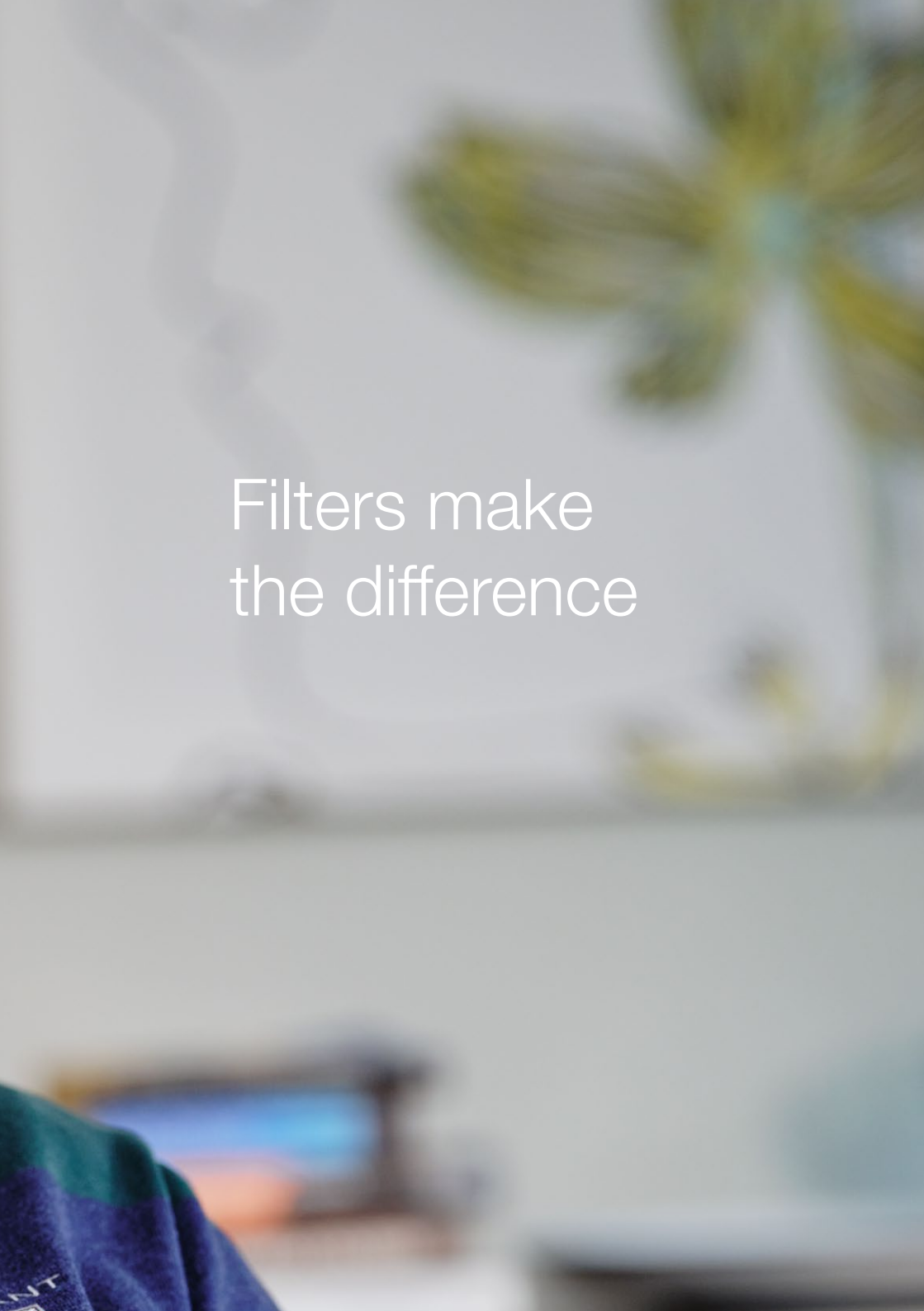
MLFILTER
Case descriptions

MULTILENS
OPTICAL SOLUTIONS


Filters make
the difference

Care
Innovation
Knowledge

From a scientific perspective, selective filters are a relatively unexplored area, and research is limited. However, there is a lot of clinical data available. About 40 years of fieldwork shows that many patients experience a significant ’subjective improvement’ when wearing filters. To some extent, it is therefore possible to conclude how filters work for different conditions, but it is important to remember that every patient experience filters in a subjective way. However, for some diagnoses, there are objective scientific data available. We cannot promise a specific effect for a specific patient, but the optometrists’ case descriptions in this booklet can offer guidance. Knowing what worked for others, might be valuable to you in your daily practice as an optometrist.

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Pioneers in filters

Lars Hellström, the founder of Multilens, was aptly called the “Gyro Gearloose of optics” and began experimenting with filters at an early stage. Multilens thus became one of the pioneers in selective filters and has developed several filters in plastic materials that have become industry standard. The filter colours are selected with care and great precision – they are based on decades of knowledge.

There is a difference between colour and filter, but also between filters and filters. Look for ML Filters and you will surely know that it is a quality filter from Multilens.

We are happy to share our knowledge – get in touch and we will support you!

In the early days of filters, most people talked about the contrast-enhancing properties. Today, the message is more about comfort and the patient's own experience. But filters also provide protection.

