

1 APPENDIX 1: BEHAVIOUR CHANGE TECHNIQUES (BCTS) USED IN USUAL CARE
 2 AND KOMPACT TREATMENT SESSIONS AS DEFINED BY THE BEHAVIOUR CHANGE
 3 TAXONOMY

BCTs KOMPACT initial	BCTs KOMPACT follow-up	BCTs usual care
1.1 Goal setting (behaviour)	1.5 Review behaviour goals	4.1 Instruction on how to perform the behaviour
1.2 Problem solving	1.2 Problem solving	5.1 Information about health consequences
1.4 Action planning	1.4 Action planning	6.1 Demonstration of the behaviour
1.8 Behavioural contract	2.3 self-monitoring of behaviour	9.1 Credible source
1.9 Commitment	3.1 Social support unspecified	
2.3 Self-monitoring of behaviour	4.1 Instruction on how to perform the behaviour (ex)	
3.1 Social support unspecified	6.1 Demonstration of the behaviour (ex)	
4.1 Instruction on how to perform the behaviour (ex)	8.1 Behavioural practice and rehearsal (ex)	
6.1 Demonstration of the behaviour (ex)	9.1 Credible source	
8.1 Behavioural practice and rehearsal (ex)	10.4 Social reward	
9.1 Credible source	12.6 Body changes	
10.4 Social reward		
12.6 Body changes		

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7 APPENDIX 2: INTERVENTION FIDELITY CHECKLIST

Reviewer

Client

Therapist

Session number

1 2 3 4

Criterion	Adherence (√ / X)	Competence (√ / X/ borderline)	Comments (detail if competence NOT achieved)
Session finished in allocated time			
ACT style communication			
Therapeutic alliance established			
Physical assessment performed			
Effective use of metaphor			
Effective use of skill			
Discussion of openness toward pain			
Generalisation of skills			
Identification of values & valued activities			
Prioritisation of values			
Main goal setting			
Action plan			
Public commitment to goals			
Positive review			
Goal review			
If and then plan established/ reviewed			
One exercise prescribed/ progressed			
Independent patient exercise progression			
Positive closure			

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9 Opportunities for improvement (include specific strategies when competence not achieved)

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Criterion	Indicators of competence achieved
Session finished in allocated time	Session 1: 60 mins; Session 2 & 3: 30 mins; Session 4: 20 mins
Overall communication and therapeutic stance consistent with the ACT style	Absence of coercion, arguing, convincing and didactic teaching style from therapist. Therapist models acceptance of unpleasant emotions/experiences. Therapist stance is caring, equal, and respectful of client ability to effect change. Therapist self-discloses when it is safe and appropriate to make a therapeutic point
Therapeutic alliance established	Evidence of patient engagement, patient seen to be an active participant in session rather than passive recipient of treatment
Physical assessment performed	AROM/PROM measures, gait and/or stairs assessment.
Effective use of metaphor	Metaphor used by therapist and identified in patient manual with positive response from participant, appropriate use of metaphor applied to patient problems, Metaphor revisited in future sessions (2, 3, 4). Includes: rusty gate, quicksand, passing train, driving the bus, bushwalk, fire alarm, hamster on a wheel, sleep, ball and chain.
Effective use of skill/tool (devices in manual)	Skill/tool introduced and taught, pointed out in manual, Relevance and application clearly stated, Review of application of skills in subsequent sessions. Includes: notice 5 things, focus, change butts to ands, FACT investigation, rate yourself.
Discussion of openness towards pain	Facilitated discussion of openness towards pain, particularly during exercise, link 'workability' of pain and exercise/activity avoidance
Generalisation of skills	Therapist facilitates identification of another appropriate situation, Rehearsal of skill/tool in session as applied to new situation. Sessions 2/3/4 only.
Identification of values and valued activities	At least three values identified by patient and accurately documented by therapist At least two valued activities identified by patient and accurately documented by therapist
Prioritisation of values	Most important value identified by patient and documented by therapist
Main goal setting (SMARTER)	Goal related to most important value and valued activity, Goal is SMARTER: specific, measurable, achievable, realistic, timely, and emotionally relevant
Action plan (all stepwise goals-SMARTER)	Each stepwise goal in action plan is SMARTER and relevant to main goal, identified value and valued activities Action plan for physical activity related to goal AND prescribed strength exercise
Public commitment to goals	Physical handshake between patient and therapist, Another significant person identified to share commitment to goals and goal shared with them.
Positive review	Positivity regarding progress expressed with verbal and non-verbal communication. Normalisation of setbacks regarding behaviour
Goal review	New goals set in line with realistic progress from last session, SMARTER format, session 2/3/4. Emphasis on behaviour change rather than "results" or "outcomes". Both physical activity and exercise based.
If and then plan established (session 1) or reviewed (session 2/3/4)	Barriers and facilitators identified for physical activity and strength exercise, documented appropriately in "if and then" plan. During review- any new barriers/facilitators identified and documented in collaboration with patient.
One exercise prescribed/ progressed	Strength exercise to hip and/or knee muscles, dosage set to fatigue, explicitly linked to valued activities. Prescribed at least x 2 per week and resistance provided.
Independent patient exercise progression	Able to independently progress exercise by session 3. Patient to understand principles of effective strength training- fatigue, x 2 per week, increasing load regularly.
Positive closure (session 3/4)	Clear sign off at session 3 and 4 regarding expectations of further appointments. Positive reinforcement of progress thus far.

APPENDIX 3: CRITERIA FOR SUCCESS

Criteria for success: feasibility

- Recruitment rates of at least 40% of those who are eligible.
- Recruitment of all participants in under 12 months.
- Retention rates to end of study (6 months after surgery) of at least 75%.
- Attendance at KOMPACT appointments of at least 80%.
- Intervention fidelity at 80% for intervention delivery by the end of the study.

Criteria for success: safety

- Length of stay- trending towards lower or at least equivalent length of stay for KOMPACT group.
- Complications after surgery- KOMPACT group experience a similar or lower number and severity of complications compared to the usual care group.
- DASS-21 data after KOMPACT intervention and before TKA similar or lower compared to the usual care group.

Criteria for success: acceptability

- At least 80% of KOMPACT group report treatment as credible (score >50% on Borkovec and Nau treatment credibility questions)