

Enabling excellence through inclusive medical education for dyslexic resident doctors

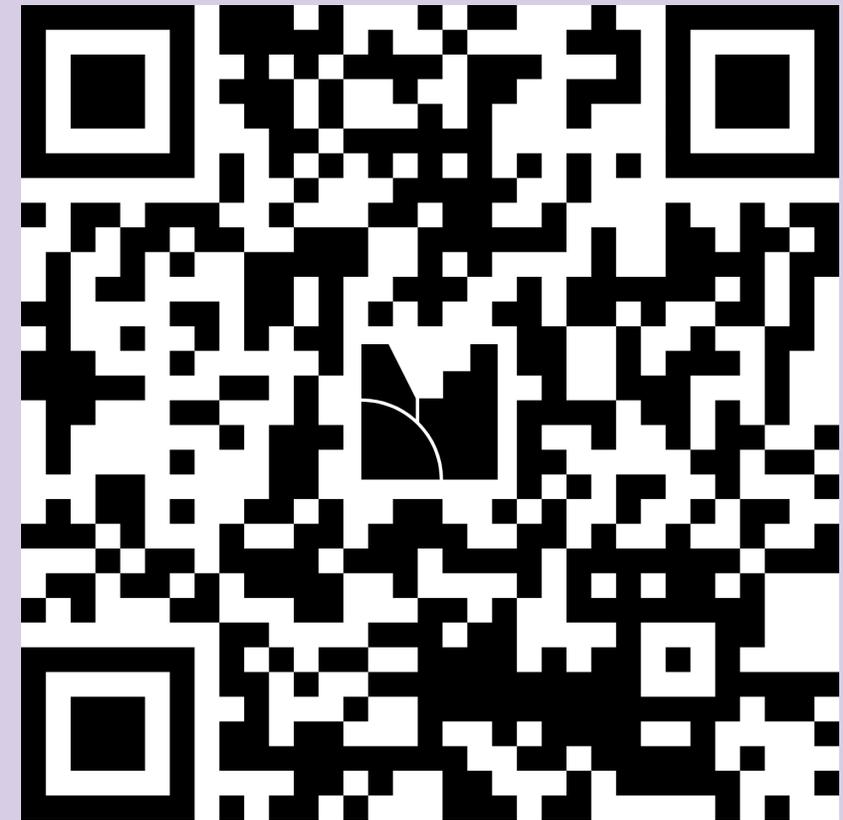
Dr Laura Bennett MBBCh (hons) MRCPsych HPEMSc

CAMHS consultant, Torbay and South Devon CAMHS

DPT GPST and Foundation Lead for Devon Partnership Trust

Session aims

- Share rationale
- Discuss dyslexia
- Outline benefits to the NHS of employing dyslexic doctors
- Highlight neurobiology evidence to support this
- Discuss ways to enable dyslexic resident doctors to learn and thrive



<https://www.menti.com/alwtzkreodtn>

www.mentimeter.com
code 5758 0447

This presentation...

- Font

- Open dyslexic font
- Dark grey (black)
- Bold for emphasis
- 18 point +
- Left aligned text
- 1.5 line spacing

- Slides

- Plain off-white, cream or pastel
- 7 lines per slide, 6 words per line

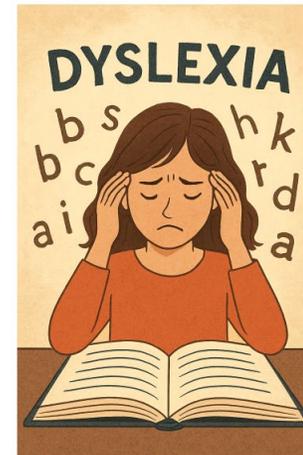
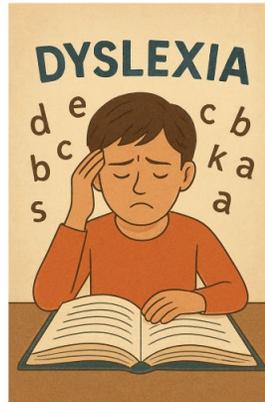
- Does not include

- Words in all capitals
- Italics or underlining
- Moving elements
- Slide transitions
- Background pattern or pictures

Why I chose this topic...

