What is Dyslexia?

Dyslexia is one of the specific learning disabilities. It is neurobiological in origin, caused by inherent differences in the structure and function of the brain. Children with Dyslexia have difficulty in accurate and fluent word reading, as well as in spelling. Dyslexia is associated with difficulty in processing the sound (phonology) and written form (orthography) of language. Secondary consequences may include problems in reading comprehension and reduced reading experience, which in turn impede growth of vocabulary and overall knowledge.

To be able to read fluently, it requires the efficient mapping of print (orthography), sound (phonology) and its meaning (morphology). Children with Dyslexia have difficulties in the accurate and efficient connection of the print with its corresponding sound and meaning. Studies suggest that phonological awareness is the key cognitive-linguistic skill in English word learning. In Chinese word learning, apart from phonological sensitivity, morphological awareness as well as orthographic skills are also important cognitive-linguistic skills.
The reading difficulties in Dyslexia are not better accounted for by intellectual disabilities, sensory impairment or lack of educational opportunities, resulting in unexpected discrepancy between their intelligence and motivation for learning and their academic achievement.

**How does Dyslexia affect children?**

Clinical features of Dyslexia evolve with the children’s age:

**Preschool:**

Preschoolers may start speaking at a later age than children of the same age, and they may show articulation problems. They may find it excessively difficult, or may take much longer time, to learn how to read letters, simple words and numbers.

**Early primary school:**

In this early phase of schooling, students with Dyslexia have difficulties in learning the association of sounds and symbols of the Chinese characters or English words, as well as in parsing or blending sounds of letters to read out or spell words in English. Moreover, the child may confuse words and characters that sound or look alike. Dictation errors include reversing the order of letters in words or confusion of radical components of Chinese characters. Errors in the stroke sequence of writing are common.
Late primary school:

Students show increasing difficulties in reading and writing. They may also have problems with reading comprehension and written expression. These will ultimately result in general academic failure.

Secondary school:

For students at this stage of education, successful performance in school requires substantial organization skills and executive functioning. Students with Dyslexia often show weakness in these areas. Furthermore, difficulties in reading comprehension, note taking and written expression will impair their learning experience. Social and psychological problems may arise because of low self-esteem and peer relationship. All these factors may lead to academic failure and adverse effects on social-emotional development.

How common is Dyslexia?

Dyslexia occurs in people of all backgrounds and intellectual levels. Reported figures from different countries show that as many as one in ten school aged children has Dyslexia. In Hong Kong, the prevalence of children with Dyslexia was shown to be 9.7 to 12.6%. The condition in about 70% of these is considered to be mild, 20% to be moderate, while the remaining 10% severe.
What causes Dyslexia?

Dyslexia is associated with observed differences in brain function. Reading is supported by brain regions and networks, with dominance of the left side of the brain. Neuroimaging studies show that the brain networks of individuals with Dyslexia may be different in structure, function or connectivity. Meanwhile, genetic studies demonstrate the role of genetic influences in Dyslexia. Clinical experience also shows that siblings and parents of an individual with Dyslexia have higher chances of reading problems.

Does my child really have Dyslexia?

Other conditions may have symptoms that can be confused with those of Dyslexia. These include intellectual disability, language disorder, attention deficit/ hyperactivity disorder or academic underachievement due to inadequate learning experience.

What conditions may co-exist in children with Dyslexia?

Children with Dyslexia commonly have other comorbid developmental problems, including language disorder, developmental coordination disorder and attention deficit/
hyperactivity disorder.

What is the mainstay of treatment for children with Dyslexia?

The mainstay of management lies in reading remediation that should be theoretically sound and evidence based, on teaching approaches that are tailored to the student’s learning style and needs, and on availability of appropriate accommodations in the learning environment.

Remediation of reading difficulties in English begins with the teaching of letter-sound correspondence through a multi-sensory approach which is provided in a systematic and cumulative manner. In reading Chinese, awareness of the internal structure and meaningful components of the characters, along with understanding of related implicit rules are essential. As Chinese characters are morphosyllabic (i.e. each word having meaning and a syllable sound), teaching explicit word attack strategies by segregating the phonetic (sound) and semantic (meaning) components of the word helps in decoding the sound and meaning of a word character. Furthermore, strengthening of morphological awareness helps in understanding Chinese vocabularies which are formed by the combination of two or more individual characters. Meanwhile, individualized educational plans including accommodations in teaching and examinations are necessary to enable effective learning at school.
There is no documented medical treatment for Dyslexia at this time. Alternative therapies for Dyslexia are sometimes offered, but many have been shown to have uncertain theoretical bases and limited replicable scientific evidence. These include nutritional supplement, optometric vision therapy and lenses, auditory integration training, programmes which apply sensori-motor integration or vestibular-cerebellar related strategies, special nutrients and psychotherapy. As children with Dyslexia may have other coexisting conditions such as attention deficit, coordination or vision problems, some of these approaches could have helped them with their other developmental problems instead of Dyslexia per se.

Can children with Dyslexia grow up normally?

Although the biological characteristics associated with Dyslexia do persist in affected individuals, different measures can be used to ameliorate or overcome difficulties faced by these individuals as they grow up. The severity of Dyslexia, cognitive ability, the effectiveness of education and psychological support, and management of any associated co-morbid problems, will affect the long term prognosis in these children.
Relevant Websites:

British Dyslexia Association
http://www.bdaDyslexia.org.uk/

Early Literacy for Chinese Children
http://literacyresearch.wixsite.com/chinese

Hong Kong Association for Specific Learning Disabilities
http://www.asld.org.hk

Hong Kong SLD Research Team
http://www.psychology.hku.hk/hksld/

International Dyslexia Association
https://dyslexiaida.org/

LD Online
http://www.ldonline.org/

Special Education Service, Education Bureau, Hong Kong

Special Education Resource Centre, Education Bureau, Hong Kong

References:


