

Table S2. The ROM measurements of 72 gait features for each group (unit: °)

	Control group	Osteoarthritis group		
		Mild	Moderate	Severe
Hip flexion extension in IDS (L)	4.47±1.80	5.97±2.30	5.97±2.10	5.98±2.30
Hip flexion extension in SS (L)	33.13±5.50	32.12±6.20	29.57±4.70	21.8±6.80
Hip flexion extension in TDS (L)	4.84±3.30	6.40±3.90	5.09±3.30	4.60±2.40
Hip flexion extension in SW (L)	38.09±7.10	37.39±8.60	37.48±6.70	28.9±7.80
Hip adduction abduction in IDS (L)	2.96±1.31	2.33±1.10	2.71±1.20	1.77±0.60
Hip adduction abduction in SS (L)	8.41±3.30	7.76±3.30	8.08±2.60	5.87±2.90
Hip adduction abduction in in TDS (L)	3.25±1.80	3.28±2.00	3.38±1.40	2.35±1.33
Hip adduction abduction (L) in SW	10.40±3.30	9.79±4.00	10.61±3.30	8.07±3.60
Hip internal external rotation in IDS (L)	2.53±1.46	3.68±1.60	2.52±1.30	2.62±1.33
Hip internal external rotation in SS (L)	15.05±5.60	10.63±5.30	8.51±4.90	7.67±4.40
Hip internal external rotation in in TDS (L)	2.71±1.90	3.63±2.00	3.6±1.80	2.02±1.20
Hip internal external rotation in SW (L)	17.44±5.80	15.80±4.80	12.53±3.80	10.97±5.70
Knee flexion extension in IDS (L)	7.14±3.00	5.37±3.10	4.19±2.60	2.81±1.60
Knee flexion extension in SS (L)	10.85±3.70	11.32±4.10	9.54±3.20	6.07±3.10
Knee flexion extension in TDS (L)	16.73±5.50	15.32±8.20	12.55±7.10	8.65±5.10
Knee flexion extension in SW (L)	55.04±6.10	48.42±8.00	37.68±8.70	31.00±8.90
Knee varus valgus in IDS (L)	1.86±1.10	2.38±1.60	1.98±1.10	1.40±0.87
Knee varus valgus in SS (L)	4.04±2.10	4.53±2.40	3.78±2.10	3.25±1.90
Knee varus valgus in in TDS (L)	2.02±1.20	1.87±1.4	1.76±1.20	1.55±1.0
Knee varus valgus in SW (L)	8.66±3.90	8.47±4.00	7.32±3.80	6.68±3.70
Knee internal external rotation in IDS (L)	3.52±1.80	4.56±2.30	3.45±2.30	2.65±1.70
Knee internal external rotation in SS (L)	13.80±5.30	9.82±4.60	9.35±4.40	5.66±3.50
Knee internal external rotation in in TDS (L)	3.53±2.50	2.75±1.90	2.83±1.60	2.68±1.60
Knee internal external rotation in swing phase (L)	16.58±6.10	14.38±6.60	14.26±6.50	9.11±5.30
Ankle dorsiflexion plantarflexion in IDS (L)	5.28±2.90	7.61±3.70	6.58±3.50	4.31±1.90
Ankle dorsiflexion plantarflexion in SS (L)	16.82±3.60	13.99±4.30	14.30±4.70	11.04±3.60
Ankle dorsiflexion plantarflexion in TDS (L)	9.17±5.80	11.82±7.10	6.56±4.20	6.34±4.90
Ankle dorsiflexion plantarflexion in SW (L)	27.30±6.80	27.94±6.20	22.17±6.90	19.05±5.30
Ankle inversion eversion in IDS (L)	4.37±2.30	4.45±2.60	4.96±2.30	4.31±2.20
Ankle inversion eversion in SS (L)	6.17±3.10	8.10±3.60	8.84±4.70	6.63±2.70
Ankle inversion eversion in in TDS (L)	3.64±2.80	5.44±4.20	2.97±2.20	2.39±1.50
Ankle inversion eversion in SW (L)	14.61±6.40	18.10±7.40	16.54±6.20	10.70±4.30
Ankle internal external rotation in IDS (L)	3.27±1.70	3.30±1.80	2.14±1.90	1.68±1.00
Ankle internal external rotation in SS (L)	4.06±2.60	4.74±3.20	3.25±2.10	1.88±1.60
Ankle internal external rotation in in TDS (L)	2.38±1.70	2.79±2.00	1.58±1.30	1.28±0.99
Ankle internal external rotation in SW (L)	7.24±3.60	10.60±5.70	7.10±3.40	5.79±3.20
Hip flexion extension in IDS (R)	4.47±1.80	5.57±2.20	5.49±1.90	5.68±3.20
Hip flexion extension in SS (R)	34.39±6.20	34.79±5.20	31.08±4.70	21.80±7.05
Hip flexion extension in TDS (R)	4.73±3.10	6.24±3.90	6.11±3.70	3.96±2.00
Hip flexion extension in SW (R)	38.71±6.20	39.84±7.38	36.83±5.80	30.19±8.30

