

Young Adult Myopia

Q&A responses by Kathryn Webber, University of Bradford

- 1 In the next 25 years will we "know" everything there is about myopia? is it a field worth going into as a young student today?
Difficult to say but I suspect not – there are still lots of unanswered questions.
- 2 I started going myopic at age 20 when I was halfway through my dispensing course, I was told it was late onset of juvenile stress myopia brought on by studying. My myopia progressed quite rapidly to -2.00 -1.75 in just 12 months but my rx hasn't changed since and I'm now 43. Was it really late onset of juvenile stress myopia or was it adult onset and would myopia management make a difference in cases like mine?
Unfortunately, without having your full history it is difficult to say, a cycloplegic refraction from a younger age would give a more detailed view. Current research is looking into the outcomes of using myopia management interventions on adult-onset myopia.
- 3 Is it common for a previous low rx myope 18 yr old student doing excessive close work to become low hypermetrope?
No, it would be surprising for any myope to become hyperopic. They could have been pseudomyopic previously?
- 4 Is the new problem mainly due to the high level of close work on phones etc. like 14+ hours per day
A recent meta-analysis suggests that near work is associated with myopia progression and onset in young adults but that the mechanism is unclear (Dutheil et al 2023). They demonstrated that occupational exposure to near work in adults is associated with a 20% increase in the odds of myopia. However, it is important to remember that there are a lot of possible confounding factors.
- 5 It seems that ECPs are shouldering the responsibility of informing / intervening with these patients. Is there any sign of Public Health England stepping in with information through other HealthCare providers like midwives, health visitors GPs etc?
Not currently that I am aware of.
- 6 Some opticians use GOS3 vouchers Towards myopia management lenses, is this allowed?
There is nothing in vouchers at a glance which suggest that vouchers cannot be used towards myopia management lenses, as long as the use of the voucher still fall within the relevant rules.
- 7 If you know the myopia is corneal should Ortho-K be recommended?
See answer to Q.15
- 8 Would the differences in eye care provisions in different countries have an effect on the reliability of the results between studies?
It depends on how the studies are conducted – if they are practice based then whether or not cycloplegic refraction was undertaken could affect the results. If they are well conducted prospective studies using biometry to measure progression then the results should be reliable.
- 9 What is your opinion on myopes getting laser eye treatment? I had a friend who was a high myope since a child and had laser eye surgery in her early 20s but now her vision has progressed in her mid-20s back to myopic rx to about a quarter of her original prescription but still requires glasses again
Criteria for stability' varies between clinics but I would say it's important to remember that a significant minority will still be progressing through young adulthood and so are not good candidates at this age. Several studies have shown continued myopia progression following refractive surgery, Gab-Alla et al (2021) found that 25% of 1219 patients aged 21-50 years who had undergone LASIK had a myopic shift of at least -0.50D after the first year.

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- 10 Are they looking at doing any studies with myopia control on patients with amblyopia etc or being seen by HES
Not that I am aware of currently.
- 11 Would you recommend a cycloplegic refraction for every ST a myopic child has on a myopia management plan?
Certainly for the first test – it would be best practice following that if you can't measure axial length particularly in the younger children.
- 12 Do you feel that there will be room for a specialised Myopia Management Optician development in the future? Or is this getting to close to the Optometrist role under the Opticians Act?
Myopia management falls under the scope of practice for Optometrists, Dispensing Opticians and Contact Lens opticians. I think that as with other areas of optometric practice such as low vision, paediatric and contact lenses there will be those practitioners who wish to specialise in these areas, and those who wish to stay in mainstream practice and refer on where necessary. For those interested a specialised qualification would be welcomed
- 13 Because atropine has been shown to reduce the growth of myopia. Is that possibly to its cycloplegic affect? If so, have any studies been done on cyclopentolate?
The exact mechanism of topical atropine isn't known, but the low doses used (0.01-0.05%) have minimal effect on accommodation.
- 14 What other solutions, services or products are available for myopia management for adults?
Everything that is available for children can also be used in adults but off-license so this is where informed consent is vital. See link in Q.18 for available options.
- 15 Are interventions such as Miyosmart spec lenses only effective if the myopia is mainly axial?
The current research that we have doesn't split px into axial v refractive so we don't know yet.
- 16 How many hours per day would we advise MM is worn for as a minimum, and can they mix it up. So use Spex & CL to make up those hours?
We need to be aiming for FT wear – there is a dose dependent effect found in some studies. No studies have been completed on mixing specs and CL wear.
- 17 If we are looking at myopia control as preventative and we know that a px who's very young and is +0.50 therefore is myopic for their age why don't we have myopia control lens options available at this point?
Manufacturers don't make interventions in these Rx's at present.
- 18 Is there a list available of all myopia management options across the brands both in spec lenses and contacts? And how the different lenses work for the px
*This is a link to all the interventions available (however, not all licensed for use in the UK):
https://www.myopiaprofile.com/products?utm_source=Myopia+Profile+Digest&utm_campaign=154a55e430-Newsletter_end+2023&utm_medium=email&utm_term=0_1f22380c0a-154a55e430-72583137&mc_cid=154a55e430&mc_eid=bccad1b018*
- 19 Risks of myopia control contact lenses in sport. Would we be liable in case of injury?
Risk is no different from other CL's. OrthoK is a great option for people to be free of lenses during the day for sports, swimming etc.

