BEHAVIORAL INTERVENTIONS TO PREVENT OR DELAY DEMENTIA

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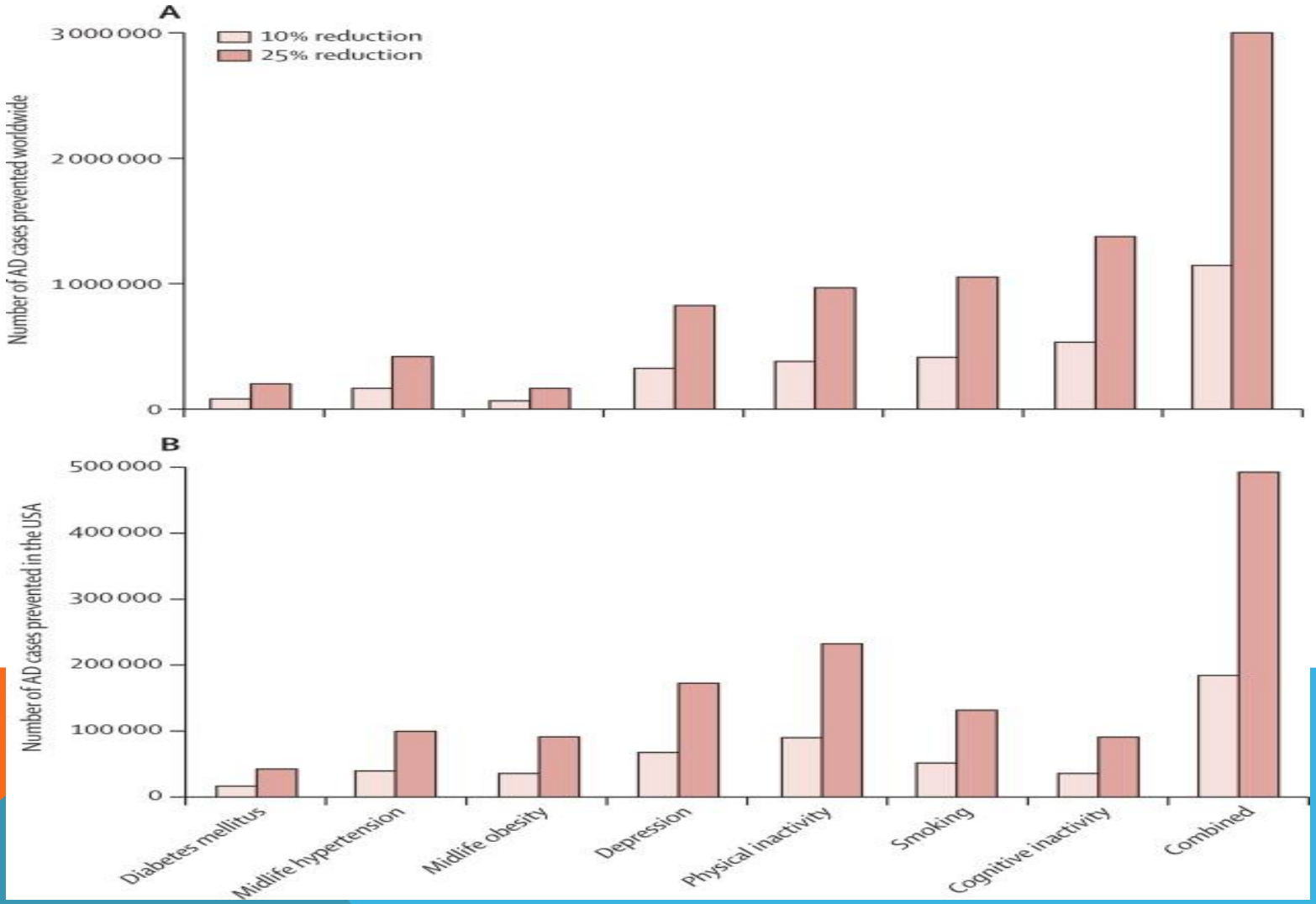
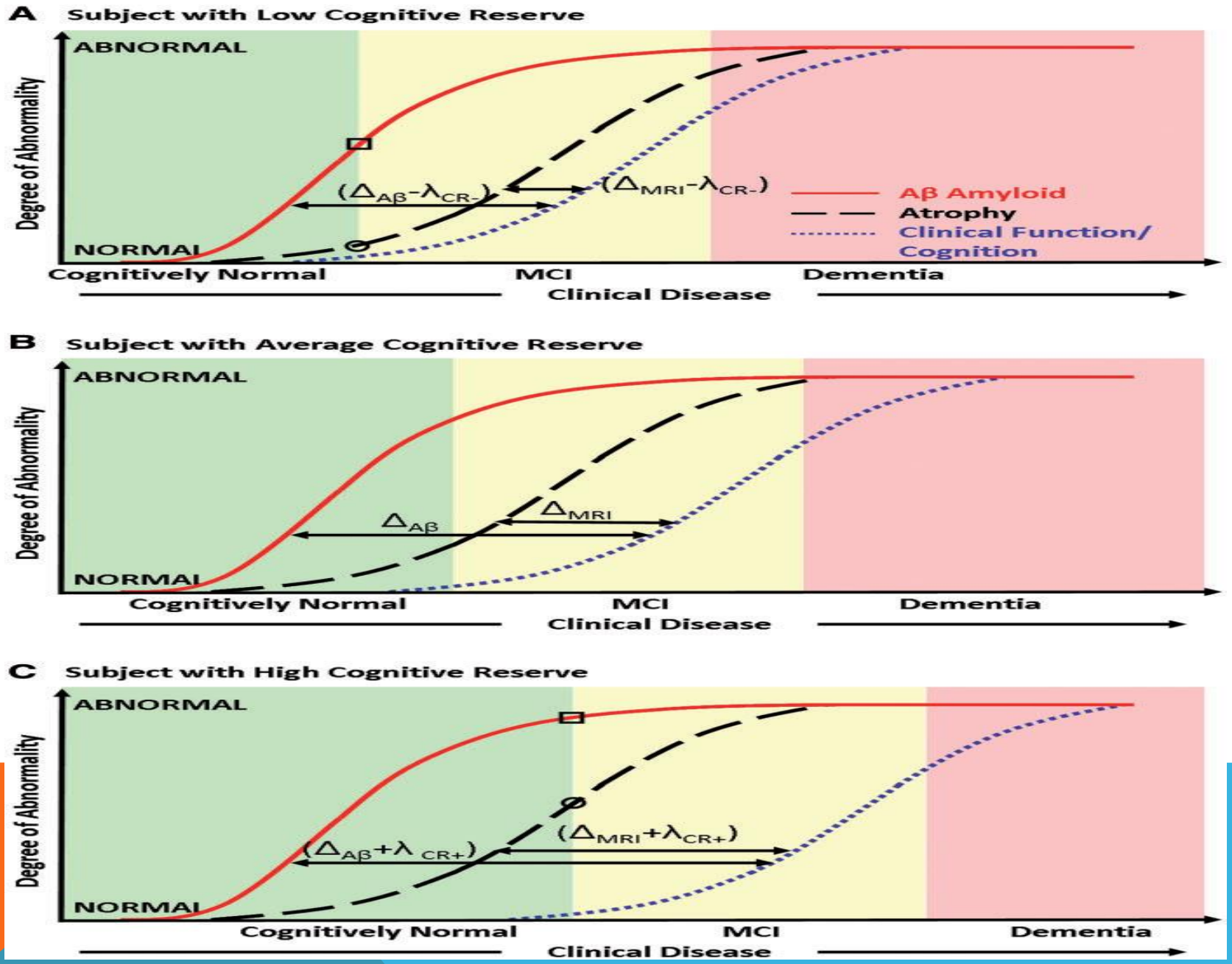
PRIMARY PREVENTION: BARNES AND YAFFE, LANCET NEUROLOGY, 2011



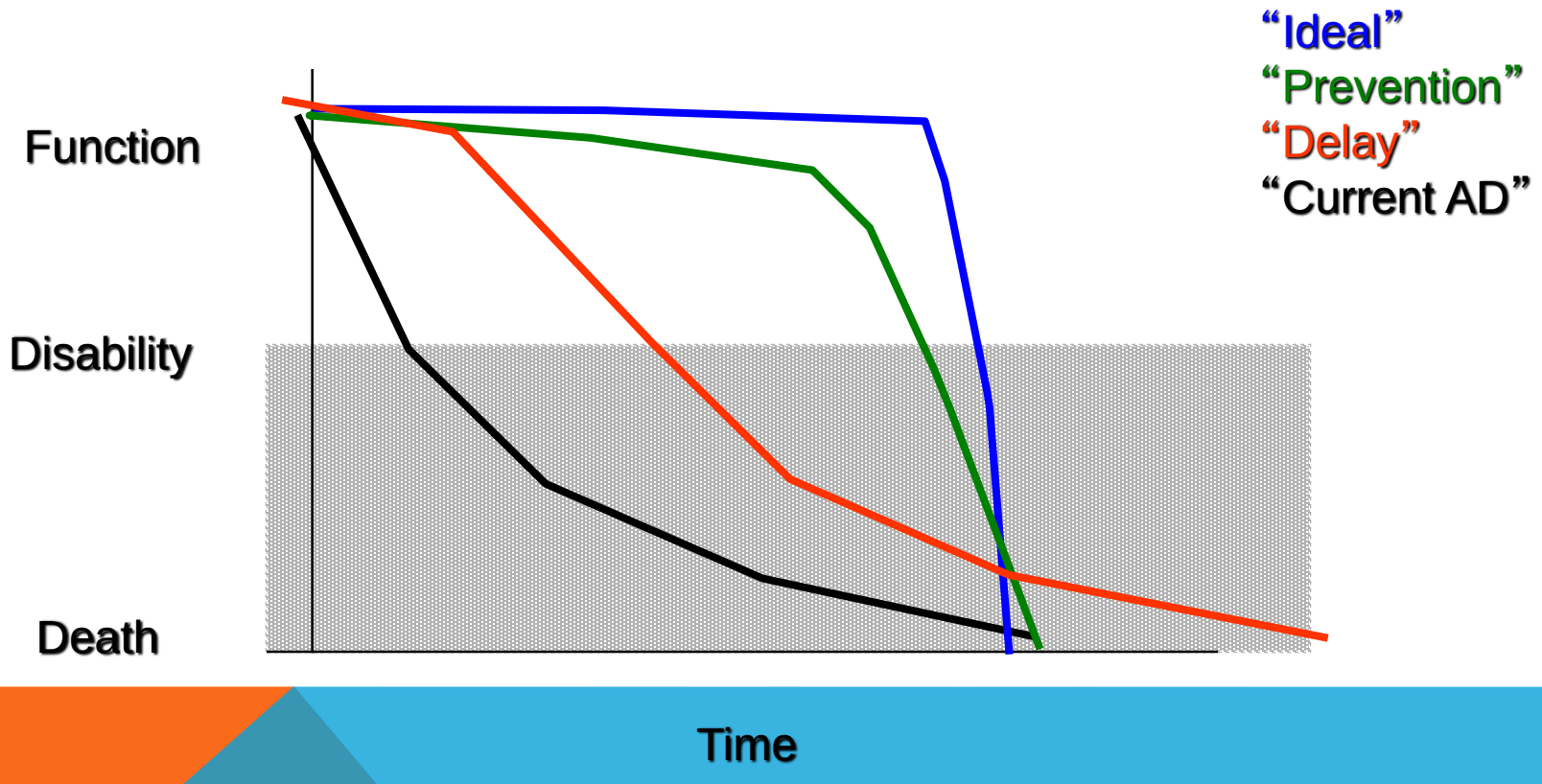
MODERN DIAGNOSIS DISTINGUISHES SYNDROMES FROM CAUSES

SYNDROMES	CAUSES
Preclinical	Alzheimer's Disease
Mild Cognitive Impairment	Cerebrovascular Disease
Dementia	Lewy Body Disease
	Frontotemporal Lobar Degeneration
	etc



Vemuri et al. Brain, 2011

PREVENTION ?


"Ideal"
"Prevention"
"Delay"
"Current AD"
Function
Disability
Death
Time

DELAYING/PREVENTING ~~AD~~ DEMENTIA

Some people die with AD changes in their brain without ever showing dementia in life

- It is possible to have cognitive/functional resilience (reserve) in the presence of brain disease

If we could delay clinical onset of symptoms more people would die without dementia

- Can we enhance cognitive reserve?

