



Study Design

The ExCITE-BA Trial: Effects of physical activity plus behavioral activation on preserving cognitive function in elderly patients with mild cognitive impairment - protocol for a randomized, controlled, phase II, parallel, single-blinded, superiority trial

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Appendices

Appendix A: Main BA domains.

DOMAIN	DESCRIPTION
Activity monitoring	Aimed to detect what are the most pleasant activities.
Problematic activities	Such as smoking.
Assessment of goals and values	To guide activation assignments.
Activity scheduling	To increase positive reinforcement by assigning home or social activities.
Skills training	A variety of skills including social skills, activities or communication skills.
Relaxation training	Aimed to enhance the enjoyability of pleasant activities
Contingency management	To reinforce desired behaviors
Procedures targeting verbal behavior	Decrease negative verbal behaviors and increase positive verbal behaviors
Procedures targeting avoidance	To minimize social withdrawal

Appendix B: Heart rate (HR) zone of training adjusted for age. The figures are averages, so they should be used as a general guide.

Age in years	Target HR Zone 50-85% Average Maximum Heart Rate in beats per minute (bpm)	Target HR Zone 100% Average Maximum Heart Rate in beats per minute (bpm)
20	100-170	200
30	95-162	190
35	93-157	185
40	90-153	180
45	88-149	175
50	88-145	170
55	83-140	165
60	80-136	160
65	78-132	155
70	75-128	150

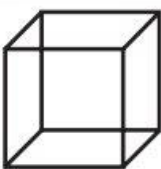
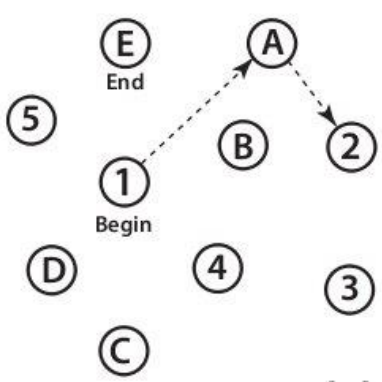
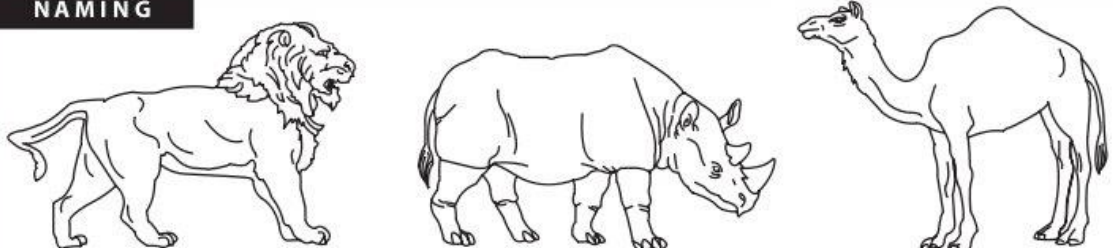
(Target Heart Rates Chart | American Heart Association, n.d.; Target Heart Rate and Estimated Maximum Heart Rate | Physical Activity | CDC, n.d.)

Appendix C: Borg Rating of Perceived Exertion (RPE) Scale

Score	Level of Exertion
6	No exertion at all
7	
7.5	Extremely light
8	
9	Very light
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard (heavy)
16	
17	Very hard
18	
19	Extremely hard
20	Maximal exertion

Appendix D: Montreal Cognitive Assessment (MoCA)

Only samples; the form to be used throughout the study will be made available as a separate document.

