bcs The Chartered Institute for IT

Learning & Development Specialist Group

Enabling the information society

Through the Looking Glass: Can you see the issues?

Visual Impairment?

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Subject Matter Expert: ITT Senior Lecturer Computing

Agenda

- Welcome
- Introduction
- My role and an overview of impact of sight loss
- Assistive Technology
- Useful Applications
- Eyecare
- Q & A

About Me

- Retired ITT trainer for 20+ years experience
- Worked across Primary Education, Secondary Education, Further Education and Higher Education
- Managing largest cohort of CS Trainee Teachers in UK and Europe.
- Supported CS Networks CAS, Python Education, Raspberry Pi Foundation, Foundation for Digital Creativity.
- Researching safeguarding, specifically responding to adolescent online behaviours
- I am Severely Sight Impaired since 2018

My work and the Impact of VI on my role in ITT

Teaching Practice

- Portfolios of Reflection
- Evidence of Application
- Reflections

Academic Work

- Audit
- Evidence of skill acquisition
- Evidence of application and use of skills

Visual Impairment: Spectrum of conditions which impact on the ability to see. 4% of those registered blind see nothing at all.

Spectrum of Sight Loss

Temporary Sight Loss

Sight Impaired

Severely Sight Impaired (Blind)

Understanding Sight-loss

Temporary Sight loss Issues	Sight Impaired	Severely Sight Impaired
• Usually over a short period of time. • Can be resolved by minimalist intervention. • Ensuring materials are available which can be adjusted to accommodate the temporary sight loss.	• There is some field of vision, but the sight is restricted in some way. • Can be resolved by minimalist intervention but there are also some facilities which need to be in place. • Sometimes patrons will have their own aides, and equipment, but the provision of stewards at events, and detailed verbal instructions. • Making larger print available	• Extremely limited field of vision • Requires support and intervention, usually a cane or a sighted guide. • Reading materials are very difficult to process. • Text to speech very helpful, free resources like Otter.AI will support the patron to be able to access materials. • Devices such as electronic readers can be helpful. • Software can be helpful.

Temporary Sight Loss

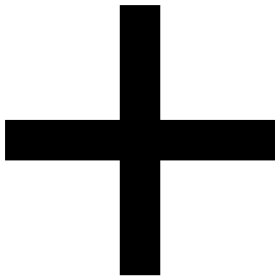
Definition

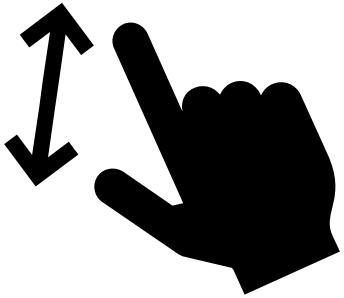
- Usually over a short period of time.
- Can be resolved by minimalist intervention.

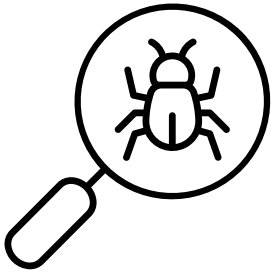
Support

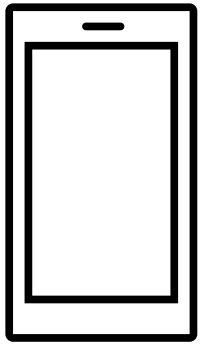
- Ensuring materials are available which can be adjusted to accommodate the temporary sight loss.

