NIALL HOLDEN

Dyslexia in medicine

On a recent ENT placement, I was taking a history from a patient on the ward during which the patient asked me If I would be able to explain their diagnosis further to them. During the morning ward round, they had been given a brief explanation of their condition by a member of the surgical team and given a patient information leaflet about their condition.

The patient confided in me that although they don't have problems with their vision, they have never felt comfortable reading as they feel the words can move around the page. They went on to mention how they are very embarrassed about struggling to read and feel modern life is very difficult when you can't read. The patient reported about how narrowed their life opportunities were by this. They will only ever eat from one takeaway and order the same meal each time because they don't know what the other words say. Although this is on the extreme end of the spectrum, this patient is clearly a member of the 10% of the population who have dyslexia.(1)

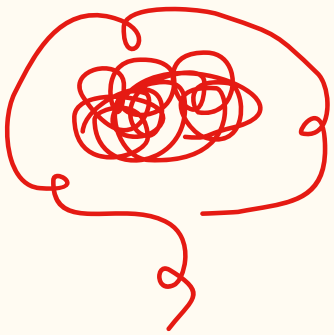
Dyslexia is a learning difficulty which is typically characterised by difficulties reading, writing, and spelling, despite affected individuals having normal levels of intelligence.(2) In normal physiology the reading pathway includes Broca's area, the inferior parietotemporal lobe (including Wernicke's area), the anterior, middle lobe and the left occipitotemporal sulcus. These four areas are vital for phonological processing and have been shown on functional MRI scanning to be far less activated in people with dyslexia.

This is compensated for by a greater use of the alternative anterior systems. These anterior systems can enable accurate reading but are unable to support fluent or rapid reading to the same extent as is seen in the more established reading pathway. (3)

People with dyslexia experience significantly reduced reading and writing speeds, experience problems with reading and problems with phonation. In addition to these more classical symptoms these people also experience problems with working memory impairments (4) and auditory temporal processing. (5)

Dyslexia is also strongly linked to low self-esteem which is likely to be caused by individuals at a young age having difficulties both inside and outside of school. (3)

As dyslexia is typically diagnosed by an educational psychologist it is not commonly considered to be within the remit of medicine. However, it is important to be aware of the struggles which it may cause patients. A quick screening question which can also cover patients who don't have their reading glasses could be 'If I were to give you a patient information leaflet would you have any difficulty reading it'.



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Doctors and Medical students are constantly being asked to consider more and more issues which may seem to run adjacent to the practicing of medicine. This is undoubtedly a challenge but patients with a better understanding of their own conditions, internal locus of control and better relationships with their clinicians have better outcomes. (6)

As 10% of our future patients are likely to have dyslexia it might be worth having a think about thinking of some ways in which we can ensure such patients are as engaged and integrated into their own care as we would want any of our other patients to be.

My experience

Having dyslexia is often thought of by many as being both a gift and a curse. Dyslexia provides a lot of advantages in terms of lateral thinking, imagination and problem solving. The disadvantages are evident: challenges with reading speed—both aloud and silently—writing difficulties, and impaired short-term memory.
The only problem is that in third level education its more likely that the downsides will outweigh the benefits. Especially in a challenging degree such as medicine. Aside from the obvious challenges faced by a plethora of textbooks, research articles and clinical guidelines and the reading challenges they present there are other ways in which dyslexia affects medical students:

Terminology – the medical world is full of complex terminology and jargon. Although I love the romanticism in naming things in Greek and Latin it does provide an extra hurdle. The minefield of cholecystitis, cholangitis and choledocholithiasis springs to mind. From my experience it's not that these are stumbling blocks, rather that I needed to learn to be patient with myself when I get them mixed up yet again.

Short term memory – Short term memory is an area in which most people in medicine are particularly gifted. As a result, having different neuronal pathways which affect students ability to remember facts in the short term can be very challenging. From unsuccessful attempts to cram topics for exams, to forgetting details for upcoming PBL's it can make aspects of university significantly more challenging. I try and have a notebook on me for important information on placement and remain buoyed by the fact that once I understand something and find a place for it in my brain it does thankfully stay there.

Exams – organising my thoughts into the correct terminology and getting them down on the page efficiently for markers provides a challenge. Exam technique is something I am constantly trying to improve. Thankfully,

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4. Wang, J. et al. (2022) Behavioral and neurophysiological aspects of working memory impairment in children with dyslexia, Nature News. Available at: https://www.nature.com/articles/s41598-022-16729-8 (Accessed: 21 March 2024).
5. Eggermont, J.J. (2015) Auditory temporal processing and its disorders, OUP Academic. Available at: https://academic.oup.com/book/7151 (Accessed: 21 March 2024).
6. Musich S;Wang SS;Slindee L;Kraemer S;Yeh CS; (no date) The impact of internal locus of control on Healthcare Utilization, expenditures, and health status across older adult income levels, Geriatric nursing (New York, N.Y.). Available at: https://pubmed.ncbi.nlm.nih.gov/31727348/ (Accessed: 21 March 2024).

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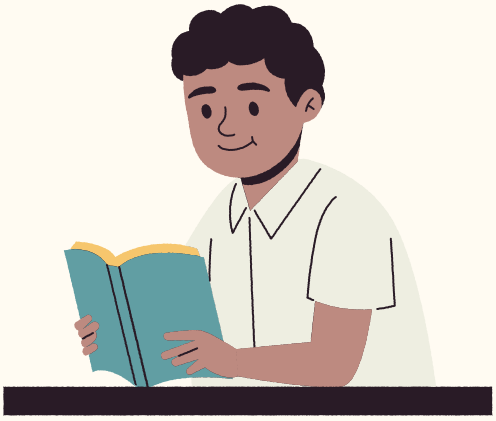
there does seem to be the beginnings of a gear shift to improve exam questions and style to better suit a wider aspect of the population.



My primary strategies are centred on two key pillars: firstly, embracing my weaknesses while leveraging my strengths; and secondly, seeking out support wherever possible. The disability services at the university are very helpful and have provided me with a lot of assistive technology. In addition I have benefited from one-to-one tuition helping me develop adaptive study techniques which can help me restructure information. This has taught me to summarise long lists into categories which I prefer to deal with. This has all been provided to me quickly and free of charge for which I am massively grateful.

I am not trying to shout from the rooftops about difficulties I have faced, rather hoping to find some people who recognise my challenges in their own experiences and have been considering exploring a diagnosis. People with dyslexia can achieve as much in medicine as anyone else can and there are countless examples of this. The importance as in anyone is recognising where we might need help and being humble enough to ask for it.