



eye health

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Thousands in the
UK suffer poor sight
through late diagnosis

— Page 05
Regular eye tests
can save your life as
well as your sight

— Page 11
Healthy eating helps
keep eyes strong and
free from disease



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Ryan McVay

Focus on correcting the nation's sight

Sight is considered to be the most precious of our senses. Yet, all too often, it is taken for granted and the health of our eyes left to chance, as **Peter Archer** reports

OVERVIEW

■ Every day 100 people in the UK start losing their sight, adding to the two million already living with problems seeing.

Sight loss affects people of all ages but, as we get older, we are increasingly likely to experience difficulty with our vision.

With an ageing population and the onset of a diabetes crisis, bringing with it eye health complications, the number of people with sight loss is set to double to nearly four million by 2050.

However, experts say more than 50 per cent of sight loss could be avoided through improved eye care and early detection of problems.

Lesley-Anne Alexander, chief executive of the Royal National Institute of Blind People (RNIB), says: "Research tells us that sight

is the sense people fear losing the most, and RNIB has current evidence to show that late diagnosis and poor access to treatments is unnecessarily robbing thousands of people of their sight.

"In a country such as the UK, it's unbelievable that so large a number of people, who could be treated, face the devastating impact of poor sight."

The Government has made eye health a public health priority and pledged to track three major causes of sight loss – glaucoma, age-related macular degeneration and diabetic retinopathy.

The Department of Health says patients deserve high-quality health care on the NHS. "That's why we have prioritised eye health under our reforms to help ensure that vision problems are identified, treated and prevented as early as possible," says a spokesperson.

"A new eye health indicator on preventable sight loss was developed in partnership with a variety of professional bodies and charities, including the RNIB. Clinicians, opticians and other health professionals now have to work together, and focus on preventing poor eye health and delivering excellent care to their patients."

Ms Alexander acknowledges the Government's role. "The introduction of the new eye health indicator in the Public Health Outcomes Framework shows some commitment to improving the eye health of the nation," she says. "This is a major breakthrough for tackling avoidable sight loss and could potentially make significant savings for the NHS."

Eye care costs, according to a study for the RNIB by Access Economics, are expected to rise to £7.9 billion by 2013, repre-

senting a largely avoidable drain on NHS resources.

Failure to invest in early detection and treatment of eye conditions means increased spending on health, social care, education and training to support people in the later stages of eye disease. Therefore, there is a sound moral and economic case for early intervention. Australian research has shown a four-fold return on investment in early eye care intervention.

"We will continue to fight to ensure patients have access to safe and effective sight-saving treatments on the NHS, and identify and challenge poor service provision wherever we find it," says Ms Alexander.

"But it's also important that we encourage people across the country to look after their own eye health and the most important thing we can all do is to go

100
 people in the UK start losing their sight every day

Source: RNIB

£7.9bn
 – cost to NHS of eye care by 2013

Source: RNIB



1 in 10 people have never had an eye test

Source: The Eyecare Trust

Access to quality eye healthcare should be everyone's right

for regular eye tests."

Some 20 million people in the UK fail to have their eyes checked at least once every two years, as recommended, and one in ten have never had an eye examination, according to The Eyecare Trust's *State of the Nation's Eyes* report.

And experts agree that smoking and obesity can double the probability of sight loss. So not smoking and a healthy diet with regular exercise can contribute to improved eye health as well as overall fitness.



In a country such as the UK, it's unbelievable that so large a number of people face the devastating impact of poor sight

Seeing light at the end of the tunnel

Knowing what to expect from eye care professionals depends on good communication which can empower and reassure patients, as Liz Bestic discovers

EYE CARE

A recent report by the Royal National Institute of Blind People (RNIB), entitled *Preventing Avoidable Sight Loss*, touched on a lack of communication between optometrists and their patients. Some of the problems were recognised in the UK Vision Strategy launched in 2008.

This aimed to bring together, for the first time, users of eye care services and professionals from the health and voluntary sectors with government to produce a unified plan for action on all issues relating to vision in the UK.

On the back of the new strategy, *You and Your Vision – A Charter for Eye Care and Sight Loss Services* was launched outlining, in clear and jargon-free language, what people should expect on their eye care journey from the first visit to an optician to seeing a consultant ophthalmologist in a hospital eye department.

“There was a concern that some people were walking away from their hospital appointments not really understanding what was wrong with their eyes or what would happen next,” says Anita Lightstone, programme director of UK Vision Strategy.

“*You and Your Vision*’ tells you what to expect from a quality service so you come away from your appointment with the eye doctor



Leslie Harris

knowing what’s wrong with your eyes, when your next appointment is going to be and knowing you can take someone with you to your consultation,” says Ms Lightstone.

Eye disease, as opposed to sight conditions resulting in the need for glasses, is generally managed at the hospital by consultant ophthalmologists. These are the doctors who manage serious eye conditions such as cataracts, age-related macular degeneration (AMD)



Waiting times for cataract surgery have improved enormously

and glaucoma. They also perform operations on the eye.

Optometrists test the eyes and ensure they are healthy. However, they are getting more and more involved in the routine monitoring of conditions such as glaucoma.

Other professionals concerned with eye care are orthoptists, who are qualified to identify and treat certain eye conditions, such as a squint or double vision. They work mainly with the ophthalmologists and ophthalmic nurses involved in specialist eye care.

Amanda Hayhurst from the Royal College of Ophthalmologists believes things have changed for the better. “There was recognition that ophthalmologists needed better communication skills particularly when breaking bad news,” she says. “It can be devastating to be told you

Eye care professionals should focus on ensuring patients are kept well informed

2m
with sight loss
in the UK

4m
could suffer sight
loss by 2050

50%
of sight loss
is avoidable

Source: RNIB

are going blind but, even where there may be no treatment, the focus now is very much on what can be done in terms of rehabilitation, low vision clinics and social services support.

“Nowadays, a large part of the examination to become a qualified ophthalmologist involves role playing a variety of scenarios, including those where you may have to break bad news to a patient.”

The number of people in the UK with sight loss is set to double to nearly four million by 2050. “Too many people are losing their sight when it is avoidable,” says Ms Lightstone. “Already there are around two million people in the UK with some degree of sight loss. About 50 per cent of those are living with sight loss when it could be avoided.”

London-based optometrist Roger

Pope stresses the importance of a good quality eye examination. “It’s not just about keeping your eyes in good shape, it can also act as an early warning system,” he says.

According to Ms Lightstone, eye care services are improving slowly. “Waiting times for cataract surgery have improved enormously and eye care professionals are working better together to provide more patient-focused care in many areas of the UK,” she says.

“Part of our job is to bring eye care to the top of the political and public agenda so that people understand they should be looking after their eyes, having routine eye tests and taking their eye health seriously. However, the other side of that is to get professionals together to ensure clear and effective patient care pathways.”

Commercial Feature

Farewell to 40 years of glasses

Millions of British people can look forward to a lifetime of better sight, thanks to a revolutionary treatment that has just been launched in the UK. It offers safer, more accurate and less invasive treatment for cataracts.

For many years, cataracts have been seen as an unavoidable and unpleasant side effect of ageing. Current techniques for cataract removal, which centre on high-frequency ultrasound to achieve phacoemulsification, nevertheless require a 3mm incision with a blade, before the cataract is broken up. Where the London Eye Hospital, on Harley Street, differs from this treatment is in the microscopic detail of the procedure. Using a Femtosecond

cataract laser, surgeons create a 3D model of the eye at close to micron levels of accuracy. Laser pulses, lasting one quadrillionth of a second, then dissolve the cataract and also create a tiny incision through which to remove it all without a needle, blade or any discomfort.

This new approach to cataract surgery also reduces the risk of complications, such as damage to the fine membrane surrounding the lens, and the risk of infection. As such, this new procedure represents a huge increase in safety and reduces the risks of surgery even further.

Mr Bobby Qureshi, BSc MBBS FRCS (Ophth), consultant ophthalmic surgeon and London Eye

Hospital medical director, became the first surgeon in the UK to use a Femtosecond laser for cataract surgery in August 2011, and is the most experienced laser cataract surgeon in the country.

