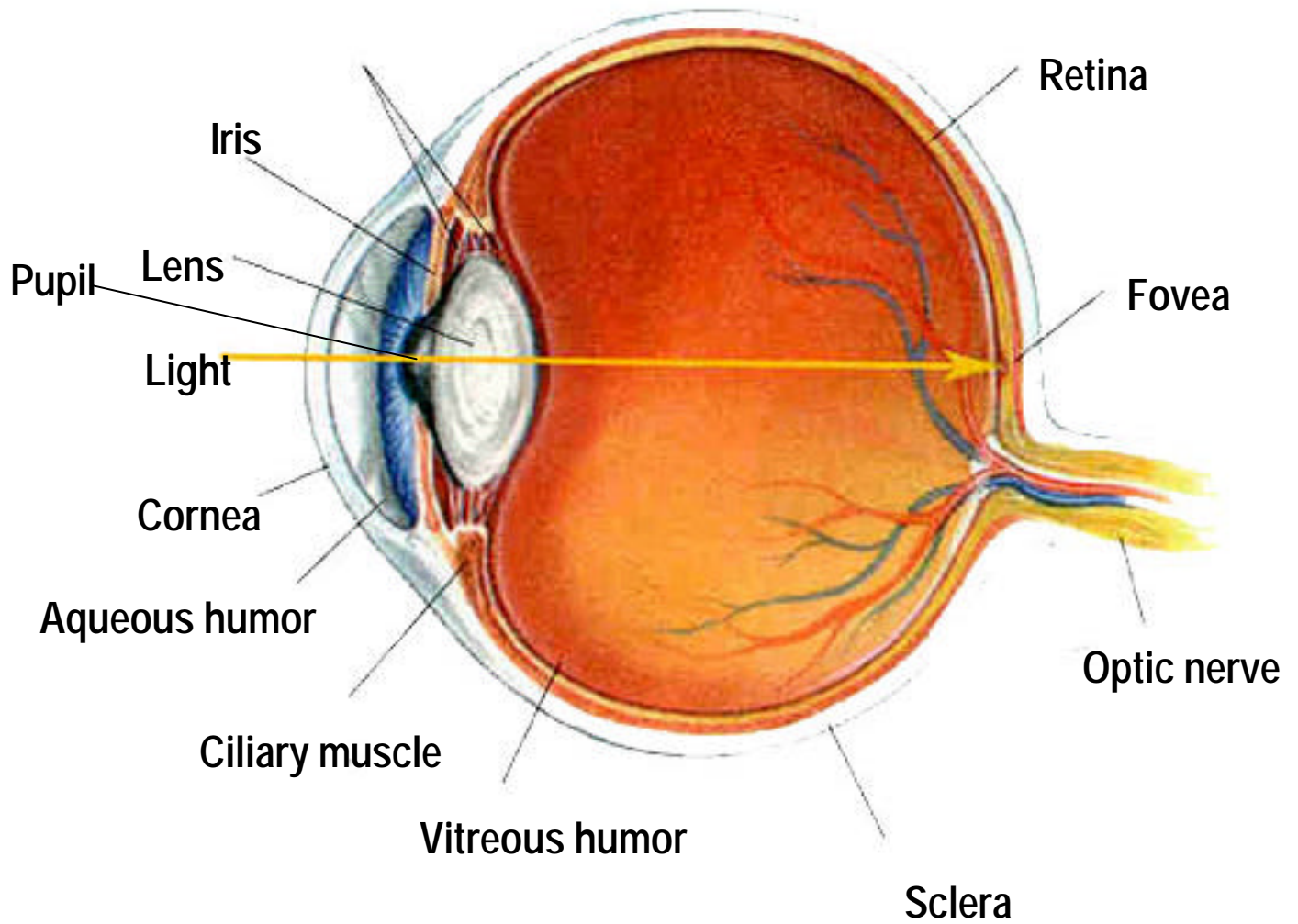
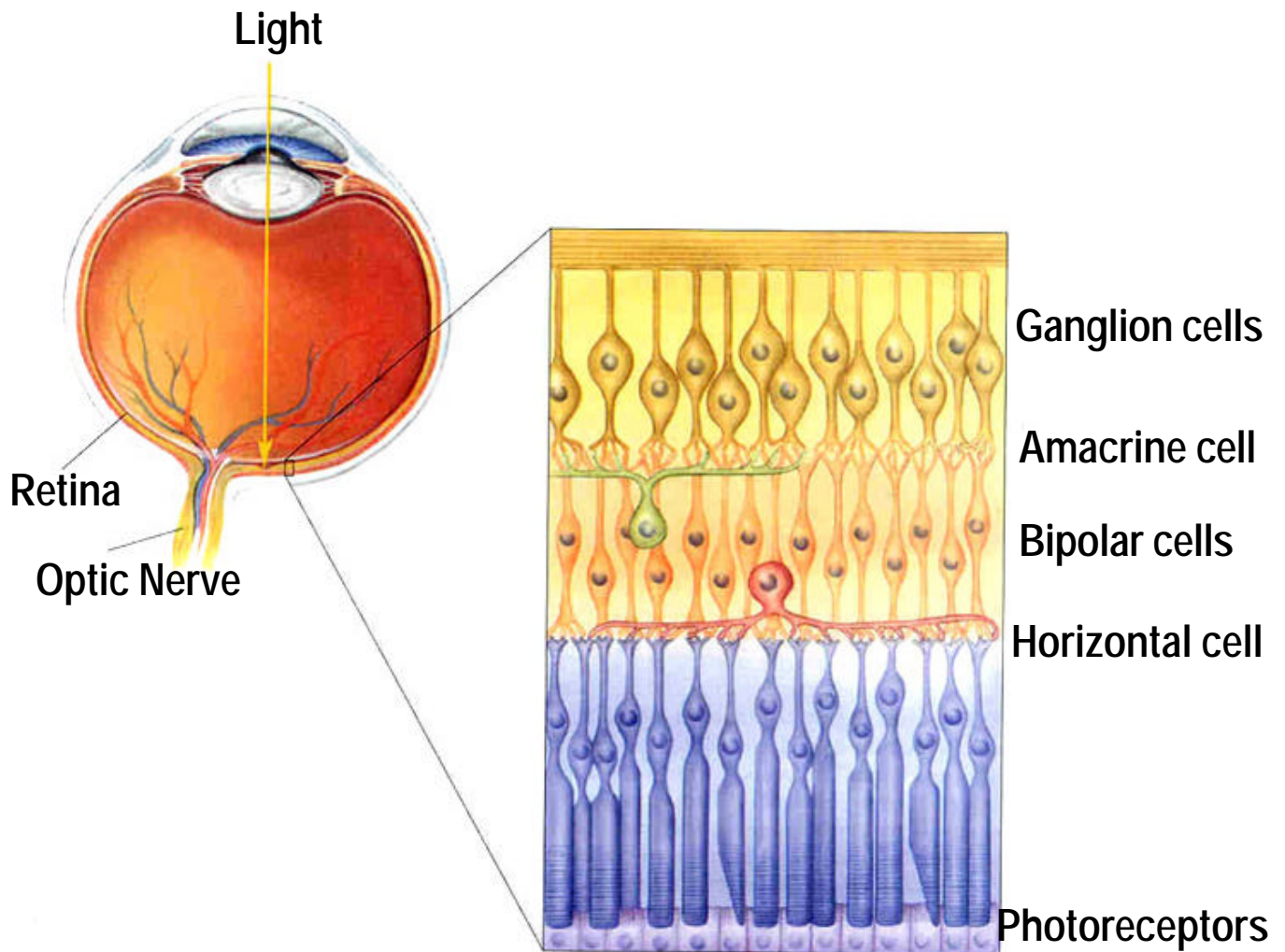


