

THE prevalence of dry and tired eyes is becoming a serious issue faced by Malaysians of all ages. This is tied to a condition known as computer vision syndrome, which arises following repeated and prolonged exposure to digital screens.

Symptoms of computer vision syndrome include blurred vision, eye irritation, dryness in the eyes and general discomfort in the ocular region. It is a common misconception that the effects of

Reducing digital eye strain

computer vision syndrome are limited to just the eye. The truth is that surrounding nerves can also be affected, leading to shoulder and neck soreness, headaches, vertigo and feelings of fatigue.

Furthermore, these symptoms are also associated with an

incorrect lens prescription or certain emotional states such as anxiety and stress. This unfortunately leads people to inadvertently seek treatment for the symptoms when in reality, they are suffering from computer vision syndrome.

A rising concern amongst Malaysians

While Malaysians have over the years been incorporating more digital technology as part of daily life, the Covid-19 pandemic has accelerated adoption, drastically increasing harmful exposure to blue light and glare.

A study titled *Computer vision syndrome among university students: A cross sectional study from Perak, Malaysia* published in the *Quest International Journal of Medical and Health Sciences* surveyed 168 Malaysian university students and found that 76.7% of them were suffering from symptoms of computer vision syndrome.



Dr Linda Ong Su Lin.

digital strain on the eyes.

What can we do about it?

Dr Linda Ong Sui Lin, an eye specialist at Damansara Specialist Hospital 2, advocates for lifestyle changes as the first defence against computer vision syndrome. While spending some time on the monitor screen is unavoidable in the modern age, Dr Ong shares the following tips for reducing the

● Keep track of screen time

As a person stares at a digital screen for an extended period, blinking is reduced by as much as 0%. This causes the eyes to become drier over time. We have to consciously remind ourselves to blink regularly when using screens.

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Adapting the Asian work ethic

The fast-paced Asian work ethic drives many Malaysians to constantly work harder and overcome their limits in both academics and the workplace. It is not uncommon for people to put in extra hours into a project to produce a more satisfying and competent result.

However, with the rapid digitalisation of the economy, a natural consequence is that working harder requires spending longer hours on digital screens. Following the pandemic, more people were found seeking consultation from eye specialists due to symptoms of dry eyes and loss of visual acuity.

One of the most affected groups are school children, who have yet to develop proper screen time management skills nor conscious of its negative effects on eye health. With educational institutions looking to incorporate online and hybrid learning into their curriculum, more younger students will be doing homework and attending classes on video displays.

Many working adults have also been affected by this wave of digital transformation. Between checking emails on the computer screen and communicating with clients via mobile phones, the average person will easily exceed the

recommended two hours of daily screen time.

Recreational activities to de-stress after work such as playing video games and watching television also contributes to the population's worsening habits regarding electronic devices.

As digital technologies evolve to provide greater conveniences, the people's perception of 'hard work' must adapt as well. Putting in extra effort into academics and career development is no longer solely about spending extra time on an immediate assignment, but also includes protecting one's eye health to ensure efficient work productivity over a longer period.



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Can steroids affect vision?

FORTY-EIGHT-YEAR-OLD housewife Madam Ida is a diabetic who goes for yearly eye examinations to screen for diabetic retinopathy. While her eye examination was spotless in December 2020, she started to notice her vision deteriorating six months later.

She found it difficult to read small prints and she could no longer drive at night as she described the oncoming headlights as “splitting”. The glare was worse in low light conditions and when it was raining.

On examination, her ophthalmologist noticed dense cataracts had developed in both of Madam Ida’s eyes. The rapid progression of cataracts, or conversion of clear lenses to have whitish or yellowish discolouration, is quite unusual. Though part of the ageing process, this usually takes years to progress. Upon questioning her diabetic control, she claimed her random blood sugar was within the normal range, but a random blood glucose test in the clinic revealed that her level was 20 mmol/L (normal range is below 11 mmol/L after meals). She later admitted to taking a traditional medication that claimed could boost her energy. She had been taking the tonic every day for the past six months. The doctor strongly advised her to stop taking any traditional medication that may contain steroids.

