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Memory training in early Alzheimer's disease: An optimistic look at the field

Sharon M. Arkin, MEd

Abstract

The purpose of this article is to encourage caregivers and treatment providers of early Alzheimer patients to try various memory stimulation strategies since, as this article will show, some patients do benefit cognitively, while most — caregivers and patients — benefit emotionally and psychologically from the cooperative effort.

This article will review three published studies with encouraging results or elements, five with negative results, and three studies involving work with other populations that would seem to have applicability to early stage Alzheimer patients. This author will also describe two unpublished memory training interventions for early

Alzheimer patients that have had promising results, but are not yet published. Related research and encouraging trends will be summarized, and treatment and rehabilitation strategies suggested by these and other published literature will be presented.

Lack of memory therapy for AD patients

My interest in memory training grew out of a quest for such a service for my mother, who was diagnosed as "probable Alzheimer's" in June 1988, with memory loss as her only symptom. My search encompassed the following publications of the National Institutes of Health on the latest federally-funded Alzheimer research and treatment programs:

*National Institute of Mental Health, 1989;¹

*National Institute of Neurological Disorders and Strokes, July 1989;²

*National Institute on Aging, March 1989;³ and

*The Group for the Advancement of Psychiatry's (GAP) 1988 book, *The Psychiatric Treatment of Alzheimer's Disease*; and Publications of the National Alzheimer's Association, as well as literature searches by three major databases (Psyclit, Medlars, and the Alzheimer's Disease Education and Referral (ADEAR) Center, a federally-funded Alzheimer's clearinghouse). This search yielded no references to currently available memory treatment for early stage patients, though memory difficulties are frequently cited as

one of the symptoms that sufferers and family members often notice first.^{4,5}

... The therapeutic benefit of patient and caregiver involving themselves with each other in an effortful task that addresses one of the patient's most distressing and noticeable problems has enormous face validity.

The only memory treatment program for early stage Alzheimer patients I was able to find was an experimental one being conducted by Curt Sandman at the University of California at Irvine.⁶ I'd heard mention of this treatment on a television program about the brain during the spring of 1989. Sandman's program, known as the Memory Enhancement and General Awareness (MEGA) training program, will be described, along with an intervention I developed to help my mother, following this article's review of the published literature.

Optimism needed

According to the Group for the Advancement of Psychiatry's (GAP's) 1988 book, *The Psychiatric Treatment of Alzheimer's Disease*,⁴ there was no



Author, Sharon M. Arkin (right), with her mother, Beatrice Shultz, an Alzheimer's disease patient. Sharon M. Arkin, MEd, is a certified clinical mental health counselor in Ft. Wayne, IN.

evidence that memory stimulation and cognitive training improved thinking or memory function. The articles cited to support the conclusion of "no improvement"⁷⁻⁹ were acknowledged as demonstrating the importance of stimulation and cognitive training in combating depression and increasing a sense of mastery. It is this fact which, in my view, makes the case for such intervention so compelling. Whether or not significant or permanent memory improvement is achieved, the therapeutic benefit of patient and caregiver involving themselves with each other in an effortful task that addresses one of the patient's most distressing and noticeable problems has enormous face validity.

Nancy Mace, co-author of the widely-used AD caregiver's handbook, *The 36-Hour Day*,¹⁰ in a 1985 speech, called for less dwelling on the suffering and despair that are the inevitable concomitants of Alzheimer's disease, increased attention to the rare success stories, and for increased commitment to rehabilitation. Mace stated that:

I believe that our charge for the coming decade is to learn what we can do to rehabilitate patients, to enable them to live WITH their illness, to improve their function, to remove excess disability, and to improve their quality of life.¹¹

Americans are brought up with slogans like "use it or lose it" and "practice makes perfect."

