

Avulux Migraine and Light Sensitivity Lenses

A Background on Headaches

A thin, dark vertical line is positioned to the right of the title text, extending from the top of the word 'Headaches' to the top of the word 'Background'.

What is a Headache?



- A headache is a pain or discomfort in any part of the head. It can be caused by a variety of factors, including stress, muscle tension, dehydration, and even underlying medical conditions. The brain itself does not feel pain, but headaches are often felt due to pain signals from nerves and blood vessels in the head, neck, and face.
- Types of headaches include:
 - Tension Headaches
 - Cluster Headaches
 - Sinus Headaches
 - Ice-Pick Headaches
 - Migraines

What is a Migraine?



- Migraines are a specific type of headache that can be extremely physically debilitating. When a patient experiences a migraine attack, they experience things like:
 - Debilitating head pain
 - Light sensitivity
 - Nausea, vomiting, dizziness
 - Distorted vision
 - Sensitivity to sound and smell
 - Brain fog, memory loss
 - Sleeping issues and even excessive tiredness
- Migraines are usually passed down genetically.

What is a Migraine?



What is a Migraine?

- The National Headache Foundation surveyed patients with migraines and found that 24% of people reported having headaches so severe that they had to seek emergency room care. In fact, the World Health Organization (WHO) identifies migraine as the **third most prevalent** and **sixth most debilitating** medical illness in the world. For people ages 15 to 49 years, migraine is the **top cause of years lived with disability**, according to the National Institute of Health.
- Studies show that a patient living with migraines experiences some level of pain almost half of their month. They also found that patients reported not being able to do what they want about 25% of their month.
- So, migraines can have a significant impact on a patient's life and well-being.

How Else Are Migraines Disruptive?

In addition to the physical impacts of migraine, patients living with migraine also suffer **social and economic impacts**.

Social Impacts

- Avoid doing things
- Relationship strain
- Missed family experiences
- Toll on family and friends
- Depression & anxiety

Economic Impacts

- Decrease in productivity at work/school
- Increase in days missed at work/school
- Unpaid time off work
- Costly doctor's appointments & treatments

So, How Common are Migraines?



As of 2025, 14.7% of people live with migraine disease.



1 Billion people in the world live with migraine disease.



47+ Million people in the United States live with migraine disease.



Almost 1 in every 5 patients in our practice lives with migraine disease.



Almost 1 in every 3 women live with migraines, which is 3x more than men.
The highest prevalence in women ages 30-40.

Migraine Treatment

- As of now, there is no cure for migraine headaches. We only treat the symptoms so that the patient has a better quality of life.
- There is medication that can be used, both for acute cases, as well as preventative.
- Patients are instructed on lifestyle changes that they can undergo.
 - Identify and avoid triggers
 - Manage stress
 - Maintain a regular sleep schedule
 - Maintain a balanced, health lifestyle
- Alternative therapies, including neuromodulation devices, acupuncture and supplements.

The Price of Managing Migraines

Migraines are expensive to manage. Medications can cost upwards of \$5,000 per year.

	Intervention	Cost	Side Effects and/or Drawbacks	Efficacy
Pharmaceuticals	Triptans	\$24/month for 8 pills	Elevated blood pressure, flushing, chest pain, dizziness, sleepiness Contraindicated in patients with heart disease	65%* <i>Patients usually become tolerant within six months, and they lose effectiveness</i>
	CGRP (Ubrelyv)	\$1,000 for 8 tablets	Nausea, drowsiness, light sensitivity, serious heart rhythms	60%
	Excedrin	\$2/pill	GI bleeding, liver failure	65%
	CGRP (Aimovig)	\$1,200/month	Dry mouth, hypertension, dizziness	68%
	Botox	\$2,500/quarter	Paralysis, double vision, swallowing difficulties, difficulty breathing	66%
	Beta Blockers	\$6/month	Bradycardia, severe fatigue, heart block Extremely poorly tolerated	50%
Neuromodulators	Cefaly Trigeminal Nerve Modulation	\$550 initial cost \$100/month for electrodes	Tingling of face, numbness of face, sleepiness Cumbersome, impractical, difficult to apply, not readily used in social settings	67%
	Gammacore Vagal Nerve Modulation	\$600/month		
	Nerivio Vagal Nerve Modulator	\$600 for 12 uses		

The Price of Managing Migraines

Neuromodulation devices can cost almost as much.



