

Sample research paper on Down syndrome

Down syndrome is a condition caused by the presence of an extra chromosome 21. It typically affects physical and cognitive development. It was first described in 1887 by John Langdon Down, thus lending its name to the condition. The incidence is estimated at 1/750 live births worldwide with about 6,000 new cases annually in the United States alone based on 2002 data from the National Institutes of Health (NIH).

Down syndrome causes cognitive impairment characterized by delayed learning of vocabulary and onset age of Alzheimer's disease as well as characteristic physical features such as the round face, upward slanting eyes, and small stature below-average intelligence quotient (IQ) ranging from 40-200 which may be higher among those without any other associated mental disabilities or lower among those with additional accompanying mental disabilities.

Common physical features include:

The cause of Down syndrome is not yet clearly identified, but it is believed to be caused by the presence of an extra chromosome 21. This condition occurs when a person receives an extra copy of chromosome number 21 either from their mother or father which results in characteristic physical and mental features shared by all with the condition. An estimated 80 percent of individuals with Down syndrome have trisomy 21 (nondisjunction) resulting from abnormal meiosis I or II during gametogenesis while 20 percent have translocations where part of an extra chromosome 21 becomes attached to another chromosome in a different pair causing partial monosomy for that chromosomal region Both nondisjunction and translocations are

random occurrences that happen during cell division in early development but do not specifically have any environmental associations.

The severity of symptoms depends on the amount of extra chromosome 21 material present in each cell. Each child with Down syndrome is unique. Early intervention helps children reach their full potential by teaching practical life skills needed for self-care and social independence when they are ready to enter school. With appropriate educational programming, individuals with Down's are more able to develop skills that help them communicate better, care for themselves, be more independent and productive at work or school, and live healthier lifestyles.

There is no cure for the condition but early intervention through speech therapy can improve communication skills while physical therapy helps reduce clumsiness caused by muscle weakness due to hypotonia.

In conclusion, Down syndrome is a condition caused by the presence of an extra chromosome 21. It is estimated to affect 1/750 live births worldwide with about 6,000 new cases annually in the US alone based on 2002 data from the National Institutes of Health (NIH). Symptoms are characterized by cognitive impairment which can be improved through speech therapy and physical therapy, especially for muscle weakness due to hypotonia. There is no known cure for this condition at present but early intervention helps children reach their full potential.