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HEALTHY EYES

Do not take visual changes lightly

HAVE you ever noticed a slight change in your appearance around your eyes or oddities regarding your sight? This may be in the form of retraction of your eyelids, puffiness around your eyes or a blurred vision that does not improve even after you blink or close your eyes multiple times.

Eyelid retraction is when your eyelid draws further back than usual, exposing a larger surface area of the eyeball either above or below the cornea or both. While puffiness around the eyes can be considered a normal occurrence

for some individuals, eyelid retraction certainly is not. It is, however, a common first indication that you may be living with Graves' eye disease, or commonly known as thyroid eye disease.

Consultant ophthalmologist and oculoplastic, lacrimal and orbital surgeon at Ara Damansara Medical Centre (ADMC) Dr Nazila Ahmad Azli says that thyroid eye disease is an autoimmune condition where the body's immune system attacks the tissue surrounding the eye. "It is a condition in which the eye muscles, eyelids, tear glands and fatty tissues behind your eyes become inflamed."

She goes further to add that in most cases, the same autoimmune condition that causes thyroid eye disease also affects the patients' thyroid gland to enlarge, resulting in them developing

Graves' disease. "Graves' diseases most commonly cause thyroid overactivity (hyperthyroidism) but they can also cause thyroid underactivity (hypothyroidism) although rarely."

Anyone can develop the disease. Dr Nazila shares there are occasions when patients come in to get their eyes checked for certain eye conditions, only to surprisingly learn after further testing that they are living with thyroid eye disease.

Affecting the lifestyles of many

Changes in appearance is not the only way in which thyroid eye disease affects people. Dr Nazila explains, "For patients with the mildest form of thyroid eye disease, the most they would have to do is to lubricate their eyes as often as they can as excessive dryness is one of the most common symptoms of thyroid eye disease."

In more severe cases, however, thyroid eye disease can affect patients' psychological and social well-being. She acknowledges, "Changes in appearance due to

thyroid eye disease can lead patients to have low self-esteem, loss of confidence and even depression. Relationships might also be affected, both socially and at work."

This does not come as a surprise as the face and eyes are the main elements of interaction between people. A change in physical appearance can affect the manner in which people react to you, which is obviously difficult for patients to cope with. She also adds that it is normal for patients to suffer from mood swings, anxiety or feel irritable due to fluctuating thyroid levels.

For those diagnosed with thyroid eye disease, 85% have thyroid overactivity, 10% have thyroid underactivity while 5% have normal thyroid activity. "Women are five to six times more susceptible to get diagnosed with thyroid eye diseases compared to men. However, men are more susceptible to develop a severe form of thyroid eye disease compared to women with a ratio of four to one," Dr Nazila reveals.

Like many other diseases, smoking is one of the risk factors of



Dr Nazila Ahmad Azli.

thyroid eye disease. Dr Nazila states that the chances of cigarette smokers to get diagnosed with thyroid eye disease are about seven to eight times higher compared to non-smokers.

Patients that have been diagnosed with Graves' disease and received radioiodine treatment are also at risk of getting thyroid eye

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Refractive errors and low vision

CAUSING blurred vision that may lead to blindness when left untreated, refractive error occurs in four types; myopia (near-sightedness), hyperopia (far-sightedness), astigmatism (caused by an irregularly curved cornea) and presbyopia (difficulty in reading or seeing at arm's length).

According to Dr Azlindarita @ Aisyah Mohd Abdullah, consultant general and paediatric ophthalmologist at Management and Science University (MSU) Medical Centre, normal sight is when light entering the pupil is focused by the cornea and the crystalline lens onto the retina.

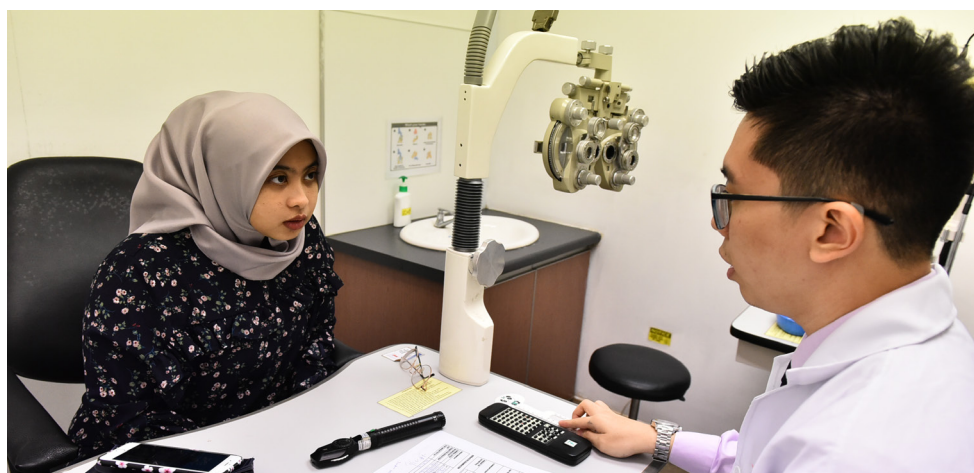
In cases of myopia, where the eyeball is too long or the focusing power of the lens or the cornea is too high, the entering light focuses in front of the retina. Correcting it requires a concave or a "minus power" lens.

