Clusters of walking impairment post-stroke

Supplementary Materials
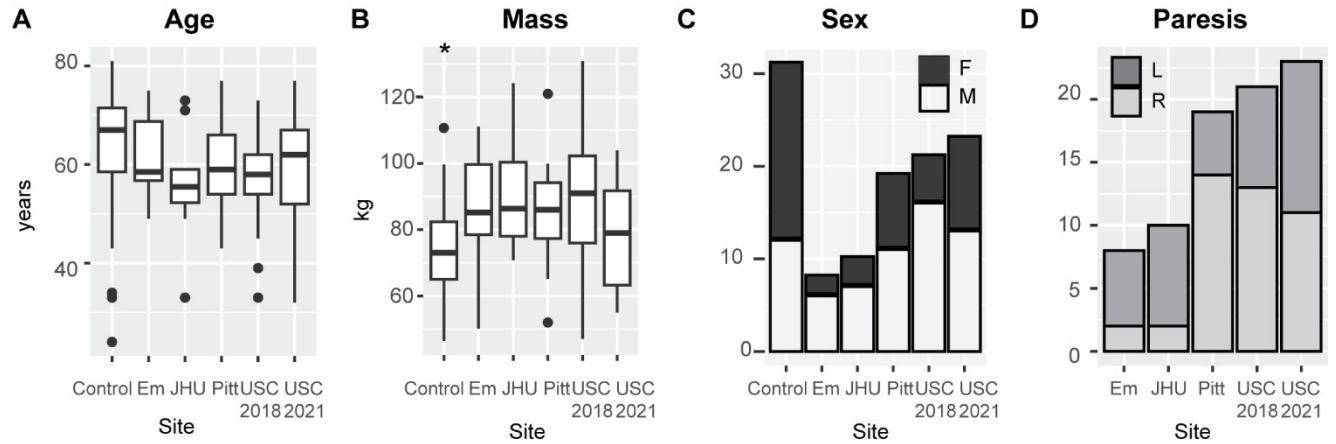
Supplementary Table 1. Demographics for participants excluded from analyses.

Group	Speed (m/s)	Mass* (kg)	Age (years)	Sex	FM Score	Affected Side	Months Post-Stroke
Emory	0.45	71.4	74	F	26	L	24
Pitt	1.11	74.5	75	M	32	R	370
Pitt	0.53	53.9	66	F	26	R	117
USC	0.13	67.0	28	F	19	L	25
Control	1.05 (matched 0.13)	51.4	28	F			

*$p<0.05$ significant differences for the independent samples t-test comparing the sample of participants excluded vs. the sample of participants included in analyses

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Supplementary Figure 1

Supplementary Figure 1. Demographics. A) Participant age in years across all sites tested. B) Participant mass in kilograms. Mass in control participants was significantly lower than in post-stroke participants (p=0.002). C) Self-reported sex across different sites. D) Paretic side for participants post-stroke across different sites.

