StarSpecial
HEALTHY EYES

Maintaining good eye health in the digital age

IN this digital age, it is important to know how our digital lifestyles effect our health, especially when it comes to eyesight.

Dr Norazah Abdul Rahman, paediatric ophthalmologist at Ara Damansara Medical Centre, says gadgets such as computers and mobile phones cause multiple ocular and vision problems for users.

"Too much screen exposure could lead to computer vision syndrome (CVS) or digital eye strain (DES), characterised by a range of eye- and vision-related symptoms, such as dry eye, blurred vision and risk of early myopia (short-sightedness). While these symptoms may be temporary, it can cause significant and frequent discomfort," she says.

Protecting children

CVS or DES affects children more than adults as their eyes are still maturing. While Dr Norazah recognises the different factors for a child becoming myopic, such as genetics and lifestyles, she says that some studies have shown an association between myopia and excessive exposure to computers at work or playing video games. She urges parents not to expose any child under 18 months to digital screens to reduce the risks of developing myopia.

"Children now have more access and are encouraged to use computers either at home or at schools. Because of this, children are more likely to stay indoors with their gadgets," says Dr Norazah.

"Spending too much time indoors with a gadget will dissuade children from doing any outdoor physical activities. Studies have found that myopic children have lower levels of dopamine compared with children without any vision problems. Dopamine is a chemical produced in the brain that acts as a neurotransmitter, also famously known as a feel-good hormone as it creates feelings of happiness and satisfaction.

"Dopamine helps inhibit the elongation of the eyeball, which is the leading cause of myopia. As dopamine is usually generated through outdoor activities, it is helpful for children to play outside, getting adequate exercise and proper amounts of sleep to both stay healthy and reduce the risk of myopia," she says.

Prioritising sight at work

Dr Norazah is an advocate of practising the 20/20/20 rule, an eye care method where after 20 minutes of visual display unit use, the person has to look at objects over 20 feet away for 20 seconds. This should be practised by people of all ages.

She says the 20/20/20 rule will help minimise the development of accommodative problems and eye irritation. Accommodative problems may occur as a result of the eyes' focusing system "locking in" to a particular target, sometimes causing what is called an accommodation spasm.

She also acknowledges that not everyone, particularly working adults, has the luxury of taking frequent breaks from their computer at work or home, and suggests some ergonomic practices that can be done in the workplace to reduce digital eye strain, as listed below.

- Maintain normal blinking during computer usage
- Use artificial tears
- Proper correction of underlying refractive errors
- Use appropriate lighting
- Carefully position your digital device
- Adjust image parameters (resolution, text size, contrast, luminance) for better eye comfort
- Improve contact lens comfort
- Take breaks

Prevention is care

Knowing the risks and effects of digital screens on our eyes, what can we do to manage our risk exposure?

"Prevention is the main strategy for management of digital eye strain," says Dr Norazah.

"This can be done through patient education and implementation of ergonomic workplace policies, regular visual examinations and eye care to treat visual disorders, and special consideration for people at high risk of DES."

She also notes that awareness for children's eyesight is still low in Malaysia.

"Parents seldom notice the signs of visual problems in children, such as squinting, rubbing their eyes and frequent blinking. This slows the application of therapy by a specialist and it can have serious health consequences."

The art of regaining sight

The advice above is helpful to reduce one's risk of preventable vision problems. However, what happens if a person already has poor vision related to a refractive error such as myopia, hyperopia or astigmatism?

Dr Ainur Rahman Anuar Masduki, consultant ophthalmologist and corneal surgeon at Ara Damansara Medical Centre, presents the many choices that modern medicine has to offer.

"There are surgical and non-surgical methods to treat refractive errors. Non-surgical methods include spectacles and contact lenses.

"As for surgical methods, there is refractive surgery and cataract surgery. Refractive surgery is where the cornea is reshaped to correct a person's refractive error, as two-thirds of the eye's focusing power is in the cornea," he says.

According to Dr Ainur, laser-assisted in situ keratomileusis (LASIK) is one form of refractive surgery, and is considered well established, safe and predictable with good patient satisfaction.

It is also the most frequently carried out refractive procedure. However, careful selection of patients is key to a safe and successful outcome, as some patients are not suited for refractive surgery or at a higher risk of poor visual outcome, and should hence never undergo surgery.

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Dr Ainur says LASIK is one of the many forms of refractive surgery and is considered well established, safe and predictable with good patient satisfaction.

LASIK can be performed conventionally (microkeratome) or with a femtosecond laser. It is also divided into standard or customised (wavefront- or topography-guided).

Cataract surgery, too, has come a long way. Dr Ainur elaborates, "Traditionally, cataract surgery is done by making a big cut in the cornea to remove the lens in one piece. However, recovery can take up to three months, as stitches are needed to close the wound and have to be removed from the eye gradually.

"Small incision cataract surgery followed, where a smaller cut is made and a tube is inserted into the eye to vacuum out the lens. It is also called phacoemulsification as ultrasound is used in addition to the vacuum to remove the hard cataract.

"Laser-assisted cataract surgery was introduced around 10 years ago. It assists the surgeon in doing some of the major steps in cataract surgery, including pre-softening of the dense cataract before vacuuming it out. In most cases, this allows for reduced or no ultrasound use during surgery, potentially hastening recovery."

Good vision for all

While laser-assisted eye surgery is slowly edging into eye care, Dr Ainur does not think it will affect the practice of conventional cataract surgery in Malaysia.

"In my opinion, conventional cataract surgery will not be made obsolete, as laser-assisted surgery is costly for both the hospital and patient. Only a handful of hospitals and eye centres in Malaysia have the equipment to carry it out, and the fees for the surgery can be substantially higher.

"As not everyone can afford this treatment and conventional methods are equally safe, conventional surgery will not be made obsolete. Both types of surgeries have their pros and cons in terms of cost, recovery time and risks, but it does not take away the fact that in both, patients' eyesight is restored," says Dr Ainur.

Medical advancements have come a long way in helping people maintain or even improve their sight. The greater danger lies in people opting to delay a visit to a specialist, accepting vision loss or refusing medical help. It is crucial for people to know they should seek early medical intervention while the problem is still treatable.

■ For more information, call 03-5639 1212.

A hidden threat

Most people cannot escape digital eye strain (DES). However, while children experience the same symptoms as adults, they are more susceptible because of unique factors, such as:

- **Lack of self-awareness** – When a child performs an enjoyable task, such as playing video games, he will forget to take breaks or blink normally, causing eye focusing problems and eye irritation.
- **The ability to adapt** – While adaptability is usually an advantage, it can cause more harm than good when children ignore their eyesight problems. A child may not change the settings of a computer that is emitting excessive glare or tell their parents about their blurred vision because of a lack of understanding.
- **Ill-designed gadgets** –The most efficient viewing angle of a computer is a slight downward angle of 15°. As most computer workstations are designed for adult use, and children are smaller in size, they have to look upwards instead of downwards, causing eye strain.
- **Non-optimal lighting** – Because the lighting level for the proper use of a computer is about half as bright as normally found in a classroom, a child might increase the brightness of the computer screen to fit his surroundings. Increased light levels can contribute to excessive glare and cause problems associated with adjustments of the eye to different levels of light.

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