Increasingly, researchers and clinicians are calling for more attention to cognitive training of the early and moderate dementia patient.^{12,13}

In the 1981 book,¹⁰ Mace and Rabins stated that "families often ask if

retraining, reality orientation, or keeping active will slow down or stop the course of the disease."

The fact that the authors' answer was equivocal about the benefits of such retraining and activity stimulation is less important than the fact that, by asking the question, family members of AD patients have demonstrated that they want to actively fight cognitive decline in their loved ones. Americans are brought up with slogans like "use it or lose it" and "practice makes perfect." The positive feeling one gets from doing something pro-active with and for a memory-impaired person and the feeling of purpose and involvement the

... it is too early to conclude that early stage AD patients are unsuitable candidates for cognitive intervention.

impaired person experiences from engaging in an effortful cooperative task make the effort worthwhile in and of itself. And if, as the programs described in this review seem to indicate, some patients get some cognitive benefit from some interventions, so much the better.

Early Alzheimer patients may profit from standard memory techniques

Most memory training methods that work with normal elderly and/or with patients with amnesia caused by other illnesses or head injuries are generally thought not to work with dementia patients. These methods include visual imagery, organizational or categorization schemes, peg and loci strategies, and various exercises based on repetition.¹⁴⁻¹⁶

Karlsson and his associates¹⁴ suggest that the reason for the failure of

these methods to work with Alzheimer's disease and other dementia patients may be the presence of other

It may be that many of the systematic behavioral methods described in the cognitive rehabilitation literature would work with early stage AD patients.

deficits, such as agnosia and aphasia, attentional problems, and losses in premorbid knowledge, autobiographic memories, and visuo-spatial abilities. Because these conditions tend to be present more frequently and to a greater degree among more advanced AD patients, that theory may be less applicable to the early stage patient. Since research tends to be conducted more frequently with more advanced institutionalized patients than with non-institutionalized patients and since most early stage patients have never been given an opportunity to work at memory therapy, it is too early to conclude that early stage AD patients are unsuitable candidates for cognitive intervention.

The literature of the emerging field of cognitive rehabilitation¹⁷⁻¹⁹ describes many head-injured and other amnesic patients who, in their symptom presentation and the intactness of other abilities, are very similar to early stage Alzheimer patients, whose noticeable impairment is limited to memory loss.

It may be that many of the systematic behavioral methods described in the cognitive rehabilitation literature would work with early stage AD patients.

Encouraging studies

One encouraging report in the literature is of an eight-month experimental

cognitive stimulation program involving 10 early Alzheimer patients and their spouses and six control couples that was sponsored by the University of

... they felt positive about concretely helping their spouse; they gained an appreciation for the intact abilities of the patient and learned new ways of coping.

San Diego.¹³ The caregivers were trained to provide one hour a day of activities from three different categories: conversation, memory-stimulating exercises, and problem-solving techniques. Monthly "booster" sessions were provided by project staff at the couples' homes.

Patient participants and controls were assessed at the beginning, middle, and end of treatment as to cognitive and behavioral functioning. Caregiving participants and controls were assessed at the same intervals as to their physical and mental health status and feelings of burden.

Results showed that patients in the program maintained their levels of cognitive and behavioral functioning, while the control patients deteriorated. Seven out of ten of the caregivers reported that there had been positive emotional outcomes for the patient as a result of participating in the program. Participating caregivers remained stable in terms of emotional well-being, while the control caregivers experienced an increase in mental health symptoms.

Qualitative reports from participating caregivers indicated that spousal relations improved as a result of the communication fostered by the joint training endeavor; they felt positive

about concretely helping their spouse; they gained an appreciation for the intact abilities of the patient and learned new ways of coping. One caregiver wrote, "A feeling of care has replaced the no-hope, impersonal concept of the disease."¹³

McEvoy and Patterson²⁰ provided cognitive-behavioral training to 15 demented and 15 non-demented adults in an institutional setting. The demented improved as much as the non-demented in communications skills (appropriate expression of pleasure and displeasure) and in personal hygiene, actually achieving the same level of skill in the latter area. On personal information and spatial orientation, the

Only in more complicated activities of daily living, such as laundry, meal preparation, and money management did the demented show no improvement.

demented showed moderate improvement, while the non-demented required little or no training in these areas. Only in more complicated activities of daily living, such as laundry, meal preparation, and money management did the demented show no improvement.