The eye



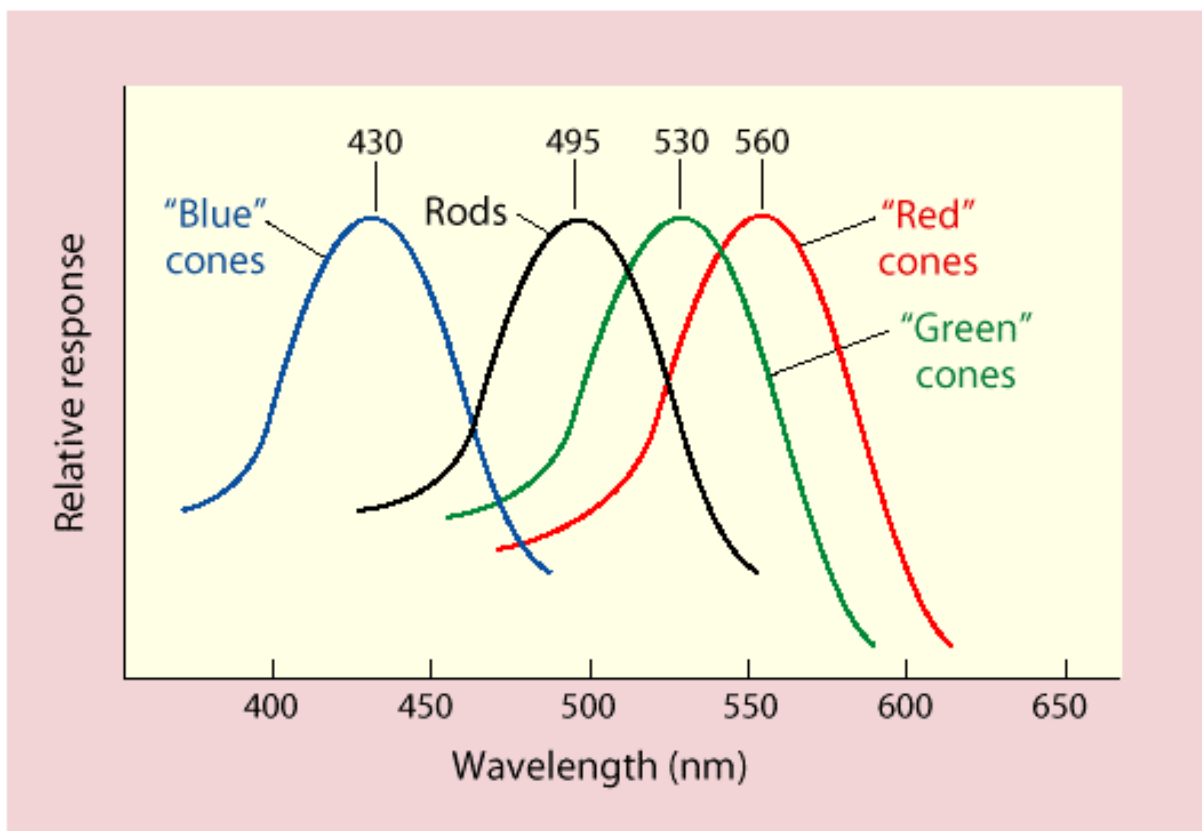
Cells of the Retina



Receptors

- Rods
 - outnumber cones 20 to 1
 - very sensitive to light
 - distributed throughout retina; none in fovea
- Cones
 - only effective in bright illumination
 - 3 kinds of photopigments
 - Fovea and periphery

