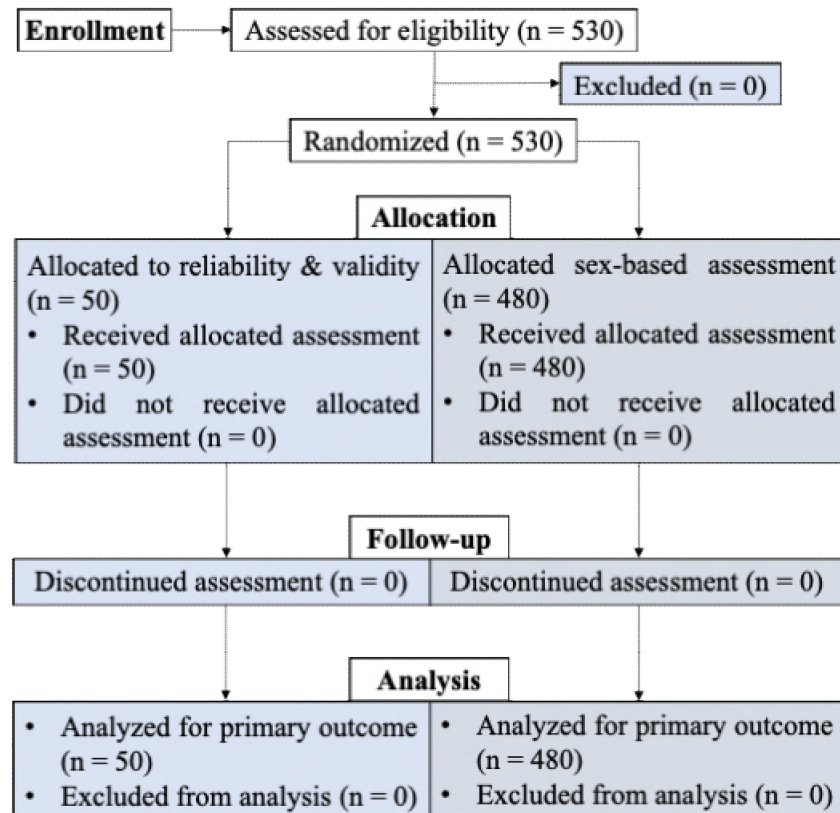


Participant Flow



Baseline Characteristics

Table 1. Demographics of 50 asymptomatic adults for reliability and validity assessment

Gender	Number	Age (y)	Height (cm)	Weight (kg)	BMI (kg/m ²)
Male	24	30.3 ± 5.4	165.1 ± 4.8	66.9 ± 10.3	24.6 ± 3.9
Female	26	27.2 ± 6.2	157.0 ± 5.9	61.6 ± 7.8	25.1 ± 3.9
Total	50	28.7 ± 6.0	160.9 ± 6.7	64.2 ± 9.4	24.9 ± 3.9

Table 2. Demographics of 480 asymptomatic adults for sex-based assessment

Gender	Number	Age (y)	Height (cm)	Weight (kg)	BMI (kg/m ²)
Male	241	28.3 ± 6.2	167.6 ± 8.5	69.0 ± 9.8	24.8 ± 4.4
Female	239	28.7 ± 6.3	160.3 ± 6.9	59.3 ± 7.9	23.3 ± 3.9
Total	480	28.5 ± 6.2	164.0 ± 8.6	64.2 ± 10.1	24.0 ± 4.2

Outcome Measures

Table 3. Inter-rater reliability and intra-instrument measurement error of manual goniometry (N = 50)

Direction	Mean $\pm$ SD (°)	Reliability	Measurement error		r
		ICC (95% CI)	SEM (°)	MDC (°)	
Flexion	44.83 $\pm$ 3.39	0.912 (0.851 – 0.949)	1.02	2.83	0.911
Extension	36.49 $\pm$ 6.16	0.955 (0.913 – 0.976)	1.31	3.64	0.961
Right side bending	43.19 $\pm$ 4.28	0.943 (0.902 – 0.967)	1.03	2.85	0.943
Left side bending	40.81 $\pm$ 3.66	0.891 (0.815 – 0.936)	1.24	3.44	0.892
Right rotation	75.09 $\pm$ 4.30	0.892 (0.817 – 0.937)	1.45	4.01	0.896
Left rotation	70.04 $\pm$ 5.17	0.936 (0.889 – 0.963)	1.32	3.67	0.938

Table 4. Test-retest reliability and intra-instrument measurement error of RomIX (N = 50)

Direction	Mean $\pm$ SD (°)	Reliability	Measurement error		r
		ICC (95% CI)	SEM (°)	MDC (°)	
Flexion	44.99 $\pm$ 3.22	0.977 (0.963 – 0.986)	0.49	1.37	0.977
Extension	36.23 $\pm$ 6.67	0.933 (0.892 – 0.960)	1.75	4.85	0.941
Right side bending	43.26 $\pm$ 4.01	0.965 (0.945 – 0.979)	0.76	2.09	0.967
Left side bending	40.74 $\pm$ 4.15	0.975 (0.960 – 0.985)	0.66	1.83	0.975
Right rotation	74.94 $\pm$ 4.21	0.917 (0.871 – 0.949)	1.24	3.44	0.922
Left rotation	70.17 $\pm$ 5.29	0.979 (0.967 – 0.987)	0.77	2.13	0.979

Table 5. Construct validity of RomIX and inter-instrument measurement error (N = 50)

Direction	Validity	Mean difference (°)	95% LoA (°)	Measurement error	
	r			SEM (°)	MDC (°)
Flexion	0.953	0.16	-1.85 – 2.18	0.73	2.01
Extension	0.979	-0.26	-2.98 – 2.45	0.98	2.72
Right side bending	0.911	0.08	-3.38 – 3.53	1.23	3.41
Left side bending	0.852	-0.07	-4.34 – 4.20	1.52	4.21
Right rotation	0.851	-0.15	-4.71 – 4.40	1.63	4.50
Left rotation	0.969	0.12	-2.42 – 2.67	0.91	2.52

Table 6. Sex-based assessment on 480 asymptomatic adults

Gender	Mean ± SD (°)					
	Flexion	Extension	Right side bending	Left side bending	Right rotation	Left rotation
Male (N = 241)	45.21 ± 8.22	31.62 ± 8.57	43.04 ± 8.65	37.77 ± 8.47	71.49 ± 5.73	64.08 ± 8.40
Female (N = 239)	57.21 ± 7.91	41.69 ± 6.14	50.41 ± 8.40	48.39 ± 9.01	77.79 ± 5.94	73.82 ± 7.89
Total (N = 480)	51.19 ± 10.05	36.63 ± 8.99	46.71 ± 9.28	43.06 ± 10.22	74.56 ± 6.65	68.93 ± 9.49

Adverse Events

There were no adverse events associated with this study.