Light and the Eyes

Migraines and Light Sensitivity

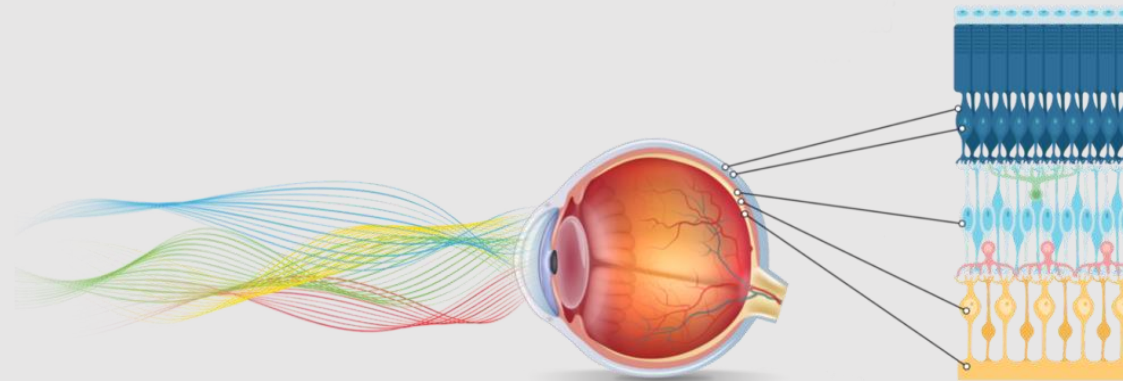


According to an FDA study with over 6,000 migraine patients were surveyed, over 49% selected light sensitivity as their most bothersome symptom, followed by nausea at 29%.

- 90% of people experience light sensitivity during a migraine attack.
- 60% of migraine attacks are triggered by light or glare.
- 40% of people experience light sensitivity between migraine attacks.

What is the Physiological Link?

The reason why light sensitivity and migraine are so closely related is due to how our eyes absorb light. In 2010, researchers linked a photopigment at the back of the eye called melanopsin to pain in people with migraine. These cells were peak activated at 480nm and 590nm wavelengths.

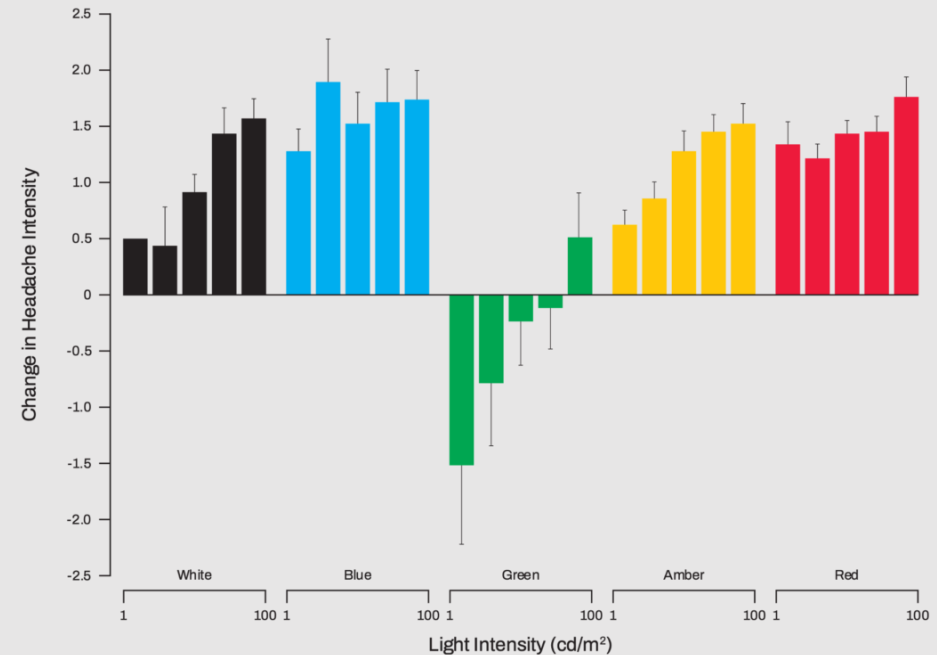


What is the Physiological Link?

