

# Smart Use of E-book



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Centre for Myopia Research  
School of Optometry

## What is an e-book?

An electronic book (or e-book) is a book in digital format that can be read on a computer or other electronic devices.

For example:

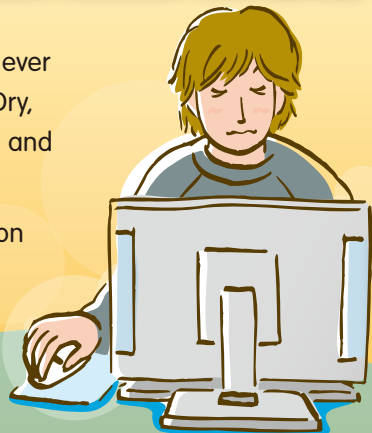
- Electronic book readers
- Desktop or laptop computers
- Tablet computers
- Smartphones



## Have you encountered these before?

While using the computer, have your eyes ever felt tired? A burning, stinging sensation? Dry, watery, or blurry? Do you have headaches and aching of your neck and shoulders?

You may be suffering from "Computer Vision Syndrome" if you experience some of the symptoms mentioned above.



## The causes of eye strain

The causes of "Computer Vision Syndrome" include: reading at close distances; lack of rest throughout prolonged period of using the eyes; working with improper lighting; glare from book or screen surfaces; working without an adequate glasses prescription (required to wear but not worn) etc.



## The importance of smart use of e-book

Nowadays, children are using more electronic devices, whether it is at home or at school. Rather than carrying loads of heavy books to school, in the future, children may simply need to carry a light-weight portable e-book reader.

However, short-sightedness (myopia) in Hong Kong children is a serious concern. Currently, there are 62% of children aged 6 to 17 with short-sightedness. Research has shown that incidence increases with prolonged periods of near work, and constantly viewing at excessively short distances.



It is common to see people wear glasses now and that might make you think it is not a major issue. But you should note that when dealing with short-sightedness, we are not only concerned about the inconvenience of having to wear glasses. You are also at an increased risk of developing eye diseases, such as retinal detachment, macular degeneration, glaucoma, that can lead to blindness in serious cases.

It is crucial to prevent your eyes from getting worse regardless of whether you are short-sighted or not. Therefore, smart use of e-book is very important!

Is this a correct posture for using a mobile phone?



## Good habits of using e-book

- ▶ Make sure you wear your glasses (if required) when reading an e-book.



- ▶ Ensure that room lighting is sufficient, even and stable.
- ▶ Avoid using e-books whilst walking or traveling.

- ▶ Minimize the time on the use of electronic devices (such as computer or portable game console).



- ▶ For prolonged periods of near work, let your eyes rest for **20 seconds** every **20 minutes**. During the break you can:


- Look at sceneries outside the window or at far objects inside the room (preferably at least **20 feet** away), hence allowing the eye muscles to relax.




- Stand up and stretch, or take a walk outside, allowing the body to rest.

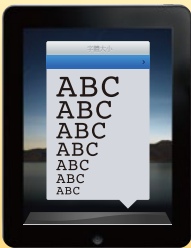
- ▶ Put the electronic devices on a stand or table rather than holding it on hand whenever possible. This will allow our arms and hands to rest.





-  Adjust the angle of the screen or apply an anti-glare screen protector, to reduce the glare off the surface of electronic devices.



-  Use suitable screen brightness and contrast settings based on your current surroundings. Adjustment should be done by dimming the screen brightness and contrast, then slowly increase it until a comfortable level is reached. Light that is too bright or too dim will increase burden on your eyes.



-  Adjust the font type and font size. Choose a simple font type, and adjust the font size, word spacing, and line spacing to a comfortable level.

-  Blink your eyes often to keep them moist; thus decreasing dry eye problems. (Our blinking rates decrease as we concentrate).





Clean the surface regularly to maintain a clear screen.



Place the screen directly in front of you. The top of the screen should be slightly below your eye level with an adequate distance from the eyes. See below:



- Desktop or laptop computer: no less than 50cm



- Tablet computer or e-book reader: no less than 40cm



- Smartphone: no less than 30cm





Sit upright on a comfortable chair. Adjust the height of the chair based on the height of the table, in order to allow your wrist and forearms to rest flatly on the table whilst using the keyboard and mouse.

There should be adequate support for your back whilst sitting down; your knees and hips should be leveled, with feet placed flat on the ground.