THE PATIENT'S VIEW

London Eye Hospital patient Patricia Paul had Light Adjustable Lens surgery and was delighted with the results. “Not only was my proce-



This new procedure represents a huge increase in safety and reduces the risks of surgery even further

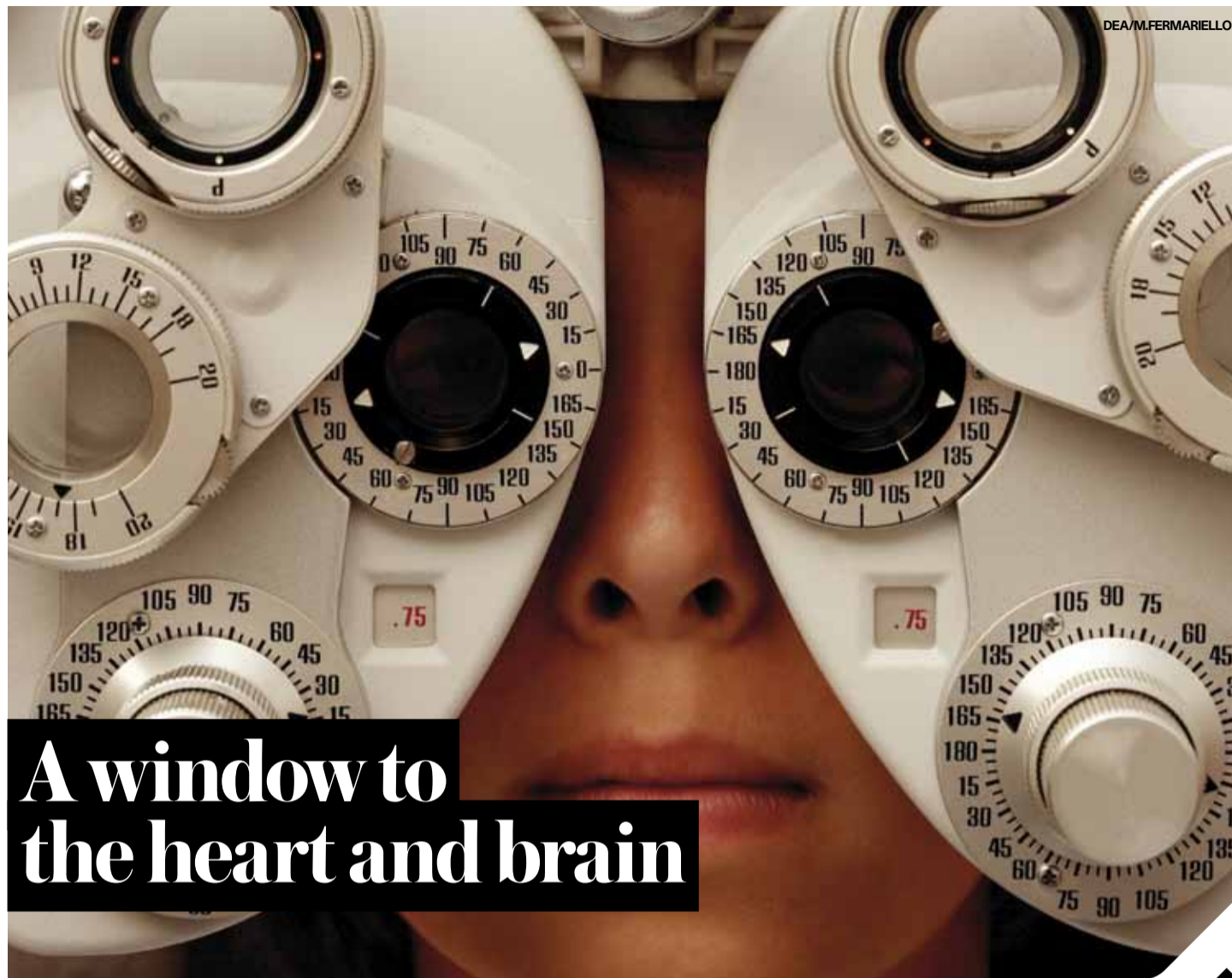


cedure a complete success, but Mr Qureshi was an absolute pleasure to work with,” says Patricia. “He always took the time to explain everything and was never in a rush. I now have the best vision that I’ve ever had. It’s amazing how sharp and colourful everything looks.”

At the age of ten, Philip Scarisbrick was diagnosed short-sighted and started wearing glasses. Forty years later, he had Light Adjustable Lens surgery and – as if by magic – his sight has been restored. “It really has transformed my life,” says Philip at his home in Ashted, Surrey. “Once I’d had the operation, I

could drive around without glasses, go into a restaurant and order from the menu. This was never possible before. I can understand people’s anxiety over having an operation on their eyes, but it was very straightforward. It only lasted about 20 minutes, I was conscious throughout and was able to leave soon afterwards.”

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A window to the heart and brain

An eye test reveals much more about you than most people realise. Indeed, the information gleaned could save your life, as **Judy Hobson** reports

An eye examination measures more than eyesight

EYE TESTS

■ Not only can an eye examination diagnose eye disease and assess whether you need glasses, it can also detect life-threatening brain tumours and heart disease, enabling these to be picked up in their early stages and treated.

Dr Susan Blakeney, clinical adviser to the College of Optometrists, says: "If someone is developing a brain tumour and it's starting to press on their optic nerve, then this may cause blind spots in certain areas of their vision. This may not be apparent to the patient, but we may be able to pick it up during a visual field test."

This test is used to assess peripheral vision. One way of doing it is for the person being tested to look down a tube at a screen and keep gazing at a central spot. Then whenever they see pinpricks of light flash around the outside, they press a button and a graph of the results is printed out.

Visual field testing, according to Sonal Rughani, health adviser to the Royal National Institute of

Blind People (RNIB) and a practising optometrist, is a particularly important part of an eye examination for those complaining of unexplained headaches.

She says: "The test tracks the pathway through the optic nerve to the back of the brain and provides essential clues about any lesions or tumours affecting the visual pathway. By careful interpretation of the results, it's possible for us to locate the lesion."

"Eye examinations are a very accurate indicator of health. The blood vessels that nourish the eye are delicate and thin. Changes where they become more 'wiggly' or tortuous can be a sign of raised blood pressure."

Dr Blakeney says: "The eye is the only transparent organ in your body. It enables us to see into it, allowing us to see whether there's been any haemorrhaging which could indicate diabetes. If we see this we would advise you to see your GP."

Having your eyes examined regularly is important because in some

conditions they do not hurt even when something is wrong. People with glaucoma, for example, often have no symptoms until they have lost quite a lot of sight.

Those over 40, the age when the disease often starts to develop, should have regular eye tests so that it can be detected as soon as possible and they can get treatment to slow down its progression. This is especially important for people of African and Caribbean origin because they are at greater risk of developing glaucoma and at an earlier age. After 40, those with a family history of the disease are entitled to free NHS eye examinations along with people aged 60 and over.

"Sadly, some people leave it too late," says Larry Benjamin from the Royal College of Ophthalmologists. "Glaucoma is a slow, silent disease and by the time they go for an eye examination they will have lost most of the vision in one eye. One in 100 people develop glaucoma, but we don't know who they're going to be, which is why it is so important everyone has their eyes examined regularly."


An eye examination takes around 30 minutes. The sharpness and clarity of your vision are assessed by asking you to read letters of differ-

ent size on a lit screen 20 feet away.

If you need glasses or already wear them and the optometrist thinks they need changing, you will be asked to look through different lenses at letters on the chart and then a prescription will be written.

To check your eyes work well together, the optometrist will look to see how your pupils react to light and, by covering each of your eyes in turn, watch how the covered eye reacts when it is uncovered and fixates on a target.

To measure the pressure in your eyes, a small probe will gently touch the cornea after a drop of local anaesthetic and some yellow dye has been put into your eyes. But in a routine examination, pressure in the eyes will simply be measured by blowing a puff of air into each eye in what is known as the "puffer test".

An instrument called a biomicroscope will be used to examine the front and back of your eyes, and assess overall health. If the optometrist needs to make a closer inspection of the back of your eye, special drops will be inserted to increase the size of the pupil enabling the optometrist to get a full view of the retina. 

Captured by the camera

State-of-the-art digital photography is helping eye doctors to detect problem conditions and keep an accurate record of patients' health, writes **Judy Hobson**

DIGITAL RETINAL PHOTOGRAPHY

■ The detailed pictures digital photography provides of the macula, retina and optic nerve are enabling optometrists and ophthalmic surgeons to detect subtle changes in the eyes that might otherwise be missed.

Another advantage is that the images serve as a photographic record of what is going on in the eye and can be used for comparison during subsequent examinations.

Ophthalmic scientist Richard Hildred, whose medical imaging company Medical Imaging UK is the biggest independent provider of diabetic screening equipment in the country, says digital retinal photography has come into its own during the past decade.


"In the 1960s and '70s, pictures of the eye were taken with a film camera," he says. "Then in the early-1990s digital chips were put in the cameras instead. From 2000 the quality of the digital chips and equipment has improved dramatically, providing instant results for patients and eye doctors."

Digital retinal photography is now being offered by many leading high street optometrists for a fee of £10 as an add-on to an NHS eye check. It is provided free as part of the annual NHS retinal screening of diabetic patients.

Larry Benjamin, consultant ophthalmic surgeon at Stoke Mandeville Hospital and spokesman for the Royal College of Ophthalmologists, says: "The traditional back-of-the-eye cameras produced pretty good pictures, but the resolution you get with a digital camera is much better and the equipment is easier to use."

"The picture is produced in an instant. In my diabetes eye clinic this allows me immediately to show a patient exactly what's wrong with their eyes. They can see where blood vessels are leaking and this helps them understand why they need to have laser treatment. It's a great educational tool and helps me explain eye conditions to patients."

Having the technology in the high street helps optometrists to diagnose disease in its early stages which allows early referral to a hospital eye clinic where it can be monitored and managed.

Dr Susan Blakeney, a practising optometrist and spokesperson for the College of Optometrists, says: "Years ago, all we had to rely on were handwritten notes of what we saw when we examined someone's eyes. We described what we saw as best we could, but having a photographic record makes spotting any changes so much easier." 



It's a great educational tool and helps me explain eye conditions to patients



The eye is the only transparent organ in your body, enabling us to see into it

Focusing on causes of sore, dry eyes

Computer screens and modern living can contribute to dry eye syndrome which is increasingly an occupational hazard for millions in the UK, as Yvonne Gordon reports

DRY EYES

■ If your eyes get red or sore you might be one of 20 million people across the UK with dry eye syndrome. Often called dry eye, the condition can be uncomfortable, but is not usually serious.