Temporary Sight Loss Support









Sight Impaired

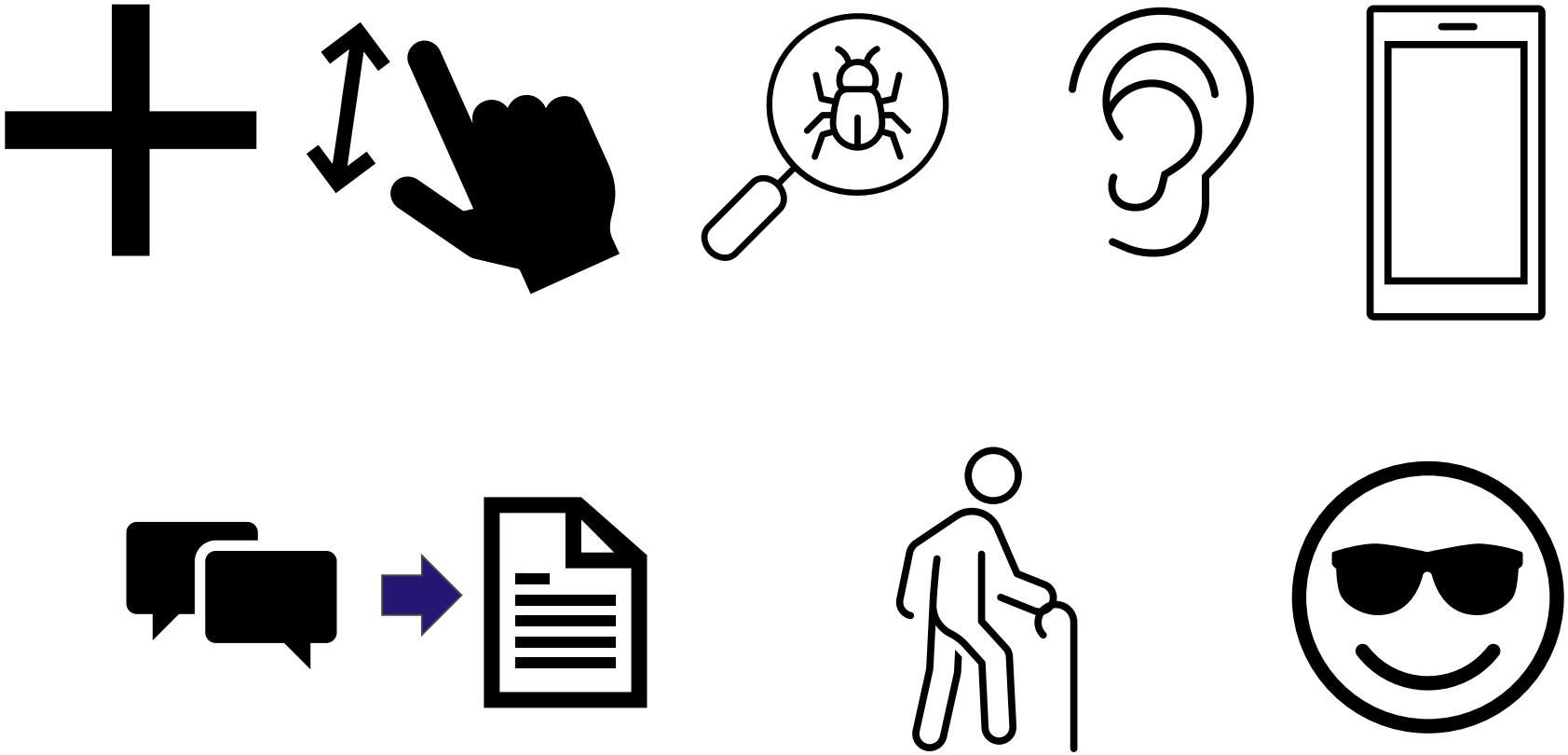
Definition

- There is some field of vision, but the sight is restricted in some way.
- Can be resolved by minimalist intervention but there are also some facilities which need to be in place.