The personal information component consisted of six basic items, such as name, address, and phone number. The information was presented to the subjects on index cards during the first week of training and knowledge assessed after one week. Staff asked the questions of the patient at frequent intervals and provided visual and verbal prompts for the information not known. Patients increased their knowledge from an average of 2.17 to 3.83 items correct; most of the gains

were made during the first month of the 20 week program. The authors note that the AD patients showed the most improvement in areas with the least cognitive involvement and where physical practice was part of the training and multi-sensory feedback was received.

McEvoy and her present and past associates at the Florida Mental Health Institute in Tampa have used cognitive-behavioral techniques to improve the behavior, communication, and overall functioning of memory-impaired outpatients and their family members^{21,22} and in a geriatric day program.²³ Unfortunately, budget cuts have resulted in termination of all outpatient programs and a de-emphasis on work with Alzheimer patients.²⁴

Several studies were found that reported on memory experiments rather than memory training involving Alzheimer patients.

Karlsson et al¹⁴ in Stockholm hypothesized that presenting information whose encoding could be assisted via a motor act would enhance learning in AD patients. They based their hypothesis on Lawson and Barker's observation²⁵ that demented persons do better on object naming tasks if they are allowed to demonstrate the use of an object prior to naming it. Alzheimer

With cueing, the AD patients were able to increase their performance fivefold over baseline.

patients at the mild, moderate, and severe levels of the illness and healthy elderly controls were tested on free and cued recall of subject-performed tasks (SPTs), such as "lift the cup; put on the glove," etc. and on verbally presented sentences containing the same information.

All groups, including all levels of

AD patients, performed better on the SPTs than on the verbal task. Cueing effects were greater on the SPT task than on the verbal task. The mildly demented AD patients (Mini-Mental State scores above 20) did only about 15 percent as well as the normal elderly on free recall and 27 percent as well on cued recall of the verbally presented material; however, on cued recall (semantic categories presented on cards and read aloud), the mildly demented achieved 25 percent of their normal counterparts scores on free recall and about 50 percent on cued recall.

Several of the least impaired AD patients did nearly as well as normals on cued recall tasks in an experiment conducted by Cushman, Como, Booth, and Caine,²⁷ though the other AD patients did not; none of the AD patients approached normals' level of performance on free recall. With cueing, the AD patients were able to increase their performance fivefold over baseline. They demonstrated better performance on recognition than on recall tasks and recalled related word lists better than unrelated ones. This study contradicted a smaller one by Buschke²⁷ which found similar performance by AD patients and normals on a cued recall task identical to the one in the study by Cushman's group.

GAP did acknowledge, however, that such training and stimulation may have a positive effect on mood, sense of mastery, and quality of life.

Discouraging studies

A recent book on the psychiatric treatment of Alzheimer's disease by the Group for the Advancement of

Psychiatry⁴ cited three studies to support their conclusion that cognitive training and stimulation does not improve memory and thinking skills in AD patients.⁷⁻⁹ GAP did acknowledge, however, that such training and stimulation may have a positive effect on mood, sense of mastery, and quality of life.

Five other studies with discouraging outcomes were found in the literature published since 1980.

Yesavage¹⁵ provided memory training to 300 outpatient elderly subjects ranging from normal to moderately demented in cognitive abilities. Training consisted of relaxation and concentration exercises and mnemonic strategies, such as imagery, categorization,

Most patients appreciate having their memory problem attended to and are willing to work hard on it.

and the use of loci to remember a list of items. Goal was to correlate improvement on measures of dementia and memory loss with scores on the Folstein Mini-Mental State.

