European Council of Optometry and Optics
Conseil Européen de l'Optométrie et de l'Optique
Europäischer Rat für Optometrie und Optik

Position Paper
Myopia in the 21st Century & its management by ECPs

May 2021

Introduction – What is Myopia?

Commonly known as short-sightedness, people with Myopia experience blurred distance vision. This is due to fractive error caused by excessive growth of the eye (axial length). Therefore, myopic individuals require optical correction to experience clear vision. Worldwide, Myopia is one of the leading causes of preventable blindness and vision impairment in the working age population.[i] The prevalence of Myopia is increasing worldwide, including in Europe, where both the prevalence and magnitude (increased refractive error) of Myopia continue to increase at a substantial rate. By 2050, it has been estimated 1 in every 2 people may be myopic, with the prevalence significantly higher in younger generations.[ii]

Uncorrected Myopia not only causes blurred vision but also a lot of common symptoms such as eyestrain, squinting and headaches that may have far-reaching implications. Particularly among young children, poor vision for distance objects like the whiteboard / blackboard in school can be associated with poor educational achievement.[iii] More importantly, myopia is a significant risk factor for a variety of ophthalmic conditions such as Glaucoma, Posterior Sub-capsular Cataract, Myopic Maculopathy and Retinal Detachment. The risk associated with these conditions is related to the level of Myopia, with higher refractive error associated with greater risk. Myopia has been recognised as one of the conditions that should be prioritised as part of the WHO's (World Health Organisation) Global Initiative for the Elimination of Avoidable Blindness. [iv]

ECOO's Position

ECOO (European Council of Optometry and Optics) is the professional body representing Opticians, Dispensing Opticians and Optometrists in 25 European countries. ECOO is committed to providing support to professionals working with the public to provide eye-care services. All advice provided to the public should be based on sound evidence-based research.

The purpose of this Position Paper is to provide information, to Eye Care Professionals (ECPs) , policy makers, parents and other health professionals, regarding guidance relating to Myopia & Myopia Management (Control) that will be of benefit to parents of children with Myopia.

It is is a clinical decision for each ECP to decide whether or not to engage in Myopia Management (Control) and if they wish to provide such services. However, ECPs should be in a position to make an informed decision based on sound evidence-based principles and the ECOO position is summarised in the points below. ECPs should also be in a position to proactively discuss the issues of Myopia and associated risks, patient suitability, and interventions for delaying the onset and slowing the progression of Myopia regardless of whether Myopia Management (Control) is available in the country where the ECP is currently practicing.

Action Points for ECPs – ECOO Advice / Discussion points for use with patients.

The cause of Myopia is the subject of much debate and research. It is believed that there is a significant interplay between the gene and the environment in determining the final refractive error.[v] Children with myopic parents are more likely to develop Myopia and the earlier onset of myopia is linked to higher refractive error which can lead to severe complications and greater risks to vision and sight loss as described above.[i]

Pre-Myopia or children with significant risk factors (family history of Myopia, Ethnicity, early emmetropisation or low hyperopia compared to age-norms) who are not yet myopic should be provided with specific lifestyle advice.

▪Advise children to spend more time outdoors, particularly for children of myopic parents, this is more effective in delaying the onset of Myopia rather than slowing the progression with a minimum of 90 minutes a day being suggested.

▪Reducing screen-time and time spent at exclusively near vision tasks is valuable.

•Myopic children also benefit from specific advice in addition to spectacles / contact lenses.

- ▪Under-correcting Myopia does not slow the progression and should be avoided. Under-correcting can increase the progression of myopia.
- ▪It is better to wear correction for Myopia for normal daily (distance & near vision) tasks.

▪Use of standard (spherical or toric) spectacles or contact lenses does not slow the rate of Myopia progression compared to the expected natural progression of myopia.

Important Advice - Where Myopia progression is at a rate greater than 0.50D per year, serious consideration should be given to Myopia Management (Control) Measures.

Myopia – What is changing in this field?

Traditionally, the clinical management of Myopia by ECPs was limited to refractive measures; using appliances such as glasses or contact lenses to correct the distance refractive error. Refractive surgery correction such as LASER surgery or CLE (Clear Lens Extraction) does not ameliorate the possibility of developing complications associated with Myopia. Like glasses and contact lenses, they simply correct the refractive error but do not address the associated risk profile. In fact, for individuals who have had refractive surgery, the relative risk for complications is not eliminated with the correction of vision.

Myopia Management

Myopia Management (or Control in some literature), is a term used to describe measures by researchers and clinicians to slow the onset or progression of Myopia[vi]; which is most effective when implemented at a younger age. ECOO recommends the use of the term Myopia Management as this encompasses traditional management via correction of refractive error in addition to measures intended to slow the progression of Myopia.

There are a variety of methods that have been proposed and are currently under research to slow the progression of Myopia.[vii] This includes the use of novel contact lenses designs[viii]; spectacle lens designs, orthokeratology (specialised contact lenses); use of pharmacological agents (e.g. Atropine); and advice on lifestyle factors including outdoor time[ix], wearing of correction. There are novel contact lens designs specifically designed and marketed for Myopia Management licensed for use in some EU states.[x]

Opinion: The risks, benefits and efficacy of these measures will be discussed in a more comprehensive paper to follow from ECOO which will give considered guidance regarding individual methodologies.

Parents of myopic children and people with Myopia have access to a variety of resources that provide them with the information regarding Myopia. It is likely that their first point to contact in seeking Myopia related advice will be their ECP. Therefore, it is important that ECPs are armed with the knowledge regarding the latest developments in myopia management research and be prepared to either implement appropriate myopia management measures or refer to an appropriate ECP depending on local legislation and scope of practice.

If ECPs can delay the onset of Myopia and slow the rate of progression, this may result in less refractive error (lower prescriptions) with reduced lifetime risk of developing blindness or complications due to High Myopia and associated vision loss and quality of life impact.[xi]

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