



NANOS

Patient

Brochure

Photophobia

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PHOTOPHOBIA

General description:

Photophobia means light sensitivity. Everyone has some light sensitivity- think of going out from a dark movie theatre to a bright sunny day. That sensitivity is usually brief. But some people have that sense of pain and brightness every day. Sometimes individuals think the light is “too bright”, meaning there is an increase in the sense of light. Others will complain of pain associated with the light.

Anatomy and Physiology:

It is not fully understood which areas of the brain are involved in light sensitivity. There are special light-sensitive cells in the retina of the eye that may be responsible for the discomfort caused by light. These cells may have connections with the trigeminal nerve. The trigeminal nerve is the nerve that supplies feeling to the face, head, eyes and eye sockets. Once pain is triggered by light, it can be very difficult to stop the cycle of pain.

Symptoms:

People with light sensitivity may have an uncomfortable sense of brightness. They may squint or blink frequently. Some conditions associated with light sensitivity cause blinking and squeezing of the eyelids that is uncontrollable. Some people with light sensitivity stay by themselves in dark rooms or wear dark sunglasses indoors. Because the trigeminal nerve is irritated, some people with light sensitivity may also get headaches or eye pain.

Causes of photophobia:

There are a number of diseases that can cause light sensitivity. These causes are usually obvious when an eye doctor examines your eyes. The most common cause of light sensitivity is dry eye syndrome. However, there are three things that can cause light sensitivity that are not obvious after examining the eyes: migraine, blepharospasm and traumatic brain injury. Many patients with migraine, blepharospasm and traumatic brain injury also have dry eyes.

Migraine is the most common neurologic disease. About 18% of women and 6% of men have migraine. If you have light sensitivity and a normal eye examination migraine is usually the most common cause. Migraine is sometimes undiagnosed or misdiagnosed. If you can answer yes to two or three of these three questions, you may have migraine:

- Has a headache limited your activities for a day or more in the last three months?
- Are you nauseated or sick to your stomach when you have a headache?
- Does light bother you when you have a headache?

For more information on migraine, see:

http://www.achenet.org/resources/information_for_patients

Blepharospasm is a movement disorder, in the same category as Parkinson's disease. People with blepharospasm have frequent uncontrollable blinking and squeezing of the eyelids. Sometimes these abnormal movements affect other parts of the face. For more information about blepharospasm see:

<http://www.blepharospasm.org/>

Traumatic brain injury may be seen after combat injuries, sports injuries, or motor vehicle crashes. Often there are other symptoms, including problems with thinking, memory, attention, concentration, and emotions. For more information about traumatic brain injury, see:

<http://www.ninds.nih.gov/disorders/tbi/tbi.htm>

Some medications can cause light sensitivity, but this side effect is very uncommon. We do not know why these drugs cause light sensitivity. Some drugs that rarely cause light sensitivity include barbiturates (a class of sedatives), benzodiazepines (another class of sedatives), chloroquine (used for treatment of malaria, rheumatoid arthritis and some autoimmune diseases), methylphenidate (used for attention-deficit and hyperactivity), stimulants, and opioids (narcotic pain killers).

Treatment:

If the cause of photophobia can be identified and treated, there is hope of ending this disabling symptom. A full neuro-ophthalmologic examination usually can identify a cause. Treatment of the underlying disease causing light sensitivity is very important.

Dry eyes can be treated with over-the-counter artificial tears, oral flaxseed oil supplements, and lubricating eye drops. You can discuss these treatments with your eye doctor.

There are a number of treatments available for migraine and you can discuss these with your doctor or a headache specialist. Blepharospasm is usually treated with injections of botulinum toxin. Traumatic brain injuries require supportive care from a team of professionals who are specifically trained to manage these injuries.

Optical Treatments:

Never wear sunglasses indoors! By wearing dark glasses indoors, you can make your eyes MORE sensitive to light so that when you take your glasses off or go outside, your light sensitivity is even worse. It is fine to wear sunglasses outside.

A tint called "FL-41" was developed for patients with fluorescent light sensitivity. Since that time, it has been shown to be helpful in patients with photophobia associated with

migraine and blepharospasm. This tint blocks the colors of light that stimulate the pain-sensitive cells in the eye.

FL-41 can be difficult to find in optical shops, but more information can be found at the following websites:

- http://healthcare.utah.edu/moran/patient_care/optometry/optical_shops.php
- <http://www.axonoptics.com>
- www.therapecs.com
- www.callbpi.com
- www.phantomresearch.com

A spectacle coating for migraine is being tested in children and adolescents. Visit: <https://clinicaltrials.gov/ct2/show/NCT01942486>

Frequently Asked Questions

1. Why do I have light sensitivity?

There are many causes of light sensitivity. That is why your eye care provider will do a careful examination to determine the contributing factors. The most common causes of light sensitivity include migraine, blepharospasm, traumatic brain injury, and dry eyes.

2. What can I do to make my light sensitivity go away?

First, adequate treatment of the cause is important—that means if you have dry eyes you should treat that symptom aggressively. Second, be sure that you do not keep yourself in the dark—e.g. NO darkened rooms, no darkened windows, slowly increase the amount of light in your environment so that you are more tolerant of the light. Get adequate sleep and treat any depression or anxiety which can make your symptoms worse.

3. Will tinted lenses work for me?

There is no way to be sure that you may or may not benefit from tinted lenses. Sometimes it is trial and error. Using the least amount of tint inside is the best because the darker things are the more the light will bother you.

4. How does FL-41 work? Although we are not really sure *why* FL-41 improves light sensitivity, we think it has something to do with the wavelengths of light (color) that are filtered out. FL-41 blocks blue and green. These colors are thought to be a problem to patients with light sensitivity.

5. Can FL-41 filter be added to any glasses? FL-41 filter can be applied to any plastic spectacle lens. It's usually best to get new lenses, rather than attempt to add the filter to old lenses.

6. ***How much does it cost to add the FL-41 filter to my existing glasses and does insurance cover the cost?*** Applying the FL-41 filter to existing lenses typically costs less than \$50. Most insurance plans, including Medicare, do not cover the cost of adding tint to lenses. However, there may be exceptions, so contact your individual insurance provider.