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Supplementary Figure 2
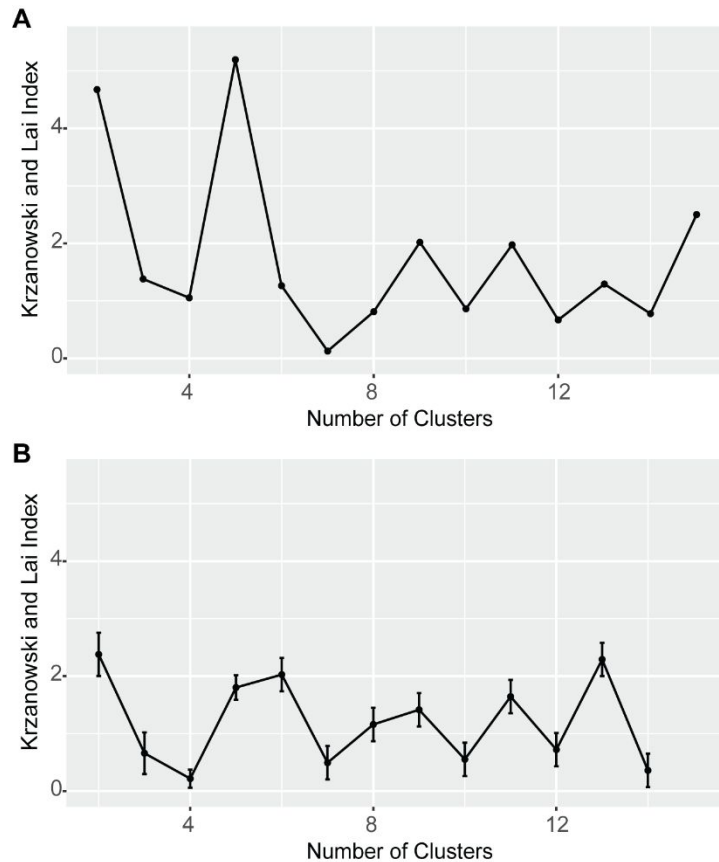
Supplementary Figure 2. A) Krzanowski and Lai index for D-Index plots for the dataset in our study. The optimal number of clusters is the one with the highest index. B) Mean and 95% confidence intervals for the Krzanowski and Lai index obtained via 1000 bootstrap iterations. Bootstrap analyses indicate overlapping confidence intervals for the Krzanowski and Lai index for 2, 5, 6 and 13 clusters, which are also higher than all other number of clusters. Given previous work identifying 4 stroke clusters plus our group of control participants we maintain $K=5$ clusters.
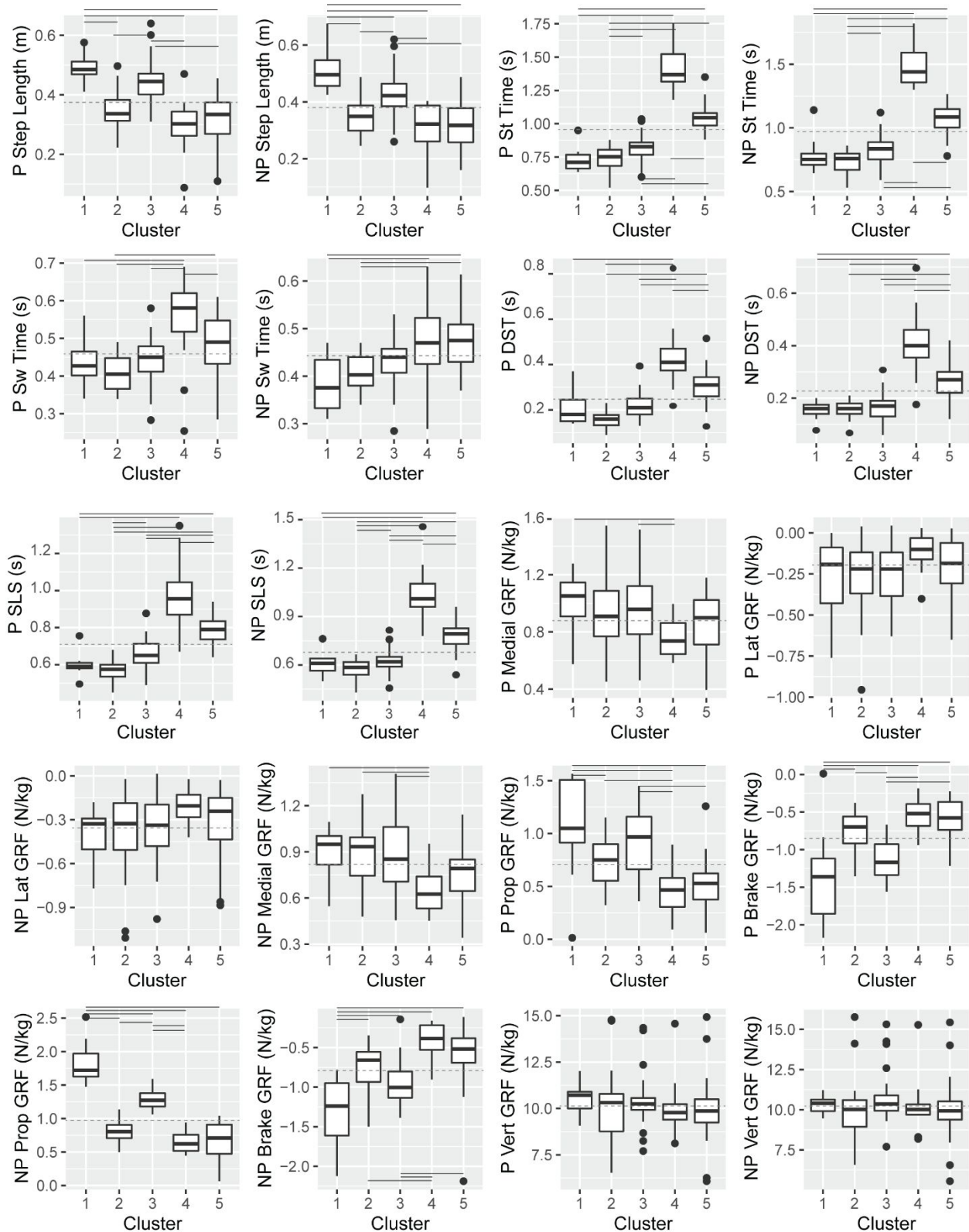
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Supplementary Figure 3
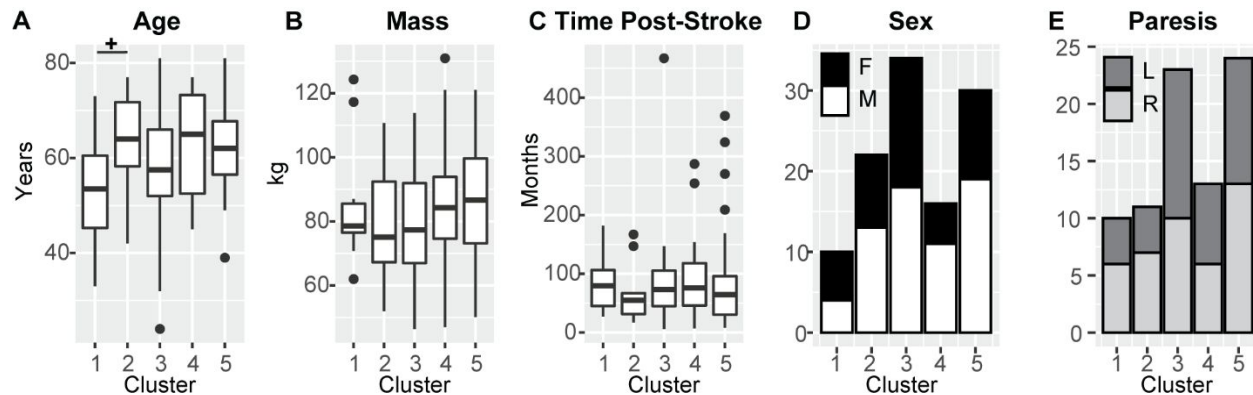
