

How Do Eyalights Work?

Stimulation of the non-dominant eye affects the contra-lateral (opposite) hemisphere of the brain. If the right eye is non-dominant, Eyalights will affect the left side of the brain, or the analytical portion of the brain. If the left eye is non-dominant, Eyalights will affect the right side, or creative portion of your thought processes.

With Eyalights you have a choice of settings for either the right or left eye. **THE NON-DOMINANT EYE IS THE SIDE THAT ALWAYS GETS THE THERAPY.** Click here for instructions on determining the non-dominant eye. The lights flash in a monocular pattern, and both the top and bottom rows will be flashing at the same time. However, one row will be flashing brighter than the other row. If the lights are blinking brighter on the upper row, it will affect the temporal lobe (mentality/emotionality) of the brain greater. If the lights are blinking brighter on the bottom row, it will affect the parietal lobe (sensory/motor) greater.

The lights that are flashing affect the contra-lateral (opposite) hemisphere of the brain at a 60% ratio compared to a 40% ratio on the ipsi-lateral (same side) hemisphere of the brain. So, both sides of the brain are being stimulated, 60% non-dominant compared to 40% dominant. Similar ratios exist between temporal (upper row brighter) and parietal (bottom row brighter) activation. Superior row brightness has a 60/40 temporal/parietal ratio, and vice versa.

Eyalights also offers glasses that provide hemifield stimulation, where one side of the brain receives 100% of the therapy. This version of the glasses is available only to doctors. For more detailed information on hemifield stimulation, click here.

Muscle Testing

After identifying the non-dominant eye we are now able to see what occurs in the neurological model as well as the mechanical model. A good way to show both is by muscle testing. The convergence test that you used to identify the non-dominant eye actually causes inhibition of the muscles globally. Immediately after performing the convergence test, have the patient hold both arms out in front of their body, at shoulder level. Push down on the person's arms and have them resist against the pressure (group muscle test). You will notice that the muscles will become weak as the patient easily succumbs to the pressure you have applied.

Have the patient put on their Eyalights with the lights blinking on their non-dominant eye. Wait through two or three sequences of the flashing lights and retest the group muscles again. You should now see that the muscles are facilitated or strong.

What is Happening on the Inside?

Upon fatigue, the non-dominant eye lateralizes. When this occurs, it causes the brain to suppress the input that would normally be entering the brain. One eye stays dominant (looking at you), while the non-dominant eye lateralizes (looks at the doorknob). The brain is not able to look in two different directions and maintain input or focused thought processes. Since it is looking at two different objects, the brain will suppress the input from the non-dominant eye, recognizing only the information from the dominant eye.

When this occurs, the rods and cones of the eye are not being brought up to the threshold and you get into a "use it or lose it" cycle. By stimulating the visual system you get global excitation of the brain. This is evidenced with an elevation in production of hormones and neurotransmitters, such as dopamine, epinephrine, and serotonin.

What is the Effect on the Motor System?

When you lose input from the medial rectus muscles, you essentially decrease input to the erector spinae muscle group of the spinal column. This occurs in a homologous column (on the same side as the weak medial rectus muscle or non-dominant eye), and you will see rotational components of the

spinal structures. On the side of medial rectus weakness you will see hypotonic (decreased tone) musculature. The opposite occurs on the dominant side, where you will see increased tone or hypertonic musculature. Spinal rotations away from the side of non-dominance are what you should find upon palpation and x-ray examination.

Top Row vs. Bottom Row

The parietal lobe of the brain deals with sensory (input) and motor (output). A patient with motor problems such as Parkinson's, tremors, MS, ALS, stability problems, sensory integration problems, numbness, or atrophy would benefit from the bottom row of lights blinking brighter. Athletes would also benefit from the bottom row of lights blinking brighter in order to increase physical performance.

The temporal lobe of the brain deals with emotionality and mentality. If one has problems such as ADD, dyslexia, memory problems, speech and hearing problems, learning difficulties, forgetfulness, dementia, cloudy thought processes, or depression, he would benefit from the top row of lights blinking brighter.

Protocol for Wearing Eyelights

Mental Function

When wearing Eyelights in order to increase mental function, lights should be blinking on the non-dominant eye with the TOP row of lights blinking brighter.

In the beginning stages of treatment, Eyelights should be worn 3-4 times a day, for 5 minutes each time (20 minutes total). Each week, increase the amount of time they are being worn by 5-10 minutes. One should eventually work his way up to standard protocol of 15-20 minute intervals 3-4 times per day.

When the lights are programmed with the top row blinking brighter, you must limit how long the glasses are being worn during each session. While Eyelights can be worn 3-4 times a day, you should avoid wearing them for more than 20-30 minutes each time. If a patient experiences headaches or eye fatigue, this may mean that they have worn the glasses for too long, and they should lessen the length of time during the next session.

Physical Function

When wearing Eyelights in order to increase physical performance or motor function, lights should be blinking on the non-dominant eye with the BOTTOM row of lights blinking brighter.

You may use the same protocol listed above. However, once a patient has reached the standard protocol of 15-20 minute intervals, glasses can be worn for extended periods of time. As long as lights are blinking brighter on the bottom, they can be worn the entire duration of practice, workout, game, etc.

Patients with Neurological Damage

Patients who have experienced strokes, seizures, or other neurological damage should have a modified protocol. Each patient should be evaluated on an individual basis as to whether Eyelights are an appropriate therapeutic device for their particular disorder.

Patient should start out at 1 minute intervals 2-3 times per day. Duration may be increased over time, not to exceed 10 minutes per session.

Autism

Autistic patients should start with 3-5 minutes of therapy 3-4 times a day if possible. The clear lens is best choice for the beginning stages of treatment. Because most autistic children do not like changes to their environment, the light therapy is usually the most stimulation they can handle at first.

Once you begin to see positive changes in their behavior you may incorporate color therapy into their routine. The lens color of choice should be applied by hand in front of the clear lens for twenty seconds (2 flashes of light). This can be done 2-3 times during each therapy session.