

## **SUPPLEMENTAL METHODS**

### **Dataset one inclusion/exclusion criteria**

Participants were included if they were at least eighteen years of age, had a stroke diagnosis, and were able to walk independently with or without an assistive device. Participants were excluded if they had orthopedic or musculoskeletal conditions, cerebellar disease or disorder, congestive heart failure, peripheral artery disease, pulmonary failure, a history of myocardial infarction or cardiac dysfunction within the last three months, uncontrolled hypertension, dementia, or renal failure.

### **Dataset two inclusion/exclusion criteria**

Participants were included if they were aged eighteen to eighty years, at least six months post-stroke, able to walk independently for at least five minutes, and had paresis confined to one side. Participants were excluded if they had damage to the pons, basal ganglia, or cerebellum, signs of cerebellar involvement or extrapyramidal symptoms, uncontrolled hypertension, a Montreal Cognitive Assessment five-minute protocol score less than nineteen, or orthopedic or pain conditions that affected walking ability.

## **SUPPLEMENTAL RESULTS**

Twenty-three participants were excluded from the step length analysis, and twenty-two participants were excluded from the AGRF analysis. The detailed reasons for exclusion are defined in Supplemental Table 1.

**Supplemental Table 1.** Detailed reasons for participant exclusion.

ID	Trials excluded	Reason for exclusion
1	All	Marker occlusion
2	All	Missing mass
3	All	Speed $\leq 0.36$ m/s at all speeds
4	All	Missing mass
6	All	Hip marker occlusion (unable to calculate leg length)
7	Step length slow	Step length $\leq 0.32$ m at slow speed
8	AGRF slow Step length slow	Marker occlusion at slow speed
11	Step length slow	Step length $\leq 0.32$ m at slow speed
12	AGRF slow Step length slow	Speed $\leq 0.36$ m/s at slow speed
13	Step length slow	Step length $\leq 0.32$ m at slow speed
14	AGRF slow Step length slow	Speed $\leq 0.36$ m/s at slow speed
15	All	Speed $\leq 0.36$ m/s at all speeds
16	All	Speed $\leq 0.36$ m/s at all speeds
17	AGRF fast Step length fast	< 120 seconds of data collected at fast speed
18	AGRF fast All step length	Step length $\leq 0.32$ m at slow speed and no fast speed collected
19	Step length slow	Step length $\leq 0.32$ m at slow speed
20	All	Missing mass
21	All	Did not report paretic limb
22	All	Speed $\leq 0.36$ m/s at self-selected speed and no fast speed collected
23	All	Data collection error
24	All	Did not report paretic limb
25	Step length slow	Step length $\leq 0.32$ m at slow speed
26	AGRF slow Step length slow	Speed $\leq 0.36$ m/s at slow speed
28	All	Did not report paretic limb
29	Step length slow	Step length $\leq 0.32$ m at slow speed
30	All	Did not report paretic limb
31	AGRF slow Step length slow	Speed $\leq 0.36$ m/s at slow speed and step length $\leq 0.32$ m at slow speed
32	AGRF fast Step length fast	No fast speed collected
33	All	Speed $\leq 0.36$ m/s for slow and self-selected speeds
34	AGRF slow	AGRF $\leq 18.2$ N at slow speed
35	All AGRF	AGRF $\leq 18.2$ N at all speeds
36	All	Speed $\leq 0.36$ m/s at slow speed, SL $\leq 0.32$ m at all speeds, and AGRF $\leq 18.2$ at self-selected speed
37	All	Speed $\leq 0.36$ m/s for slow and self-selected speeds
38	AGRF slow	AGRF $\leq 18.2$ N at slow speed
39	All AGRF	AGRF $\leq 18.2$ N at all speeds
40	All	Speed $\leq 0.36$ m/s at all speeds
41	All step length AGRF slow	Step length $\leq 0.32$ m at slow and self-selected speeds, AGRF $\leq 18.2$ N at slow speed
42	All AGRF Step length slow	Speed $\leq 0.36$ m/s at slow speed, AGRF $\leq 18.2$ N at self-selected
46	All step length	Step length $\leq 0.32$ m all speeds
47	AGRF slow	AGRF $\leq 18.2$ N at slow speed
48	AGRF slow Step length slow	Speed $\leq 0.36$ m/s at slow speed
49	All	Speed $\leq 0.36$ m/s at slow speed, step length $\leq 0.32$ m at self-selected speed, and AGRF $\leq 18.2$ N at all speeds
51	Step length slow	Step length $\leq 0.32$ m at slow speed
52	Step length slow	Step length $\leq 0.32$ m at slow speed
53	All step length	Marker occlusion

Abbreviation: AGRF, anterior ground reaction force.