Or we at least we can theoretically compress the period of morbidity

- We can enhance functional resilience

PREVENTION

Primary

- efforts provided to all individuals to prevent the onset of a targeted condition.

Secondary

- efforts that identify and treat asymptomatic persons who have already developed risk factors or preclinical disease but in whom the condition is not clinically apparent.

Tertiary

- the care of established disease, with attempts made to restore to highest function, minimize the negative effects of disease, and prevent disease-related complications.

U.S. Preventative Services Task Forces' Guide to Clinical Preventive Services (2d edition, 1996)

APPROACHES TO PREVENTION

Physical Exercise

Cognitive training

Compensation

GROWTH OF BEHAVIORAL INTERVENTIONS IN MCI

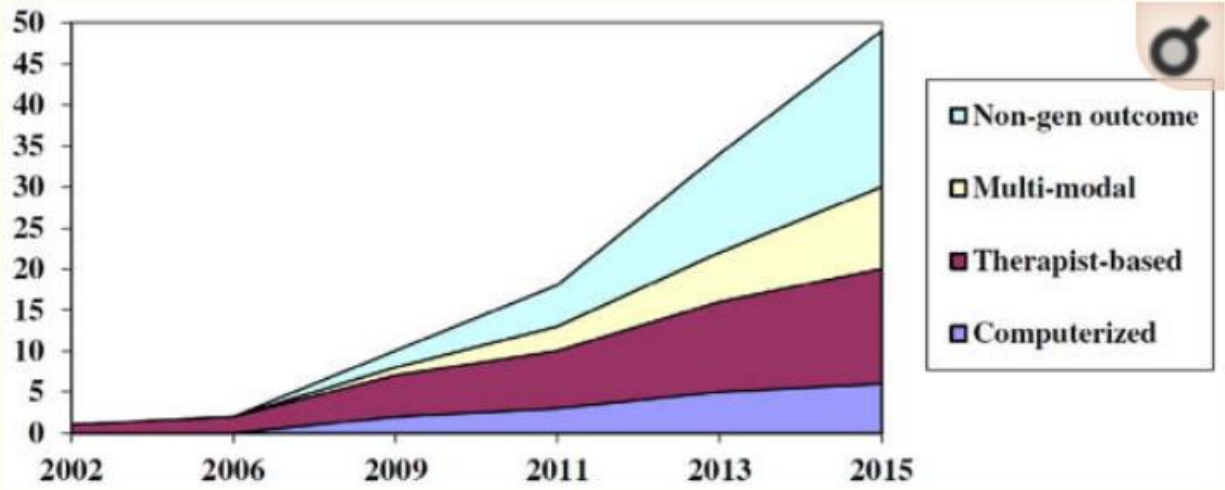


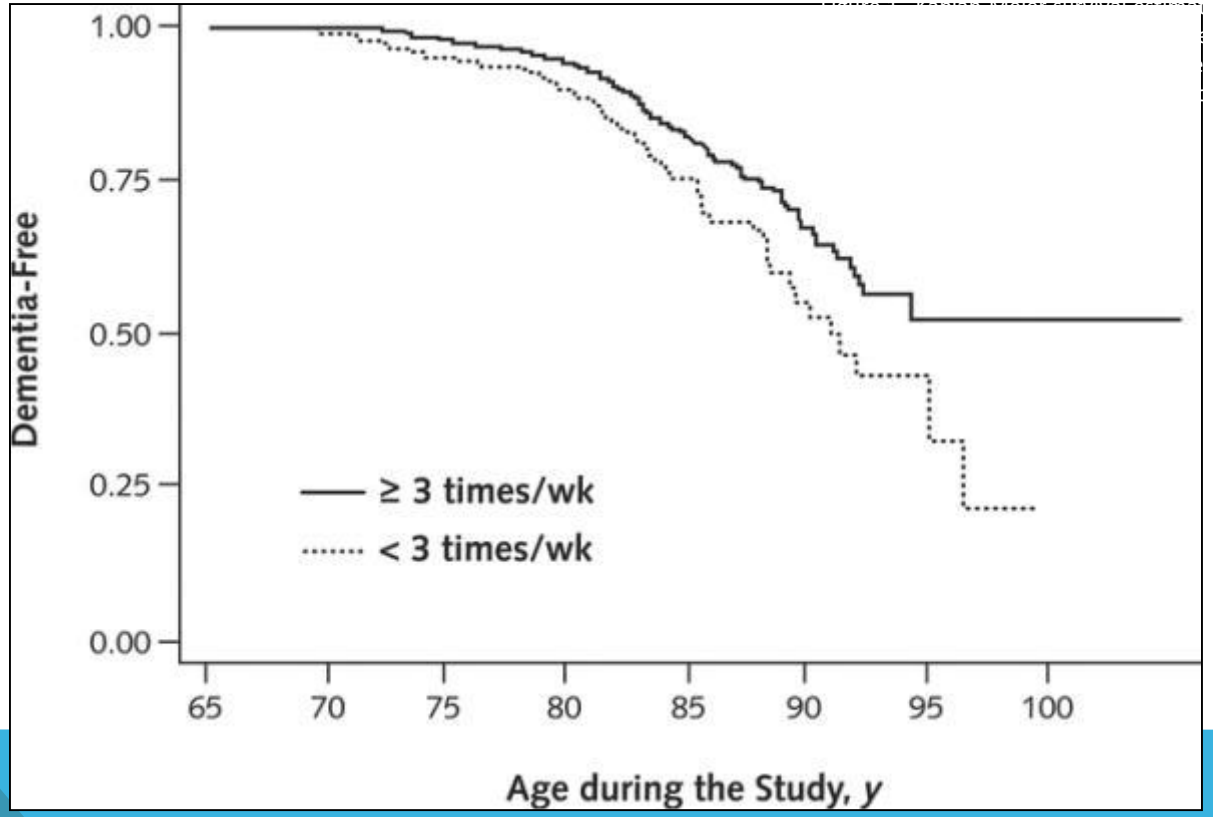
Fig. 1

Cumulative growth of controlled trials of cognitive interventions in MCI over time. To fully illustrate the total number of studies in this area, studies that included no generalization outcome measure (i.e., controlled trials of cognitive interventions in MCI that only provided cognitive measures or fMRI outcomes) that were excluded from the general review are shown in this figure as "Non-gen outcome"

Chandler, M. J., Parks, A. C., Marsiske, M., Rotblatt, L. J., & Smith, G. E. (2016). Everyday impact of cognitive interventions in mild cognitive impairment: a systematic review and meta-analysis. *Neuropsychology review*, *26*(3), 225-251.

Physical Exercise

ANNALS OF INTERNAL MEDICINE



Larsen et al. Exercise Is Associated with Reduced Risk for Incident Dementia among Persons 65 Years of Age and Older. Annals of Internal Medicine. 144(2):73-81, January 17, 2006.

PHYSICAL EXERCISE AND COGNITION

Meta-analysis

16 prospective epidemiological studies

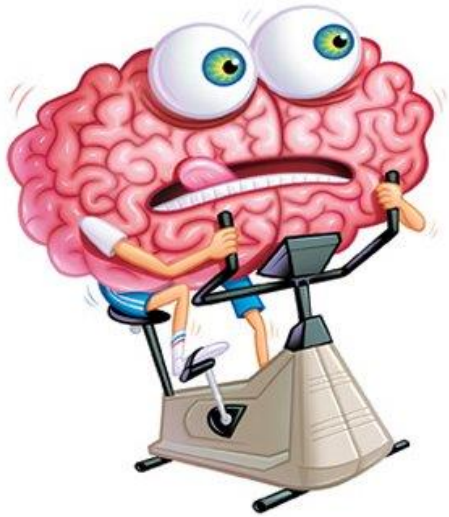
Relative risk highest physical activity compared to lowest:

Regular exercise and physical activity:

- 0.72 for dementia (CI 0.60-0.86, p<0.001)
- 0.55 for AD (CI 0.36-0.84, p=0.006)
- 0.82 for PD (CI 0.57-1.18, p=0.28)

Hamer & Chida. Psychol Med 2009;39:3-11

Cognitive Training



STANFORD LONGEVITY CENTER STATEMENT

"We object to the claim that brain games offer consumers a scientifically grounded avenue to reduce or reverse cognitive decline when there is no compelling scientific evidence to date that they do. The promise of a magic bullet detracts from the best evidence to date, which is that cognitive health in old age reflects the long-term effects of healthy, engaged lifestyles. In the judgment of the signatories below, exaggerated and misleading claims exploit the anxieties of older adults about impending cognitive decline. We encourage continued careful research and validation in this field."

"A Consensus on the Brain Training Industry from the Scientific Community," Max Planck Institute for Human Development and Stanford Center on Longevity, accessed (add date), http://longevity3.stanford.edu/blog/2014/10/15/ the-consensus-on-the-brain -training-industry-from-the-scientific-community/

Extended Practice and Aerobic Exercise Interventions Benefit Untrained Cognitive Outcomes in Older Adults: A Meta-Analysis

Shoshana B. Hindin, BS, and Elizabeth M. Zelinski, PhD

OBJECTIVES: To examine whether therapeutic interventions of extended practice of cognitive tasks or aerobic exercise have led to significant improvement in untrained cognitive tasks.

DESIGN: The PSYCINFO, MEDLINE, and Abstracts in Social Gerontology databases were searched for English-language studies of cognitive interventions of exercise or extended cognitive practice between 1966 and 2010. The final search was in January 2011. Studies included were experimental interventions hypothesizing improvement on untrained cognitive outcomes with pre- and posttests. Studies of varying quality were included and compared.

SETTING: Interventions generally took place in laboratories, in gymnasium facilities, in the home, and outdoors. Experimenters administered testing.

PARTICIPANTS: Forty-two studies with 3,781 healthy older adults aged 55 and older were analyzed.

MEASUREMENTS: Between-group effect sizes (ESs), which account for practice effects on outcome measures, and within-experimental group ESs were computed from untrained cognitive outcome domains, including choice reaction time, memory, and executive function, and compared. ESs were also coded for training type and study quality. Multilevel [illegible] multiple outcomes [illegible]

RESULTS: Extend[illegible] confidence interval [illegible] (estimated ES = 0 [illegible] produced significan[illegible] differ in magnitude. Better study quality was associated with larger ESs.

RESULTS: Extended practice (estimated ES = 0.33, 95% confidence interval (CI) = 0.13–0.52) and aerobic fitness (estimated ES = 0.33, 95% CI = 0.10–0.55) training produced significant between-group ESs, but they did not differ in magnitude. Better study quality was associated with larger ESs.

CONCLUSION: Findings indicate that aerobic and extended cognitive practice training interventions for healthy older adults improve performance on untrained cognitive tasks. **J Am Geriatr Soc 60:136–141, 2012.**

From the Davis School of Gerontology, University of Southern California, Los Angeles, California.

Address correspondence to Elizabeth M. Zelinski, Davis School of Gerontology, 3715 South McClintock Avenue, University of Southern California, Los Angeles, CA 90089. E-mail: zelinski@usc.edu

DOI: 10.1111/j.1532-5415.2011.03761.x

Key words: cognitive intervention; cognitive training; meta-analysis; aerobic exercise; cognitive decline

The National Institutes of Health recently published a State of the Science Conference statement on preventing Alzheimer's disease and cognitive decline[1] that indicated that the evidence is inadequate to support a conclusion that any interventions are adequate to prevent or delay Alzheimer's disease. The conference review focused on randomized controlled clinical trials with more than 200 participants, although it suggested that there are encouraging associations of positive effects of interventions that maintain or improve cognitive function in healthy older adults, including cognitive engagement and aerobic exercise.

Both types of interventions are at an early evaluation phase for clinical practice adoption. Many studies are in Phase I or II, during which hypothesized effects of the [illegible]ment protocol are developed (Phase [illegible] studies are conducted (Phase II). A [illegible]olled trials are in Phase III. In con- Science review was of Phase IV and [illegible]acy studies to extend established [illegible]pecified populations (Phase IV) and [illegible]tiveness and intervention efficiency (Phase V).[2]

The cognitive training industry grossed an estimated $295 million in 2009.[3] It is therefore important to evaluate early-phase results of interventions for older adults. The assumption behind cognitive training is that the benefits will extend to untrained outcomes,[4] but several meta-analyses[5,6] have found only small effects of untrained test improvement.