SELECTIVE FILTERS

For better visual comfort

Selective filters are made with a special colouring that cuts off disturbing light, creating a relaxing and comfortable experience. For use in bright situations, a polarising effect can be added, and the glasses then looks like ordinary sunglasses. Regardless, filters can provide increased visual comfort.

Filters also provide increased contrast and create a visual experience with high clarity and sharpness.

Many protect their eyes in bright environments but forget the harmful light that reaches the eyes indirectly, both indoors and outdoors. With selective filters that

A filter is a colored lens, but what allows us to call it a filter is the knowledge of exactly what light that is absorbed.

block or reduce harmful light, better eye protection is achieved.

WHO CAN USE FILTERS?

Filters can be used by people with normal vision, for comfort, and by people with reduced vision where annoying light can be cut off and the eyes protected against further damage.

FILTERS FOR NORMAL VISION

Many people experience filters as relieving when working behind computer screens. Some also find them comfortable when driving a car, not least in the evening, since it filters out glaring light without reducing night vision. Filters are also appreciated for activities such as sailing, kayaking, fishing, skiing, cycling, and shooting, where reduced glare and high contrast can make a big difference.

Recently, relieving filters have been increasingly used for people with neurological conditions and symptoms such as migraines, brain fatigue, and general photosensitivity.

ADDING FILTERS

It is possible to add filters to prescribed glasses, and then add polarisation or photochromatic effect. For those who prefer to use filters on specific occasions, there are solutions such as Hang-On, flip-up, or cover frames.

CASE DESCRIPTIONS

In this brochure, we have collected case descriptions for various filters in our range. Feel free to read and be inspired by what can be achieved with filters.

You are welcome to contact us with your questions (info@multilens.com).

Pleasant reading!

ML400

The ML 400 is a sightly coloured lens that absorbs most of the light up to 420 nm. Used for comfort and protection, suitable as computer glasses.

ML400, ML400 Pol 1, ML400 Pol 3.

ML400 | OUR LIGHTEST FILTER

AMD (Dry form)

ANAMNESIS

Has difficulty reading without a magnifying glass. Problems with light sensitivity. The patient does not think that ordinary sunglasses help, but they are necessary to wear in the sun.

ML400 was primarily developed to protect against UV light

REFRACTION AND VISUAL ACUITY

OD: +0.50 VA: 0.6
OS: +1.50 VA: 0.1
Add: +4.00 10p, Add: +5.50 5p

COMMENT

Very positive with ML Filters. Polarised glasses are also needed outdoors for environments with a lot of light. No problems reading at a shorter distance.

PRESCRIPTION

ML Mono OD: +6.00 OS: plano with ML400 for reading.

Filter ML C1 for general use and a pair of ML C1 with Pol 3 to be used in sunlight.

ML LLR | REDUCES GLARE

Corneal dystrophy and cataracts

ANAMNESIS

Post-cataract surgery improvement did not occur. While driving the car, the glare is disturbing. Above all, there is a problem with reading and needlework. The patient has progressive glasses according to the refraction with an addition of +2.50.

REFRACTION AND VISUAL ACUITY

OD: +0.25 VA: 0.4
OS: +1.50 -0.50 70 VA: 0.63
Add: +2.50 barely 8p, Add: +3.00 5p

COMMENT

Finds reading easier with single vision lenses with a slightly higher add value.

Great improvement with ML LLR filters when driving in the dark.

PRESCRIPTION

Reading glasses with the addition of +3.00, glasses with ML Grand 3%, and a pair of ML Night Cover (with LLR filter) in a HangOn frame.

ML LLR

This pale, yellow lens absorbs blue light with a focus on reducing glare from LED headlights (LED light reduction) and increasing the comfort of computer work. Optimised for the best possible colour reproduction.

ML LLR

Myopia, cataracts, and epiretinal membrane

ANAMNESIS

Myopia since youth. Epiretinal. Membrane left eye. Cataract surgery left eye with single vision IOL in December 2021. Has cataract also in right eye and has an appointment for surgery.

Post cataract surgery left eye. Vision improved as expected but the epiretinal membrane causes reduced VA and metamorphosis.

Disturbed by glare when driving and experiences difficulties to drive at night. Can read with good lighting and uses reading glasses when needed.

Experiences less glare and improved contrast vision with ML Filter LLR

COMMENTS

Has bifocals due to the Refraction with Add +2.25 and computer single vision glasses, both with ML Filter LLR.

Experiences less glare and improved contrast vision with ML Filter LLR both at the computer and when driving at night.

REFRACTION OCH VISUAL ACUITY

OD: -0.75 VA: 0.7
OS: -0.75 VA: 1.0
Add: +2.25

PRESCRIPTION

Glasses with ML Night Cover (with LLR filter) with correction for the myopia for driving plus glasses for working at the computer. Both with ML LLR-filter.

ML450 | POPULAR FILTER AMONG PEOPLE WITH AMD

AMD in treatment

ANAMNESIS

Ongoing treatment for wet AMD in an ophthalmic clinic. The patient only has reading glasses +3.00. Sometimes uses a hand-held magnifying glass.

REFRACTION AND VISUAL ACUITY

OD: +0.25 VA: 0.25
OS: +0.50 VA: 0.4
The patient reads 10 p with addition of +2.50 and 5 p with addition of +3.50.

