

## SUPPLEMENTARY MATERIAL

**Supplementary Figure 1. Content of the Activity Pacing Framework: Overview and Theory, and Appendices and Teaching Guide booklets****A. Overview and Theory**

1. Glossary
2. Introduction:
  - Why is an activity pacing framework needed?
  - How has the activity pacing framework been developed?
3. Definition of activity pacing
4. Aims of pacing
  - Examples of aims of pacing and their clinical application
5. Who can benefit from pacing?
6. Activity behaviours:
  - Avoidance behaviour/fear-avoidance
  - Over-exertion/excessive persistence
  - Boom-bust/overactivity-underactivity cycling
7. Quota-contingent and symptom-contingent pacing
8. Models of pacing:
  - Operant approach
  - Energy conservation
  - Activity pacing framework model of pacing
9. Facets of pacing:
  - Facets of pacing, broader pacing themes and individuals who may benefit
  - Facets of pacing that are not endorsed for routine use, but may be considered during a flare-up of symptoms
10. Getting started with pacing: stages of pacing
11. Potential barriers to pacing:
  - Addressing barriers
12. How pacing relates to other coping strategies
  - Pacing and graded exercise/graded activity
  - Pacing and cognitive behavioural therapy
  - Pacing and acceptance and commitment therapy
  - Pacing and mindfulness
  - Pacing and relaxation

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Pacing and sleep hygiene

Pacing and other strategies

13. Pacing aids

Activity diaries

Goal setting

**B. Appendices and teaching guide**

*Part 1. Conceptual model of pacing*

Appendix 1. Activity pacing and the fear-avoidance model

Appendix 2. Pacing as a health behaviour:

The Health Action Process Approach (HAPA)

The Transtheoretical model

*Part 2. Pacing guide for healthcare professionals*

Appendix 3. Chronic pain/fatigue cycle

Appendix 4. Overactivity-underactivity (boom-bust) cycle:

Boom-bust, avoidance and excessive persistence behaviours

Appendix 5. Activity pacing framework model of pacing

Appendix 6. Facets of pacing:

Facets of pacing, explanation/examples and who may benefit

Appendix 7. Stages of pacing

Appendix 8. Patient exemplars:

Avoidance

Excessive persistence

Boom-bust

Patients who are predominantly bedbound

Appendix 9. Questions for healthcare professionals to ask patients:

Exploring current patterns of activity

Exploring current baselines of activity

Exploring possible barriers to pacing

Exploring individuals' aims

*Part 3. Pacing tools*

Appendix 10. Activity diary:

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Blank activity diary and example of a completed diary

Appendix 11. Goal setting

Appendix 12. Checklist for health care professionals

Appendix 13. References

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## Supplementary Table 1. CONSORT checklist



## CONSORT 2010 checklist of information to include when reporting a pilot or feasibility trial\*

Section/Topic	Item No	Checklist item	Reported on page No
<b>Title and abstract</b>			
	1a	Identification as a pilot or feasibility randomised trial in the title	Title page (Page 1)
	1b	Structured summary of pilot trial design, methods, results, and conclusions (for specific guidance see CONSORT abstract extension for pilot trials)	The abstract is structured as per the <i>BMJ Open</i> format, but it contains the information as per the CONSORT checklist. (Page 3)
<b>Introduction</b>			
Background and objectives	2a	Scientific background and explanation of rationale for future definitive trial, and reasons for randomised pilot trial	Pages 5-7
	2b	Specific objectives or research questions for pilot trial	Page 7

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<b>Methods</b>			
Trial design	3a	Description of pilot trial design (such as parallel, factorial) including allocation ratio	Page 8
	3b	Important changes to methods after pilot trial commencement (such as eligibility criteria), with reasons	This was not a pilot trial that ran into a RCT. Any suggested modifications following this feasibility study are included on Pages 32-33
Participants	4a	Eligibility criteria for participants	Page 9
	4b	Settings and locations where the data were collected	Page 11
	4c	How participants were identified and consented	Page 8
Interventions	5	The interventions for each group with sufficient details to allow replication, including how and when they were actually administered	Pages 9-11 and Supplementary Figures 1-2
Outcomes	6a	Completely defined prespecified assessments or measurements to address each pilot trial objective specified in 2b, including how and when they were assessed	Pages 11-14
	6b	Any changes to pilot trial assessments or measurements after the pilot trial commenced, with reasons	This was not a pilot trial that ran into a RCT. Any suggested

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			modifications following this feasibility study are included on Pages 32-33
	6c	If applicable, prespecified criteria used to judge whether, or how, to proceed with future definitive trial	N/A. This was not a pilot trial that ran into a RCT. There were no prespecified criteria in this single-arm feasibility study
Sample size	7a	Rationale for numbers in the pilot trial	Page 9
	7b	When applicable, explanation of any interim analyses and stopping guidelines	This was not a pilot trial that ran into a RCT. No interim analyses or stopping guidelines were included in this feasibility study.