Nevertheless, some approaches may be effective for untrained outcomes. One kind of intervention similar to that of commercial products uses extended practice, that is, completing hundreds to thousands of trials of basic

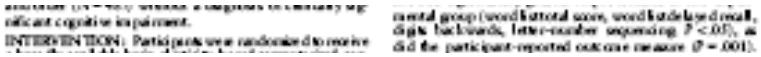
0002-8614/12/$15.00

CLINICAL INVESTIGATIONS

A Cognitive Training Program Based on Principles of Brain Plasticity: Results from the Improvement in Memory with Plasticity-based Adaptive Cognitive Training (IMPACT) Study

Glenn E. Smith, PhD, Patricia Housen, PhD,† Kristine Yaffe, MD,‡§‖ Ronald Ruff, PhD,‡# Robert F. Kennison, PhD,‡** Henry W. Mahncke, PhD,†† and Elizabeth M. Zelinski, PhD†*

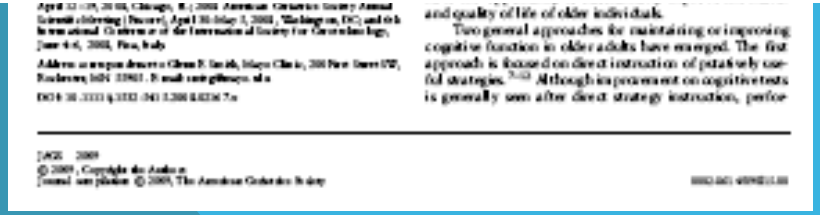
JAGS, 2009



Improvement in Memory with Plasticity-Based Adaptive Cognitive Training: Results of the 3-Month Follow-Up

Elizabeth M. Zelinski, PhD, Laila M. Spina, PsyD, Kristine Yaffe, MD, Ronald Ruff, PhD, Robert F. Kennison, PhD, Henry W. Mahncke, PhD,ww and Glenn E. Smith, PhD

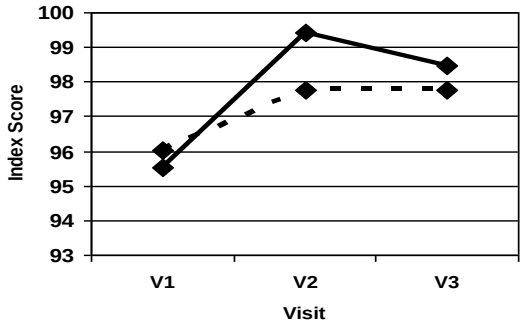
JAGS, 2011



BASELINE, END OF TREATMENT AND 3-MONTH FOLLOW-UP

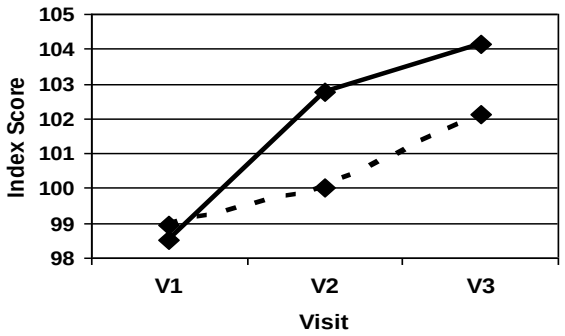
A. RBANS Auditory Memory/Attention

P = 0.34, d = 0.09



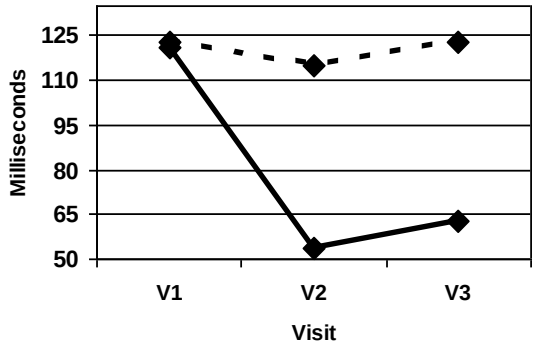
B. Overall Memory

P = 0.01, d = 0.25



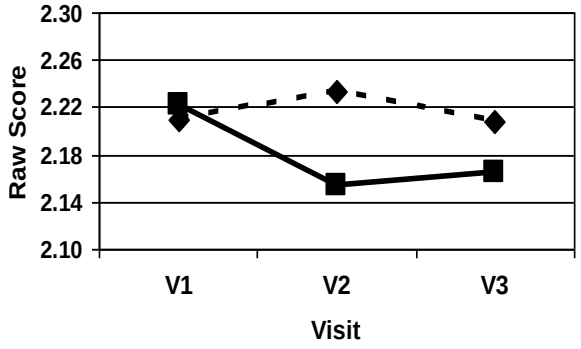
C. Processing Speed

P < 0.001, d = 0.80



D. CSRQ-25 Total

P = 0.06, d = 0.19



Treatment Control

ORIGINAL ARTICLE

Computer-based Cognitive Training for Mild Cognitive Impairment

Results from a Pilot Randomized, Controlled Trial

Deborah E. Barnes, PhD, MPH,† Kristine Yaffe, MD,*†‡§ Nataliya Belfor, PhD,* William J. Jagust, MD,‖ Charles DeCarli, MD,¶ Bruce R. Reed, MD,¶ and Joel H. Kramer, PsyD‡*

Abstract: We performed a pilot randomized, controlled trial of intensive, computer-based cognitive training in 47 subjects with mild cognitive impairment. The intervention group performed exercises specifically designed to improve auditory processing speed and accuracy for 100 min/d, 5 d/wk for 6 weeks; the control group performed more passive computer activities (reading, listening, visuospatial game) for similar amounts of time. Subjects had a mean age of 74 years and 60% were men; 77% successfully completed training. On our primary outcome, Repeatable Battery for Assessment of Neuropsychological Status total score improved 0.36 standard deviations (SD) in the intervention group ($P = 0.097$) compared with 0.03 SD in the control group ($P = 0.88$) for a nonsignificant difference between the groups of 0.33 SD ($P = 0.26$). On 12 secondary outcome measures, most differences between the groups were not statistically significant. However, we observed a pattern in which effect sizes for verbal learning and memory measures tended to favor the intervention group whereas effect sizes for language and visuospatial function measures tended to favor the control group, which raises the possibility that these training programs may have domain-specific effects. We conclude that intensive, computer-based mental activity is feasible in subjects with mild cognitive impairment and that larger trials are warranted.

Received for publication January 29, 2008; accepted October 22, 2008.
From the ¶Departments of Psychiatry, ‡Neurology, §Epidemiology, University of California, San Francisco (UCSF); †Mental Health

Key Words: human, aged, cognition, cognitive rehabilitation, memory, neuropsychologic tests, randomized controlled trial, mild cognitive impairment

(*Alzheimer Dis Assoc Disord* 2009;23:205–210)

There is growing interest in the potential for lifestyle interventions such as mental activity to improve cognitive function in the short term and possibly slow cognitive decline and delay onset of dementia in the long term. The Alzheimer's Association Maintain Your Brain campaign recommends staying mentally active as one of the key components of a "brain healthy" lifestyle. In addition, the Alzheimer's Association has recently partnered with the Centers for Disease Control and Prevention to develop the *Healthy Brain Initiative*, which recommends studying the effects of mental activity as part of its Road Map for maintaining or improving the cognitive performance of all adults.

These recommendations are based on recent studies demonstrating that the brain is highly plastic and capable of generating new synaptic connections and neurons throughout life.[1] Studies in mice have found that animals raised in an "enriched" environment—which includes access to "mental activities" such as colorful toys and

- 47 with persons with MCI
- Nonsignificant difference between the groups SD (P=0.26).
- Effect Size

  0.33

Journal of the American Geriatrics Society

Journal of the American Geriatrics Society

AGS Geriatrics Healthcare Professionals
Leading Change. Improving Care for Older Adults.

Brief Reports

Cognitive and Neural Effects of Vision-Based Speed-of-Processing Training in Older Adults with Amnestic Mild Cognitive Impairment: A Pilot Study

Feng Lin PhD, MB ✉, Kathi L. Heffner PhD, Ping Ren PhD, Madalina E. Tivarus PhD, Judith Brasch MS, Ding-Geng Chen PhD, Mark Mapstone PhD, Anton P. Porsteinsson MD, Duje Tadin PhD

First published: 20 June 2016 | https://doi.org/10.1111/jgs.14132 | Cited by:10

- Significant impact on processing speed, working memory and IADLs p<.02
- Effect size=.28 for WM and .21 for IALs
- Also significant impact on neural connectivity

STATE OF THE SCIENCE IN 2018: THE FOUR LARGEST RCTS IN CCT

IMPACT (N=487)	Auditory speed & accuracy training vs. cognitive stimulation	Aged 65+	Improvement in untrained measures of memory; patient-reported cognitive function
IHAMS (N=681)	**Visual speed & accuracy training vs. crossword puzzles**	Aged 50-64 Aged 65+	Improvement in untrained measures of cognitive function
ACTIVE (N=2,832)	Visual speed & accuracy vs. no-treatment [memory, reasoning]	Aged 65+	Improvement in everyday speed, IADLs, depressive symptoms, health-related quality of life, at-fault auto crashes
BGTT (N=11,430) (N=2,912)	Multi-domain vs. computer games	Aged 18-60 Aged 60+	No effects in younger group Improvement in cognitive function and IADLs in older group

STATE OF THE SCIENCE IN 2018: FOUR RECENT META-ANALYSES

Shao 2015 (N=12) "Computer-Based Cognitive Programs for Improvement of Memory, Processing Speed and Executive Function during Age-Related Cognitive Decline: A Meta-Analysis"	"CCP should be recommended as a complementary and alternative therapy for age-related cognitive decline, especially in memory performance and processing speed."
Lampit 2014 (N=52) "Computerized Cognitive Training in Cognitively Healthy Older Adults: A Systematic Review and Meta-Analysis of Effect Modifiers"	"CCT is modestly effective at improving cognitive performance in healthy older adults, but efficacy varies across cognitive domains and is largely determined by design choices."
Mewborn 2017 (N=97, CCT and non-CCT) "Cognitive Interventions for Cognitively Healthy, Mildly Impaired, and Mixed Samples of Older Adults: A Systematic Review and Meta-Analysis of Randomized-Controlled Trials"	"Overall, results indicated that cognitive interventions produce a small, but significant, improvement in the cognitive functioning of older adults . Effects were larger for directly trained outcomes but were also significant for non-trained outcomes (i.e., transfer effects)."
Edwards 2018 (N=17, speed training only) "Systematic review and meta-analyses of useful field of view cognitive training"	"Training transfers to real-world tasks, including those that are vital to older adults' maintained independence, with significant, lasting effects."