ML450

ML 450 is a bright yellow lens that absorbs shortwave violet light and is generally contrast-enhancing. Can be used, for example, for people with macular degeneration (AMD) and other retinal diseases. Gives good contrast vision in ordinary sunglasses.

ML450, ML450 Pol 1, ML450 Pol 3

COMMENT

Standard ML Binova reading glasses work well and ML450 filter provide much better comfort.

PRESCRIPTION

ML Binova +4.00 reading glasses.
ML450 filter glasses.

Significantly improved reading speed with 450 filters[1].

[1]. Effect of light filters on reading speed in normal and low vision due to age-related macular degeneration Frank Eperjesi, Colin W. Fowler and Bruce J. W. Evans

ML450 | POPULAR FILTER AMONG PEOPLE WITH AMD

AMD

ANAMNESIS

71-year-old man with AMD. Gradual visual impairment in recent years. Has difficulty walking up stairs and seeing when walking in rough terrain. Can't read the newspaper anymore.

REFRACTION AND VISUAL ACUITY

OD: +1.50 VA: 0.4+
OS: +1.50 VA: 0.3 Add: +4.50 8p
VA Low contrast (10%) OU: 0.1-
VA Low contrast (10%) with filter ML450: 0.1 with good subjective improvement.

COMMENT

The user has reduced contrast sensitivity. He experiences increased contrast with the filter.

PRESCRIPTION

Distance glasses with filter ML450 and photochromatic lenses (Transitions).
Reading glasses ML Binova add +4.5 with filter ML450.

ML C1 | APPRECIATED ALL-ROUND FILTER

Endothelial dystrophy and cataract

ANAMNESIS

Hypersensitivity to light and glare is very disturbing.

REFRACTION AND VISUAL ACUITY

OD: amauros
OS: -2.75 -1.75 70 VA: 0.5

COMMENT

Tested all ML Filters both outdoors and indoors, and by far the best was ML C1 with photochromatic effect.

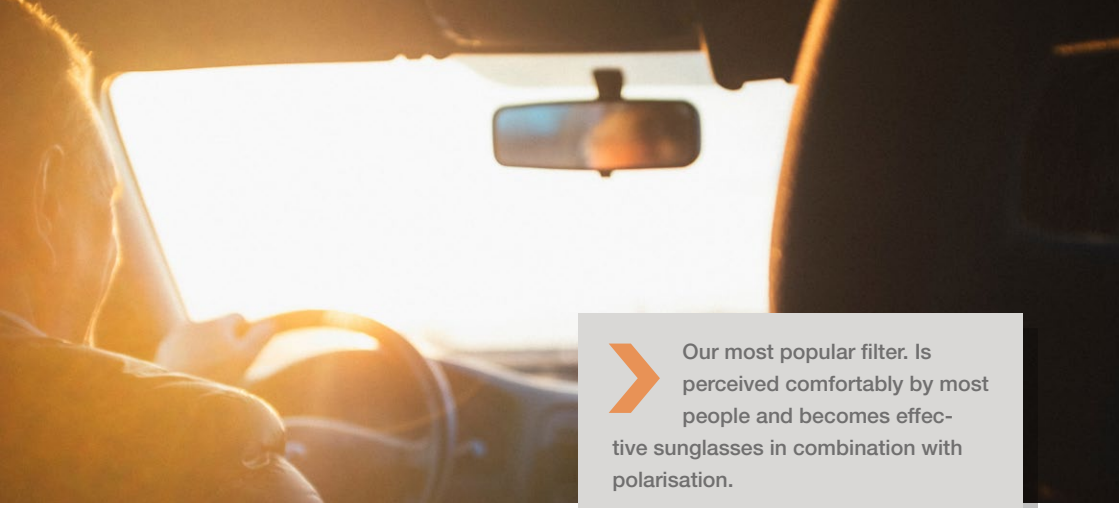
PRESCRIPTION

ML Biocover with the ML C1 filter and photochromatic effect.

ML C1

A useful all-round filter that removes most of the blue light and is optimised for the best colour reproduction. Can be advantageously combined with polarising glass for reduced glare in bright environments. Can also be used for some retinal degenerations such as macular degeneration (AMD).

ML C1, ML C1 Pol 1, ML C1 Pol 3



Our most popular filter. Is perceived comfortably by most people and becomes effective sunglasses in combination with polarisation.

ML C1 | APPRECIATED ALL-ROUND FILTER

Dry eyes and photosensitivity

ANAMNESIS

41-year-old woman working as a nurse. Suffers from dry eyes and photosensitivity. Is particularly affected by bright ceiling lights.

REFRACTION AND VISUAL ACUITY

OD: +0.75	VA: 1.0
OS: +0.50	VA: 1.0

COMMENT

When testing all different filters, she prefers ML C1 and ML527, and experiences ML527 as the very best. Unfortunately, she is dependent on normal color vision at work and can therefore not use ML527. At the same time, she thinks that ML C1 is a little too bright.

We test a combination with ML C1 and a neutral grey filter, and it works well. The patient finds a frame that fits well and shields from light from above.

PRESCRIPTION

Filter glasses with ML C1 + 40% grey.