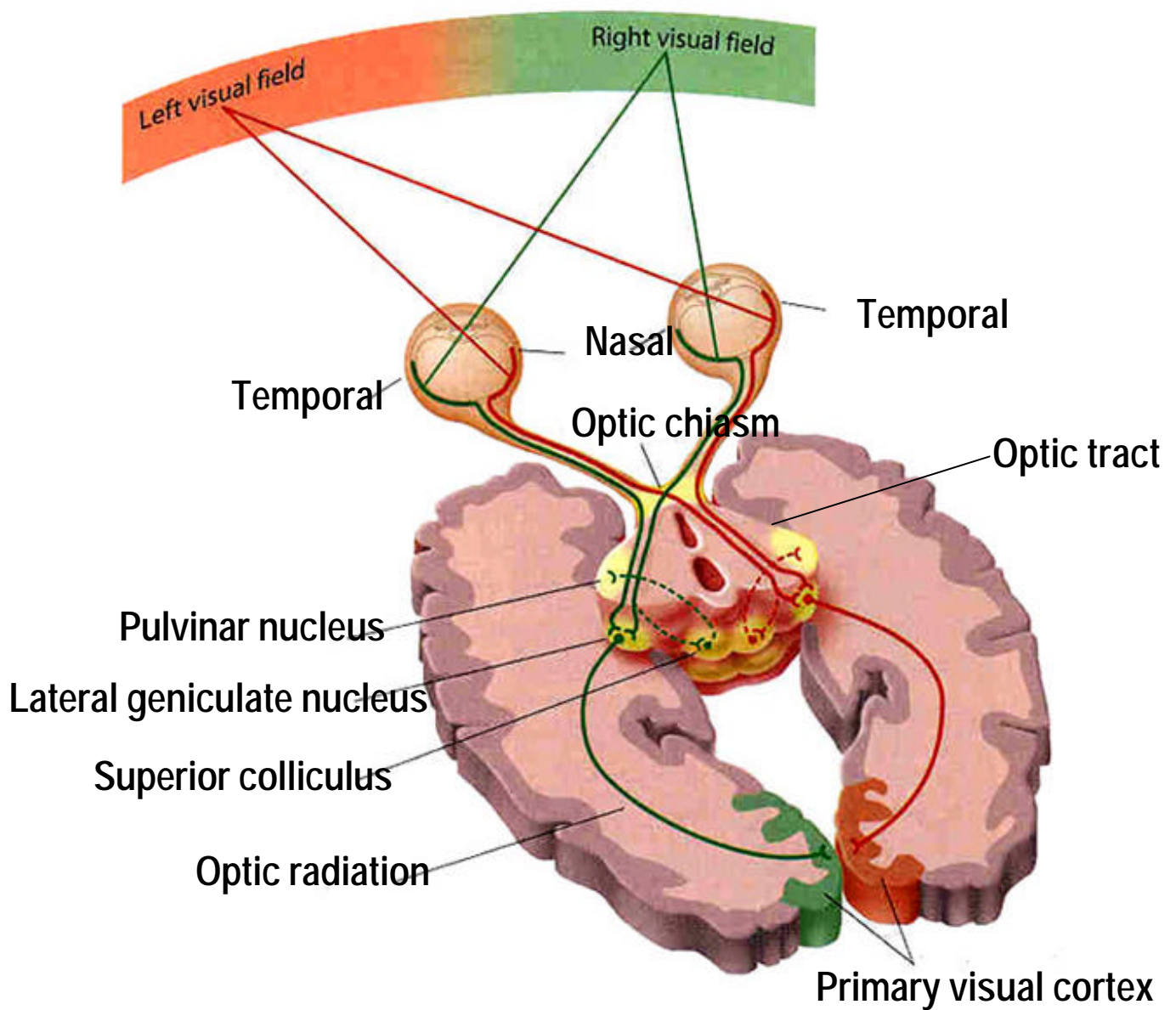
Cones and Wavelength Sensitivity



Ganglion Cells

- M-type (10%)
 - good temporal/poorer spatial resolution
 - faster conduction
 - transient response
- P-type (~85%)
 - good spatial/poorer temporal resolution
 - sensitive to color
 - sustained response