Memory Compensation Techniques

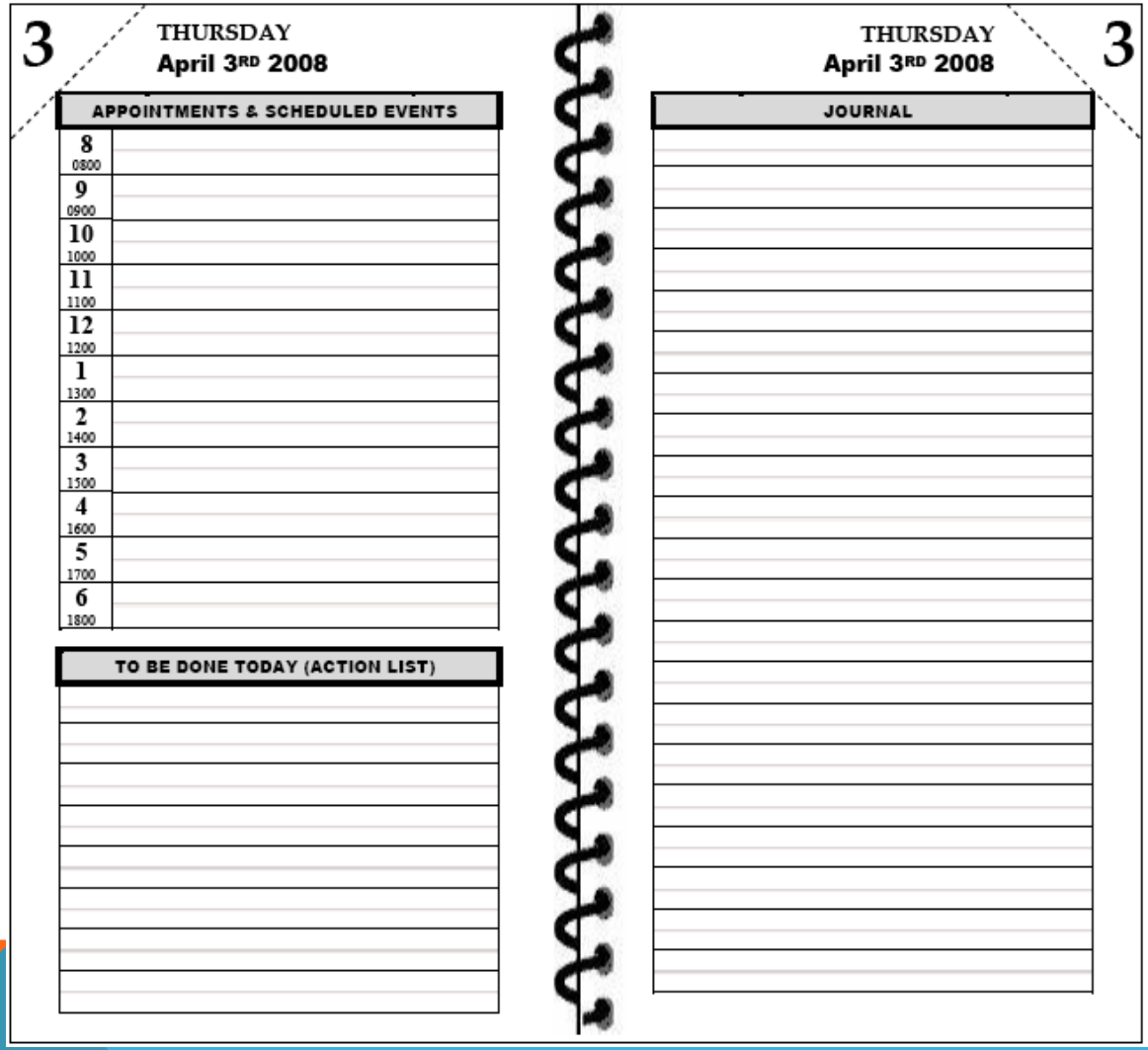
MEMORY SUPPORT SYSTEM (MSS)
SOHLBERG AND MATEER, 1988

Training to use a calendar/note taking system to compensate for memory loss

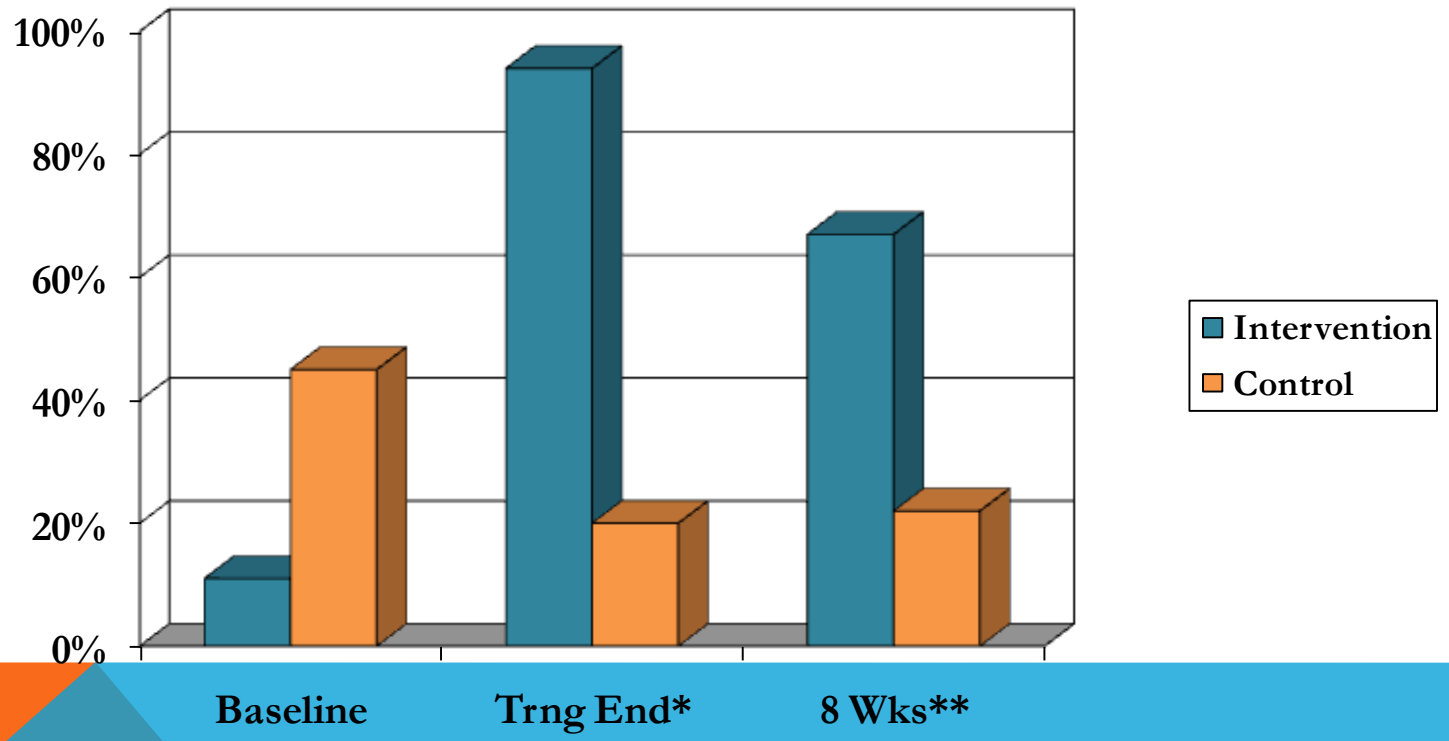
Capitalize on preserved skills in early memory loss

- Exploit intact procedural or “habit” memory

Compensation aids may perhaps extend the time individuals can function independently and offer symptom reduction


3
THURSDAY
April 3RD 2008
APPOINTMENTS & SCHEDULED EVENTS
8 0800
9 0900
10 1000
11 1100
12 1200
1 1300
2 1400
3 1500
4 1600
5 1700
6 1800
TO BE DONE TODAY (ACTION LIST)
THURSDAY
April 3RD 2008
3
JOURNAL

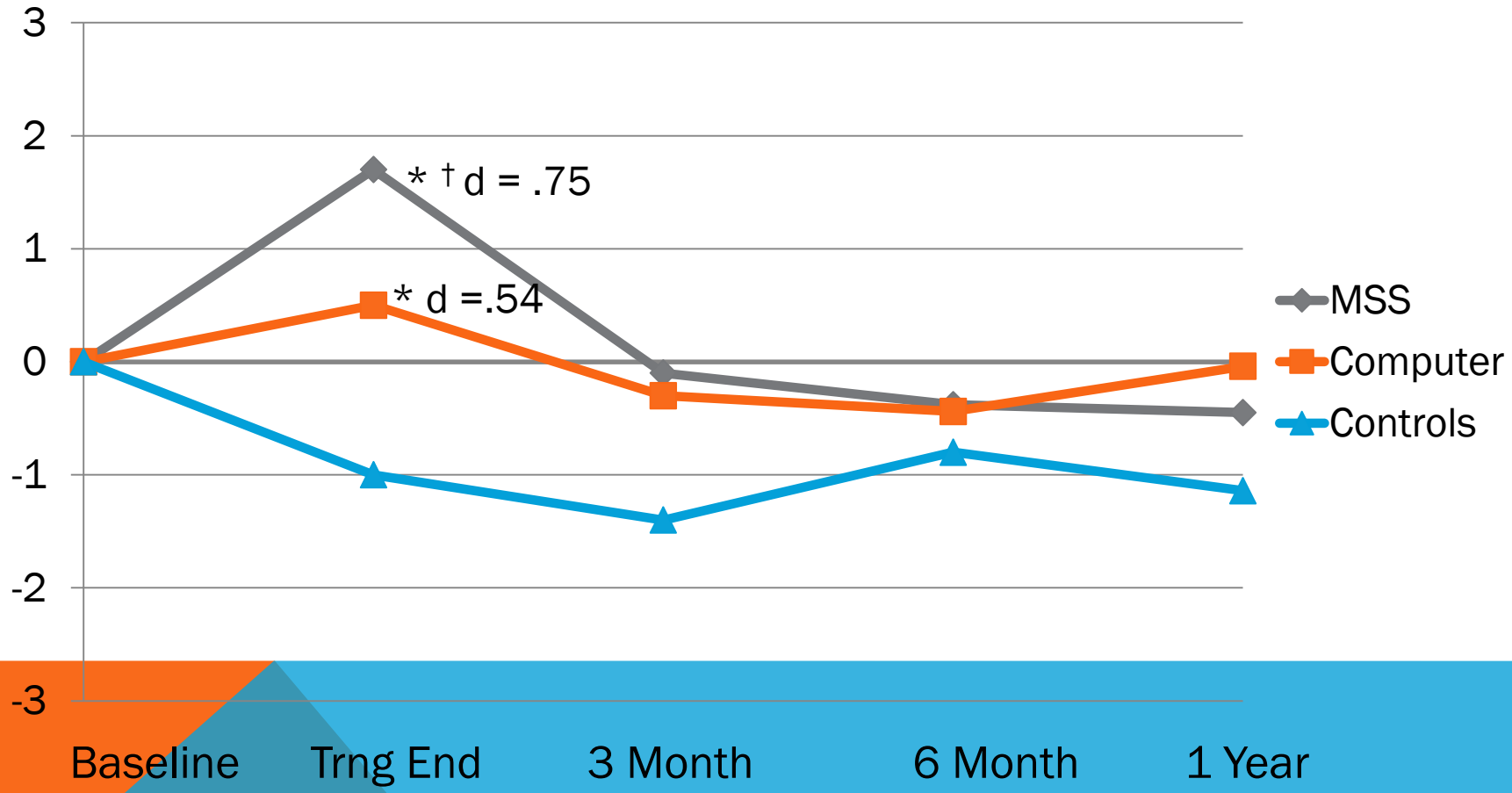
ADHERENCE



* $p < .001$; ** $p < .01$

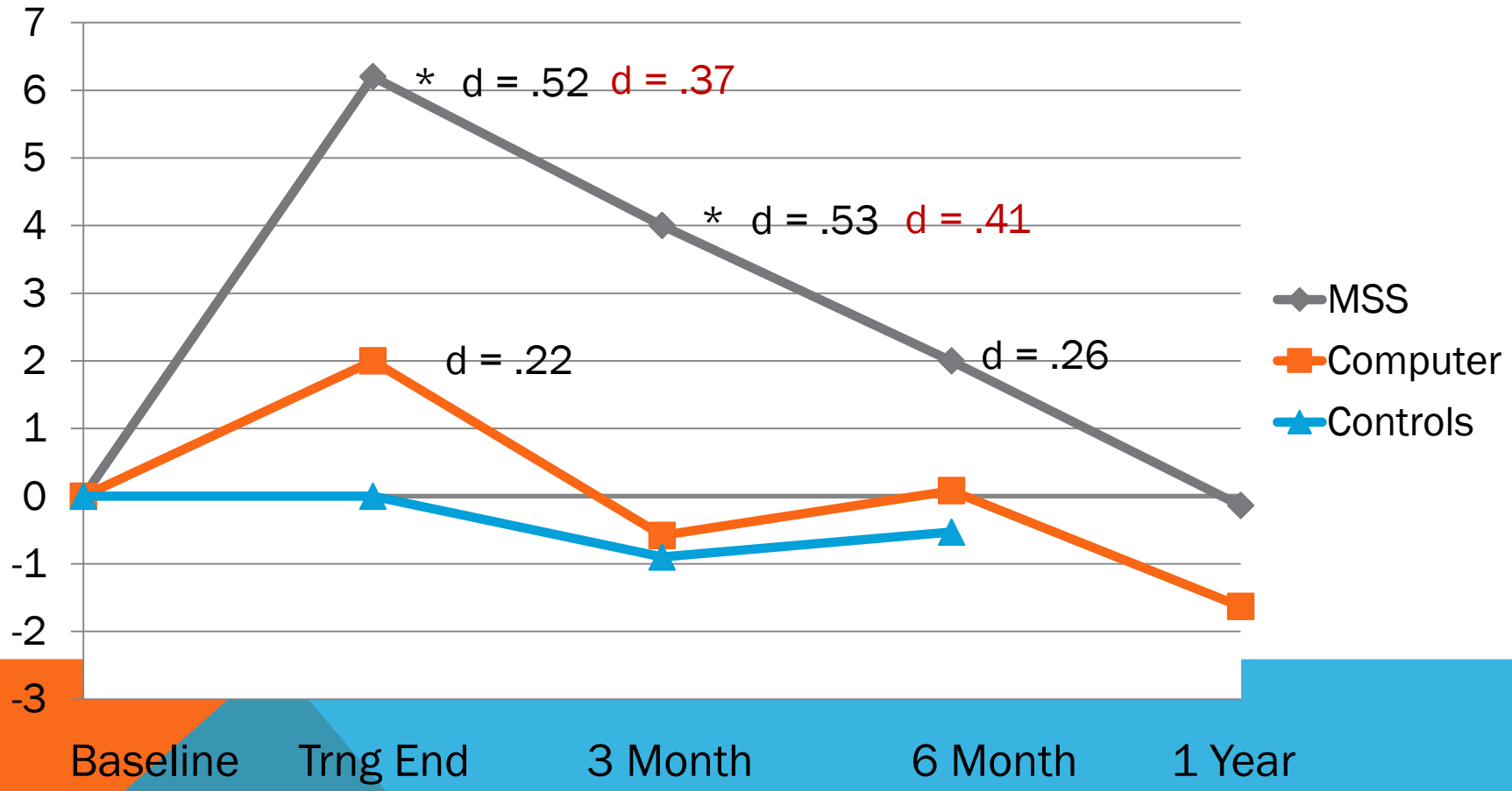
Greenaway, Duncan, and Smith, (2013)