Hyperopia involves the eyeball being too short or the focusing power of the lens or cornea being too low when the entering light focuses behind the retina. It is a less common condition yet still treatable by a corrective convex or a "plus power" lens.

When the cornea or the lens is more curved in one direction than another, as in an astigmatic condition, the entering light focuses at different points in front of and behind the retina. Astigmatism can be corrected by a cylindrical lens.

Symptoms and prevalence among Malaysian children

Children below the age of two who live with refractive errors may appear cross-eyed, tend to bring objects very close to their eyes, or come closer to objects (such as the television). Abnormal head postures (AHPs) that they adapt to improve vision such as a face turn, a head tilt or a chin lift may indicate astigmatism. Older children



Early treatment is crucial in correcting refractive errors and maintaining good vision.

may squint or decrease the eye aperture when looking at distanced objects and may still display AHPs.

School-going children may complain of headache, eye strain, or plain inability to see clearly in the classroom. Their poor eyesight could be the culprit behind reduced school performance.

In 2010, myopia and high myopia were respectively estimated to affect 27% (1,893 million) and 2.8% (170 million) of the world population [Myopia and High Myopia Impact Report by WHO and Brian Holden Vision Institute, 2015]. Myopia is most prevalent in East Asia; with China, Japan, the Republic of Korea and Singapore recording approximately 50% lower prevalence, and lower still in Australia, Europe, and North as well as South America.

A population-based cross-sectional 2003 survey done in Gombak district reports overwhelming cases of myopia; 87% of students with reduced visual acuity had myopia, and half of them who needed

refractive corrections were without glasses.

The high prevalence of myopia among Asians may be attributed to genetics but the steep increase in the number of cases may also be due to factors such as excessive use of gadgets, reduced sun exposure, increased indoor-time, and late intervention for correction.

A common misperception among parents in Malaysia delaying treatment in their children is a fear of glasses further deteriorating an already declining vision. The fear is unfounded as clear visual stimulation is especially needed for children to develop to their full potential. Early treatment will also help prevent amblyopia or lazy eyes.

Hoax eye-drops and products sold over-the-counter or online that claim to cure refractive errors pose dangers. Usually approved as food products, they are not medication. Their false assurance to parents will only delay prompt and proper treatment.

Treatment options for children with refractive errors

Glasses are the simplest option and carry less risk of infection compared to contact lenses. Very high-powered glasses, however, can be uncomfortable to wear, warranting the use of contact lenses instead.

In China, Singapore, Hong Kong and Korea, atropine eye-drops in low concentration have been used to safely slow down myopia. However, it should only be given by ophthalmologists who must also monitor the patient's vision power as well as eyeball length.

A special contact lens worn at night, called the orthokeratology lens, has shown promising results in slowing down progression of myopia in children. However, it has a slightly higher risk of infection as it is worn overnight and care may be lax on the hygiene aspect.

Myopia usually progresses yearly and stabilises by the late teens to the early 20s. Past 21 years of age, laser surgery can be an option if the patient's affected eye is not still growing or changing.

MSU offers the four-year Bachelor of Optometry (Hons) and the three-year Diploma in Ophthalmic Dispensing programmes at the Faculty of Health and Life Sciences (FHLS).

In a concerted effort at bringing vision health's importance into focus, the university holds an annual MSU Eye Carnival, organised by the MSU Eye Centre, the MSU Optometry Students Club, and the FHLS' Department of Optometry and Visual Science.

With many children across the world belonging to families who cannot afford even an eye examination, blindness prevention aided by the university reduces the statistics while helping children see better, achieve more, and excel in school.

Be vigilant in the fight against glaucoma

GLAUCOMA is an ancient term and etymology that describes the bluish-green colour of the pupil, which is typical of the end stage of the disease.

It was mistaken for cataract until the beginning of the 18th century when it was proved that they differ greatly from one another. Cataract is the leading cause of blindness worldwide while glaucoma is the leading cause of irreversible blindness in the world.

Globally it is estimated that about 76 million people suffer from glaucoma, and is predicted to reach 111.8 million by 2040. The magnitude of glaucoma is expected to keep increasing with population growth and an increasing number of ageing people.

Based on the National Eye Survey II (NES II), the estimated prevalence of irreversible glaucoma blindness is 6.6% in Malaysia's blindness population over 50 years of age.