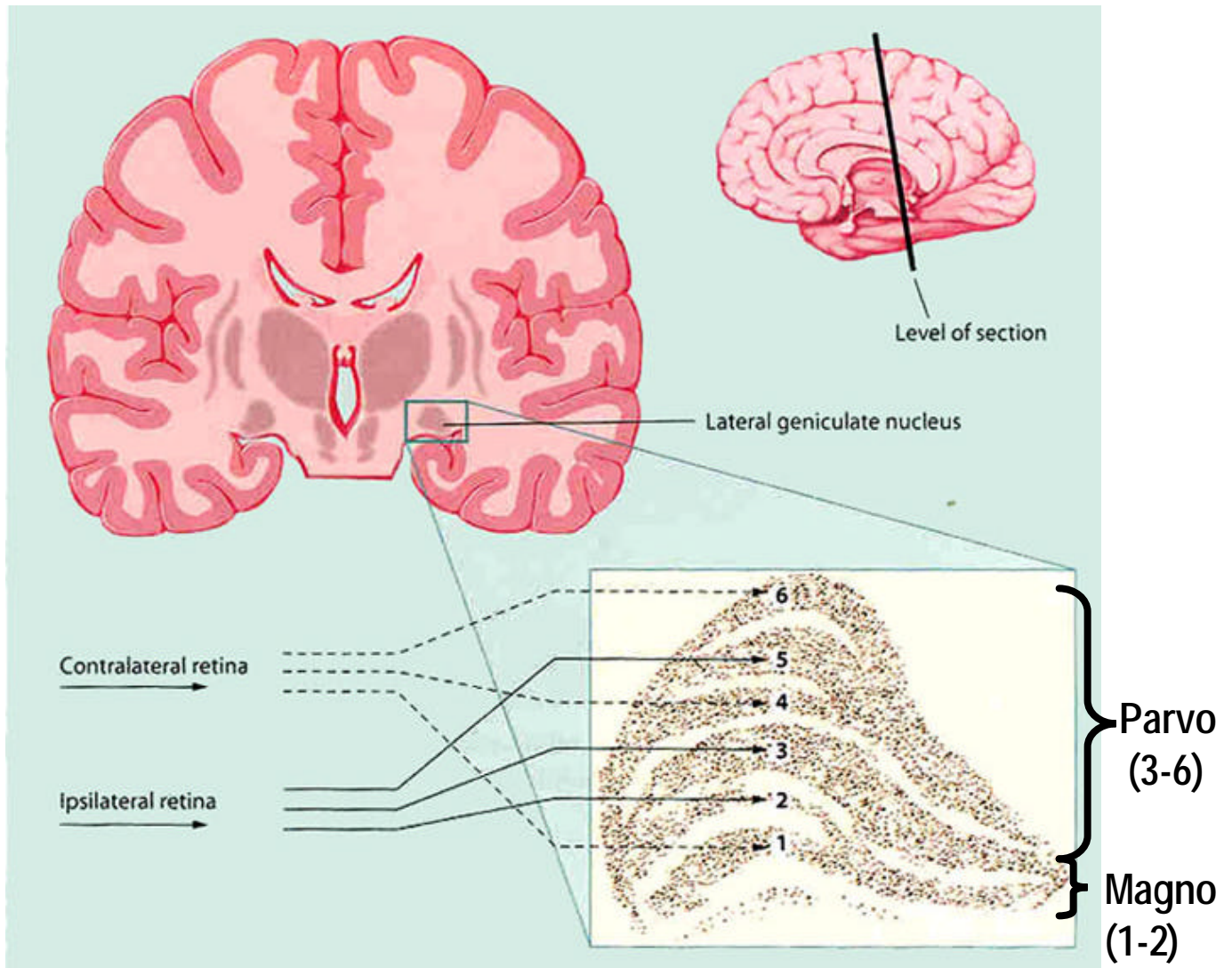
Retinofugal Projection



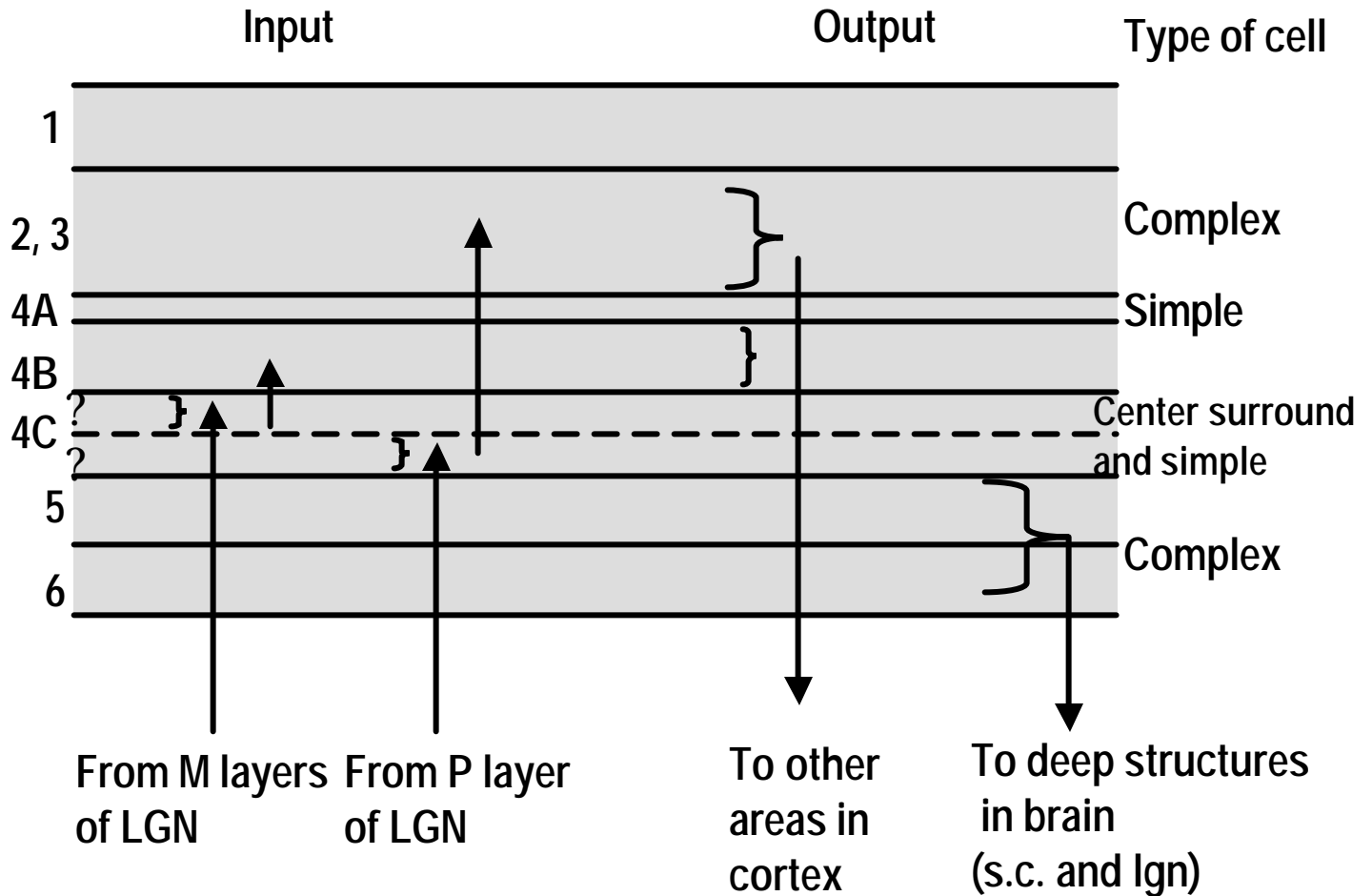
Retinotopy

- Topography is preserved as one area projects to another (from retina to higher cortical areas)
- Precise spatial information preserved by multiple retinotopic maps

