DISCLAIMER

The information contained within this document does not constitute medical advice or diagnosis and is intended for education and information purposes only. It was current at the time of publication and every effort is made to keep the document up to date.

The information contained herein includes both psychological and non psychological interventions. The delivery of psychological services requires a medical referral whilst non psychological services do not.

Each person is an individual and has a unique psychological profile, biochemistry, developmental and social history. As such, advice will not be given over the internet and recommendations and interventions within this website cannot be taken as a substitute for a thorough medical or allied health professional assessment or diagnosis.

Dyslexia

Article QUICK LINKS :

WHAT IS DYSLEXIA?

Stedman's Medical Dictionary lists dyslexia as "Impaired reading ability with a competence level below that expected on the basis of the individual's level of intelligence, and in the presence of normal vision and letter recognition and normal recognition of the meaning of pictures and objects. Syn: incomplete alexia. Origin [dys- + G. lexis, word, phrase]".[1]

The International Dyslexia Association (IDA) and the National Institutes of Health (NIH) in America, define dyslexia as a language-based learning disability characterised by difficulties in single word decoding caused by phonological processing problems. In addition to reading problems, dyslexia can also involve difficulty with writing and spelling.

The Learning Disabilities Association of America defines dyslexia as a learning disability in the area of reading.

Many famous and successful people have gone public in recent times about their own learning problems - and indeed many claim to have "dyslexia".

As you can see, the term dyslexia is defined in many ways depending upon who is doing the defining. Obviously we must accept that there is more than one "type" of "dyslexia".

Many educators do not use the term "dyslexia" and instead refer to: Specific Learning Disabilities.

Yet it should not be seen as a disability - rather, dyslexia should be viewed as a different learning ability. Dyslexia only becomes a disability when the condition goes unrecognised and inappropriate teaching methods result in the child's failure to gain competency in literacy and numeracy.[2]

As early as 1925, Dr. Samuel T. Orton had specific ideas in the amelioration / remediation of dyslexia, these included the following two main points of his principles for retraining:

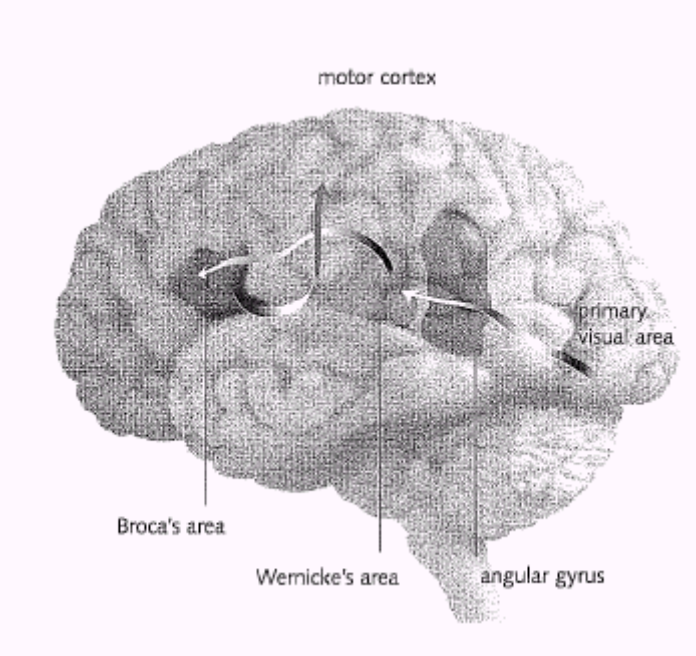
1. "Training for simultaneous association of visual, auditory and kinaesthetic language stimuli - in reading cases, tracing and sounding the visually presented word and maintaining consistent direction by following the letters with the fingers during the sound synthesis of syllables and words".

2. "Finding such units as the child can use without difficulty in the field of his [or her] particular disability and directing the training toward developing the process of fusing these smaller units into larger and more complex wholes."[3]

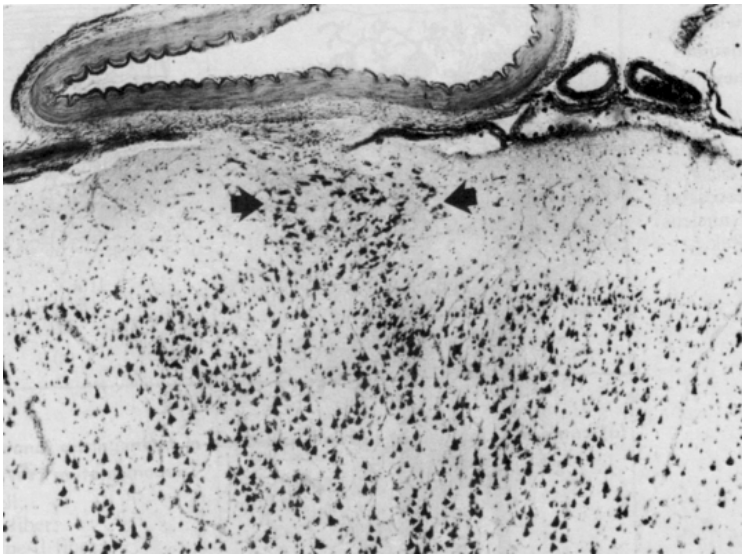
However, that being said, current neurobiology points to certain specific areas of brain dysfunction.

SO WHAT CAUSES DYSLEXIA?

Reading and writing involves more than just the language areas of the brain. Dyslexia takes many different forms and it's aetilology is just as confounding. The visual cortex feeds information in from the page and the motor cortex is required to activate the muscles for writing. Information must flow freely between the areas concerned or else a form of dyslexia may result.

