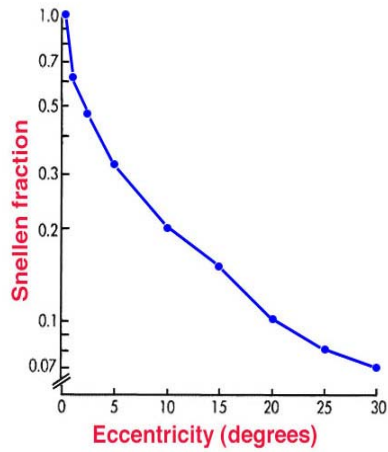
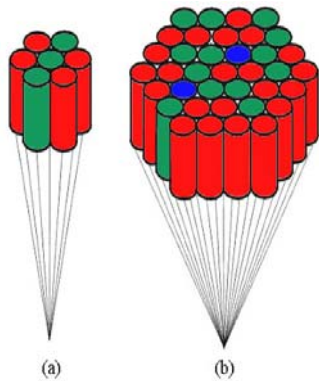


Visual Acuity vs. Field Angle



Visual Acuity rapidly decreases away from the fovea. Typically 20/20 in the fovea and 20/200 at a field angle of 20 degrees.

Spatial Summation



The loss in acuity is primarily due to Spatial Summation, where the output of multiple photoreceptors are tied to a single nerve fiber.

Figure 26. Schematic illustration of the size of receptive fields in (a) the parafoveal region (7° eccentricity) and in (b) the peripheral retina (35° eccentricity).

Acuity versus Field Angle



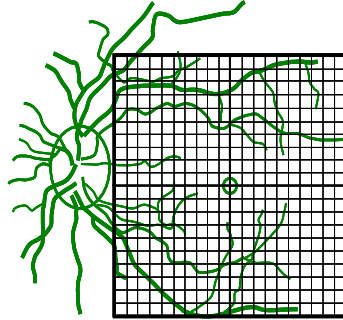
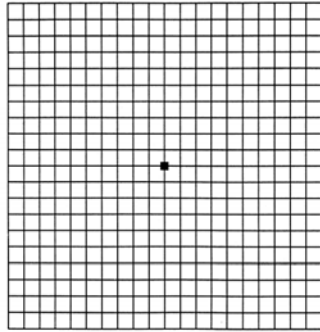
<http://www.usd.edu/psyc301/images/acuity.GIF>

Foveated Display



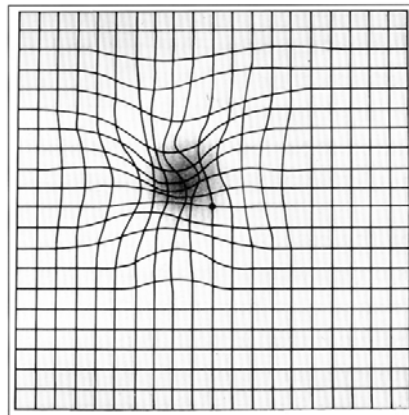
Amsler Grid

The Amsler Grid is a device used to rapidly assess visual field loss. It is composed of a grid of 20 by 20 squares, each 5 mm on a side. The grid is held at reading distance and subtends roughly 20° of visual angle.



National Eye Institute, National Institutes of Health

Amsler Grid



National Eye Institute, National Institutes of Health

Visual Field Testing

- Kinetic - Target moved from out of field of view towards center of field until it is perceived.
 - *Tangent Screen*: Objects of different sizes moved from perimeter until seen. Bigger objects seen earlier.
 - *Goldmann Projection*: Objects of different brightness moved in from the perimeter until seen. Brighter objects seen sooner.
- Static - Dim light shines in retina and is slowly increased in brightness until perceived. Repeated for multiple locations on the retina.

Visual Field Testing



Visual Fields

“Island of Vision”