Results indicated that persons scoring over 25 (generally regarded as normal) did quite well and persons scoring under 18 (moderately demented) did not benefit at all. Persons scoring in the mild range of 18-24 showed some improvement on test scores, but minimal improvement in practical functioning.

Zarit and associates¹⁶ used visual imagery in an attempt to improve memory functioning in community dwelling elderly dementia patients. On two out of four recall tasks, subjects did worse at post-test than on pre-test. Slight, but non-significant improvements occurred on the two other recall tests. According to caregivers, none of

the modest improvements had any impact on functioning at home.

Concentrate on teaching or reviewing information that is personally significant to the patient.

Individual cognitive skills remediation training was undertaken with 10 mild to moderately impaired (Mini-Mental State scores of 15-20) institutionalized dementia patients.²⁸ A matched control group received no training. Training took place three times a week for six weeks and focused on attention and reading, concentrating on detail, and remembering. Results showed no overall difference between the experimental and control subjects on the cognitive skills pre-test and post-test used.

In contrast to the experimental results of Karlsson and his colleagues in Sweden described above,¹⁴ researchers at the University of California/Irvine²⁹ found that Alzheimer patients did no better recalling tasks which they performed (SPTs) than they did verbal descriptions of tasks provided by the experimenter. Young and non-impaired elderly subjects showed significantly higher recall of the SPTs.

Cognitive training of amnesics

Two comprehensive published works on cognitive rehabilitation of the head injured and neurologically impaired were reviewed for applicability to the treatment of early AD patients.^{17,19}

Sohlberg and Mateer¹⁷ describe two treatment methods that seem particularly appropriate for use with early stage AD patients:

- Systematically teaching the

use of memory notebooks, and

- Teaching prospective memory skills — remembering to do things in the future.

Daily or frequent practice may slow down mental decline.

The first step in teaching the use of the memory notebook is repeated administration of questions and answers about the notebook's purpose and contents. The second step is role playing of situations necessitating notebook use. Finally, notebook use in real situations is assigned and monitored. Prospective memory skills are taught by teaching subjects to perform tasks, such as making a phone call, at gradually increasing intervals.

Four globally amnesic patients were improved in functioning sufficiently via the above-described methods that they were able to live independently and hold jobs.

Wilson and Moffat¹⁹ have written extensively about their individual and group memory training work with brain-injured individuals. They concede that the very mildly demented might benefit from traditional memory therapy techniques and recommend 24 hour or classroom reality orientation for the confused elderly in inpatient settings. For further information on reality orientation with the elderly, see Hanley and Hodge, 1984.⁴⁰

Schacter, Rich, and Stamp, ¹⁸ in their work with four amnesic patients, demonstrated that memory-impaired persons could be taught to retrieve information at increasingly longer temporal intervals after exposure to the material. I accidentally discovered that the spaced retrieval technique worked with an early AD patient (my mother)

while I was on a plane trip with her. She had repeatedly asked me where she had gotten the bracelet she was wearing. Finally, after the fourth inquiry, I gave her the answer and, rather impatiently, asked, "Do you think you can remember that for 30 seconds?" I asked where she'd gotten the bracelet 30 seconds later, then a minute later, then five minutes later, and kept it up — ever increasing the time intervals and with lunch and other distractions in between till the five hour trip was over. About half way through the trip, she asked who was meeting us at the airport. I gave her the answer and started the procedure all over again with the second bit of information. She recalled both pieces of information consistently by the end of the trip and remembered who had met the plane the next day, when I asked her the question over the telephone. She did not know what I was referring to when I asked about the bracelet the next day, probably since she was no longer wearing it.

Memory training: Two personal unpublished reports

In November 1989, I took my mother to the University of California in Irvine to participate in the memory training class (MEGA) I'd heard about on television. I arranged to do a clinical psychology practicum in Alzheimer treatment under the program's director, Dr. Curt Sandman.

