

MYOPIA and YOU



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Centre for Myopia Research
School of Optometry

What is myopia (short-sightedness)?

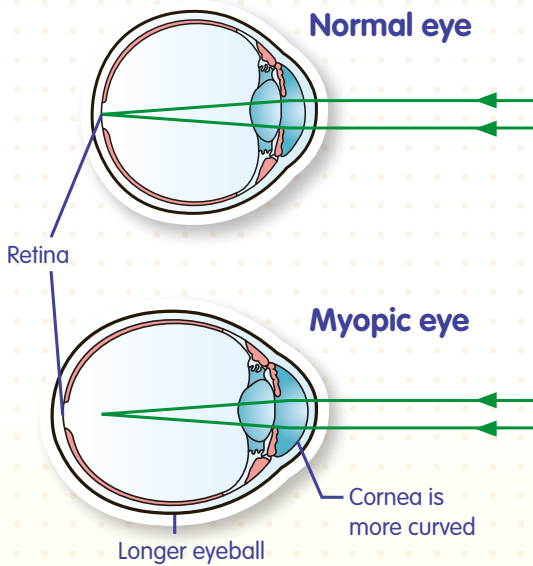


Image can accurately focus on the retina (the back part of our eyes) in a normal eye.

In an eye with myopia (a myopic eye), the **eyeball** is either **too long** or the **cornea too curved**, causing image to focus **in front of the retina**. Hence far away objects cannot be viewed clearly.

How does a myopic (short-sighted) eye see?



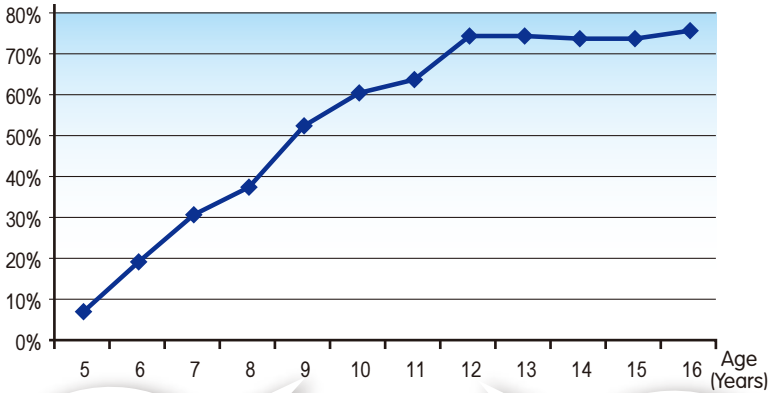
Normal eye can see far and near objects clearly.



Myopic eye sees near objects clearly, but far objects appear blurry.

Did you know?

Myopia (short-sightedness) Trend



Half of the school children in Hong Kong at the age of 9 are short-sighted



For school children aged 12 and above, more than 70% are short-sighted



Let's check your vision now! Turn to page 7 for a simple vision check and see if you are already short-sighted!

Did you behave like these?



You might not notice whether you are short-sighted or not at the beginning. Please ask yourself or your family: if you have more than one of the following behaviours and feel that your vision is blurry, then you need to go for an eye check immediately.



Lots of forceful blinking
or eye-rubbing



Poor concentration



Likes to tilt your
head down to look up
or one eye is always
turning in or out

**You might
already be
short-sighted!**



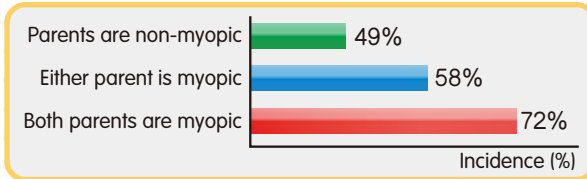
Tilts your head excessively
when reading or
watching television



Always squinting or closing
one eye whilst viewing

Why are you short-sighted?

The causes of myopia (short-sightedness) include genetics, environmental factors, and poor habits. For example, having parents who are highly myopic; reading at close distances; playing game consoles for prolonged periods of time.



Research shows that the “incidence of children being myopic” is related to whether the parents are short-sighted or not.

How do you correct myopia?

The most common, direct, and safe option to obtain clear vision again is by wearing glasses. The second option is contact lenses. Glasses are recommended if your prescription is more than $-0.75D$ (Diopters).



Can you wear contact lenses?

People of all ages can wear contact lenses, but we must pay attention to the following:

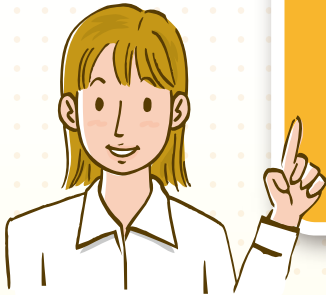
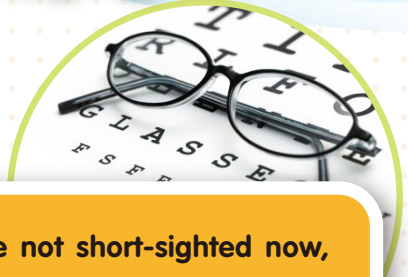
- ▶ Must be fitted by a qualified optometrist and should not be purchased from unknown sources
- ▶ Be self-disciplined: can correctly follow instructions to clean and disinfect the lenses, as well as replacing them regularly
- ▶ Follow the recommended wearing schedule
- ▶ Regular check-ups to ensure normal eye health



Contact lenses are not suitable for everyone. Please consult an optometrist before deciding.