- CAMHS
- My position
- My experiences in medical education
- Stigma and stereotypes
- Language use

The struggles of dyslexia





MEDICAL EDUCATION EDUCATION EVENT

mental state exam teaching
for foundation doctors
on 15th Feb, 2:2pm

What must your mother do every day? (two things)
My mother is cleaning the room every day

What can you do when there is no school? (two things)
I can ^{not} be in the school working

What are you doing at the moment?
working together with pupils. He is working

gettyimages
Credit: Claudia Rehm

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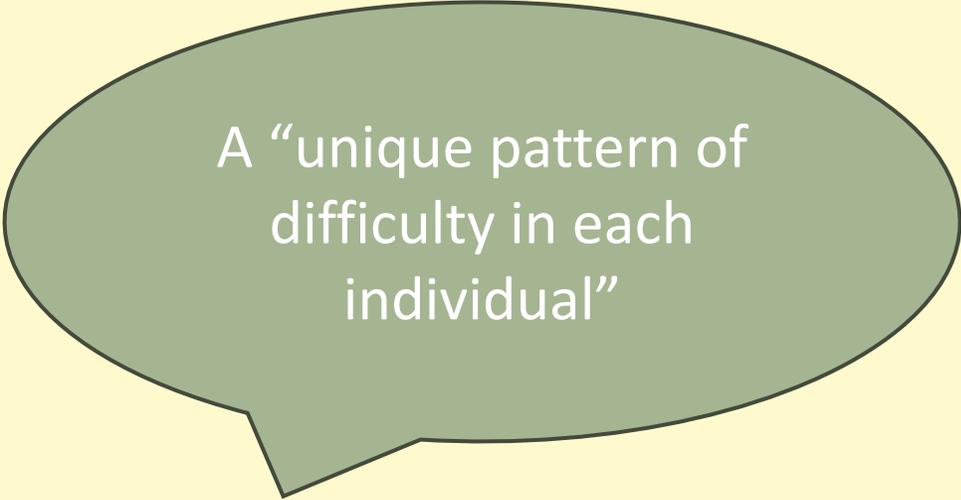
Get together in threes
and agree a role each,
doctor, patient, observer
and take a history and
include a mental state
examination. Take notes
and feedback.

MENTAL STATE EXAMINATION

MSE: use the following headings:
appearance, behaviour, speech, mood,
thoughts, perceptions, risk

Definition of dyslexia

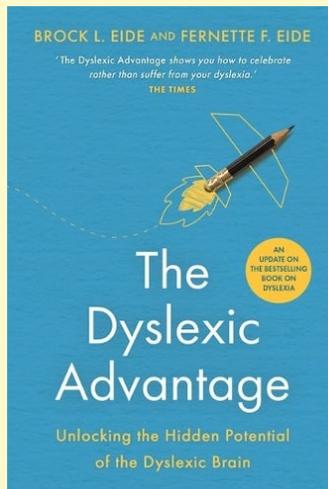
- Specific learning difficulty
- Or a **learning and processing style**
- Reading and writing
- Also information processing
 - organisational skills
 - short-term working memory
 - processing speed



A “unique pattern of difficulty in each individual”

Dyslexic thinking

- MIND strengths
 - Material reasoning
 - Interconnected reasoning
 - Narrative reasoning
 - Dynamic reasoning



Dyslexic thinking skills



Visualising



Imagining



Communicating



Reasoning



Connecting



Exploring

dyslexic thinking

AMERICAN

[dis-**lek**-sik **thing**-king] / dɪsˈlɛk sɪk ˈθɪŋ kɪŋ /

NOUN

an approach to problem solving, assessing information, and learning, often used by people with [dyslexia](#), that involves pattern recognition, spatial reasoning, lateral thinking, and interpersonal communication.

