SOCIETÀ ITALIANA DI GERONTOLOGIA E GERIATRIA

52° CONGRESSO NAZIONALE SIGG

6° CORSO DI RIABILITAZIONE COGNTIVA

C'è futuro per La ROT ?

(Terapia di [ri]orientamento alla realtà)

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U.O.Alzheimer - Centro per la Memoria

IRCCS, Centro S.Giovanni di Dio - Fatebenefratelli,

Brescia

Il Modello Riabilitativo

Il Modello Gentlecare (protesico)

Il Modello Validation Therapy

Le “Multistrategy group therapies”

quali la ***Reality Orientation***, la rimotivazione, la stimolazione sensoriale, la reminiscenza,

possono essere utili nella cura del demente

Doody et al.: Neurology, 2001; 56:1154-66

A Special issue of the Journal

Neuropsychological Rehabilitation

Cognitive Rehabilitation in Dementia

Guest Editors: L.Clare, R.T.Woods

Psychology Press, 2001

The evidence presented in this special issue strongly supports the relevance of cognitive rehabilitation approaches for people with dementia.

As with any newly developing area of research many questions remain to be answered, and there is the need to strengthen further the evidence base.

L. Clare, R.T. Woods: Editorial: A role for cognitive rehabilitation in dementia care. Neuropsychological Rehabilitation, 2001; 11(3-4):193-196

Memory rehabilitation in Alzheimer's disease: a review of progress

De Vreese L.P., Neri M., Fioravanti M., Belloi L., Zanetti O.:

Int.J.Geriatr.Psychiatry 2001;16 :794-809

Prefazioni alla seconda edizione (2006) - [prima ed. ’99]

*… Nella prima ed. avevamo inserito, **in maniera quasi provocatoria**, un capitolo dedicato alla riabilitazione delle demenze, intendendo contrastare un diffuso fatalismo nei confronti di questa patologia … Nella presente ed. il tema viene affrontato con un nuovo capitolo più ampio nel quale sono stati inseriti dati clinici e di letteratura che dimostrano quanto questa sfida si sia dimostrata positiva. A. Mazzucchi (2006)*

… Per quel che riguarda le demenze, può sorprendere che siano incluse in tematiche di riabilitazione, In realtà, una volta posto il problema nei suoi corretti termini e limiti, è sempre più evidente che non poco si può ottenere se, al pregiudiziale negativismo, si sostituisce un attivismo di provvedimenti intesi a strutturare i rapporti tra il paziente e l’ambiente in modo tale da ottenere, nella massima misura possibile, comportamenti autonomi. M. Parma (2006)

La riabilitazione cognitiva nella malattia di Alzheimer

- **Approcci globali (Multistrategy group therapies)**
  - RO Therapy; 3R Therapy (RO, reminiscence, remotivation)
- **Metodi cognitivi**
  - ***Memoria esplicita***
    - "Spaced-retrieval technique"
    - "Method of vanishing cues"
    - "Errorless learning technique"
    - Metodi di compensazione (verbalizzazione, visual imagery)
    - Metodi per la memorizzazione di brani ("PQRST")
    - Metodi Computerizzati
    - Metodo delle iniziali
    - Metodo delle storie
    - Metodo delle immagini assurde
  - ***Memoria implicita***
    - Procedural Memory Training (sensorimotor skills training)
- **Ausili esterni (prosthetic support)**
  - Electronic Memory Aids
  - Agenda e/o Diari

La riabilitazione cognitiva nella malattia di Alzheimer

- ***Approcci globali (Multistrategy group therapies)***
  - RO Therapy
  - 3R Therapy (RO, reminiscence, remotivation)

[COGNITIVE STIMULATION THERAPY]

Reality Orientation Therapy

Obiettivo

"Riorientamento personale e spazio/temporale tramite ripetute stimolazioni "

Reality Orientation Therapy

R.O.T. FORMALE : ***Sedute in classe***

R.O.T. INFORMALE: "*Stimolazioni durante l'arco della giornata da parte del personale di asistenza; ausili mnesici ambientali*

Reality Orientation Therapy

E' rivolta a pazienti con decadimento cognitivo moderato o lieve moderato

- L'obiettivo è il mantenimento delle funzioni cognitive residue e l'incremento delle interazioni sociali
- Si attua attraverso la stimolazione dell'orientamento spaziale e temporale, e della memoria autobiografica

3R Mental Stimulation Programme

***R**eality Orientation*

***R**eminiscenza*

***R**imotivazione*

Programma Multimodale “ 3R “

Riorientamento

Obiettivi: attraverso la stimolazione dell’attenzione, della memoria, dell’orientamento spazio-temporale e del linguaggio si propone di mantenere e potenziare le funzioni cognitive residue, migliorando il rapporto con l’ambiente di vita.

Reminescenza

Obiettivi: attraverso il ricordo di eventi del passato e delle esperienze autobiografiche si propone di stimolare la memoria per recuperare il rapporto con il proprio Sé attraverso la storia personale.

Rimotivazione

Obiettivi: si prefigge di far sentire la persona ancora parte del mondo all’interno del quale vive; creare un legame tra il paziente e la realtà circostante attraverso la discussione di una serie di argomenti legati alla vita personale e alla realtà circostante.

Programma Multimodale “ 3R “

TECNICHE

- *R.O.T.*
- *REMINISCENZA*
- *RIMOTIVAZIONE*

METODO

GRUPPO

TEMPI

20 INCONTRI DI 60 MINUTI

Informazioni e stimolazioni fornite durante la seduta riabilitativa

- Orientamento nel tempo
- Orientamento nello spazio
- Informazioni personali
- Informazioni storiche culturali
- Informazioni legate al rapporto con il mondo circostante

Seduta tipo Programma “ 3R “

1) **accoglienza e riorientamento spazio/temporale**

2) **stimolazione della memoria autobiografica**

3) **argomento specifico di attualità (giornale)**

4) **rievocazione lavori ed hobbies**

5) **riorientamento e introduzione temi del giorno successivo**

Reality orientation therapy in Alzheimer disease: useful or not? A controlled study.

Zanetti O, Frisoni GB, De Leo D, Dello Buono M, Bianchetti A, Trabucchi M

Alzheimer Disease Research and Care Unit, S. Cuore Fatebenefratelli Hospital, Brescia, Italy.

Alzheimer Dis Assoc Disord. 1995 Fall; 9(3):132-8.

Aim : to evaluate the effects of a long-term program of formal didactic group therapy [class reality orientation therapy (ROT)] in Alzheimer disease.

Zanetti et al., 1995

Criteria for the inclusion:

- Alzheimer's disease

- Moderate cognitive impairment (MMSE between 11 and 24/30)

- Absence of major aphasia, blindness, and overt behavioral disturbances such as wandering or agitation.

Zanetti et al., 1995

Experimental group: 16 patients

Control group: 12 patients

The experimental group had repeated cycles of 1-month ROT classes, and 5-7 weeks was allowed between each cycle.

The last cognitive, functional, and affective evaluation in the experimental and control group was performed 8.2 and 8.5 months after baseline assessment, respectively.

Zanetti et al., 1995

In the experimental group, there was mild improvement in MMSE score (0.68 point) at the last assessment, whereas the control group declined (-2.58 points).

Zanetti et al., 1995

This treatment effect on MMSE score (3.27 points) was controlled for potential confounders in a multiple regression analysis. Adjusted treatment effect, including age, education, baseline MMSE, disease duration, disease severity, number of diseases other than Alzheimer, and time elapsing from baseline to last assessment, was very slightly lower: 3.12.

Zanetti et al., 1995

In the experimental group, treatment effect was evaluated by comparing ROT cycle changes and resting period changes. A clearly significant treatment effect was found for MMSE and verbal fluency.

Zanetti et al., 1995

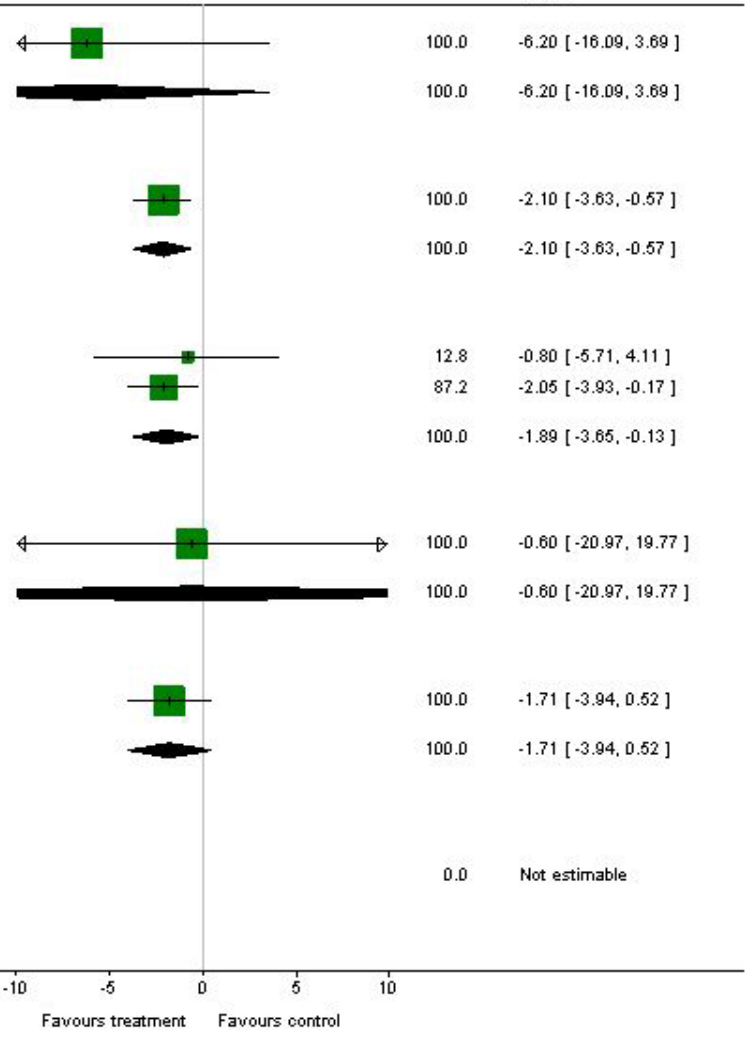
Spector A., Orrel M., Davies S. and Woods B.: Reality orientation for dementia: a sistematic review of the evidence of effectiveness from randomized controlled trials. The Gerontologist, 2000;4:206-12

