

Instrumental gait analysis parameters for assessing lower limb spasticity: a systematic review

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Aim: To examine the assessment of adults' lower leg spasticity, in studies of instrumental gait analysis (GA).

Method: At least two independent investigators reviewed each paper, and rated its quality (Quality Assessment Tools-NIH).

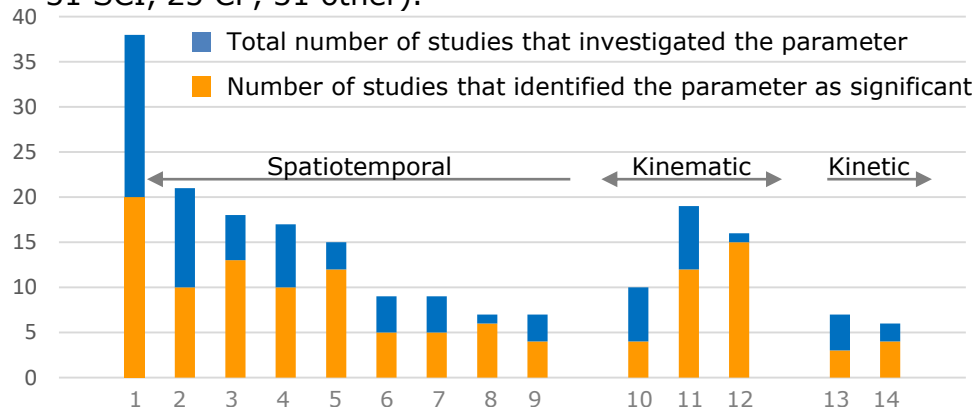
Data bases searched: Medline, EMBASE, CINAHL, AMED, Cochrane and PEDro.

Inclusion criteria: Empirical studies, adult participants, reported clinical measurements of lower limb spasticity and instrumental GA.

Exclusion criteria: Interventions or history of orthopaedic surgery, GA studies published before 1991 and non-English manuscripts.

Study type quality	Good	Fair	Poor	Total
Controlled intervention	3	2	1	6
Observational	2	12	5	19
Pre-post intervention	3	11	4	18
Case series	3	0	0	3
Total	11	25	10	46

Results: 46 studies of 973 participants with spasticity were included (639 Stroke, 95 HSP/SSP, 86 ABI, 66 TBI, 31 SCI, 25 CP, 31 other).



1-Gait velocity, **2**-Cadence, **3**-Step length, **4**-Stance duration, **5**-Stride length, **6**-Swing duration, **7**-Step width, **8**-Single leg support duration, **9**-Double leg support duration, **10**-Specific angle, **11**-Peak angle, **12**-Total ROM, **13**-Peak moment, **14**-Peak power generation

Spatiotemporal and kinematic parameters were most comprehensively studied with instrumental GA. Kinetic parameters used were highly variable.

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