

Development of the Gross Motor Function Classification System (1997)



To address the need for a standardized system to classify the gross motor function of children with cerebral palsy, the authors developed a five-level classification system analogous to the staging and grading systems used in medicine. Nominal group process and Delphi survey consensus methods were used to examine content validity and revise the classification system until consensus among 48 experts (physical therapists, occupational therapists, and developmental pediatricians with expertise in cerebral palsy) was achieved. Interrater reliability (κ) was 0.55 for children less than 2 years of age and 0.75 for children 2 to 12 years of age. The classification system has application for clinical practice, research, teaching, and administration.

Palisano R, Rosenbaum P, Walter S, Russell D, Wood E, Galuppi B. (1997) Development and reliability of a system to classify gross motor function in children with cerebral palsy. *Dev Med Child Neurol* 39: 214–223.

Considering influential articles published in the journal over the past 50 years, few have had an impact to compete with the paper by Professor Palisano and his colleagues on the development of the Gross Motor Function Classification System (GMFCS). Versions of the GMFCS are now available in at least 10 languages; the ISI Web of Science records nearly 400 citations, which is considerably more than we found in 2003.¹

In hindsight, the need for a system for classifying gross motor function for children with cerebral palsy (CP) seems such a necessary piece of research. Up until then, the clinical and research community had been inconsistently using the terms 'mild, moderate, and severe' or 'household and community ambulator', about which individuals might have been clear what they intended to convey, but there was no widespread understanding of what these terms really meant. The GMFCS provides a method for communicating about gross motor function, based principally on performance in sitting, standing, and walking activities and the use of mobility aids.

I first came across the GMFCS in 1999 as I sought a way of comparing populations of children with CP. CP population registries now routinely collect GMFCS level as part of the standard dataset. There are few papers that present research about children with CP that do not use the GMFCS to describe subjects. 'Motor growth curves' have been created by plotting children's age and GMFM scores stratified by GMFCS level.² These curves enable more reliable predictions to be made about children's future prospects for independent mobility based only on the GMFCS.

A key element of my own research has assessed the reliability

of families classifying their child's movement ability using the GMFCS. The original intention of the developers was that classification would be made by a health professional in consultation with the child's family. However, in postal surveys we have found that classifications made by families, provided with instructions but otherwise unfamiliar with the system, are highly consistent with those made independently by health professionals.^{3,4} In those papers, we suggest that information from the family is essential for making any classification using the GMFCS, as their knowledge of a child's performance across a range of environments such as home, school, and community settings will typically be far greater than a health professional can observe in clinic.

Work has recently been completed to revise the descriptions of children between 6 and 12 years old, mainly to clarify the effect of different environments, and also the addition of an older age band for adolescents between 12 and 18 years old. Colleagues in Australia have produced helpful illustrations for children and adolescents in each GMFCS level that provide a visual reference when first learning about the system. The success of the GMFCS has prompted the development of an analogous system for classifying manual ability in children with CP,⁵ and work is in progress to develop a similar system for classifying communication function. Each system is adding another part of the jigsaw that can help us understand children's life experiences and how best to improve their participation. Palisano et al. are to be commended for their work on the GMFCS and the 1997 paper is fittingly celebrated as part of the 50th anniversary of the journal.

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References

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