Around one in 13 people in their 50s experience it, rising to one in three of over-65s because we produce fewer tears in old age. Older women comprise 60 per cent of sufferers, usually due to hormonal changes.

Precipitating factors include central heating, wind, smoke, medical side effects, contact lenses or infrequent blinking.

Dr Sandip Doshi, senior optometrist at the Eyecare Centre, Hove, says: "Tears play an essential role in how our eyes work, contributing towards good vision. We've all experienced blurry vision when crying, but similar problems can occur due to external factors causing dry eye."

C.T. Pillai, founder and medical director of London-based laser eye surgery clinic AVC, says dry eye is characterised by disturbance in the tears covering the transparent eye-front or the cornea.

"When we blink, a thin tear layer covers the cornea which keeps eyes moist. Dry eye can occur when there is a dysfunction in the meibomian glands producing the tears. Simple steps such as using humidifiers to restore room mois-

ture or decreasing air-conditioning fan speeds can sometimes help."

Research indicates dry eye may be reduced by consuming foods rich in Omega 3 or through innovative treatments, such as professionally designed, warm eye poultices.

Consultant ophthalmic surgeon at West Yorkshire's Calderdale Royal Hospital Teifi James explains the two dry eye types. "Evaporative dry eye affects up to 40 per cent of the UK population, but Sjogrens syndrome, caused by tear gland failure, is rare. If you can produce tears, you haven't got Sjogrens.

"If the lacrimal function unit, which produces tears, breaks down, then eyes don't make enough tears or the tears evaporate too quickly, which causes dry eye. About 40 per cent of people get dry eye 30 minutes after prolonged close work – it's an unrecognised epidemic." Mr James advises warm compresses and regular computer breaks.

One dry eye complication is conjunctivitis – inflammation of the cell-layer inside the eyelids – which causes painful, sticky eyes. It usually improves without treatment, but lubricant eye drops can be purchased at pharmacies.

Common diagnostic method, the tear break-up time test, demonstrates how quickly the tear film breaks up after blinking; the shorter the time, the more severe the dry eye. In the Rose Bengal test, the optometrist observes how long

tears take to evaporate, while the Schirmer test is used in severe cases.

Ian Grierson, ophthalmology professor at Liverpool University, comments: "The main issue with chronic dry eye condition is that, if not addressed, it can create symptoms from itching and inflammation to pain and visual disturbance."

He acknowledges mineral supplements may reduce symptoms by encouraging the eyes' natural hydration.

Geoffrey Ballantine, of Edinburgh optometrists Ballantine Goldie, says treatment varies. "If dryness results from working environment, we may discuss blinking exercises or eye-drops," he says. "With blocked secreting glands, hot compresses or eyelid care might help. Dry eye management involves a custom-made individual approach."



About 40 per cent of people get dry eye 30 minutes after prolonged close work – it's an unrecognised epidemic

1 in 13
people in their 50s are affected

20m
people in the UK suffer dry eyes syndrome

3 in 5
sufferers are older women

1 in 3
over -65s are affected

Source:RNIB

ALLERGIES

No hay fever, no cry

Spring has arrived bringing with it hay fever or seasonal allergic rhinitis, a reaction to pollen which irritates the lungs and nose, as well as the eyes, causing soreness and itching.

Optometrist Tracy Goldie, of Ballantine Goldie Optometrists in Edinburgh, says: "Signs of ocular hay fever also include inflammation of the conjunctiva – the thin membrane covering the eyelid's inner surface and the whites of the eye."

She adds: "If symptoms are just watery and itchy eyes, antihistamine eye drops from chemists or on prescription bring rapid relief of ocular inflammations."

If exposure to pollen is unavoidable, contact lenses and/or sunglasses provide eye-protecting barriers to minimise symptoms.

Simon Mudge, consultant ophthalmologist at Nuffield Health Hereford Hospital, says: "As a lifelong hay fever sufferer myself I understand only too well the eye discomfort it brings. Lubricant eye drops – artificial tears – available over the counter represent the first treatment stage.

"If these don't completely relieve symptoms, sufferers can take eye drops containing sodium cromoglycate, which stabilises the mast cells causing hay fever. These take time to work so can be started before the hay-fever season."

Anecdotal evidence suggests limiting wheat and dairy intake can reduce symptoms.

Hay fever isn't usually serious but, if symptoms persist, see an optometrist.



THE
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Eye Health EyeBag

Dry eye syndromes and blepharitis affect millions of people around the world. Contemporary lifestyles exacerbate evaporative dry eye, as does the normal ageing process, bringing changes to the meibomian gland function and tear composition, resulting in sore, gritty and irritating dry eye. This is known as MGD (meibomian gland dysfunction). Effective eyelid warming is the mainstay of treatment for this condition.

Historically, eye care professionals have advised hot wet flannel compresses to warm the eyes, but

this is messy and inconvenient. The MGDRx EyeBag, a reusable warm compress, heated quickly and conveniently in a microwave, was developed in 2004 by Mr Teifi James, a consultant ophthalmologist working in West Yorkshire. He was granted a patent in 2007 and it is registered as a class I medical device with the MHRA.

Improving the quality of life for dry eye and blepharitis sufferers, the MGDRx EyeBag has been purchased by more than 100,000 users. In a recent survey, 90 per cent found the MGDRx EyeBag

to be better than a hot wet flannel and 94 per cent would recommend the MGDRx EyeBag to a friend or relative.

Made in Yorkshire, the MGDRx EyeBag is available nationwide from opticians and optometrists, and also directly from the EyeBag Company.

www.eyebagcompany.com

MGDRx

As we grow older, our eyes change and sight may deteriorate. Older eyes are also more vulnerable to disease, much of which is preventable. **Lilian Anekwe** reports on the lifecycle of seeing

Living, breathing and getting older affects sight

AGEING EYES

■ Eyesight is often one of the first senses affected by ageing. As we age, there are key changes that take place in the eyes which can impair our vision.

The pupil, which controls the amount of light that reaches the retina, becomes smaller and less responsive to changes in light – the eye of a 20 year old can receive as much as 16 times more light than that of an 80 year old.

This can affect vision in several ways. Seeing well in dim light becomes harder, we are less able to adjust to glare and it becomes more difficult to adapt from darkness to bright light or vice versa.

As we age the lens of the eye begins to lose elasticity. In the same way that losing flexibility in tendons and muscles makes it more difficult for the body to move, losing lens elasticity makes it harder for the lens to bend and focus our eyes.

Also, the fluid inside the vitreous humour, which makes up about four fifths of the eye, becomes more watery and strands of a protein called collagen can form within it – these can sometimes be visible as “floaters”.

But these changes are distinct from the eye diseases that can also commonly occur in older age. John Nolan, principal investigator in the macular pigment research group at the Waterford Institute of Technology in Ireland, says the changes that lead to the development of eye diseases are “an inevitable conse-

quence of living and breathing”.

For example, a combination of age and the environment contributes to the development of age-related macular degeneration (AMD) – damage to the spot near the centre of the retina and the leading cause of age-related blindness.

Dr Nolan explains: “AMD is caused by free radicals [unstable molecules] damaging the cells in the macula. As we get older, our ability to defend against and repair the damage caused by the free radicals diminishes and the free radicals that we are exposed to daily build up over the course of a lifetime. Both these things contribute to the development of AMD.”

Similarly, with cataracts, Dr Nolan says the blurred vision that people with a cataract experience is caused by the cells in the lens “becoming damaged by the oxygen we need to stay alive”. These changes cause the protein fibres in the lens to break down and clump together, which clouds the lens and leads to a loss of vision.



Changes that lead to the development of eye diseases are an inevitable consequence of living and breathing



Camille Tokerud Photography Inc.

Ageing is an unavoidable risk factor with eye health

For older people diagnosed with eye diseases, the future is increasingly promising. Many ophthalmologists are now able to use a technique called optical coherence tomography (OCT) imaging, which creates a 3D image of the eye that can spot the progression of many common eye diseases of old age much earlier than ever before.

Krysten Williams, general manager of Heidelberg Engineering, a leading manufacturer of OCT machines, says: “The advanced treatments that have become available and are in development for eye diseases have made it necessary to have advanced imaging techniques. OCT imaging can allow an ophthalmologist to see and

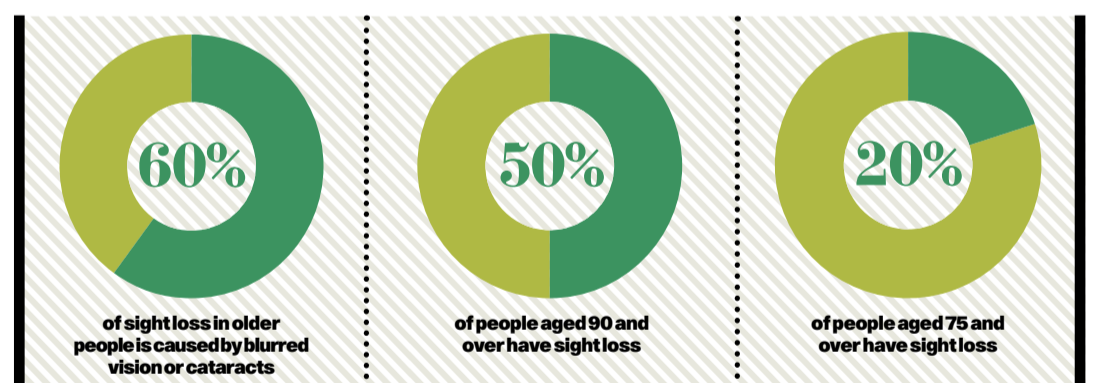
identify exactly where treatment is required, down to one thousandth of a millimetre of change – far earlier than a person will notice any change or loss of vision.