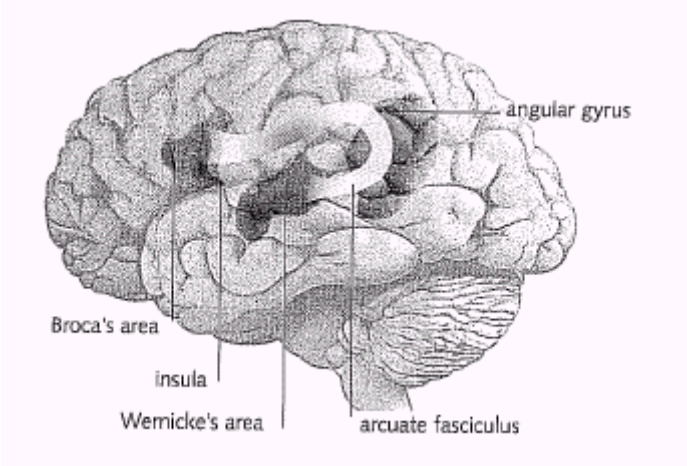


Some research has shown that abnormal migration of neurons exists in dyslexic individuals.[4] For more information on this aspect of neuronal migration, please see the article: Stages of Brain Development.



Abnormal cell aggregation in the brain of a person with dyslexia
Source : Biological Psychology by D.P. Kimble

Some types of dyslexia may be due to what is known as a disassociation disorder - a missing or inactive connection between parts of the brain. Positron Emission Tomography (PET) studies have shown that Wernicke's area and Broca's area do not work in concert in dyslexics and the connection between the two - known as the insula - is inactive.[5] Given the implications of these brain areas - the angular gyrus (which links visual word recognition with other linguistic abilities) and arcuate fasciculus (a tract of fibres connecting Wenicke's and Broca's areas which may actually predate speech) may also be involved.



Ratios of males to females in dyslexic populations vary according to the criteria of each study reviewed, but it is generally thought that 2:1 may be an appropriate ratio.[6]

There is increasing evidence that cerebellar deficits may be a causal factor in dyslexia. In a direct test of cerebellar function in learning, dyslexic individuals demonstrated significantly reduced habituation of the orienting response to the conditioned response than controls. This recent study showed for the first time that there are fundamental differences in the way that dyslexic individual's learn.[7]

Perhaps the most popularly known of all conditions resulting in what can be termed dyslexia is what has become known as Irlen Syndrome - a form of scotopic sensitivity which results in problems of perception.

More information on this phenomenon may be found at: http://www.dyslexia-australia.com.au/ Rosemary Boon, our registered psychologist and founder of Learning Discoveries is also a certified Irlen Lens screener.

Generally, there is a high rate of comorbidity in dyslexia. For example, dyspraxia (a developmental coordination disorder), 'night blindness', ADD / ADHD (Attentional deficits with or without hyperactivity), short term memory deficits, organisational, behavioural and attitudinal problems as well as other specific learning difficulties, indicating that there may be some common biological basis to the conditions. Visual and central processing deficits have been found.

SO WHAT CAN BE DONE FOR DYSLEXIA?

The long-chain polyunsaturated fatty acids (LCPUFAs) are important components of retinal and brain membranes and studies of supplementation with a docosahexanoic acid (DHA) rich fish oil have shown improvements in dark adaptaion and movement skills.[8,9]

Neurofeedback: has been shown to be a useful adjunct in dyslexia and optimal placement of electrodes according to QEEG and current neuroanatomical understanding is essential for the success of this technique.[10]

CranioSacral Therapy: has been shown to be helpful with dyslexia and dyspraxia. Temporal bone dysfunction is almost always implicated and gentle balancing of the temporal bones often dramatically improves reading ability.[11] Therefore, a referral to a CranioSacral Therapist is usually recommended before formal academic intervention begins.

Interactive Metronome Programme: Is very useful in assisting with difficulties of coordination.

Remedial Teaching: Individualised remedial teaching is essential for people with Dyslexia.

THE HOLISTIC APPROACH AT LDPS

At Learning Discoveries, our approach looks at guiding and educating the person in their own innate capacities to attain balance and wellbeing in their lives.

After a thorough history and Psychometric Assessment, an individualised programme will be devised aimed at restoring balance to the nervous system.

These may include a combination of any of the following:

- Education and Counselling
- Diet and Nutrition
- Biofeedback and or Neurofeedback Training
- Heart Rate Variability Training
- The Interactive Metronome Training Program
- Neurodevelopmental Therapy
- Movement Exercises
- Remedial Teaching

For more information or to make an appointment please contact us on (02) 9637 9998 during business hours.

FURTHER READING SUGGESTIONS

- Learning Disabilities
- Stages of Brain Development
- QEEG and Neurofeedback - diagnostic and training modalities for the enhancement of CNS functioning in ADHD and other disorders
- Interactive Metronome
- Remediation of reading, spelling, and comprehension
- Psychometric and Learning Difficulties Assessments
- Quantitative Electroencephalography (QEEG)
- Counselling
- Dietary Supplements
- Neurofeedback - EEG Biofeedback - a Drug-Free Strategy for ADHD, Learning Disorders and Other Conditions
- Flexyx™ Neurotherapy System
- Heart Rhythms and Heart Rate Variability (HRV)
- Interactive Metronome
- Neurodevelopmental Therapy - Inhibition of Primitive Reflexes
- Bodywork, Breathing and Movement for Sensory Integration, General Health and Wellbeing
- The relationship between spelling, writing, reading and comprehension

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