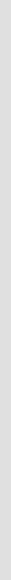
Further research was done at Harvard in 2016 where they exposed subjects with migraine to varying colors of light and found that:

- White, blue, amber and red light all increased headache pain.
- While low intensity green light was shown to decrease headache pain.

Unfortunately, no migraine treatments on the market today specifically address light sensitivity. In fact, some treatments may even cause or worsen light sensitivity.



Avulux Lens Technology



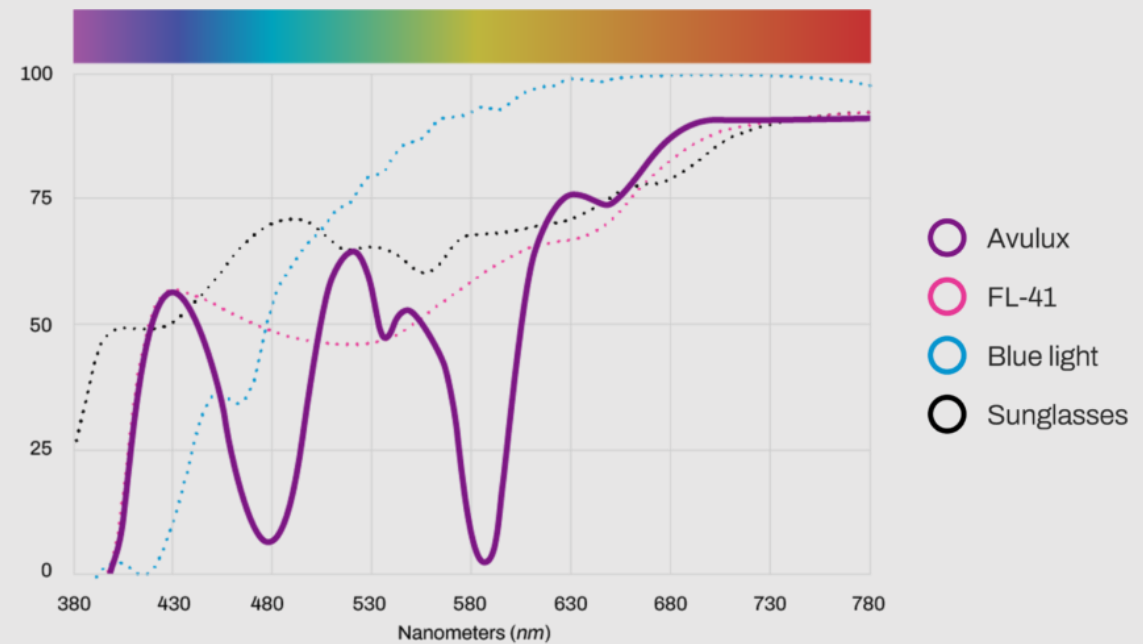
What are Avulux Lenses?

Avulux (pronounced “a-view-lux”) Migraine and Light Sensitivity Lenses are the world’s only clinically proven lens for patients living with migraine and light sensitivity.



How is Avulux technology different?

Avulux lenses employ a multi-band precision optical filter that works by filtering up to 97% of harmful blue, amber, and red light, while allowing in soothing green light.