“The images are more obvious and easier to interpret than traditional, two-dimensional imaging techniques. They are designed to augment and complement existing technology to allow eye diseases to be diagnosed and monitored much earlier.”

As well as AMD, other eye diseases that affect older people, such as glaucoma – a group of eye conditions caused by changes in eye pressure and the second most common cause of blindness worldwide – and a complication of

diabetes that affects vision called retinopathy, are benefitting from these advances in technology which could prevent sight loss.

Rebecca Sheehy, older people impact team manager at the Royal National Institute of Blind People (RNIB), stresses that vision loss can be traumatic, but there is help available. “If people do find that they have vision loss, it does not mean that they can’t continue to do many of the things they have always done and been used to. The RNIB can offer emotional support and advice about the many aids that are available, which can help people with sight loss have an active, fulfilling life.”



Source: RNIB

Time to keep an eye on disease

Reaching the age of 40 can be a critical time for eye health. So, as **Lilian Anekwe** explains, it’s best to get your eyes checked

VISION AFTER 40

■ One in nine people over 60 have some degree of sight loss and this increases to one in three people over 85.

But some sight loss can occur as early as 40 – most commonly presbyopia, a loss of our ability to focus the eyes. Which is why Rebecca Sheehy, older people impact team manager at the Royal National Institute of Blind People (RNIB) says that at any age “an eye health check is really important because you may well be having sight loss without knowing it”.

Eye examinations test more than just your sight. Dr Sue Blakeney, clinical adviser for the College of Optometrists, says: “Optometrists will test your vision. But we will also check your eye health: this means checking the front of your eye which can pick up high cholesterol, and the insides of the eye where we can detect eye diseases like cataracts and AMD.

“If you’re over 40, we may also test the blood pressure inside the eye, which can detect glaucoma and, if your optometrist thinks you need it, they’ll also arrange for a visual field test, which can pick up glaucoma as well as much rarer diseases such as brain tumours.

“You shouldn’t have to ask for these tests as, with the exception of the visual field test, they are all offered by good high street opticians. But if people think they need a test, they shouldn’t be too shy to ask, even in between their regular eye tests.”

There’s plenty you can do to reduce the risk of eye disease and boost eye health in your 40s and beyond. Ms Sheehy says: “Many people don’t know but the link

between smoking and AMD is as strong as the link between smoking and lung cancer, and stopping smoking can greatly reduce the risk.

“In addition, eat a varied diet, with plenty of fruit and vegetables, and keep to a healthy weight. If you have diabetes and high blood pressure, it’s important to manage these well, and also keep your eyes covered in the sun, as UVA and UVB rays in sunlight can damage the eyes over time.”



Some sight loss can occur as early as 40, most commonly loss of focus

Mapping key eye conditions

Research shows that more than 90 per cent of us are more scared of losing our sight than any of our senses. Yet many of us still take our eyesight for granted. Liz Bestic looks at how the eye works, what can sometimes go wrong and how best to care for our vision

Seeing can be likened to the process of taking pictures on a film with a camera which you then get developed. The retina is like a camera film which stores an image of what we are looking at. The image directed on to the retina is then sent to the brain where it is processed, like developing a camera film.

Therefore, we actually “see” in our brain with the light information sent to it from our eyes. This whole process happens very quickly so that everything we see is in focus.

Familiarity with the symptoms of common eye conditions can help you to prevent an initially minor infection or problem from becoming a major health issue.

Some eye conditions can be indicators of deeper, underlying health problems such as diabetes or high blood pressure, which with the right treatment can be managed or even eradicated.

However, it is essential that you have regular general health checks, as well as regular eye tests to ensure a healthy lifestyle.

It’s like trying to see through a dirty car windscreen

CATARACTS

Cataracts are the leading cause of impaired vision throughout the world. Around one in three people over 65 has a cataract, although they can develop at any age.

Men and women are affected equally and one eye is usually more affected than the other. Although most cataracts are age-related, some may occur earlier in life with illnesses, such as diabetes, or with eye injuries, long-standing inflammation and also with some drug treatments.

The symptoms of age-related cataracts develop gradually, getting worse over many months. Some people describe having a cataract as a bit like having a dirty windscreen

on a car making the vision cloudy, foggy or sometimes blurry.

“Changes in focus are also likely, and common complaints include problems with glare, particularly from oncoming car headlights, and misty vision,” says Bruce Allan, consultant ophthalmic surgeon at Moorfields Eye Hospital in London.

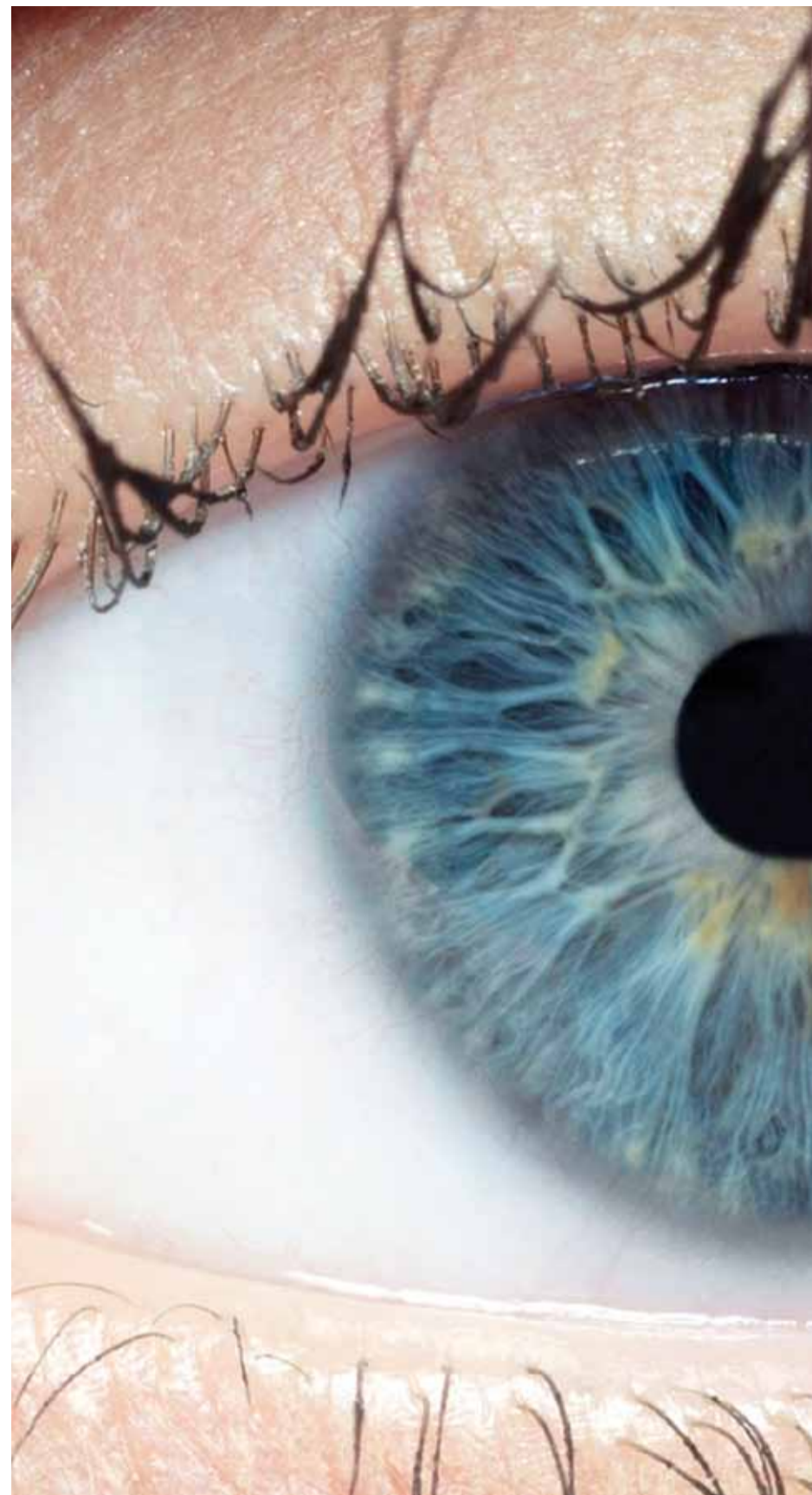
Lifestyle modifications can reduce the risk of cataract development, and include not smoking and good blood sugar control in diabetic patients.

Cataract surgery can be performed equally successfully at any age and with either advanced or early-stage cataracts. It involves

replacing the misty lens with an artificial lens.

Surgery is carried out under local anaesthetic and usually takes around 20 minutes. A key-hole technique is used in which a probe is inserted through a tiny, self-sealing, valve-type entry into the eye. The probe breaks up and vacuums out the hardened, misty lens using ultrasound energy.

A soft plastic lens is then injected within the lens capsule just behind the pupil. The operation is not painful and vision normally recovers substantially within two days, once the strong pupil-dilating drugs, used before surgery, wear off.



The silent thief stealing sight

The incidence of glaucoma is set to rise by 33 per cent in the UK over the next decade. Although a cure may not be on the horizon, groundbreaking research is giving reason for hope, as Liz Bestic reports

GLAUCOMA

Glaucoma affects around 5 per cent of people over the age of 65. Primary open angle glaucoma (POAG) is the most common type and becomes more prevalent with age.