ACTIVITIES OF DAILY LIVING



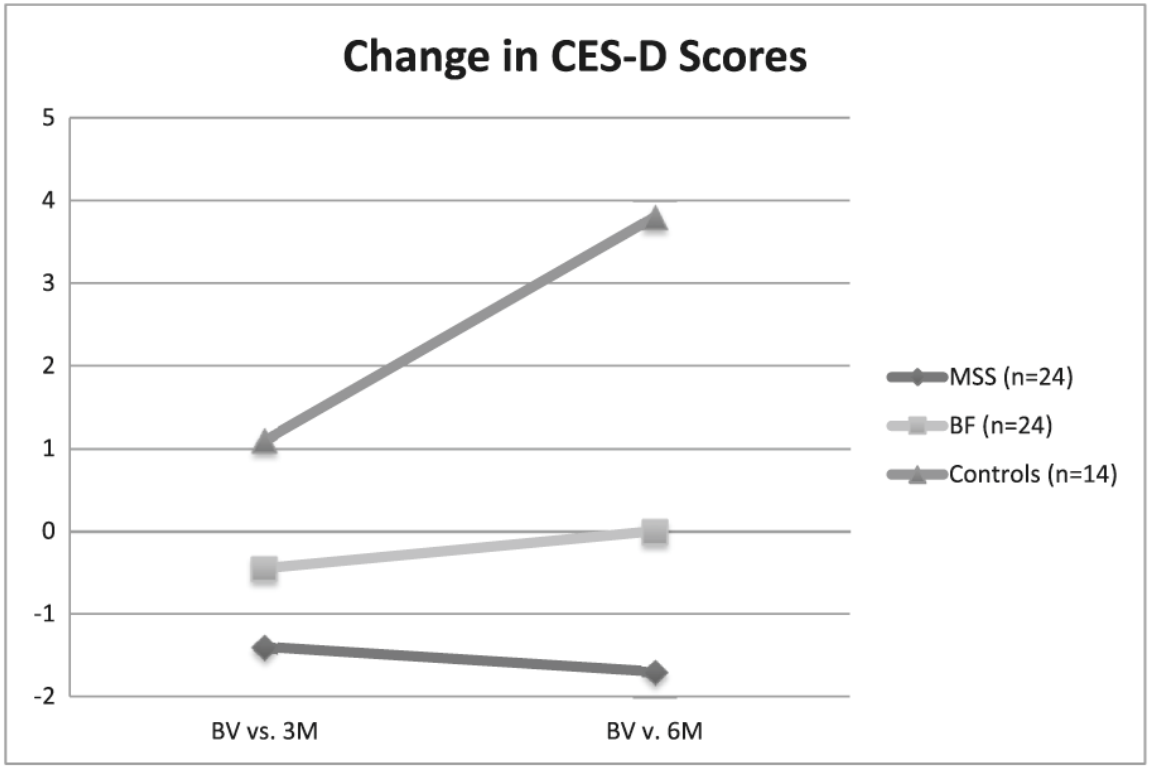
*Within subject change * p < .05 for both computer and MSS*
Between subject change † p = .01 for MSS compared to controls
Effect sizes are compared to controls

SELF-EFFICACY



*Within subject change * p < .05*
Effect sizes are compared to controls

A PILOT RANDOMIZED TRIAL OF TWO COGNITIVE REHABILITATION INTERVENTIONS FOR MILD COGNITIVE IMPAIRMENT: CAREGIVER OUTCOMES



Note: BV = baseline visit; 3M = 3 month visit; 6M = 6 month visit; MSS = memory support system; BF = brain fitness; Positive scores indicate increasing depression; Negative scores indicate decreasing depression

Cuc, et al, (2017) International Journal of Geriatric Psychiatry GPS-16-0370.R1, 24 FEB 2017 DOI: 10.1002/gps.4689
http://onlinelibrary.wiley.com/doi/10.1002/gps.4689/full#gps4689-fig-0001

Intervention is not just for the Patient!

THE CASE FOR MULTICOMPONENT PROGRAMS

Olazaran et al. 2010

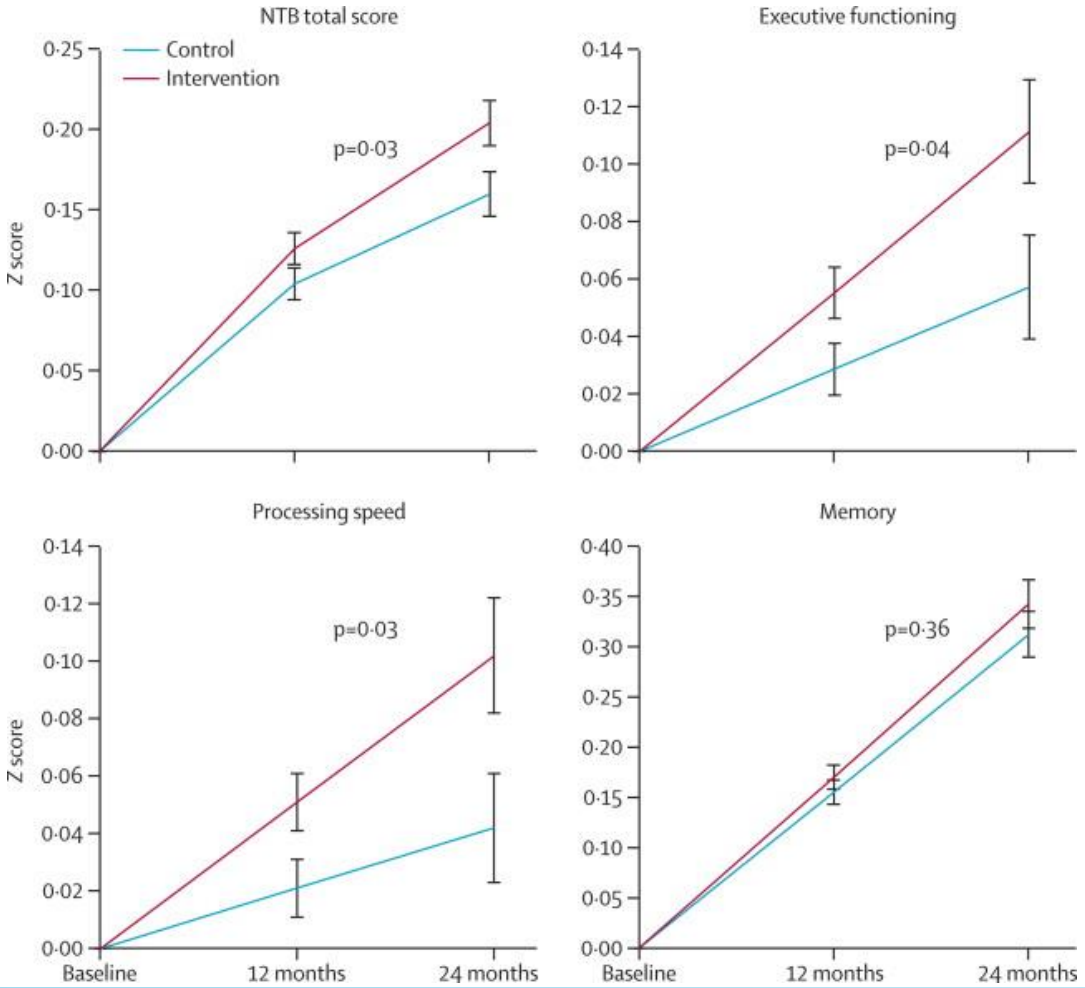
Nonpharmacological therapies (NPTs) in AD and related disorders (ADRD)

Meta-analysis of 179 randomized, controlled trials belonging to 26 intervention categories

Key findings:

- Multicomponent interventions based on caregiver support and education delayed institutionalization of persons with ADRD
- Effects on cognition, ADLs, behavior, and mood similar to effects obtained by medication
- No side effects from NPTs and more readily individualized than medication
- NPTs should be complementary to medication

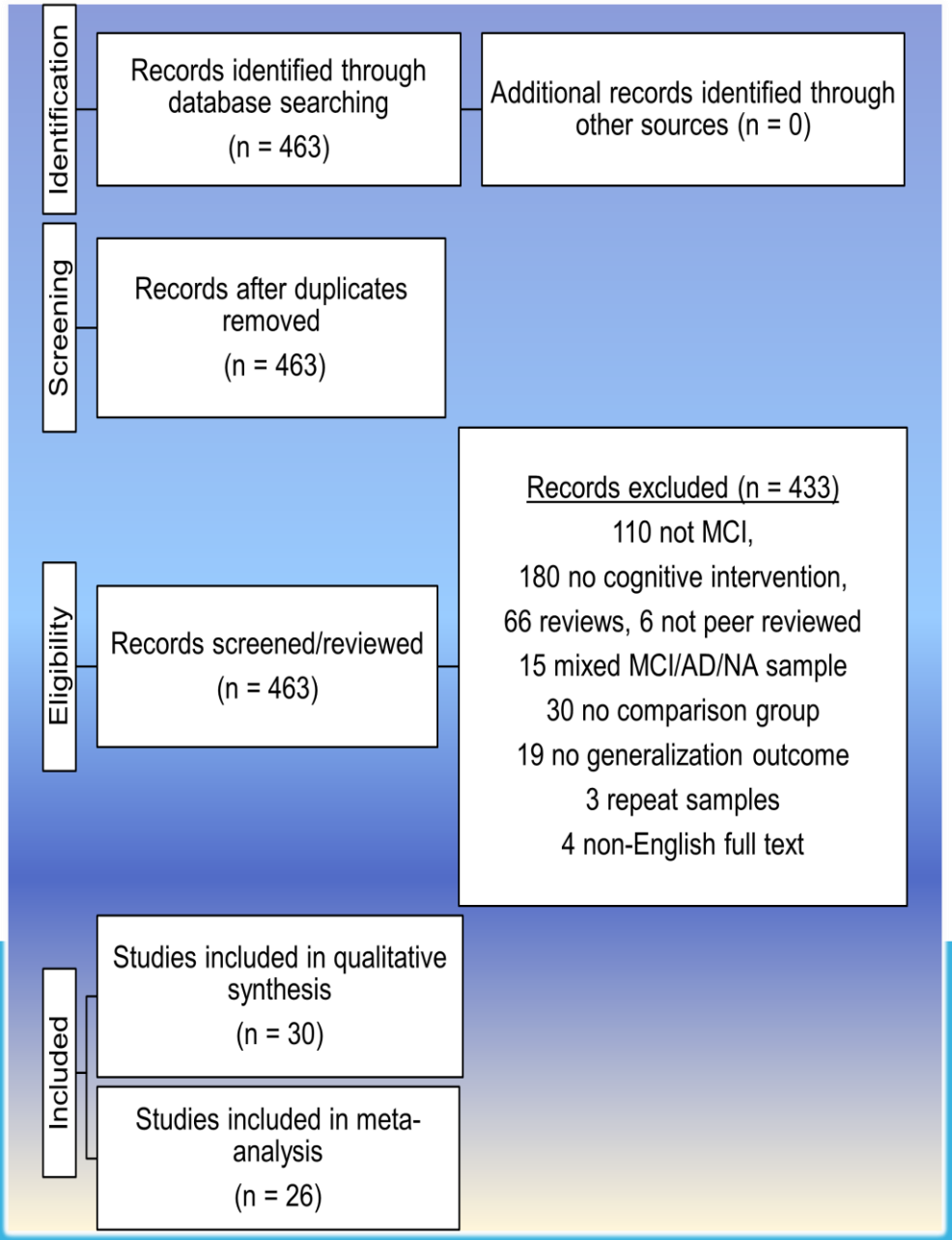
Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability



Ngandu, T, el al., A 2 year multidomain intervention of diet, exercise, cognitive training, and vascular risk monitoring versus control to prevent cognitive decline in at-risk elderly people (FINGER): a randomised controlled trial. The Lancet, 2015,http://dx.doi.org/10.1016/S0140-6736(15)60461-5

META-ANALYSIS

Examined the effect of cognitive interventions compared to a control group in MCI on generalizability outcome measures [activities of daily living (ADLs), mood, quality of life (QOL), and metacognition]



META-ANALYSIS RESULTS

Outcome	Computer	Therapist Based	Multimodal
Mood	+	-	+/-
Metacognition	-	+	+
ADLs	-	+	+/-
QOL	?	-	-

Chandler, MJ, Parks A, Marsiske, M., Rothblatt, L., Smith, GE (2016). Everyday impact of cognitive interventions in Mild Cognitive Impairment: A systematic review and meta-analysis. *Neuropsychology Review, 26 (3),* 225-251.