The MEGA program consists of four two-hour training sessions at weekly intervals. Each training class is composed of two to four couples, each couple consisting of a memory-impaired early AD patient and a spouse or partner with normal memory.

The MEGA program presents four major learning activities:

- Learning the names of and basic facts about students and instructors in the class through class drills, home study of photographs and class notes,

and weekly quizzes on the material;

- Home viewing of a mutually agreed upon television show, preparation of quiz questions about the program, and taking of a quiz about it;
- Planning and carrying out a "significant event" day, defined as an activity or outing that is out of the ordinary for the couple, and then taking a quiz about the day; and
- In-class viewing of emotionally-laden excerpts from the film, *On Golden Pond*, and then taking a quiz about it.

Sandman's approach is based on his belief that a lot of hard work can compensate for some of the memory problems early AD patients experience and that they (and their normal memory partners) will remember novel experiences more vividly than routine events.

Sandman's preliminary findings were that, with a great deal of effort, some AD patients could, in fact, approximate the level of recall achieved by their normal partners without effort.

Unusual experiences may be remembered better than routine ones.

My mother was not able to do this. Despite enthusiastic participation during the class sessions and many hours spent on homework, she could not remember that the class existed between sessions or remember people or events that were the subject of class and homework assignments.

However, one of my practicum experiences with an early AD patient who had been successful in the MEGA

program led to my discovery of an intervention that did work with my mother. The idea for this intervention was discovered quite by chance.

Dr. Sandman asked me to observe a particular patient, a 58-year old man, and his wife during a "significant event" day and then, later, to quiz the patient on his recall of the day's events. It had been agreed that I would videotape the patient during the quiz.

As the quiz proceeded, it was obvious he was having a terrible time recalling details of the day. After about the third incorrectly answered question, I came upon the idea of supplying him the correct answer for each unknown question and leaving the videotape with the correct answers for him to review over the week. The result was most encouraging. On the original quiz, the subject answered eight out of 19 questions correctly, most of them with prompting. On a re-take of the quiz, after four viewings of the videotape, the subject answered all 19 questions correctly, with only one prompt.

***Involvement of
motor activity
sometimes facilitates
learning in some
AD patients.***

I later adapted the question and answer format that had worked with this subject to my mother's situation—a need to prepare for my forthcoming move out of town and for her forthcoming move to a retirement building. Since she did not own a VCR, I decided to use an audio cassette recorder instead. In her case, I prepared brief informational narratives followed by pertinent questions; each question was followed by a pause for her to answer, if able, and then the correct answer was supplied.

My mother learned the material on two subject matter tapes to near 100 percent accuracy after six to eight practice sessions. The material on the tapes greatly facilitated her adjustment to our change in residence and was observed being used by her in social conversation many months after the training took place. Two single subject replications of the above-described methodology became the subject of my doctoral dissertation (in progress) and had highly significant results.

**Treatment implications and
recommendations**

None of the studies cited in the above literature review on memory training and research with early Alzheimer patients demonstrated significant global cognitive improvement as a result of training. However, the San Diego study¹³ suggested that cognitive stimulation could temporarily halt or slow down the inevitable cognitive decline that is associated with Alzheimer's disease and, when family members are involved in providing the stimulation, patient and caregiver mood and relationship tends to improve.

The McEvoy and Patterson study²⁰ as well as Sandman's and my experience indicated that limited amounts of specific and personally significant information could be taught, using a variety of face-to-face drills and audio or video-assisted quizzing methods.

The type of training and stimulation described by the San Diego study need not be done by a family member or by expensive professional therapists. I have trained two college students to coach my mother, using audio and video materials I developed, and to play word fluency games with her. The audio tape contains important personal and family information and remains constant; on the flip side is more current information that I keep updated, e.g., recent and upcoming vacations,

deaths, weddings, etc. Each brief factual narrative is followed by a quiz, with each question stated twice and the correct answer given after a pause. As previously stressed, it is the question and answer portion of the tape that seems to have therapeutic value.