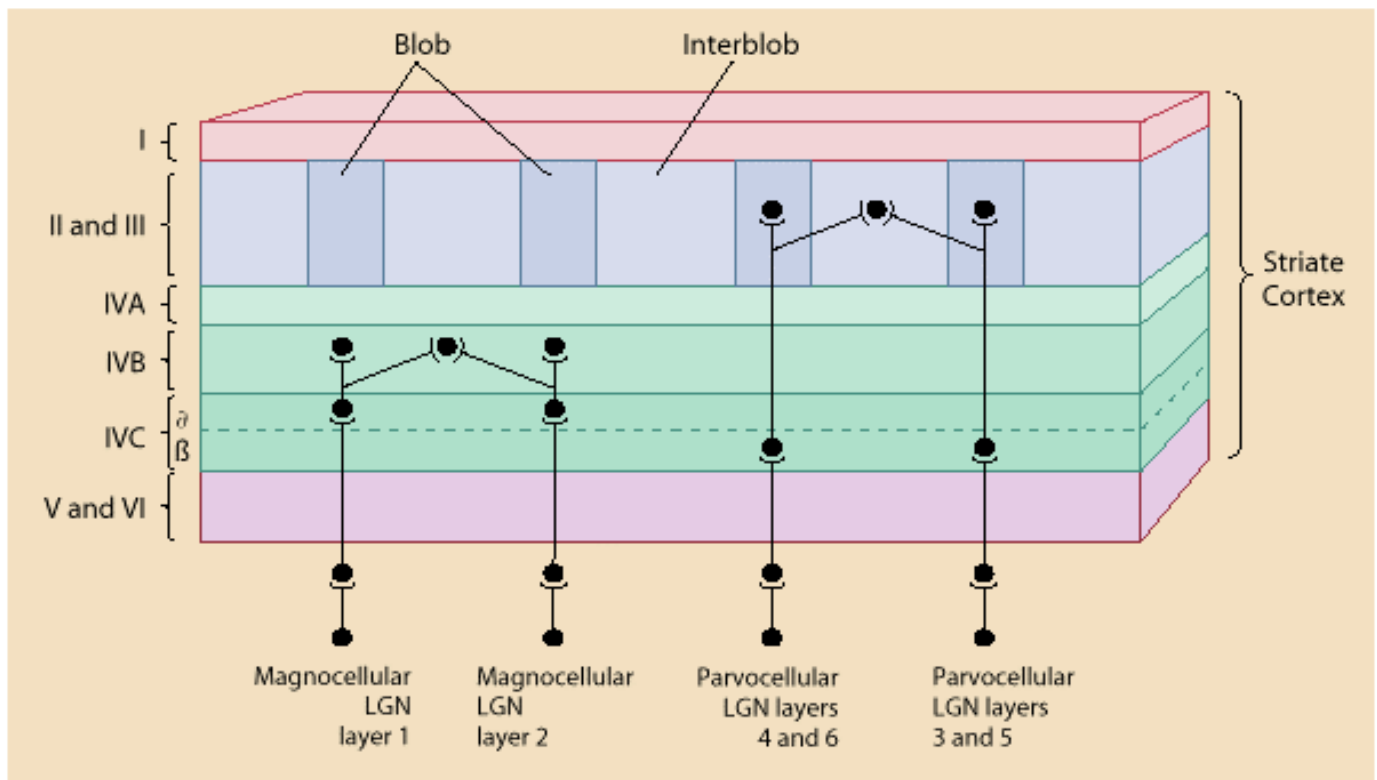
Retinal Inputs to LGN



Layers of Striate Cortex



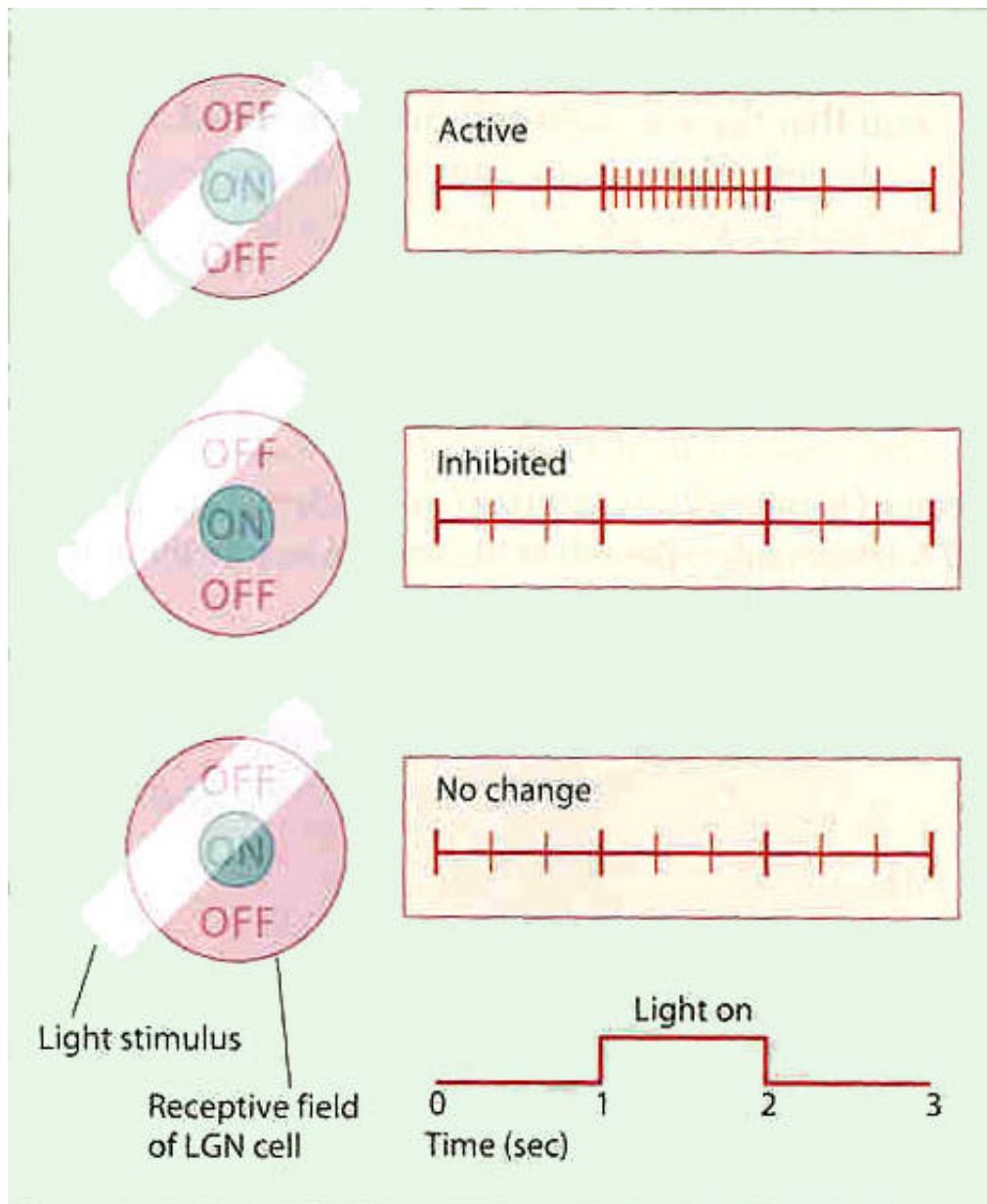
Layers of Striate Cortex