Spector et al.: Reality Orientation for Dementia. Cochrane Library. Oxford: Update software, 3, 2001

Outcome: cognition

Review: Reality orientation for dementia
Comparison: 01 Reality Orientation versus no Reality Orientation
Outcome: 01 Cognition

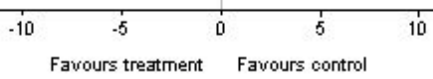
Study	Experimental N	Mean (SD)	Control N	Mean (SD)	Weight (%)	Weighted Mean Difference (Fixed) 95% CI
02 Wechsler						
Woods 1979	5	-20.80 (10.50)	4	-14.60 (3.68)	100.0	-6.20 [-16.09, 3.69]
Subtotal (95% CI)	5		4		100.0	-6.20 [-16.09, 3.69]
Test for heterogeneity chi-square=0.00 df=0						
Test for overall effect=-1.23 p=0.2						
07 MMS (CERAD): cognition						
Breuil 1994	29	-1.40 (2.70)	27	0.70 (3.10)	100.0	-2.10 [-3.63, -0.57]
Subtotal (95% CI)	29		27		100.0	-2.10 [-3.63, -0.57]
Test for heterogeneity chi-square=0.00 df=0						
Test for overall effect=-2.69 p=0.007						
08 Information/Orientation						
Baines 1987	5	-6.80 (3.59)	5	-6.00 (4.30)	12.8	-0.80 [-5.71, 4.11]
Ferrario, 1991	13	-9.38 (2.10)	6	-7.33 (1.87)	87.2	-2.05 [-3.93, -0.17]
Subtotal (95% CI)	18		11		100.0	-1.89 [-3.65, -0.13]
Test for heterogeneity chi-square=0.22 df=1 p=0.6413						
Test for overall effect=-2.11 p=0.04						
09 RCP: cognition						
Wallis 1983	10	-28.00 (26.60)	9	-27.40 (18.30)	100.0	-0.60 [-20.97, 19.77]
Subtotal (95% CI)	10		9		100.0	-0.60 [-20.97, 19.77]
Test for heterogeneity chi-square=0.00 df=0						
Test for overall effect=-0.06 p=1.0						
10 Orientation (KDRS)						
Gerber 1991	5	5.00 (1.58)	7	6.71 (2.36)	100.0	-1.71 [-3.94, 0.52]
Subtotal (95% CI)	5		7		100.0	-1.71 [-3.94, 0.52]
Test for heterogeneity chi-square=0.00 df=0						
Test for overall effect=-1.50 p=0.13						
11 MMSE						
Subtotal (95% CI)	0		0		0.0	Not estimable
Test for heterogeneity chi-square=0.0 df=0						
Test for overall effect=0.0 p=1.0						



Outcome: behaviour

Review: Reality orientation for dementia
Comparison: 01 Reality Orientation versus no Reality Orientation
Outcome: 02 Behaviour

Study	Experimental N	Mean (SD)	Control N	Mean (SD)	Weighted Mean Difference (Fixed) 95% CI	Weight (%)	Weighted Mean Difference (Fixed) 95% CI
01 CAPE (behaviour)							
Baines 1987	5	7.80 (2.59)	5	17.00 (8.49)		27.0	-9.20 [-16.98, -1.42]
02 Self-care functioning (MOSES)							
Ferrario, 1991	13	-19.46 (7.44)	6	-15.33 (4.32)		57.8	-4.13 [-9.45, 1.19]
03 Crichton: behaviour							
Wallis 1983	10	-57.10 (16.80)	9	-49.80 (13.80)		8.6	-7.30 [-21.07, 6.47]
04 Behaviour							
Woods 1979	5	28.80 (11.17)	4	36.00 (12.74)		6.5	-7.20 [-23.07, 8.67]
05 ADL							



A recent meta-analisys of controlled trials of RO research concluded that RO should be considered as part of a more general dementia care programme, as they improve orientation, memory, and behavior

Spector A., Orrel M., Davies S. and Woods B.:
Reality orientation for dementia: a sistematic review of the evidence of effectiveness from randomized controlled trials. The Gerontologist, 2000;4:206-12

Spector et al.: Reality Orientation for Dementia. Cochrane Library. Oxford: Update software, 3, 2001

Reality Orientation Therapy classes during the early to middle stages of dementia delay NH placement and slow down the progression of cognitive decline.

Metitieri T., Zanetti O., Geroldi C. et al.:
Clinical Rehabilitation 2001;15:471-478

… Continued ROT classes during the early middle stages of dementia may delay NH placement (6 mos) and slow down the progression of cognitive decline (7 mos)

Metitieri T., Zanetti O., Geroldi C. et al.:
Reality Orientation Therapy to delay outcomes of progression in patients with dementia. A retrospective study. Clinical Rehabilitation 2001;15:471-478

Predictors of cognitive improvement after reality orientation in Alzheimer's disease

Zanetti O., Oriani M., Geroldi C., et al.:

Age Ageing 2002;31:193-196

… a lower MMSE and the absence of euphoric behaviour in patients with mild-to-moderate AD predict a good cognitive outcome of RO Therapy

Zanetti O., Oriani M., Geroldi C., et al.:
Age Ageing 2002;31:193-196

Efficacy of an evidence-based cognitive stimulation therapy programme for people with dementia

Two months study

Spector et al.: British Journal of Psychiatry (September) 2003; 183: 248-254.

The results compare favourably with trials of drugs for dementia. CST groups may have worthwhile benefits for many people with dementia.

Spector et al.: British Journal of Psychiatry (September) 2003; 183: 248-254.

INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY
Int J Geriatr Psychiatry 2005; **20**: 446–451.
Published online in Wiley InterScience (www.interscience.wiley.com). **DOI**: 10.1002/gps.1304

23 weeks study

A pilot study examining the effectiveness of maintenance Cognitive Stimulation Therapy (MCST) for people with dementia

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[1]*Department of Mental Health Sciences, University College London, London, UK*
[2]*Dementia Services Development Centre, Department of Clinical Psychology, University of Wales, Bangor, UK*

Table 1. Demographics by group at baseline

Group	No of participants	Gender (female: male)	Mean age	Cognitive function (MMSE)	Quality of Life (QoL-AD)	Communication (Holden)	Behaviour (CAPE-BRS)
MCST	8	7:1	84.3	13.6 (3.3)	34.1 (5.1)	7.5 (5.9)	10.0 (3.1)
CST	12	12:0	82.8	12.6 (4.3)	34.5 (4.3)	12.8 (4.7)	12.7 (4.7)
No CST	15	15:0	85.2	13.5 (3.1)	34.2 (5.0)	8.5 (5.3)	11.9 (4.8)

Orrel et al.,2005

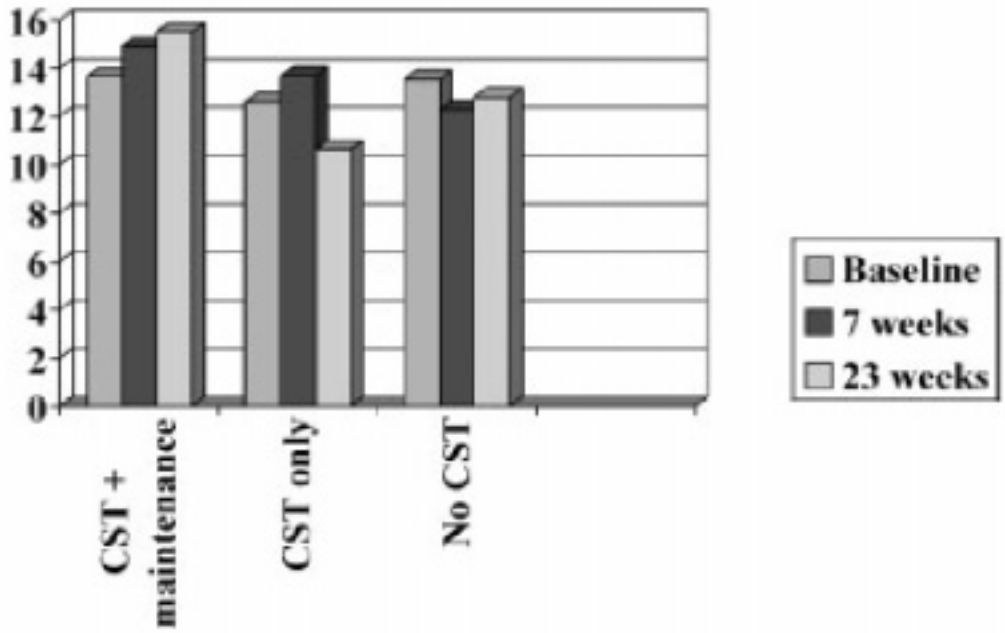

Figure 1. Change in cognitive function (MMSE score) over time

Orrel et al.,2005

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BRITISH JOURNAL OF PSYCHIATRY (2005), 187, 450–455

Reality orientation therapy combined with cholinesterase inhibitors in Alzheimer's disease: randomised controlled trial

GRAZIANO ONDER, ORAZIO ZANETTI, EZIO GIACOBINI, GIOVANNI B. FRISONI, LUISA BARTORELLI, GABRIELE CARBONE, PAOLA LAMBERTUCCI, MARIA CATERINA SILVERI and ROBERTO BERNABEI

Background and Aims (I)

The use of acetilcolinesterase inhibitors is an established therapeutic strategy against cognitive impairment in AD. Reality Orientation Therapy (ROT) is the only one rehabilitative cognitive approach supported by evidence.