It results in a narrowing of the field of vision, due to pressure on the optic nerve, caused by a build-up of the fluid that supplies the eyes with oxygen and nutrients, and removes waste.

Initially, only peripheral vision is affected, with the centre of the

visual field affected last, resulting in so-called tunnel vision, likened to looking through a long tube.

Glaucoma is genetic so those with close blood relatives with POAG are four times more at risk of developing the condition. People of African origin are also more at risk, along with those with diabetes, very short sight, high blood pressure and hypothyroidism.

As many as 250,000 people may be going undiagnosed each year because the deterioration of sight is slow, with virtually no symptoms. However, detected

early, glaucoma is simple to treat with eye drops.

New technology has helped in the detection of glaucoma. A puff-of-air test can gauge the pressure in the eye and perimetry, which shows sight loss in peripheral vision, can help to spot early signs.

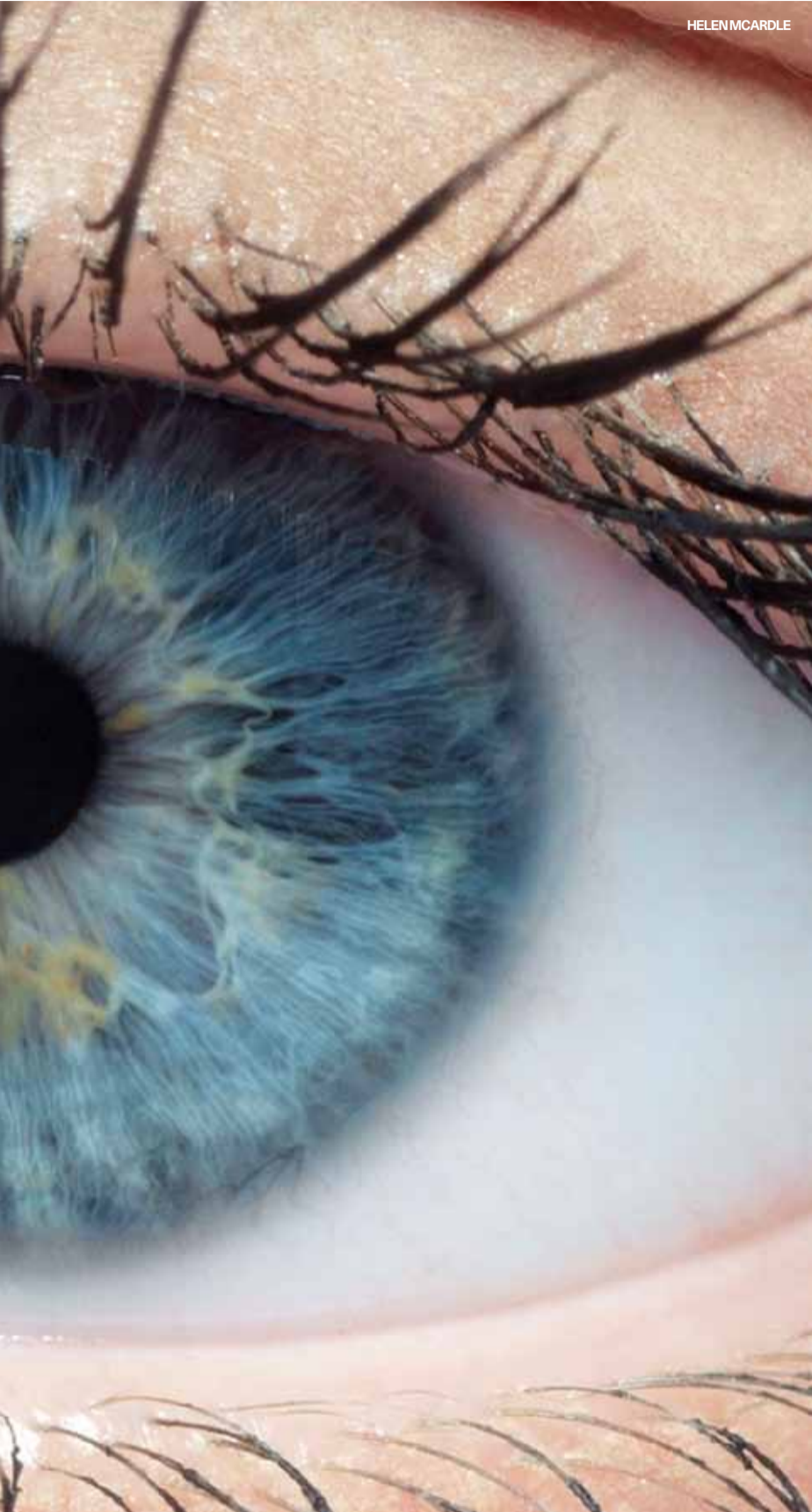
Early detection is really important in glaucoma, as most of the sight loss is preventable. If the disease is detected late, it is much harder to treat and the risk of vision loss is much higher.

Professor David Garway-Heath,

consultant ophthalmologist at Moorfields Eye Hospital NHS Foundation Trust, London, is leading the UK Glaucoma Treatment Study.

“Although high eye pressure is the major risk for glaucoma, other factors may make patients more susceptible to glaucoma,” says Professor Garway-Heath. “Our study is looking at what may make patients more or less susceptible to this condition.”

Also at Moorfields NHS Trust, a brand new test for field of vision, which can be run on a laptop com-



HELEN MCARDLE

Straight lines look wavy and things are the wrong size

AGE-RELATED MACULAR DEGENERATION

■ By the year 2020, it is predicted that more than 750,000 people in the UK will have age-related macular degeneration (AMD), which is the leading cause of sight loss in the Western world.

AMD is more common in the over-60s, but it can occur in people in their 40s and 50s. There are two different types of AMD – wet and dry. The condition affects a small part of the retina at the back of the eye, known as the macula, causing blurred vision and leading to potential sight loss.

Symptoms include distorted vision, such as straight lines becoming wavy, or objects appearing the wrong size. Blurry or blank patches in central vision are also common and people may have dif-

ficulty reading, recognising faces, driving, looking at small objects and watching television.

Although the exact cause of AMD is unknown, risk factors include smoking, poor diet and old age.

There is currently no cure for either type of the condition, but early diagnosis and treatment of wet AMD – which is acute – is crucial in order to prevent vision loss. Dry AMD, which is more common but develops gradually, is not treatable. However, there are services available to support people with sight problems caused by the condition.

AMD may normally be associated with older age, but there are steps you can take earlier in life to minimise your risk.

Research suggests that a diet rich in leafy, green vegetables, brightly coloured fruit and vegetables, and oily fish may help prevent AMD. “Smoking doubles your chances of developing the condition, so quitting can reduce your risk,” says Dr Susan Blakeney, optometric adviser to the College of Optometrists.

Some experts recommend supplements of lutein, zeaxanthin and meso zeaxanthin. “There is a growing body of evidence that antioxidant supplements containing these macular carotenoids may prevent or delay the onset or progression of AMD,” says Dr John Nolan, programme director at the Macular Pigment Research Group, Waterford Institute of Technology, Ireland.

Blurred vision comes and goes during the day

DIABETIC RETINOPATHY

■ One of the most serious complications of diabetes is the development of diabetic retinopathy. Some 40 per cent of people with type 1 diabetes and 20 per cent with type 2 diabetes will develop this condition during their lifetime.

Diabetes affects the tiny blood vessels of the eye so, if they become blocked or leak, the retina and vision are affected. The extent of these changes determines the type of diabetic retinopathy.

Background diabetic retinopathy is the most common type where the blood vessels in the retina are only mildly affected. When diabetic retinopathy progresses, however, it can cause the larger blood vessels in

the retina to become blocked.

This can either affect the sight directly or stimulate the formation of abnormal new blood vessels – a process known as proliferative diabetic retinopathy. This can result in large haemorrhages over the surface of the retina or into the vitreous gel, totally obscuring the vision in the affected eye.

Extensive haemorrhages can lead to scar tissue forming which pulls and distorts the retina. This type of advanced diabetic eye disease can result in the retina becoming detached with the risk of serious sight loss.

Regular diabetic eye screening at least once a year can help discover

any changes in the blood vessels of the retina which can then be treated with a laser to stop sight loss.

Looking after your diabetes with good sugar and blood pressure control can help avoid the potential changes to the eye and maintain vision. Regular retinal screening will keep a close check on early changes and ensure that any signs of progression to more serious stages of retinopathy are detected early.

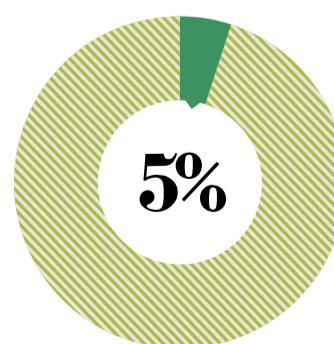
Not everyone who has diabetes develops an eye complication. Of those who do, many have a very mild form of retinopathy which may never progress to a sight-threatening condition.

puter, could revolutionise the way glaucoma is detected. Each eye is tested separately; the patient is asked to look at a central spot on the computer screen and to press the mouse each time a line on the screen is seen to move.

