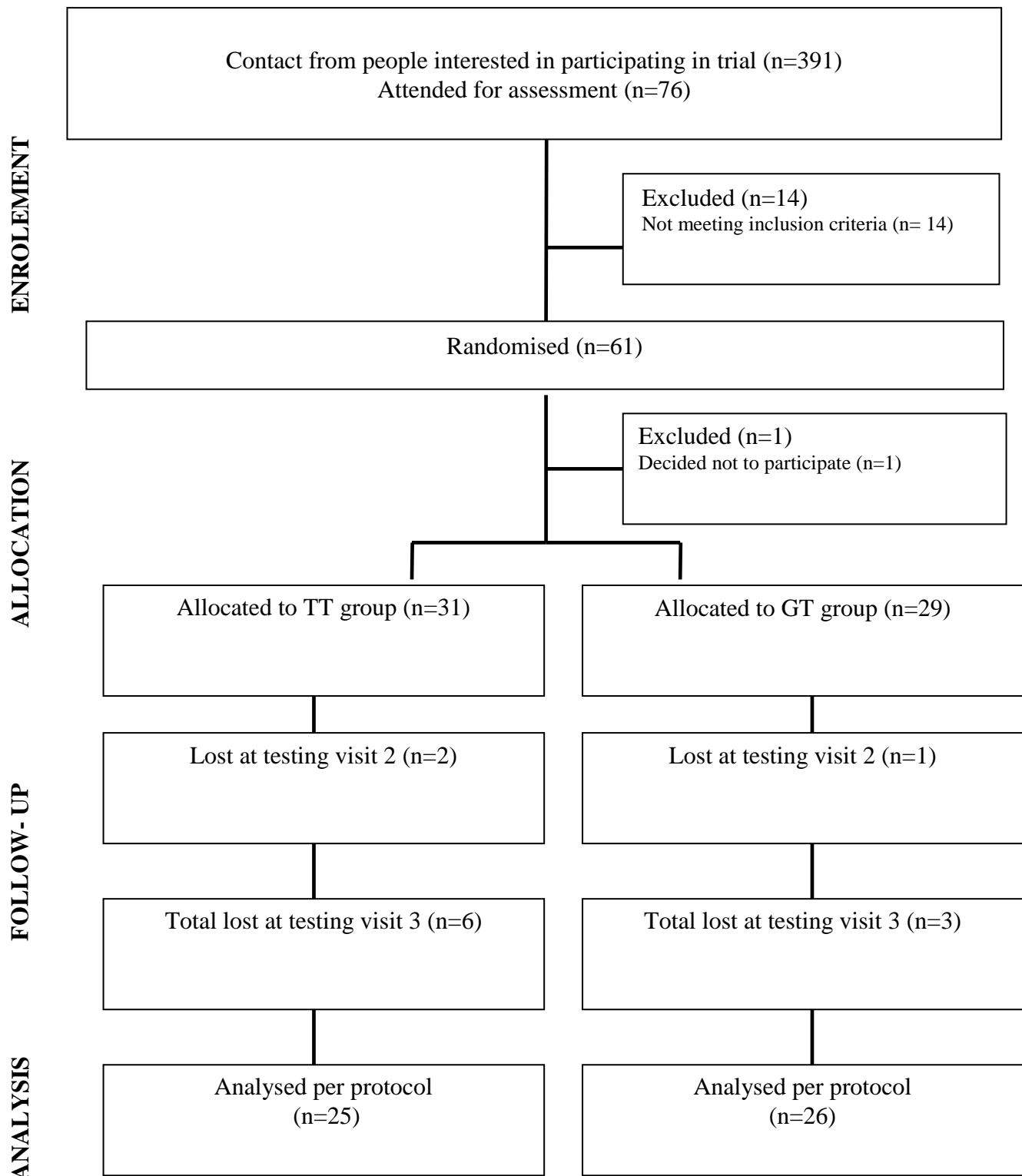


Participant Flow

Figure 1. The CONSORT Statement Diagram, Detailing the Participant Flow through the Trial