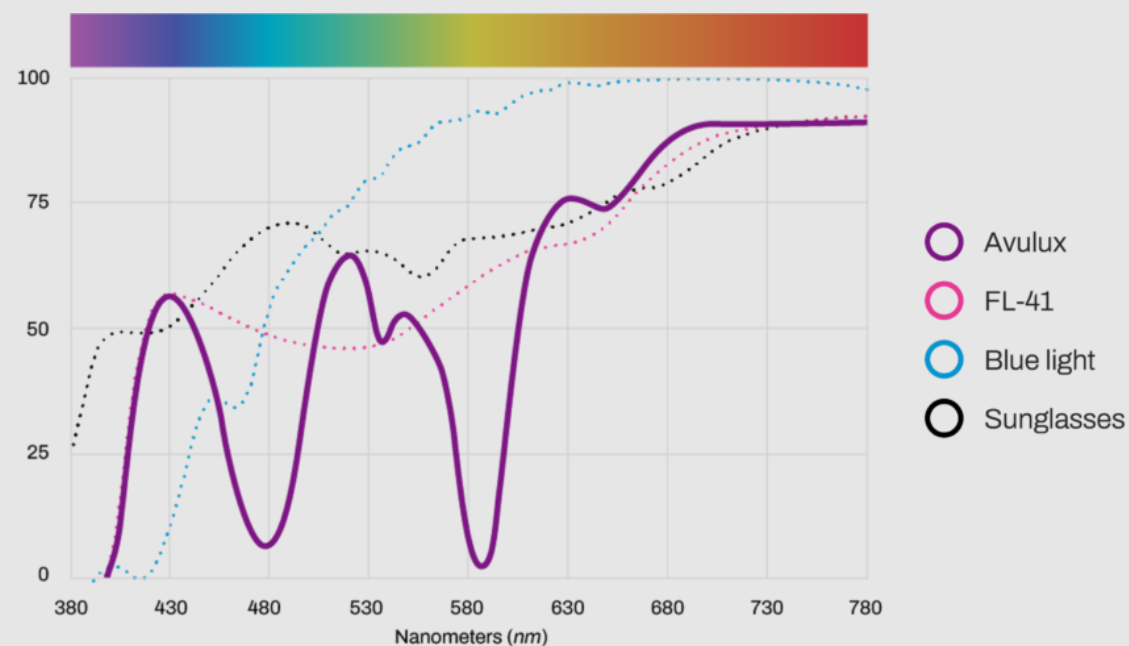


How is Avulux technology different?

- Avulux is not a tint or a coating, but rather a proprietary technology that incorporates organic dyes throughout the matrix of the lens, in order to drive its filtration properties. Importantly, this process also allows for an incredibly high level of consistency from lens to lens.
- If you were to take another lens and tint it the same color as the Avulux lens, the filtration properties would not be the same, because it is not the color that defines the filtration but the filtration that defines the color.
- Because Avulux lenses help with light sensitivity, mainly migraine sufferers that have problems with light sensitivity during and between migraine headaches are the main candidates for this lens.

How is Avulux technology different?

This graph compares Avulux to FL-41 tints, blue light blockers, and sunglass lenses. As you can see, the light transmission through the Avulux lens looks very different from these other technologies.



How is Avulux Technology Different?

Many eyecare professionals and patients often ask how Avulux compares to FL-41. The below chart compares the performance of the two products.

Avulux

- Created in 2018 for migraine patients
- Multi-band precision optical filter, filtering harmful light. Allowing green light through.
- Peer-reviewed clinical study proving efficacy
- FDA pathway, general wellness device
- Color neutral, just “softens the world”

FL-41

- Created in the 1980’s for flickering fluorescent light
- Non-selective tint/coating, filtering less harmful light, allowing in less green light
- Generic lens, lack of consistency between manufacturers
- Color distorting pink/red color

Does Avulux Actually Work?

- The Avulux lens is the *only* lens that has been clinically proven for people living with migraines and light sensitivity.
- In a 2020 double blind, randomized, placebo-controlled study conducted by an independent clinical research organization, the Avulux lens achieved both clinical and statistical significance when compared to a clear placebo lens.
- In addition to clinical data, Avulux has a substantial amount of real-world feedback as well!

Does Avulux Actually Work?

