

## CHAPTER 12

# Natural History of Cerebral Palsy

**ABSTRACT:** The natural course of CP has changed greatly during the past 50 years. If appropriate health care is available, affected children without significant comorbidities have actuarial survival approaching that of the general population.

An understanding of the natural history of CP is essential for a proper prognosis and provision of support services. The natural history of untreated CP is one of progressive deterioration. It has been shown that without intervention, detrimental changes in gait and function will occur over time span as short as 1.5 years. The impact of skeletal growth during childhood can compound the primary neurological problem if muscles fail to lengthen in proportion to their adjacent long bones; and spastic muscles have been shown to grow more slowly than normal. Therefore, although CP is by definition a static neurological lesion and a disorder of motor function, the phenotype has also been labelled a 'progressive neuromuscular deformity'. During adolescent growth spurt, many patients gain substantial weight, their gait worsens and become wheelchair bound. Important items include prognosis for life expectancy, walking, and hand function. The symptoms range from a mild gait abnormality to profound total body involvement. The standardized mortality ratios for CP in all ages, is significantly raised. There is a sharp fall in SMR after 14 years though mortality remains higher from ischemic heart disease and cancer than in the general population.

**KEYWORDS** Predicting the ability to walk, Walking beyond the second decade of life, Hand function: use it or lose it, Life expectancy, Quality of life and costs of caring, Medicolegal aspects

An understanding of the natural history of CP is essential for a proper prognosis and provision of support services. The natural history of untreated CP is one of progressive deterioration. It has been shown that without intervention, detrimental changes in gait and function will occur over time span as short as 1.5 years. During adolescent growth spurt, many patients gain substantial weight, their gait worsens and become wheel-chair bound. Important items include prognosis for life expectancy, walking, and hand function.

The impact of skeletal growth during childhood can compound the primary neurological problem

if muscles fail to lengthen in proportion to their adjacent long bones; and spastic muscles have been shown to grow more slowly than normal. Therefore, although CP is by definition a static neurological lesion and a disorder of motor function, the phenotype has also been labeled a 'progressive neuromuscular deformity' (Graham 2002). The symptoms range from a mild gait abnormality to profound total body involvement.

### Survival

Children with total body involvement and bulbar difficulties, necessitating alternative feeding, are

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**Jiyuan Zhang**



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