Background and Aims (II)

The aim of the study was to evaluate the efficacy of the association of donepezil and ROT

Study design (I)

Six months multicenter randomized controlled trial

Study design (II)

Participants:

1) IRCCS San Giovanni di Dio-Fatebenefratelli, U.O. Alzheimer-Centro per la Memoria, Brescia (G. Rossi, O. Zanetti)

2) Dipartimento di Scienze Gerontologico-Geriatriche e Fisiatriche , Universita' Cattolica Sacro Cuore di Roma, Roma (C. Silveri, G. Onder, R. Bernabei)

3) U.O.C. di Geriatria, Ospedale S. Eugenio, Dipartimento Tutela e Salute dell'Anziano, Roma (F. Arcangeli, L. Bartorelli)

4) CRCCS San Giovanni Calibita" Fatebenefratelli, Isola Tiberina, Roma (F. Moffa, E. Cassetta, P.M. Rossini)

5) Istituto Ospedaliero Don UVA, Roma (G. Carbone)

Primary and secondary efficacy measures

Main outcome:
cognitive function (MMSE, ADAScog)
Secondary outcomes:
Behavioural disturbances (NPI)
Caregiver distress (Caregiver Burden Inventory, Depression, Anxiety, QOL)

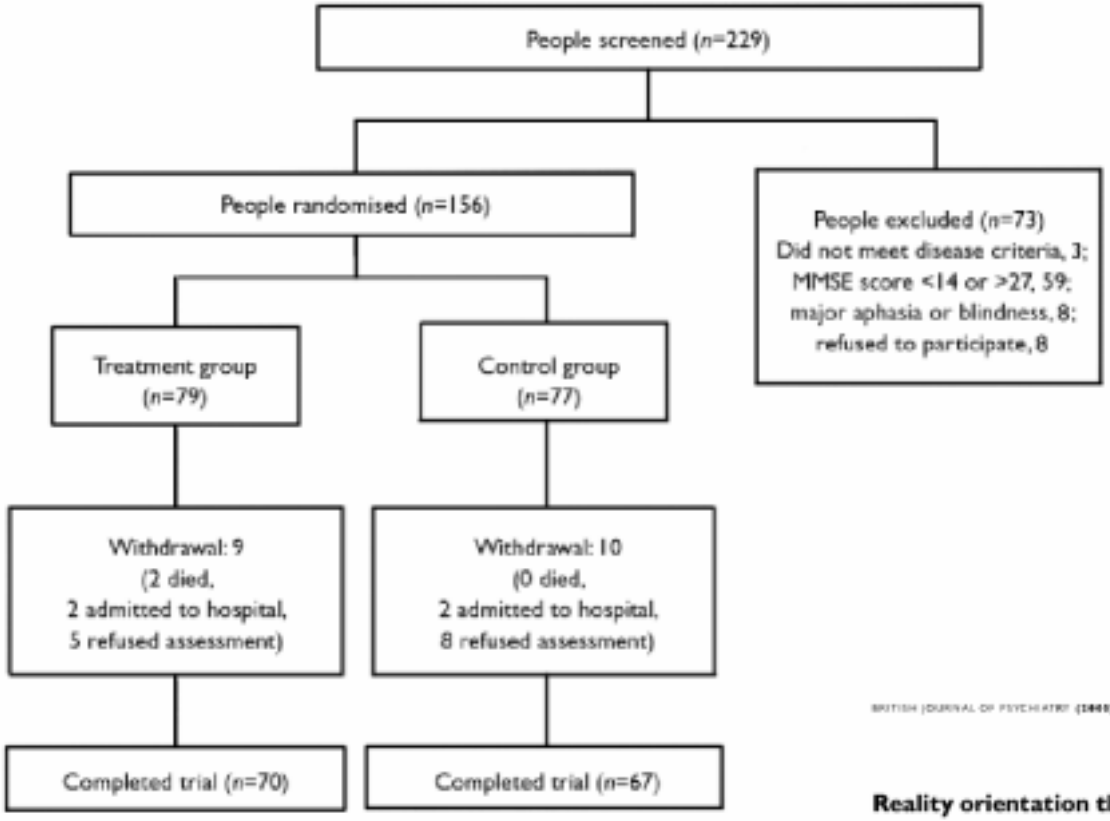

Fig. 1 Trial profile. MMSE, Mini-Mental State Examination.

BRITISH JOURNAL OF PSYCHIATRY (2005), 187, 450–455

Reality orientation therapy combined with cholinesterase inhibitors in Alzheimer's disease: randomised controlled trial

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Table 1 Characteristics of participants at study entry

	Treatment group (n=79)	Control group (n=77)
Patients		
Age, years: mean (s.d.)	75.7 (7.8)	75.8 (6.3)
Female gender, n (%)	58 (73)	55 (71)
Education, years: mean (s.d.)	7.3 (3.8)	7.3 (4.3)
MMSE score: mean (s.d.)	20.2 (3.3)	19.9 (3.0)
ADAS–Cog score: mean (s.d.)	37.1 (12.7)	40.1 (14.3)
Neuropsychiatric Inventory score: mean (s.d.)	18.4 (18.2)	21.6 (17.1)
Barthel Index score: mean (s.d.)	94.2 (10.9)	92.0 (10.6)
Number of impaired IADL: mean (s.d.)	4.0 (2.3)	3.9 (2.4)
Duration of disease, years: mean (s.d.)	1.8 (1.3)	2.1 (1.5)
Donepezil dosage, n (%)		
5 mg	32 (41)	37 (48)
10 mg	47 (59)	40 (52)
Duration of treatment with donepezil, months: mean (s.d.)	7.0 (5.2)	7.4 (5.0)
Use of antipsychotics, n (%)	2 (2.5)	3 (3.9)
Caregivers		
Age, years: mean (s.d.)	55.1 (13.9)	58.4 (12.8)
Female gender, n (%)	52 (66)	46 (60)
HRSD score: mean (s.d.)	6.8 (5.6)	6.8 (5.9)
HRSA score: mean (s.d.)	6.5 (5.5)	7.5 (6.8)
Caregiver Burden Inventory score: mean (s.d.)	19.5 (16.7)	24.2 (18.7)
SP–36 score: mean (s.d.)	70.9 (16.3)	67.9 (18.0)

	Mean change in score (standard error)[1]		P
	Treatment group (n=70)	Control group (n=67)	
Patients			
MMSE	0.2 (0.4)	−1.1 (0.4)	0.02
ADAS–Cog	0.4 (0.8)	−2.5 (0.8)	0.01
Neuropsychiatric Inventory	0.9 (1.9)	−2.5 (2.1)	0.23
Barthel Index	−0.9 (1.0)	−2.9 (1.0)	0.18
Number of impaired IADL	0.0 (0.2)	−0.2 (0.2)	0.34
Caregivers			
Hamilton Rating Scale for Depression	−0.9 (0.4)	−1.0 (0.4)	0.83
Hamilton Anxiety Scale	−0.3 (0.4)	−0.5 (0.4)	0.80
Caregiver Burden Inventory	−2.0 (1.4)	−1.3 (1.5)	0.72
SF–36	−1.3 (1.4)	−1.1 (1.4)	0.90

ADAS–Cog, Alzheimer's Disease Assessment Scale – Cognition; IADL, Instrumental Activities of Daily Living; MMSE, Mini-Mental State Examination; SF–36, Medical Outcomes Study 36-item Short-Form General Health Survey.
1. Adjusted for baseline value of the outcome measure.

Results

The treatment-group showed a significantly greather improvement either in the ADAS-cog (p=.005) and MMSE (p=.01) compared to control-group.

Original Research Article

Dementia and Geriatric Cognitive Disorders

Dement Geriatr Cogn Disord 2004;18:50–54
DOI: 10.1159/000077735

Accepted: September 28, 2003
Published online: April 6, 2004

Effects of Cholinergic Drugs and Cognitive Training on Dementia

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the overall deterioration scale (FAST). The results showed that subjects receiving the combined treatment had a better response than those who did not receive any cognitive training. These subjects' MMSE score de-

86 pazienti affetti da AD in trattamento con DON 10mg/die;

Trattamento: 5 sedute (45 min) /week di "ROT" per un anno

Table 1. Demographic characteristics and tests scores for each of the groups (means ± SD, in parentheses)

Variable	Group 1	Group 2	Group 3	Group 4
Gender (M/F)	7/13	10/20	5/13	3/15
Age	74.20 (7.81)	78.80 (6.62)	77.00 (7.84)	70.85 (8.12)
MMSE-Pre	22.95 (5.01)	21.17 (7.56)	19.44 (8.18)	19.39 (4.92)
MMSE-Post	24.45 (5.42)	17.80 (7.59)	21.89 (7.93)	13.11 (5.87)
ADAS-cog Pre	23.95 (10.34)	29.77 (12.52)	32.50 (18.28)	26.06 (8.85)
ADAS-cog Post	17.55 (9.53)	36.37 (16.21)	28.56 (21.02)	35.33 (11.50)
GDS-Pre	13.45 (4.95)	12.20 (5.83)	11.50 (6.17)	12.61 (8.25)
GDS-Post	7.85 (6.12)	10.17 (6.96)	8.17 (4.66)	7.89 (7.65)
FAST-Pre	2.80 (1.01)	3.10 (1.63)	3.50 (1.79)	3.44 (1.38)
FAST-Post	2.45 (1.10)	4.03 (1.69)	2.94 (1.73)	4.44 (1.42)

Group 1: Drug+Rehab.