Table S2. Continued

	Control group	Osteoarthritis group		
		Mild	Moderate	Severe
Hip adduction abduction in IDS (R)	2.90±1.30	2.75±2.00	2.74±0.90	1.94±0.90
Hip adduction abduction in SS (R)	8.02±2.90	6.75±3.70	8.08±2.20	5.29±2.60
Hip adduction abduction in in TDS (R)	3.39±1.70	3.11±1.60	3.46±1.40	1.89±0.90
Hip adduction abduction in SW (R)	10.38±3.20	9.08±2.70	10.29±2.30	7.36±3.30
Hip internal external rotation in IDS (R)	2.68±1.80	3.88±2.10	3.47±1.60	2.92±2.00
Hip internal external rotation in SS (R)	12.97±5.90	10.79±4.90	8.48±3.90	5.42±3.00
Hip internal external rotation in in TDS (R)	2.61±1.68	3.81±2.50	3.46±2.60	2.04±1.20
Hip internal external rotation in SW (R)	15.26±5.20	15.67±5.80	12.16±4.70	8.79±3.90
Knee flexion extension in IDS (R)	7.37±3.10	5.78±3.30	5.43±2.50	3.95±2.60
Knee flexion extension in SS (R)	10.90±4.00	11.51±3.80	10.21±3.40	5.83±2.80
Knee flexion extension in TDS (R)	16.67±5.30	14.98±6.70	12.50±8.30	7.88±5.40
Knee flexion extension in SW (R)	56.05±6.60	48.50±9.60	35.14±8.40	29.53±9.60
Knee varus valgus in IDS (R)	2.29±1.30	2.37±1.20	2.85±1.30	1.25±0.60
Knee varus valgus in SS (R)	4.67±2.60	4.65±2.40	4.48±2.60	3.20±1.60
Knee varus valgus in in TDS (R)	1.66±1.20	2.04±1.30	1.99±1.70	1.25±0.60
Knee varus valgus in SW (R)	9.02±3.80	8.99±4.60	9.52±4.60	7.69±3.90
Knee internal external rotation in IDS (R)	3.54±1.70	4.68±2.70	3.99±2.30	2.70±1.90
Knee internal external rotation in SS (R)	14.62±5.20	10.93±5.40	8.77±4.50	4.56±2.50
Knee internal external rotation in in TDS (R)	2.99±1.70	2.70±1.60	2.82±1.60	1.94±1.40
Knee internal external rotation in swing phase (R)	16.83±6.10	14.87±5.70	14.52±5.20	7.74±4.80
Ankle dorsiflexion plantarflexion in IDS (R)	5.18±2.50	9.04±6.40	6.69±2.56	4.46±2.70
Ankle dorsiflexion plantarflexion in SS (R)	16.39±4.00	13.70±3.50	14.00±3.70	10.51±3.00
Ankle dorsiflexion plantarflexion in TDS (R)	8.52±5.90	11.60±6.60	8.98±6.230	5.32±3.50
Ankle dorsiflexion plantarflexion in SW (R)	27.63±6.30	29.13±6.23	26.0±8.60	17.76±6.70
Ankle inversion eversion in IDS (R)	4.06±2.20	5.20±3.40	5.80±3.20	5.92±3.30
Ankle inversion eversion in SS (R)	5.90±3.20	9.22±4.10	7.40±4.00	7.42±3.30
Ankle inversion eversion in in TDS (R)	3.56±2.60	3.59±2.10	3.59±3.20	2.43±1.60
Ankle inversion eversion in SW (R)	11.60±5.20	17.17±7.20	19.16±11.60	14.87±7.00
Ankle internal external rotation in IDS (R)	3.22±1.80	3.95±2.90	2.42±1.80	1.94±1.70
Ankle internal external rotation in SS (R)	3.71±2.20	4.68±2.70	3.10±2.70	2.55±2.70
Ankle internal external rotation in in TDS (R)	2.10±1.40	2.56±1.80	1.51±1.80	1.15±1.00
Ankle internal external rotation in SW (R)	6.83±3.50	9.67±4.90	6.64±3.23	5.80±3.20

ROM, range of motion; IDS, initial double support phase; SS, single support phase; TDS, terminal double support phase; SW, swing phase.