Baseline Characteristics

Table 1. Baseline characteristics of the two groups following randomisation

n=60		TT Group n=31		GT Group n=29	
		Mean	SD	Mean	SD
Age		37.90	12.31	35.66	10.68
BMI		26.81	4.24	27.09	3.98
SF36 (0-100)		67.40	15.75	64.37	10.78
MSPQ (0-39)		6.33	6.66	5.96	4.87
Zung (25-100)		15.97	10.70	14.82	9.38
DRAM total		21.63	13.11	22.11	11.37
TSK (17-68)		35.63	6.62	35.58	6.62
RM (0-24)		6.57	3.82	6.48	3.46
VAS mm (0-100)	Specific	31.98	15.60	27.31	20.74
	General	23.95	14.77	27.31	20.74
	Average	35.82	18.86	34.79	20.85

Outcome Measures

Table 2 Descriptive statistics for the pain measurements

				Test 1			Test 2			Test 3		
				n	m	SD	n	m	SD	n	m	SD
PPT Iliocostalis (kg/cm ²)	Right	TT	pre	31	6.17	2.78	29	6.97	2.91	25	6.70	2.65
		TT	post		6.95	3.29		7.97	3.72		7.68	2.84
		GT	pre	29	6.61	3.85	28	3.65	3.80	26	6.80	3.48
		GT	post		6.83	4.08		6.86	3.73		7.62	4.13
	Left	TT	pre	31	6.78	2.77	29	7.47	3.33	25	7.67	2.82
		TT	post		8.40	3.20		8.83	3.16		8.63	2.66
		GT	pre	29	6.62	4.10	28	7.04	3.99	26	7.71	4.15
		GT	post		7.49	4.34		7.86	4.26		8.28	4.12
PPT Multifidus (kg/cm ²)	Right	TT	pre	31	6.50	2.80	29	7.16	3.21	25	7.36	2.81
		TT	post		7.99	2.97		9.04	3.88		8.90	3.18
		GT	pre	29	7.02	3.86	28	7.36	4.12	26	7.64	4.18
		GT	post		7.27	4.38		7.89	4.60		8.43	4.76
	Left	TT	pre	31	6.91	2.89	29	7.18	3.16	25	7.50	2.68
		TT	post		8.47	3.47		9.01	3.04		8.84	2.98
		GT	pre	29	6.69	3.74	28	6.88	3.75	26	7.60	4.29
		GT	post		7.35	3.99		7.95	4.29		8.06	4.40
PPT Gluteus (kg/cm ²)	Right	TT	pre	31	6.09	2.56	29	6.43	2.64	25	6.62	2.44
		TT	post		6.96	2.84		7.40	3.19		7.32	3.00
		GT	pre	29	6.02	3.25	28	5.88	3.13	26	6.38	3.32
		GT	post		6.18	2.97		6.60	3.35		6.92	3.46
	Left	TT	pre	31	5.43	2.59	29	5.73	2.75	25	5.88	2.38
		TT	post		6.32	2.70		6.82	2.98		6.66	2.91
		GT	pre	29	5.45	3.47	28	5.38	3.22	26	5.50	3.04
		GT	post		5.78	3.33		6.24	3.44		5.97	3.18
PPT Trapezius (kg/cm ²)	Right	TT	pre	31	4.51	2.16	29	4.92	2.50	25	4.78	1.81
		TT	post		4.50	2.34		5.10	2.54		5.09	2.41
		GT	pre	29	4.06	2.38	28	4.43	2.29	26	4.45	2.33
		GT	post		4.35	2.63		4.34	2.25		4.75	2.71
	Left	TT	pre	31	4.09	1.84	29	4.53	2.12	25	4.53	2.02
		TT	post		4.51	2.58		4.84	2.38		4.74	2.12
		GT	pre	29	3.71	2.14	28	3.98	1.91	26	4.20	2.04
		GT	post		4.05	2.60		4.12	4.34		4.39	2.51
VAS G (mm)		TT	pre	31	23.95	14.77	28	19.63	14.26	25	16.18	16.16
		TT	post		23.82	14.82		14.05	16.23		9.65	14.37
		GT	pre	29	26.55	22.86	28	28.89	22.44	24	17.48	13.55
		GT	post		14.82	15.04		19.48	21.87		15.48	14.85
VAS S (mm)		TT	pre	31	31.98	15.60	28	24.82	14.72	25	19.94	17.94
		TT	post		23.82	18.13		14.39	15.46		13.26	16.96
		GT	pre	29	27.31	20.74	28	27.38	21.07	24	22.78	13.78
		GT	post		18.41	17.97		21.98	24.78		16.17	16.58
RM		TT		31	5.94	3.76	29	4.38	4.31	25	4.08	4.35
		GT		29	5.03	3.43	28	4.75	3.23	26	3.33	2.48

