

Stellest®

Starting with Essilor® Stellest® lens Dispensing Guide



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Essilor® Stellest® lenses are currently not available in all countries



SUMMARY



01

**MYOPIA & MYOPIA
MANAGEMENT PAGE 4**



02

**ESSILOR® STELLEST®
LENS INTRODUCTION PAGE 10**



03

**PRESCRIBE AND
DISPENSE ESSILOR®
STELLEST® LENSES PAGE 18**

The background features several concentric circles in light blue and grey. A teal-colored shape, consisting of a rectangle on the left and a semi-circle on the right, is positioned horizontally across the middle. Inside the semi-circular part of this shape, the number '01' is written in white.

01

**MYOPIA & MYOPIA
MANAGEMENT**



Myopia & Myopia Management

MYOPIA (NEARSIGHTEDNESS)

Caused by an increase in eye length (more common type) or an overly curved cornea and/or lens with increased optical power.¹ Consequently, light from distant objects is focused in front of the retina causing blurry vision, but clear vision while looking at closer objects.

- In most cases, myopia is due to excessive eye elongation.
- Myopia is a condition with a spherical equivalent refraction of at least **-0.50D**.¹
- Usually develops and progresses in childhood, especially at school-going age.
- Myopia was previously considered as a benign condition which could be corrected by single vision spectacle lenses or contact lenses.

RISK FACTORS FOR DEVELOPING MYOPIA

Known risk factors include patient age, refractive error, recent eye growth, parental myopia, visual environment, education and binocular function.

Myopic parents

having one or two myopic parents increases the risk²

Time outdoors

less time outdoors increases the risk³

Near work

reading at very close distances
< **20 cm** and for continuous periods of time > **45 min** increases the risk⁴

Binocular vision

high accommodative lag and high AC/A ratio increases the risk^{5, 6}

Recent eye growth

Increased axial elongation precedes the onset of myopia⁷

1. Flitcroft DJ, He M, Jonas JB, Jong M, Naidoo K, Ohno-Matsui K, Rahi J, Resnikoff S, Vitale S, Yannuzzi L. IMI-Defining and classifying myopia: a proposed set of standards for clinical and epidemiologic studies. *Investigative ophthalmology & visual science*. 2019;60(3):M20-30.

2. Jones LA, Sinnott LT, Mutti DO, Mitchell GL, Moeschberger ML, Zadnik K. Parental history of myopia, sports and outdoor activities, and future myopia. *Investigative Ophthalmology & Visual Science*. 2007;48(8):3524-32.

3. Xiong S, Sankaridurg P, Naduvilath T, Zang J, Zou H, Zhu J, Lv M, He X, Xu X. Time spent in outdoor activities in relation to myopia prevention and control: a meta-analysis and systematic review. *Acta Ophthalmologica*. 2017;95(6):551-66.

4. Li SM, Li SY, Kang MT, Zhou Y, Liu LR, Li H, Wang YP, Zhan SY, Gopinath B, Mitchell P, Wang N. Anyang Childhood Eye Study. *PLoS One*. 2015;10:e0134514.

5. Mutti DO, Mitchell GL, Jones-Jordan LA, Cotter SA, Kleinstei RN, Manny RE, Twelker JD, Zadnik K, CLEERE Study Group. The response AC/A ratio before and after the onset of myopia. *Investigative Ophthalmology & Visual Science*. 2017;58(3):1594-602.

6. Gwiazda JE, Hyman L, Norton TT, Hussein ME, Marsh-Tootle W, Manny R, Wang Y, Everett D. Accommodation and related risk factors associated with myopia progression and their interaction with treatment in COMET children. *Investigative Ophthalmology & Visual Science*. 2004;45(7):2143-51.

7. Mutti DO, Hayes JR, Mitchell GL, Jones LA, Moeschberger ML, Cotter SA, Kleinstei RN, Manny RE, Twelker JD, Zadnik K. Refractive error, axial length, and relative peripheral refractive error before and after the onset of myopia. *Investigative Ophthalmology & Visual Science*. 2007;48(6):2510-9.

