

Figure 1. Differentiation of Pain Sites

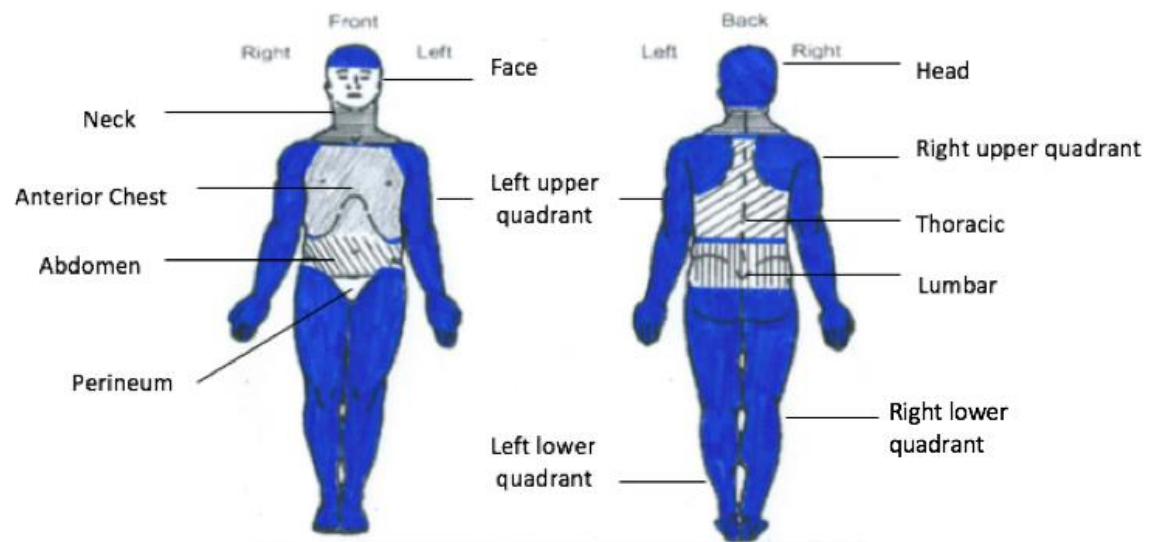
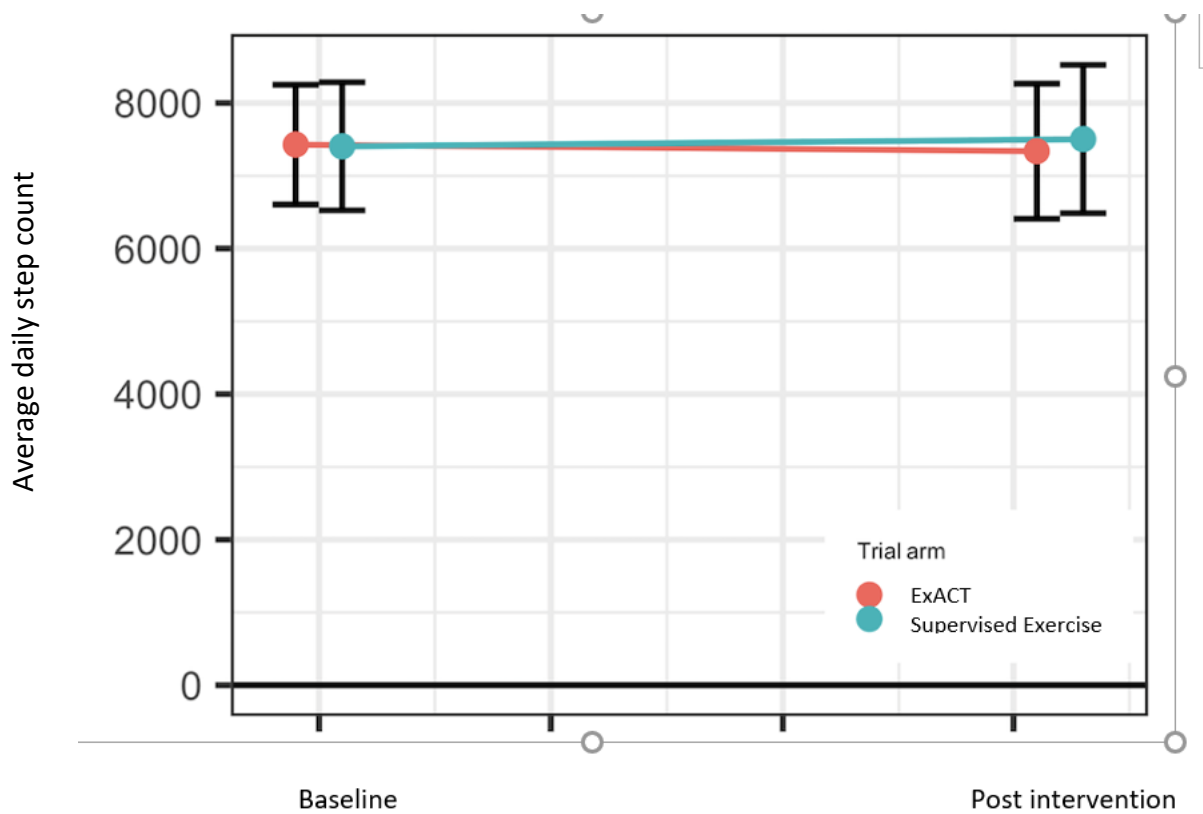