Lily is a 14-year-old patient who came with her father complaining about bilateral eye pain. On examination, it was noted that her vision was poor with a constricted visual field. Her intraocular pressure was high, and her optic disc was pale and cupped, with the residual functioning nerve of about 10% in each eye. It was discovered that Lily had glaucoma.

Glaucoma is a progressive disease usually caused by abnormally high intraocular pressure, either due to an increase in the

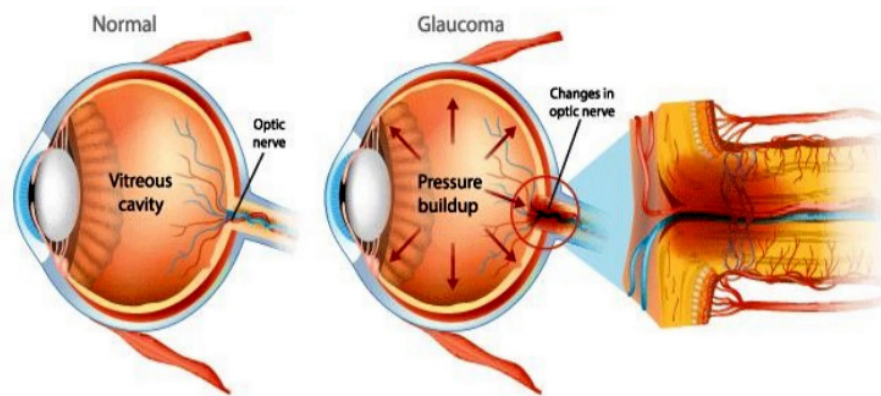


Dr Azlindarita @ Aisyah Mohd Abdullah.

fluid production in the eyeball or reduced drainage of the said fluid, called the aqueous humour. The effect of glaucoma is usually blindness if left untreated. Since Lily had no family history of glaucoma, the ophthalmologist enquired further if she had been using any over-the-counter eyedrops without a prescription.

Lily’s father remembered that she had an episode of allergic conjunctivitis when she was 11 years old. They had gone to see a different ophthalmologist then, who gave them a bottle of eyedrops containing steroids. They never returned for a follow-up session and her father continued purchasing the medication from a pharmacy.

“These two cases, are real-life cases of misuse of steroid-containing supplements and medications, resulting in catastrophic events. Fortunately, for Madam Ida, cataract is easily treated with surgery. However, she is still at risk of the side effects of prolonged steroid use including high blood pressure, osteoporosis, thin skin, bruising and slower wound healing, weight gain and increased



Improper steroid use can cause pressure build-up and optic nerve changes via glaucoma.

risk of infection. Sudden withdrawal of steroids can cause slow recovery of suppressed adrenal gland hormone production,” says MSU’s Medical Centre general and paediatric ophthalmologist Dr Azlindarita @ Aisyah Mohd Abdullah.

The majority of patients who have been taking steroid-containing supplements are unaware of the possible side effects of long-term use. Most physicians would discourage patients from taking any supplements, tonics or herbal juice which do not clearly label the content. Most of these supplements have been approved as food products by the Health Ministry, but later sold under wrongful labels as health products.

Unfortunately for Lily, glaucoma due to steroid use, or “secondary glaucoma”, is irreversible. The high intraocular pressure is due to a change in the micro-structure in the drainage system in the eyeball, causing high resistance to the flow. Medication alone was not enough to control the pressure, thus Lily had to undergo bilateral glaucoma surgery to prevent her from losing her remaining eyesight.

Strict regulation on over-the-counter medication should be in place to prevent misuse of medication containing steroids, particularly eyedrops. The Asian population, particularly children are prone to be steroid responders, a condition in which the intraocular pressure will increase after a short exposure to steroid eyedrops and the pressure goes back to normal once the usage is stopped. A study in Singapore showed that the figure can be as high as 28%, with 5% of children progressing to develop glaucoma.⁽¹⁾

This regulation should include the refusal to sell eyedrops containing steroids without a prescription from a doctor, nor be available over the counter. A doctor should not prescribe them for more than one week if one does not have the means to monitor the intraocular pressure of the patient.

Reference

⁽¹⁾*Steroid-induced ocular hypertension in Asian children with severe vernal keratoconjunctivitis*, Marcus Ang et al, *Clinical Ophthalmology*, 2012;6:1253-8.