Group 2: Drug only

Group 3: Rehab. only

Group 4: no drug and no rehab.

Dementia and Geriatric Cognitive Disorders

Original Research Article

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Effects of Cholinergic Drugs and Cognitive Training on Dementia

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[a]Universidad de León (Área de Psicología), León, [b]Departamento de Psiquiatría, Facultad de Medicina, and [c]Centro de Magnetoencefalografía, Universidad Complutense de Madrid, Madrid, Spain

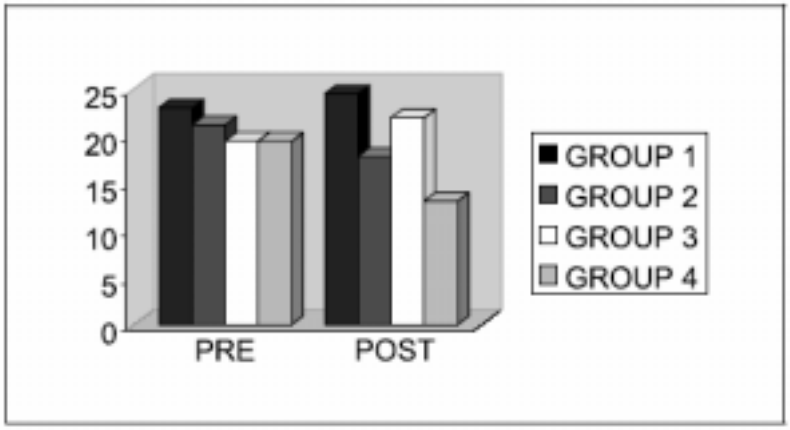

Fig. 1. Differences between groups on MMSE scores.

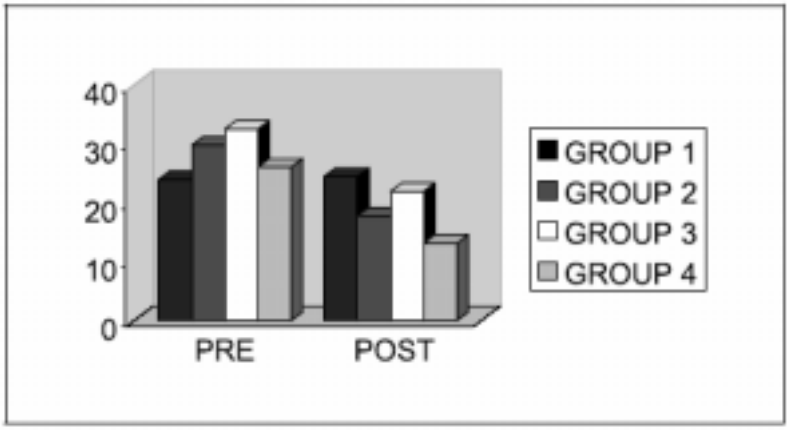

Fig. 2. Differences between groups on ADAS-Cog scores.

Group 1: Drug+Rehab.

Group 2: Drug only

Group 3: Rehab. only

Group 4: no drug and no rehab.

Original Research Article

Dementia and Geriatric Cognitive Disorders

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Published online April 6, 2004

Effects of Cholinergic Drugs and Cognitive Training on Dementia

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Dementia
and Geriatric Cognitive Disorders

Original Research Article

Dement Geriatr Cogn Disord 2006;22:339–345
DOI: 10.1159/000095600

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Effects of Cholinergic Drugs and Cognitive Training on Dementia: 2-Year Follow-Up

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[a] Área de Psicología, Universidad de León, [b] Centro de Magnetoencefalografía, Universidad Complutense de Madrid, y [c] Departamento de Psiquiatría, Facultad de Medicina, Universidad Complutense de Madrid, Madrid, España

Group 1: Drug+Rehab.

Group 2: Drug only

Group 3: Rehab. only

Group 4: no drug and no rehab.

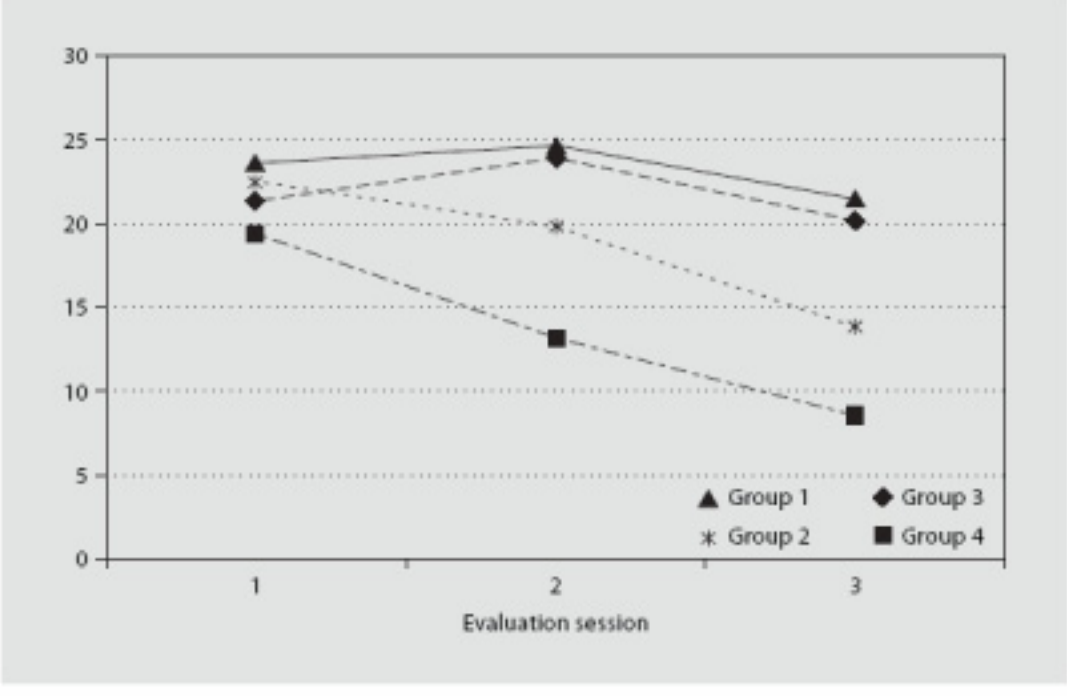

Fig. 1. Progression of MMSE scores across sessions for each group.

Benefits of cognitive-motor intervention in MCI and mild to moderate Alzheimer disease

J. Olazarán, MD, PhD;* R. Muñiz, BSc;* B. Reisberg, MD; J. Peña-Casanova, MD, PhD;
T. del Ser, MD, PhD; A.J. Cruz-Jentoft, MD; P. Serrano, MD; E. Navarro, MD; M.L. García de la Rocha, MD;
A. Frank, MD, PhD; M. Galiano, MD; Y. Fernández-Bullido, MD; J.A. Serra, MD, PhD;
M.T. González-Salvador, MD; and C. Sevilla, MD

NEUROLOGY 2004;63:2348–2353

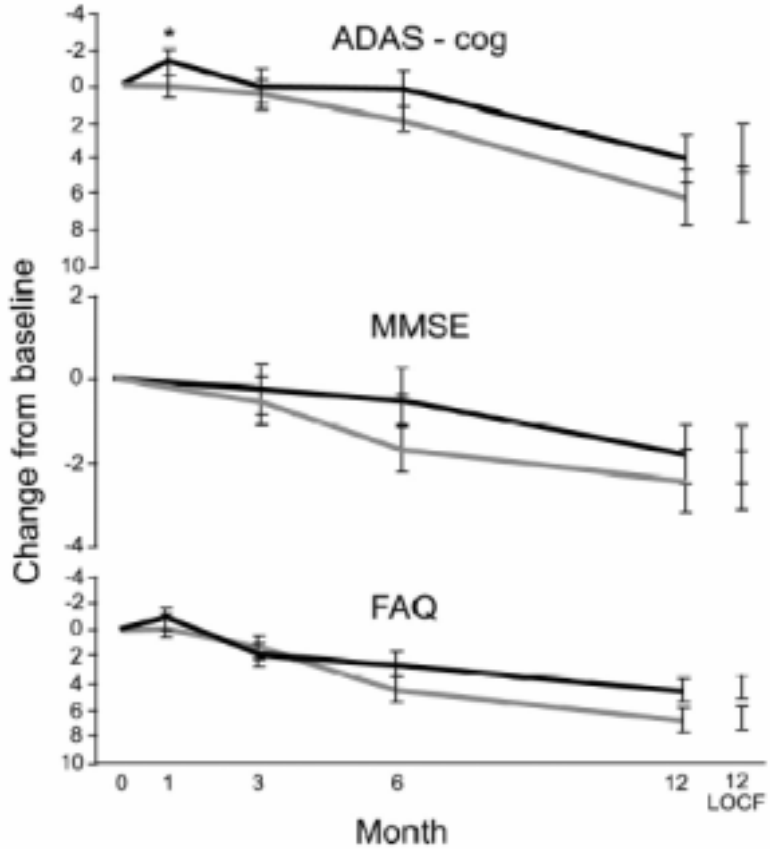

*Figure 2. Mean (± SE) change from baseline score by treatment group. Downward slope means deterioration. *p = 0.05 vs basal performance. ADAS-cog = cognitive subscale of the AD Assessment Scale; MMSE = Mini-Mental State Examination; FAQ = Functional Activities Questionnaire; GDS = Geriatric Depression Scale; LOCF = last observation carried forward. Black line = experimental group; gray line = control group.*

