INTERNATIONAL MYOPIA INSTITUTE

International Myopia Institute (IMI) Facts and Findings: 2023

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Impact of myopia

2020

Myopia affects almost

30% of the world's population

2050

Myopia is estimated to affect

50% of the world's population

High myopia will affect

10% of the world's population

Myopia -0.50 D or worse
High myopia -5.00 D or worse

Risk of vision impairment
Uncorrected myopia is a leading cause of avoidable vision impairment. Complications associated with high myopia can be sight threatening e.g. myopic macular degeneration.

Education
In children, poor vision or uncorrected vision can impact scholastic performance and result in psychosocial stress. Negative attitudes to spectacle wear may also affect psychosocial well-being.

Quality of Life (QOL)
Reduced QOL has been demonstrated for myopia and myopia-related complications. QOL is impacted whether myopia is corrected or uncorrected and varies according to the type of corrective modality worn.

Economic impact
Given the progressive nature of myopia, direct costs (expenditure on diagnosis, correction/ management, transport and treatment of morbidity) and lost productivity costs are substantial.

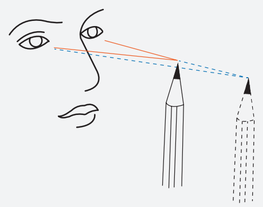
Risk factors

Higher levels of education and near work

Less time outdoors

- East Asian ethnicity
- Parents with myopia
- Girls more susceptible according to some studies

Binocular vision



- Link with myopia development is unclear
- Important to optimize accommodation and vergence in children to provide single, clear comfortable vision

Pathologic myopia

META-PM classification system

Category	Retinal signs
0	No myopic retinal lesions
1	Tessellated (or tigroid) fundus
2	Diffuse choroidal atrophy
3	Patchy choroidal atrophy
4	Macular atrophy
Plus lesion	Lacquer cracks, myopic choroidal neovascularization, Fuchs spot
Posterior staphyloma	

3%
of the world's population **is affected by pathologic myopia**

1-3% Asians
1% Europeans

Affects
50-70%
of those with high myopia

Increases with age and spherical equivalent refractive error/ axial length

Increases in prevalence and severity 40+ years

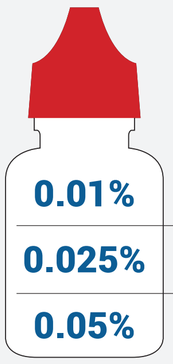
Management options – Reported treatment effectiveness varies with age of initiation, treatment duration, compliance as well as demographic/environmental factors.

Prevention

2 hours+ outdoors **daily**

Slowing progression

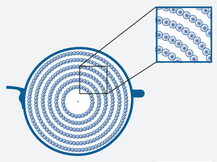
Pharmacological option



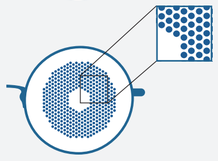
Atropine*

0.01%	ΔSphE 0.39 D ΔAL 0.13 mm
0.025%	ΔSphE 0.43 D ΔAL 0.16 mm
0.05%	ΔSphE 0.62 D ΔAL 0.25 mm

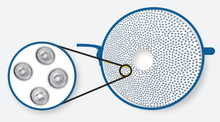
Spectacle options



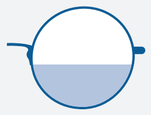
Highly Aspherical Lenslets (HAL)
2 years
ΔSphE 0.80 D (55%)
ΔAL 0.35 mm (51%)



Defocus Incorporated Multiple Segments (DIMS)
2 years
ΔSphE 0.44 D (52%)
ΔAL 0.34 mm (62%)

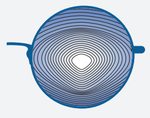


Diffusion Optics Technology (DOT)
1 year
ΔSphE 0.40 D (74%)
ΔAL 0.15 mm (50%)



Executive Prismatic Bifocals (+1.50 D add)
3 years
ΔSphE 1.05 D (51%)
ΔAL 0.28 mm (34%)

Progressive Addition Lens (PALS)*
2 years
ΔSphE 0.14 D (24%)
ΔAL 0.04 mm (28%)



Peripheral Hyperopia Reduction Lens
2 years
ΔSphE 0.04 D (3%)
ΔAL 0.04 mm (5%)

Contact lens options

Dual Focus
3 years
ΔSphE 0.73 D (59%)
ΔAL 0.32 mm (52%)
US FDA approved

Extended Depth of Focus
2 years
ΔSphE 0.37 D (32%)
ΔAL 0.15 mm (25%)

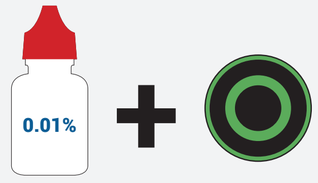
Center distance (+2.50 D add)
3 years
ΔSphE 0.46 D (44%)
ΔAL 0.23 mm (35%)

Soft contact lenses - worn daily

Orthokeratology*
2 years
ΔAL 0.27 mm (45%)
Worn overnight

Emerging therapies

Combination Atropine (0.01%) and Orthokeratology
2 years
ΔAL 0.11 mm (27%) compared to Orthokeratology



Red and blue light therapies – safety yet to be established

*Meta-analysis

Atropine, spectacle and contact lens options: Δ= reduction in average progression compared to control group; SphE= spherical equivalent refractive error; AL= axial length; % efficacy = Δ/control group progression

Source: IMI white papers, 2019, 2021, 2023 https://myopiainstitute.org/imi-white-papers/
Investigative Ophthalmology & Vision Science IMI Special issues 60(3) 2019, 62(5) 2021 and 64(6) 2023