***Figuring out the
reason for or goal
of a person's
troublesome behavior
is an important
first step in
correcting it.***

The primary videotape contains a series of thirty second segments of 25 important people in my mother's life; the student asks her to name each person as his or her image is on the screen. The student shows her other videotapes of her participation in family events, vacations, etc., to jog her memory, stimulate conversation, and to maintain her self-confidence. (Many of the videotapes show her doing skillful and active things, such as singing, dancing, playing the piano, and swimming.) My mother has shown no significant decline in social skills or self care or on formal neuropsychological and language testing in three years, though her memory deficit was and continues to be severe.

Despite the disappointing lack of conclusively positive outcomes in most of the studies reviewed, a number of observations and recommendations were derived from them and other sources that could be of use to family and institutional caregivers of AD patients willing to experiment with mental stimulation activities. These are summarized below:

- Alzheimer's disease and individual patients vary considerably. Some respond to

memory training under supportive conditions. Anything might work. Experimentation may be fruitful.

- Most patients appreciate having their memory problem attended to and are willing to work hard on it. The effort is therapeutic and gives hope and sense of purpose to patient and coach/caregiver.
- Concentrate on teaching or reviewing information that is personally significant to the patient.
- Coaching sessions can be done by high school or college students, neighbors, friends, relatives.
- Daily or frequent practice may slow down mental decline.
- Unusual experiences may be remembered better than routine ones.
- Audio and videotapes of familiar people and family events are a tremendous assist. They have reassurance or comfort value even when training effect is no longer evident.
- Involvement of motor activity sometimes facilitates learning in some AD patients.
- AD patients do better on recognition tasks than on tasks involving free recall. Multiple choice and sentence completion quizzes on past events, public figures, commercials, slogans, and the like are very useful. See Brennan³⁰ for a collection of multiple choice reminiscence exercises.
- Many early AD patients experience verbal fluency problems in addition to

memory loss. Word fluency games, such as naming words beginning with a given letter; naming objects in different categories; Scrabble; Hangman; structured or guided conversation; and information reinforced by systematic question and answer sessions assist learning. For an excellent collection of word fluency exercises and games see Stofregen.³² For a collection of theme-based sensory-mental stimulation programs for groups, see Ashworth.³³

*Learning occurs
more easily if the
learning environment
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over time.*

- Figuring out the reason for or goal of a person's troublesome behavior is an important first step in correcting it.^{34,35}
- Teaching or reteaching tasks can be more easily accomplished by breaking tasks down into individual components and teaching them systematically.
- Learning occurs more easily if the learning environment is consistent over time. This suggests it is better for memory training to take place in the subject's home than at a therapist's office.
- AD patients can learn personally significant information (past and prospective) with frequent and consistent questioning and prompting. Most such learning takes place within the first four weeks of training. This prompting can

be done in person or with the aid of audio or video tapes. Only very motivated and high functioning subjects can be expected to work with tapes on their own. Anecdotal experience suggests that caregivers may not have the motivation to develop audio and video materials for their patients. Alzheimer expert Dr. Marshall Folstein reported that he explained the intervention to several caregivers, but that none followed through (personal conversation, June 20, 1991). It may be that the help of a therapist is required to get the ball rolling. I have found that I can get my mother to use the cassette recorder by means of step-by-step instructions by telephone, although she doesn't remember what a cassette recorder is between sessions.

- Recall can be improved in some early AD patients by the use of hints or cues.
- AD patients at mild, moderate, and severe stages of impairment can be retaught basic self-care skills using behavioral methods.
- Memory-impaired persons vary from time to time on what they know or remember, so multiple assessments are important.
- AD patients might make better use of external memory aids if they were systematically taught how to use them.
- For maximum impact on activities of daily living, memory training for AD patients should emphasize prospective memory skills, that is, remembering to do things in the future.