Figure 2. Mean change in average daily step count by study arm at baseline and post intervention based on ITT analysis



	Baseline	Post Intervention
ExACT (valid n)	73	58
Supervised Exercise (valid n)	64	46

Fig. 2. Error bars represent 95% CIs of estimated marginal mean

Table 1. Summary of the content of the ACT component of the combined intervention

Session	Content
1	Introductions and basic foundations of treatment, present the goal of ACT – shifting focus from pursuit of symptom reduction to improving function
2	Review of previous treatment history – creative hopelessness exercise including primary and secondary suffering Introduce openness as a skill area - Acceptance as an alternative to avoidance
3	Recap of acceptance and continue focus on enhancing openness. Introduce process of defusion. Passenger on the bus experiential exercise
4	Focus on engagement: Values awareness and assessment Experiential values exercise
5	Further values clarification work Committing to action that improves and enriches one's life
6	Focus on awareness – contact with the present moment, perspective taking and self-awareness as distinct from fusion with thought content and perception of self
7	Treatment review Walking mindfulness exercise
8	Wrap up and conclusions Relapses and set-backs: preparation not prevention

Table 2 **Summary of the content of the supervised exercise component of both interventions**

Session	Education/advice (30 minutes)	Exercise (1 hour)
1	Introduction to exercise Pool orientation Induction to gym programme Demonstration of gym exercises	Gym Exercise: Gentle warm up - walking and stretches Brief gym circuit Cool down
2	Group discussion on goal setting Provision of individual HEP created by physiotherapist based on patient's individual goals	Hydrotherapy Warm up Gentle aerobic and buoyancy assisted and resistance exercises
3	Understanding Pain Group will be shown the YouTube video "understanding pain in five minutes" followed by a group question/answer session	Hydrotherapy Warm up Aerobic, strengthening exercises and informal pool
4	Group discussion about physical activity, introduction to pacing and principles of graded exposure Time to answer any questions from participants	Hydrotherapy Continuation of above and gentle progression of exercises
5	Group discussion on pacing and graded exposure including potential challenges that may be arising regarding putting principles into practice.	Hydrotherapy Continuation of above and gentle progression of exercises
6	Continued group discussion on progress and problem solving	Gym Session – participants are free to perform exercises from their individualised exercise programme or create their own exercises of their own choosing under the guidance of physiotherapist
7	Group discussion on progress and problem solving. Introduce topic of maintaining behaviour change.	Gym Session Continuation of above and progression of exercises under guidance of physiotherapist
8	Wrap up session including preparation for maintaining an active lifestyle and managing setbacks.	Gym session Continuation of above and progression of exercises under guidance of physiotherapist

Table 3 Reasons for failure to attend the intervention (withdrew prior to commencement)

Reason for failure to attend	Supervised Exercise (n)	ExACT (n)
Work commitments	1	1
Illness/injury	3	1
Personal or family difficulties	0	2
Bereavement	0	1
Lack of ability to commit to the programme	0	2
Timetable unsuitable	1	0
Parking costs prohibitive	1	0
Pain flare up	1	0
College commitments	1	0
Reported did not receive information about group allocation/timetable	1	0
Reasons unknown	6	2
Total	15	10

Table 4 Reasons for withdrawal for participants who commenced but did not complete the intervention

Reason for withdrawal	Supervised Exercise (n)	ExACT (n)
Found to be ineligible after randomisation due to a contraindication to participation in the exercise component of the programme*	0	1
Work commitments	0	1
Found exercises too easy	1	0
illness/injury	3	0
Practical difficulties	1	0
Found group off-putting	0	4
Personal or family difficulties	1	0
Self-discharge from clinic	0	1
Pain flare up	3	1
Bereavement	0	1
Hydrotherapy irritated skin	0	1
Preference for individual treatment	1	0
Travel costs prohibitive	1	0
Reasons unknown	4	2
Total	15	12

*As this participant was ineligible for both ExACT and the Supervised Exercise intervention, they were withdrawn from the trial and referred for review with their Medical Consultant.

