

Digital Insight

Santen

Beat the digital burn

The latest science on screentime and eye strain

The Eye Strain Index: Your devices, ranked

Is your environment eye-friendly?

Why virtual reality is looking good

Smart on screens – top tips for healthy eyes

The truth about blue light

"Whether you're an office worker, gamer, social media scroller (or parent of one!), student, or just someone who loves their Netflix... there is something in here for you, especially if you have dry eyes!"

Avoid the pitfalls of uncomfortable, strained eyes at the end of the day, with the latest science-based facts.

This leaflet was created and published by Santen UK&I and has been medically reviewed by James S. Wolffsohn, Professor of Optometry, Aston University.

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When stone age biology meets digital technology



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Have you ever looked in the mirror after a long day to see red bloodshot eyes staring back? I know I have. Digital eye strain affects most of us at some point. In a single generation, digital devices have transformed daily life. Today, we spend around *8 hours daily* on our devices – banking, navigating, shopping, working, and socialising all through screens.

But technology has raced far ahead of our biology, which has evolved our eyes to be better suited for scanning savannas than scrolling smartphones. This mismatch helps explain why so many of us experience eye strain, dryness and discomfort when using digital devices. This isn't just uncomfortable – it impacts our work, our happiness and our productivity.

Don't get me wrong, technology has made many things easier (no more wrestling with paper maps or hunting for a payphone!), so I'm not about to advocate for ditching the devices. Instead, this leaflet is all about **practical, evidence-based ways** to help protect your eyes which were created for a more natural environment and still enjoy all the benefits of our digital world.

Did you know?

It's estimated that 71% of people who use digital devices experience digital eye strain globally!¹

What is digital eye strain?

It's when you use a digital device – like a laptop – and it causes new or worsening eye symptoms. Unlike traditional eye strain from reading books or paperwork, digital eye strain is specifically linked to screen use.¹

Symptoms of eye strain

Early signs

(first few hours)¹

- Tired, heavy-feeling eyes
- Mild discomfort when blinking
- Slight dryness
- Occasional eye redness

Worsening symptoms

(with continued use)¹

- Blurred vision that temporarily improves with blinking
- Increased dryness and irritation
- Sensitivity to light
- Difficulty focusing
- Headaches
- Neck and shoulder tension

These symptoms usually improve when screen use stops

Advanced symptoms

(end of day/ongoing)¹

- Severe discomfort in the eyes
- Vision problems (like difficulty switching focus between near and far objects)
- Other physical symptoms (severe headaches, fatigue and ongoing neck pain)

The strain cycle¹



Warning signs

If symptoms persist after stopping screen use or worsen over time despite taking breaks, make sure you talk to an eye health professional

How digital eye strain develops

Ever notice how you stare more intensely at screens than books? That's because digital content – with its constant updates, notifications, and rapid changes – demands more mental energy. When we're deeply focused on a task, our brain actually **suppresses our natural blinking**, probably to avoid missing anything important.¹

Screens make this worse with their bright light, small text, and high contrast. The harder we concentrate, the less we blink – and when we do blink, we often don't close our eyes fully.¹

Without proper blinking, our tears don't spread evenly across our eyes, causing them to **dry out and become irritated**. This creates **an unhelpful cycle**: the more our eyes get irritated, the harder it becomes to focus, leading us to concentrate even more intensely – and blink even less.¹



Did you know?

Eye strain risk increases significantly after **4-5 hours daily** screen time, but it varies by **device type, task intensity, your individual risk** and how often you take proper breaks.¹

The Eye Strain Index

Here's science's verdict on our common digital devices, from the most eye friendly to the worst offenders (and most likely to cause eye strain!)



E-READERS / E-INK TABLETS

- ✓ Paper-like display
- ✓ No backlight glare

Risk level: *Low*



TABLETS AND SMARTPHONES

- ✓ Usually used for shorter time
- ✓ Downward gaze reduces eye exposure
- ✗ Small font
- ✗ Screen glare

Risk level: *Moderate*



DESKTOP MONITORS AND LAPTOPS

- ✗ Used for long periods
- ✗ More demanding tasks
- ✗ Higher gaze – More eye surface exposed
- ✗ Screen glare

Risk level: *Moderate-High*

Did you know?