You should maintain a proper posture whenever you are using electronic devices whilst standing up or sitting down, even when you are not sitting in front of your desk.





Now back to page 4: Do you think she had good posture when using her mobile phone?

## Other eye health tips



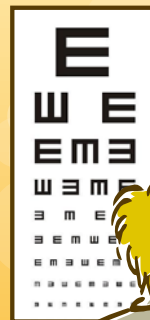
Maintain a healthy and balanced diet.



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



Make sure you have your eyes checked by eye health professionals at least once a year to ensure normal eye and visual health. Early intervention will increase the chance of correcting any eye problems.



## Self-quiz

Let's see how much you have understood on how to develop good habits when using electronic devices?

1. Can I control and adjust the setting of my electronic devices proficiently?
  - a. No but it does not matter
  - b. Yes because that is very important
2. How much time should I spend on using electronic devices?
  - a. Whenever I have time
  - b. Only when necessary
3. How long should I read for before I rest?
  - a. It depends, as I am too busy
  - b. Every 20 minutes, even if I don't feel tired
4. Is it important to reduce glare off the screen?
  - a. No, it does not matter
  - b. Yes because it allows me to have better visibility. I will also use an anti-glare screen protector
5. Which is the best way to adjust screen brightness and contrast?
  - a. Adjust the brightness and contrast to the maximum
  - b. Dim the brightness and contrast settings at the start, then slowly increase it until a comfortable level is reached
6. How often should I clean the screen?
  - a. Not often. I don't mind if the screen is dirty
  - b. Clean regularly to achieve the best clarity



7. Which of the following diagram shows the best posture of using a computer?

a.



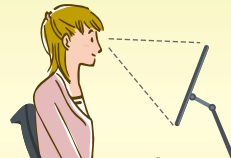
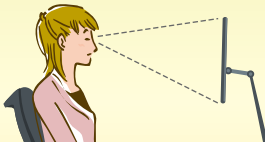
b.



8. Where should the screen be placed when using a computer?

a. Above eye level, and at any distance

b. Slightly below eye level and at a suitable viewing distance



9. What is the correct viewing distance when using a smartphone?

a. The closer the better as the screen is small

b. No less than 30cm, otherwise I will get eye strain



Hope you have correctly answered all the questions on this self-quiz. It's actually very easy to follow these smart tips on using an e-book!



## What can parents do?



- Encourage your children to minimize unnecessary near work and ensure they get enough rest.
  - ✔ For example: setting a limit on the amount of time they can spend on portable game consoles or computers.
- Encourage your children to participate in more outdoor activities, minimizing the time spent on facing electronic screens. Research has shown that the risk of developing myopia and the rate of progression is lower for those who participate in more outdoor activities.
  - ✔ Arrange more outdoor activities outside school hours for your children. Not only will it improve their mental and physical health, it will also enhance your relationship with them.
- Ensure your children are working and reading under adequate lighting conditions at home.
  - ✔ During the day, room lighting can be switched on if it is too dim. Desk lamps may be used if the lighting is still inadequate.
- Remind your children to maintain a correct posture when standing up or sitting down.
  - ✔ Provide a table and chair of suitable heights for them to work with. They should be cautioned immediately if an incorrect posture is used.
- Watch out for any unusual behaviours.
  - ✔ If you find your children always tilting their head, squinting their eyes, rubbing their eyes, or tilting their head down to look up, then you should bring them to an optometrist for a comprehensive eye examination as soon as possible.

## What can teachers do?

- Rearrange students' seating plan in the classroom regularly.
  - ✔ A change in seating arrangement every 6 months will allow your students to experience various viewing distances from the blackboard.
- Encourage students to participate in more outdoor activities.
  - ✔ Encourage them to participate in more outdoor activities or ball games. School can also organize outings such as day trips etc.
- Maintain sufficient and even lighting in classrooms, allowing students to read and write comfortably.
  - ✔ Ensure the number of fluorescent lamps and brightness are adequate. If required, blinds may be adjusted to ensure adequate and even room lighting. The school should be notified if the situation cannot be improved.
  - ✔ Projectors should be well looked after. Brightness and position should also be adjusted to provide adequate contrast and clear images.
- Remind students the correct posture when standing up or sitting down.
  - ✔ They should be cautioned immediately if an incorrect posture is used.





## **The Optometry Clinic at PolyU**

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Hung Hom, Kowloon, Hong Kong.

Tel: (852) 2766 5225

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## **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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