THE BENEFITS OF USING AI IN OPHTHALMOLOGY

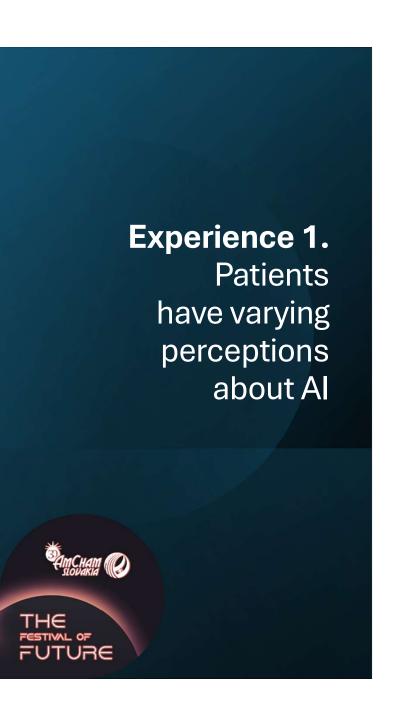




SESSION: HOW CAN NEW TECHNOLOGIES AND MODERN APPROACHES IMPROVE THE QUALITY OF HEALTHCARE / PRACTICAL EXAMPLES

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Will AI replace doctors?

Many still want to talk to their doctor.

Patient's perception of AI

Will AI always be certain in its recommendations? Some are keen for AI to express it's uncertainty.

Can AI explain its recommendation?
Many want to know what was crucial.

Experience 2. Glaucoma is one specialty that would benefit from Al



Currently in UK:

Individuals

- Second leading cause of blindness in the UK
- 4000 people registered with **vision loss** per year
- Leading cause of irreversible blindness worldwide

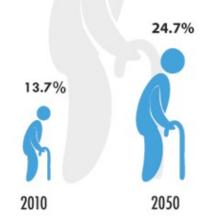
Society

- Prevalence of glaucoma increases with age
- 50% undiagnosed

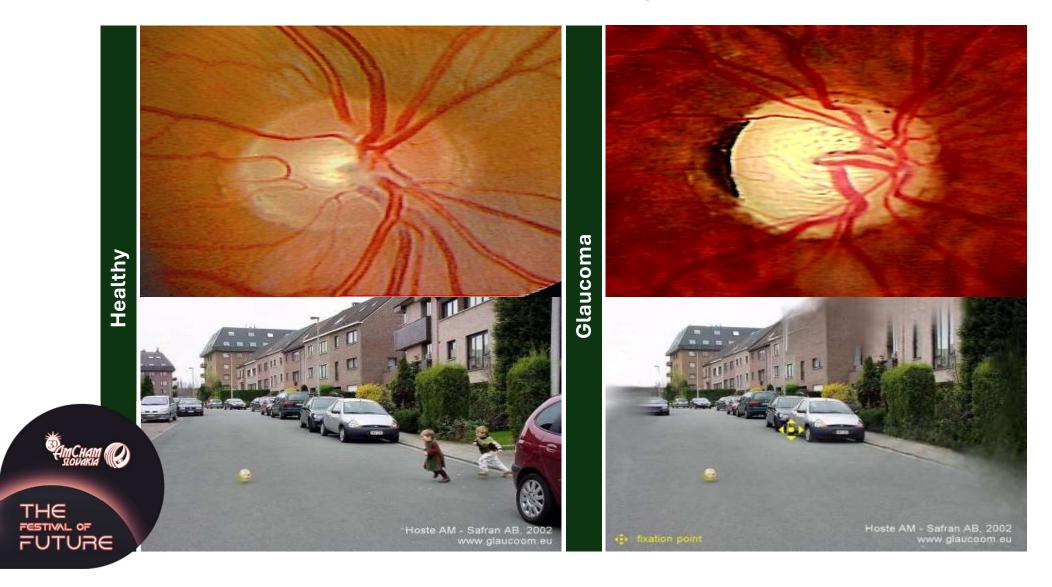
National Health Service

- Responsible for >1m outpatient visits/year in NHS England
- Ophthalmology is responsible for 10% of all NHS outpatient activity
- 25% of outpatient activity of hospital eye services