Table 5 Attendance of the trial interventions

Number of sessions attended	Supervised Exercise	ExACT	Total
0	15	10	25
1	7	4	11
2	6	7	13
3	8	4	12
4	12	8	20
5	10	8	18
6	16	12	28
7	6	16	22
8	8	18	26
Total no. of participants	88	87	175

Table 6 Healthcare professional diagnoses: frequency by group

Diagnosis	Standalone Exercise (n = 88) N/%	ExACT (n = 87) N/%
Myofascial mediated body pain	5 (5.7%)	6 (6.9%)
Chronic neck, shoulder and low back pain	0	1 (1.1%)
Low back pain and leg pain post trauma	3 (3.4%)	0
Post-surgical pain	1 (1.1%)	1 (1.1%)
Failed back surgery syndrome	5 (5.7%)	10 (11.5%)
Chronic widespread pain	9 (10.2%)	8 (9.2%)
Myofascial back and leg pain	6 (6.8%)	1 (1.1%)
Pudendal neuralgia	1 (1.1%)	0
Knee pain post road traffic accident	0	1 (1.1%)
Fibromyalgia/osteoarthritis	1 (1.1%)	3 (3.4%)
Fibromyalgia	22 (25%)	16 (18.4)
Patellofemoral pain syndrome	1 (1.1%)	0
Lumbar disc prolapse	0	1 (1.1%)
Chronic ankle pain post-surgery	1 (1.1%)	0
Myofascial mediated back pain	2 (2.3%)	3 (3.4%)
Neck pain post road traffic accident	1 (1.1%)	1 (1.1%)
Cervical spondylosis	1 (1.1%)	0
Hip and ankle pain	0	1 (1.1%)
SLE, fibromyalgia, chronic headache	1 (1.1%)	0
Non-specific low back pain	7 (8%)	10 (11.5%)
Low back pain post fracture and surgery	2 (2.3%)	0
Hip and low back pain	1 (1.1%)	0
Neuropathic pain post-surgery	2 (2.3%)	1 (1.1%)
Low back and leg pain	1 (1.1%)	1 (1.1%)
Osteoarthritis and osteoporosis	1 (1.1%)	0
Myofascial pain secondary to trauma	0	1 (1.1%)
Trochanteric Bursitis	1 (1.1%)	0
Chronic upper limb pain	0	1 (1.1%)
Fibromyalgia and sciatica	0	1 (1.1%)
Chronic low back pain post trauma	1 (1.1%)	1 (1.1%)
Chronic chest wall pain post rib fracture	0	1 (1.1%)
Gluteus medius bursitis	1 (1.1%)	0
Fibromyalgia and psoriatic arthritis	1 (1.1%)	0
Degenerative disc disease c3-c7	0	1 (1.1%)
Myofascial mediated neck and back pain	0	3 (3.4%)
Chronic pain	3 (3.4%)	2 (2.3%)
Chronic neck and upper limb pain post road traffic accident	0	1 (1.1%)

Arthralgia sero-negative	0	1 (1.1%)
Complex regional pain syndrome	1 (1.1%)	3 (3.4%)
Chronic right shoulder pain	1 (1.1%)	0
Sciatica	0	1 (1.1%)
Peripheral neuropathy	0	1 (1.1%)
Sacro-iliac joint pain	0	1 (1.1%)
Psoriatic arthritis, fibromyalgia and OA	0	1 (1.1%)
Vulvodynia	1	0
Occipital neuralgia and trapezius muscle spasm	1 (1.1%)	0
Myofascial mediated upper quadrant and rectus abdominus pain	0	1 (1.1%)
Degenerative disease lumbar spine with spondylostenosis	1 (1.1%)	0
Neck and shoulder pain with cervical stenosis and disc prolapse	0	1 (1.1%)
Chronic facial pain	1 (1.1%)	0
Radicular pain	1 (1.1%)	0

Table 7 **Participant satisfaction**

Level of satisfaction	Post intervention		12-week follow up	
	Supervised Exercise n (%)	ExACT n (%)	Supervised Exercise n (%)	ExACT n (%)
Very satisfied	18 (30)	36 (55.38)	17 (26.98)	24 (37.5)
Mostly satisfied	24 (40)	24 (36.92)	30 (47.61)	32 (50)
Indifferent or mildly dissatisfied	16 (26.66)	3 (4.62)	13 (20.63)	8 (12.5)
Quite dissatisfied	2 (3.33)	2 (3.08)	3 (4.76)	0
Total	60 (100)	65 (100)	63 (100)	64 (100)