ML500 | OFTEN USED IN RETINAL DISEASES

Glaucoma and drusen

ANAMNESIS

Visual acuity is good, but the patient has typical paracentral scotoma; 'Bjerrum Scotoma'. Has recently become more sensitive to light.

REFRACTION AND VISUAL ACUITY

OU: -2.50 VA 0.8

COMMENT

Makes a clear choice of ML500, as ML450 and ML511 change the colour vision more.

PRESCRIPTION

Covers with ML500 and brown photochromatic Transitions over the own glasses.

ML511 | OFTEN USED IN RETINAL DISEASES

AMD and incipient cataract

ANAMNESIS

Got his diagnosis from an ophthalmologist, has not been to the vision centre. Uses regular sunglasses with polarisation. Reads mostly on his iPad but wants an alternative to his hand magnifying glass.

REFRACTION AND VISUAL ACUITY

OD: +1.50 VA: 0.2
OS: +1.00 VA: 0.16
OU: Add 4.00 12p och med add 8.00 4p

COMMENT

Experiences the best comfort with ML511 filter. Should always be worn, except in sunlight when darker is needed: ML511 + Pol 3. Reads well on the shorter reading distance with ML Binova.

PRESCRIPTION

Distance glasses with correction according to refraction, with ML Filter 511. Distance glasses with ML511 + Pol 3. Reading glasses ML Binova +8.00 with filter.

ML500

The ML500 transmits a small amount of blue light to enhance colour vision (blocks 95 percent of all light below 500 nm). ML500 is recommended for patients with retinal diseases such as optic atrophy and macular degeneration (AMD) but can also be used with a polarising lens in high-quality sunglasses for bright environments.

ML500, ML500 Pol 1, ML500 Pol 3

ML511

This is an orange lens that absorbs all blue light. Recommended for patients with macular degeneration (AMD) and other retinal diseases. Can be combined with polarising lens for sunglasses for light-intensive outdoor activities such as skiing and sailing.

ML511, ML511 Pol 1, ML511 Pol 3

Diabetic retinopathy

ANAMNESIS

The patient wears ordinary sunglasses, has serious problems with hypersensitivity to light and difficulties in adapting. The patient experiences problems with reading.

REFRACTION AND VISUAL ACUITY

OD: +2.0 -1.5 95 VA: 0.08
OS: +1.0 -3.0 90 VA: 0.25
Left eye additon +4.00 12p,
Add: +8.00 5p

COMMENT

A big improvement after applying ML527 filter to help with photophobia. The patient fully accepts short reading distance after initial instruction and training.

PRESCRIPTION

Distance corrected filter glasses, one pair of ML527 and one pair of ML527 Pol 3. ML Mono reading glasses, OD: black occlusion OS: +9.00 -3.00 90 with ML450.

ML527

A clear orange filter that absorbs all blue light and some of the green. For normal vision, color vision changes significantly, but for people with advanced retinal diseases such as macular degeneration (AMD), diabetic retinopathy and Retinitis Pigmentosa, the filter can be very helpful. ML527 is also appreciated by some patients with glaucoma.

ML527, ML527 Pol 1, ML527 Pol 3

ML550 | MAINLY USED IN REDUCED VISION CASES

Retinitis pigmentosa

ANAMNESIS

Decreasing visual field for many years, now only 5 degrees left centrally. Has different types of sunglasses with brown and grey colour that are constantly worn. More difficult with orientation in bright light and when switching from sunlight to shade.

REFRACTION AND VISUAL ACUITY

OU: +2.50 -1.00 180 VA: 1.0

COMMENT

Very positive with ML550, after having borrowed ML527 and ML511 for testing as well. A little darker permanent distance glasses are also desired. Gets very satisfied with ML Bilux outdoors in covers over ML550 with 30% grey.

A classic that has been in the collection since 1983. Absorbs all light below 550 nm.

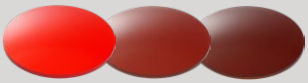
PRESCRIPTION

Distance glasses OD/OS +2.50 -1.00 180 and ML550 with +30% grey.

ML Bilux Covers with Pol 1 and 80% grey.

ML550

ML550 is a bright red lens that was originally developed for patients with Retinitis Pigmentosa but it can also be used for diseases such as diabetes retinopathy and achromatopsia. Absorbs light below 550 nm.



ML550, ML550 Pol 1, ML550 Pol 3

ML585

Dark red lens that absorbs light below 585 nm. It is most commonly used in achromatopsies, but also in other advanced retinal diseases such as Retinitis Pigmentosa and diabetes retinopathy.

ML585, ML585 Pol 1, ML585 Pol 3

ML585 | OFTEN USED IN SEVERE PHOTOPHOBIA

Achromatopsia

ANAMNESIS

Six-year-old boy with extreme photophobia. He wears as dark sunglasses as there is to be found. Adapts very slowly to different light levels.

