Visual Field: Testing Your Peripheral Vision

The visual field machine consists of one of our two pre-test machines. It allows for us to test the patient’s peripheral vision, but why do we need to test their peripheral vision?

Peripheral vision can be defined as the vision one sees without moving the eye. The eye is kept looking straight ahead, but the periphery allows one to not only see what is in front of them, but also to see the what’s above, below, or to the sides.

The visual field test comes in a variety of methods, but it pretty much tests for how far up, down, or to the sides your eyes can see without moving and how sensitive your vision is in different parts of the visual field. The method that we use here at the Ashe Center is known as an automated perimetry exam. It is the most common method nowadays, utilizing a machine with a clicker. Another method that the optometrist might use during an exam is known as a confrontation visual field exam. This involves the patient covering one eye and the doctor moving the hands in and out of focus.

There are several reasons why we test the peripheral vision. One of the main one is to screen for glaucoma. Patients with early glaucoma do not notice any visual symptoms. Degradation of the peripheral vision can be a sign that the patient might have glaucoma and they can be properly screened and treated for it if present. It can also be interpreted the other way for glaucoma patients who are currently on treatment to evaluate whether or not the medication is working.

Another reason why we test the visual field is to see if there are any defects correlating to the nervous system such as the retina, optic nerve, or the brain itself. We won’t get too technical here, but I am sure that all of us have touched upon the optic nerve/visual pathways at some point in our undergraduate careers. The visual field machine is split into four grids, something similar to Figure 1 shown below, and it basically corresponds to the field of vision that the corresponding sides of the optic nerve can see. If there are several misses on the machine in one specific quadrant, this could raise a red flag for the optometrist, and they would either conduct more tests to ascertain the problem, or refer the patient out to see an ophthalmologist. The causes of the missed points could result from several different factors, including a brain tumor near the optic chiasm or optic nerve, brain swelling, brain injury, damage to the optic nerve, macular degeneration, etc.

Figure 1 Optic Nerve Pathway shown with the corresponding visual field
http://www.pacificu.edu/optometry/ce/courses/28349/images/clip_image016.gif