Support

- Sometimes patrons will have their own aides, and equipment, but the provision of stewards at events, and detailed verbal instructions.
- Making larger print available

Sight Impairment Support



Severe Sight Impairment (Blind) Issues

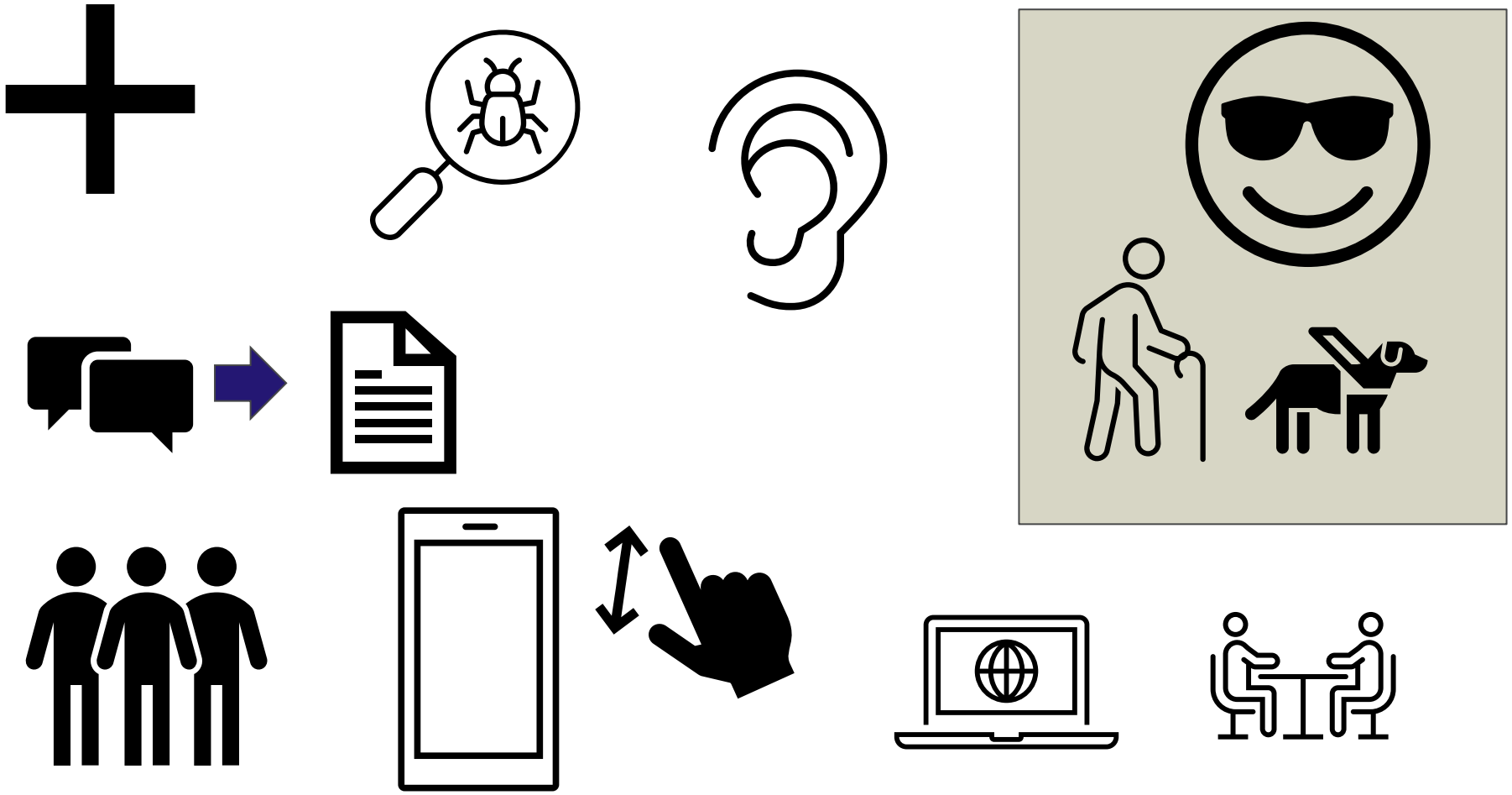
Definition

- Extremely limited field of vision
- Requires support and intervention, usually a cane or a sighted guide.
- Reading materials are very difficult to process..

