

Wisconsin Gait Scale (WGS)

Overview: The Wisconsin Gait Scale (WGS) can be used to evaluate the gait problems experienced by a patient with hemiplegia following stroke. This can be used to monitor the effectiveness of rehabilitation training. The authors are from the University of Wisconsin.

Observations of the subject:

- (1) walking towards the observer
- (2) walking away from the observer
- (3) from the side

Measures (14 submeasures):

- (1) stance phase of the affected leg (5 submeasures)
- (2) toe off of the affected leg (2 submeasures)
- (3) swing phase of the affected leg (6 submeasures)
- (4) heel strike of the affected leg (1 submeasure)

Stance phase submeasures:

- (1) use of hand held gait aid
- (2) stance time on impaired side
- (3) step length of the unaffected side
- (4) weight shift to the affected side with or without a gait aid
- (5) stance width (measure distance between feet prior to toe off of affected foot)

Toe off submeasures:

- (6) guardedness (pause prior to advancing affected leg)
- (7) hip extension of affected side (observe gluteal creases from behind the subject)

Swing phase submeasures:

- (8) external rotation during initial swing
- (9) circumduction at mid swing (observe path of affected heel)
- (10) hip hiking at mid swing
- (11) knee flexion from toe off to mid swing
- (12) toe clearance
- (13) pelvis rotation

Heel strike affected leg submeasure:

(14) initial foot contact

Submeasure	Finding	Points
use of hand held gait aid	no gait aid	1
	minimal gait aid use	2
	minimal gait aid use wide base	3
	marked use	4
	marked use wide base	5
stance time on impaired side	equal (time spent on affected side same as time spent on unaffected side during single leg stance)	1
	unequal	2
	ver brief	3
step length of unaffected side	step through (heel of unaffected foot clearly advances beyond the toe of the affected foot)	1
	foot does not clear	2
	step to (unaffected foot placed behind or up to affected foot but not beyond)	3
weight shift to the affected side (with or without gait aid)	full shift (head and trunk shift laterally over the affected foot during the single stance)	1
	decreased shift	2
	very limited shift	3
stance width	normal (up to 1 shoe width between feet)	1
	moderate (up to 2 shoe widths)	2
	wide (more than 2 shoe widths)	3
guardedness	none (good forward movement with no hesitancy noted)	1
	slight	2
	marked hesitation	3
hip extension of affected side	equal extension (hips equally extend during push off; maintains erect posture during toe off)	1

	slight flexion	2
	marked extension	3
external rotation during initial swing	same as unimpaired leg	1
	increased rotation	2
	marked	3
circumduction at mid swing	none (affected foot adducts no more than unaffected foot during swing)	1
	moderate	2
	marked	3
hip hiking at mid swing	none (pelvis slightly dips during swing)	1
	elevation	2
	vaults	3
knee flexion from toe off to mid swing	normal (affected knee flexes equally to unaffected side)	1
	some	2
	minimal	3
	none	4
toe clearance	normal (toe clears floor throughout swing)	1
	slight drag	2
	marked	3
pelvic rotation at terminal swing	forward (pelvis rotated forward to prepare for heel strike)	1
	neutral	2
	retracted	3
initial foot contact	heel strike (heel makes the initial contact with the floor)	1
	foot flat	2
	no contact of heel	3

total score = SUM(points for 2 to 10 12 to 14) + (3/5 * (points for 1)) + (3/4 * (points for 11))

Interpretation:

- minimum score: 13.35
- maximum score: 42
- The higher the score the more seriously affected the gait.

References:

Rodriquez AA Black PO et al. Gait training efficacy using a home-based practice model in chronic hemiplegia. Arch Phys Med Rehabil. 1996; 77: 801-805. (Table 1 page 803).