Table 8 Patient Global Impression of Change (PGIC) Question 1

PGIC Response	Post intervention		12 week follow up	
	Supervised Exercise n (%)	ExACT n (%)	Supervised Exercise n (%)	ExACT n (%)
1. No change (or the condition has got worse)	17 (27.4)	12 (17.6)	28 (41.2)	13 (19.7)
2. Almost the same, hardly any change at all	17 (27.4)	10 (14.7)	11 (16.2)	17 (25.8)
3. A little better but no noticeable change	10 (16.1)	7 (10.3)	2 (2.9)	8 (12.12)
4. Somewhat better but the change has not made any real difference	6 (9.7)	6 (8.8)	10 (14.7)	7 (10.6)
5. Moderately better and a slight but noticeable change	10 (16.1)	21 (30.9)	8 (11.8)	14 (21.2)
6. Better and a definite improvement that has made a real and worthwhile difference	2 (3.2)	9 (13.2)	8 (11.8)	6 (9.1)
7. A great deal better and a considerable improvement that has made all the difference	0	3 (4.4)	1 (1.5)	1 (1.5)
Total (n)	62	68	68	66

Table 9 Patient Global Impression of Change (PGIC) Question 2

PGIC Response	Post intervention		12-week follow up	
	Supervised Exercise n (%)	ExACT n (%)	Supervised Exercise n (%)	ExACT n (%)
0	1 (1.6)	4 (5.9)	3 (4.3)	1 (1.5)
1	0	2 (2.9)	1 (1.4)	2 (3.0)
2	2 (3.1)	7 (10.3)	4 (5.8)	5 (7.5)
3	11 (17.2)	14 (20.6)	6 (8.7)	16 (23.9)
4	13 (20.3)	14 (20.6)	11 (15.9)	9 (13.4)
5	18 (28.1)	18 (26.5)	13 (18.8)	13 (19.4)
6	5 (7.8)	7 (10.3)	4 (5.8)	7 (10.4)
7	7 (10.9)	1 (1.5)	11 (15.9)	5 (7.5)
8	4 (6.3)	0	6 (8.7)	4 (6.0)
9	0	1 (1.5)	4 (5.8)	2 (3.0)
10	3 (4.7)	0	6 (8.7)	3 (4.5)
Total	64	68	69	67

Table 10 Effectiveness Analysis: Healthcare utilisation

Healthcare visits	Randomised Group		Baseline	12-week Follow-up	p value	Effect Size
GP visits	Supervised Exercise	Mean (95%CI)	2.56 (1.99-3.13)	2.25 (1.74-2.76)		
		Δ (95% CI)		0.31 (-0.15-0.77)	0.19	.12
	ExACT	Mean (95%CI)	2.53 (1.95-3.10)	1.99 (1.47-2.51)		
		Δ (95% CI)		0.54 (0.07-1.10)	0.03	.19
	Group Difference			-0.23 (-0.89-0.43)	0.49	0.00
Medical Specialist visits	Supervised Exercise	Mean (95%CI)	0.98 (0.79-1.16)	0.82 (0.53-1.12)		
		Δ (95% CI)		0.15 (-0.15-0.46)	0.32	.17
	ExACT	Mean (95%CI)	0.85 (0.66-1.03)	0.57 (.27-0.87)		
		Δ (95% CI)		0.28 (-0.03-0.59)	0.08	.32
	Group Difference			-0.12 (-0.56-0.31)	0.58	.14
Other HCP visits	Supervised Exercise	Mean (95%CI)	1.03 (0.47-1.60)	0.99 (0.394-1.58)		
		Δ (95% CI)		0.05 (-0.69-0.79)	0.90	.02
	ExACT	Mean (95%CI)	1.38 (0.81-1.95)	1.53 (0.93-2.12)		
		Δ (95% CI)		-0.14 (-0.89-0.60)	0.70	.05
	Group Difference			0.19 (-0.86-1.24)	0.72	0.00
ED visits	Supervised Exercise	Mean (95%CI)	0.195 (0.06-0.33)	0.22 (0.08-0.35)		
		Δ (95% CI)		-0.02 (-0.18-0.14)	0.8	.04
	ExACT	Mean (95%CI)	0.17 (0.04-0.31)	0.17 (0.04-0.31)		
		Δ (95% CI)		-0.001 (-0.16-0.16)	0.99	0.00
	Group Difference			-0.02 (-0.24-0.21)	0.87	.03
Inpatient nights	Supervised Exercise	Mean (95%CI)	0.06 (-0.07-0.18)	0.21 (-0.007-0.42)		
		Δ (95% CI)		-0.15 (-0.39-0.10)	0.24	.47
	ExACT	Mean (95%CI)	0.92 (-0.03-0.22)	0.03 (-0.18-0.24)		
		Δ (95% CI)		0.06 (-0.18-0.31)	0.62	.08
	Group Difference			-0.21 (-0.56-0.14)	0.23	.36

Δ change from baseline.

*From linear mixed model test for measurement timepoint x group interaction term. All models included an unstructured correlation between time points.

**Cohen's D computed as mean difference relative to pooled standard deviations (baseline standard deviations used in both within and between group calculations).