Wellness Education

Yoga

Patient function, patient and caregiver self-efficacy and mood

Cognitive Rehabilitation

Brain Fitness

Support Groups

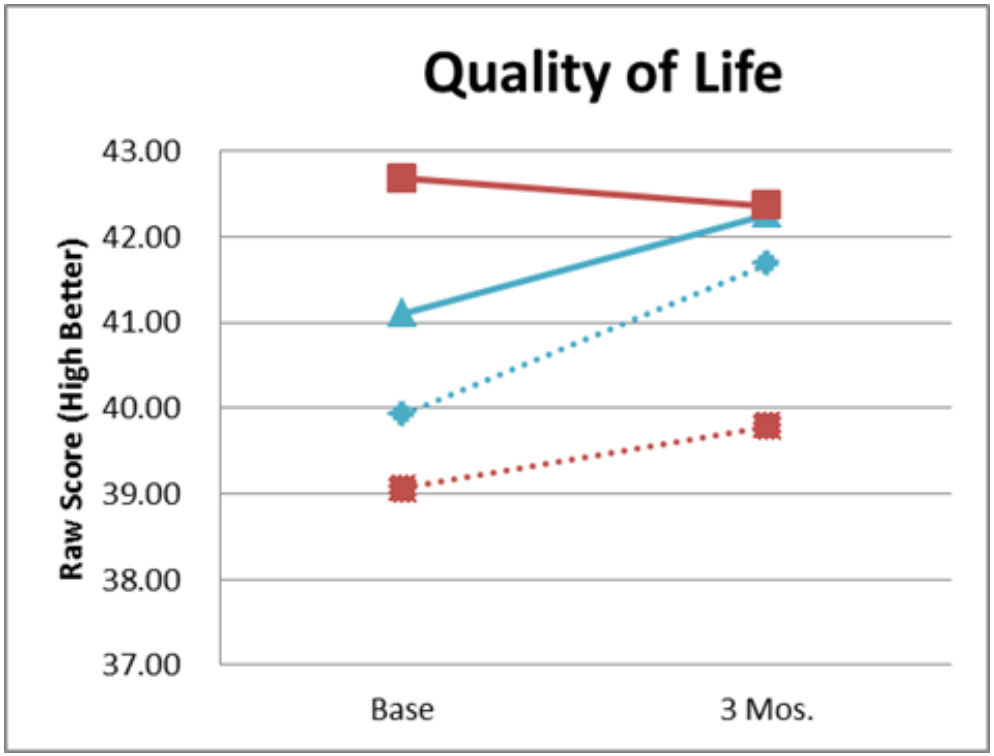
HEALTHY ACTION TO BENEFIT INDEPENDENCE AND THINKING (HABIT) PROGRAM

50 hours of programming (5 components, 1 hour each day x 10 days)

- Individualized calendar training (compensation training)
- Computer lab: Brain Fitness (Posit)
- Physical activity (Yoga)
- Separate group support for participant and partners
- Wellness education

Program partner required

SUMMARY OF RESULTS (3 MONTHS)



HABIT MCI Participants: improved QOL (p = .000)

Control MCI Patients: NO CHANGE

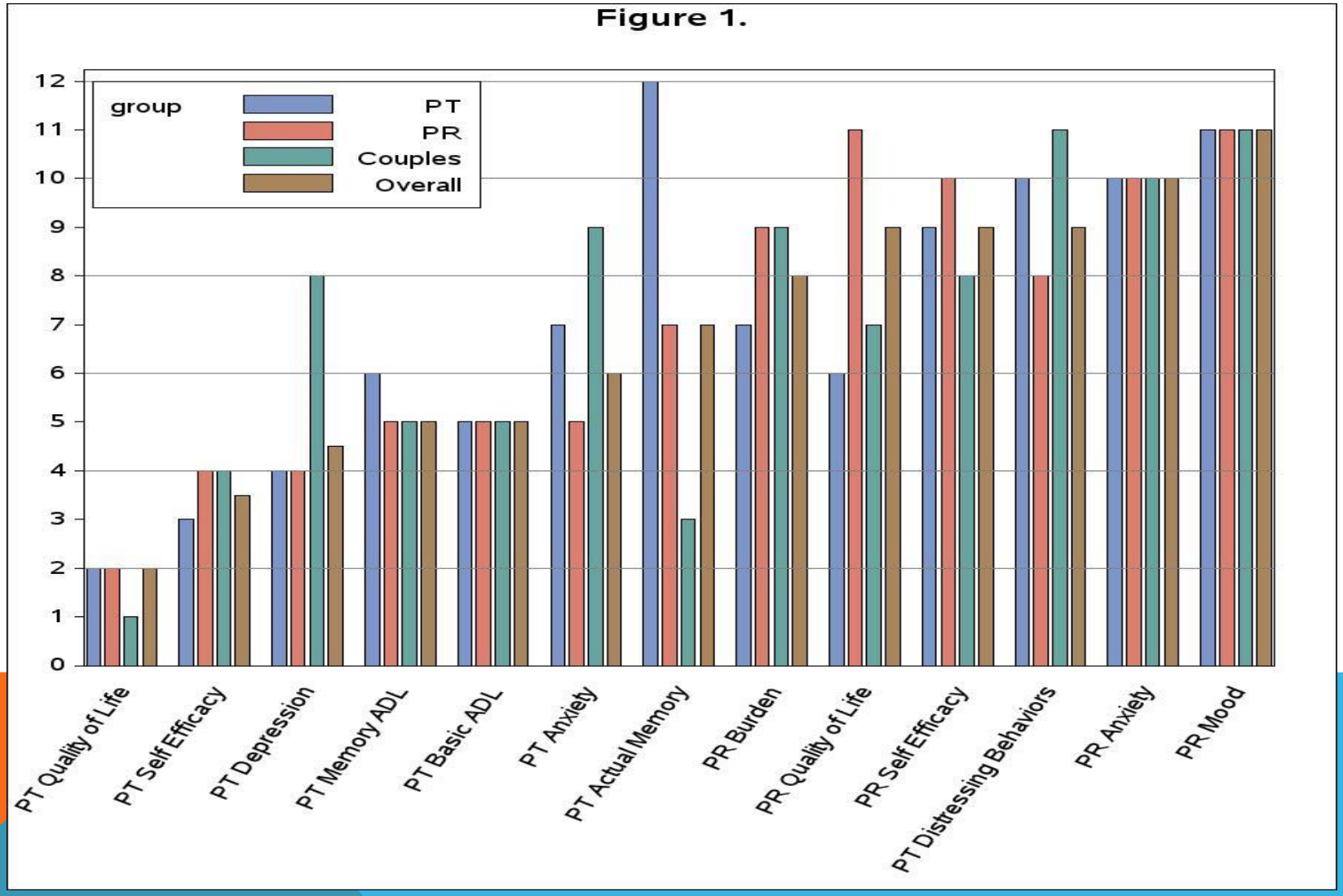
HABIT Caregivers: trend towards improved QOL (p = .07)

Control Caregivers: NO CHANGE

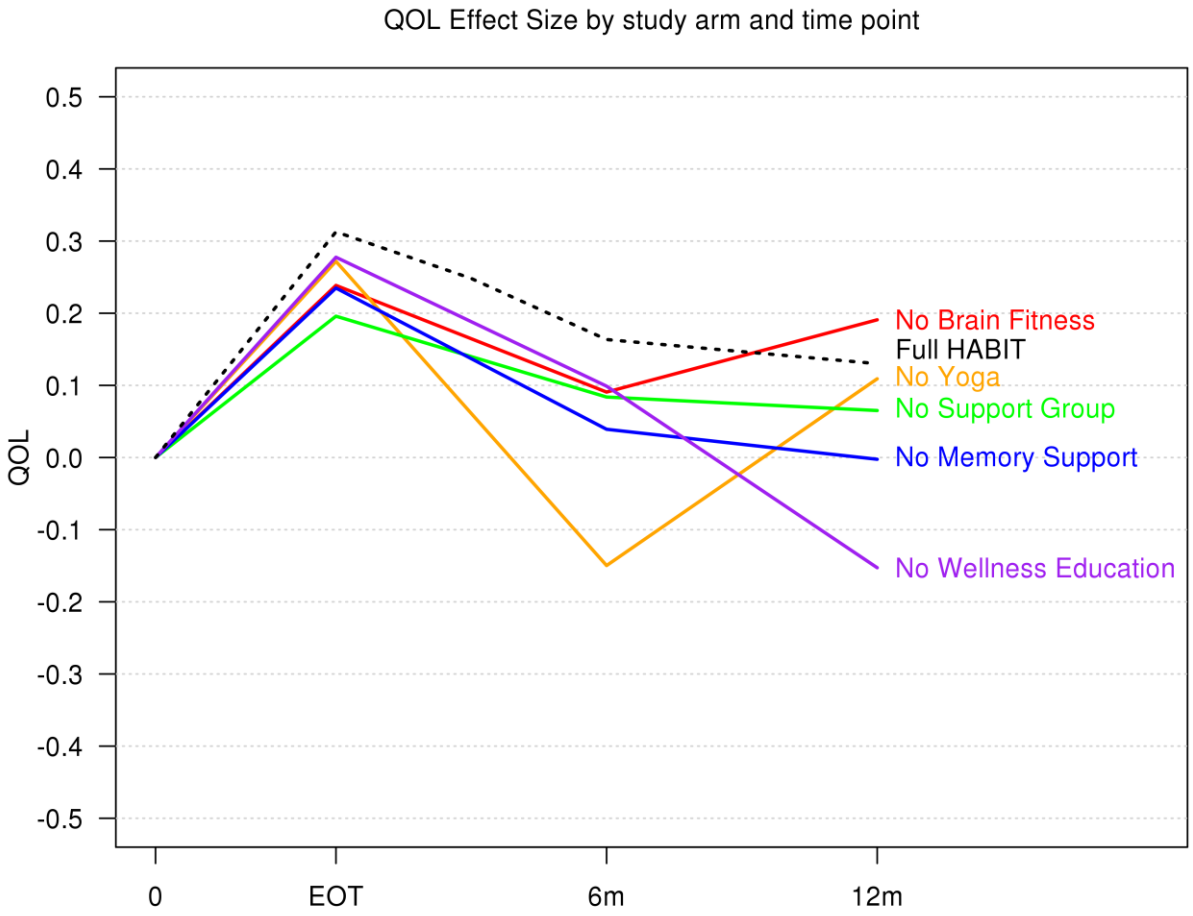
COMPARATIVE EFFECTIVENESS OF BEHAVIORAL INTERVENTIONS TO PREVENT OF DELAY DEMENTIA

SMITH, G., CHANDLER, M., LOCKE, D. E., FIELDS, J., PHATAK, V., CROOK, J., ... & HUGHES, C. A. (2017). BEHAVIORAL INTERVENTIONS TO PREVENT OR DELAY DEMENTIA: PROTOCOL FOR A RANDOMIZED COMPARATIVE EFFECTIVENESS STUDY. *JMIR RESEARCH PROTOCOLS*, *6*(11).