Supplementary Figure 3. Participant demographics across the different clusters. A) Age in years for participants post-stroke and controls in each cluster. Participants in C1 were marginally younger than C2 (p=0.051). B) Mass in kg for participants post-stroke and controls across clusters. C) Time post-stroke in months for participants post-stroke. No differences were observed across clusters (p=0.925). Horizontal lines indicate post-hoc differences between clusters. D) Sex for participants post-stroke and controls across clusters for all participants. E) Paresis across clusters for participants post-stroke.
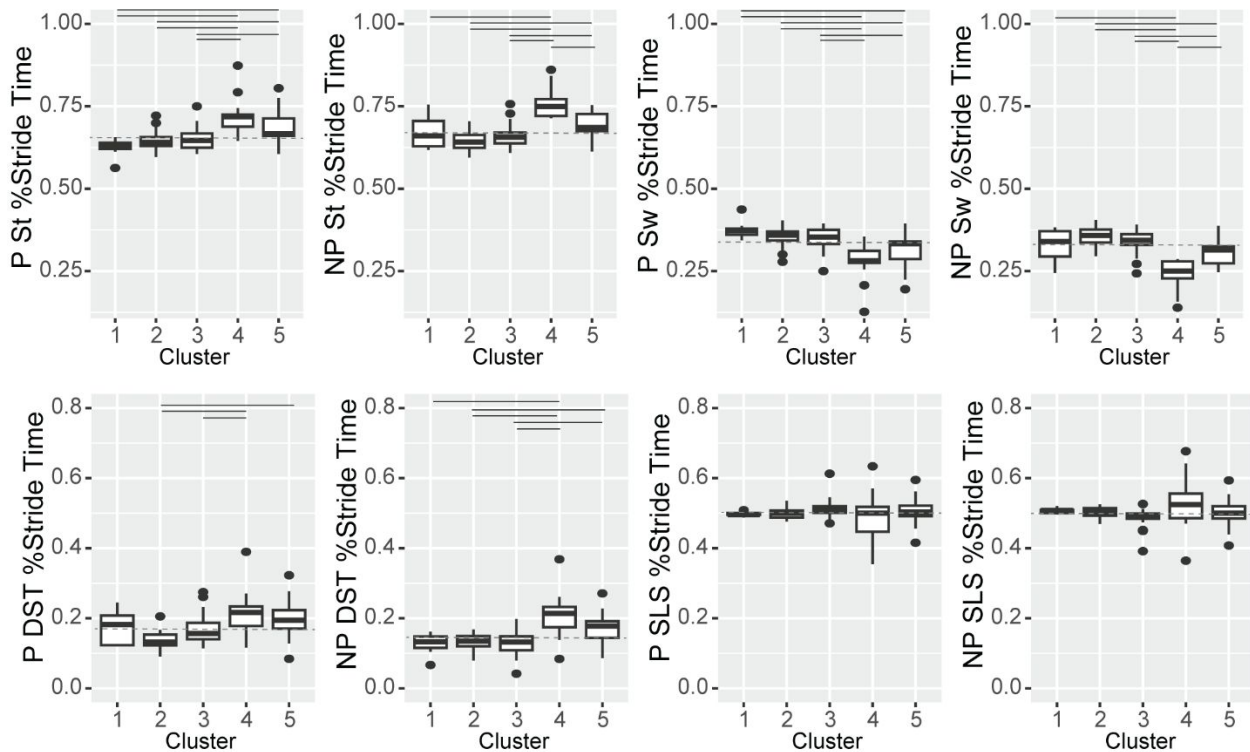
Supplementary Figure 4

Supplementary Figure 4. Spatiotemporal and peak forces across the different clusters for participants post-stroke and controls. Post-hoc significant differences between clusters are indicated by the solid horizontal lines (p<0.050). The dashed horizontal line indicates the average value of the variable across all 112 participants to allow comparisons of group-level averages with cluster-level averages. DST refers to double support time, and SLS refers to single limb support time, which was available for all participants except those from Pitt and therefore were not used as candidate variables for clustering. All other variables were used as candidate variables in sparse analyses.

Supplementary Figure 5

Supplementary Figure 5. Temporal variables are expressed as the percent duration of the overall stride. Post-hoc significant differences between clusters are indicated by the solid horizontal lines ($p<0.050$). The dashed horizontal line indicates the average value of the variable across all 112 participants for stance and swing times and 93 participants for double and single support times to allow comparisons of group-level averages with cluster-level averages. DST refers to double support time, and SLS refers to single limb support time, which was available for all participants except those from Pitt.