

## Physical Exercise for Brain Health

Physical exercise is very important to maintain brain health and function. After checking with the physician to make sure that it is safe to exercise, you should work up slowly starting an exercise routine for 5 minutes at a time for a few days. Then add one or two minutes of the exercise for a few days. Slowly increase the exercise time up to 30 to 40 minutes at a time for 5 days a week. Though exercise for 5 days a week is best, even 2 or 3 days of physical exercise benefits the brain. In someone with Alzheimer's disease, such routine physical exercise may slow down the rate of decline.

### What kind of exercise could help your brain health?

Scientific research has shown that the following types of exercise help memory, attention, language skills, and other thinking functions:

- 1) **Walking**: enough walking to work up a mild sweat; walk outdoors or in a shopping mall or on a treadmill with safety bars to hold onto.
- 2) **Bicycling**: on a bike or tricycle; outdoors or on an indoor stationary bike with safety sidebars and large enough control buttons to see easily and press readily to start, slow down or stop.
- 3) **Resistance training** to improve muscle strength: using push-pull exercise machines in a gym; wide rubber stretch-bands (Sometimes called resistance bands, they range from easy-highly stretchable to a firm or heavy-duty stretchable.); or lifting small free weights.

### Changes in Brain Chemistry

Regular physical exercise promotes the release of a brain chemical, called BDNF (brain-derived neurotrophic factor). In simple words, BDNF fertilizes or nurtures the brain cells.

### Research on Exercise Shows Benefits

A careful review of 10 research studies found evidence that exercise improves walking and slows the decline in ADLs (personal care activities of daily living such as eating, bathing, dressing, etc.) of people with advanced Alzheimer's disease and who live in residential care facilities, such as assisted living facilities.

Researchers have concluded that routine physical exercise makes a significant difference in brain health, brain function, and in general health. For example, changes occur to:

- ◆ improve muscle and bone strength,
- ◆ reduce (high) blood pressure,
- ◆ strengthen the heart,
- ◆ make insulin function more effectively,

- ◆ help the digestion system,
- ◆ reduce caregiver stress.

One research project on the effect of walking measured the hippocampus, the brain area responsible for storing details making up memories. In the older people who walked for 30 minutes at a time for 5 days a week over many months, there was a 2% increase in their hippocampus brain area. Meanwhile the comparison group which only did stretching and toning exercises for several months had a 1.5% decrease in that area of the brain.

## **Conclusion**

Exercise should be pleasant, fun and energizing at the beginning of the day in preparation for the day's schedule. At the end of the day, physical exercise should be relaxing in preparation for sleep.

Exercising by yourself may be a time to think through issues or relax the mind. Done with a family member or friend, physical exercise can mix with brain exercise such as a conversation about the current news or fun brain exercises such as taking turns to come up with names of plants, states or cars or going through the alphabet and for each letter, taking turns saying a name of boys or girls.

It is never too late to start being active and gaining the brain benefits from physical exercise! The person with Alzheimer's disease or other type of progressive dementia as well as the caregiver will be healthier and have more resilience to deal with the ongoing challenges of decline.

*References available upon request.*

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