Glaucoma is a multifactorial condition which is clinically defined as a group of progressive optic nerve damages having characteristic patterns of visual field loss. The etiological pattern is a combination of vascular, genetic, anatomical and immune factors involved in the pathogenesis of glaucoma.

The condition shows no signs or symptoms until later stages and if left untreated, leads to impaired vision and eventually worsens into blindness.

Intraocular pressure is the only known modifiable risk factor. Other important risk factors include older age (>50 years), gender, refractive error, genetics, family history, smoking, race, several systemic medical conditions, vasospasm, use of systemic or topical steroids, migraine, eye injury and obstructive sleep apnea syndrome.

Glaucoma diagnosis criteria are well



Dr Suresh Subramaniam.

Glaucoma is a multifactorial condition which is clinically defined as a group of progressive optic nerve damages having characteristic patterns of visual field loss.

defined and have to be strictly observed. The earlier the disease is diagnosed, the earlier the patient can undergo the most suitable treatment and the better the prognosis. – **By Dr Suresh Subramaniam, consultant ophthalmologist, glaucoma specialist at Optimax Eye Specialist Centre (Ipoh)**

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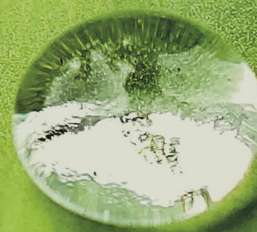


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Precaution and prevention

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disease. According to a meta-analysis published in *Clinical Endocrinology*, people of Asian ethnicities had a higher prevalence of thyroid eye disease compared to Caucasians.

Solving the problem

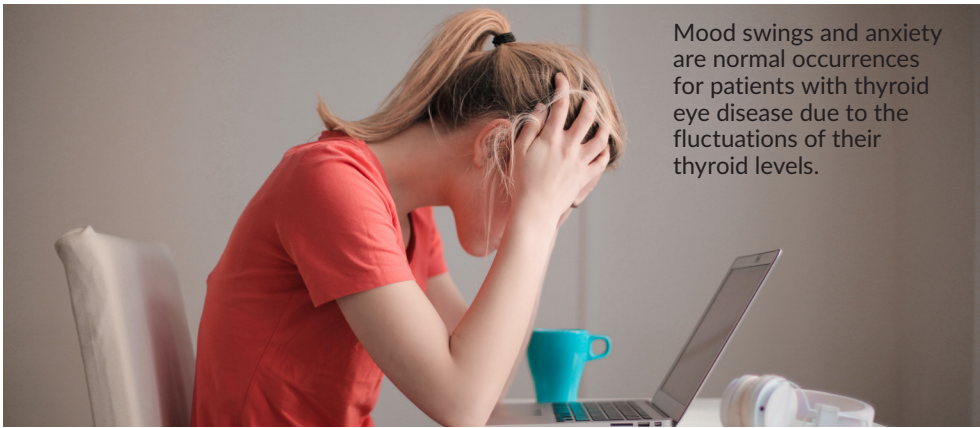
Treatment for thyroid eye disease will generally depend on the stage in which patients are diagnosed – active or in remission. Dr Nazila explains, “If it is in an active phase, physicians will identify the severity of the disease. If it is mild, doctors will prescribe artificial tears for patients to use throughout the day and gels or ointments at night to protect the eyes from dryness.” Selenium supplementation has also shown to be beneficial in reducing the severity and progression of disease in patients with mild thyroid eye disease.

Patients who experience a moderate form of the disease are treated with steroids, which can be given orally or intravenously. Steroid therapy is often paired with other treatments such as immunosuppressive agents or radiotherapy to help manage the disease more efficiently and prevent relapse.

Unfortunately, patients with thyroid eye disease are often left with a permanent double vision or a change in the appearance of their eyes, during the remission phase. In order to correct this, some physicians might suggest a surgery called orbital decompression. “It is a surgery where doctors will create more space behind the eyes to relieve some of the pressure on the nerve, or if there is a lot of protrusion of the eyeballs. This will allow the eyes to return to their near normal position within the socket, so they can close their eyes better,” Dr Nazila explains. Squint and eyelid surgeries may also be performed sequentially to correct the appearance.

The good news is that there are ways to help prevent and manage thyroid eye disease, which are generally categorised as primary, secondary and tertiary.

Dr Nazila shares, “Primary prevention is where you remove the risk factors such as smoking cessation and stress reduction. This is something that you can control unlike genetics, gender and age. Secondary prevention relates to early detection. Once you notice the signs and symptoms of thyroid eye disease, immediately make an appointment with your doctor so you can



Mood swings and anxiety are normal occurrences for patients with thyroid eye disease due to the fluctuations of their thyroid levels.

do a complete work-up. Tertiary prevention is when you are already diagnosed with the disease but you need to minimise the progression and reduce complications. This is crucial as treating thyroid eye disease can take a long time.”