POTENTIAL IMPACT AT ADULTHOOD

Individuals with higher myopia have an increased risk of ocular complications later in life—including **myopic macular degeneration, retinal detachment, cataract* and glaucoma**—that may cause visual **impairment and blindness**.^{1,2}

- Greatest myopia-related cause of irreversible vision loss is myopic macular degeneration.³
- There is no safe level of myopia.²
- Each additional diopter of myopia increases the risk for the patient.⁴

MYOPIA CORRECTION

Myopia correction is the optical correction of the myopic refractive error- either by single vision spectacles or soft or rigid contact lenses, providing the best visual acuity.

The primary objective is to provide clear distance vision for a myopic patient, with no emphasis on slowing progression of the refractive error.

Myopia undercorrection contributes to more rapid myopia progression and axial elongation.⁵ Therefore, refractive correction of progressing myopes should be updated regularly.

*Posterior subcapsular cataract

1. World Health Organization. The impact of myopia and high myopia: report of the Joint World Health Organization -Brien Holden Vision Institute, Global Scientific Meeting on Myopia, University of New South Wales, Sydney, Australia, 16-18 March 2015

2. Fittcroft DJ. The complex interactions of retinal, optical and environmental factors in myopia aetiology. *Progress in Retinal and Eye Research*. 2012;31(6):622-60.

3. Holden B, Sankaridurg P, Smith E, Aller T, Jong M, He M. Myopia, an underrated global challenge to vision: where the current data takes us on myopia control. *Eye*. 2014;28:142-146

4. Bullimore MA, Brennan NA. Myopia control: why each diopter matters. *Optometry and Vision Science*. 2019;96(6):463-5.

5. Chung K, Mohidin N, O'Leary DJ. Undercorrection of myopia enhances rather than inhibits myopia progression. *Vision Research*. 2002;42(22):2555-9.

MYOPIA CONTROL

Myopia control is the service offered by eye care professionals (ECPs) to slow down progression of myopia, to minimise the risk of high myopia and its related complications, that may eventually lead to irreversible vision loss.

ECPs practicing evidence-based myopia control utilise a series of novel devices, to control the excessive ocular growth such as:

- Overnight orthokeratology (Ortho-K) lenses.
- Daytime multifocal contact lenses.
- Specially designed ophthalmic spectacle lenses.

MYOPIA MANAGEMENT

Involves all aspects of eye and vision care for myopic patients, including myopia risk assessment, prevention, early detection, proper correction, timely control, and management of related complications.

Much more comprehensive and profound than myopia control as it covers almost the whole life cycle of the myopic patient.

Myopia control serves as the most important component of myopia management, but is limited to the retardation of myopic progression, during which the rate of axial elongation is fastest.

It aims at reducing risk of the onset of myopia, and the continuous care of myopic patients, even after the progression has stabilised.



A teal graphic element consisting of a vertical rectangle on the left and a semi-circle on the right. The number '02' is centered within the semi-circle in white. The background features concentric circles in light blue and grey.

02

**ESSILOR® STELLEST®
LENS INTRODUCTION**



Essilor® Stellest® Lenses: Spectacle Lenses To Slow Down Myopia Progression

ESSILOR® STELLEST® LENSES

The Essilor® Stellest® lens is Essilor®'s latest generation of spectacle lens,

designed to control myopia progression and abnormal eye elongation while correcting the refractive error in myopic children.

The Essilor® Stellest® lens is designed with Highly Aspherical Lenslet Target (H.A.L.T.) technology.

H.A.L.T. TECHNOLOGY

H.A.L.T. technology comprises 1021 contiguous highly aspherical lenslets, arranged over 11 rings.

The light rays passing through the lenslets create a volume of non focused light in front of the retina and which follows the shape of a child's theoretical myopic retina.

H.A.L.T. technology creates, not a surface but a volume of myopia progression slow down signal, by using aspherical lenslets.

ESSILOR® STELLEST® LENS MECHANISM OF ACTION

The Essilor® Stellest® lens comprises of a single vision zone and a myopia control zone made with H.A.L.T. technology.

The Essilor® Stellest® lens ensures the correction of refractive error in all gaze directions and creates a volume of signal slowing down the eye elongation.

ASPHERICAL LENSLETS

Spherical lenslets would provide a "surface" of signal.

Essilor R&D experts' conclusions, based on scientific publications, are that a volume of slowing down signal has a stronger effect on slowing down myopia progression than a surface of signal.¹⁻³

The aspherical lenslet design creates this targeted effect of a volume of non focused light in front of the retina.