Dyslexia in medical education

- 6% - 10% population
- Increasing in UK medical schools from 1.7% - 6.6%
- Overlap and increased prevalence of neurodevelopmental differences

The functional neurobiology

- Right brain
 - Creative, emotional and visuo-spatial tasks
 - Complex language, metaphors, semantics, relation to emotions
- Left Brain
 - Logic, analysis
 - Language- literal word meaning, narrow, precise, faster
- New tasks
 - Right brain first for big picture processing and problem solving
 - With familiarity, move to left brain for details, then speed and automaticity
 - Dyslexic thinkers do this shift less, continue to use right hemisphere more
- Dyslexic thinkers perform tasks through more conscious neural circuits than automatic

Research findings

- Hruska (2015)
 - 10 med students (novices), 10 consultants (experts)
 - Diagnostic tasks under fMRI
 - Significantly different neural areas in novices vs experts for difficult cases
 - Novices: left hemisphere areas involved in linguistic reasoning, rules and definitions
 - Experts: right hemisphere areas associated with personal experience, imagination, creativity and mental simulations
 - These areas correspond with those that dyslexic thinkers tend towards using preferentially

The structural neurobiology

- Structural differences found
 - Non-dyslexic adults: left hemisphere usually larger (right handedness)
 - Dyslexic adults: hemispheres more equal size
 - Relates to visuo-spatial talents in dyslexia
- Dyslexic adults more likely to have wider spacing between cortical microcolumns with longer axon tails
 - Associated with larger, broader cortical circuits
 - Better for processing large concepts, synthesising ideas, making unusual connections, problem solving
 - Less focused on fine detail, less reliable for automatic familiar tasks
- Trees vs forest



Dyslexia helps you to:

- 1** Make connections across complex issues, subjects and data, which others don't see.
- 2** Cut through the noise and see the big picture, rather than getting stuck in the detail.
- 3** Communicate and explain complex subjects through storytelling and simplifying.
- 4** Solve problems in different ways, coming up with new ideas to tackle them.
- 5** Build, support and empower teams, people and organisations.

Assessments

- No significant differences found in written exams
- Difference found in first year OSCEs, but not later on
- Extra time for written exams, not OSCEs
- Essays and revision place extra burden on dyslexic learners