REFRACTION AND VISUAL ACUITY

OD: +4.50 -1.00 20	VA: 0.12
OS: +5.00 -1.50 175	VA: 0.16

COMMENT

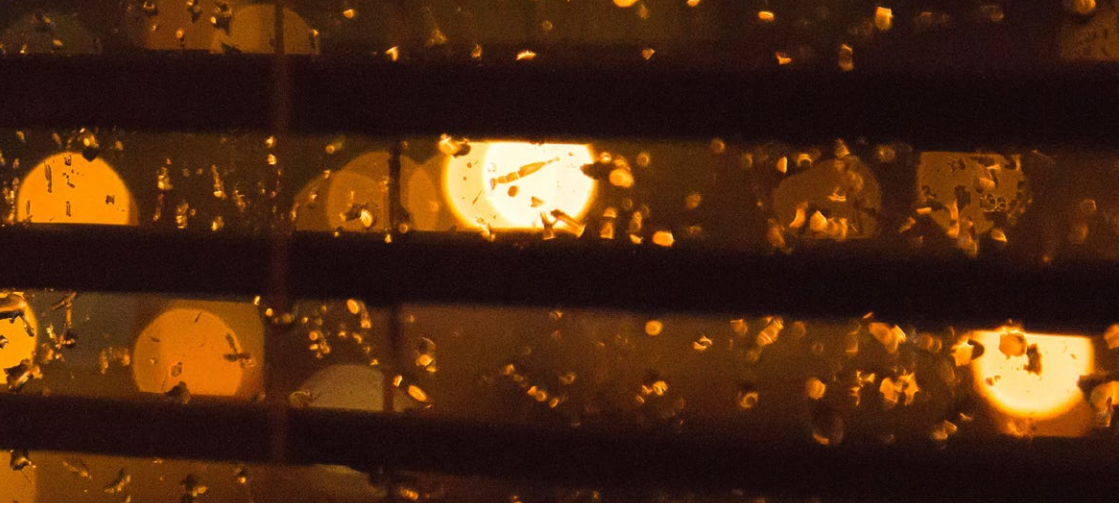
The patient has great benefit from having filter glasses with different darkness, to be able to change and adapt to different light levels. Does not think photochromatic glasses adapt quickly enough. Works better with glasses found below, all with proper side protection.

PRESCRIPTION

ML585 with correction according to refraction.

ML585 + Pol 1 with correction according to refraction.

ML585 + Pol 3 with correction according to refraction.



ML585 | OFTEN USED IN SEVERE PHOTOPHOBIA

Extreme sensitivity to light

ANAMNESIS

45-year-old woman with the diagnoses ME (myalgic encephalomyelitis), hypersensitivity pneumonia, and EDS (Ehlers-Danlos syndrome). Is extremely sensitive to light and has difficulty leaving her darkened bedroom. Has tried several different types of sunglasses, also double pairs, but have not found a solution that works.

REFRACTION AND VISUAL ACUITY

Information is lacking as the diagnoses have caused the vision to change rapidly and a new visit to the optometrist has been difficult to carry out.

COMMENT

The test takes place in the dark and since the patient can only cope with a very short test session, the first solution is a bit of a gamble: ML Bilux Iris with 97% grey in the middle and 99% grey around, and filter ML41 Dark. However, this solution does not suit the patient. Instead suggesting a solution that is independent of PD: Filter ML585 with Pol 3 and grey so that the whole solution is 98% dark. The patient is very satisfied and is now able to stay in the light.

PRESCRIPTION

ML585 with Pol 3 and grey.

ML41 | WHEN SUFFERING FROM NEURO-VISUAL PROBLEMS

Migraines and asthenopia

BACKGROUND

The patient is a 40-year-old woman with a lot of headaches and migraines. She describes several types of headaches, some of which are milder and do not affect her as much, while the intense migraine attacks make her bedridden. She suspects that the migraine has something to do with her eyes. During periods when she strains her eyes more, the frequency of migraine attacks increases.

ANAMNESIS

The patient wears adequate distance glasses and also has computer glasses that she received from her employer. No deviating findings on adjustment to near distance, strabismus, or other that can explain the headache problem.

Relief and comfort in migraines and neuro-visual problems

ASSESSMENT

Tests the different Multilens post-COVID filters in flirps, and the patient finds the blue (ML Sapphire) filters comfortable, the green (ML Emerald) gives no difference in experience and the pink (ML41) absolutely best.

TREATMENT

The patient is treated with ML41 Medium in both distance glass and computer glasses. The same powers as before.

FOLLOW-UP

At follow-up eight weeks after the examination, she describes a large improvement in the number of migraine attacks and the attacks she suffers from are milder than before.

ML41

ML41 is a pink filter that is available in three different tints. It has been shown to provide increased comfort for many patients. It can reduce the symptoms of migraines or visual stress, especially for patients with visual disturbances following brain trauma.

ML41: Light, Medium, Dark

Eye and head pain post-COVID

BACKGROUND

44-year-old male lawyer becomes ill in September 2020 with fever and respiratory symptoms. Subsequent persistent frontal headache, pain above the eyeballs, and photosensitivity. Symptoms are aggravated by busy environments with a lot of noise and light. Fluctuating visual acuity during longer work shifts. Also feels cognitively affected and does not have the same energy to read documents, which is his job. Comes for vision assessment after about 12 months with persistent symptoms and difficulty returning to normal everyday function.

ANAMNESIS

I find low levels of optical vision defects, adequate visual acuity at a distance, reduced ability to adjust the focus at close range, and ”vision motion sensitivity”.