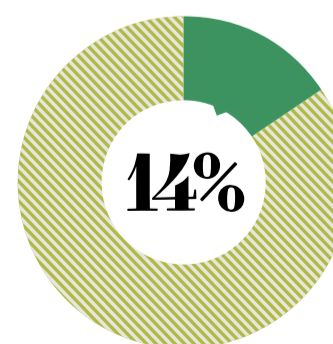
“We are hoping that this test will make a real difference in both the developed and developing world, and reduce unnecessary blindness from glaucoma which results from late diagnosis,” says Professor Garway-Heath.



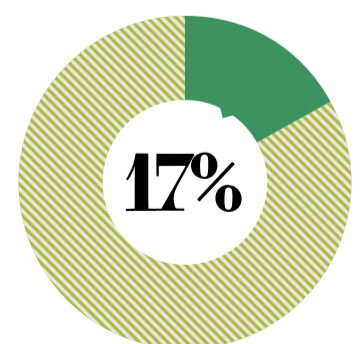
As many as 250,000 people may be going undiagnosed each year because the deterioration of sight is slow, with virtually no symptoms



of adults are affected by glaucoma



by cataract



by AMD

Source: Access Economics, 2009

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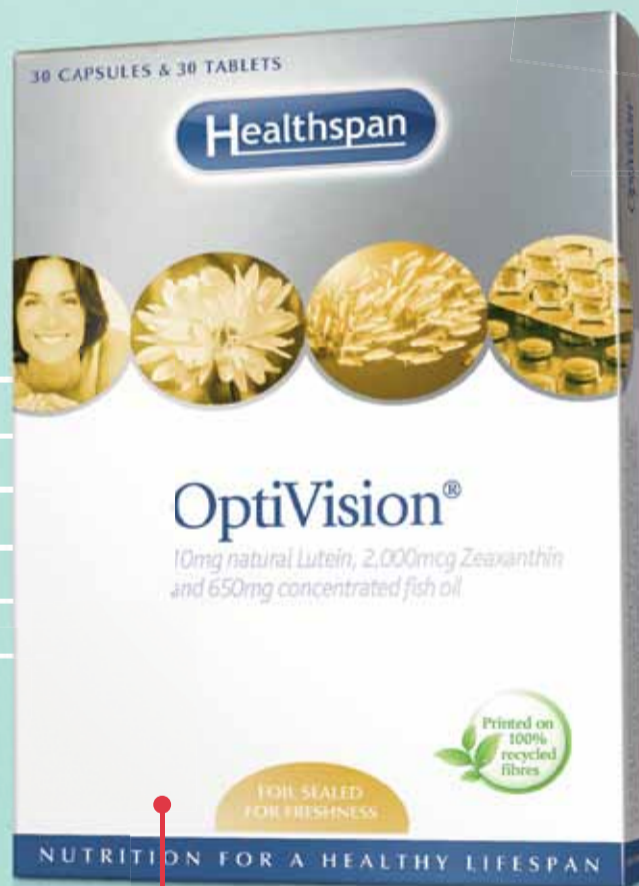
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Food for sight – nourishing the eyes

Research suggests eye health can be maintained through good diet or nutritional supplements. The age-related eye disease study found that people taking certain vitamins and minerals were less likely to develop cataracts and advanced age-related macular degeneration, writes **Yvonne Gordon**

NUTRITION

VITAMIN A



Kevin Summers

■ Essential for eye health and good vision, vitamin A relates to the ability to form visual images. But we only need a small amount.

When absorbed from animal sources, such as liver, other meat, oily fish, dairy products and eggs, vitamin A is called Retinol. We also take vitamin A into the diet through leafy greens, and brightly coloured fruit and vegetables, like carrots and oranges which contain antioxidants called carotenoids, some of which

are converted into vitamin A.

Nutritional therapist and author of *The Encyclopedia of Vitamins, Minerals and Herbal Supplements* Dr Sarah Brewer says: “In the eye, vitamin A is converted into a pigment known as ‘visual purple’. When exposed to light, it absorbs photon – electro-magnetic – energy which induces a change that stimulates nerve endings in the retina. This triggers sensory messages sent to the brain to form visual images.”

Although in the UK we usually obtain enough through diet, vitamin-A deficiency, which is more common in poorer countries, can cause conditions including difficulty in adapting to dim light (night blindness) and an increased risk of cataracts. If taking vitamin A supplements, Dr Brewer warns that it is important not to go over the recommended dose, especially during pregnancy.

VITAMIN C



■ Another important nutrient for eye health, vitamin C is not produced by the human body, unlike with animals, so we need to absorb it through diet or supplements.

Scientists have recently found that nerve cells in our eyes need lots of vitamin C to function properly. Nuts, including walnuts, hazelnuts and pecans, contain vitamin C, plus most fruit, including strawberries, blackcurrants and kiwis, and vegetables, such as

greens, broccoli and sprouts.

Nutritional therapist Dr Brewer, who is a GP, says: “Vitamin C is an important antioxidant – a nutrient in food which slows the cell damage caused from by-products of the body’s use of oxygen – for the eye. The level in the eye lens is 60 times more than that found in the circulation. In one study, patients taking 300mg of vitamin C daily were 70 per cent less likely to develop cataracts than similar

patients not taking supplements.”

Research shows women who took vitamin C supplements for over ten years had 83 per cent less risk of moderate lens clouding compared with others not using vitamin C. However, it’s important to read supplement labels to ensure you’re getting 100 per cent vitamin C, as some contain added ingredients like processed sugar or artificial colouring.

LUTEIN



John Fox

■ A vital component of good vision, lutein is an eye-protecting antioxidant pigment found in green, yellow and orange vegetables, plus fruits, including blueberries and grapes.

Ophthalmology professor at the University of Liverpool Ian Grierson says it’s important to increase the right antioxidant levels in the general population, as they “offer the most precise way of maintaining eye-health”.

Lutein, naturally concentrated in the eye area called the macula

responsible for fine vision, absorbs damaging blue light and protects against age-related macular degeneration (AMD) which destroys central vision.

Professor Grierson says lutein has no side effects and recommends eating 6mg daily, although average consumption is 2mg. But he adds: “Vegetables alone aren’t enough as lutein needs fat for absorption. Egg yolk is one of lutein’s main sources, which is why egg Florentine, for example, is a good

meal for maintaining eye health. Spinach is high in lutein and egg yolk maximises absorption.”

However, he concedes that it’s not always easy to eat well, so a supplement like OcuVite Complete may help. He explains: “Containing higher levels of essential micro-nutrients than diet, it provides consistent levels to protect eyes against age-related changes.” But he adds taking supplements is no excuse for bad diet.

OMEGA 3



Jupiterimages

■ There is growing evidence that food containing Omega-3 fatty acids, such as oily fish, flaxseeds and walnuts, can help maintain eye health, and arrest cataract and AMD progression in older people.

Key Omega-3 component DHA, one of the nervous system’s building blocks, has its highest concentration in the retina. But the body cannot manufacture Omega 3, which must be absorbed through diet or supplements.

Simon Madge, consultant eye surgeon Nuffield Health Hereford

Hospital, says: “Since publication of the age-related eye disease study (AREDS), most eye specialists now recommend careful vitamin and antioxidant dietary supplements, which may reduce disease progression in at-risk patients. But in patients with low AMD risk, a healthy diet may provide all the supplements required.”

Mr Madge adds that stopping smoking and blood-pressure control are also essential. As with lutein, getting enough Omega 3 through diet alone can sometimes

be difficult, so eye health supplements like Efalex Vision, from Efamol Ltd, which combines DHA with other antioxidants, may help.

Its technical director Peter Clough says: “Eye cells and tissues contain some of the highest levels of DHA in the body, and it is now becoming apparent that this Omega-3 fatty acid is critical to eyes’ healthy functioning as people age. Evidence suggests supplementation slows down age-related vision problems.”

Nutritional insights into healthy eyes

FOOD	Lutein per typical serving
Kale (cooked)	24 mg
Spinach (cooked)	20mg
Spinach (raw)	4 mg
Sweet corn	2 mg
Green peas (tinned)	2 mg
Broccoli (cooked)	2 mg
Green beans (cooked)	0.8 mg
Eggs (2 large)	0.3mg
Orange (1 medium)	0.2 mg

OPINION

Dr Sarah Brewer, an expert nutritionist, advises on the importance of good diet for eye care

■ Vision is one of your most important senses, but while many people select healthy foods for their heart, did you know that a nutrient-rich diet can also preserve your sight?

