

"As relevant to doctors and health professionals as it is to people with cerebral palsy and their families."

—NADIA BADAWI, AM

**Gillette
Children's
Healthcare
Series**

SPASTIC HEMIPLEGIA

Unilateral Cerebral Palsy

Understanding
and managing the
condition across
the lifespan:
A practical guide
for families

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GILLETTE CHILDREN'S

The title of this book is *Spastic Hemiplegia—Unilateral Cerebral Palsy*. “Spastic hemiplegia” is the term historically used to describe this condition, and it remains in use today in the US. The term derives from “spastic” (the type of high tone), “hemi” (half, referring to one side of the body affected), and “plegia” (the Greek word for stroke). Over the past 20 years, the term “unilateral spastic CP,” or simply “unilateral CP,” has been adopted in Europe and Australia because it is thought to provide a more accurate description of the condition. “Unilateral” refers to one side of the body being affected. The three terms “spastic hemiplegia,” “unilateral spastic CP,” and “unilateral CP” are all used in the scientific literature. In this book, written in the US, we use the term “spastic hemiplegia,” and since spastic hemiplegia is often referred to simply as hemiplegia, we use both terms interchangeably.

Spastic hemiplegia affects the upper and lower limbs of one side of the body. The upper limb is usually more affected than the lower limb. Spasticity is the most common type of atypical tone present in individuals with hemiplegia, although dystonia can be present as well.

As noted in Chapter 1, the Gross Motor Function Classification System (GMFCS) offers an indication of the severity of the condition. This book is relevant to those at GMFCS levels I and II: those who are capable of walking independently or with an assistive walking device. GMFCS levels I and II account for the majority of individuals with spastic hemiplegia.

Spastic hemiplegia is a complex and lifelong condition. There is currently no cure. However, good management and treatment can help reduce its effects. This chapter explains spastic hemiplegia from birth through adolescence. It should contribute to your understanding of how the condition arises and develops over time. It provides information intended to help parents understand the diagnosis and what to anticipate as their child grows to adulthood. It provides adolescents and adults with an understanding of their condition. Chapter 3 addresses the management of the condition during childhood and adolescence. Chapter 4 is devoted to spastic hemiplegia in adulthood.

Spastic hemiplegia is caused by injury mostly, but not exclusively, to the cerebrum on one side of the brain—the parts of the brain that control voluntary movement, and receive and process sensory information for the opposite side of the body.

Associated problems

A large Australian study reported on the prevalence of associated problems (i.e., problems with other body systems) among children aged five with hemiplegia (all GMFCS levels).⁷⁹ See Figure 2.1.2.

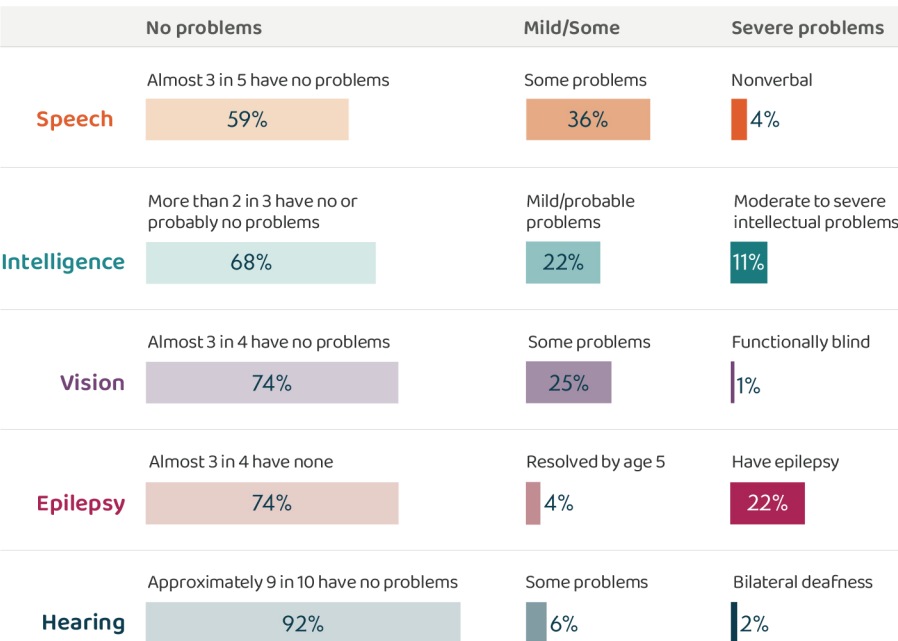


Figure 2.1.2 Prevalence of associated problems among children age five with hemiplegia (all GMFCS levels; data also includes monoplegia).

Figure 2.1.2 shows that a proportion of children with hemiplegia (all GMFCS levels) have problems in the areas of speech, intelligence (cognition), epilepsy, vision, and hearing of varying severity. Not shown in the figure is that more than 90 percent of children had none or only one severe associated problem.⁷⁹ As well, the prevalence and severity of associated problems were found to be greater in children at higher GMFCS levels compared with those at lower GMFCS levels.⁷⁹ Section 2.10 addresses associated problems in more detail.

Ally was born prematurely in Limerick, Ireland, on May 2011, at 25 weeks gestation and weighed 2 lb. The early birth was due to cervical insufficiency and a premature rupture of my membranes with consequent loss of amniotic fluid. I had been in hospital for five days prior to delivery, and because I developed an infection, I had an emergency cesarean section. Following delivery, it was nearly 24 hours before I got to meet Ally in her tiny red hat, in an incubator, and with lots of tubes and machines attached to her. I just could not believe that any baby could be so small; she literally was the size of a soda can with tiny arms and legs.

Ally was intubated with full life support,* and the clear message we got from the doctors and nurses was how critical the next 24 hours would be. The risk of brain bleeds, breathing issues, and infection was significant, and this would really determine whether Ally would survive.

At the time, this did not mean a lot to me. I did not research or delve into the implications or what it would mean in the future. Instead, I wanted to focus on what I could do to help her there and then, which for me was the immediate focus of generating breast milk and having skin-to-skin contact.

* Life support for a newborn infant typically involves providing mechanical ventilation (a tube down the throat to help with breathing) and other interventions to support vital functions.

"This book gets my highest recommendation."

—NATHALIE MAITRE, MD, PhD, PARENT

"Wow! This book is the most amazing and comprehensive source of information available for persons with unilateral CP and their families I have ever seen, and it should be required reading for any professionals who care for them."

—DIANE DAMIANO, PhD, FAPTA

"A must-read for all."

—BENJAMIN SHORE, MD, MPH, FRCSC

Spastic hemiplegia is a very common subtype of cerebral palsy (CP), and CP itself is the most common cause of childhood-onset physical disability. An estimated 17 million people worldwide have CP. Spastic hemiplegia is also known as unilateral spastic CP or, simply, unilateral CP.

Spastic hemiplegia affects the upper and lower limbs of one side of the body. The upper limb is usually more affected than the lower limb. This practical guide addresses spastic hemiplegia across the lifespan and the evidence-based, best-practice treatments. It also includes the lived experience of families.

The writing of *Spastic Hemiplegia* was led by Marcie Ward, MD, Pediatric Rehabilitation Medicine Physician at Gillette Children's, a world-renowned center of excellence for the treatment of brain, bone, and movement conditions. *Spastic Hemiplegia* is part of the **Gillette Children's Healthcare Series**, a series of books for families who are looking for clear, comprehensive information. Health care professionals, researchers, educators, students, and extended family members will also benefit from reading *Spastic Hemiplegia*.

Other titles in the series include:

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