Abbreviations: CI, confidence interval; ED, emergency department; GP, general practitioner; HCP, healthcare professional

Table 11 Effectiveness Analyses for physical activity measures (Average daily step count, distance travelled and active minutes)

Physical Activity Measure	Randomised Group		Baseline	Post Intervention	P value*	Effect size**
(number of participants included in analysis)						
Average daily step count	Supervised Exercise	Mean (95%CI)	7405 (6525-8286)	7504 (6486-8524)		
		Δ (95% CI)		-99.52 (-865-666)	0.797	0.03
	ExACT	Mean (95%CI)	7429 (6606-8251)	7338 (6409-8266)		
		Δ (95% CI)		90.80 (-594-775)	0.793	0.03
	Group Difference			-190.32 (-1218-837)	0.714	0.05
	(n=144)					
Distance travelled per day (km)	Supervised Exercise	Mean (95%CI)	5.16 (4.52-5.80)	5.16 (4.34-5.89)		
		Δ (95% CI)		-0.002 (-0.53-0.53)	0.995	0.0007
	ExACT	Mean (95%CI)	5.23 (4.63-5.82)	5.12 (4.45-5.78)		
		Δ (95% CI)		0.11 (-0.36-0.58)	0.649	0.04
	Group Difference			-0.11 (-0.82-0.60)	0.758	0.04
	(n=144)					
Active Minutes per day	Supervised Exercise	Mean (95%CI)	234.26 (207.42-261.10)	233.96 (202.29-265.62)		
		Δ (95% CI)		0.31 (-28.19-28.81)	0.983	0.002
	ExACT	Mean (95%CI)	235.81 (211.13-260.49)	230.77 (202.48-259.07)		
		Δ (95% CI)		5.04 (-19.46-29.53)	0.684	0.05
	Group Difference			-4.73 (-42.31-32.85)	0.803	0.04
	(n=142)					

Δ change from baseline.

*From linear mixed model test for measurement timepoint x group interaction term. All models included an unstructured correlation between time points.

**Cohen's D computed as mean difference relative to pooled standard deviations (baseline standard deviations used in both within and between group calculations).

Abbreviations: CI, confidence interval; km, kilometre

Table 12 Compliance with wear of the FitBit Zip Activity Tracker

Time Point		Randomised Group		
		Supervised Exercise	ExACT	Total
Baseline	n	64	73	137
	%	72.72%	83.9	78.28%
Final week of Intervention	n	46	58	104
	%	52.30%	66.70%	59.40%

Table 13 Physical activity levels of trial participants at baseline categorised according to average daily step count

	< 6500 steps per day	≥ 6500 and < 8500	≥ 8500 and < 10000	≥10000
Supervised Exercise n (%)*	32 (50)	6 (9.4)	7 (11)	19 (29.7)
ExACT n (%)*	27 (37)	24 (32.9)	7 (9.6)	15(20.5)
Total n (%)*	59 (43.06)	30 (21.9)	14 (10.2)	34 (24.8)

*% calculated based on total number of individuals who wore fitbit tracker at baseline (supervised exercise group n=64, ExACT group n=73, total n=137)

Table 14 Physical activity levels of trial participants post intervention categorised according to average daily step count

	< 6500 steps per day	≥ 6500 and < 8500	≥ 8500 and < 10000	≥10000
Supervised Exercise n (%)*	20 (43.5)	10 (21.7)	2 (4.3)	14 (30.4)
ExACT n (%)*	25 (43.1)	9 (15.5)	11 (19)	13 (22.4)
Total n (%)*	45 (43.3)	19 (18.3)	13 (12.5)	27 (26)

*% calculated based on total number of individuals who wore fitbit tracker post intervention (supervised exercise group n=46, ExACT group n=58, total n=104)

Table 15 Per protocol analyses for primary outcome (BPI- interference subscale) and secondary outcomes (BPI Composite Severity, PHQ-9, GAD-7)