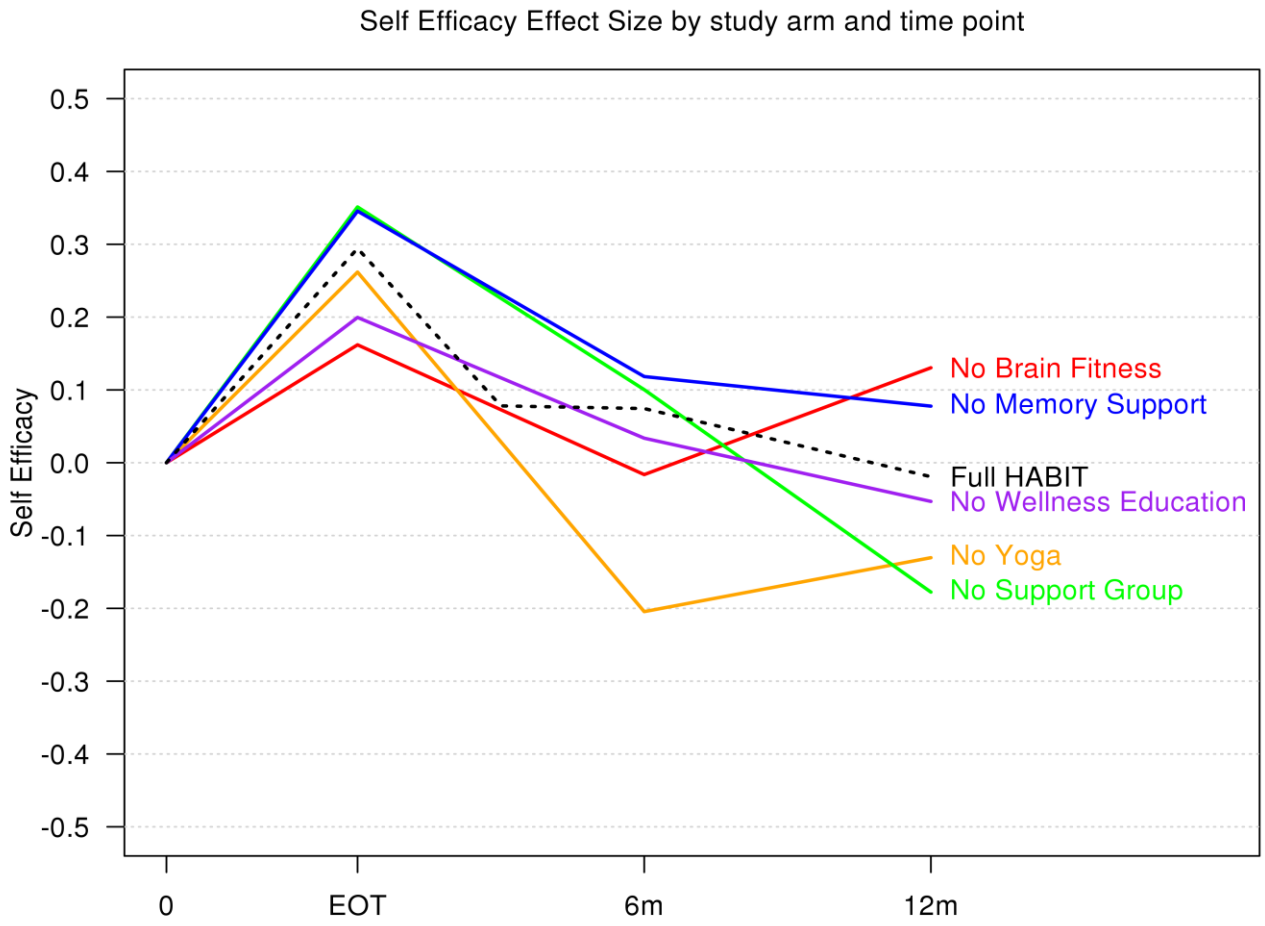
CAREGIVER RANKINGS OF PRIORITY OF HABIT OUTCOMES



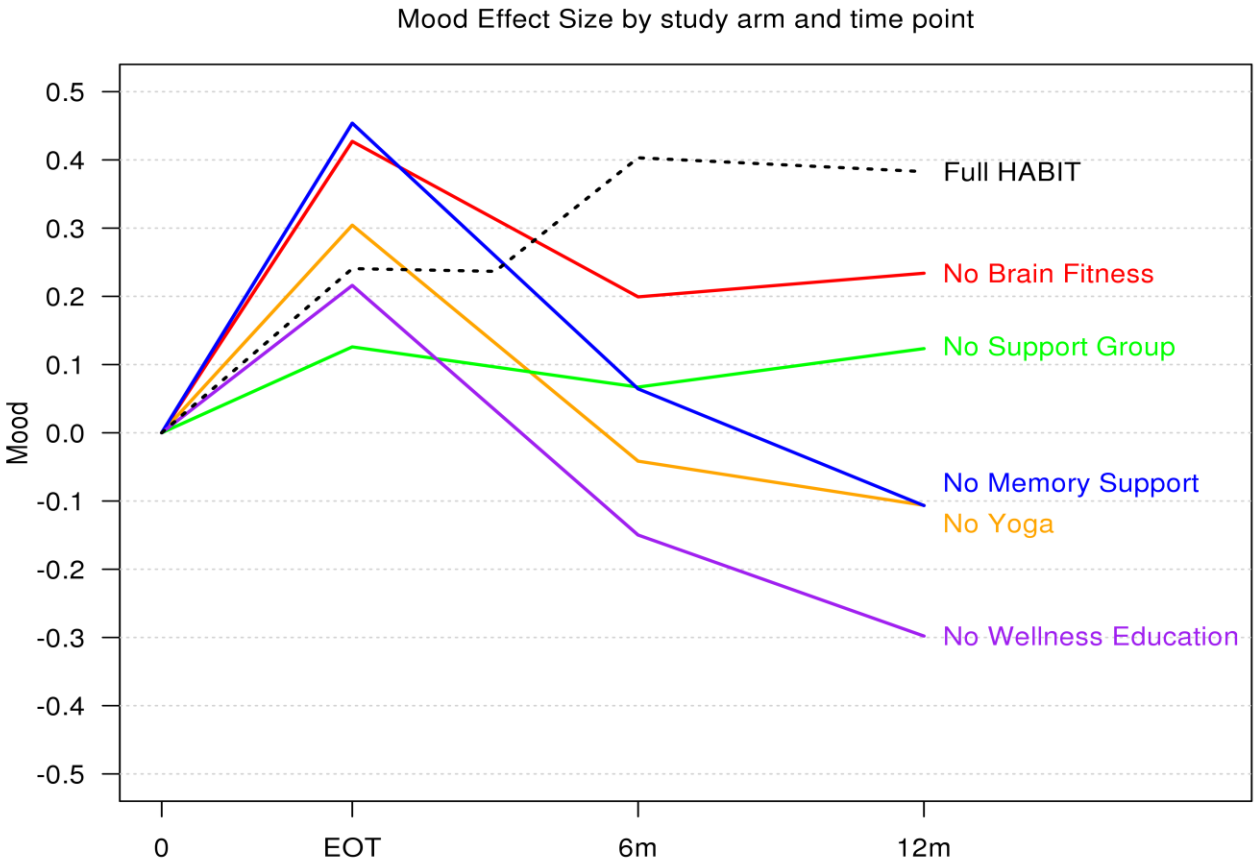
Smith, G., Chandler, M., Fields, J., Aakre, J., and Locke, D. (2018), Journal of Alzheimer's Disease



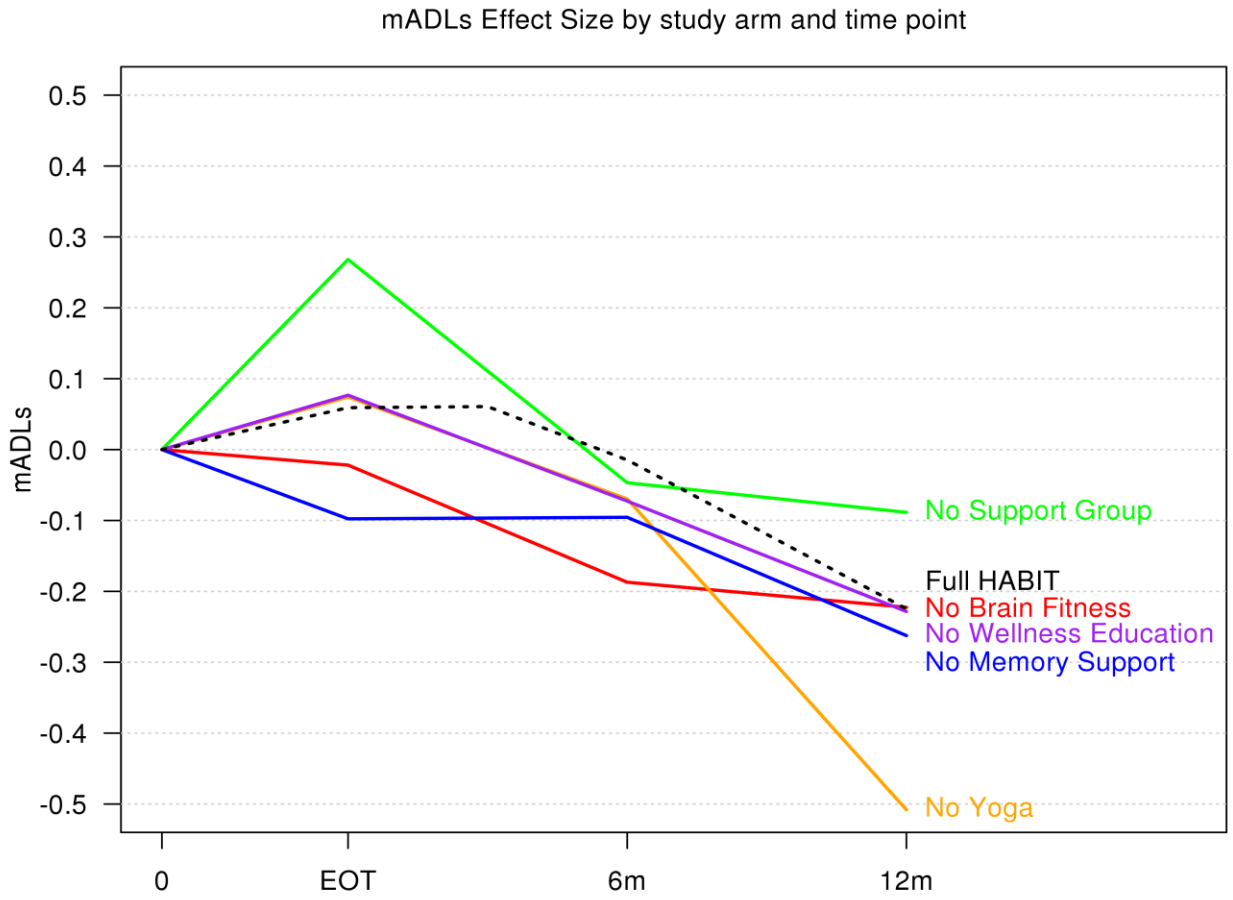
- All groups improved by end of treatment ($p < .05$)
- Wellness education was significantly more important to QOL than BF at 12 months ($p = .02$, Effect Size = .34)



- Arms with no support group, no MSS training, and no yoga had significant improvement by end of treatment ($p < .05$)
- Support group was significantly more important to self-efficacy than BF at 12 months ($p = .04$, Effect Size = .31)