Breaking down the misconceptions

In the era where everyone can easily have access to a wide variety of information, it is common for some doctors to hear about certain misconceptions patients may have regarding the disease. According to Dr Nazila, the most common misconception she hears is that thyroid eye disease can only occur if you have overactive thyroid levels. She dismisses, “This is simply not true because thyroid eye disease can develop even when your thyroid level is normal or low.”

Other than that, patients always think that treatments for Graves’ disease will automatically help in treating thyroid eye disease. “While both diseases stem from the

immune system’s attack on healthy tissue, one disease does not directly cause the other. Hence, the treatment for the thyroid gland, while important, does not improve the condition of thyroid eye disease or vice versa. The two diseases run their separate courses and do not necessarily occur at the same time,” she warns.

Dr Nazila believes that like any other disease, there is always room for improvement in regard to the understanding of the disease and the treatments available. As thyroid eye disease is multifactorial, there are many risk factors that researchers can continue to study on and its direct effect on the disease.

She is also optimistic on the exploration of treatments such as immunotherapy as a treatment option and study its safety and efficacy to replace the usage of steroids. She believes such discoveries will be a game changer in treating thyroid eye disease, but until then, she advises people to be alert and act immediately should they experience changes around their eyes.

■ For more information, call 03-5639 1212.

What are the symptoms of thyroid eye disease?

If you experience a combination of these symptoms, it would be advisable to consult your doctor and ask if it could be thyroid eye disease:

- Change in the appearance of the eyes
 - eyelid retraction
 - bulging or staring in either one or both eyes
- A feeling of grittiness in the eyes or

excessive dryness in the eyes

- Watery eyes
- Intolerance of bright lights
- Swelling or feeling of fullness in upper or lower eyelids
- Redness of the lids and eyes
- Blurred or double vision
- Pain in or behind the eye, especially when looking up, down or sideways
- Difficulty moving the eyes

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Understanding symptoms and treatment for cataract

WITHOUT a doubt, sight is the most important of the five human senses. It allows us to connect with the environment and protects us from peril. A clear refractive system is crucial to focus light from an object to the retina. Within this refractive system, there is an integral component called the lens, a transparent structure which permits light transmission into the eye seamlessly.

Unfortunately, unless you have ambrosia served by a dove daily, the lens undergoes senility changes, losing its transparency as age catches up. This loss of transparency or opacification is medically known as cataract. Derived from the Latin word *cataracta*, which means waterfall, the term has been used metaphorically to describe the appearance of mature lens opacities, akin to rapidly running water that turns white.

Blurring of vision, glare, haloes, frequent change of prescription spectacles are the tell-tale signs of cataract.

The human lens is synonymous to the lens of a camera. Photos taken will be suboptimal if the lens is blurred. This analogy can be applied to cataract, where an opaque lens reduces light transmission into the eyes and fails to precisely focus the light

rays on the retina.

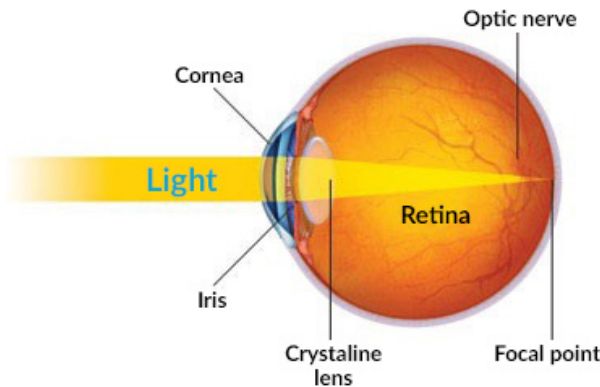
The only treatment for cataract is surgery. There are no proven medications or supplements that can cure cataract.

Modern cataract surgery is termed phacoemulsification in which the lens is emulsified with an ultrasound device and removed via aspiration. An artificial lens will then be implanted to restore vision. It is safe, painless and commonly performed as a daycare procedure. Visual recovery is rapid with patients attaining functional vision in merely a few days.

Cataract should be treated once it affects one’s vision and waiting for the cataract to mature is a myth.

Cataract surgery has evolved rapidly and its use is not limited to the elderly with cataract. It is also used to treat other conditions such as near or long-sightedness, astigmatism and presbyopia.

Technology advancement has produced a plethora of intraocular lenses that rectify the aforementioned disorders. Therefore, it is imperative to discuss with your ophthalmologist at length to plan and personalise your care. – **By Dr Faith Ho Fui Li, consultant ophthalmologist at Optimax Eye Specialist Centre (Kuching)**



Clear lens transmits light and precisely focuses it onto the retina.