Table 3 Descriptive statistics: sEMG responses for TT and GT groups at each visit

			Test 1			Test 2			Test 3		
			n	mean	SD	n	mean	SD	n	mean	SD
sEMG reflex Iliocostalis (V)	right	TT	26	3.72	4.00	27	4.55	4.52	21	4.75	5.59
		GT	22	3.55	3.62	25	3.55	4.30	24	2.94	4.10
	left	TT	28	5.17	5.80	26	4.27	4.57	23	3.48	4.34
		GT	23	3.65	4.15	25	3.55	4.30	23	2.95	4.84
sEMG reflex Multifidus	right	TT	27	2.72	2.82	29	3.10	4.89	21	4.78	6.31
		GT	27	3.53	4.81	28	2.93	4.61	25	1.23	1.59
	left	TT	27	2.44	3.52	29	2.51	3.73	23	5.62	6.85
		GT	25	3.90	6.51	27	2.40	3.41	25	1.65	2.13
sEMG reflex Gluteus	right	TT	28	3.48	3.22	28	2.54	1.82	22	5.23	4.05
		GT	23	4.16	5.64	27	3.16	3.73	24	2.23	2.05
	left	TT	28	2.22	2.62	26	3.30	2.91	20	5.17	4.88
		GT	21	4.45	6.85	25	4.05	4.15	24	1.98	2.20
sEMG reflex Trapezius	right	TT	27	3.01	3.87	27	1.89	2.59	22	4.59	7.62
		GT	26	4.02	5.32	23	2.53	3.47	25	1.93	1.67
	left	TT	28	3.00	3.80	26	4.23	5.15	21	3.70	6.22
		GT	26	3.33	2.79	24	2.65	2.78	24	1.97	3.42

Table showing the numbers per group, means and standard deviations of the sEMG response (V=voltage) to targeted thrust (TT) and general thrust (GT) for each of the eight muscle channels for the three experimental visits (SD=standard deviation).

Table 4 Differences in the magnitude of the sEMG reflex responses

		F	sig
EMG reflex Iliocostalis	Right	0.90	0.35
	Left	0.27	0.61
EMG reflex Multifidus	Right	9.57	0.00
	Left	5.01	0.03
EMG reflex Gluteus	Right	2.78	0.10
	Left	6.41	0.02
EMG reflex Trapezius	Right	3.53	0.07
	Left	2.25	0.14

A table showing the repeated measure ANCOVA for the sEMG time x group interaction, F value and the significance (sig), for the targeted thrust (TT) and general thrust (GT) groups.

Table 5 Differences in the magnitude of the sEMG reflex response at test 3

		Adjusted mean difference (V)	95% confidence interval	sig
sEMG reflex Iliocostalis	Right	1.17	-1.89 to 4.22	0.44
	Left	0.55	-1.36 to 3.80	0.73
sEMG reflex Multifidus	Right	4.22	1.36 to 7.08	0.01
	Left	3.01	0.07 to 5.97	0.04
sEMG reflex Gluteus	Right	3.14	0.90 to 5.39	0.01
	Left	2.97	0.67 to 5.27	0.01
sEMG reflex Trapezius	Right	2.81	-0.93 to 6.55	0.14
	Left	2.88	-0.52 to 6.29	0.09

A table showing the adjusted mean difference (V=voltage), significance value (p) and the 95% confidence intervals, for each of the eight channels taken from the parameter estimates of the repeated measure ANCOVA analysis, for the time x group interaction; for targeted thrust (TT) and the general thrust (GT) groups, at test 3. A positive value signifies an increase in sEMG of the TT group.

Adverse effects

There were no adverse events associated with this trial.