

**Kids**

Lenti per piccoli occhi

**MYOP**KIDS

LENS FOR THE MYOPIA CONTROL



**ITAL•LENTI**  
LENTI DA VISTA ITALIANE

LENS FOR CONTROL OF  
MYOPIC PROGRESSION IN  
CHILDREN AND TEENAGERS

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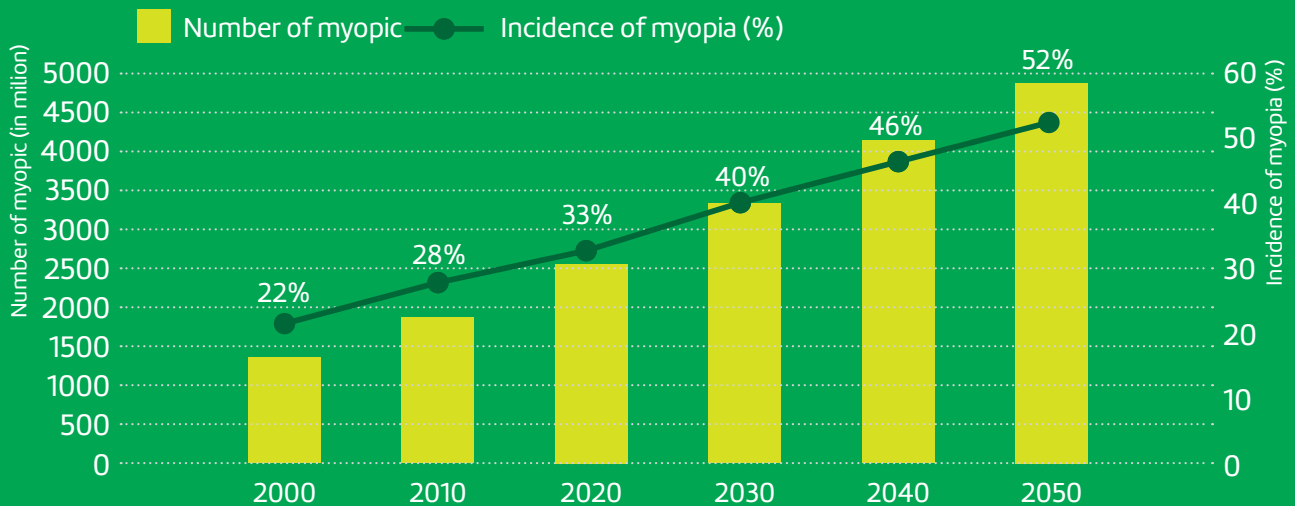
# MYOPKIDS

## Lens with peripheral defocus for prevention and control of myopia evolution in children and teenagers

Myopia is becoming an increasingly widespread problem worldwide. In fact, the statistics indicate a constant and significant increase over the last 20 years and today a third of the world population appears to be myope.

The detected trend suggests data destined to grow with a projection that leads to exceeding the 50% threshold in 2050.

### Evolution of myopia between today to 2050



The research carried out shows that the causes are to be found in the changed habits of life, mainly in increasing of visual activity at near distance, often using digital devices and in the shortest time spent in open spaces.

The studies carried out so far show that over 60% of myopia already develops from 6/7 years up adolescence, therefore prevention with the adoption of precautionary measures becomes a factor important in order to limit its progression.

To meet this need, Ital-Lenti has developed MYOPKIDS, an innovative **lens with peripheral defocus, precisely with the aim of limiting the development of myopic progression in children and teenagers.**

International research\* has confirmed that the central part of the retina of myopic patients

it shows a “myopic defocus”, while the peripheral part shows a “hypermetropic defocus” this is the main cause of increase in myopia.

For correct the myopic defocus we use normal negative lenses, but the hypermetropic peripheral defocus is not corrected. To try to focus the peripheral area, the child’s brain stretches the eyeball, solving the peripheral problem but further worsening the myopic value.

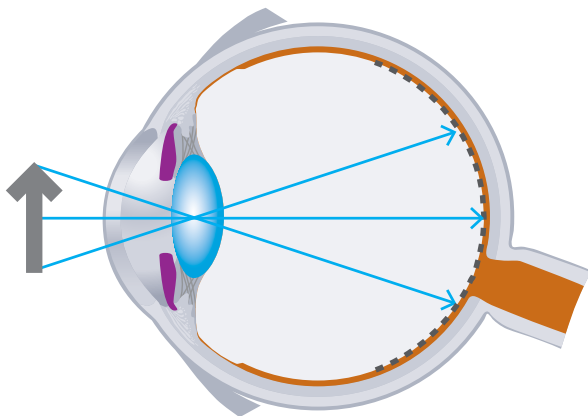
The realization of the new Myopkids lenses refers to important clinical studies \* they have led to the design of "Perifocal" lenses.

The concept is based on the principle of peripheral optical defocus necessary to control evolution myopic disease of children of development age between 6 and 14 years.

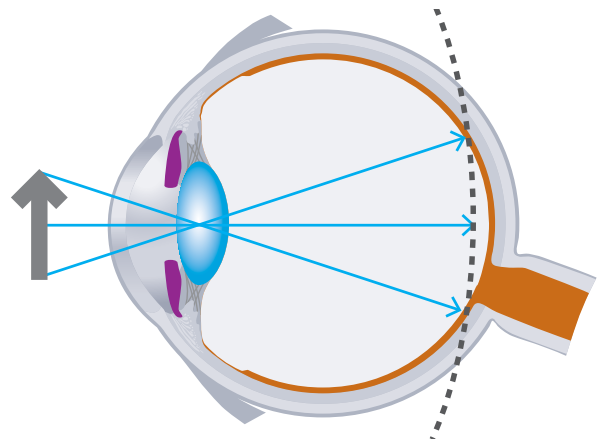
Research shows that the central part of the retina of myopic patients shows a "defocus myopic" while the peripheral part shows a "hypermetropic defocus" that the brain of the subject tries to compensate by inducing a lengthening of the ocular axis.

To induce a slowdown in the axial elongation of the eyeball, the lens is designed with a central area of 9 mm in diameter, necessary to correct myopia as a normal single vision lens, outside of this corrective area a situation of "peripheral defocus" is created in order to effectively control and delay the progression of myopia in young people.

## Emmetropic eye

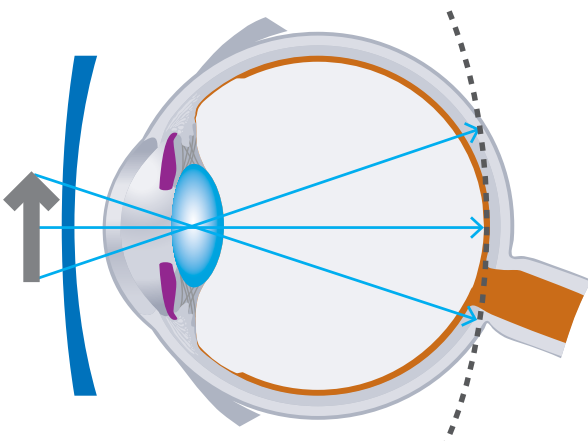


## Myopia before correction



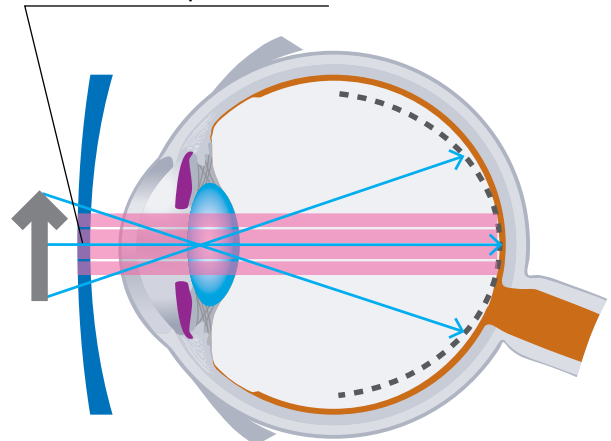
## Correction with standard lens

No control of myopic evolution

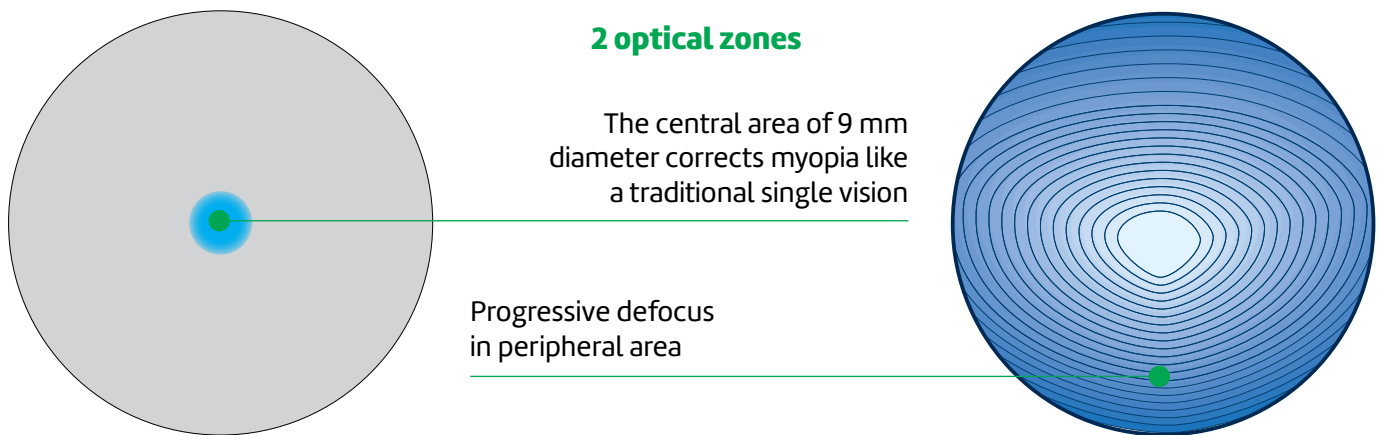


## Correction with MYOPKIDS lens

9 mm. optical zone



## Project principle of perifocal lenses with “optical” defocus progressive



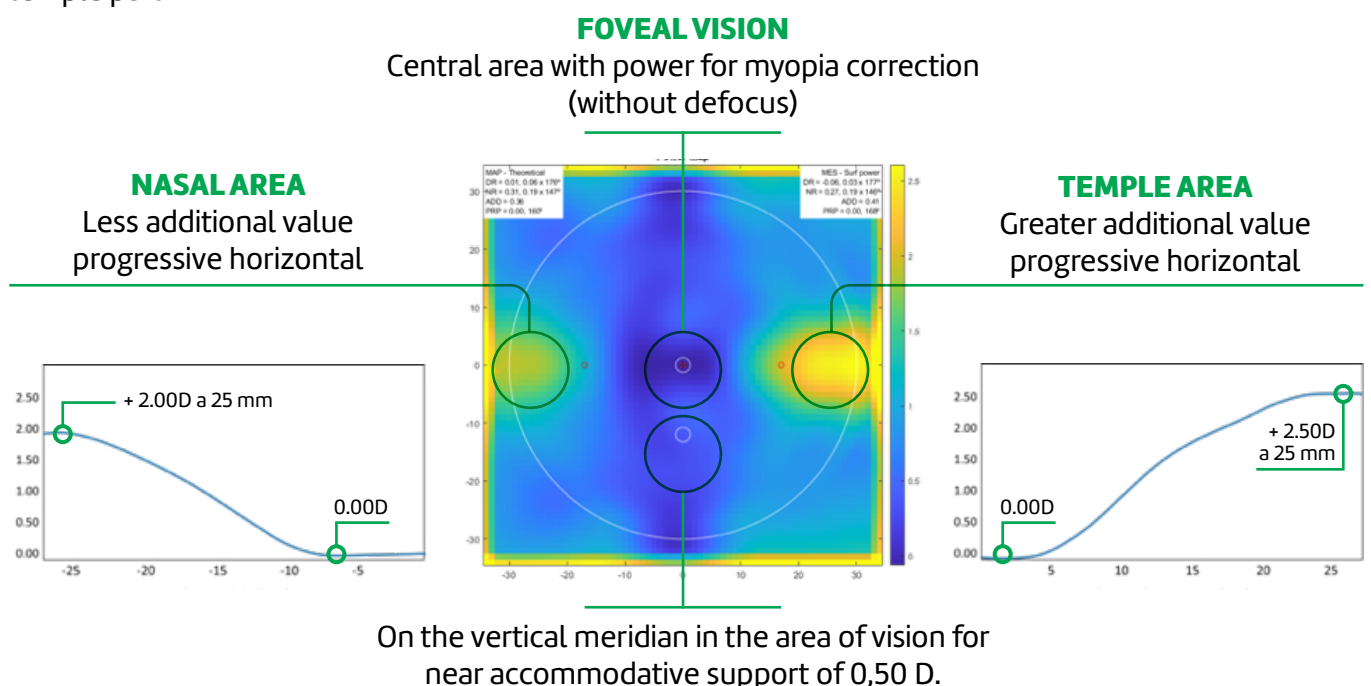
MYOPKIDS Free-Form technology consists of a 9 mm central optical zone to correct the myopic defect in far vision and a peripheral defocus that extends over the entire surface of the lens.

This characteristic of the lens with progressive peripheral optical defocus, as demonstrated by studies, is able to reduce and control the axial elongation of the eyeball caused by hypermetropic peripheral blur thus effectively controlling and delaying progression of myopia in young carriers.

### Design feature

A simple “pinhole” is not enough to effectively fulfill visual needs physiological conditions of the wearer, it is therefore necessary to develop the peripheral defocus area with a progressive geometry from the center to the periphery of the lens.

We must also take into account another fundamental aspect of the physiology of the eye, which is that of “retinal asymmetry”, the studies carried out show a potential effect dominant visual cues in the horizontal retinal meridian with respect to the vertical meridian, with a asymmetry between the nasal part and the temple part.



## Clinical Background

Retina has a greater density of retinal cells in the horizontal meridian, this involves greater visual acuity and contrast sensitivity in horizontal meridian than in vertical meridian.

Studies\* carried out have confirmed that asymmetry provides useful conditions for reducing the myopic progression in children, but what anatomical neural asymmetry means: the peripheral retina nasal has 300% more ganglion cells and over 40% more cones than the retina thunderstorm.

By optimizing a lens with such a specific and structured geometry in compliance with the physiology of retina can effectively inhibit uncontrolled axial growth of the eyeball.

## Result

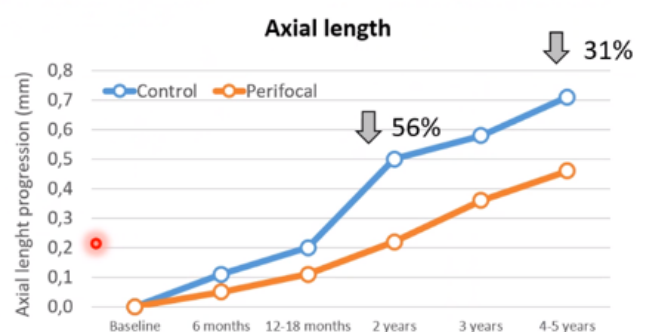
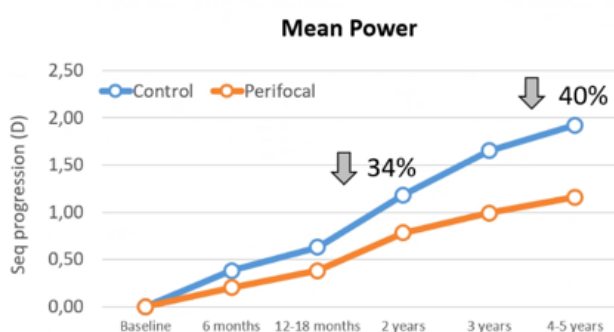
The study was carried out over a period of 6 years, involving an important number of subjects tested, divided into two groups, in which the first group of 94 children aged between 7 and 14 years and was corrected with the “perifocal” lens while, the control group of 52 children in the same range age was corrected with traditional single vision lenses.

As we can see from the graph, the follow-up of the research led very interesting results, in fact, after the first two years in the group of children who used perifocal lenses it was evident a 56% reduction in the axial elongation of the eyeball and a further 31% in subsequent ones three years, therefore with an effective reduction in the period of use of over 65%.

As for the corrective power, the graph is always highlighted in the first two years of testing in corrected subjects with perifocal lenses a reduction of 34% and in the following three years a further 40% reduction, which added up over the 5 years of testing leads to an effective total reduction in power refractive by more than 50% between the two groups of subjects tested.

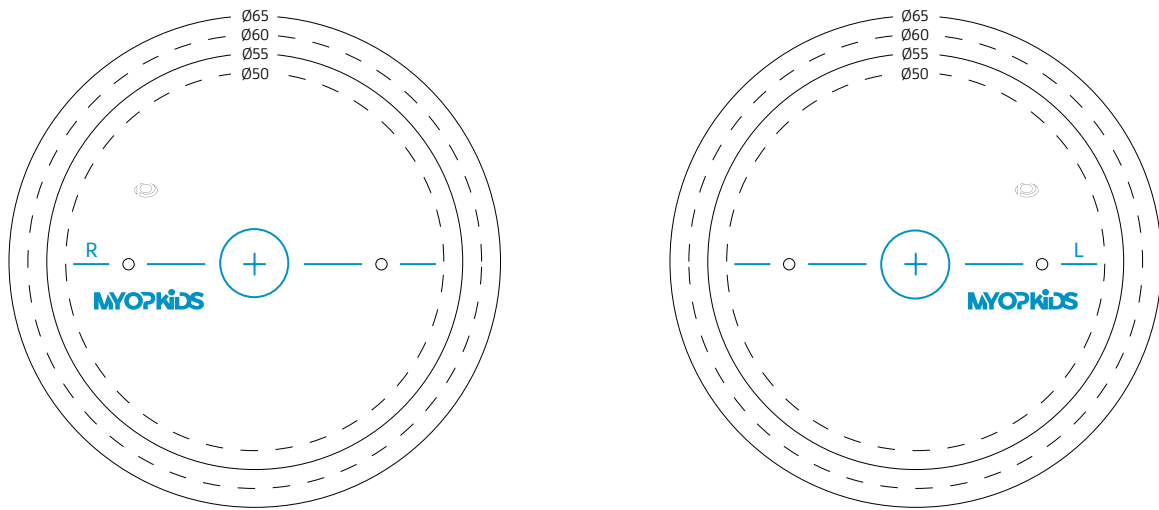
Long-term follow-up study::

- Treatment group: 94 children aged 7 to 14 with Perifocal lenses
- Control group: 52 children aged 8 to 14 with standard single vision lenses.



\* Tarutta E.P., Proskurina N.V., Maksimova M.V., Penkina A.V. – *Peripheral defocus induced by «perifocal-m» spectacles and myopia progression in children*  
 Proskurina N.V. – *The influence of progressive and perifocal glasses on refraction, accommodation and muscle balance*  
 Tarutta E.P. – *LongTerm results of perifoal defocus lens correction in children with progressive myopia*  
 Tarutta E.P. – *Influence of different means of myopia correction depending on gaze direction*  
 Proskurina O.V., Tarutta E.P. – *Multi-Factoral Mechanisms of Therapeutic Effect of Perifocal Spectacles (Perifocal-M) on Progressive Myopia in Children*

## Fitting and retrace rules



## Tips for the correct use of lenses

For the effectively functionality of Myopkids lenses the glasses must be used continuously for most of the day active (at least 12 hours).

At first use, the lenses may require an adaptation period, the duration of which is extremely subjective and which can vary from a few minutes to a few days.

During this adaptation period it is advisable not to carry out particularly dynamic activities, if the wearer must carry out sports activities (eg playing football, cycling) can use momentarily disposable contact lenses or glasses with traditional lenses

### Assembly tips

Carry out the assembly respecting the horizontal axis which is indicated in the infill (similar assembly to the progressive lens).

The pupil center must be perfectly aligned with the optical center of the lens while paying attention to do not reverse the left and right lenses to respect the applied geometry.

For an effective result it is essential to evaluate with pay attention to the choice of the frame that must be perfectly settled and stable on the baby's face.

Glasses with a low bridge and pantoscopic shaped are recommended. Round or teardrop frames are not recommended.



## Available materials and production range

1.60 Retina High index material for medium / high ametropia  
**UV PROTECTION AND HARMFUL BLUE LIGHT UP TO 420 NM**

1.50 Base material for low ametropi



MATERIAL	CHARACTERISTICS			FITTING
	Abbe	Density (gr/cm3)	UV	Nylor/Glasant
<b>1,60 RETINA</b>	42	1,30	420	SI
<b>1,50</b>	58	1,31	360	NO

DIAMETERS AND PRODUCTION RANGES		
Production limits	Cil. max	Diameters
da sf. -10,00 a sf. 0,00	6.00	50 - 55 - 60 - 65
da sf. -4,00 a sf. 0,00	6.00	50 - 55 - 60 - 65

## Coatings

For added protection MYOPKIDS lenses are supplied with DuraKids super-hardening coating, developed to ensure a greater resistance to the lenses, when stressed from the intense activities of children and young people.

It is possible to request MYOPKIDS lenses also with Iron Kids coating, to protect the lenses of young wearers from wear and from atmospheric agents, improving vision and facilitating lens cleaning.

## Blue light protection

Retina Kids is the innovative material made with a special pigment that allows to minimize the effects of ultraviolet radiation and the harmful blue light that comes widely emitted by digital devices.



## Periodic checks

The use of lenses for control of myopia evolution must be monitored by the Ophthalmologist in synergy with the professional of the vision, for the purpose of verifying the effectiveness of the lenses.

Checks are recommended half-yearly for a period of at least 2 years.



## The Kids lenses catalog

MYOPKIDS lenses are part of the Kids product catalog recently introduced by Ital-Lenti, a range of lenses specifically designed and built for the visual needs of children and boys.

Thanks to the innovative Free-Form computing technologies, the company has developed specific designs, made considering the needs visuals of younger carriers, which are different than adults.

The result is fully customized lenses that guarantee an exceptional quality of vision especially for important refractions.

## Facilitated replacement

MYOPKIDS lenses are also part of the “Easy Replacement” program.

The delivery of the glasses will be accompanied by a certificate that will economically facilitate the eventual replacement of lenses at the half-yearly check-up.



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