Take proper precautions

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“When our eyes do not blink enough, our tears evaporate more easily due to exposure to open air. Making a deliberate effort to blink regularly helps refresh the tear film in front of our eye while providing a brief respite from the screen.”

There is also the 20-20-20 rule to reduce fatigue and eyestrain, where a person takes a 20-second break from their screen every 20 minutes by focusing on a distant object 20m away. In addition, a person should take longer 15-minute breaks after every two hours on the computer.

● Maintain a comfortable sitting position

Good posture goes a long way in minimising eye strain when working at a desk. Dr Ong advises people to make the following adjustments to one’s working environment to improve eye posture.

“Whether you are a student or an office worker, finding a proper chair with good ergonomics is preferable when expecting to work for long periods. This positions our eyes in a comfortable angle to view the monitor easily and accurately.”

There are also other ways to improve one’s work environment for the eyes, such as sitting up straight and refraining from slouching. The monitor should also be positioned about 80-100cm away from the body and the centre of the screen should stay slightly below eye level.

● Improve lighting

To reduce strain on the eyes, the monitor’s brightness setting should be relative to the luminosity of the room. It should neither be too bright nor too dim. Other external sources of light such as sunlight or a ceiling lamp, should not be reflecting off the monitor as it causes indirect strain to the eyes.

Fortunately, recent technologies such as anti-glare lenses, blue-light filters, flicker-free technology and high refresh rate monitors reduce the damage done by prolonged use of computers.

In cases where computer vision syndrome persists, it is best to seek medical attention for a thorough eye examination, following which the ophthalmologist may recommend treatment with an eye drop prescription, glasses adjustment or correctional vision therapy.

The mass digitalisation of the Malaysian lifestyle has led to many benefits such as the accessibility of information and streamlined communication methods. However, it is important to mitigate the harmful effects caused by it and take proper measures to reduce eyestrain.

As more children and young teenagers are exposed to digital screens, it is up to adults to lead by example on how to use them safely and responsibly.

■ For more information, call 03-7717 3000.

Food that are good for your eyes

GOOD eye health starts from a well-balanced diet containing a variety of proteins, fruits and vegetables. Good eye health can be maintained by incorporating vitamins, antioxidants, minerals and carotenoids into your daily food intake. Micronutrients like omega-3 fatty acids, lutein and zinc help protect against macular degeneration and cataracts in older adults.

A healthy and balanced diet is important to keep your eyes and vision healthy and avoid serious eye complications.

Here are some of the nutrient-rich foods for good eye health.

Orange-coloured fruits and vegetables

Orange-coloured fruits and vegetables that are high in vitamin A are the best nutrients for eye health.

Carrots are universally known as the holy grail of eyes and vision. It contains lutein and beta-carotene which convert to vitamin A in the body. Other orange fruits and vegetables such as sweet potatoes, cantaloupes, mangoes and apricots are also high in vitamin A and beta-carotene.

The eyes need vitamin A to transform light rays into images and keep the eyes moist whereas beta-carotene helps with night vision. These fruits and vegetables are easy to eat on the go. Carrots and mangoes can be added to salads while sweet potatoes and cantaloupes can be eaten as a midday snack.

Fish

Fishes such as tuna, salmon, sardines and mackerel are important for the eyes as they are rich sources of omega-3 fatty acids. Omega-3 fatty acids contribute to visual development and maintain the health of the retina.

The fatty acids also protect the eyes from age-related macular degeneration (AMD) which is an eye disease that causes blurring of the central vision and glaucoma. Consuming these fish also prevents dry eyes.

Leafy vegetables

Leafy greens such as spinach, collards and kale are rich in antioxidants such as lutein and zeaxanthin. These minerals are the key to maintaining the macula, which is the area of the eye that provides central and most detailed vision.

As lutein and zeaxanthin are not produced by the body, these antioxidants must be obtained through food. A hundred grams of kale provides approximately 11.4mg of lutein and it is recommended to consume about 10mg of lutein and zeaxanthin per day to maintain good eye health.

These minerals aid in the prevention of major eye disorders including macular degeneration and cataracts.

A balanced diet is the best way to get eye-healthy nutrients. Consume a variety of whole, unprocessed foods daily to ensure your eyes work at their best.