Outcome Measure (Scoring range)			Baseline	Post Intervention	p-value*	12 week Follow up	p-value*
BPI Interference (0-10)	Supervised Exercise	Mean (95%CI)	6.69 (6.22-7.16)	6.29 (5.72-6.86)		6.27 (5.66-6.89)	
		Δ (95% CI)		0.40 (-0.14- 0.94)	0.144	0.42 (-0.17-1.01)	0.163
	ExACT	Mean (95%CI)	6.89 (6.46-7.32)	6.38 (5.86-6.90)		6.38 (5.81-6.95)	
		Δ (95% CI)		0.51 (0.02-1.00)	0.042	0.51 (-0.03-1.06)	0.065
	Group Difference			-0.11 (-0.84-0.62)	0.77	-0.10 (-0.90-0.71)	0.81
BPI Composite Severity (0-10)	Supervised Exercise	Mean (95%CI)	6.41 (5.99-6.83)	6.21 (5.77-6.66)		6.32 (5.81-6.84)	
		Δ (95% CI)		0.20 (-0.16-0.55)	.273	0.08 (-0.36-0.53)	0.708
	ExACT	Mean (95%CI)	6.25 (5.86-6.63)	5.91 (5.51-6.32)		6.15 (5.67-6.62)	
		Δ (95% CI)		0.33 (0.01-0.65)	0.044	0.10 (-0.32-0.51)	0.644
	Group Difference (95% CI)			-0.14 (-0.61-0.34)	0.575	-0.01 (-0.62-0.60)	0.968
PHQ-9 (0-27)	Supervised Exercise	Mean (95%CI)	12.96 (11.37-14.56)	12.43 (10.85-14.01)		11.36 (9.61-13.06)	
		Δ (95% CI)		0.53 (-0.94-2.00)	0.479	1.63 (0.10-3.15)	0.037
	ExACT	Mean (95%CI)	13.84 (12.38-15.30)	12.13 (10.70-13.56)		11.10 (9.53-12.67)	
		Δ (95% CI)		1.71 (0.38-3.04)	0.012	2.74 (1.36-4.13)	0.000
	Group Difference			-1.18 (-3.16-0.80)	0.240	-1.11 (-3.17-0.95)	0.286
GAD-7 (0-21)	Supervised Exercise	Mean (95%CI)	10.12 (8.57-11.66)	9.43 (7.96-10.89)		8.94 (7.43-10.45)	
		Δ (95% CI)		0.69 (-0.63-2.01)	0.301	1.18 (-0.05-2.40)	0.059
	ExACT	Mean (95%CI)	10.71 (9.30-12.12)	8.63 (7.31-9.96)		8.60 (7.21-9.99)	
		Δ (95% CI)		2.08 (0.89-3.27)	0.001	2.11 (0.98-3.23)	0.000
	Group Difference			-1.39 (-3.16-0.38)	0.124	-0.93 (-2.59-0.73)	0.268

Δ change from baseline.

*From linear mixed model test for timepoint x group interaction term. All models included an unstructured correlation between time points.

**Cohen's D computed as mean difference relative to pooled standard deviations (baseline standard deviations used in both within and between group calculations).

Abbreviations: BPI, Brief Pain Inventory; GAD-7, General Anxiety Disorder-7; PHQ-9, Patient Health Questionnaire

Table 16 Per protocol analyses for treatment process measures (PSEQ, PCS, TSK, CPAQ, CAQ)

Outcome Measure			Baseline	Post Intervention	p-value*	12 week Follow up	p-value*
(Scoring range)							
PSEQ (0-60)	Supervised Exercise	Mean (95%CI)	25.71 (22.67-28.75)	28.06 (25.05-31.07)		28.12 (24.96-31.29)	
		Δ (95% CI)		-2.35 (-5.00-0.30)	0.082	-2.41 (-5.16-0.34)	0.085
	ExACT	Mean (95%CI)	23.55 (20.77-26.33)	30.61 (27.88-33.33)		29.06 (26.12-31.99)	
		Δ (95% CI)		-7.06 (-9.45--4.67)	0.000	-5.51 (-8.07--2.95)	0.000
	Group Difference			4.71 (1.15-8.28)	0.01	3.10 (-0.66-6.86)	0.105
PCS (total) (0-52)	Supervised Exercise	Mean (95%CI)	26.85 (23.80-29.90)	25.28 (21.91-28.65)		23.70 (20.13-27.26)	
		Δ (95% CI)		1.57 (-1.30-4.45)	0.88	3.16 (-0.23-6.54)	0.07
	ExACT	Mean (95%CI)	34.07 (31.29-36.84)	26.71 (23.62-29.80)		24.07 (20.79-27.34)	
		Δ (95% CI)		7.36 (4.74-9.97)	0.000	9.99	0.000
	Group Difference			-5.78 (-9.67--1.90)	0.004	-6.84 (-11.44--2.25)	0.004
PCS (Rumination) (0-16)	Supervised Exercise	Mean ± SD (95%CI)	9.13 (8.03-10.22)	8.74 (7.46-10.04)		8.17 (6.81-9.54)	
		Δ (95% CI)		0.37 (-0.70-1.45)	0.49	0.95 (-0.34-2.25)	0.150
	ExACT	Mean (95%CI)	11.47 (10.47-12.46)	8.98 (7.79-10.16)		8.44 (7.18-9.69)	
		Δ (95% CI)		2.49 (1.51-3.47)	0.000	3.03 (1.85-4.22)	0.000
	Group Difference			-2.12 (-3.57--0.67)	0.005	-2.08 (-3.83--0.32)	0.02
PCS (Magnification) (0-12)	Supervised Exercise	Mean (95%CI)	4.83 (3.96-5.69)	4.44 (3.57-5.31)		4.03 (3.14-4.92)	
		Δ (95% CI)		0.39 (-0.43-1.21)	0.35	0.80 (-0.04-1.63)	0.002
	ExACT	Mean (95%CI)	6.66 (5.87-7.45)	5.44 (4.65-6.24)		4.32 (3.49-5.14)	
		Δ (95% CI)		1.22 (0.46-1.97)	0.002	2.35 (1.58-3.12)	0.000
	Group Difference			-0.83 (-1.95-0.29)	0.14	-1.55 (-2.69--0.41)	0.008
PCS (Helplessness) (0-24)	Supervised Exercise	Mean (95%CI)	12.73 (11.24-14.22)	12.08 (10.46-13.69)		11.34 (9.65-13.03)	
		Δ (95% CI)		0.65 (-0.87-2.18)	0.4	1.39 (-0.44-3.22)	0.14
	ExACT	Mean (95%CI)	15.94 (14.57-17.30)	12.24 (10.76-13.72)		11.28 (9.73-12.84)	
		Δ (95% CI)		3.70 (2.30-5.09)	0.000	4.65 (2.97-6.33)	0.000
	Group Difference			-3.04 (-5.11--0.97)	0.004	-3.26 (-5.75--0.78)	0.01