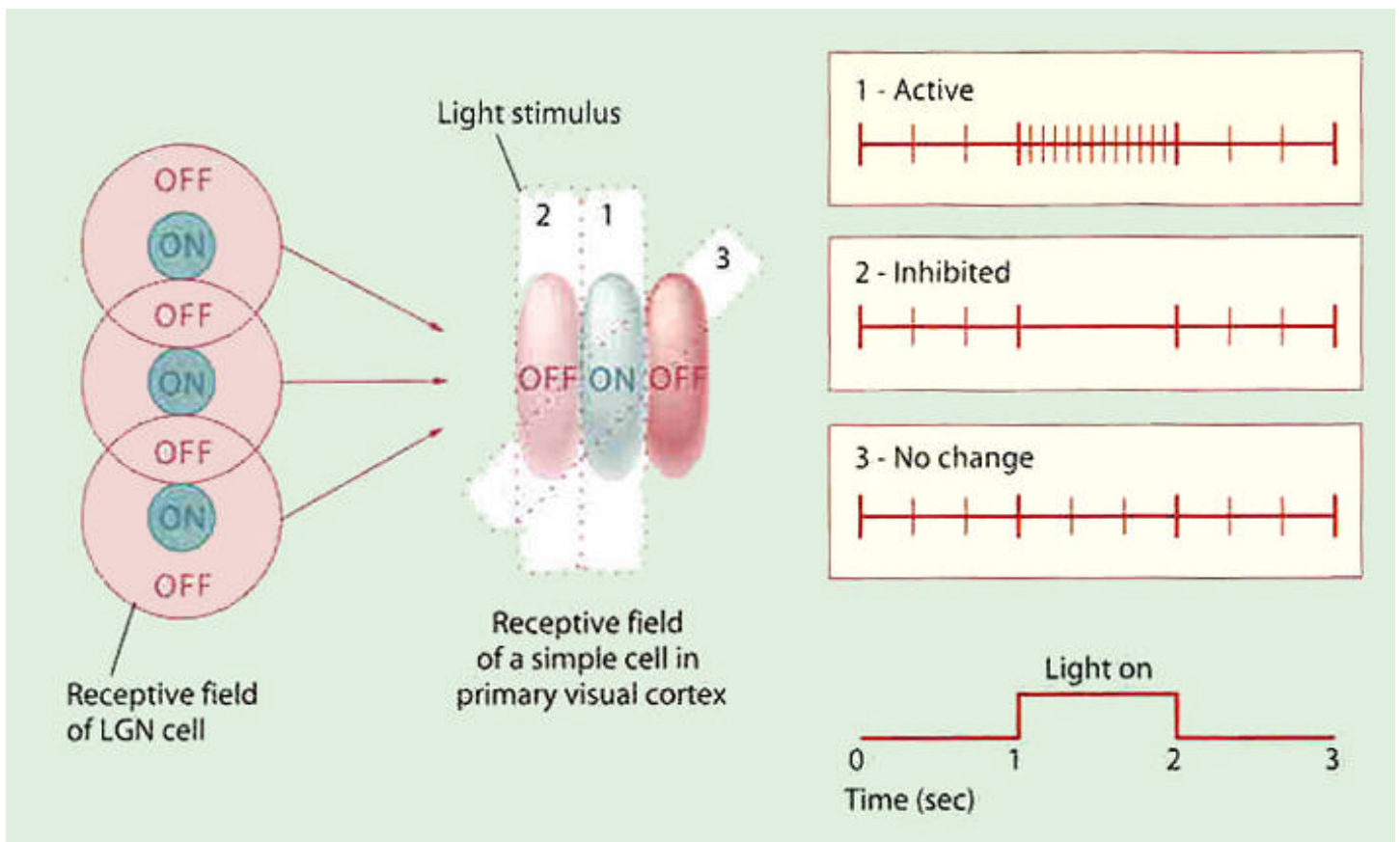
Three channels

- Magnocellular (M) channel
 - object motion
- Parvocellular-Interblob (P-IB) channel
 - object shape
- Blob channel
 - object color