ASSESSMENT

The patient tries all Multilens post-COVID filters in flirps and finds that the blue filter provokes more eye pain and headache while the pink ML41 momentarily eliminates the pain. The patient is highly skeptical of the finding and tests the filters several times. Finally, he can state that he wants to wear ML41 Medium since he experiences a great rest in the eyes and head. He demands clear evidence of how the filter works, which I cannot give.

TREATMENT

Treated with reading glasses for all close-up work with ML41 Medium and is recommended to take breaks during the workday. Vision motion sensitivity is treated through provocation exercises and he receives instructions on home exercises.

FOLLOW-UP

Patient feedback via email after about one month of training. In the follow-up e-mail conversation, the patient says that the glasses are being used. The fluctuating visual acuity is now stable with the glasses on and the filters are very comfortable. The problems with headaches and eye pain remain to some extent but are significantly less than without the glasses. We discuss ML41 filters in Biocovers that can be worn at a distance when he is out. Vision training is ongoing and has reduced the hassle of scrolling on screens and staying in busy environments.

It has been shown that many people with symptoms of brain fatigue, especially after severe brain damage or stroke, find that ML41 helps.

The patient prefers ML Emerald Light which gives a great subjective improvement. The filter feels comfortable and adds a feeling of calm.

ML EMERALD | ABSORBS BLUE AND YELLOW LIGHT

Glaucoma and epiretinal fibrosis

ANAMNESIS

Man born in 1935 and diagnosed with Glaucoma and Epiretinal fibrosis. The patient has difficulty reading and can only read with a lot of light. Also bothered by glare, as well as the shifts from light to dark and dark to light. Drives his car in well-known places in daytime. Always wears a hat outdoors.

Current glasses:
Bifocal glasses
OD: +0.5 -0.75 70 add +3.00 VA: 0.5 -2
OS: +0.5 -1.75 90 add +3.00 VA: 0.4 -1

Reading glasses (2 years old)
OD: +3.75 -1.25 70
OS: +3.75 -1.50 90

REFRACTION AND VISUAL ACUITY

OD: +1.0 -0.75 70 VA: 0.5 -1
OS: +1.25 -2.5 80 VA: 0.5 -1
KM Contrast test: 1.4 at visus 0.4

The visual field is reduced to 30 degrees on the right eye and 40 degrees on the left eye. Measured at a distance of one meter, one eye at a time.

COMMENT

The patient needs a new correction and also tries out filters. He tests ML450, ML C1 with 25% grey, ML Emerald Light, and ML Emerald Medium. The patient chooses ML Emerald Light which gives a great subjective improvement. The filter

feels comfortable and adds a feeling of calm.

The contrast vision also increases to 1.55 on the KM test, ie full contrast vision.

Visus up close with his personal bifocal glasses are measured to: M 1.25 at low contrast and M 0.8 at high contrast.

With increased addition from +3.00 to +4.00 and filter ML Emerald Light, visus is measured to: M 0.8 at low contrast and M 0.63 at high contrast.

PRESCRIPTION

New bifocal glasses according to refraction with add +4.00 and filter ML Emerald Light.

ML EMERALD

This is a green filter available in three different tints. It mostly depresses the light around 600 nm and can be used as a comfort filter, or for post-commotional symptoms.

ML Emerald: Light, Medium, Dark

Light sensitivity after concussion

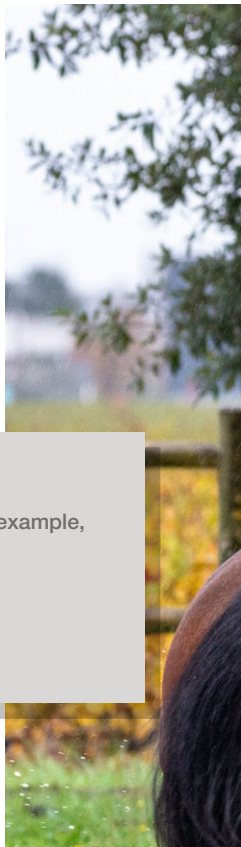
BACKGROUND

27-year-old woman with major visual problems after several concussions over the years after falling from horses. Works on a horse farm and now finds it difficult to take care of her job due to strained eyes, photosensitivity, and brain fatigue. Comes to the examination with dark glasses that she wears during her waking time both indoors and outdoors as well as a hat and noise-reducing headphones.

Blue light affects hormone balance and circadian rhythm. In the right dose, some may experience a positive effect of increased transmission of blue light.

ANAMNESIS

The patient wears adequate correction for her visual impairment at a distance but has difficulty with close adjustment (accommodation and convergence). The eye examination is very strenuous, and she is nauseous and prefers to close her eyes to rest her head. When provoked by 'vision motion sensitivity' VMS (visual vertigo), she becomes very provoked and nauseous.



ML SAPPHIRE

ML Sapphire is blue and available in three different tints. It can be used, for example, for increased comfort or for post-commotional symptoms.

ML Sapphire: Light, Medium, Dark

ASSESSMENT

The patient tries Multilens filters in Biocover frames. She finds a great rest with the blue ML Sapphire Dark, while the other filters do not give the same effect for her. She chooses to wear these filters for the rest of the examination. Instead of closing her eyes, we now have eye contact when we talk.