Despite being worn so close to the face, research has found that virtual reality headsets may actually help protect eyes in some ways by surrounding them in a more humid environment!¹



Remember: No device is inherently 'bad' – it's how we use them that matters.

PREVENTION

Eye-friendly tips

Your settings¹

- Reduce screen brightness to match surroundings
- Increase text size to reduce squinting
- Adjust contrast for comfort
- Use dark/night mode in low light
- Consider voice commands
- Switch to e-reader (or e-ink device) mode for long reading tasks



Your 'office' set-up¹

- Screen arm-length's away (e-readers a little closer: 30-60cm from eyes)
- Top of screen at or slightly below eye level
- Use proper chair height for good posture – feet flat, knees at 90°, thighs parallel to ground
- Avoid glare/reflections (consider using matte screen protector)
- Use external keyboard to improve posture
- Keep screen clean
- Consider using a humidifier
- Avoid sitting facing air conditioning

Also make sure you take regular breaks (at least a mini-break every 2-hours), get regular eye check-ups and stay well hydrated

The truth about blue light

Most screens (except e-ink displays) emit blue light, and recently many companies have popped up selling special glasses and screen filters which claim to protect eyes by blocking blue light. However, the **evidence** clearly shows blue light filtering does not reduce eye strain.¹

That said, reducing blue light exposure in the evening may help your natural sleep patterns, as blue light can affect the hormones that regulate sleep.¹



THE 20-20-20 RULE

Every 20 minutes...
Look at something
20 feet away...
For at least
20 seconds¹

RISKS

Are you at higher risk?¹⁻⁴



Office workers/
heavy screen
users



Those
already with
dry eye



Those aged
over 40 years
of age



Children/teens
with high
screen time

Special focus: protecting young eyes⁴⁻⁷

- ▶ Around 1 in 5 children have dry eye disease
- ▶ Short-sightedness (myopia) rates are increasing worldwide, linked to modern lifestyle changes (more time spent indoors and on near tasks like screens)
- ▶ Short-sightedness usually starts in children from age 6 to 13. It can get worse until around 20 years of age.



ESSENTIAL ACTIONS FOR PARENTS¹

Book regular eye checks from
age 6 (or earlier)

Balance screen time with outdoor
activities – natural light and varied
viewing distances

Watch for signs of eye strain or
discomfort such as:

Rubbing eyes frequently
Squinting or sitting very close to screens
Complaining of tired or sore eyes
Headaches during or after screen use



Did you know?

Studies show outdoor
time helps protect
children's eye health and
development. Aim for
2+ hours daily
outside.¹

What to do if you've got digital eye strain¹

- 1 Take a break from screens
- 2 Adjust your environment – see page 4
- 3 Do a less cognitively demanding task – see below
- 4 See an eye care professional (even small uncorrected vision problems can make symptoms worse)
- 5 Treat symptoms of dry eye if you have them (e.g. by using artificial tears)
- 6 Consider an Omega-3 supplement (Some studies suggest they might help, but more research is needed)



THE DRY EYE LINK

Digital eye strain can cause dry eye – that itchy, burning feeling – but you can also get dry eye without having digital eye strain: They're separate conditions but one increases the risk of the other.¹



Top Tip

When you're doing complex tasks on screens – like writing, gaming, or analysing detailed information – you blink much less than when doing simpler activities like casual reading. You blink nearly 70% MORE during relaxed reading compared to active writing or working. So, try to mix "low-demand" screen time with your more intense tasks.¹

Red Flag

See an eye care professional if you experience ongoing symptoms despite changes, worsening vision or severe eye pain.

WHERE HAS THIS INFORMATION COME FROM?

This leaflet is based on information from the published report **"TFOS Lifestyle: Impact of the digital environment on the ocular surface,"** by the Tear Film & Ocular Surface Society (TFOS) – a non-profit organisation dedicated to advancing eye health research and education.



This leaflet was created and published by Santen UK&I and has been medically reviewed by James Wolffsohn, Professor of Optometry, Aston University, UK. As specialists in ophthalmology, Santen is continually working to advance vision and eye health, with more than 130 years of experience developing innovative products that improve the lives of people living with eye conditions all over the world.

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