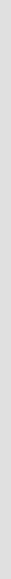
In 2024, Avulux conducted an extensive patient feedback survey to better understand how Avulux lenses were helping patients with migraines and light sensitivity. The results were overwhelmingly positive:

- 96% of Avulux wearers experience decreased sensitivity to light during and between migraine attacks.
- 94% of Avulux wearers say that Avulux brings a soothing sensation to their eyes during a migraine attack.
- 93% of Avulux wearers were able to engage more fully in daily activities like work, hobbies, and time with family/friends.
- 96% of Avulux wearers would recommend Avulux lenses to a friend or colleague.

More About Avulux Lenses/ FAQs

- There are no known side effects to the use of Avulux lenses.
- They can be worn both indoors and outdoors, with no chronic dark adaptation.
- There is superior color accuracy.
- They can be worn with other migraine treatment modalities.
- They are affordable with no recurring costs.

Avulux Lenses at Visualeyes



Avulux Candidates

- Identify patients who would be good candidates for the lenses.
 - “Do you live with migraines or experience migraine-like symptoms?”
 - “Does exposure to light increase the frequency or severity of these symptoms, or do you find yourself spending time in a dark room?”
 - If the patient answers no to both of these, they are not good candidates for the Avulux lens.
- QR Tents are found in the office that can help screen patients as well.

Avulux Lens Options



- Avulux Rx- Most often, patients will purchase Avulux prescription lenses as a second pair, unless they have a very high frequency of migraines and expect to wear their Avulux lenses full time.
- Avulux Plano/ Fitovers- Avulux plano lenses are fantastic for patients that wear contact lenses, or for patients that need no correction. Fitovers work well over a pair of prescription eyeglasses.

Avulux Lens Options



- Chemie Avulux- Developed in partnership with Eyenavision, the Chemie Clip layering system and a proprietary ultra-lightweight Avulux lens material will be the best option, given that it can be worn at the onset of symptoms and preventive any triggering activities when worn over their clear lenses. This has no AR, so the color may appear a little different. The material is a polyflex with a slightly higher ABBE value.

Avulux Lens Demos

- Demos for both the Avulux Plano and Avulux Fitovers are kept in the office for patients to try.



Avulux Lens Ordering

- Guide the patient through the typical ordering process, selecting a frame, lens design, AR coating, etc.
 - Frames must be full. We cannot use grooved or frames with drills.
 - Any backside progressive lens design can be used. Shamir and Unity are best.
 - AR must be spin cast.
- All prices are both in our EHR and the Visualeytes Book.
- Once you are ready to order Avulux lenses, simply place the order with Cherry Optical Labs as you would with any other lens.

Avulux Lens Dispensing

- If the patient purchases Avulux lenses, provide them with an Avulux patient brochure. This will instruct them how and when to wear them.
- There is a 6 month warranty against manufacturer defects.
- Avulux is so confident in our patient outcomes that we offer a **100% satisfaction guarantee** on all Avulux Migraine & Light Sensitivity Lenses for 90 days after the initial purchase. Communicating this to the patient will instill a sense of confidence that these lenses will be effective. But please do not sell just based on this. Please inform patients there is a 60 day guarantee. The return rate of Avulux lenses is about 3% nationwide.

Avulux Lens Instructions

- Be sure to wear the Avulux lenses at the onset of any migraine or light sensitivity symptoms, or when exposed to any known light triggers.
- If you have more than 15 headaches in a month or continuous light sensitivity, you can wear the Avulux lenses full-time.
- Generally these lenses are not suitable for driving because of their filtration properties.
- Care for the lenses like all other lenses purchased here at Visualeyex Optometry.
- More information can be found at avuluxcares.com

Avulux Lens Sales Pearls

- If the patient decides not to purchase Avulux lenses, still provide them with an Avulux patient brochure. Many patients change their minds after a few days of reconsidering their decision. Attach staff member or practice card for the patient to get in contact if they decide to move forward. Do not let this discourage you! Many patients return to the office for the lenses. You may always ask, “Is it OK if I check in with you in 1 week if you have any other questions?”
- The main objections are
 - Cost- Patients can use Care Credit and FSA/HAS.
 - Efficiency
 - Color- This is not a sunglass lens. Show the patient the demos.
- We can offer a 10% discount when sold as a multiple. Not 40%.

Any Questions???