TREATMENT

The patient is treated with ML Sapphire Dark in a Biocover frame (which is put on over her glasses) and given vision training to reduce the problems of VMS. For the close work she does, reading glasses are recommended. They relieve accommodation with plus glasses and convergence with price glasses. The plan is to start vision training when the energy is higher.

FOLLOW-UP

At follow-up four weeks later, she feels a little better. She wears her filter glasses all the time and feels great relief in her eyes and head. She doesn't need to wear dark sunglasses but gets enough help with the blue glasses. With this follow-up, we were able to start vision training to build up adjustment to near distance and reduce VMS.

ML LAVENDER | OFTEN PERCEIVED AS RELIEVING

Concussion

BACKGROUND

The patient is a 50-year-old woman who suffered a concussion in 2014. She has also undergone a long cancer treatment. An occupational therapist advised her to perform an optical examination.

ANAMNESIS

The patient is myopic and after the accident she suffers from several symptoms, such as light sensitivity, blurry vision, reading difficulties, difficulty concentrating, and memory problems. She has a constant headache, which is aggravated by her visual impairment. The patient has difficulty accommodating movement in the field of view for a longer period of time, which causes dizziness and nausea, for example in traffic. Due to her visual disturbances, she also has difficulty reading and can only do so for a few minutes at a time, depending on her current state. In particular, the patient has difficulty with computer work and the use of other digital devices and can only use them for a few minutes at a time. She experiences strong visual exhaustion in social contexts with many people.

REFRACTION AND VISUAL ACUITY

VA existing RX solution OD: 1.00 OS: 0.8
VA new RX solution OD: 1.00 OS: 1.00

TREATMENT

New glasses with a slightly different correction and cover frames Biocover with comfort filter ML Lavender Medium as well as visual training.

FOLLOW-UP

A month later the patient sent an email to express her gratitude. “I cannot live, without the Lavender filter”.

ML LAVENDER

ML Lavender is a purple filter that is available in three different tints and is often perceived as comfortable and soothing. It has been shown to help people suffering from headaches, brain fatigue, and other neurological conditions.

ML Lavender: Light, Medium, Dark

ML LAVENDER | OFTEN PERCEIVED AS RELIEVING

Headache

BACKGROUND

A 25-year-old woman with hyperopia suddenly starts to get severe headaches.

ANAMNESIS

The headache becomes chronic, and the pain cannot be relieved. The patient is sensitive to light and has difficulty in social contexts with many people.

REFRACTION AND VISUAL ACUITY

VA with current RX OD: 1.00 OS: 1.00

COMMENT

No need for new glasses but filters might be an option.

PRESCRIPTION

Cover frames with ML Lavender Light for distance and cover frame with ML41 Medium for near, to be used with her current glasses.

FOLLOW-UP

The patient gets in touch after a month with the following feedback: “I have started medication and use my filter glasses. My eyes feel more relaxed, and I do not get tired as quickly. The filters have made a big difference, thanks for your help!”

Examples of usage

ML400

Description:
Slightly coloured lens. Absorbs most light up to 420 nm.
Often used for:
• Comfort, protection, computer glasses.

ML LLR

Description:
Reduces short wave blue light from LED light sources.
Often used for:
• Comfort, night driving, computer glasses.

ML450

Description:
Clear yellow lens that absorbs wavelengths below 450 nm.
Often used for:
• Contrast, contrast enhancing sports glasses
• AMD, Opticus atrophy

ML C1

Description:
Admits some of the blue light to help colour vision. Blocks 80% of all light below 450 nm.
Often used for:
• Comfort, effective sunglasses together with polarisation
• AMD

ML500

Description:
Admits some blue light to help colour vision. Blocks about 95% of all light up to 500 nm.
Often used for:
• Contrast, sports glasses for light-intensive environments, effective sunglasses together with polarisation.
• AMD, Glaucoma, Opticus atrophy

ML511

Description:
Absorbs light below 511 nm (all blue light).
Often used for:
• Effective sunglasses together with polarisation, sports glasses for light-intensive environments.
• AMD, Glaucoma, Opticus atrophy

ML527

Description:
Dark orange lens that absorbs light under 527 nm. Can change colour vision too much for people with normal vision.
Often used for:
• Glaucoma, Diabetes retinopathy, Retinitis Pigmentosa (RP)

ML550

Description:
Bright red lens that absorbs light up to 550 nm. Mainly used for visually impaired patients.
Often used for:
• Diabetes retinopathy, Retinitis Pigmentosa (RP), Achromatopsia

ML585

Description:
Dark red lens that absorbs light below 585 nm. Most commonly used in achromatopsia.
Often used for:
• Diabetes retinopathy, Achromatopsia

ML41

Description:
Pink lens that absorbs some of the blue light but also parts of the green. The largest absorption is on the border between blue and green light.
Often used for:
• Comfort
• Blepharospasm, Migraines, Neuro-visual problems

ML EMERALD

Description:
Green lens that absorbs the short-wave blue light and some of the yellow light. The focus of the transmission is on long-wave blue light and green light.
Often used for:
• Comfort
• Neuro-visual problems

ML SAPPHIRE

Description:
Blue lens that mainly absorbs yellow light. The focus of the transmission is on blue light.
Often used for:
• Comfort
• Neuro-visual problems

ML LAVENDER

Description:
Purple lens that absorbs both blue and green light.
Often used for:
• Comfort
• Neuro-visual problems

ND FILTER

Description:
ND stands for Neutral Density and dims the whole colour spectrum equally. Available in four tints (ND20, ND21, ND22, ND23).
Often used for:
Suitable for dimming the transmission in a colour neutral way.