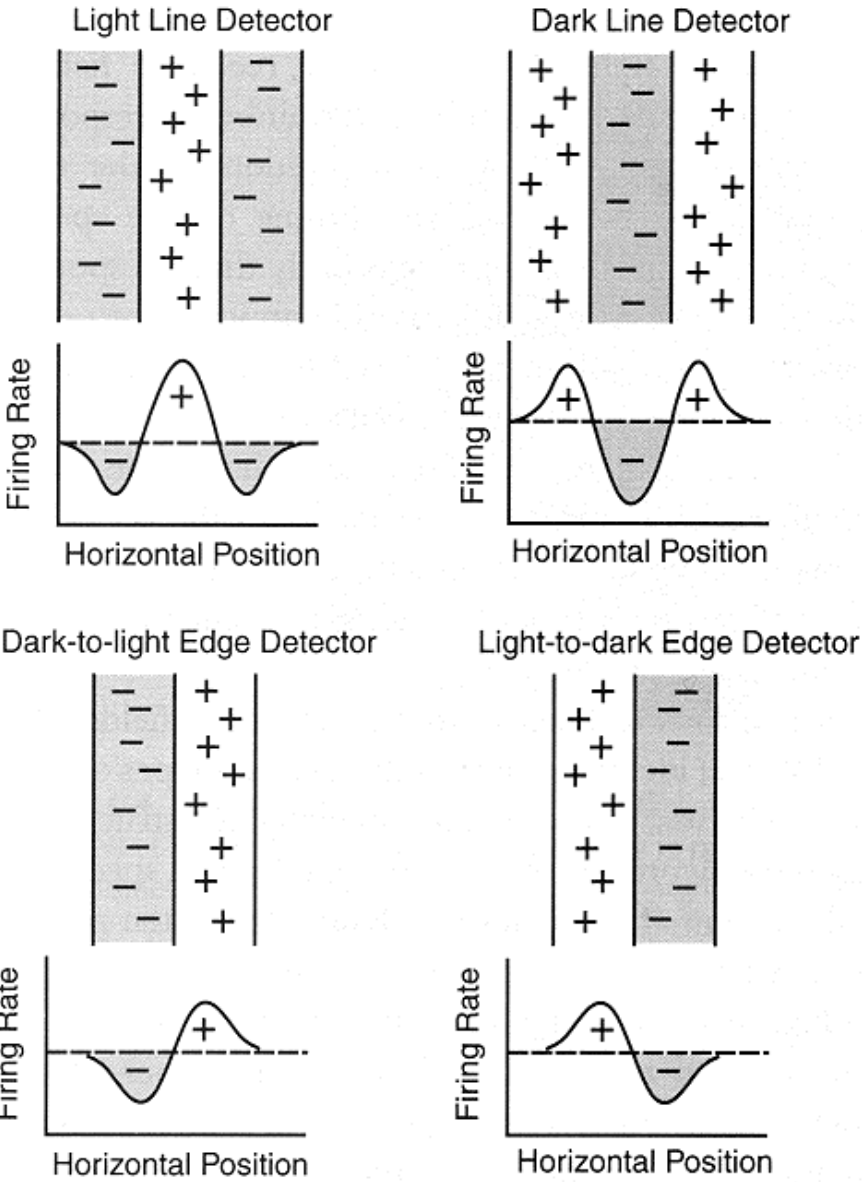
Receptive Fields: Retina and LGN



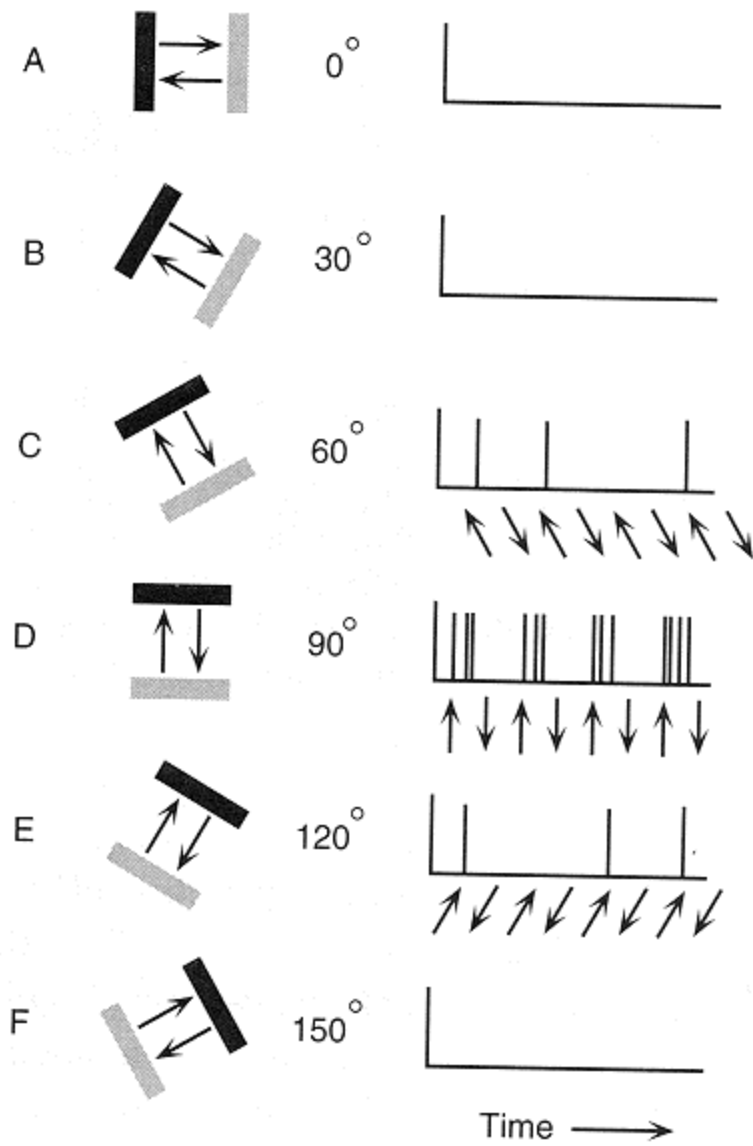
