



# CONSENSUS STATEMENT

## Myopia Management

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On 15 June 2018, The College of Optometrists held a roundtable meeting to bring together clinicians, researchers and lead organisations across eye health, to consider the current evidence on childhood and adult myopia management.

This consensus statement represents an overview of collective analysis, evaluation, and opinion based on input from the eye health sector clinicians, researchers and lead organisations listed at the end of this statement.

### A global problem and a public health concern

Myopia is a global problem. The rising prevalence and the risks of sight-threatening ocular pathology associated with myopia are well documented. By 2050, it is predicted that half the world's population (five billion people) will have myopia, with nearly one billion at high risk of sight threatening ocular pathology<sup>1</sup>. Myopia is considered as a public health concern in some parts of the world and it now features on the World Health Organization's agenda<sup>2</sup>.

In the UK, the prevalence of myopia in children aged between 10-16 years has more than doubled over the last 50 years, and children are becoming myopic at a younger age<sup>3</sup>. Children with parents with myopia are more likely to be myopic than those without.

Given this backdrop, there is a genuine and pressing need to understand how myopia develops and to find innovative solutions – including optical and pharmacological interventions – to prevent or slow the progression of myopia as much as possible. Interventions have focused on either preventing the onset of myopia, or limiting the rate at which myopia progresses.

### What we know

Evidence exists showing that progression of myopia could potentially be slowed. Myopia progression and the rate of axial length growth may potentially be slowed by around 50% across different intervention strategies<sup>4</sup>.

There is evidence that encouraging children to spend time outdoors would reduce the onset of myopia<sup>5</sup>.

There is, however, very little evidence about the long-term benefits and risks of the myopia control treatments available, or the effect on myopia progression following the cessation of treatment.

### What we do not know

There is currently not enough evidence to support the widespread roll out of myopia control procedures for all patients with myopia or for those at risk of developing myopia, nor is there enough evidence to determine conclusively which interventions work for which people.

At present, we do not know which children may benefit the most from myopia control interventions.

We do not know whether myopia control should be best targeted to at risk groups or simply offered to all children that present with myopia and there is insufficient evidence that myopia control treatments are effective in reducing the progression of myopia.

<sup>1</sup> Holden BA, Wilson DA, Jong M, et al. Myopia: a growing global problem with sight-threatening complications. *Community Eye Health*. 2015;28(90):35.

<sup>2</sup> <http://www.who.int/blindness/causes/MyopiaReportforWeb.pdf>

<sup>3</sup> McCullough SJ, O'Donoghue L, Saunders KJ (2016) Six Year Refractive Change among White Children and Young Adults: Evidence for Significant Increase in Myopia among White UK Children. *PLoS ONE* 11(1): e0146332. <https://doi.org/10.1371/journal.pone.0146332>.

<sup>4</sup> Kang, P. (2018), Optical and pharmacological strategies of myopia control. *Clin Exp Optom*, 101: 321-332. doi:10.1111/cxo.12666.

<sup>5</sup> Xiong, S., Sankaridurg, P., Naduvilath, T., Zang, J., Zou, H., Zhu, J., Lv, M., He, X. and Xu, X. (2017), Time spent in outdoor activities in relation to myopia prevention and control: a meta-analysis and systematic review. *Acta Ophthalmol*. doi:10.1111/aos.13403.

## Based on the current evidence available, what practitioners could or should do...

### ...when managing myopia

It is safe and ethical for the eye health professionals offering myopia management interventions to continue to do so, if they follow guidance to be developed by the sector. This would include giving patients and parents information and obtaining consent, establishing practices' processes and defining practitioners' responsibilities.

- All myopia control interventions need to be underpinned by explicit consent, involving clear provision of information and accurate records of the discussions leading to the consent being given.
- If practitioners are going to recommend interventions, they need to take responsibility for ensuring that they keep up-to-date with the evidence relating to myopia management, and ensure that they understand the issues involved in obtaining consent.
- Where practitioners offer treatments, they must discuss the option of no treatment and should record that discussion.
- Practitioners should also discuss the mechanism they would use to measure outcomes – measurement of axial length being the best method. They should make clear that it is difficult to predict whether, and to what extent, an individual would benefit from any interventions, and that it is impossible to show what might have happened without any intervention.
- Practices must have an adverse event reporting scheme to track safety issues and build the evidence base data set for future use.

### More specifically on optical interventions

There are contact lenses that are designed to slow the progression of myopia, however, the efficacy is variable as myopia progression has been shown to be reduced by around 40-60%, across a number of studies<sup>6</sup>.

The change from a standard contact lens to a myopia control contact lens is unlikely to introduce additional risk, although there may be an impact associated with wearing lenses for longer periods. Benefits, uncertainties about efficacy, and possible risks should be clearly explained to the patient.

The transition from spectacle wearing to contact lenses use for myopia control or any other purpose may carry some additional risks – these should be clearly explained as part of the consent process.

At present, myopia control ophthalmic spectacle lenses are available only in countries outside the UK, although they are believed to be coming to the UK in due course. This would open up additional treatment options.

### More specifically on pharmacological interventions

Low dose atropine for myopia control is not licensed in the UK, but there are a number of UK trials using it at various concentrations (0.01% or 0.02%) that are underway, or about to start.

Until those studies are completed, there is insufficient evidence relating to the effects of long-term use of atropine in children.

### ...when talking to patients and parents about myopia

There is no obligation on a practitioner to discuss a particular treatment, as efficacy and safety are not yet adequately established by the evidence.

However, practitioners do need to be well informed and familiar with the current evidence so that they are able to offer information if asked. They should be able to explain the benefits and risks of the treatments available, as well as the option of no intervention, in a clear and balanced way, even if they do not provide these treatments. They should be able to inform patients and parents about the current evidence and explain whether and why they do, or do not, offer myopia management.

### What does the eye health and care sector need?

#### More research

Myopia management is an area that will be changing and The College of Optometrists will continually review and update its guidance accordingly. Continuing research is welcomed to underpin any change in routine clinical practice.

Because myopia prevalence varies with ethnicity, we do not know if the current evidence base would be fully relevant to children of European ancestry. As much research has been in children of East Asian origin, more research is needed in children of European and other ancestries.

#### Professional guidance

There is a need to produce guidance based on the current evidence for eye health professionals.

The College of Optometrists will lead the development of guidance mainly about:

- What eye care professionals should tell patients and their parents about what treatment is available, for whom it is suitable, how effective it might be and the probability of it being effective, and what the short-term and long-term risks and benefits are likely to be.
- Specific points about what eye care professionals already offering myopia control/management interventions should do.

<sup>6</sup> Kang, P. (2018), Optical and pharmacological strategies of myopia control. Clin Exp Optom, 101: 321-332. doi:10.1111/cxo.12666.

A leaflet providing the patients and their parents with information on myopia management to be made available to practitioners will be also developed.

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Find out more about the myopia management roundtable hosted by the College of Optometrists at [college-optometrists.org/myopia-roundtable](https://college-optometrists.org/myopia-roundtable)



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