

Treatment of Myopia (Short-sightedness)

Mechanism

Myopia occurs when the eyeball is too long. Therefore, the focus of a far object falls in front, instead of on the retina. A blurred image is formed.

To treat myopia, we cannot shorten the length of eyeball. However, we can flatten the central part of the cornea so that the focus of a far object falls on the retina forming a sharp image again.

Note that no myopia treatment can prevent or cure severe myopia complications such as retinal breaks, detachment, chronic glaucoma, cataract or yellow spot hemorrhage.

Treatments

1. Orthokeratology (Ortho-K)

Flatten the curvature of cornea gradually through the use of a series of gas permeable hard contact lenses.

2. Laser-Assisted *In Situ* Keratomileusis (Lasik)

Vaporize about 5% of cornea surface tissue by laser. Hence, a more flattened cornea is formed.

	Ortho-K	Lasik
Nature	<ul style="list-style-type: none"> ● Non-invasive ● Cornea will return to pre-treatment status if treatment is not completed 	<ul style="list-style-type: none"> ● Invasive ● Part of the cornea is removed during surgery. Cornea cannot return to pre-treatment status
Daily care	<ul style="list-style-type: none"> ● Wear contact lenses to sleep every night in order to stabilize the cornea curvature ● Same care as standard gas permeable hard contact lenses. Need regular optometric check up 	<ul style="list-style-type: none"> ● Special eye care for 1-3 months after surgery only, no need of special care afterwards. Need regular optometric check up
Suitable person	<ul style="list-style-type: none"> ● Suitable for person whose myopia is less than -4dioptre. The more severe the myopia, the less effective the treatment. Also suitable for person with mild astigmatism ● No age limitation ● No other eye illness ● Can tolerate gas permeable contact lenses ● Those who wish to be less dependent on glasses and contact lenses during daytime 	<ul style="list-style-type: none"> ● Suitable up to -15dioptre. The risk is higher for more severe myopia. Also suitable for person with hypermetropia or astigmatism ● Age >21, no signs of increase in myopia in recent 1 year ● No other eye disease and willing to take surgical risk ● Those who want to be less dependent on glasses and contact lens forever
Unsuitable person	<ul style="list-style-type: none"> ● Person with hypermetropia (long-sightedness) ● Cornea curvature is too flat ● Those who have scar on the cornea due to eye disease or trauma 	<ul style="list-style-type: none"> ● Too young and the myopia has not yet stabilised ● Those with eye diseases ● Those who don't want to take surgical risk ● Those whose cornea is not thick enough or pupil diameter is too large
Adverse reaction	<ul style="list-style-type: none"> ● Improper use can cause corneal trauma or infection 	<ul style="list-style-type: none"> ● Over or under corrected ● Halo may occur when seeing object in dim environment ● Rare adverse reaction like conjunctivitis, edema, perforation, eyeball infection
Can it prevent deterioration of myopia?	<ul style="list-style-type: none"> ● More medical evidence is required to indicate that it can prevent worsening of myopia 	<ul style="list-style-type: none"> ● No
Treatment time	<ul style="list-style-type: none"> ● 4 to 6 months 	<ul style="list-style-type: none"> ● Surgery takes about 15 minutes, need special care afterward for 1-3 months