Olazaran et al, 2004

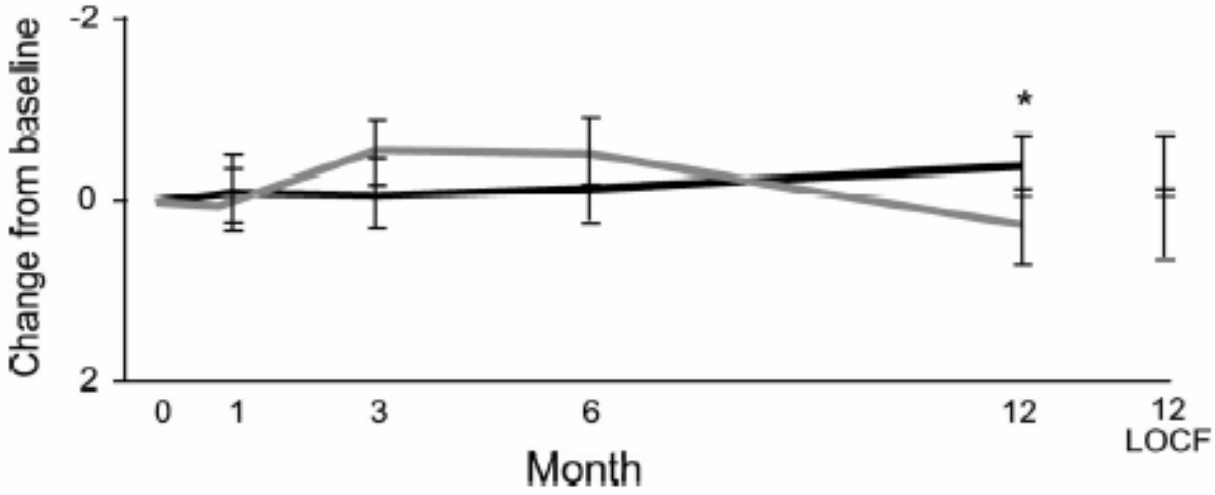

*Figure 3. Geriatric Depression Scale. Mean (± SE) change from baseline by treatment group. Downward slope indicates more depressive symptoms. *p = 0.05 Between experimental and control groups. LOCF = last observation carried forward. Black line = experimental group; gray line = control group.*

Olazaran et al, 2004

International Psychogeriatrics: page 1 of 12 © 2006 International Psychogeriatric Association
doi:10.1017/S1041610206004194

Cognitive stimulation therapy for Alzheimer's disease: the effect of cognitive stimulation therapy on the progression of mild Alzheimer's disease in patients treated with donepezil

One year study

Osamu Matsuda

Department of Clinical Psychology, Faculty of Educational Psychology, Tokyo Gakugei University, Japan

Objective: This study examines their combined effect on the progression of cognitive decline in AD by comparing the cognitive performance of 17 AD patients treated with CST *and* donepezil (combined treatment group) and 13 AD patients treated with donepezil alone (control group).

Methods: Patients in the combined treatment group received 5 mg of donepezil per day and about 20 one-hour CST sessions for one year, whereas the control group received only 5 mg of donepezil per day. The first eight sessions were carried out once a week, and subsequent sessions were generally once every two weeks. The patients were evaluated for changes in cognitive ability by administering the Mini-mental State Examination (MMSE) before the start of CST (baseline) and about one year later (follow-up).

Results: A repeated-measure analysis of variance revealed a significant group × time interaction. The MMSE score decreased significantly in the control group, but did not change significantly in the combined treatment group. Three patients in the control group declined by four points on the MMSE, compared to none in the combined treatment group. Effect size (ES) in the control group was relatively large and negative, while the ES in the combined treatment group was close to zero.

JNNP ONLINE

A randomized pilot study to assess the efficacy of an interactive, multimedia tool of cognitive stimulation in Alzheimer's disease

Lluís Tárraga, Mercè Boada, Gemma Modinos, Ana Espinosa, Susana Diego, Amèrica Morera, Marina Guitart, Jaume Balcells, Oscar L López and James T Becker

J. Neurol. Neurosurg. Psychiatry published online 4 Jul 2006; doi:10.1136/jnnp.2005.086074

24-week, single-blind, randomized study on 46 mild AD on stable AChEIs

Groups:

1) **Experimental: Interactive multimedia internet-based system (IMIS) + integrated psychostimulation program (IPP) (experimental)**
2) **IPP only (control)**
3) **AChEIs only (control)**

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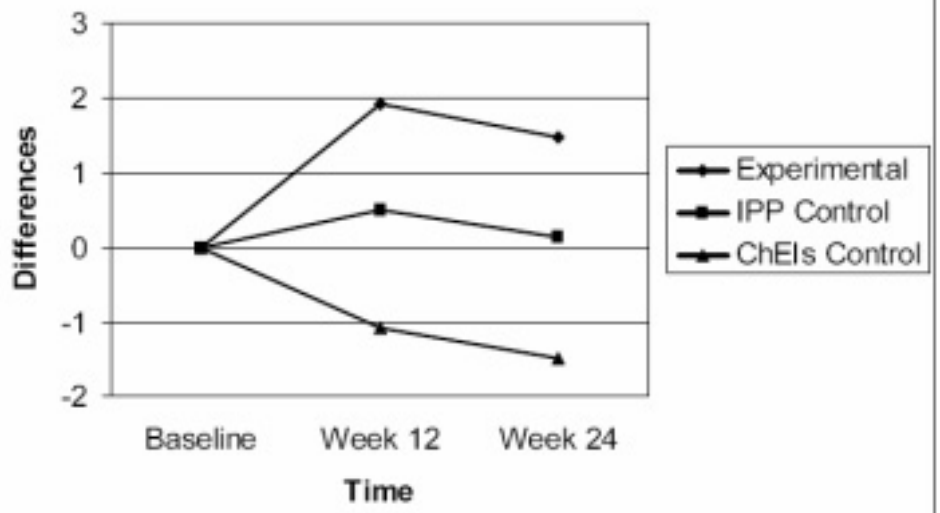
Figure 1. MMSE mean change after 12 and 24 weeks



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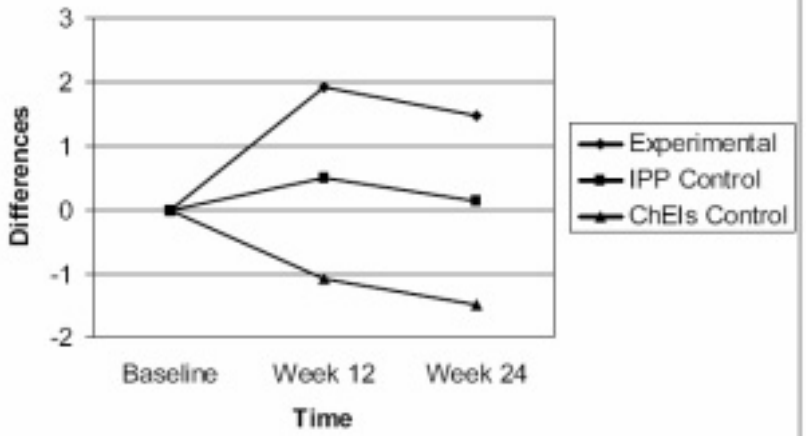
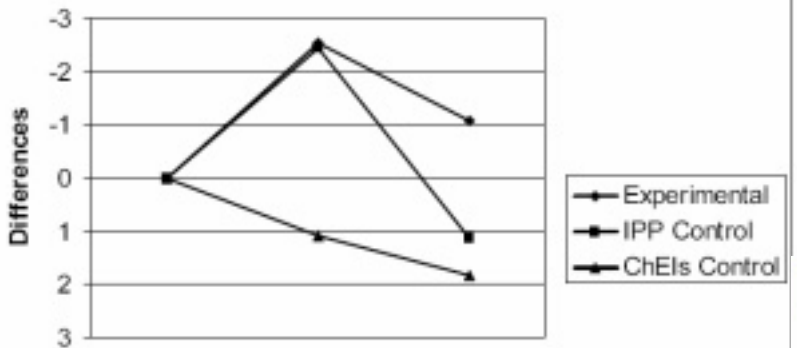


Figure 2. ADAS-Cog mean change after 12 and 24 weeks



JNNP ONLINE

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Aging & Mental Health, May 2006; 10(3): 211–218

Routledge
Taylor & Francis Group

ORIGINAL ARTICLE

Evaluating two group programmes of cognitive training in mild-to-moderate AD: Is there any difference between a 'global' stimulation and a 'cognitive-specific' one?

E. FARINAMD[1], F. MANTOVANI[1], R. FIORAVANTI[1], R. PIGNATTI[3], L. CHIAVARI[1], E. IMBORNONE[1], F. OLIVOTTO[1], M. ALBERONI[1], C. MARIANI[2], & R. NEMNI[1]

[1]*Neurorehabilitation Unit, IRCCS Don Gnocchi Foundation,* [2]*Neurology Unit, Luigi Sacco Hospital, University of Milan, Milan, and* [3]*Psychology Laboratory, Istituto Auxologico Italiano di Piancavallo (VB) & Psychology Department, University of Trieste, Trieste, Italy*

Abstract

This study evaluated the efficacy of two different group procedures of non-pharmacological treatment in mild-to-moderate Alzheimer's disease (AD). Thirty-two patients entered the study and were divided in groups of four subjects. We compared recreational activities ('global' stimulation) with a combination of procedural memory training on activities of daily living and neuropsychological rehabilitation of 'residual' functions ('cognitive-specific'). All patients and caregivers were ensured psychological support. Both group treatments were delivered for six weeks. Multidimensional efficacy assessment of functional, behavioural and neuropsychological aspects was performed. Patients receiving 'global' stimulation showed a substantial reduction in behavioural disturbances (Neuropsychiatric Inventory [NPI]: frequency $p = 0.034$; severity $p = 0.012$); Revised Memory Behaviour Problems Checklist (frequency $p = 0.008$; reaction $p = 0.027$), and better performance in the Functional Living Skills Assessment (FLSA), a standardized direct measure of performance in everyday life ($p = 0.021$) and Verbal Fluency for Letters ($p = 0.000$). Patients receiving 'cognitive-specific' treatment improved only on the scale evaluating functional competence in daily living (Nurses' Observation Scale for Geriatric Patients [NOSGER] $p = 0.018$). At follow-up (six months later), compared with baseline, patients following the 'global' stimulation treatment showed an improvement at caregiver distress on NPI ($p = 0.04$). No other significant difference was detected. Our results support the contention that a 'global' treatment can lead to a significant improvement in AD patients, both for behavioural and functional aspects. The 'cognitive-specific' treatment we used in this research did not show better efficacy.