H.A.L.T. Highly Aspherical Lenslet Target

1. Woods J, Guthrie SE, Keir N, Dillehay S, Tyson M, Griffin R, Choh V, Fonn D, Jones L, Irving E. Inhibition of defocus-induced myopia in chickens. *Investigative ophthalmology & visual science*. 2013;54(4):2662-8.
2. Irving EL, Yakobchuk-Stanger C. Myopia progression control lens reverses induced myopia in chicks. *Ophthalmic and Physiological Optics*. 2017;37(5):576-84.
3. Bao J, Yang A, Huang Y, Li X, Pan Y, Ding C, Lim EW, Zheng J, Spiegel DP, Drobe B, Lu F. One-year myopia control efficacy of spectacle lenses with aspherical lenslets. *British Journal of Ophthalmology*. 2022;106(8):1171-6.

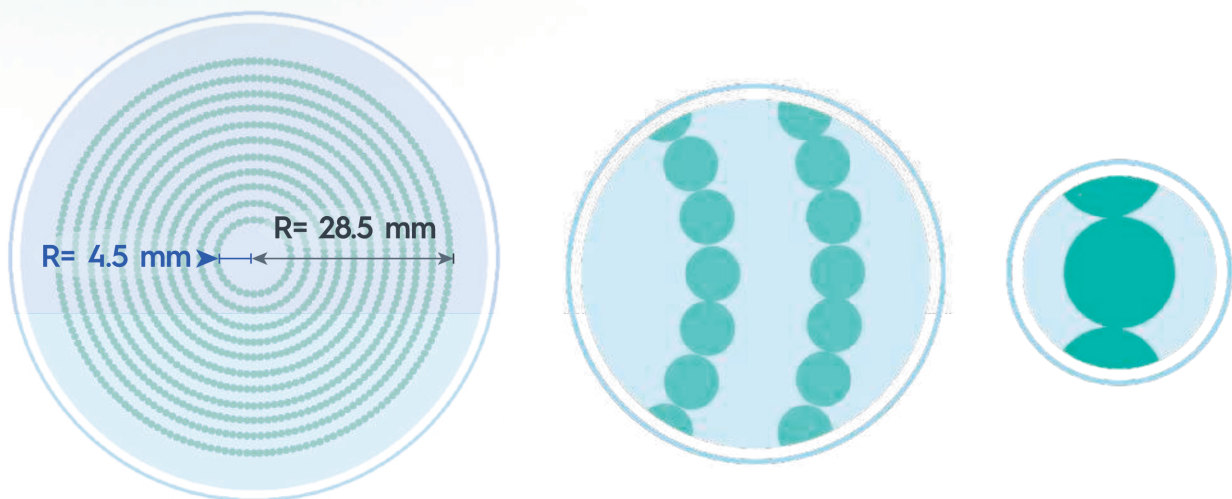
LENSLET DISTRIBUTION & FEATURES

The Essilor® Stellest® lens consists of a single vision zone and a myopia control zone made with H.A.L.T. technology.

H.A.L.T. technology comprises 1021 contiguous highly aspherical lenslets, arranged over 11 rings.

The 1021 lenslets cover 40% of the lens front surface.

This large surface covered by the lenslets, or the myopia control zone, fits a large frame choice for children and teenagers and offers the H.A.L.T. technology effect in all gaze directions from edge to edge.



ESSILOR® STELLEST® LENS EFFICACY

The clinical trial started in 2018 in Essilor's joint research lab with the Wenzhou Medical University in China:

- Prospective, randomized, double-masked clinical trial
- Duration: 2 years
- 104 myopic children split in two groups: single vision lenses (50) or Essilor® Stellest® lenses (54)
- Efficacy results are based on 32 children who declared wearing Essilor® Stellest® lenses at least 12 hours per day every day

The Essilor® Stellest® lens 2-year clinical trial results show that there is a greater efficacy when Essilor® Stellest® lenses are worn more than 12 hours a day, than when worn less than 12 hours a day.¹

H.A.L.T., Highly Aspherical Lenslet Target

1. Bao J, Huang Y, Li X, Yang A, Zhou F, Wu J, Wang C, Li Y, Lim EW, Spiegel DP, Drobe B, Chen, H. Spectacle lenses with aspherical lenslets for myopia control vs single-vision spectacle lenses: a randomized clinical trial. JAMA ophthalmology. 2022;140(5):472-8.