Does myopia (short-sightedness) progress?

The higher your prescription now, the faster it will progress each year. It will slowly stabilize by the age of 17 to 18.



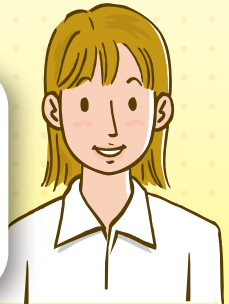
Even if you are not short-sighted now, research has shown that myopia can increase by 0.14D each year as you grow. If your prescription is already -0.50D or above, it can increase by 0.50D each year.

Can myopia progression be controlled?

The most effective way is by changing bad habits. In addition, there are currently products in the market claiming to slow myopia progression, but effects are dependent on each individual. Some common methods are:

- ▶ Myopic-control progressive lenses
- ▶ Myopic-control soft contact lenses
- ▶ Orthokeratology (hard contact lenses)

Results for the above methods may vary among individuals and are not suitable for everyone. You should consult an optometrist before deciding.



The consequences of myopia progression

You have to be careful if your prescription is already more than $-4.00D$. Myopia is considered "high" if your prescription is over $-6.00D$. At this stage, wearing glasses is not the only issue: it has a direct influence on your eye health.

- ▶ The higher the myopia, the longer the eyeball. The retina would then be more fragile, hence making it more vulnerable to tears and ruptures. Degeneration and complications are also more common as the eyeball grows longer. For example: retinal degeneration, macular degeneration, cataract and glaucoma etc. Blindness can ensue in serious cases.



Macular degeneration
distorting images



Retinal detachment
causing some portions
of vision to be blocked



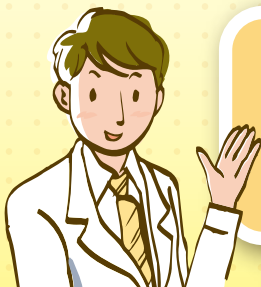
Normal vision



Cataract causing
blurry vision



Glaucoma causing
restriction in peripheral vision



High myopia is related to many eye diseases. Prevention is better than cure. You must develop healthy habits; protect your own eyes, in order to avoid developing myopia or myopia progression.



Try it now!

Put this vision chart at 3 meters (approximately 10 feet) away, and turn on all room lights, then cover one eye first. Which row of letters is the smallest that you can read? Once finished, cover the other eye and test again.

E E E

W W W

Y Y Y

3 3 3

W W W

6/38
(0.16)

3 3 3

E E E

W W W

Y Y Y

E E E

6/30
(0.20)

Y W W

E W W

E E E

3 3 3

W W W

6/24
(0.25)

М Э Ш М Э

6/19
(0.32)

М Ш Е Ш Э

6/15
(0.40)

М Ш Э М Ш

6/12
(0.50)

Э М Е Э Е

6/9.5
(0.63)

М Ш Э Ш Э

6/7.5
(0.8)

Е Э Ш Э М

6/6
(1.0)

Э Е М Э Ш

6/4.8
(1.25)

* If you can read the row of letters with the **blue** line with each eye, congratulations! Your vision is normal. Very good!

* If you can only read the letters between the **red** and the **blue** lines, your vision is acceptable. But be careful and check again in 3 months' time.

* If either eye can only read the row of letters with the **red** line, or above, then you should find an optometrist for an eye check as soon as possible!

What can you do?

Do you want your eyes to be healthy?



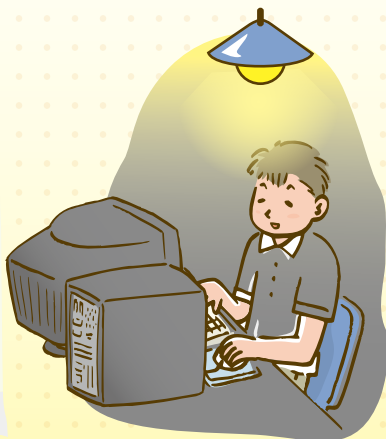
- ▶ Keep a suitable viewing distance: at least 30cm when reading books; at least 50cm when using computers



- ▶ Let your eyes rest and view distant objects for at least 20 seconds every 20 minutes



- ▶ Do not read or use electronic devices whilst walking or traveling



- ▶ Lighting should be sufficient, even and stable



- ▶ Remember to blink your eyes often to keep them moist



- ▶ Wash hands often and do not rub the eyes



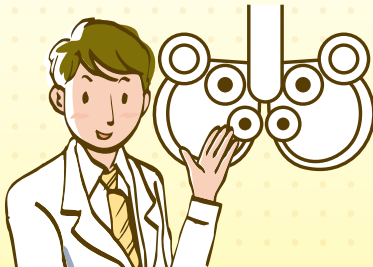
- ▶ Participate in outdoor activities more often and minimize the use of electronic devices



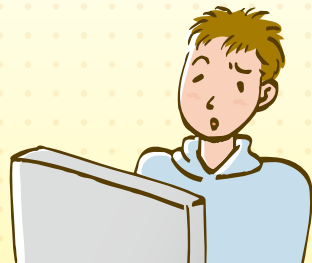
- ▶ Adequate sleep of at least 8 hours, allowing the eyes to fully rest



- ▶ Maintain a healthy and balanced diet



- ▶ Follow the instructions of your optometrist if glasses are to be worn



- ▶ Seek an optometrist for eye check if you notice any problems with your eyes or your vision

Let us all start with healthy habits!