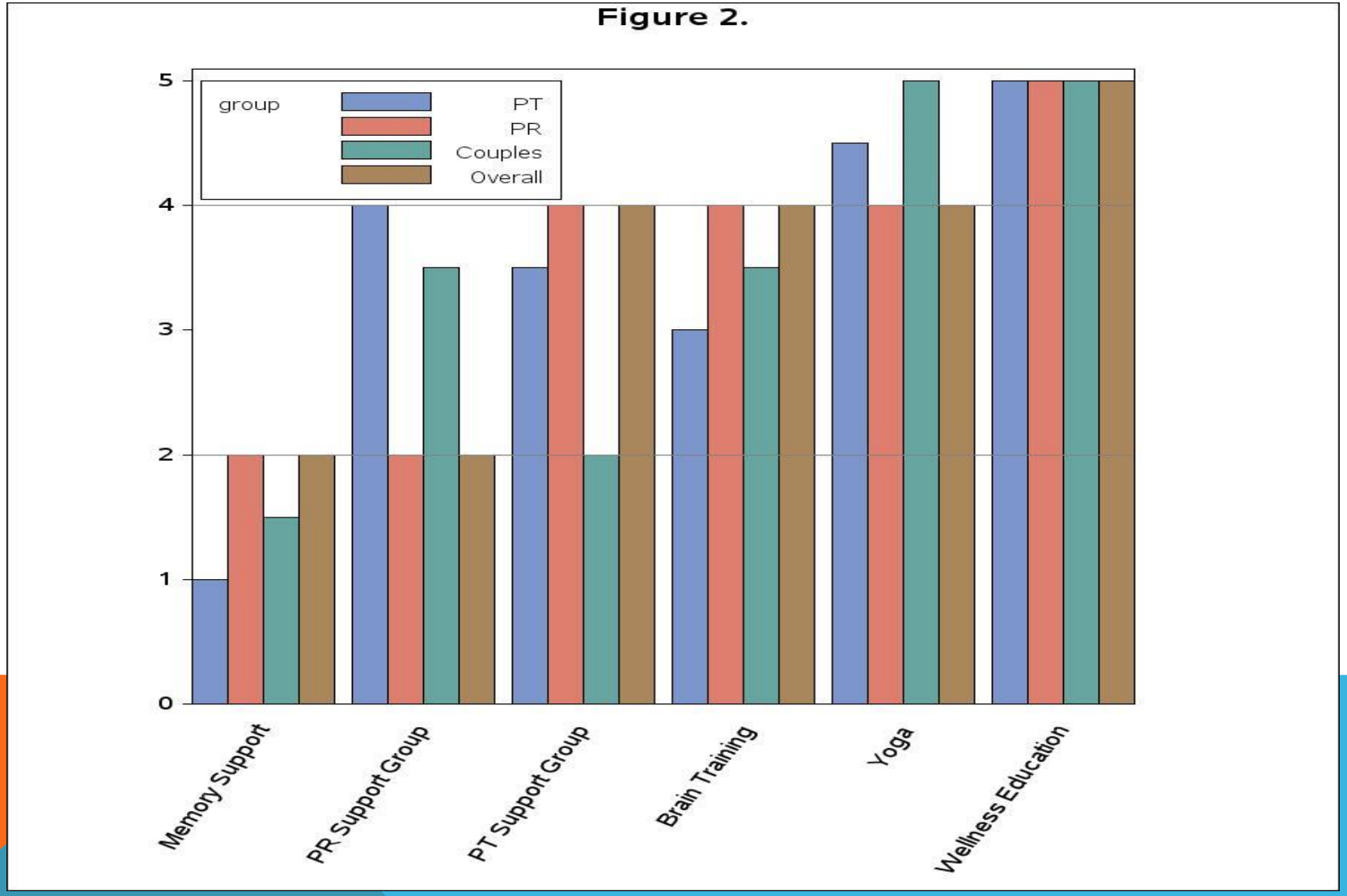


- Arms with no BF, no MSS training, and no yoga had significant improvement by end of treatment ($p < .05$)
- At 12-months wellness education (effect size = 0.53, $p = .001$), yoga (effect size = 0.34, $p = .035$), and MSS calendar training (effect size = 0.34, $p = .04$) all had significantly more positive impact on mood than BF.



- Only no support group had significant improvement by EOT ($p < .05$)
- All groups had significantly worse mADLS by 12 mos except no support group
- Lack of yoga was particularly detrimental to mADLS by 12 mos

CAREGIVER RANKINGS OF PRIORITY OF HABIT INTERVENTIONS



Smith, G., Chandler, M., Fields, J., Aakre, J., and Locke, D. (2018), Journal of Alzheimer's Disease

ADHERENCE CHALLENGES

Intervention	12 mnth Adherence Full / Partial / Not
Physical Exercise	65 / 21 / 14
Cognitive Activity	35 / 40 / 25
Memory Compensation	17 / 53 / 30
Patient Support Group	20 / 25 / 55
Partner Support Group	22 / 27 / 51
Wellness Education	53/ 23 / 24

LESSONS LEARNED

Multicomponent programs can target multiple patient and partner valued outcomes at once.

Programs which include partners and patients have added value.

Active participation in confronting illness increases both individuals' chances of success.

Adherence is difficult and requires support

UF UNIVERSITY of FLORIDA

MAYO CLINIC

Tallahassee Memorial HealthCare

UF IRB-01 Approved

A Study of

PEACEOFMND

Physical Exercise And Cognitive Engagement Outcomes For Mild Neurocognitive Disorder

A wellness program for people living with mild cognitive impairment and a support partner.

The PEACEOFMND Program

PEACEOFMND is a study being conducted jointly by the University of Florida (UF), Mayo Clinic, and Tallahassee Memorial Healthcare to investigate the impact of behavioral interventions on brain function, thinking skills, and well-being in individuals living with Mild Cognitive Impairment (MCI). The study will use components of the larger clinical HABIT Healthy Action to Benefit Independence & Thinking® program.* A support partner is required to complete the program with the participant.

Over the two weeks of the PEACEOFMND study training, participants will engage daily in individual memory compensation training as well as group supportive therapy. In addition, participants will be randomly assigned to 1 of 3 program components:

- Yoga
- Computer brain fitness
- Wellness education

These sessions are delivered by a caring, multidisciplinary team including psychologists, education specialists, social workers, cognitive interventionists and exercise specialists. Participants will continue to engage at home in either yoga, computer brain fitness, or wellness techniques for six months after the initial 2 week program. Participants will visit UF in Gainesville to complete an MRI and cognitive measures before the program and six months later to look at the impact of these interventions on the brain, thinking skills, and well-being.

Who May Benefit

People with a recent diagnosis of Mild Cognitive Impairment (MCI), also called Mild Neurocognitive Disorder (MND) can benefit. The diagnosis may be due to Alzheimer's disease, Lewy Body disease, vascular disease, or frontotemporal dementia or other causes. The partners (spouse, partner, sibling, adult child or good friend) also may learn and experience benefit.

*HABIT Healthy Action to Benefit Independence & Thinking® was developed at Mayo Clinic and is a trademark owned by Mayo Foundation for Medical Education and Research.

Specific Goals of the Study

This study will examine the contribution of the components of the PEACEOFMND program to:

- Engagement in yoga or cognitive exercise
- Cognitive function
- Use of a daily memory compensation tool
- Quality of life
- Independence in function
- Wellness (or Healthy lifestyle)
- Self-efficacy (i.e., confidence)
- Psychological well-being
- Physical conditioning, balance, and/or flexibility
- Brain function on MRI

The PEACEOFMND Experience

Wellness is more than just good memory. In the PEACEOFMND program, a wellness experience will be offered that encompasses emotional balance, supportive relationships, the ability to face change, and a sense of understanding one's situation and what may lie ahead.

Eligibility

The most important criteria to participate in the PEACEOFMND program are listed below.

The person with MCI must:

- Be diagnosed with amnestic MCI or Mild Neurocognitive Disorder, as confirmed by our criteria
- Be at least 50 years of age
- Have no MRI contraindications
- Have a "care-partner" that is willing to participate in the full program (such as a spouse, child or a good friend)

The care-partner must be:

- Be at least 21 years of age
- Have no cognitive impairment, as confirmed by our criteria

Not sure if you're eligible? Contact us for more information

How much does the study cost? Does insurance cover this program?

Insurance is billed for the Memory Compensation Training and Group Supportive Therapy. Medicare and many private insurance companies often cover the cost of these two components, but you may be responsible for deductibles or co-pays. When participating in the full, 5 component HABIT Healthy Action to Benefit Independence and Thinking® program,* there is typically an out of pocket program fee that will be paid for by study funding in the PEACEOFMND study. In addition, participants will receive two MRI scans at no cost to give to their health care providers if they wish.

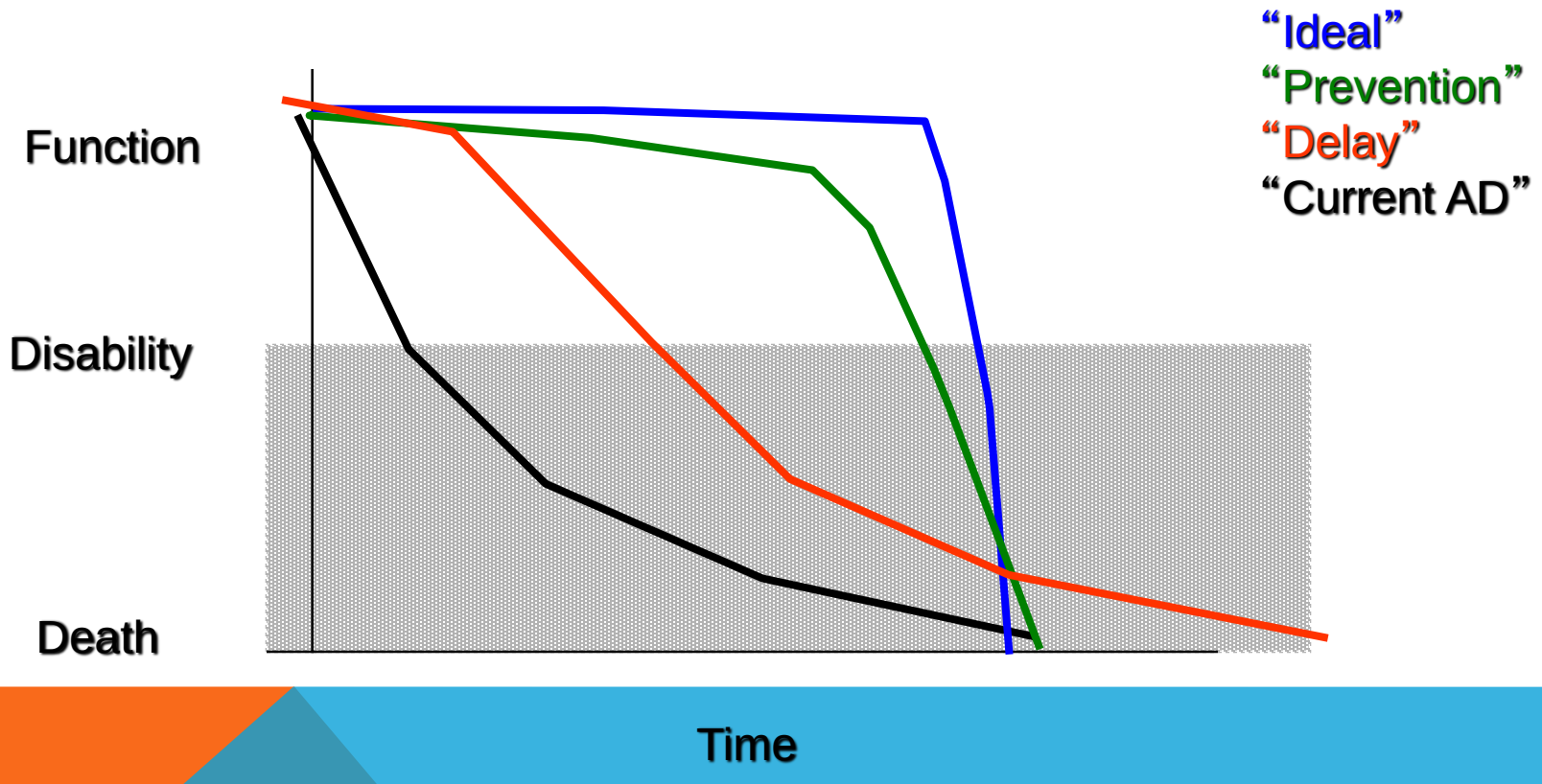
For more information call:

University of Florida
Deirdre O'Shea or Lise De Wit
352-294-8674

Tallahassee Memorial Healthcare
Tracey Aittama
850-431-5037

Mayo Clinic Florida
Miranda Morris
904-953-8853

PREVENTION ?


"Ideal"
"Prevention"
"Delay"
"Current AD"
Function
Disability
Death
Time

Questions?

THANK YOU TO THE HABIT TEAM

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