Essilor® Stellest® Lenses: Spectacle Lenses To Slow Down Myopia Progression

YEAR 1 & YEAR 2

ESSILOR® STELLEST® LENS EFFICACY ON MYOPIA PROGRESSION

After the first and second year,

9 out of 10

children wearing Essilor® Stellest® lenses full time had similar or slower eye growth compared to non-myopic children.¹



ADAPTATION TIME

100%

of children adapted within 1 week after first dispensing*²

90%

of children adapted within 3 days after first dispensing*²

ESSILOR® STELLEST® LENSES SLOW DOWN MYOPIA PROGRESSION BY 67% ON AVERAGE*³

Compared to single vision lenses when worn 12 hours or more per day, every day.

Essilor® Stellest® lenses slowed down myopia progression by **55%** (**0.80D**) on average for all subjects.³

Wearing Essilor® Stellest® lenses ≥12h/day every day, increases efficacy to **67% (0.99D).**^{†3}

*One-year results from the two-year prospective, controlled, randomized, double-masked clinical trial results on 54 myopic children wearing Essilor® Stellest® lenses compared to 50 myopic children wearing single vision lenses.

†Two-year prospective, controlled, randomized, double-masked clinical trial results on 54 myopic children wearing Essilor® Stellest® lenses compared to 50 myopic children wearing single vision lenses in Wenzhou China. Results based on 32 children from the Test Group wearing Essilor® Stellest® lenses at least 12 hours per day every day for two consecutive years.

1. Wong YL, Li X, Huang Y, Yuan Y, Ye Y, Lim EW, Yang A, Spiegel DP, Drobe B, Bao J, Chen H. Eye growth pattern of myopic children wearing spectacle lenses with aspherical lenses compared with non-myopic children. *Ophthalmic Physiol Opt*. 2024;44(1):206-213.

2. Bao J, Yang A, Huang Y, Li X, Pan Y, Ding C, Lim EW, Zheng J, Spiegel DP, Drobe B, Lu F. One-year myopia control efficacy of spectacle lenses with aspherical lenses. *British Journal of Ophthalmology*. 2022;106(8):1171-6.

3. Bao J, Huang Y, Li X, Yang A, Zhou F, Wu J, Wang C, Li Y, Lim EW, Spiegel DP, Drobe B, Chen H. Spectacle lenses with aspherical lenses for myopia control vs single-vision spectacle lenses: a randomized clinical trial. *JAMA ophthalmology*. 2022;140(5):472-8.

ESSILOR® STELLEST® LENSES SLOW DOWN AXIAL ELONGATION BY 60% ON AVERAGE*¹

Compared to single vision lenses when worn 12 hours or more per day, every day.

Essilor® Stellest® lenses slowed down axial elongation by **51% (0.35mm)** on average for all subjects.¹

Wearing Essilor® Stellest® lenses
≥12h/day every day, increased efficacy
to **60% (0.41mm).**^{*1}

YEAR 3

Essilor® Stellest® lenses remain effective in slowing myopia progression during the third year.²

- Over three years, Essilor® Stellest® lenses demonstrated a total accumulated myopia control effect of 1.06D and 0.49mm on average.^{*2}
- Essilor® Stellest® lenses were effective in slowing myopia progression and axial elongation when myopia control was started in older children (10–15 years old).²

YEAR 4 & 5

- Essilor® Stellest® lenses remained effective in slowing myopia progression and axial elongation during the fourth and fifth years.^{3,4}
- Over five years, Essilor® Stellest® lenses slowed myopia progression by 1.75D and axial elongation by 0.72mm on average for all subjects.^{*4}

CLEAR VISION

All children wearing Essilor® Stellest® lenses had vision as clear as those children wearing single vision lenses.⁵

^{*}Two-year prospective, controlled, randomized, double-masked clinical trial results on 54 myopic children wearing Essilor® Stellest® lenses compared to 50 myopic children wearing single vision lenses in Wenzhou China. Results based on 32 children from the Test Group wearing Essilor® Stellest® lenses at least 12 hours per day every day for two consecutive years.