Support

- Text to speech very helpful, free resources like Otter.AI will support the patron to be able to access materials.
- Devices such as electronic readers can be helpful.
- Software can be helpful

Severe Sight Impairment Support



How Sight Loss Impacts Individuals

General Mobility and Navigation

Navigation around the workplace

Travelling to and from work

Supportive technologies

Performing work related tasks

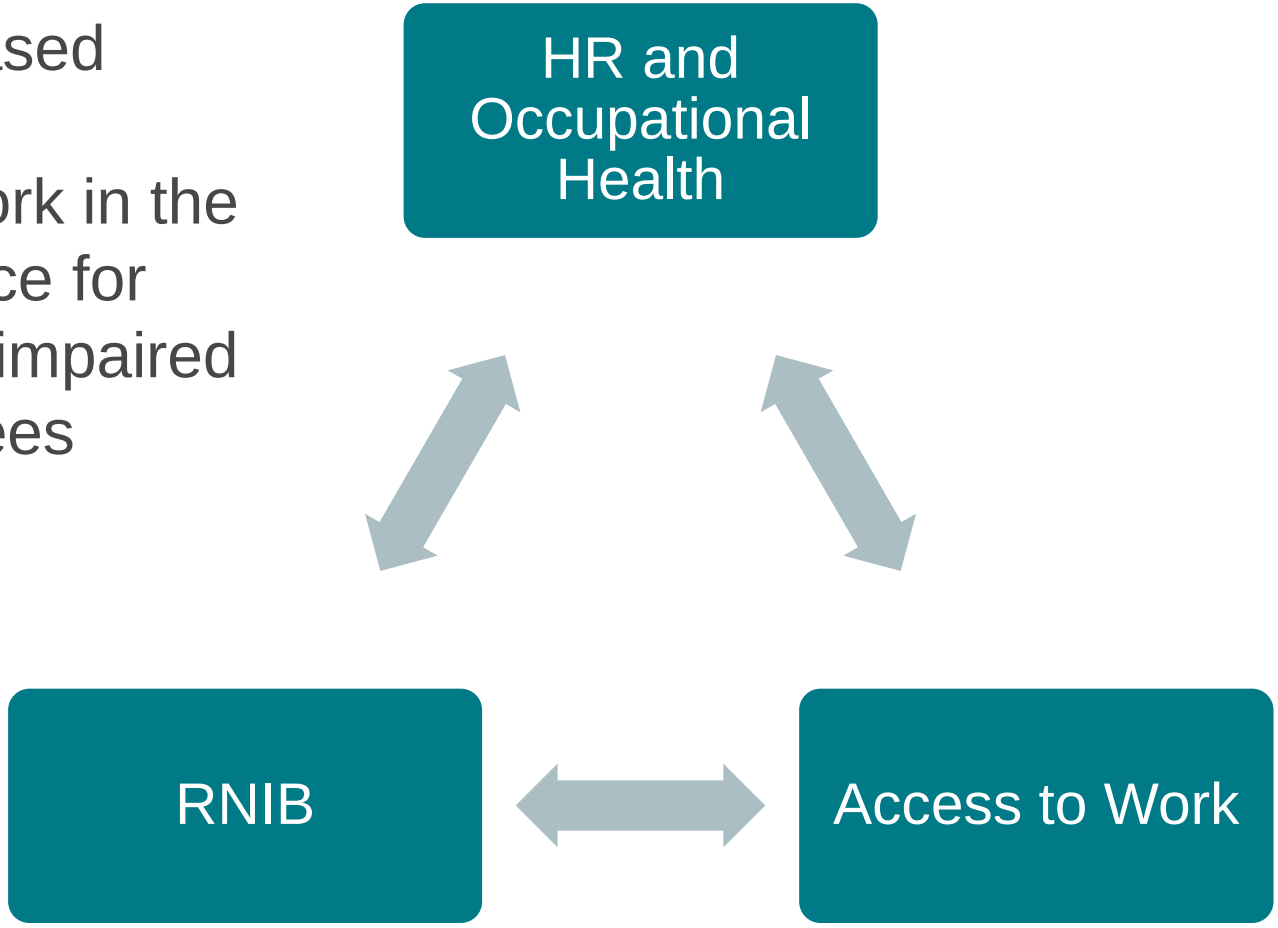
Social Isolation

Awareness of visual cues

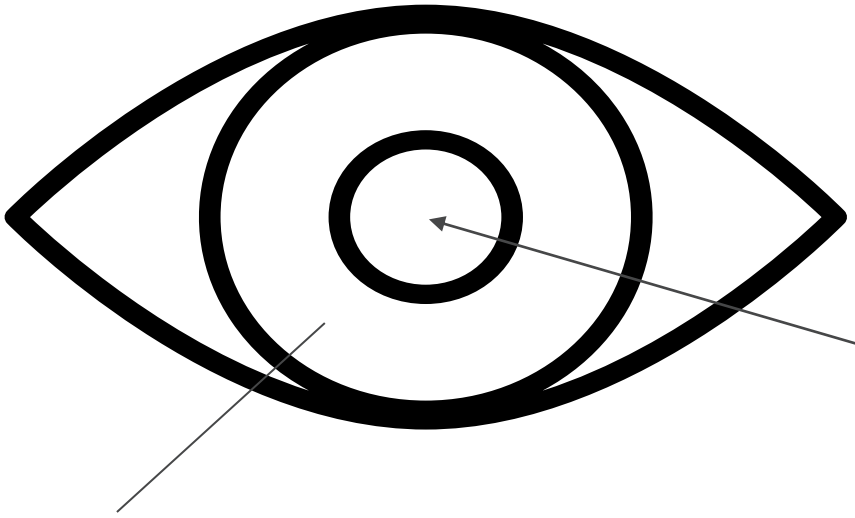
Managing Emotions and Personal Confidence Issues

Support Framework

Work based support framework in the workplace for visually impaired employees



The Eye



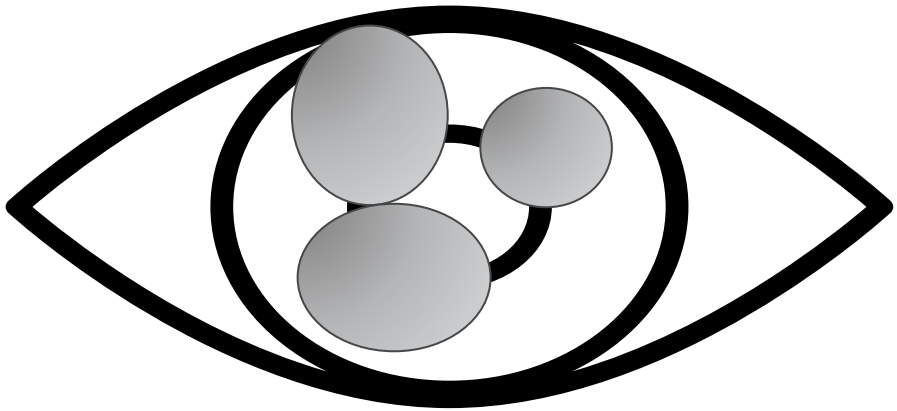
96% of environmental information is received through our vision.

