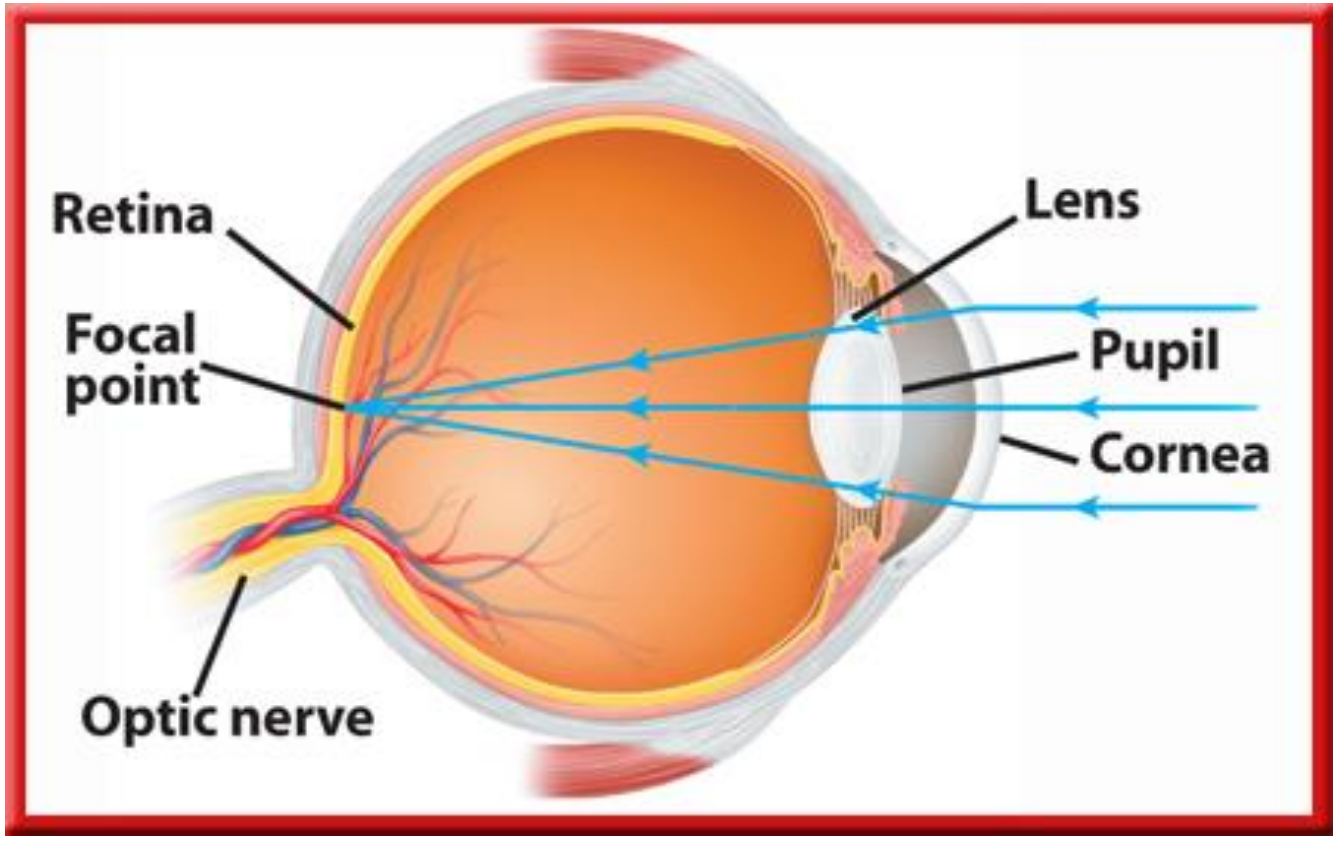
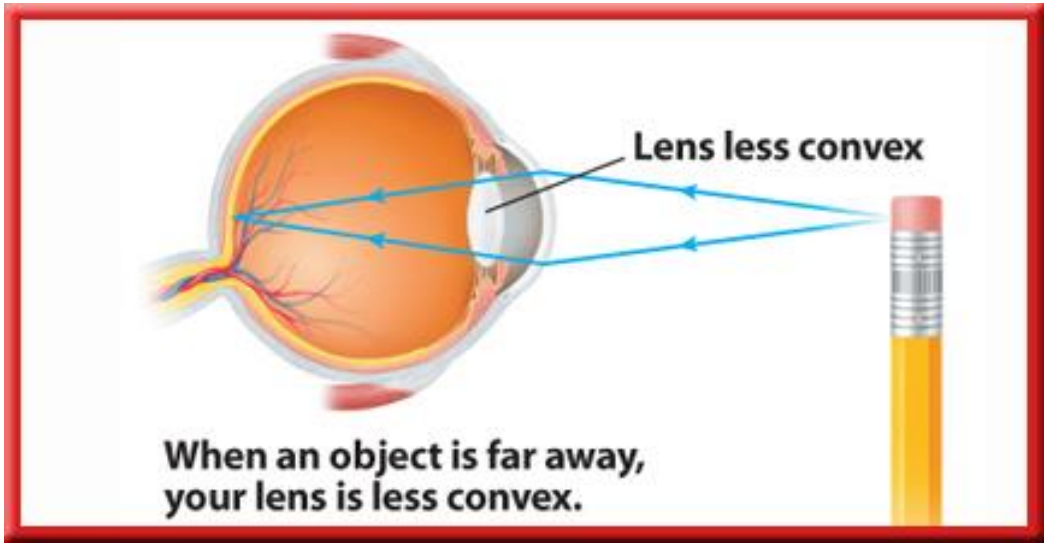
Lenses and Eyesight