TSK (17-68)	Supervised Exercise	Mean (95%CI)	12.73 (11.24-14.22)	12.08 (10.46-13.69)		11.34 (9.65-13.03)	
		Δ (95% CI)		0.65 (-0.87-2.18)	0.4	1.39 (-0.44-3.22)	0.14
	ExACT	Mean (95%CI)	15.94 (14.57-17.30)	12.24 (10.76-13.72)		11.28 (9.73-12.84)	
		Δ (95% CI)		3.70 (2.30-5.09)	0.000	4.65 (2.97-6.33)	0.000
	Group Difference			-3.04 (-5.11--0.97)	0.004	-3.26 (-5.75--0.78)	0.01
CPAQ Total (0-48)	Supervised Exercise	Mean (95%CI)	20.35 (18.13-22.57)	22.03 (19.98-24.08)		22.89 (20.54-25.25)	
		Δ (95% CI)		-1.69 (-3.61-0.24)	0.09	-2.55 (-4.64--0.46)	0.02
	ExACT	Mean (95%CI)	19.16 ± (17.13-21.20)	22.42 (20.57-24.27)		22.88 (20.73-25.03)	
		Δ (95% CI)		-3.26 (-5.00--1.52)	0.000	-3.72 (-5.62--1.82)	0.000
	Group Difference			1.57 (-1.02-4.17)	0.23	1.17 (-1.65-4.00)	0.41
CPAQ Activity Engagement (0-24)	Supervised Exercise	Mean (95%CI)	12.25 (10.65-13.85)	13.49 (12.15-14.83)		13.29 (11.92-14.67)	
		Δ (95% CI)		-1.24 (-2.67-0.18)	0.087	-1.04 (-2.48-0.40)	0.154
	ExACT	Mean (95%CI)	11.40 (9.94-12.87)	13.82 (12.61-15.03)		13.60 (12.38-14.84)	
		Δ (95% CI)		-2.42 (-3.71--1.13)	0.000	-2.19 (-3.49--0.89)	0.001
	Group Difference			1.18 (-0.74-3.10)	0.227	1.15 (-0.79-3.09)	0.242
CPAQ Pain Willingness (0-24)	Supervised Exercise	Mean (95%CI)	8.10 (6.82-9.37)	8.49 (7.23-9.75)		9.57 (8.19 - 10.95)	
		Δ (95% CI)		-0.39 (-1.59-0.80)	0.515	-1.47 (-2.74--0.21)	0.02
	ExACT	Mean (95%CI)	7.76 (6.59-8.92)	8.58 (7.44-9.72)		9.23 (7.96-10.50)	
		Δ (95% CI)		-0.82 (-1.90-0.26)	0.134	-1.46 (-2.63--0.30)	0.014
	Group Difference			0.43 (-1.18-2.04)	0.599	-0.006 (-1.72-1.71)	0.994
CAQ (0-48)	Supervised Exercise	Mean (95%CI)	29.77 (27.52-32.02)	28.88 (26.96-30.98)		28.90 (26.83-30.98)	
		Δ (95% CI)		0.89 (-1.08-2.87)	0.372	0.87 (-1.32-3.05)	0.435
	ExACT	Mean (95%CI)	27.16 (25.10-29.23)	29.74 (28.00-31.48)		28.81 (26.92-30.71)	
		Δ (95% CI)		-2.58 (-4.38--0.79)	0.005	-1.65 (-3.65-0.35)	0.105
	Group Difference			3.47 (0.80-6.14)	0.011	2.51 (-0.45-5.48)	0.096

Δ change from baseline

*From linear mixed model test for timepoint x group interaction term. All models included an unstructured correlation between time points.

Abbreviations: CAQ, Committed Action Questionnaire; CI, confidence interval; CPAQ, Chronic Pain Acceptance Questionnaire; PCS, Pain Catastrophising Scale; PSEQ, Pain Self Efficacy Questionnaire; TSK, Tampa Scale for Kinesiophobia.

Table 17 Per protocol analyses for physical activity measures (Average daily step count, distance travelled and active minutes)

Physical Activity Measure			Baseline	Post Intervention	P value*
(number of participants included in analysis)					
Average daily step count (n=114)	Supervised Exercise	Mean (95%CI)	7170 (6165-8175)	7378 (6280-8476)	0.61
		Δ (95% CI)		-208 (-1013-587)	
	ExACT	Mean (95%CI)	7529 (6595-8462)	7359 (6361-8358)	0.637
		Δ (95% CI)		169 (-541-879)	
	Group Difference			-377 (-1450-696)	0.487
Distance travelled per day (km) (n=114)	Supervised Exercise	Mean (95%CI)	5.01 (4.27-5.74)	5.07 (4.29-5.86)	0.807
		Δ (95% CI)		-0.07 (-0.63-0.49)	
	ExACT	Mean (95%CI)	5.30 (4.61-5.98)	5.13 (4.41-5.85)	0.510
		Δ (95% CI)		0.16 (-0.33-0.65)	
	Group Difference			-0.23 (-0.97-0.51)	0.536
Active Minutes per day (n=114)	Supervised Exercise	Mean (95%CI)	230.54 (200.24-260.85)	231.84 (198.42-265.26)	0.931
		Δ (95% CI)		-1.30 (-30.93-28.33)	
	ExACT	Mean (95%CI)	236.84 (209.22-264.45)	230.48 (200.73-260.23)	0.621
		Δ (95% CI)		6.36 (-19.14-31-85)	
	Group Difference			-7.65 (-46.74-31.44)	0.698

Δ change from baseline.

*From linear mixed model test for measurement timepoint x group interaction term. All models included an unstructured correlation between time points.

Abbreviations: CI, confidence interval; km, kilometre

Table 18 Per protocol analyses: Healthcare utilisation

Healthcare visits			Baseline	12 week Follow-up	p value
GP visits	Supervised Exercise	Mean (95%CI)	2.66 (2.0-3.31)	2.39 (1.77-2.98)	
		Δ (95% CI)		0.28 (-0.29-0.85)	0.330
	ExACT	Mean (95%CI)	2.44 (1.84-3.05)	1.82 (1.25-2.39)	
		Δ (95% CI)		0.62 (0.08-1.16)	0.024
	Group Difference			-0.34 (-1.13-0.45)	0.392
Medical Specialist visits	Supervised Exercise	Mean (95%CI)	0.92 (0.72-1.20)	1.05 (0.65-1.14)	
		Δ (95% CI)		-0.09 (-0.48-0.31)	0.659
	ExACT	Mean (95%CI)	0.92 (0.70-1.14)	0.57 (0.20- 0.94)	
		Δ (95% CI)		0.35 (-0.02-0.71)	0.063
	Group Difference			-0.44 (-0.97-0.10)	0.112
Other HCP visits	Supervised Exercise	Mean (95%CI)	1.31 (0.43-2.18)	0.95 (0.14-1.77)	
		Δ (95% CI)		0.35 (-0.73-1.43)	0.52
	ExACT	Mean (95%CI)	1.74 (0.93-2.54)	1.72 (0.95-2.48)	
		Δ (95% CI)		0.02 (-0.99-1.03)	0.97
	Group Difference			0.33 (-1.14-1.81)	0.655
ED visits	Supervised Exercise	Mean (95%CI)	0.19 (-0.002-0.39)	0.28 (0.11-0.45)	
		Δ (95% CI)		-0.09 (-0.26-0.09)	0.318
	ExACT	Mean (95%CI)	0.19 (0.02-0.37)	0.15 (-0.008-0.31)	
		Δ (95% CI)		0.04 (-0.12-0.20)	0.615
	Group Difference			-0.13 (-0.37-0.11)	0.284
Inpatient nights	Supervised Exercise	Mean (95%CI)	0.04 (-0.02-0.10)	0.31 (0.003-0.61)	
		Δ (95% CI)		-0.27 (-0.15-0.68)	0.203
	ExACT	Mean (95%CI)	0.02 (-0.04-0.07)	0.04 (-0.24-0.32)	
		Δ (95% CI)		-0.02 (-0.31-0.27)	0.880
	Group Difference			-0.24 (-0.67-0.18)	0.254

Δ change from baseline.

*From linear mixed model test for measurement timepoint x group interaction term. All models included an unstructured correlation between time points.

Abbreviations: CI, confidence interval; ED, emergency department; GP, general practitioner; HCP, healthcare professional