MONTREAL COGNITIVE ASSESSMENT (MOCA)		NAME:	Date of birth:	POINTS			
		Education:	DATE:				
		Sex:					
VISUOSPATIAL / EXECUTIVE		 Copy cube	Draw CLOCK (Ten past eleven) (3 points)	___/5			
 <div style="display: flex; justify-content: space-around; width: 100%;"> [] [] </div>		<div style="display: flex; justify-content: space-around;"> [] [] [] </div> Contour Numbers Hands					
NAMING		 <div style="display: flex; justify-content: space-around; width: 100%;"> [] [] [] </div>			___/3		
MEMORY		Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.			No points		
		FACE	VELVET	CHURCH		DAISY	RED
		1st trial					
		2nd trial					
ATTENTION		Read list of digits (1 digit/ sec.). Subject has to repeat them in the forward order [] 2 1 8 5 4 Subject has to repeat them in the backward order [] 7 4 2			___/2		
		Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors [] FBACMNAAJKLBAFAKDEAAAJAMOF AAB			___/1		
		Serial 7 subtraction starting at 100 [] 93 [] 86 [] 79 [] 72 [] 65 4 or 5 correct subtractions: 3 pts , 2 or 3 correct: 2 pts , 1 correct: 1 pt , 0 correct: 0 pt			___/3		
LANGUAGE		Repeat: I only know that John is the one to help today. [] The cat always hid under the couch when dogs were in the room. []			___/2		
		Fluency / Name maximum number of words in one minute that begin with the letter F. [] _____ (N ≥ 11 words)			___/1		
ABSTRACTION		Similarity between e.g. banana - orange = fruit [] train - bicycle [] watch - ruler			___/2		
DELAYED RECALL		Has to recall words WITH NO CUE			Points for UNCUED recall only		
		FACE	VELVET	CHURCH		DAISY	RED
		[]	[]	[]	[]	[]	
Optional		Category cue					
		Multiple choice cue					
ORIENTATION		[] Date [] Month [] Year [] Day [] Place [] City			___/6		
© Z.Nasreddine MD Version 7.1 www.mocatest.org Normal ≥ 26 / 30		TOTAL ___/30 Add 1 point if ≤ 12 yr edu					

Patient Name: _____

Rater Name: _____

Date: _____

Activity	Score
1. Feeding	
0 = unable	
5 = needs help cutting, spreading butter, etc., or requires modified diet	
10 = independent	
2. Bathing	
0 = dependent	
5 = independent (or in shower)	
3. Grooming	
0 = needs to help with personal care	
5 = independent face/hair/teeth/shaving (implements provided)	
4. Dressing	
0 = dependent	
5 = needs help but can do about half unaided	
10 = independent (including buttons, zips, laces, etc.)	
5. Bowels	
0 = incontinent (or needs to be given enemas)	

5 = occasional accident	
10 = continent	
6. Bladder	
0 = incontinent, or catheterized and unable to manage alone	
5 = occasional accident	
10 = continent	
7. Toilet Use	
0 = dependent	
5 = needs some help, but can do something alone	
10 = independent (on and off, dressing, wiping)	
8. Transfers (Bed to chair and back)	
0 = unable, no sitting balance	
5 = major help (one or two people, physical), can sit	
10 = minor help (verbal or physical)	
15 = independent	
9. Mobility (on level surfaces)	
0 = immobile or < 50 yards	
5 = wheelchair independent, including corners, > 50 yards	
10 = walks with help of one person (verbal or physical) > 50 yards	
15 = independent (but may use any aid; for example, stick) > 50 yards	

10. Stairs	
0 = unable	
5 = needs help (verbal, physical, carrying aid)	
10 = independent	
Total score (0-100)	

Appendix F: SF-12® Patient Questionnaire

Patient Initials:

Date of Birth: ____/____/____

Date: ____/____/____

SF-12®: This information will help your doctors keep track of how you feel and how well you are able to do your usual activities. Answer every question by placing a check mark on the line in front of the appropriate answer. If you are unsure about how to answer a question, please give the best answer you can and make a written comment beside your answer.

1. In general, would you say your health is:

- a. ____ Excellent
- b. ____ Very Good
- c. ____ Good
- d. ____ Fair
- e. ____ Poor

The following two questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?