EFFICACY OF RECREATIONAL AND OCCUPATIONAL ACTIVITIES ASSOCIATED TO PSYCHOLOGIC SUPPORT [FOR PATIENTS AND CAREGIVERS] IN MILD TO MODERATE ALZHEIMER DISEASE

A multicenter controlled study

E.Farina et al.: Alzheimer Dis. Assoc. Disord. 2006;20:275-282.

67 patients e 31 controls

6-week treatment (recreational-occupational: conversation, music listening, party games, collage, poster creation, games with balls; procedural memory training; setting a table, preparing tea or coffee, washing hands and dishes)

AD patients demonstrated an improvement in behavioral disturbances.

Guide-lines for for cognitive rehabilitation in AD

	STAGES OF DEMENTIA
• ***Global approaches (ROT, 3R)***	***mild – moderate****
• ***Selective approaches***	
• Sensorimotor skills	***mild – moderate*** #
• Spaced-retrieval	***mild*** #
• Vanishing cues	***mild*** #
• Errorless learning	***mild*** #
• ***Prostetic support***	***mild*** #
• Electronic devices	

*** Supported by randomized clinical trials; # Supported by non randomized clinical trials, mainly small scale pilot studies**

Review

Reality orientation for dementia

A Spector, M Orrell, S Davies, B Woods
Cochrane Database of Systematic Reviews 2007 Issue 3 **Status: *Withdrawn***

DOI: 10.1002/14651858.CD001119.pub2 This version first published online: 24 July 2000 in Issue 3, 2000
Date of Most Recent Substantive Amendment: 25 May 2000

This record should be cited as: Spector A, Orrell M, Davies S, Woods B. Reality orientation for dementia. *Cochrane Database of Systematic Reviews* 2000, Issue 3. Art. No.: CD001119. DOI: 10.1002/14651858.CD001119.pub2.

The editorial group responsible for this previously published document have withdrawn it from publication.

Reason For Withdrawal

21 February 2003: Following an overhaul (revisione) of all our psychosocial reviews this review has been permanently withdrawn. It has been replaced by a new protocol titled: "Cognitive stimulation to improve cognitive functioning in people with dementia" which includes reality orientation as well as cognitive stimulation.
We are lucky to keep the same review team but now under the lead of Bob Woods to undertake this new review.

Enriched environments, experience-dependent plasticity and disorders of the nervous system

Jess Nithianantharajah and Anthony J. Hannan

Enriched environments, experience-dependent plasticity and disorders of the nervous system

Jess Nithianantharajah and Anthony J. Hannan

NATURE REVIEWS | NEUROSCIENCE VOLUME 7 | SEPTEMBER 2006 | 697

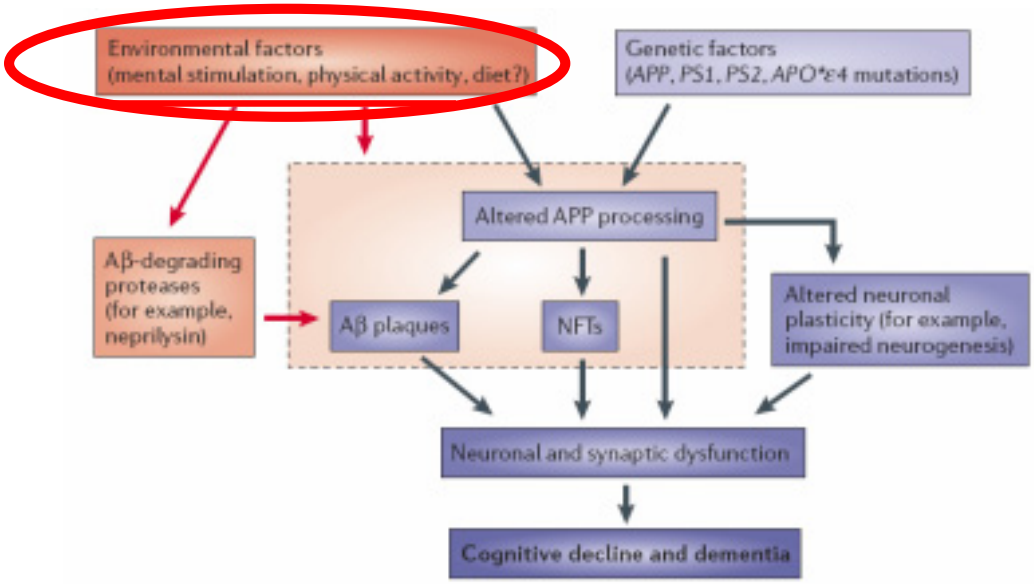

Figure 3 | **Gene–environment interactions in Alzheimer's disease.** Schematic of postulated molecular and cellular pathogenic mechanisms and possible ways in which environmental stimulation modulates these mechanisms. Red shading indicates processes on which environmental factors might have a beneficial effect during disease onset, progression and neuropathology. *APOEε4*, apolipoprotein E; *APP*, amyloid precursor protein; NFTs, neurofibrillary tangles; *PS1*, presenilin 1; *PS2*, presenilin 2.

Although there remains debate about the effect of enrichment and exercise on the neuropathological abnormalities in AD, these studies, together with epidemiological investigations[1], suggest that both mental and physical activity help to slow down or prevent the cognitive decline associated with AD, possibly by preventing neuronal dysfunction and allowing synaptic recovery.

Enriched environments, experience-dependent plasticity and disorders of the nervous system

Jess Nithianantharajah and Anthony J. Hannan

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EDITORIAL

Use It or Lose It

Activity May be the Best Treatment for Aging

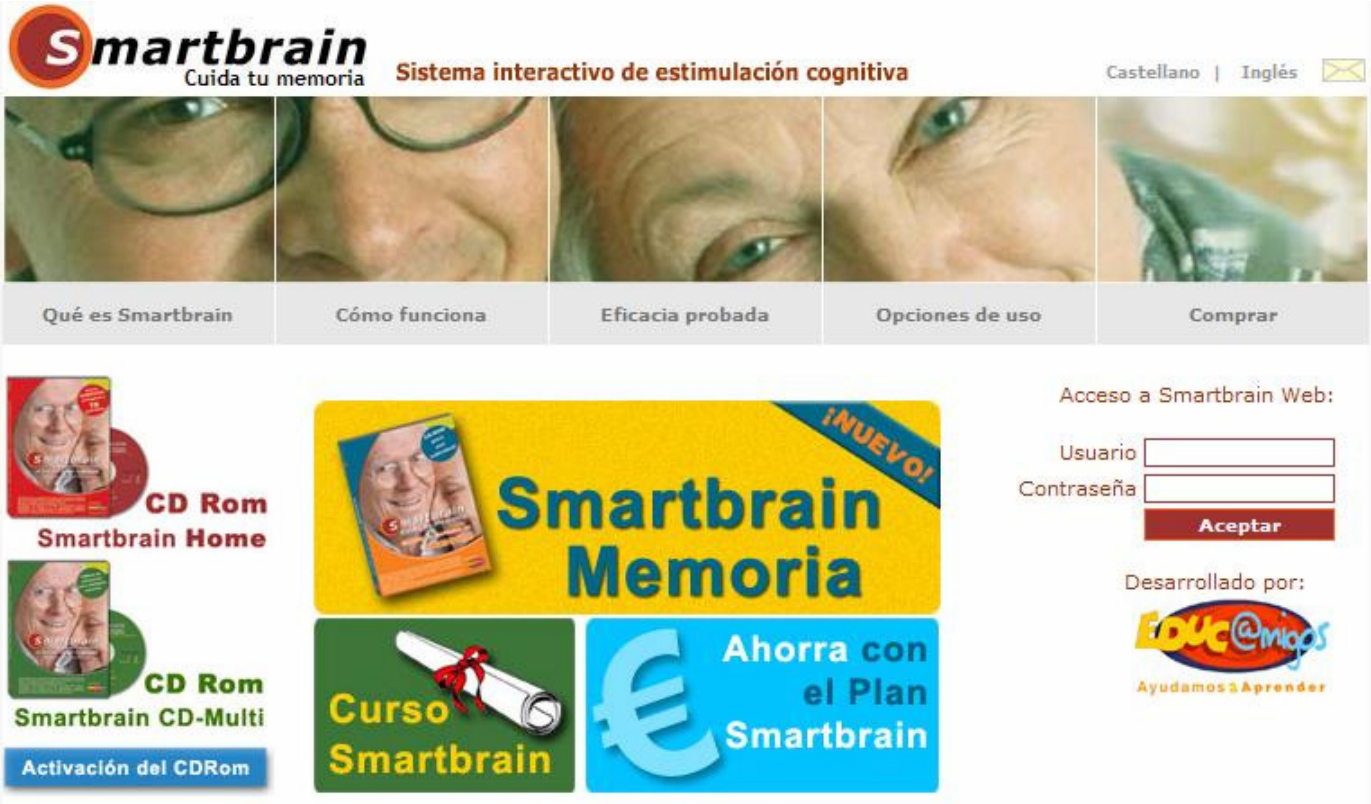
(See Ball et al.: JAMA 2002;288:2271-2281)

Christine K. Cassel, MD

JAMA 2002; 288:2333-2335.