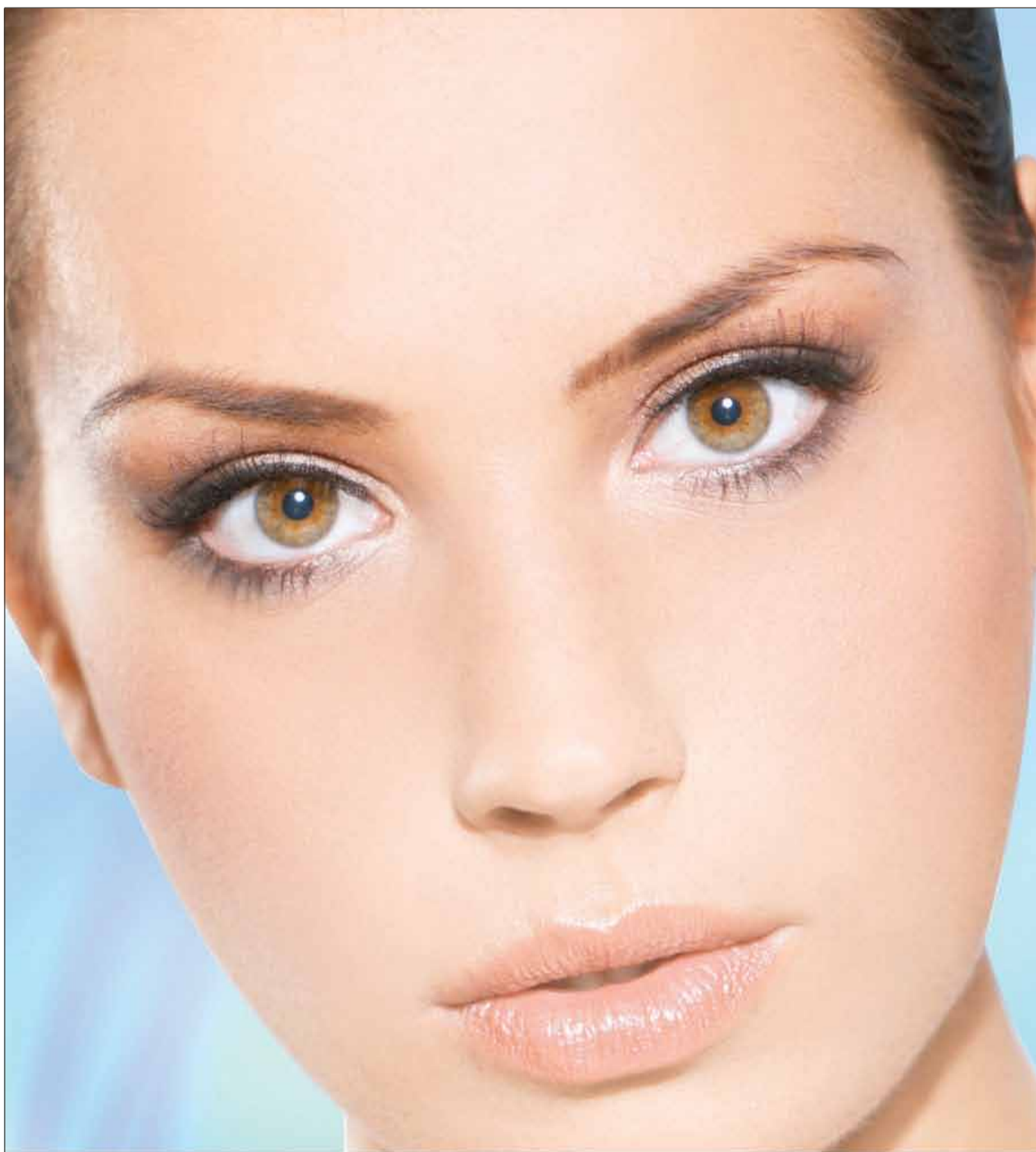
Lutein is important for healthy eyes and can be found, along with zeaxanthin, in spinach. These are yellow carotenoid pigments that filter out blue light and provide antioxidant protection in the eye. The pigments accumulate in the macula, a part of the eye responsible for fine vision, such as recognising faces and reading words. When your diet lacks these important nutrients, the macula starts to break down and visual distortion occurs. As you cannot make lutein yourself, it has to come from your food. The richest sources are dark-green leafies, such as spinach and kale. Other good sources include orange-yellow fruit and vegetables, orange juice and egg yolk.

A good intake of lutein-rich foods helps prevent age-related macular degeneration (AMD). Intakes of 10mg lutein and 2mg zeaxanthin a day are optimal, but this means eating a serving of spinach or kale at least every other day. Most of us don’t do that, and the average Western diet provides less than 4mg of carotenoids such as lutein and zeaxanthin daily. While diet should always come first, supplements are an important alternative for those whose intakes are low. Lutein supplements have been shown to increase macular pigment density and even reverse early macular damage.

It is important to select supplements made to a standard known as Good Manufacturing Practice or GMP. This gold-standard ensures that every stage of production is documented and double-checked, samples of all raw materials are tested to confirm their purity, and finished products are tested to ensure they contain the right amounts of different ingredients. In the UK, compliance with GMP regulations is assessed by the MHRA (Medicines and Healthcare products Regulatory Agency), who also regulate the manufacture of pharmaceutical drugs.



A good intake of lutein-rich foods helps prevent age-related macular degeneration



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We might not be able to change the hectic pace of modern life - and let's be honest, most of us wouldn't want to. What we can do is find quick, easy and effective solutions to some of its less desirable side effects.

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Climate change 'is harming eye health'

▲ Increased ultraviolet radiation is impacting on eyesight

Warming of the Earth's climate system and related increasing concentrations of greenhouse gasses are causing some eye disorders, writes **Maria Anguita**

GLOBAL WARMING

■ Two years ago, retired teacher Vera started experiencing eye discomfort, irritation and crusting of the eyelids. She was prescribed a short course of antibiotics for what her doctor suspected was a simple eye infection, but several months later she was still having problems.

"My eyes felt constantly gritty and dry, and my lids were red and flaky. I was treated for a range of eye conditions, but nothing seemed to make a difference," says Vera.

Many trips to eye specialists later, she was diagnosed with chronic blepharitis, an inflammation of the eyelid, of unknown cause. And, after trial and error with different treatments, she now has a routine that keeps her discomfort and pain in check. However, some days her eyes flare up for no apparent reason: "I just wish I knew why I keep getting this," she says.

It may be difficult to pin Vera's symptoms to global warming, but scientists all over the world agree that increased levels of ultraviolet radiation reaching the surface of the Earth, resulting from ozone depletion at high altitude, and a toxic mix

of air pollutants are responsible for serious eye disorders.

According to the World Health Organisation (WHO), of the 18 million people worldwide who have cataract-related diseases, 5 per cent are directly attributable to UV radiation. UVA light, a component of UV radiation, stimulates the over-production of damaging oxygen-free radicals responsible for the clouding of the lens, typical of cataracts.

Last year researchers at the All India Institute of Medical Sciences, New Delhi, started gathering data for what is to date the largest study into the link between global warming and eye health.

More than 5,000 people across north-east India are being screened for eye disease and are asked to fill in a questionnaire on how much time they spend outdoors. The results will then be compared with regional meteorological data.

According to Robyn Lucas, associate professor at the Australian National University, Canberra, there is already strong evidence that short exposures to intense


UV radiation can cause painful inflammation of the cornea and conjunctiva, and that even low-dose, long-term exposure is a risk factor for cataract pterygium – a non-cancerous growth of the thin tissue that lays over the white part of the eye – and eye cancer.

Scientists also believe that the rise in global temperature attributed to the greenhouse effect of global warming can be linked directly to some eye conditions, and that airborne pollutants, such as sulphur dioxide, soot and dust, can cause dry eyes, irritation and visual impairment.

Sonal Rughani, eye health development adviser at the Royal National Institute of Blind People (RNIB), says that excessive UV exposure can also

increase the risk of age-related macular degeneration which affects the retina of the eye, causing blurry and distorted vision. Elderly people are most at risk.

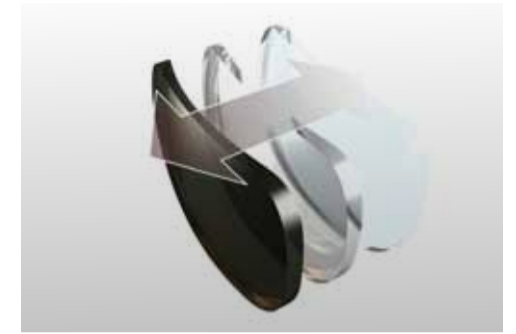
Grass, soil, water, beach sand and sea foam can reflect up to 25 per cent of the sun's rays, adding to the overall UV exposure, warns the WHO. For people who spend lots of time outdoors, particularly in the summer months, the RNIB recommends wearing sunglasses, glasses or contact lenses with a built-in UV filter that have a CE mark or carry British Standard BSEN 1836:1997.

Som Prasad, consultant ophthalmologist based in Wirral, also suggests using eye drops to combat dry eyes and wearing wide-brimmed hats that shield the eyes from sun - glare. 



Scientists agree that increased levels of ultraviolet radiation and a toxic mix of air pollutants are responsible for serious eye disorders

Bespoke lenses for the perfect fit



Spectacle lenses are thinner, lighter and more comfortable than ever with high-tech innovations tailored to individual needs, as **Nicky Collinson** reports


LENS TECHNOLOGY

■ Bespoke spectacle lenses, tailored to a person's individual eye movements, visual habits and personal preferences are now readily available on every high street, according to the Federation of Manufacturing Opticians (FMO).

"Advances in the past ten years mean that a person's glasses can now be as individual as their fingerprint with an infinite range of options to provide the very best vision for all work and leisure-time activities," says John Conway, chairman of the FMO and managing director of Seiko Optical UK.

"A taxi driver and an architect may both need progressive lenses once they reach their mid-40s but, because they have very different lifestyles, their lenses can be tailored to give the right reading options, good peripheral vision and maximum field of view," Mr Conway adds.

Pioneering lens technology means opticians can now optimise your vision, whether you need single vision lenses, bifocals, varifocals or progressive lenses. Unlike normal lenses based on a standard set of measurements, bespoke lenses are based on your individual parameters such as the distance between your pupils (pupillary distance), the distance between the back of the spectacle lens and the front of the cornea (vertex distance), and the tilt of the lens from lower rim to cheek (pantoscopic tilt).