2. MODERATE ACTIVITIES, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf:

- a. ____ Yes, Limited A Lot
- b. ____ Yes, Limited A Little
- c. ____ No, Not Limited At All

3. Climbing SEVERAL flights of stairs:

- a. ____ Yes, Limited A Lot
- b. ____ Yes, Limited A Little
- c. ____ No, Not Limited At All (3)

During the PAST 4 WEEKS have you had any of the following problems with your work or other regular activities AS A RESULT OF YOUR PHYSICAL HEALTH?

4. ACCOMPLISHED LESS than you would like:

- a. ____ Yes
- b. ____ No

5. Were limited in the KIND of work or other activities:

- a. ____ Yes
- b. ____ No

During the PAST 4 WEEKS, were you limited in the kind of work you do or other regular activities AS A RESULT OF ANY EMOTIONAL PROBLEMS (such as feeling depressed or anxious)?

6. ACCOMPLISHED LESS than you would like:

- a. ____ Yes

b. _____ No

7. Didn't do work or other activities as CAREFULLY as usual:

a. _____ Yes

b. _____ No

8. During the PAST 4 WEEKS, how much did PAIN interfere with your normal work (including both work outside the home and housework)?

a. _____ Not At All

b. _____ A Little Bit

c. _____ Moderately

d. _____ Quite A Bit

e. _____ Extremely

The next three questions are about how you feel and how things have been DURING THE PAST 4 WEEKS. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the PAST 4 WEEKS

9. Have you felt calm and peaceful?

a. _____ All of the Time

b. _____ Most of the Time

c. _____ A Good Bit of the Time

d. _____ Some of the Time

e. _____ A Little of the Time

f. _____ None of the Time

10. Did you have a lot of energy?

a. _____ All of the Time

b. _____ Most of the Time

- c. _____ A Good Bit of the Time
- d. _____ Some of the Time
- e. _____ A Little of the Time
- f. _____ None of the Time

11. Have you felt downhearted and blue?

- a. _____ All of the Time
- b. _____ Most of the Time
- c. _____ A Good Bit of the Time
- d. _____ Some of the Time
- e. _____ A Little of the Time
- f. _____ None of the Time

12. During the PAST 4 WEEKS, how much of the time has your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your social activities (like visiting with friends, relatives, etc.)?

- a. _____ All of the Time
- b. _____ Most of the Time
- c. _____ A Good Bit of the Time
- d. _____ Some of the Time
- e. _____ A Little of the Time
- f. _____ None of the Time

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Appendix G: Geriatric Depression Scale (Short Form)

Patient Initials:

Date of Birth: ___/___/___

Date: ___/___/___

Instructions: Mark an X on the answer that best describes how you felt over the past week.

Questions	YES	NO
1. Are you basically satisfied with your life?		
2. Have you dropped many of your activities and interests?		
3. Do you feel that your life is empty?		
4. Do you often get bored?		
5. Are you in good spirits most of the time?		
6. Are you afraid that something bad is going to happen to you?		
7. Do you feel happy most of the time?		
8. Do you often feel helpless?		
9. Do you prefer to stay at home, rather than going out and doing things?		
10. Do you feel that you have more problems with memory than most?		
11. Do you think it is wonderful to be alive now?		
12. Do you feel worthless the way you are now?		
13. Do you feel full of energy?		

14. Do you feel that your situation is hopeless?		
15. Do you think that most people are better off than you are?		
Total Score Geriatric Depression Scale (GDS)		

Scoring Instructions Instructions: Score 1 point for each crossed answer in the YES column. A score of 5 or more suggests depression.

Yesavage, J. A. (1986). The use of self-rating depression scales in the elderly. In L. W. Poon, T. Crook, K. L. Davis, C. Eisdorfer, B. J. Gurland, A. W. Kaszniak, & L. W. Thompson (Eds.), Handbook for clinical memory assessment of older adults (pp. 213–217). American Psychological Association. <https://doi.org/10.1037/10057-017>