

TABLE 12-1. PARAMETERS OF GAIT	
SPATIOTEMPORAL VARIABLE	DEFINITION
Cadence	Step rate, reported in steps per minute.
Foot progression angle	The angle between the line bisecting the calcaneus and the second metatarsal and line of progression.
Stride length	The distance of one entire cycle in the gait process beginning when one foot contacts the ground and continuing until the same foot once again contacts the ground.
Step length	The distance between the initial contact point of the 2 opposite feet.
Step width	The perpendicular distance between the bisection of each calcaneus, perpendicular to the plane of motion.

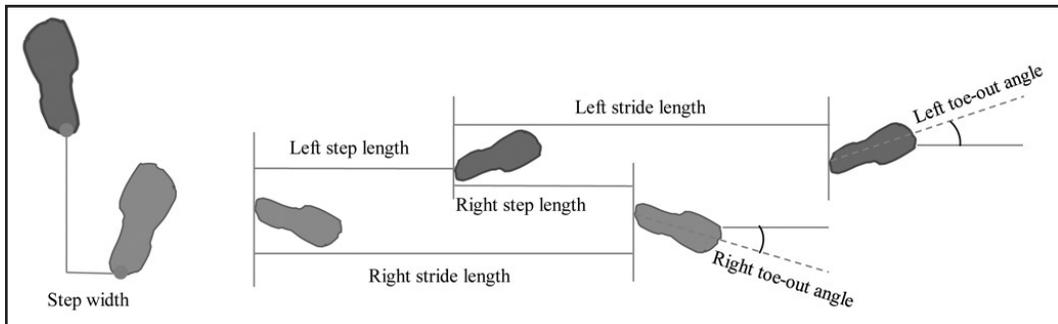


Figure 12-1. Spatiotemporal parameters of gait.

which comprises the other 40% of the cycle. Phases include more specific spatiotemporal, kinematic, and kinetic components of gait. The intent of this chapter is not to provide an in-depth review of gait biomechanics, but a general understanding of these elements, which is critical for proper examination and evaluation.

Symmetry is a hallmark of a healthy and efficient gait. Cadence, foot progression angle, step length, step width, and stride length are spatiotemporal parameters that are easily and frequently measured. (See Table 12-1 and Figure 12-1.) Whereas breaking down the components of gait may be essential for an accurate assessment, it is critical to realize that just as a symphony cannot be understood or appreciated by studying each note in isolation, gait cannot be understood by studying only the individual aspects.

GROWTH AND DEVELOPMENT

Gait parameters change across the lifespan. In general, younger children show greater variability in gait parameters than older children. Across childhood, step and stride lengths increase with age and cadence decreases, as step and stride lengths increase. The BOS decreases with age.¹⁷ The changes in these parameters reflect changes in many of the body systems and continual refinements of global neuronal maps. Gait is thought to be mature by age 7 years.¹⁷ (See Table 12-2 and Figure 12-2.)