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Randomisation:			
Sequence generation	8a	Method used to generate the random allocation sequence	There was no randomisation in this single-arm feasibility study
	8b	Type of randomisation(s); details of any restriction (such as blocking and block size)	There was no randomisation in this single-arm feasibility study
Allocation concealment mechanism	9	Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned	There was no randomisation in this single-arm feasibility study
Implementation	10	Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions	There was no randomisation in this single-arm feasibility study
Blinding	11a	If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how	There was no blinding in this single-arm feasibility study

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	11b	If relevant, description of the similarity of interventions	This was a single arm study
Statistical methods	12	Methods used to address each pilot trial objective whether qualitative or quantitative	Page 14
<b>Results</b>			
Participant flow (a diagram is strongly recommended)	13a	For each group, the numbers of participants who were approached and/or assessed for eligibility, randomly assigned, received intended treatment, and were assessed for each objective	Page 19 Figure 2: CONSORT flow diagram
	13b	For each group, losses and exclusions after randomisation, together with reasons	This was a single arm study without randomisation. The recruitment and attrition rates are included on Page 19 and Figure 2. CONSORT flow diagram
Recruitment	14a	Dates defining the periods of recruitment and follow-up	Page 15
	14b	Why the pilot trial ended or was stopped	Page 15. Figure 2: CONSORT flow diagram



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			states T3 (follow up) was stopped due to attaining target sample
Baseline data	15	A table showing baseline demographic and clinical characteristics for each group	Tables 1 and 2
Numbers analysed	16	For each objective, number of participants (denominator) included in each analysis. If relevant, these numbers should be by randomised group	Tables 3 and 4
Outcomes and estimation	17	For each objective, results including expressions of uncertainty (such as 95% confidence interval) for any estimates. If relevant, these results should be by randomised group	Tables 3 and 4
Ancillary analyses	18	Results of any other analyses performed that could be used to inform the future definitive trial	Pages 21-22
Harms	19	All important harms or unintended effects in each group (for specific guidance see CONSORT for harms)	Page 19
	19a	If relevant, other important unintended consequences	N/A. (Page 19 states no adverse events)
<b>Discussion</b>			
Limitations	20	Pilot trial limitations, addressing sources of potential bias and remaining uncertainty about feasibility	Pages 31-32
Generalisability	21	Generalisability (applicability) of pilot trial methods and findings to future definitive trial and other studies	Page 32
Interpretation	22	Interpretation consistent with pilot trial objectives and findings, balancing potential benefits and harms, and considering other relevant evidence	Pages 27-31
	22a	Implications for progression from pilot to future definitive trial, including any proposed amendments	32-33

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Other information			
Registration	23	Registration number for pilot trial and name of trial registry	Abstract; Page 8
Protocol	24	Where the pilot trial protocol can be accessed, if available	Page 8
Funding	25	Sources of funding and other support (such as supply of drugs), role of funders	Page 35
	26	Ethical approval or approval by research review committee, confirmed with reference number	Pages 8, 35

Citation: Eldridge SM, Chan CL, Campbell MJ, Bond CM, Hopewell S, Thabane L, et al. CONSORT 2010 statement: extension to randomised pilot and feasibility trials. *BMJ*. 2016;355.

\*We strongly recommend reading this statement in conjunction with the CONSORT 2010, extension to randomised pilot and feasibility trials, Explanation and Elaboration for important clarifications on all the items. If relevant, we also recommend reading CONSORT extensions for cluster randomised trials, non-inferiority and equivalence trials, non-pharmacological treatments, herbal interventions, and pragmatic trials. Additional extensions are forthcoming: for those and for up to date references relevant to this checklist, see [www.consort-statement.org](http://www.consort-statement.org).

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**Supplementary Figure 2: Content of the rehabilitation programme****Week 1**

Introduction to the programme  
Aims and concerns of the programme  
Understanding chronic pain  
Chronic pain/fatigue cycle  
Benefits of exercise  
Graded exercise (circuit exercises)  
Relaxation session: Breathing exercises and Progressive Muscle Relaxation (led by a psychological wellbeing practitioner)  
Goal setting (SMART goals)

**Week 2**

Goal review  
Understanding pain and the emotional effects: negative thinking and unhelpful thoughts  
Pacing Session 1:  
    Activity patterns (boom-bust, avoidance and excessive persistence)  
    Aims of pacing  
    Barriers to pacing  
    Using activity diaries for the week ahead  
Graded exercise (circuit exercises)  
Mindfulness session: Introduction to mindfulness & Body Scan (led by a psychological wellbeing practitioner)  
Goal setting

**Week 3**

Goal review  
Pacing Session 2:  
    Discuss the completed activity diaries  
    Facets of pacing  
    Stages of pacing  
Dealing with difficult thoughts

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Graded exercise (circuit exercises)

Mindfulness session: Leaves on the stream (led by a psychological wellbeing practitioner)

Goal setting: specific pacing goal

**Week 4**

Pacing goal review

Choice V's demand activities

Increasing positive thoughts

Work and employment

Graded exercise (circuit exercises)

Mindfulness session: Compassionate acceptance (led by a psychological wellbeing practitioner)

Goal setting

**Week 5**

Goal review

Sleep hygiene

Medication

Graded exercise (circuit exercises)

Mindfulness session: Treasure of pleasure (led by a psychological wellbeing practitioner)

Goal setting

**Week 6**

Goal review

Managing setbacks

Mindfulness session: Open Heart (led by a psychological wellbeing practitioner)

Maintaining progress

Signposting to community resources

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**Supplementary Table 2. Five themes of the 28-item Activity Pacing Questionnaire (APQ-28) with examples**

<b>APQ Theme</b>	<b>Example of items</b>
Activity adjustment	“I broke tasks up into periods of activity and rest” “I alternated the type of activity that I was doing”
Activity consistency	“I did a similar amount of activity on ‘good’ and ‘bad’ days” “I made sure I did some activity every day, even if I had a “bad” day”
Activity progression	“I gradually increased how long I could spend on my activities” “I gradually increased activities that I had been avoiding because of my symptoms”
Activity planning	“I set activity goals that were meaningful for me” “I planned in advance how long I would spend on each activity”
Activity acceptance	“I changed my activity targets if they were unrealistic” “I set activity goals that were realistic for me”