



# Journey through Health: Brain

## EXTENSION

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## Age-Related Brain Changes

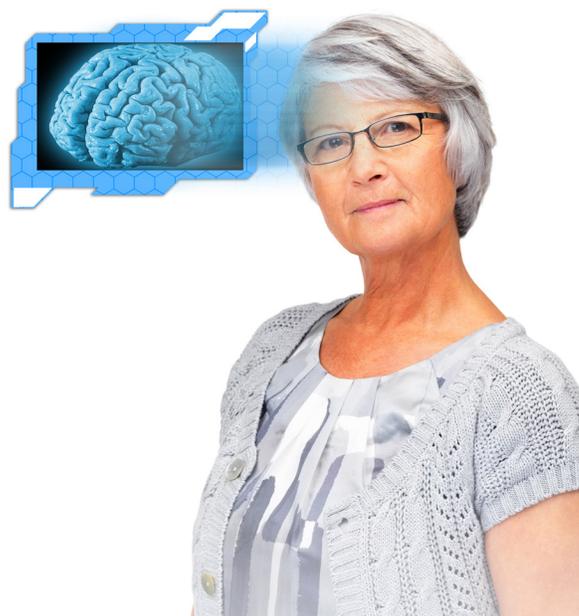
Many changes related to the brain often occur with aging. Common brain conditions where diet and physical activity may have a role include depression, cognitive decline, dementia and stroke.

## Diet, Physical Activity and Brain Health

**Depression.** Depression is not a normal consequence of aging; however, depression is a common problem with aging. Depression is often overlooked among older adults because some of the signs of depression such as tiredness, irritability, confusion, or attention problems are viewed as aspects of aging.

Depression often results from loneliness associated with the loss of family, friends and a sense of purpose. Health and financial problems can also contribute to depression. Furthermore, many medications used by older adults can have a depressive effect.

Diet and depression are interrelated. Depression can be caused by many nutrient deficiencies including thiamin, niacin, folate



and zinc. In addition, depression can lead to a decreased interest in preparing and eating food which can result in a poor diet. This can begin a downward spiral because a poor diet can further decrease energy to prepare and eat food.

Eating a healthful diet can provide all the nutrients needed for health and well-being. Social interaction and regular physical activity can also provide emotional benefits. Furthermore, eating a healthful diet and being physically active can help prevent illness and mobility problems which can contribute to depression.

**Cognitive Function.** Although not a natural consequence of aging, cognitive function may decline with age. It is important to note that most changes in cognitive function related to age are mild. In fact, memory loss is often due to depression rather than cognitive decline.

Nerve cells in the brain depend on many nutrients to function properly. Confusion and memory loss may be due, in part, to nutrient deficiencies including vitamin B12, folate, vitamin B6, thiamin, niacin, riboflavin, vitamin C, vitamin E and iron. Dehydration can also result in confusion.

Vitamin B12 is already a nutrient of concern with aging. Many adults, 50 years of age and older, develop atrophic gastritis which can result in a decreased ability to absorb naturally occurring vitamin B12. Over time, this can lead to a deficiency of vitamin B12. Vitamin B12 deficiency can impair cognitive function which can cause loss of ability to concentrate, loss of memory and confusion.

Eating a healthful diet providing all the nutrients needed is important for helping to maintain cognitive function. Due to the decreased ability to absorb naturally occurring vitamin B12 with age, adults 50 years of age and older are encouraged to include foods fortified with vitamin B12, such as fortified cereals, or take a dietary supplement containing vitamin B12. In addition, both physical and mental activities that simulate the body and mind can also help to maintain cognitive function.

**Dementia.** In some cases, cognitive loss is extensive. More serious declines in cognitive function and memory are grouped under the term dementia.

**Alzheimer's disease.** Alzheimer's disease tends to have a genetic component. However, oxidative damage and high homocysteine levels may have a role in the development of Alzheimer's disease. Antioxidant nutrients can reduce oxidative damage. Fruits, vegetables, whole grains and lean protein foods are good sources of many antioxidant nutrients. Folate, vitamin B6 and vitamin B12 can lower homocysteine. Fruits, vegetables, beans, peas, lentils and fortified cereals are good sources of folate and vitamin B6. Lean protein foods are a good source of vitamin B6 and vitamin B12. The role of many nutrients highlights the importance of a healthful diet including fruits, vegetables, low-fat dairy, whole grains and lean protein foods.

**Vascular dementia.** