

SOLA MC Myopia Control Lens

Why design and manufacture this lens?

The reported and published (*refr. Optometry & Vision Science, edition 76, June 1999*) research by Jackson T. M. Leung and Brian Brown of the Department of Optometry at the Hong Kong Polytechnic University into the effects on the progression of Myopia in Hong Kong Chinese schoolchildren when wearing progressive lenses, prompted SOLA to design, manufacture and distribute the SOLA MC Myopia Control lens.

In this report the authors suggested that practitioners might wish to consider progressive lenses as a treatment option for their myopic patients.

Lens Design Rational

As progressive lenses are traditionally designed for presbyopic correction, SOLA embarked on the programme to design a progressive lens especially for use by children, with the focus being on providing a lens that allows the child to maintain its natural visual behaviour while reducing accommodation when used for near vision.

Which progressive lens design works best for a child?

The criteria set for SOLA MC Myopia Control were:

- 1) The fact that the lenses need to fit into a small frame without cutting off the near viewing area requires a progressive lens with a short corridor.
- 2) Because the child does not need the addition power to read clearly, the near power area must be positioned in such a way that the child looks through this area when doing near work so as to reduce accommodation. This requires the lens have, in addition to a short corridor, a large and wide near.
- 3) The lenses need to provide easy adaptability and be comfortable to wear.

Short corridor:

Although all humans turn their eyes downwards when viewing objects at near, SOLA Vision Research Eye-tracking data indicates that the natural eye declination for non-presbyopes (younger people) is less than that of presbyopes who were wearing progressive lenses. The eye declination of non-presbyopes varies between 11.7 and 15.7mm below their distance gaze position whereas the declination for presbyopes varies between 13.2 and 17.1mm.

Therefore, except for the fact that the lenses are to be used in small frames, it is important to provide a design with a short corridor so as to position the near viewing area high enough so that it is positioned in front of the declining eye when viewing near objects.

SOLA MC Myopia Control progressive has a corridor length of 11.5mm at 95% near power. (9.9mm at 85% near power)

Large and wide near:

SOLA Vision Research Eye-tracking data also indicates that 90% of all non-presbyopes have a horizontal eye-turn of 10.5° left and right. On average this means that they would need a lens with a viewing zone of 11mm width so as to not impinge on their natural eye turn.

SOLA MC Myopia Control progressive provides a 11mm wide near area, as measured at 0.50D RMS, at 11.7mm distance from the fitting cross.

Easy adaptability and comfortable wear:

These subjective measurements can best be determined through wearer adaptability studies. A wearer study involving thirty-three subjects, aged between 5 and 12 years was conducted in the Singapore Eye Research Institute, in which all subjects were uniformly successful and comfortable in wearing SOLA MC Myopia Control

Addition power:

The design criteria set for a “non presbyopic” progressive lens dictated that SOLA design and manufacturing MC Myopia Control with an addition of 1.50D. This is also one of the addition powers used in Hong Kong Polytechnic study.

SOLA's position:

SOLA International is a designer, manufacturer and distributor of spectacle lenses. At no point do SOLA suggest that research into the effectiveness of progressive lenses in the control of myopic progression was conducted by SOLA, nor do SOLA make any claims as to the therapeutic effects of progressive lenses based on any in-house research.

SOLA MC Myopia Control progressive lenses are made available to practitioners who prescribe to the practice of using progressive lenses in an effort to control myopic progression.