- Quizzing persons on to-be-learned information is more effective than equivalent time spent in re-presenting the information.
- Look for ideas in the literature of many disciplines, i.e. special education, nursing, motivational training, etc.
- Speech therapy can improve and prolong communications skills of some AD patients.³⁶

Memory-impaired persons vary from time to time on what they know or remember, so multiple assessments are important.

Conclusions and recommendations

There is something important that I learned from my search for memory training ideas. That is that one must be "ecumenical," or simply stated, not limited to one field. If I had maintained a narrow viewpoint to the literature of clinical psychology which is my discipline, I would have missed important and relevant work from the fields of nursing, neurology, education, neuropsychology, psychiatry, and the lay literature of the Alzheimer field.

From a tireless and resourceful caregiver,³⁶ I learned about the importance of providing speech therapy to Alzheimer patients in order to prolong their ability to communicate.

From studying the research and treatment literature on memory work with Alzheimer patients, I concluded that one possible explanation for the dismal results that are so often reported is the irrelevance of the material being taught or that is the subject of testing. What possible motivation could there

be for a memory impaired person to work hard at learning lists of words, number strings, or names and faces of strange people? It's about as much fun as reading the phone book. Also, it seems that the practice of evaluating the effectiveness of a particular cognitive intervention by comparing pre- and post-training performance on tests of general cognitive ability is beside the point. I believe that early Alzheimer patients should be treated as learning disabled persons or rehabilitation clients and tested on the materials they have been taught. If they are taught practical personally significant information and they learn some of it, the transfer effect will be readily apparent to family members. In my mind, it is not important if they remember more or fewer facts on a Wechsler Memory Test story or an IQ test.

From observing memory testing at two leading memory disorders clinics, I came to see the treatment and research potential of some of the evaluation materials used to periodically assess dementia patients. Difficulty in naming common objects when visually confronted with them is a common Alzheimer symptom. The standardized set of pictures used to test this ability, the Boston Naming Test, could be used by caregivers and researchers to test and compare the efficacy of various teaching methods, drawn from the field of special education, in improving performance on this task. The set of photos of famous people from past decades, used to test visual recognition and long term memory, developed by Dr. Marilyn Albert at Massachusetts General Hospital, could be used similarly. Single subject research is accepted practice with the neurologically impaired.³⁷⁻³⁹ Alzheimer patients are notorious for being unpredictable as to symptom presentation and disease course. The considerable individual differences among them are lost in group studies. Single subject research

is especially suitable for this population and is a good method for tracking cognitive performance.

The Boston University Memory Disorders Clinic, which put my mother through a comprehensive series of proven and experimental memory evaluation tests and exercises, uses an interactive computer program to test Alzheimer and other amnesic patients' ability to learn touch typewriting. Since my mother had once been an accomplished typist, it was not clear that the programmed instruction was responsible for her success on this task. What was noteworthy was the fact that she became increasingly better at following written instructions (e.g., "Type the letter 'p'"), a skill area in which she had become deficient. If she could be retaught to promptly follow written instructions, techniques such as attaching a "sticky back" instructional note to a pre-set alarm clock, might help prolong her independence. The potential for early AD patients to recover some lost knowledge and skills through appropriate computer programs seems enormous.

Recall can be improved in some early AD patients by the use of hints or cues.

In this article, I have attempted to encourage readers to not "give up" on the Alzheimer patients in their lives. I have also given examples of cognitive strategies and interventions that have worked in some cases and might work in others. Most Americans, including many early Alzheimer patients, will readily complete the phrase, "If at first you don't succeed" with a resounding "try, try, again." This slogan can motivate both patients and caregivers as long as they are realistic in their

expectations about results and accept this version of another popular American slogan: "Practice makes imperfect!" □

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