Dyslexia, Susceptibility to, 1

Alternative Names
DYX1
Word-Blindness, Congenital
Reading Disability, Specific, 1
Dyslexia, Susceptibility to, 4
DYX4
Dyslexia, Susceptibility to, 7
DYX7

Record Category
Disease phenotype

WHO-ICD
Mental and behavioural disorders > Disorders of psychological development

Incidence per 100,000 Live Births
Unknown

OMIM Number
127700

Mode of Inheritance
Autosomal dominant

Gene Map Locus
15q21

Description
Dyslexia is a learning disability characterized by an inability to read properly, in the absence of any form of mental retardation, or lack of intelligence. Common features of the condition include difficulty with manipulation of sounds, spelling, and/or rapid visual/verbal responding. However, these symptoms appear in varying degrees of severity among affected individuals. Of all the forms of dyslexia, the primary form can be hereditary in nature. This type of dyslexia results from a dysfunction in the left cerebral cortex, as opposed to damage to the brain seen in trauma dyslexia. Primary dyslexia is seen more often in boys than girls. Development dyslexia is yet another type of dyslexia resulting from defects in hormonal development in the early stages of fetal development.

Dyslexia is diagnosed based on tests that assess the child's functional reading level and compare it to the reading potential. As in all developmental disorders, early intervention is important for effective management of dyslexia. Special teaching methods and a modified educational environment that meets the specific needs of dyslexic students can make a significant impact. Children who undergo an early remediation program, and who have a supportive home environment have a good prognosis.

Molecular Genetics
The underlying physiologic basis for dyslexia is purported to be abnormal cortical development occurring before the sixth month of fetal brain development. Twin studies have shown a definite genetic basis to at least some forms of dyslexia. Studies have identified several loci and candidate genes that have been implicated in the condition. These include ROBO1 on chromosome 3, DCDC2 and KIAA0319 on chromosome 6, and DYX1C1 on chromosome 15.

Epidemiology in the Arab World
Egypt
Farrag et al. (1988) assessed 2878 children from the 2nd and 3rd grades in elementary schools for their reading ability by means of standardized tests for linguistic ability and rate of letters identification. Of this group, 84 children (3%) with IQ 90 or more and no evidence of sensory or motor impairment were backward in their reading ability. They were left to proceed in their conventional educational program for the next 3 years. After reassessment, 37 (27 boys, 10 girls) were diagnosed as having the syndrome of specific reading disability. Farrag et al. (1988) calculated the prevalence of SRD among the population surveyed as 1%, and the male to female ratio as 2.7 to 1. This prevalence is far lower than that reported in western countries. In a subsequent study, Farrag and el-Behary (1990) indicated that children with SRD had a significantly higher incidence of: (1) illiteracy of both parents; (2) low sociocultural standard; (3) positive family

history of elementary school failure; (4) abnormal optokinetic nystagmus; (5) disturbed homolateral dominance, and (6) immature EEG tracing over the occipital area.

Kuwait

Elbeheri et al. (2009) investigated the incidence of dyslexia among juvenile offenders in Kuwait. Of the 91 children and young adults originally selected, 53 were tested for dyslexia. Surprisingly, the results indicated a much higher percentage of dyslexics in this population (>20%), when compared to the Kuwaiti national average (6%).

References

Elbeheri G, Everatt J, Al Malki M. The incidence of dyslexia among young offenders in Kuwait. Dyslexia. 2009; 15(2):86-104. PMID: 18433005

Farrag AF, el-Behary AA, Kandil MR. Prevalence of specific reading disability in Egypt. Lancet. 1988; 2(8615):837-9. PMID: 2902276

Farrag AK, el-Behary AR. Specific reading disability in Egyptian children. Clinical picture, diagnosis and prognosis. Neuroepidemiology. 1990; 9(1):50-6. PMID: 2330071

Related CTGA Records

N/A

External Links

http://emedicine.medscape.com/article/1835801-overview
http://www.dyslexia.com/
http://www.dyslexiatreatment.com/
http://www.interdys.org/
http://www.ninds.nih.gov/disorders/dyslexia/dyslexia.htm

Contributors

Ghazi O. Tadmouri: 20.11.2011
Pratibha Nair: 13.11.2011