¹Compared to combined single vision lens groups SVL(0M-24M)-SVL2(24M-36M)

^{*4}Compared to the 60-month progression of the extrapolated control group (predicted average annual decrease in SER by 9.7%, Smotherman C, et al. IOVS 2023;64:ARVO E-Abstract 811 and predicted average annual decrease in AL by 15%. Shamp W, et al. IOVS 2022;63:ARVO E-Abstract A0111)

1. Bao J, Huang Y, Li X, Yang A, Zhou F, Wu J, Wang C, Li Y, Lim EW, Spiegel DP, Drobe B. Spectacle lenses with aspherical lenslets for myopia control vs single-vision spectacle lenses: a randomized clinical trial. JAMA ophthalmology. 2022;140(5):472-8.

2. Li X, Huang Y, Yin Z, Liu C, Zhang S, Yang A, Drobe B, Chen H, Bao J. Myopia Control Efficacy of Spectacle Lenses with Aspherical Lenslets: Results of a 3-year Follow-up Study. Am J Ophthalmol. 2023;253:160-8.

3. Drobe B, Xue L, Huang Y, Lim EW, Bao J. Spectacle lenses with highly aspherical lenslets for myopia control: 4-year clinical trial results. Investigative Ophthalmology & Visual Science. 2023;64(8):4162. Presented at the 2023 ARVO Annual Meeting, New Orleans

4. Li X, Huang Y, Liu C, Yin Z, Cui Z, Lim EW, Drobe B, Chen H, Bao J. Myopia control efficacy of spectacle lenses with highly aspherical lenslets: results of a 5-year follow-up study. Investigative Ophthalmology & Visual Science. 2024 Jun 17;65(7):131-.

5. Bao J, Yang A, Huang Y, Li X, Pan Y, Ding C, Lim EW, Zheng J, Spiegel DP, Drobe B, Lu F. One-year myopia control efficacy of spectacle lenses with aspherical lenslets. British Journal of Ophthalmology. 2022;106(8):1171-6.

Essilor® Stellest® Lenses: Spectacle Lenses To Slow Down Myopia Progression

VISUAL PERFORMANCE

Essilor® Stellest® lenses offer clear vision at all viewing distances, including far vision and near vision.¹

Visual acuity measurements from the 2-year randomized clinical trial demonstrated that:

Distance visual acuity:

No difference between Essilor® Stellest® lenses and single vision lenses.

Near visual acuity:

No difference between Essilor® Stellest® lenses and single vision lenses.

RECOMMENDED WEARING TIME

The more a child wears Essilor® Stellest® lenses the better the efficacy. Hence, children should wear Essilor® Stellest® lenses during waking hours:

12^{hrs} at least per day, every day

ESSILOR® STELLEST® LENS PRESCRIPTION

AFTER AN EYE EXAM PREFORMED BY AN OPHTHALMOLOGIST

As soon as myopia progression has been detected in a child, Essilor® Stellest® lenses can be recommended. Early intervention would be beneficial.

The age range of children benefiting from the Essilor® Stellest® lens in the randomized clinical trial and follow up studies was between **8 and 18 years** after five years.²

1. Bao J, Yang A, Huang Y, Li X, Pan Y, Ding C, Lim EW, Zheng J, Spiegel DP, Drobe B, Lu F. One-year myopia control efficacy of spectacle lenses with aspherical lenslets. *British Journal of Ophthalmology*. 2022;106(8):1171-6.
2. Li X, Huang Y, Liu C, Yin Z, Cui Z, Lim EW, Drobe B, Chen H, Bao J. Myopia control efficacy of spectacle lenses with highly aspherical lenslets: results of a 5-year follow-up study. *Investigative Ophthalmology & Visual Science*. 2024 Jun 17;65(7):131-.

ESSILOR® STELLEST® LENS RANGE AVAILABILITY

TECHNOLOGY	H.A.L.T.
SPHERE/CYLINDER POWER	• SPH [0.00; -10.00]; • CYL [0.00; +4.00]
EXTENDED RANGE*	• SPH [+2.00; -12.00]; • CYL [0.00; -4.00] depending on sphere (SER must be ≤0 for sphere [0.00;+2.00])
PRISM	up to 2Δ / lens
DIAMETER	Ø65 MM, Ø70MM
COATING	CRIZAL® ROCK™
MATERIAL	AIRWEAR® 1.59
UV CUT OFF	100% UV PROTECTION*

Essilor® Stellest® lenses are now available with sun tints, to continue to wear Essilor® Stellest® lenses for outdoor activities with UV protection, glare reduction and comfortable vision.†

H.A.L.T., Highly Aspherical Lenslet Target

*By absorption. Additional UV back side reflection reduction when combined with Crizal® coating

†Subject to availability and launch timelines

A teal graphic consisting of a vertical rectangle on the left and a semi-circle on the right. The number '03' is written in white inside the semi-circle. The background features concentric circles in light blue and grey.

03

**PRESCRIBE AND DISPENSE
ESSILOR® STELLEST® LENSES**

**INTERVIEW
EXAMINATION
DIAGNOSTIC
RECOMMENDATIONS**

**Visit
01**

**DISPENSING
ADVISING**

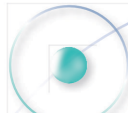
**Visit
02**

FIRST FOLLOW-UP

**Visit
03**

**FOLLOW-UP
EVERY 6 MONTHS**

**Visit
04**



Prescribing And Dispensing Essilor® Stellest® Lenses

Visit
01



INTERVIEW, EXAMINATION & DIAGNOSTIC

Performed by ophthalmology.

Visit
02

Visit
03

Visit
04



Visit
01

Visit
02

Visit
03

Visit
04



DISPENSING

Frame selection - Recommendations for children's spectacle frames

GENERAL FEATURES

The ideal frame should meet a number of criteria to withstand a child's active lifestyle:

- ✓ Light weight
- ✓ Flexible
- ✓ Solid
- ✓ Material resistant to sweat and corrosion
- ✓ Adjustability features

FRAME'S CHARACTERISTICS

Consider the child's developing facial features, which become similar to adults from about 13 years old (YO).¹

>13 YO: rimless and half rim frames can be adapted according to the maturity of the child, but need to be handled with care.

<13 YO: there are a number of anatomical differences which should be reflected in the frame choice. Main differences in facial features are:

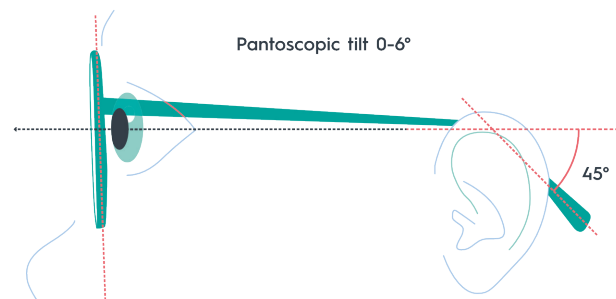
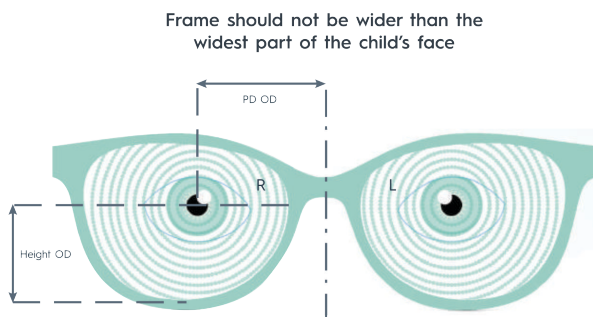
- | | |
|--|--|
| ① Reduced crest height | ⑥ Small pantoscopic angle ~ 0° (vs adults ~ 8-12°) |
| ② Larger frontal angle | ⑦ Wrap angle close to 0° |
| ③ Widened splay angle | ⑧ Back vertex distance < 12 mm |
| ④ Smaller bridge projection | |
| ⑤ Smaller head and temple width ¹ | |

Prescribing And Dispensing Essilor® Stellest® Lenses

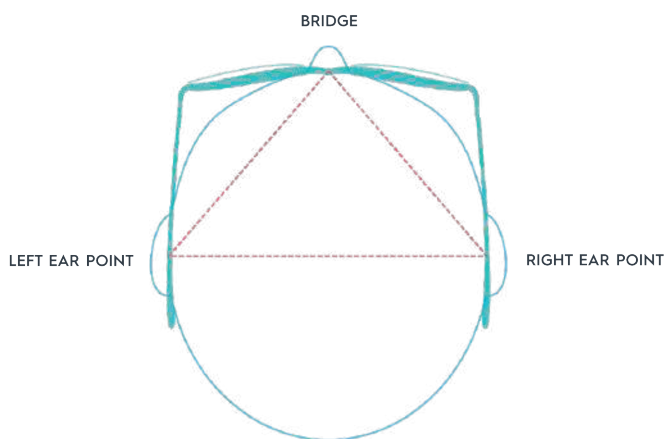
THE FRAME SIZE MATTERS:

- 1 Should not be wider than the widest part of the child's face.
- 2 Choose a frame with a boxed centre distance similar to the patient's PD.
- 3 This reduces the amount of decentration required when glazing and thus reduces edge thickness, giving a lighter, more comfortable pair of glasses with the best cosmetics.
- 4 Eyes should be centered in the frame.
- 5 No narrow frames.

