

Monograph Summary: Alzheimer's Disease and Exercise

This article is a summary of the "Alzheimer's Disease and Exercise" monograph prepared for the National Center on Physical Activity and Disability. For the complete monograph see The National Center on Physical Activity and Disability Web site at www.ncpad.org.

Alzheimer's Disease: Prevalence and Symptoms

Alzheimer's Disease is a progressive brain disorder that disproportionately affects older adults, though it has been known to afflict persons in their 30s and 40s. About 10 percent of persons over 65, 20 percent of persons between 75 and 84, and 47 percent of persons over 85 are believed to have it. According to the Alzheimer's Association, about four million Americans have Alzheimer's, with the numbers expected to rise dramatically as the baby boomer generation reaches older adulthood.

Persons with Alzheimer's Disease have many of the same health problems and emotional needs as everybody else and derive the same benefits as their mentally intact peers from a regular exercise program. Plus, they can derive a benefit that is unique to their situation: the ability to gain skill and show regular improvement in physical fitness at a time when they are losing skills in every other arena of life. Such a tangible gain can be a tremendous source of pride, both for the person with Alzheimer's and for their caregivers.

What are the challenges to engaging people with Alzheimer's in physical activity programs?

- Even during the very early stage of Alzheimer's Disease, people with Alzheimer's Disease have difficulty initiating and maintaining a new behavior or routine on their own.
- Most of them no longer drive independently, making it difficult to get to a gym or health club.
- Caregivers are also often in poor health and not able to motivate and help an Alzheimer's patient maintain a physical activity program.
- It's difficult for most early stage patients to keep track of the date and of appointments.
- Many Alzheimer's patients get lost or disoriented when away from home.
- The ability to read is preserved, but the rapid forgetting that occurs makes the activity generally unsatisfying.
- Most can carry on a coherent one-to-one conversation, but will get lost in a complex discussion, particularly if several people are involved.

The net result of this constellation of symptoms is a loss of confidence and a withdrawal from former activities and relationships. Persons at this early stage will most certainly benefit from an exercise program from the standpoint of enhancing social stimulation, particularly if provided one-on-one or in a small supportive group setting.

Persons in the moderate stage of Alzheimer's Disease will experience a worsening of the above-mentioned symptoms. In addition, they may no longer be able to comprehend or respond appropriately to conversation directed at them. They may no longer consistently identify their spouse or children, though they will recognize them as someone close to and loved by them. Confusing spouses with long-deceased parents, or children with siblings is very common. They may become suspicious, accusing a son or daughter-in-law, or long-trusted household worker of stealing their belongings or their spouse of being unfaithful. Frustration engendered by their failing abilities may trigger outbreaks of aggressive behavior. Wandering and sleep disturbances may occur and ability to dress, bathe, shampoo, and brush teeth independently may be lost. There may be occasional incontinence, made more difficult to manage by patient resistance to wearing absorbent products.

Many persons with moderate and moderate-to-severe symptoms remain at home with help from hired part-time caregivers and the use of adult daycare centers. Patients at this level are excellent candidates for an exercise program. If your care recipient attends a daycare center, insist that he/she include regular exercise in their daily programming. If you have hired help in the home, require them to take the person for brisk walks and engage them in regular exercise.

Persons in the severe stage of dementia are unable to communicate or recognize family members, may have difficulty swallowing, are incontinent and incapable of any self-care activities, and may be bedridden much of the time. They typically do respond to music, touch, a doll or stuffed animal, the affection of a dog or cat. Any movement they can be encouraged to make will be beneficial to their cardio respiratory systems and reduce the likelihood of pressure sores and other infections.

Where to begin?

- Convincing people of the benefits of exercise is an essential first step. Many persons with early stage Alzheimer's are worried about becoming a burden to their families. Explaining that exercise can help keep them healthy and make care giving easier on their loved ones can be a strong selling point.
- Obtain a thorough physical exam by a physician, preferably one that believes in the health benefits of exercise. Such an exam may reveal cardiac, musculoskeletal, or other problems that may impose restrictions on the type and intensity of exercise to be undertaken. If this is the case, request a referral to a physical therapist or cardiac-rehab specialist to work out a beginning regimen that is suitable for the individual.
- Ask the person's physician to reinforce his or her exercise recommendation by writing out a prescription that can be shown to the individual periodically. Such an instruction carries more weight than suggestions from a caregiver.

The key to motivating people to persevere in any program of lifestyle change is social support. Exercise programs for persons with disabilities that are successful are all

characterized by the presence of exercise "buddies" or program monitors that provide ongoing supervision and encouragement.

Family and close friends of a person with dementia can be the catalyst for making an exercise regimen part of the patient's. Instead of (or tacked onto) a weekly meal together or a trip to church or the mall, trips to a fitness center can be planned. If this is not possible, a local high school or college student might be asked to help out (either as a volunteer or as a hired assistant). Exercising should be made a social activity.

A balanced exercise program for persons with Alzheimer's Disease, as for any population, should include activities that improve flexibility, balance, cardiovascular endurance (aerobic activity), and strength (weight training).

For people with Alzheimer's Disease in otherwise good health, a session might start with a 5-minute walk or a series of stretches, followed by 20 minutes of an aerobic activity, 20-30 minutes of weight training, and ending with 5-10 minutes of stretching.