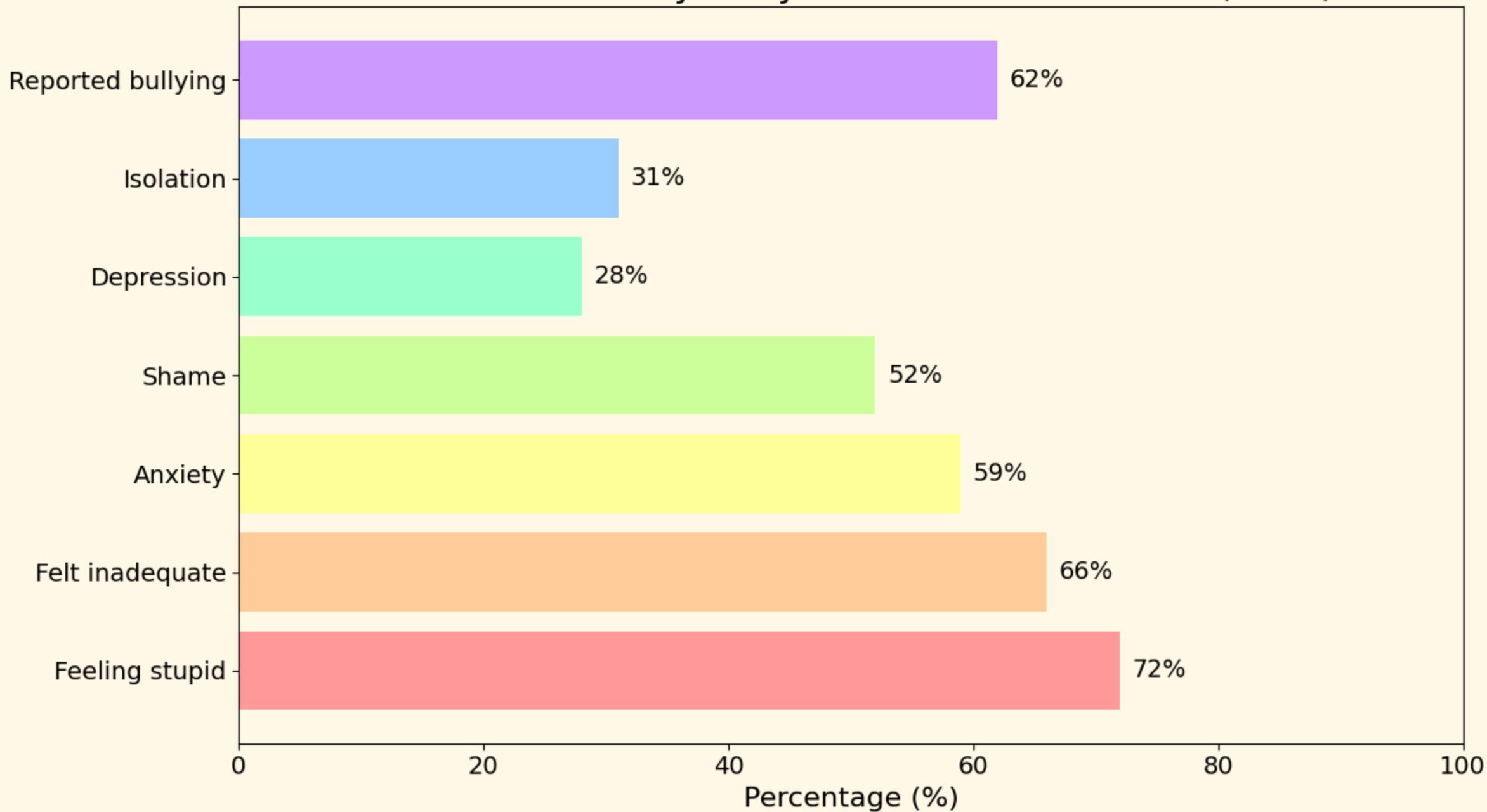
Clinical learning environment

- Prescribing
 - No difference in prescribing exam marks found
- Hand-written notes
 - Reading and writing
- Time pressure, interruptions
- Organisation, prioritising
- Sensory inputs

Wellbeing

- Adult learners developed strategies
 - Can have a time, cost and emotional burden for them, lead to burnout
 - A negative impact of both dyslexia and strategies needed described in the literature

Anderson's Survey of Dyslexic Resident Doctors (2020)



Qualitative research themes around wellbeing

- Subject to greater stressors
- Stigma
- Humiliation in ward rounds
- “Told off” for slow writing
- Misunderstood, dismissed, accused of “fake” dyslexia

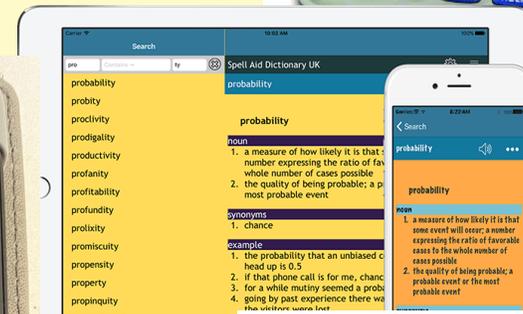
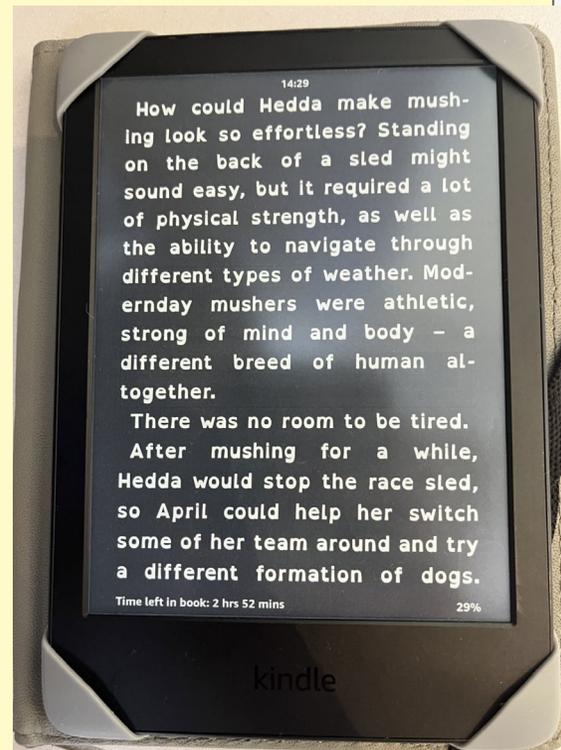
So how can we enable dyslexic resident doctors to learn well and thrive in our trusts?