Check the frame fit



THE FRAME SIZE:



The frame touches in 3 places only to avoid pressure:

- The bridge of the nose
- The left ear point
- The right ear point

- 1 The frame should fit over the eye sockets without extending down the cheeks.
- 2 If the frame does slip down, the bridge and nose pads may need tightening. If the nose pads are too tight, they can cause discomfort.
- 3 Be aware of the length of the glasses' temples, which should extend just beyond the child's ears.
- 4 If frames are too tight at the temples, they can cause pressure, which may lead to discomfort and headaches.
- 5 If the temples are too long, the spectacles may slip, which can inhibit the child's vision.

ESSILOR® STELLEST® LENSES RECOMMENDATION

Centration & Fitting

The position of the reference point is the centre of the rings of the lenslets. It is the point where the prescription is measured and controlled.

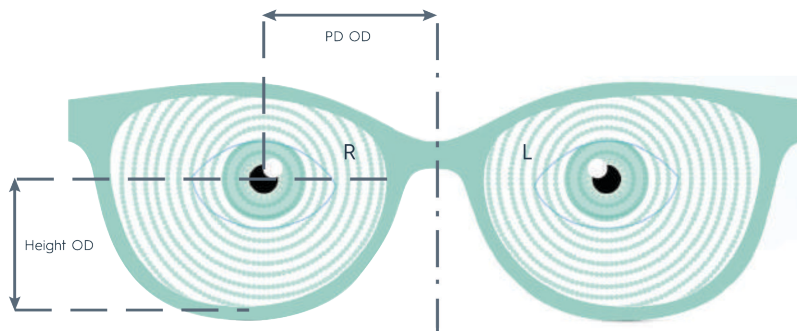
This marking (dot) is to be used by the ECP as the reference point for the centering of the lens.

HORIZONTALLY

monocular pupillary distances
OD and OS

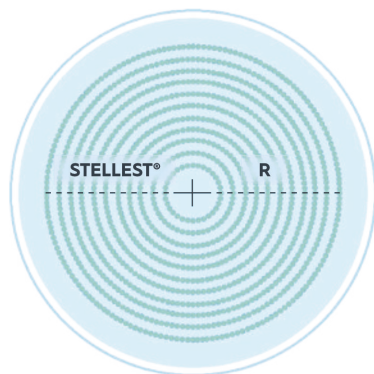
VERTICALLY

monocular heights OD and OS: mark the monocular
pupil centres in horizontal gaze direction



Mounting

- Do not put too much pressure to avoid tension in the lens. This is the case with any lens material.
- Cold mounting is always preferred for a plastic frame.



Cleaning

- Do not use acetone, ether, ammoniac or trichloroethylene.
- Can be cleaned with water and gentle soap, isopropyl or denatured alcohol and EssiClean.

Prescribing And Dispensing Essilor® Stellest® Lenses



DISPENSING AND ADVISING

Advising – spectacles collection

- Frame fit and adjustment check
- Visual acuity far and near control
- 15 min spectacles trial (reading, walking)
- Recommended wearing schedule: at least 12 hours/day, every day
- Adaptation period up to 1 week

ERGONOMICS AND LIFESTYLE RECOMMENDATIONS:



Increased time outdoors : **> 2H**



Near vision activities & screen time:
distance > 20 cm



Regular breaks

Visit
01

Visit
02

Visit
03

Visit
04

FIRST FOLLOW-UP

First follow-up Visit After 2 weeks (Optician)

- 1 Check for adaptation and compliance/wearing time
- 2 Frame fitting check
- 3 Answer questions

If needed, additional visits to adjust the frame.



Prescribing And Dispensing Essilor® Stellest® Lenses

Visit
01

Visit
02

Visit
03

Visit
04



FOLLOW-UP EVERY 6 MONTHS

First follow-up Visit After 6 months
(Ophthalmologist)

Annually: complete eye exam by ophthalmologist.