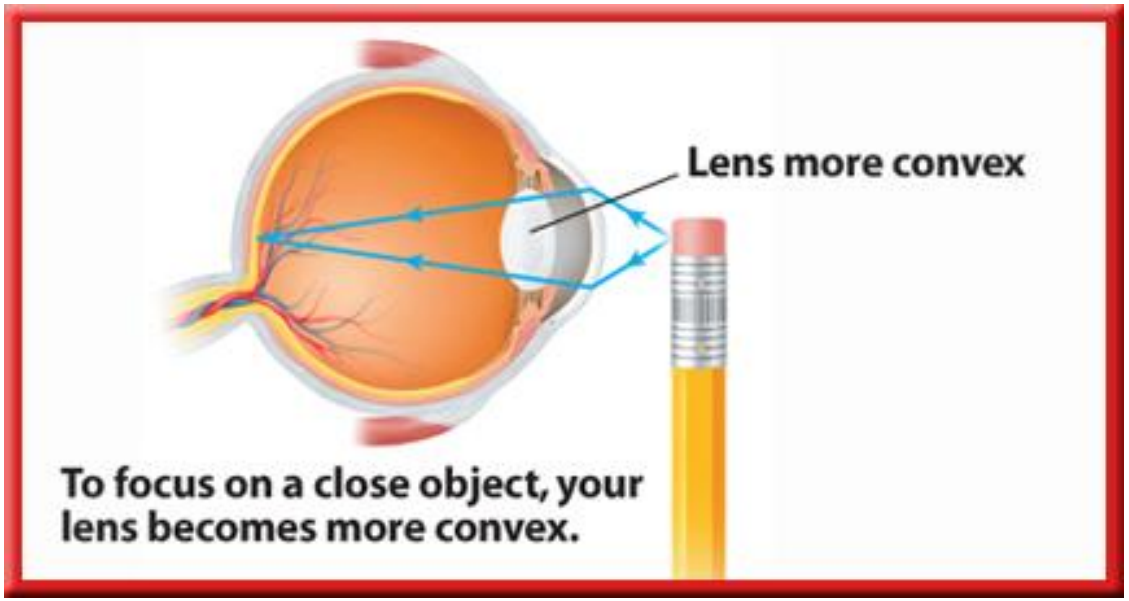
Focusing on Far and Near

- As an object gets farther from your eye, the focal length of the lens has to increase.
- The muscles around the lens stretch it so it has a less convex shape.



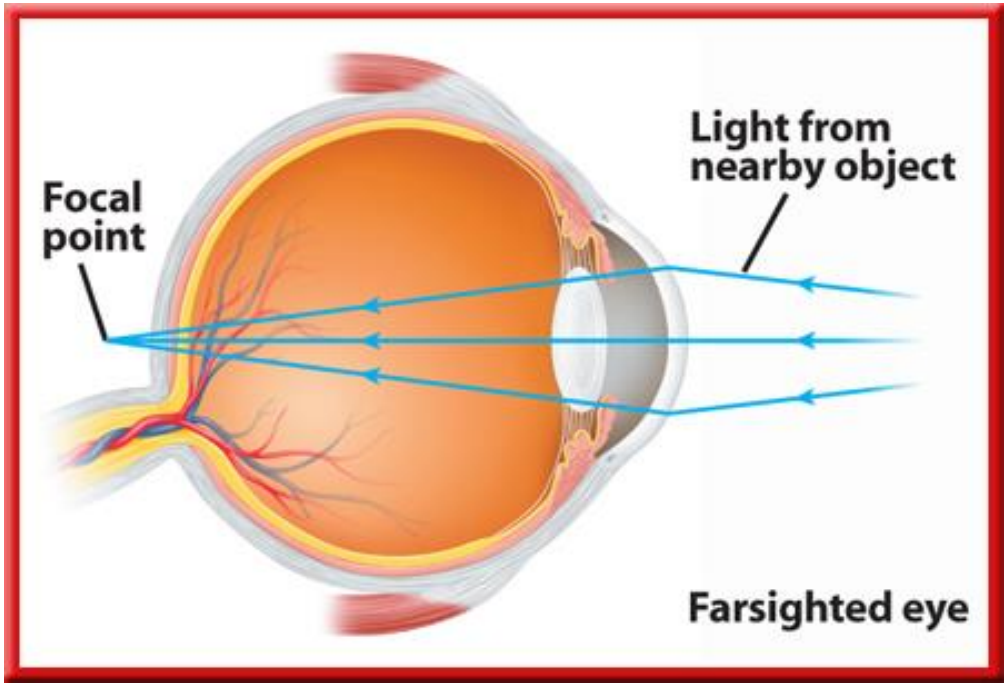
Focusing on Far and Near

- But when you focus on a nearby object, these muscles make the lens more curved, causing the focal length to decrease.