Ulcerative Keratitis

- Virus
- Prevalent
- People with compromised immune systems impacted
- No cure yet
- Doesn't respond well to stress

Controlled by

- Use of anti viral meds
- Eye drops



How I see. The impact

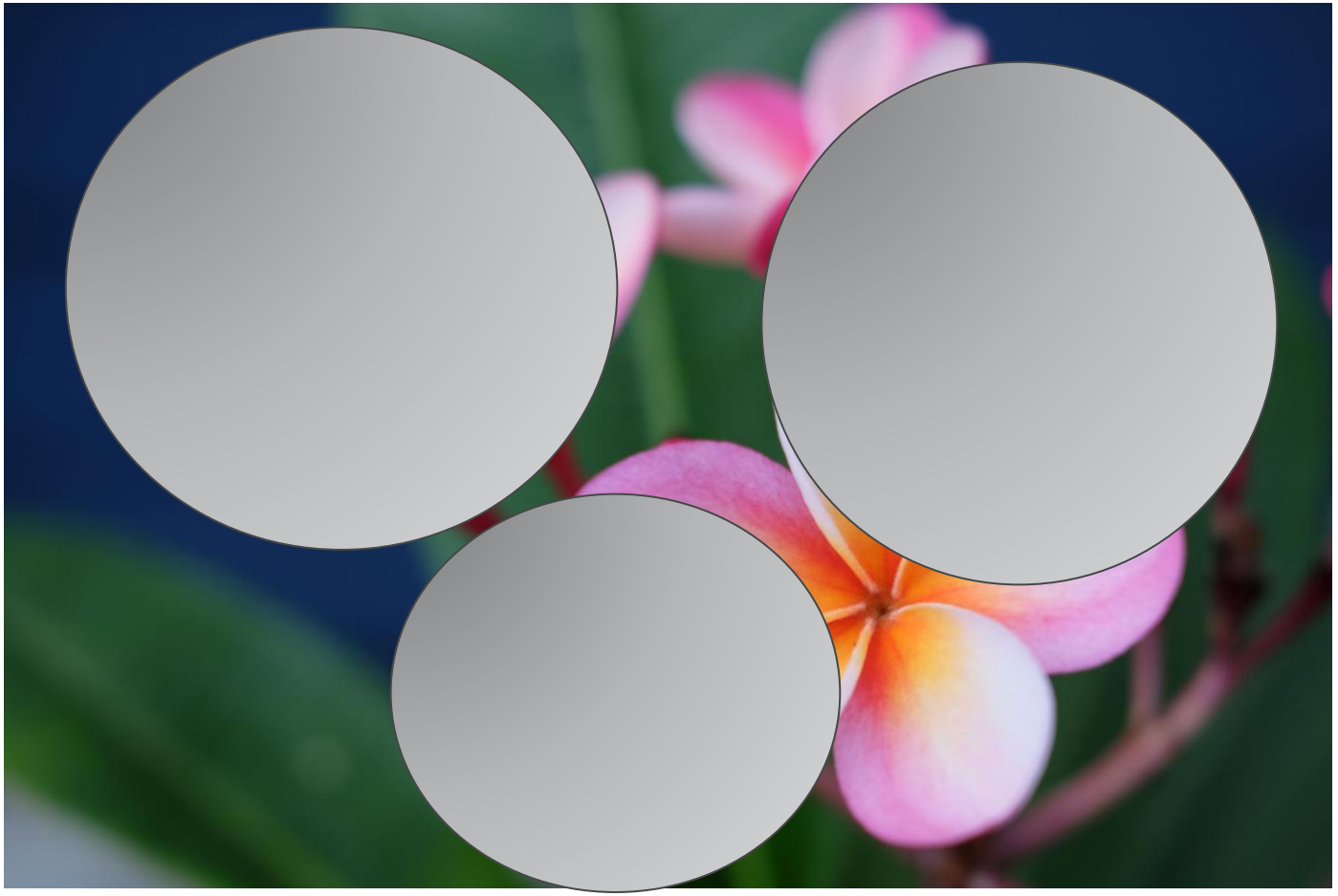


Image of a flower

How do some visually impaired people navigate work processes

ASSISTIVE TECHNOLOGY

Assistive technology

Liquid Level Indicator

- Making a hot drink independently.
- Uses sensors and sound to minimise the risk of burning
- Three prongs, one for hot water, one for milk and one to stop the cup from overflowing

Assistive technology

- Screen displays fine detail from documents, photographs or labels
- Colour coded tactile buttons
- Contrast colour viewing modes; ability to change text and background colours

Ruby

Magnification Device

Assistive technology

- Use as a magnifier
- Download VI applications
- Location services (tracking)
- QR Code Reader
- Speech recognition software

Tablet Technology

Assistive technology

- WEWalk White cane
- Location services (tracking)
- Obstacle detection
- Vibrates to inform of low-hanging obstacles

Navigational Technology

Assistive technology

Sumi Band

- Location services (tracking)
- Obstacle detection
- Overhead obstacle detection
- Socially distanced (People too close)

Navigational Technology

Mobile Phone Applications: Recognition

Be My Eyes: Connects Visually Impaired and Sighted people, for support via a phone call. Used when lost in London

Seeing AI: Provides a narrative about the world around you; colours, shapes or objects.

Thirdeye: Enables users to recognize everyday objects via one button. The app replies verbally

Mobile Phone Applications: Speech to Text and Vice Versa

OtterAI: Enables Visually Impaired people to dictate into their mobile phones and this application will play back and convert speech to text.

Dragon: Provides speech to text software and voice recognition. It will also allow control of some software on a computer. It will open, close and save files.

JAWS: Job Access With Speech screen reader, for computer users whose vision loss prevents them from seeing screen content or navigating with a mouse

Mobile Phone Applications: Reading

RNIB Bookshare: Enables Visually Impaired people and lexically challenged persons to access reading materials in a variety of accessible formats

Audible : Provides subscription access to audio books

Talking Newspapers and Magazines: Provides access to local and national newspapers and magazines

Important to Remember

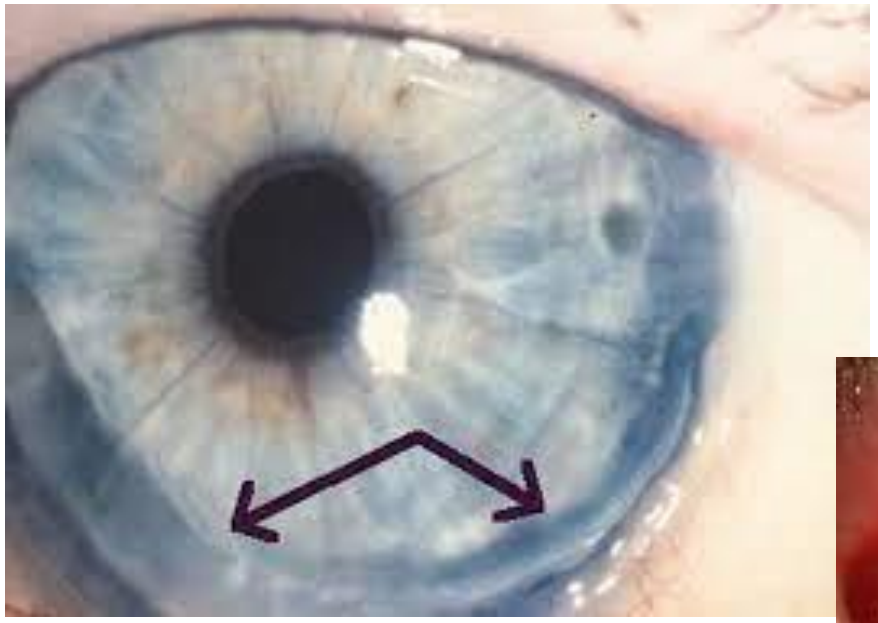
The progression of my eye condition could have been ***stopped*** before I became **blind**.

A significant proportion of blindness is preventable.

Look after your eyes!

Get all your itchy eyes checked out, do not rely on over the counter medicines.