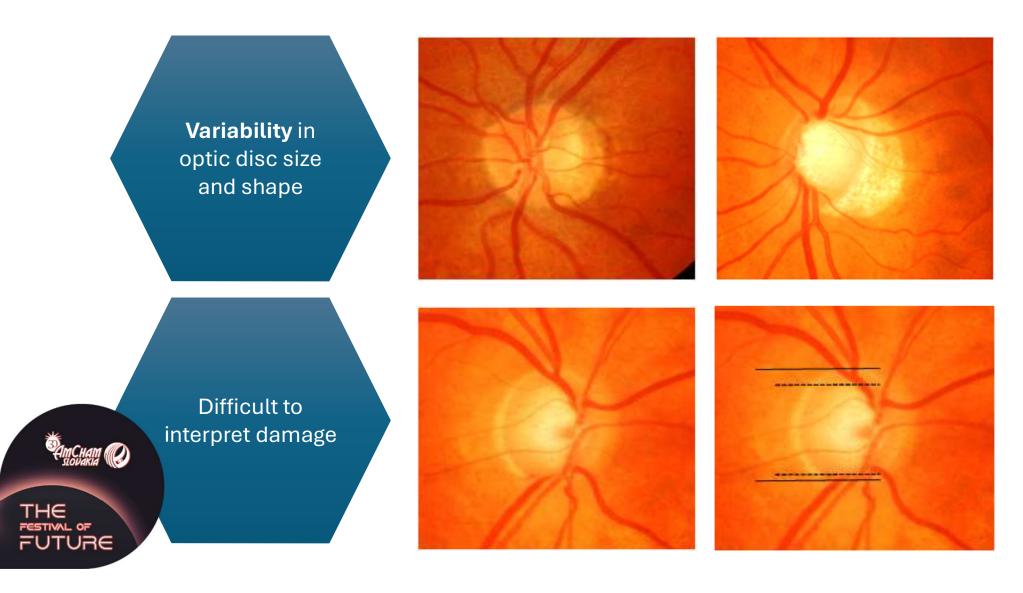
Percentage of the population above 65 years in the WHO European Region*



Glaucoma: A Chronic Disease of the Optic Nerve



Glaucoma: Diagnosis is Difficult



Current pathway

Routine sight test at optometrist

Referred with possible Glaucoma

Hospital appointment with clinician

20%

30%

50%

Glaucoma

At risk of glaucoma

Test normal - discharged

Unnecessary and costly over-referral

Possible new pathway

Routine sight test at optometrist

Al test

Referred with Glaucoma

Hospital appointment with clinician

20%

Glaucoma

Removal of overreferral

Test normal discharg ed

50%

30%

At risk of glaucoma

Monitoring in the community



Experience 3. Now, only a few Als are in routine use – for diagnosis/case detection

- In the UK, one AI is used routinely in ophthalmology: Scottish National Screening. Many trials are going on, including HERMES and work relating to the OCTANE algorithm from Moorfields-DeepMind.
- Royal College of Ophthalmology: Position Statement on Al in Ophthalmology
- 80% of AI use is in radiology: The Royal College of Radiologists created AI Registry



Position statement

Artificial intelligence in ophthalmology



Key messages

- With potential for strengthening patient care, streamlining processes and advancing research, artificial intelligence (AI) undoubtedly has an important role to play in transforming eyecare delivery in the UK.
- We believe that AI tools should be adopted via an iterative process, with ophthalmology services
 conducting regular audits, quality assurance and inclusive patient engagement to ensure safe,
 equitable and effective implementation.
- Enhanced digital integration, adequate workfo are needed to facilitate such efforts, and clinici enabled tools supplementing – not replacing –



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Question?