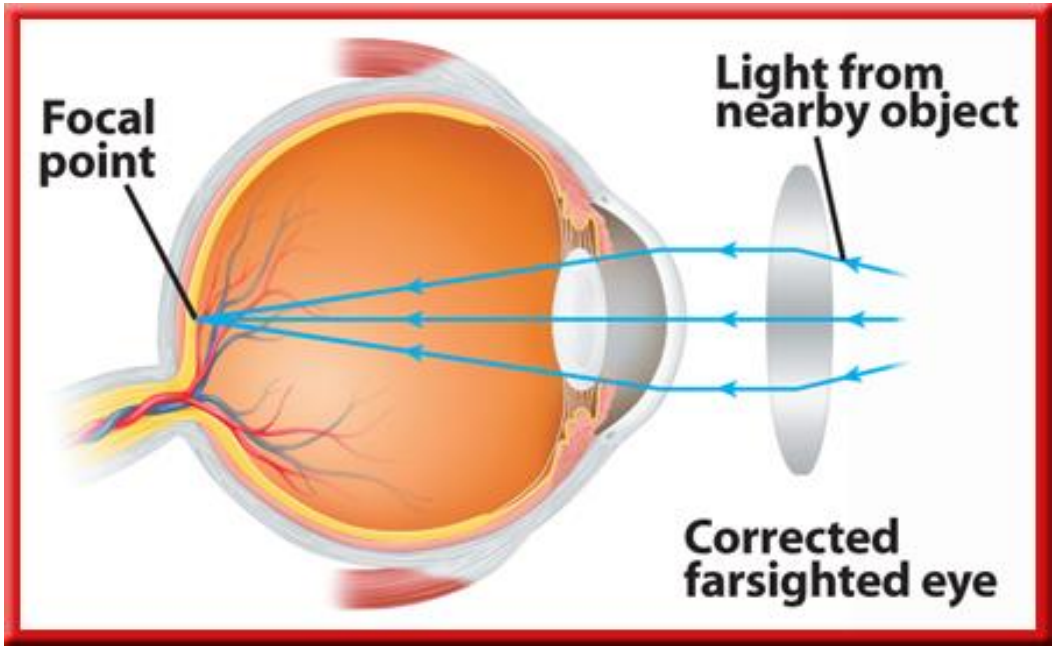
Farsightedness

- If you can see distant objects clearly but can't bring nearby objects into focus, then you are farsighted.



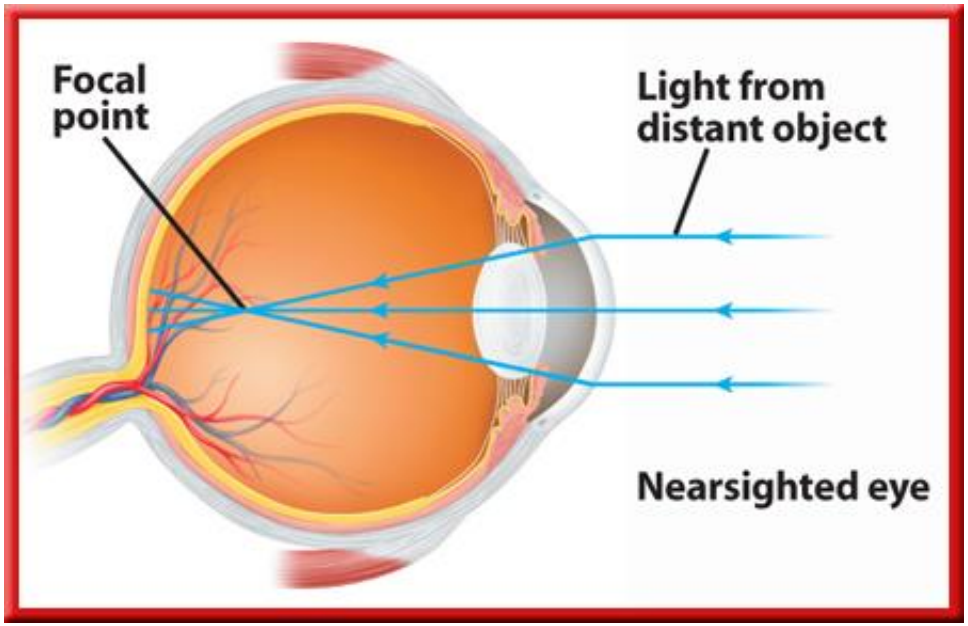
Farsightedness

- To correct the problem, convex lenses cause incoming light rays to converge before they enter the eye.



Nearsightedness

- If you have nearsighted friends, you know that they can see clearly only when objects are nearby.
- When a nearsighted person looks at distant objects, the light rays from the objects are focused in front of the retina.



Nearsightedness

- A concave lens in front of a nearsighted eye will diverge the light rays so they are focused on the retina.