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- 20 Should we be recommending contact lenses or glasses?
Either – whatever suits the patient best. In children we know that the efficacy is broadly similar – we don't know in adults yet but assume it will be similar.
- 21 So, spectacle myopia management in adults. Are there issues for driving or requiring high levels of vision for work? As not licensed for over 18s are we as DOs subjecting ourselves to potential legal issues if problems happened?
Driving and occupational vision standards should be checked in the normal way.
- 22 We had someone aged 37 attend our practice with external rx. Prescribed rx -7.00 R&L (roughly) with -1.00 cyls. Has high add of +2.50. Was prescribed Stellest lenses by the optometrist. Previously worn varifocals. Any reasons why? Isn't it too late?
Worth a try if still progressing – needs fully informed consent.
- 23 What does full time wear look like? If a child wears myopia control CL from 8am to 5pm, would they be ok to wear normal specs the rest of the day?
See Q.16
- 24 What would you recommend for a myope that is out of range for a px over -10D
NaturalVue and Menicon Bloom Day contact lenses are available up to -12.00DS, while Mylo is available up to -15.00DS. Red light therapy would also be an option for those out of range for other inventions.
- 25 When is it likely myopia control lenses will be available on the NHS therefore being available to all without the financial constraints we have at present?
I don't know – it's a tricky cost benefit analysis as the potential public health benefits of lower levels of myopia are many years into the future.
- 26 Would you still recommend products like Stellest and MiSight to adults say from 30 years old upwards?
If they are progressing – with full informed consent.
- 27 Are there any myopia management out for high cyls yet? and thinning or transitions?
MiyoSmart is available up to 4.00DC and in polarised and photochromic options. Stellest is available up to 4.00DC.
- 28 Can you remind me of the axial length formula?
See answer to Q.31 for links
- 29 I'd like to know my axial length, but my practice doesn't have the equipment. Where can I go to find out my measurement? Likewise, if a px requested their axial length how would you navigate answering this question?
University clinics, some local practices may have biometry, private cataract clinics.
- 30 Opinions on axial length estimators for monitoring Myopia Management? E.g. OcuMetra
They have their limitations but better than nothing if biometry not available – ensure you always use the same one with the same patient as results do vary.
- 31 Where can you download an axial length estimator chart
<https://coopervision.co.uk/practitioner/clinical-resources/myopia-in-children/axial-length-estimator>
https://www.ulster.ac.uk/data/assets/pdf_file/0010/826183/Estimate-Axial-Length.pdf

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Dutheil, F., Oueslati, T., Delamarre, L., Castanon, J., Maurin, C., Chiambaretta, F., Baker, J.S., Ugbohue, U.C., Zak, M., Lakbar, I. and Pereira, B., 2023. Myopia and near work: a systematic review and meta-analysis. International Journal of Environmental Research and Public Health, 20(1), p.875.

Gab-Alla, A.A., 2021. Is the axial length a risk factor for post-LASIK myopic regression? Graefe's Archive for Clinical and Experimental Ophthalmology, 259, pp.777-786.