An excellent resource for persons who wish to start their care recipient (or themselves) on an exercise program at home is *Exercise: A Guide from the National Institute on Aging*. This is a comprehensive illustrated manual by a panel of experts with an accompanying video that demonstrates a one-hour workout that includes all four types of exercise cited above. The manual includes charts for recording participants' progress, as well as an order form for a free certificate of achievement for persons who follow the program for more than one month. The manual and video are available from the National Institute on Aging Public Information Office. To order, call 1-800-222-2225.

Set short-term achievable goals, such as a one minute increase in time on the treadmill and/or bike every two weeks until 30 minutes is reached, or steady increases in RPMs, miles per hour, pounds lifted, or repetitions are achieved. Reward progress along the way - with stars on a chart, a special T-shirt or badge, or a treat such as a frozen yogurt. Avoid promises of long-term results, like weight loss, that may not show evidence of progress for a long time.

Some activity options:

- The easiest, safest, and most readily available physical activity for a person with Alzheimer's Disease is **walking**. It channels a tendency for restlessness and wandering that is characteristic of the disease into a beneficial activity. If possible, combine it with a purposeful activity, such as walking a dog, pushing a person in a wheelchair, walking to the store to buy a newspaper or groceries, or picking up trash in the neighborhood. Many shopping malls have organized "mall walking" programs that offer structure, incentives, T-shirts, and social opportunities, as well as a safe, climate-controlled, stimulating, and traffic-free environment. Such programs are a perfect activity for an accompanied person with dementia.

Friends and neighbors who know about the Alzheimer's diagnosis may be sympathetic and willing to help out, but may not know what to do. Ask several of them to take a

regular turn as a walking partner. Both will benefit. Make sure the person with Alzheimer's Disease is wearing a Medic Alert (<http://www.medicalert.org/>; 1-800-432-5378) or Safe Return (<http://www.alz.org/>, 1-800-272-3900) ID bracelet or medallion or has other identifying information on his or her person, in case he or she gets lost when out walking alone or gets separated from a walking partner. (Many persons with Alzheimer's Disease can take unaccompanied walks in their immediate neighborhood in the early to early moderate stages of the disease; however, it is wise to notify neighbors along the route and the nearest police and fire station of the person's diagnosis).

- Many communities have **hiking** clubs that sponsor guided walks at various levels of difficulty. Universities have hiking and service clubs whose members may be willing to take a person with Alzheimer's on an individual or group outing.
- A modern day **surrey** is a four-wheeled canopied vehicle powered by two or more people pedaling side by side. Steering and braking are in the control of one pedaler, though both have a wheel to hold onto. These vehicles are often available for rent at beach resort towns. However, large bicycle shops may have them for sale or rent.
- Persons long accustomed to **riding a bicycle** can continue to do that activity, though it might be safer for him or her to ride on a tandem bike with a partner in front. If balance is a problem, adult tricycles are a stable option that can be enjoyed with a companion on bike trails or quiet streets.
- For couples that already know how to **dance**, this is an enjoyable activity that can be continued. Many senior centers hold afternoon or early evening dance parties geared to the music tastes and abilities of older persons. For couples or individuals that don't know how to dance, certain kinds of dancing (i.e., folk dancing and square dancing) can be enjoyed by a person with dementia, as long as his or her companion can follow the instructions and lead the partner.
- **Rowing** side by side and pedaling a two-person pedal boat are enjoyable activities for persons with access to such facilities.
- Persons with dementia who formerly enjoyed **gardening** will continue to do so, though they may need supervision to stay on task. Raking leaves is an ideal activity for persons who live in a temperate climate. Using a non-motorized lawnmower is also a good physical activity.
- **Household tasks** such as sweeping, mopping, running a carpet sweeper or vacuum cleaner, washing windows, making beds, folding laundry are all over learned tasks that can be continued with proper supervision.
- **Volunteer activities** can have multiple benefits. They provide physical activity with a social purpose, which results in improvements in mood and self esteem for participants. An added bonus is that the community, often depicting negative images associated with Alzheimer's disease, has an opportunity to see people with this disorder making useful

social contributions. Volunteer activities could include packing food boxes at a local food bank, bringing pets to a nursing home, taking nursing home residents for walks in their wheelchairs, walking dogs at the Humane Society, picking up trash in public places, and reading to and playing with children at a child daycare center.

A "Tried and True" Fitness Protocol for Persons with Alzheimer's Disease

Each workout should consist of stretching and balance exercises, 20-30 minutes of aerobics (usually achieved by the end of one semester of participation) and 20-30 minutes of upper and lower body strength training. (Examples of all the activities administered are available in the monograph at www.ncpad.org.) The protocol described on the NCPAD Web site has been successfully used with persons with Alzheimer's Disease for four years at the University of Arizona Medical Center's cardio-rehab/employee wellness center.

General precautions and procedures

- As with any exercise program, general precautions of safety procedures must be installed before starting the program. During the first session, record the participant's weight and resting pulse. Begin all sessions with a resting pulse below 100, the upper limit for a normal resting pulse. (If your partner's resting pulse is consistently more than 100, check with his or her doctor to determine at what level it is best to begin exercising.)
- Observe your partner's gait. If you notice any signs of instability, be extra vigilant when he or she is moving about.
- Use the "talk test." As a rule of thumb, make sure your partner can talk to you comfortably during any exercise. As long as conversation is possible, the danger of over-exertion or fatigue is minimal.
- If using machines, establish and record seat adjustments and starting weight levels during the first two orientation visits.
- Have subjects drink water at regular intervals and rest between sets and activities. Make sure that there is a restroom close by since participants who drink extra fluids may require more frequent trips to the restroom.