Simple cells in Striate Cortex



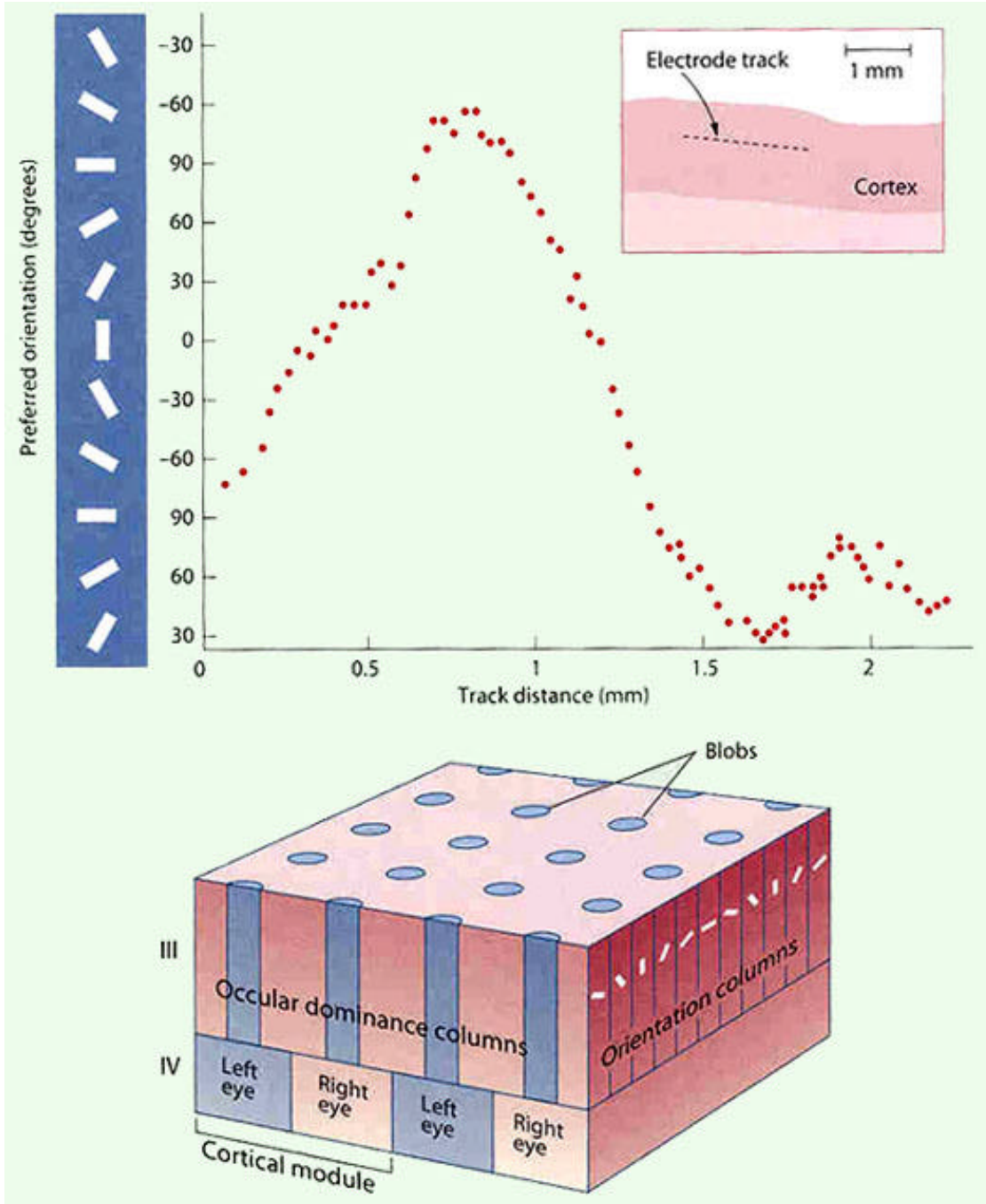
Simple Cells



Complex Cells



Cortical Module



Beyond V1