The brain is arguably the major organ of interest as people age.

The report of Ball and colleagues demonstrates the effectiveness of simple cognitive exercises to improve memory. The implication of this finding for healthy aging is enormous.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Cómo funciona
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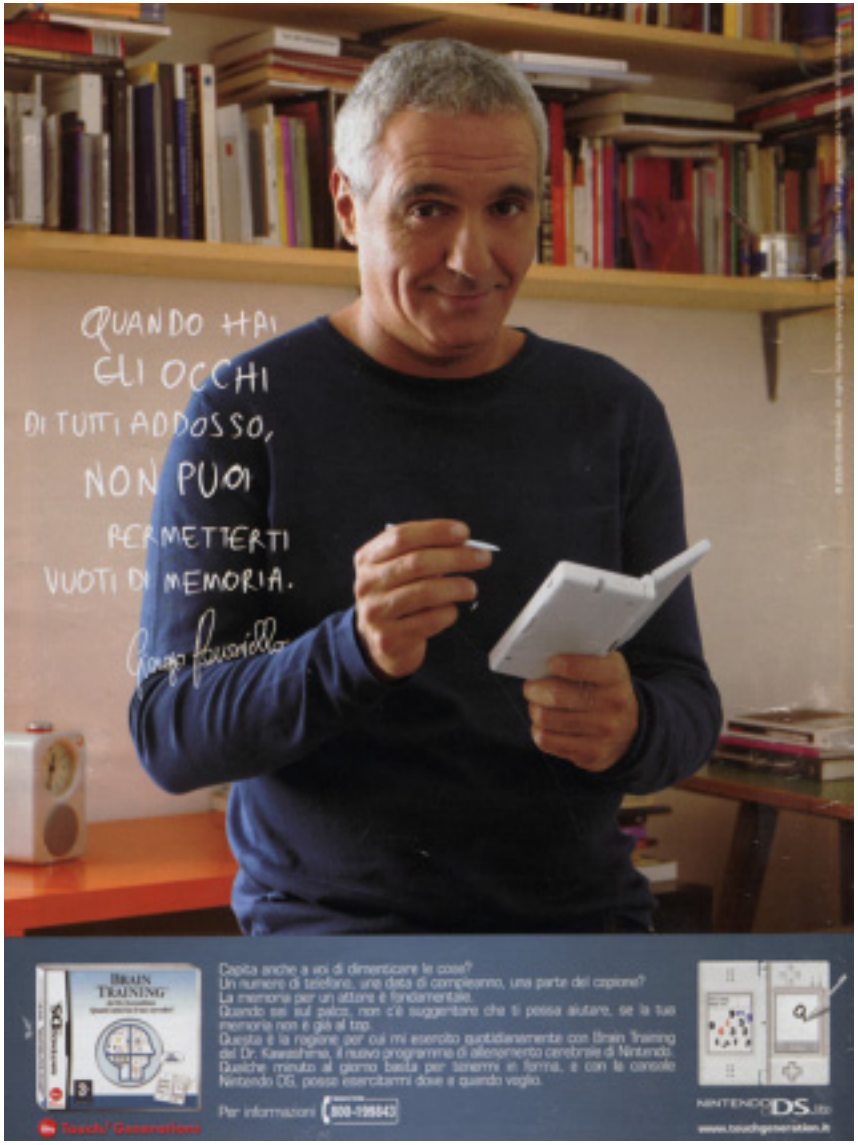


Corsera Magazine
23-11-06

Prospettive future

ORIGINAL CONTRIBUTION

Effect of Transcranial Magnetic Stimulation on Action Naming in Patients With Alzheimer Disease

Maria Cotelli, MSc; Rosa Manenti, MSc; Stefano F. Cappa, MD; Cristina Geroldi, MD, PhD; Orazio Zanetti, MD; Paolo M. Rossini, MD; Carlo Miniussi, PhD

Objective: To assess the effect of repetitive transcranial magnetic stimulation (rTMS) to the dorsolateral prefrontal cortex (DLPFC) on picture naming in patients with Alzheimer disease (AD).

Design: Experimental study. Patients with AD underwent rTMS in real and control conditions during picture-naming tasks.

Setting: San Giovanni di Dio Fatebenefratelli Scientific Institute in Brescia, Italy.

Patients: Fifteen patients with probable AD.

Intervention: High-frequency rTMS was applied to the left and right DLPFC during object and action naming.

Main Outcome Measures: Language ability was assessed by accuracy of verbal response during online rTMS.

Results: Stimulation to the left and right DLPFC improved accuracy in action naming.

Conclusions: These findings indicate that rTMS to the DLPFC, which speeds up action naming in normal controls, improves performance in patients with AD. While the mechanisms of rTMS-induced naming facilitation in these patients are unknown, the procedure may be worth testing as a novel approach to the treatment of language dysfunction.

Arch Neurol. 2006;63:1602-1604

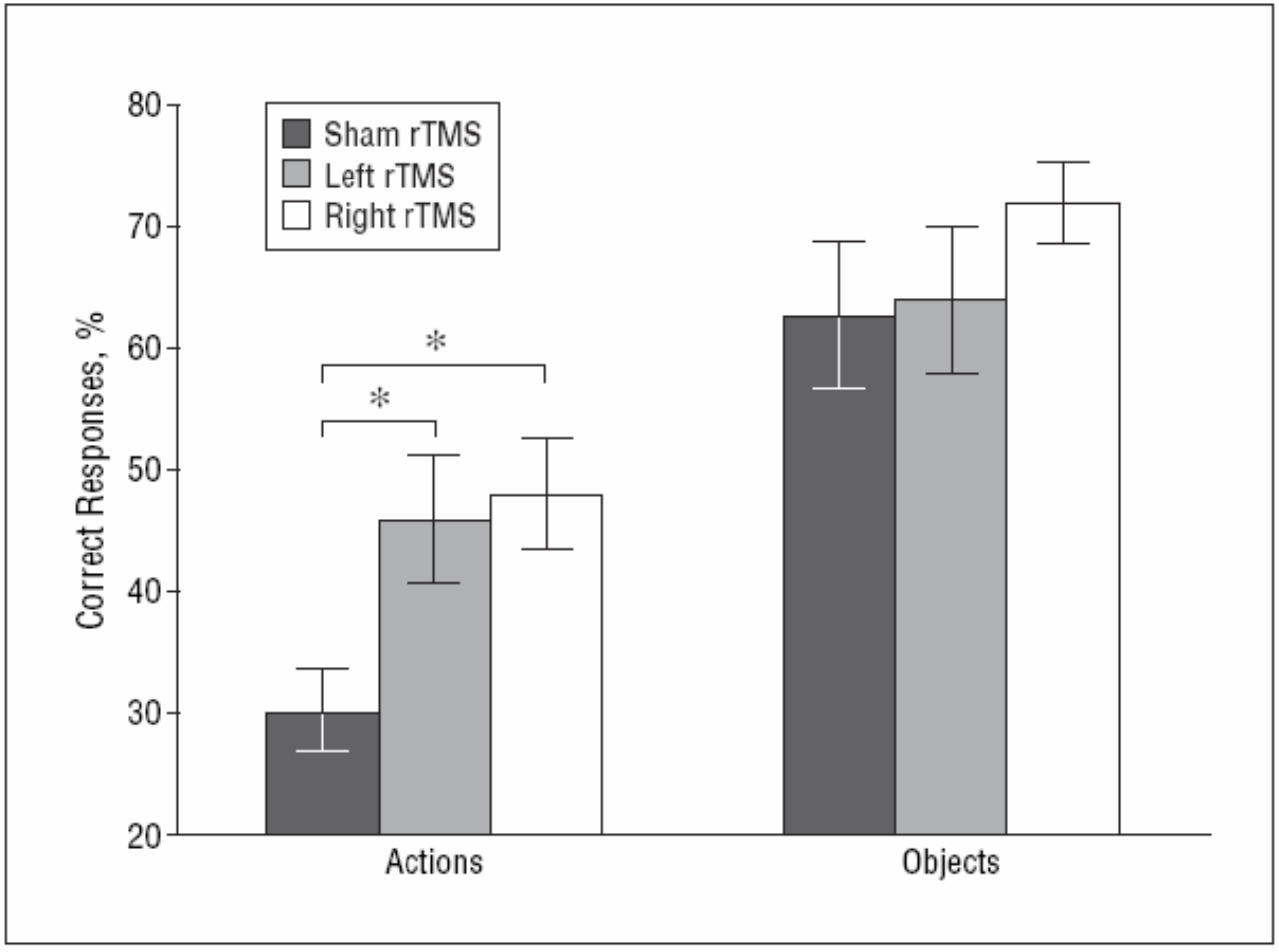
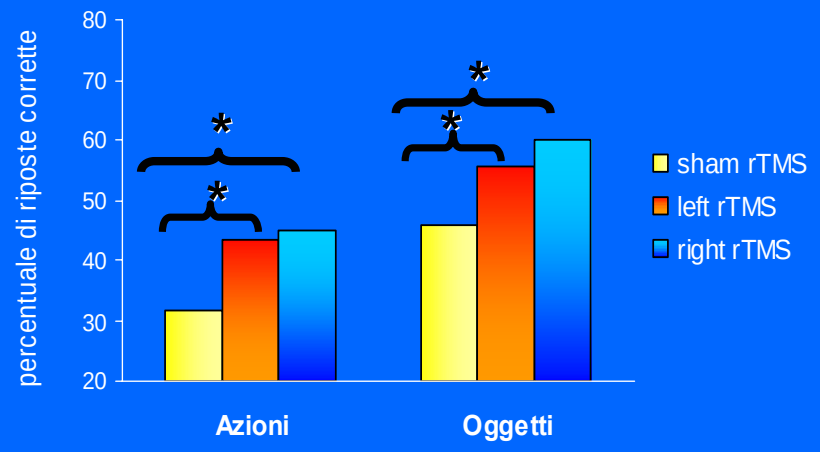


Figure. The graphs show the percentage of correct naming, divided by stimulus category (action vs object), in patients with Alzheimer disease for different sites of repetitive transcranial magnetic stimulation (rTMS).*$P<.05$.

