


Tests for Neural Defects

The last time I saw my family physician for a routine check-up he commented that I was one of his first patients when he took over the previous doctor's practice. He took one look at me and out comes his favorite tests for senility. The first request was for me to remember three words: "baby", "kitchen", and "village". Next he gave me a circle and told me to fill in the numbers of a clock face and put in hands at twelve minutes past two o'clock I didn't tell him but that is the same test I use on my patients. (I think that next time I do that test I'll use roman numbers to show off.)

I know that many of you in this audience specialize in the treatment of just this kind of neural disorder so please bear with me to inform those of us that just look at VA, fundus, visual fields and OCT. People can have a stroke and still have good VA and good motor function. (The most common site of a stroke is the middle cerebral artery). These people can see but they lack understanding. They know something is wrong but they cannot verbalize what it is. It seems like they are just in a bad mood, or having a bad day. This condition is called "Agnosia", the lack of understanding. In the visual system, these people have trouble identifying or, naming something they see, they can't tell how the parts of what they see fit together and they can't draw the whole object in detail. If they get to hold the object they can then tell what it is and what it does. I have just described "Apperceptive Agnosia". I show them this picture  one of the gollin test forms and the patient says 7415 but cannot see that it spells "THIS".

Another form of Agnosia is "Associative Agnosia which is specific to the part of the brain which is damaged. A person, who can't identify a cat by seeing it, but can identify a cat by hearing its meow, unlike apperceptive agnosia they can draw a likeness of the object they are shown but can't tell what it is. They can however, tell what a cat is if asked.

In the worst case (Global Agnosia) they lose all visual memories and associations.

In prosopagnosia people can't recognize their own faces, not even their own face in a mirror; even if they see and identify the features. A few people are even born with this disability.

Some people have trouble attending to multiple details of an object at the same time. (Simultagnosia) other people may notice that the patient has a narrow attention

span. I show them the cookie theft picture, the vegetable man picture, and the alphabet letter test. The patient will report a person washing dishes but not the sink overflowing or the child falling. They see the vegetables and can name them but they don't see that they go together to make a face or they see that a form is made up of lots of letter "E's: but they miss that it spells a big letter A.

Some people complain that they can get lost in their own home or their own neighborhood. They can repeat to you the directions to go somewhere but they can't actually do it or they can't form a mental picture in their mind. THIS IS A FORM OF Topographic agnosia, which causes tremendous mental strain since they can't take themselves anywhere.

The inability to read, write, and do arithmetic is another form of acquired agnosia in formerly literate people. They have language deficits. (Inability to articulate) In Apraxic Agraphia they can't write but they can spell correctly orally.

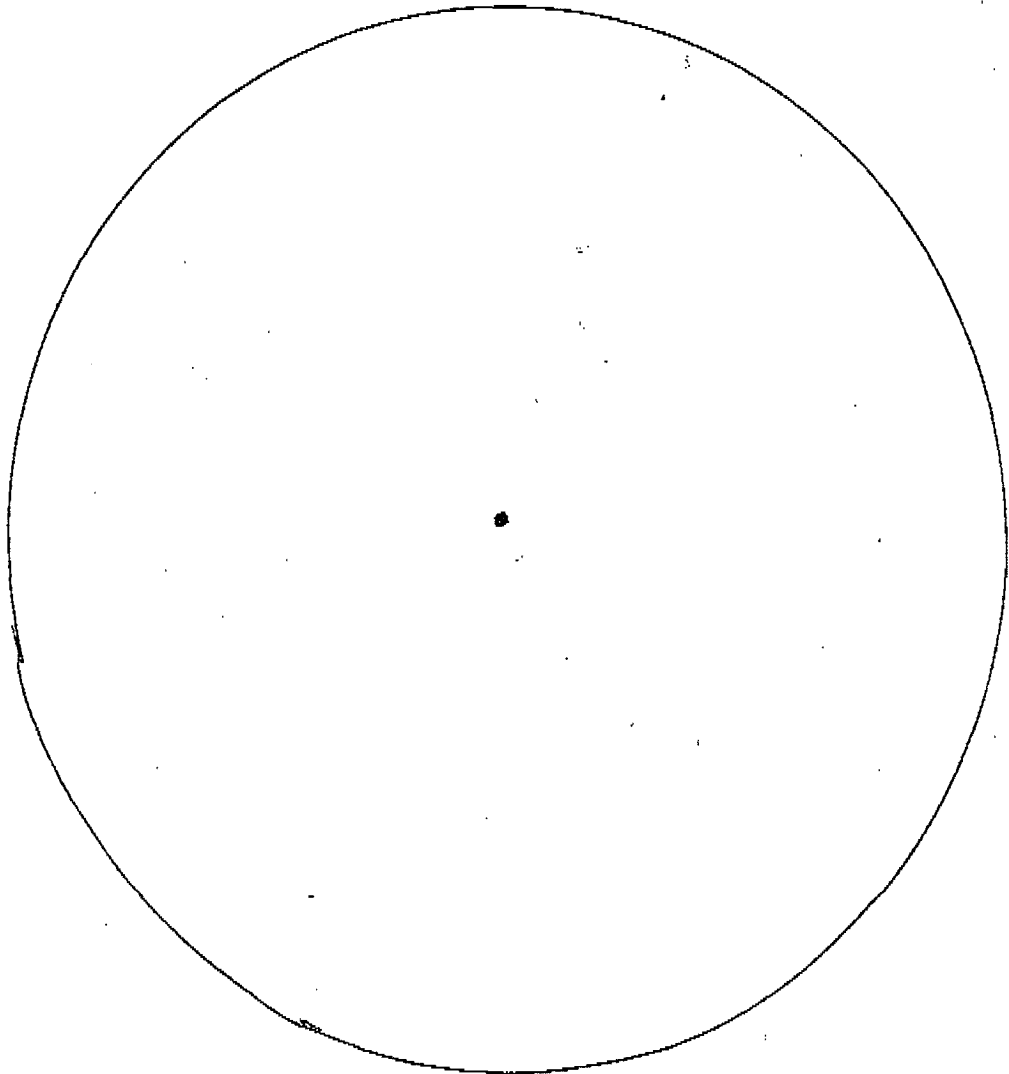
Finally there are people who will reverse information from one side of the body to the other side. This is called Allochiria, they will reverse the clock face test from memory putting the nine where the three belongs. Loss of part of their visual field causes the brain to create the missing parts incorrectly, but the patient is not aware of the missing parts. These patients have a lot of trouble with reading and balance and dizziness since they can't deal with objects in space. They often bump into things they don't see.