Advanced Stages of Keratitis



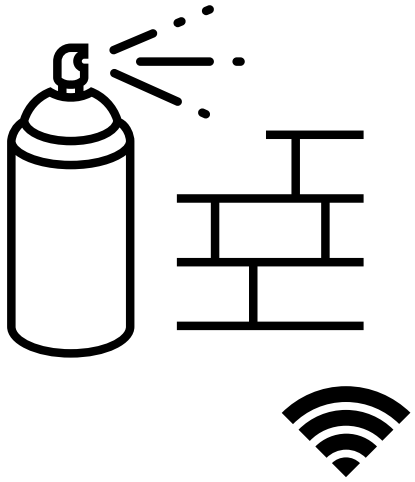
General Hygiene

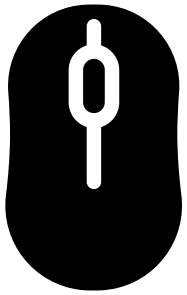
Most people in this meeting tonight will use a keyboard as part of their role.

A positive outcome from COVID should be the improvement of general hygiene.

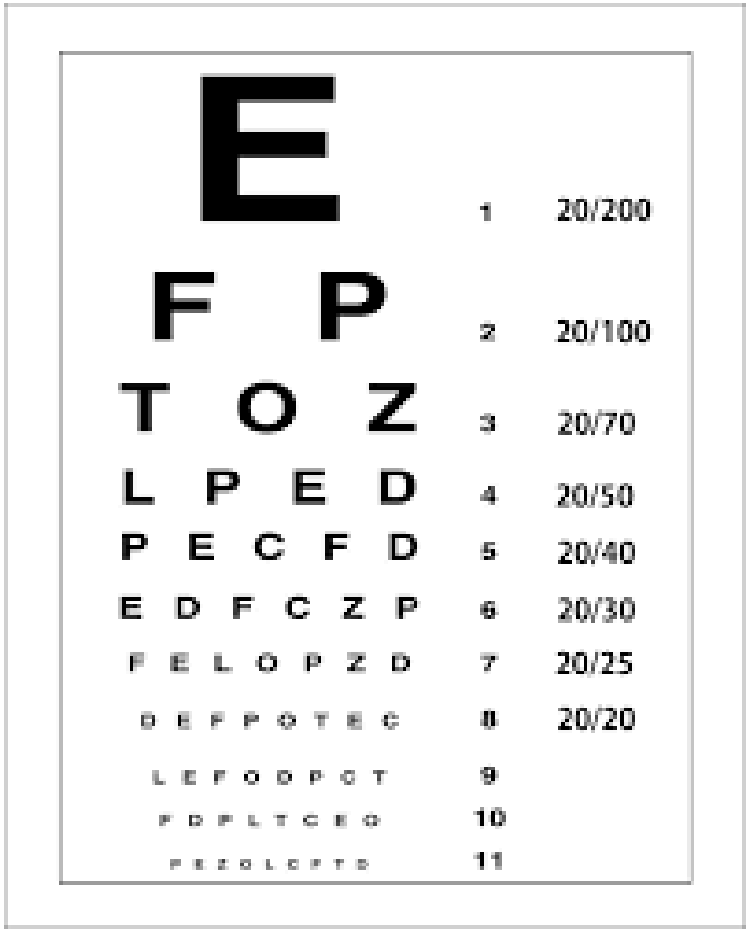
Look after your eyes!

- Make sure if you use keyboard equipment that it is clean.
- Use blue tooth personal keyboards if you can or your own personal equipment to minimise infection.
- Where possible try to avoid multi usage work stations.





Preventative Measures



Regular eye checks.

Particularly if:-

- You work with screens
- You wear contact lenses
- You are prone to itchy sore eyes.

Useful Links

Websites

www.RNIB.org.uk

www.guidedogs.org.uk

https://www.noisyvision.org

https://visionaware.org/

www.adbs.org.uk

https://www.sightairedale.org.uk/

My Apps

Seeing AI

Be My Eyes

Otter AI

Dragon Naturally Speaking

Find Friends

Any questions?

Thank you