Individual strategies

- Note: Disclosure vs not, help-seeking or not
- Rehearsal
- Double checking mechanism
- Organising time to go back to make notes
- Colour coding paperwork
- Finding quiet places

Adaptive technology

- Speech recognition software
 - Dragon, claro read
- Text to speech
- Spellcheckers
- Reading pens
- BNF app
- Kindle
- Earplugs



Trust and deanery support

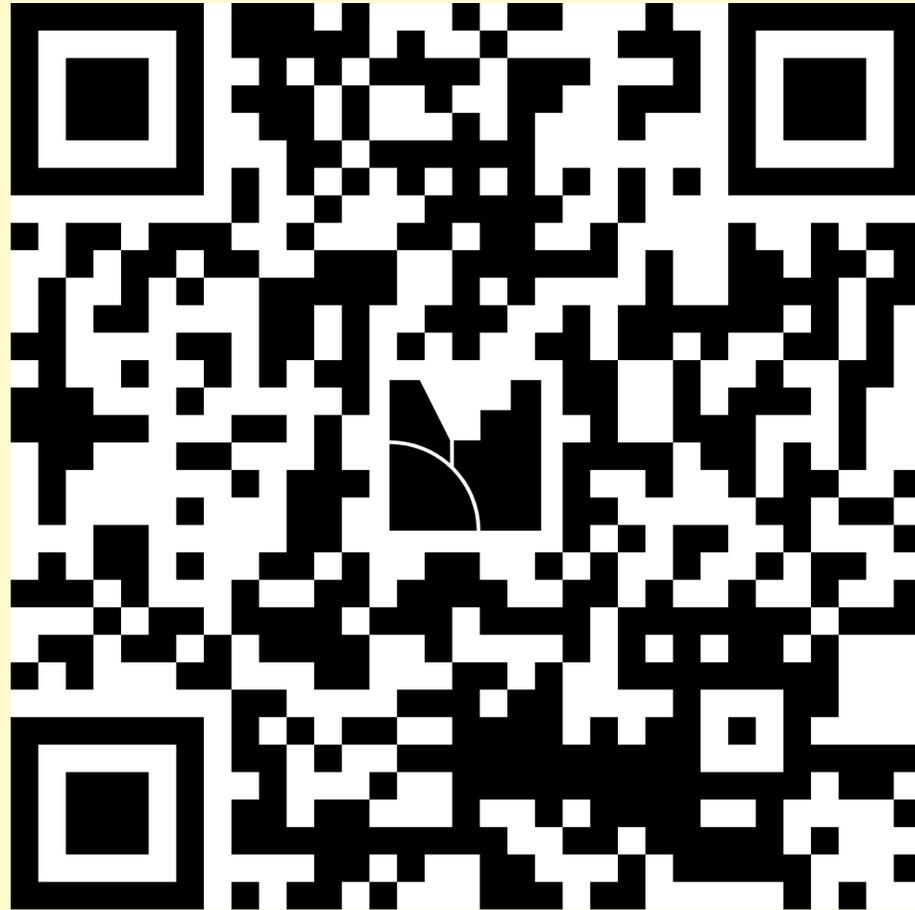
- Peninsula deanery
 - 1:1 meeting
 - Exam and revision support
 - 6 study skills sessions for exams
 - Revision guide
- Occupational health
- Access to work for reasonable adjustments
- Sight test and colourimetry



Examples of what we are doing

- CASC role play information
- My written skills day
- Guidelines
- Teaching fellows use OpenDyslexic font
- Speech recognition software pilot
- Dyslexia awareness days and training
 - Medical education journal club
 - Medical education trust CPD session

What do you do in your work?



Conclusions and plans

- Early identification
- Dyslexic thinking profile strengths are evidenced by research
- Appropriate reasonable adjustments all levels
- Awareness and knowledge key
- But needs to be rooted in an inclusive environment that welcomes and invites different thinking styles and a diverse workforce

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Many thanks!

- Please email any questions or comments, or if you want to discuss this further at [**laura.bennett9@nhs.net**](mailto:laura.bennett9@nhs.net)
- **Feedback to me at:**