So what do we optometrists do when we find these problems? First we refer to a neurologist to define the location of the brain lesion and then possibly to Vision Therapy for rehabilitation.

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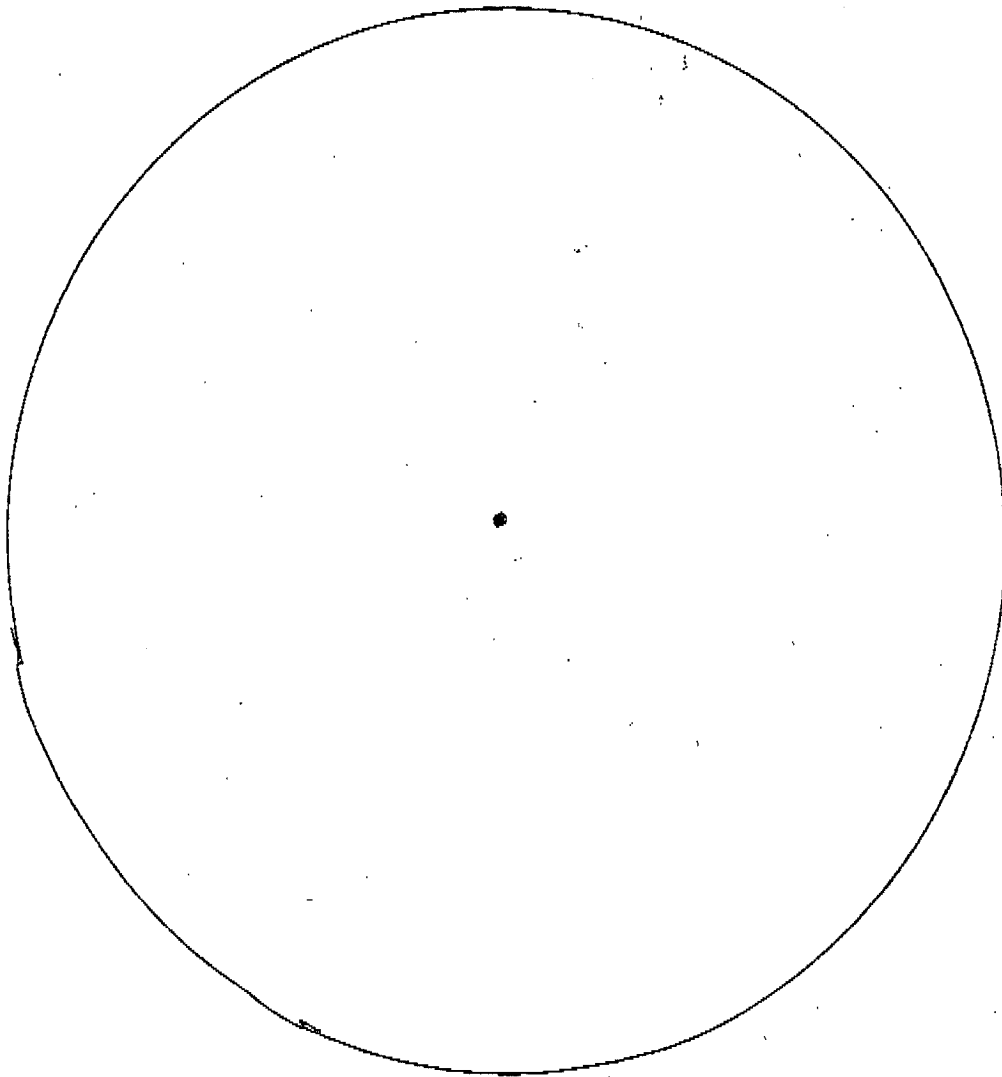
DRAW A CLOCK FACE

MAKE THE HANDS READ TWELVE AFTER TWO



DRAW A CLOCK FACE

MAKE THE HANDS READ TWELVE AFTER TWO





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