Filter	Absorption
ND20	42%
ND21	68%
ND22	87%
ND23	96%

Trying out filters

• Start from the individual in front of you — what are the needs of this person?

• Select a few filters to try on.

• Ask questions about comfort rather than visual acuity.

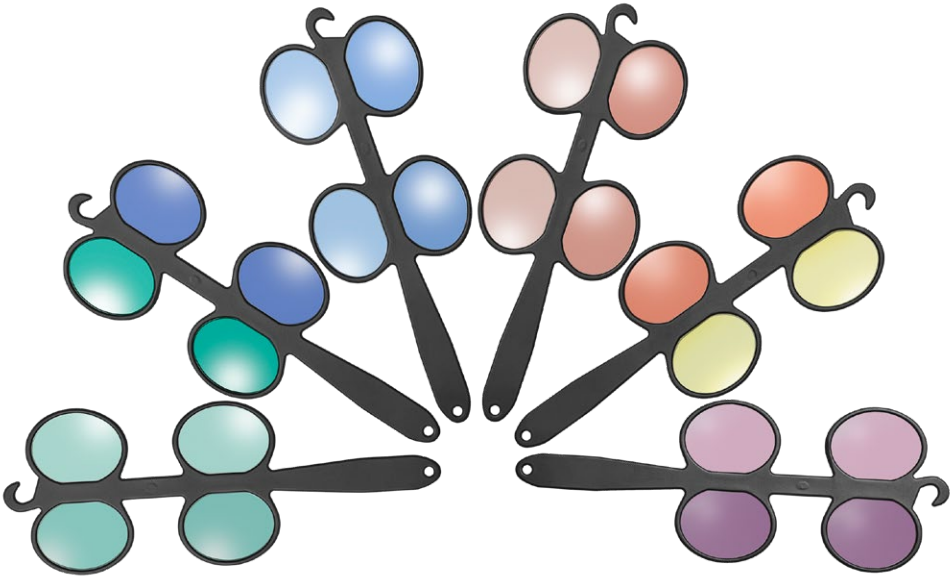
• Low contrast vision is more important than high contrast vision.

• Different lighting conditions create different needs — combine the selected filter with polarising or photochromatic effect.

• Take the opportunity to talk about lighting.

• Also test up close.

• If possible, let the patient borrow a cover frame to test the filter at home, both indoors and outdoors.



References

ML400 | AMD (Dry form) By Jörgen Gustafsson, Optometrist, PhD, FAAO, Sweden

ML LLR | Corneal dystrophy och cataracts By Jörgen Gustafsson, Optometrist, PhD, FAAO, Sweden

ML LLR | Myopia, cataracts and epiretinal membrane By Anita Robertson, Optometrist MSc, Sweden

ML450 | AMD in treatment By Jörgen Gustafsson, Optometrist, PhD, FAAO, Sweden

ML450 | AMD By Multioptikk AS, Norway

ML C1 | Endothelial dystrophy and cataract By Jörgen Gustafsson, Optometrist, PhD, FAAO, Sweden

ML C1 | Dry eyes and photosensitivity By Multioptikk AS, Norway

ML500 | Glaucoma and drusen By Jörgen Gustafsson, Optometrist, PhD, FAAO, Sweden

ML511 | AMD and incipient cataract By Jörgen Gustafsson, Optometrist, PhD, FAAO, Sweden

ML527 | Diabetic retinopathy By Jörgen Gustafsson, Optometrist, PhD, FAAO, Sweden

ML550 | Retinitis Pigmentosa By Jörgen Gustafsson, Optometrist, PhD, FAAO, Sweden

ML585 | Achromatopsia By Jörgen Gustafsson, Optometrist, PhD, FAAO, Sweden

ML585 | Photophobia By Jakob Hellström, Multilens, Sweden

ML41 | Migraines and asthenopia By Tony Pansell, Optometrist and Associate Professor, Karolinska Institutet, Sweden

ML41 | Eye and head pain post-COVID By Tony Pansell, Optometrist and Associate Professor, Karolinska Institutet, Sweden

ML Emerald | Glaucoma and epiretinal fibrosis By Kay Wernersen, Optometrist, Kommunikationscentret, Hillerød, Denmark

ML Sapphire | Light sensitivity after concussion By Tony Pansell, Optometrist and Associate Professor, Karolinska Institutet, Sweden

ML Lavender | Concussion By Dorthe Jensen, Optometrist, Synsrådgivningen (Visual Centre), Roskilde, Denmark

ML Lavender | Headache By Dorthe Jensen, Optometrist, Synsrådgivningen (Visual Centre), Roskilde, Denmark

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Are you working with filters and searching for studies that confirm that they work? There are still few scientific studies but that doesn't mean that the subject is unexplored. We have collected about 20 case descriptions where filters have been used as part of a treatment, or simply to increase contrast or comfort for people with various visual problems. We hope that these case descriptions will inspire you in your work with filters!

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