What can parents do?

▶ Encourage your children to minimize unnecessary near work and increase rest.



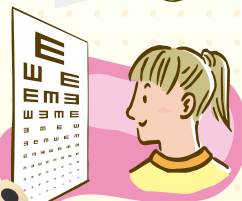
▶ Encourage your children to participate in more outdoor activities, instead of close-viewing-distance activities such as playing game consoles and computers. Research has shown that the risk of developing myopia decreases by 2% if school children increase participation in outdoor activities by one hour every week.



▶ Avoid letting children younger than 2 years old to use electronic devices, in order to prevent speech and language development problems. Teenagers should also use them less than two hours per day.



▶ Yearly eye check up for your children, keeping records of their glasses prescriptions to monitor for any changes.



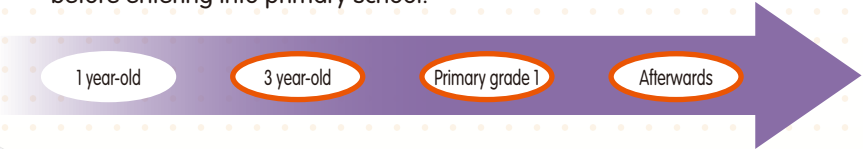
Glasses prescription record:



Date	Glasses Prescription	Next review date
	Right:	
	Left:	
	Right:	
	Left:	
	Right:	
	Left:	

A comprehensive eye examination is very important!

- ▶ 0 to 8 years old is the golden period of visual system development.
- ▶ An optometric examination should be performed at the age of 3 and before entering into primary school.




- ▶ Annual eye check should be performed after entering primary school.
- ▶ The eyes looking healthy do not necessarily mean proper eye development.
- ▶ Besides myopia (short-sightedness), hyperopia (long-sightedness) and astigmatism, common eye problems also include amblyopia (lazy eye), strabismus/squint (turned eye), poor binocular coordination etc.
- ▶ Some vision problems can be fixed by wearing suitable glasses, vision therapy, or even through surgery.



What is comprehensive eye examination?

A basic optometric examination should include:

- 1 History taking
 - 2 Vision and glasses prescription check
 - 3 Binocular coordination check including:
strabismus (turned eye);
stereopsis (3-D vision)
 - 4 Colour vision
 - 5 Intra-ocular (eye) pressure
 - 6 External eye health check
 - 7 Internal eye health check
(dilated fundus examination)
-  Diagnosis and management



"Real/unreal" myopia? Dilated fundus examination?

Using topical eyedrops to temporarily dilate the pupil and relax the eye muscles, will allow accurate measurement of glasses prescription; checking for pseudo-myopia (unreal myopia); and the eye health.

Self-quiz



Do you know if your eyes are healthy now?

I am currently _____ years old.

I am currently:

myopic (short-sighted) / hyperopic (long-sighted) / normal,
with approximately _____ Diopters.



Do you know if your eyes will be healthy in the future?

Choose from below a suitable formula according to your current glasses prescription, you can find out how your eyes will be when you are 18 years old!

Formula 1: If you are already short-sighted (greater than or equal to -0.50D)

The diopters at 18 years old = current diopter + 0.50 X (18 – current age)

Formula 2: If you do not have short-sightedness at moment (or less than -0.50D)

The diopters at 18 years old = 0.14 X (18 – current age)

(Note: if you are long-sighted, the two formulae above are not applicable)

When I am 18 years old, my short-sightedness will be approximately _____ Diopters.

If your short-sightedness will be higher than -6.00D, you are classified as having high myopia, then you are at an increased risk of developing serious eye diseases!

You need to know...

No matter whether you are short-sighted or not, you should protect your eyes well and develop healthy habits, in order to prevent short-sightedness from developing or progressing!





The Optometry Clinic at PolyU

Address: Rm A034, The Hong Kong Polytechnic University,
Hung Hom, Kowloon, Hong Kong.

Tel: (852) 2766 5225

Other Eye Care Centres:

1. The Integrative Community Health Centre

Address: Ground Floor, No. 7-10, Yeung King House,
Lai King Estate, Kwai Chung, N.T.

Tel: (852) 2370 1799

2. The Sik Sik Yuen – PolyU Optometry Centre

Address: 1/F, Sik Sik Yuen Social Services Complex,
No. 38 Fung Tak Road, Wong Tai Sin, Kowloon

Tel: (852) 2329 8622

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