Unpublished data
November 2007

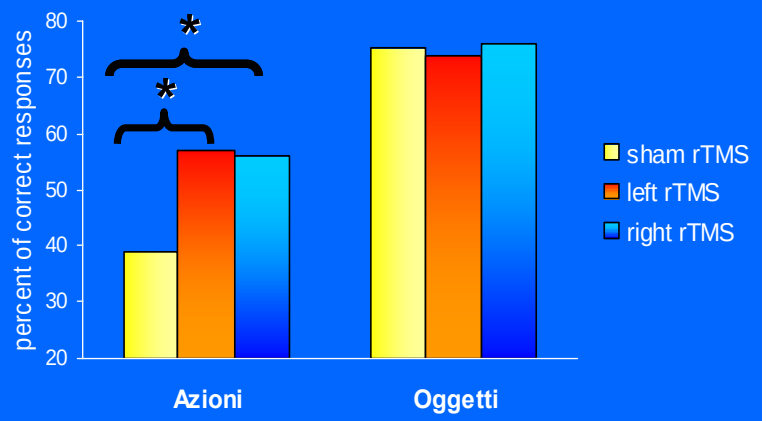
Risultati

12 AD MMSE < 18



	MEDIA	DS
MMSE	14,27	2,61
ETA'	77,6	4,8
SCOLARITA'	5,7	2,6

10 AD MMSE ≥ 18



	MEDIA	DS
MMSE	19,88	1,83
ETA'	74,8	6,4
SCOLARITA'	6,7	2,7

Review TRENDS in Cognitive Sciences Vol.8 No.8 June 2004

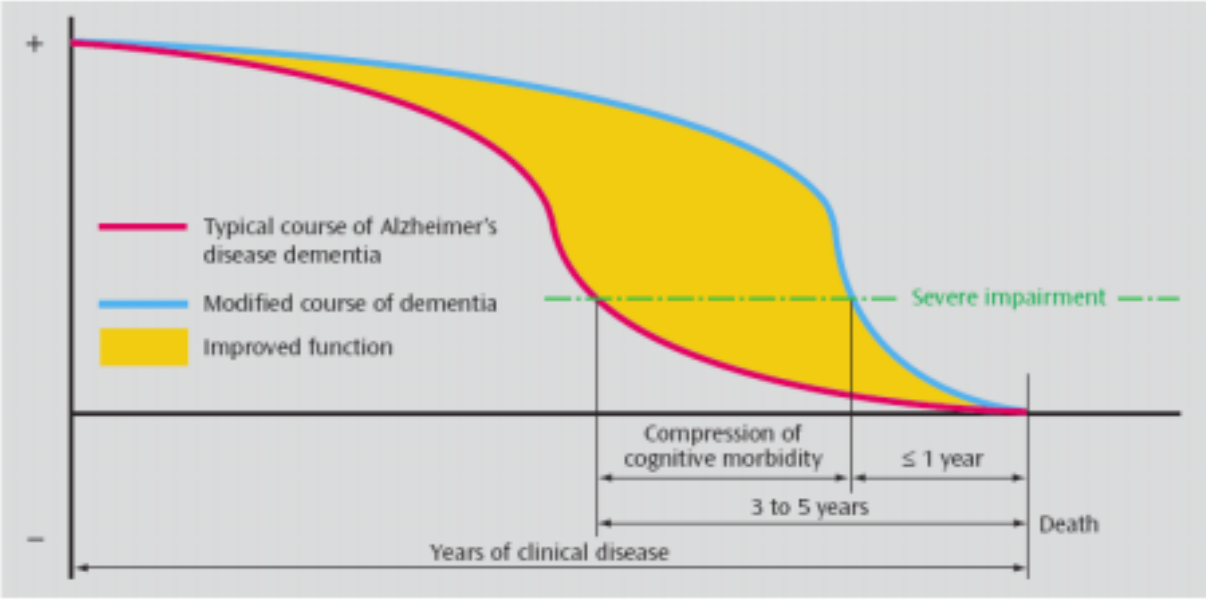
TMS in cognitive plasticity and the potential for rehabilitation

Simone Rossi[1] and Paolo M. Rossini[2,3,4]

[1]Dipartimento di Neuroscienze, Sezione Neurologia, Università di Siena, Policlinico Le Scotte, Viale Bracci, I-53100 Siena, Italy
[2]Neurologia, Università Campus Biomedico, Via Longoni 71, Roma, Italy
[3]IRCCS Centro S.Giovanni di Dio-Fatebenefratelli, Via Pilastroni 4, Brescia, Italy
[4]AFaR-Dip.Neuroscienze, Ospedale Fatebenefratelli, Isola Tiberina, Roma, Italy

There are exciting prospects for the use of TMS as a tool to promote changes of brain activity paralleled by behavioral improvements, although, at present, these are generally short-lived. However, a growing body of evidence is converging on the possibility that TMS induces an exogenous plastic rearrangement of synaptic efficacy in the stimulated network. Most evidence comes from studies on sensorimotor areas, but the principles are probably equally applicable to networks subserving cognition, emotion and mood regulation. Future work on TMS as a rehabilitative tool in cases of cognitive impairment represents a challenge that might be as consequential as it is exciting (see also Box 3).

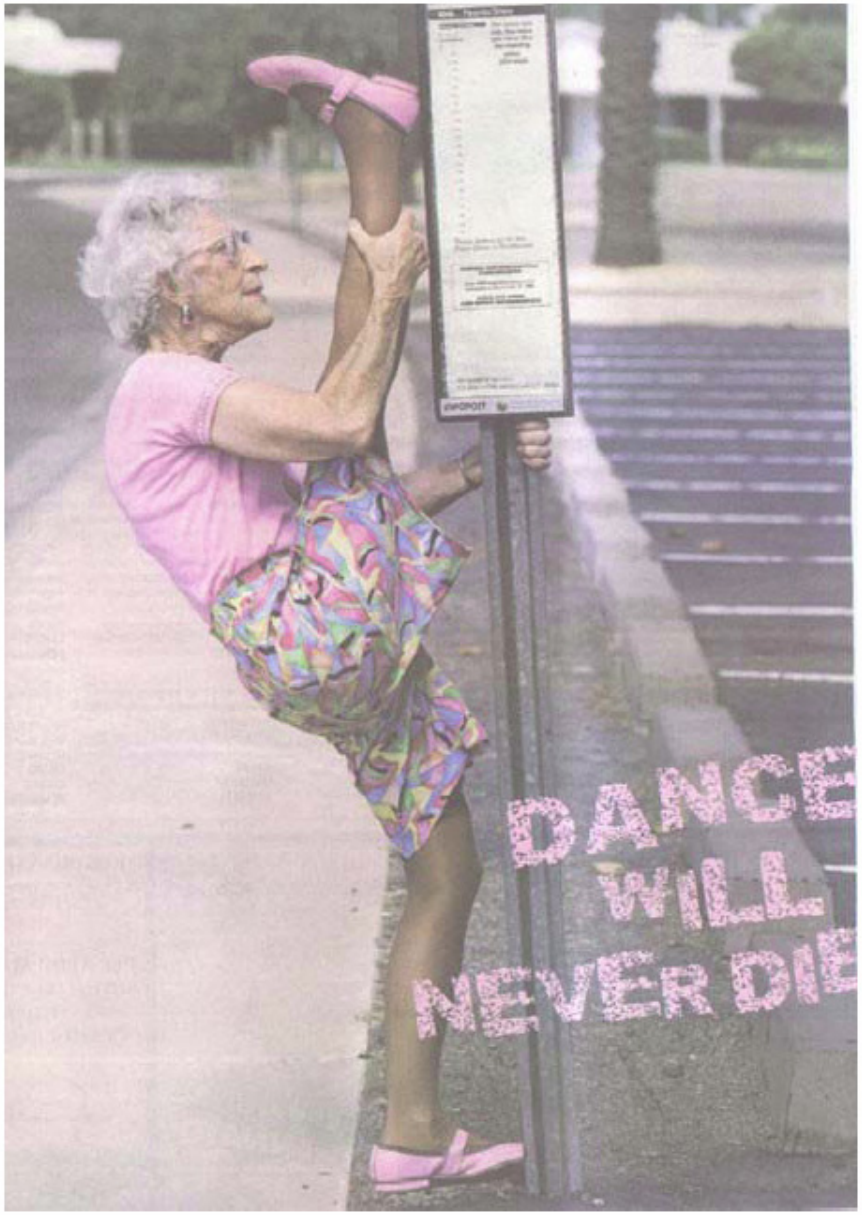
FIGURE 1. Effects of Modification of the Natural History of Alzheimer's Disease[a]



"Until such time as treatments are available that can truly modify or prevent Alzheimer's disease, improving and extending the period of higher quality of life may be the most important clinical outcome."

JAMES T. BECKER, PH.D.
LUIS TARRAGA MESTRE, M.SC.
SCOTT ZIOLKO, B.S.
OSCAR L. LOPEZ, M.D.

Am J Psychiatry 164:6, June 2007


DANCE
WILL
NEVER DIE