The software programmes needed to take these measurements come in many shapes and sizes with the most innovative using 3D imaging and behavioural data, such as how you rotate your head and eyes. This bespoke approach, with opticians completing an in-depth analysis of your occupation, hobbies and visual requirements, has brought about a new level of optical personalisation. 

Technology for the eyes

HOYA
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With iPads, digital books and online banking, the demands of constant screen use on our eyes has increased dramatically. Computer Vision Syndrome (CVS) is the result of today's computer revolution – **symptoms can include eye strain, headaches, dry eyes and blurred vision.**

Once again it's the technology of lenses to the rescue. Hoya has created a range of 'Indoor lens designs' to support the vision of office and computer workers. They support the near/intermediate vision area (the areas predominantly used by computer workers) and can be ordered with an Anti-Reflection coating which alleviates the negative effects of glare from your screen.

Ask your Independent Optician about Indoor lenses and Anti-Reflection coatings from Hoya...



Golden age of contact lens innovation

Implantable contact lenses are an alternative for patients who cannot have laser eye surgery

IMPLANTS

Cutting-edge vision correction



Laser eye surgery is not for everyone, so it's no surprise that more and more people are opting for implantable contact lenses to achieve freedom from glasses and traditional contact lenses.

Available in the UK since 1996, implantable contact lenses (ICLs) are at the cutting edge of vision correction.

Flexible, miniature contact lenses that are placed permanently between the iris and the eye's natural lens, ICLs can correct short sight (myopia), severe long-sightedness (hyperopia) and astigmatism, where the cornea is misshapen causing blurred vision.

Working under a microscope, the eye surgeon will make a small incision where the cornea joins the white of the eye; the ICL is then folded up and injected before unfurling in front of the lens. Because the results are immediate ICLs can produce a real "wow" factor.

One of the UK's leading ICL providers is Advanced Vision Care (AVC), in London's Harley Street, which uses the Visian ICL.

AVC consultant surgeon Göran Helgason has carried out hundreds of procedures over the past 12 years and underwent treatment himself in 2004, of which he recalls: "The bright light from the operating table was the most disturbing thing about the procedure, but it was totally painless. I thought I'd be able to identify the different steps of the procedure, having done hundreds myself, but all I could sense was a shimmer and of looking into a headlight from under water.

"It took about 10 minutes to do both eyes and after a short test I was allowed to leave. I even went shopping for a pair of sunglasses on the way home. The same evening I could read the subtitles on my television without correction – for the first time in my adult life."

Eight years on, Dr Helgason is still seeing clearly the advantages of ICLs – through his and his patients' eyes.

CONTACT LENSES

With augmented reality contact lenses in the pipeline, lenses that monitor eye disease and 3D lenses for gaming, nanotechnology is revolutionising the way we use contact lenses.

At the same time corrective contact lenses are helping wearers reach exceptional levels of visual acuity, eye health and comfort.

"The advent and popularity of one-day disposable soft contact lenses has made contact lens wear safer than ever before," says leading London contact lens practitioner and past president of the British Contact Lens Association, Nigel Burnett Hodd.

"Today's contact lens innovators are using high-tech materials and manufacturing techniques to solve complex vision problems with ever-safer, more reusable and more highly gas permeable contact lenses. Gone are the days of slow adaptation and weeping over weeks of perseverance – today's lenses are quick and easy to get used to."

In the past few months alone we have seen the launch of high-definition, ultra-stable toric contact lenses for people with astigmatism – a misshapen cornea that distorts vision – and the world's first daily disposable silicone hydrogel contact lens to correct presbyopia (inability to focus on objects close up).

First launched in 1999, silicone hydrogel contact lenses are considered to be the gold standard for the industry because of their exceptional oxygen transmissibility – that is the amount of oxygen that passes through the lens to reach the cornea. When the cornea's oxygen supply is significantly reduced – a condition called hypoxia – a number of problems may occur,



Advances in technology are transforming the contact lens industry and producing safer, more comfortable and innovative solutions to complex vision problems, writes Nicky Collinson

such as red eyes, corneal swelling, blurred vision and eye discomfort.

There are now silicone hydrogel lenses with built-in UV blockers that protect the eyes from sun damage by covering the entire cornea and limbus, making them effective against light rays reflected from surfaces and peripheral rays that enter from the side.

Extended or continuous-wear silicone hydrogels can be worn overnight if your eyes are suitable and your optician recommends it, and there is now a monthly silicone hydrogel contact lens available in a staggering 17-million-plus parameters.

According to the Association of Contact Lens Manufacturers (ACLM), the number of people in the UK using silicone hydrogel

contact lenses has increased by 10 per cent in the last 12 months alone, with 1.3 million out of a total 3.7 million contact lens wearers now choosing them.

Simon Rodwell, secretary general of the ACLM, says: "Contact lens technology is entering a golden age of innovation with lenses appealing to a much wider audience. Whether you need a large correction, are becoming presbyopic or have found them uncomfortable in the past, now may be the time to try again.

"New materials have already made a huge difference to comfort levels and in the future we will see contact lenses that slow down the effects of myopia in young people, others which carry pharmaceutical agents to the eye, some which will be able to act as diagnostic and

disease-monitoring tools, and even contact lenses which have computer display capabilities."

Following the recommendations of your optician, there's no reason why you can't benefit from contact lenses now and into the virtual-reality future.



Gone are the days of slow adaptation and weeping over weeks of perseverance – today's lenses are quick and easy to get used to

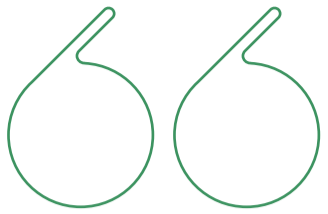
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Peter Ackland, chief executive of the International Agency for the Prevention of Blindness, highlights the plight of the blind and visually impaired in the UK and around the world



An unaddressed health issue that shames us all

OPINION



■ The state of the world's eye health is currently appalling, but there are some big things going on out there that are going to make it a whole lot worse over the next 20 to 30 years – unless we choose to invest now in simple and highly cost-effective eye health services.

As people get older so they become much more susceptible to

many eye diseases, including age-related macular degeneration – the cause of most blindness in countries like the UK – and cataracts – the leading cause of blindness in low and middle-income countries.

By 2050 there will be some two billion people worldwide over the age of 60 compared to 600 million at the start of the century. It is estimated that the number of people with significant sight loss in the UK will double from two million now to four million by 2050.

According to World Health Organisation (WHO) estimates, some 285 million people in the world are blind or have a severely disabling visual impairment – global ageing could see a three-fold increase in this number.

Another major concern is the global trend towards urbanisation and more sedentary life styles, together with less healthy eating which, along with ageing, are major causes of diabetes.

Presently, it is estimated there are 300 million people with diabetes

worldwide, with the number set to rise to 450 million within 20 years.

Diabetic retinopathy is a potentially blinding eye disease that typically develops between ten and twenty years after the onset of diabetes, and develops faster when diabetes is undiagnosed and untreated.

Studies in UK show that an alarmingly high number of diabetes patients do not attend regular eye examinations which would



Some 285 million people in the world are blind or have a severely disabling visual impairment – global ageing could see a three-fold increase in this number

enable preventive measures to be taken. In lower-income countries very few diabetics are able to control their condition, resulting in higher levels of visual impairment as well as other disabling conditions associated with diabetes.

While we should be worried about the future, we should be outraged by the situation now. Although virtually no one is going to go blind from a cataract in the UK, that is not the case in poorer countries – some 90 million people worldwide are blind or severely visually impaired from a condition that can be fixed in 20 minutes for as little as £20 and which health policy makers know to be one of the most cost-effective of all health interventions.

Equally incredible is the fact that 120 million people are severely disabled and another 400 million cannot read the newspaper simply because they cannot access a pair of spectacles – a technology that has been around for a thousand years and which can be provided for less than £5.

What is really shocking is that 80 per cent of global blindness could be avoided through prevention or

cure. And even worse, we know how to do it, but we lack the political will to devote the tiny amount of resources needed to improve the lives of hundreds of millions of visually disabled people.

It was against this background that the WHO and the International Agency for the Blind jointly launched the global initiative VISION 2020: The Right to Sight in 1999. The aim was straightforward – to eliminate avoidable blindness by the year 2020.

Twelve years later, there have been some remarkable achievements. Levels of blindness from trachoma, river blindness and corneal scar have been more than halved, and cataract surgical coverage has greatly increased in many parts of the world, particularly in South-East Asia. But with the threats from ageing and changing lifestyles this progress is under grave threat.

This is one health problem that could be largely solved throughout the world. Doing so would bring huge economic benefits and lift hundreds of millions of people out of poverty. It is a “no-brainer” – why aren't we doing it? **R**



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The Facts...

- ✓ The macula is found at the centre of the retina at the back of the eye and is responsible for detailed and coloured central vision. This is where vision is required for everyday tasks such as reading, driving and recognising loved ones faces.
- ✓ Within the macula is a protective layer, called macular pigment (MP), which helps filter harmful blue light and acts as a powerful anti-oxidant.
- ✓ We have less MP when we get older, which results in decreased visual performance.
- ✓ MacuShield®'s unique patented formula contains all three ingredients that make up MP and importantly the *meso*-zeaxanthin ingredient is exclusively found at the centre where vision is sharpest.
- ✓ New scientific research has shown that supplementing with MacuShield® can increase macular pigment levels efficiently.
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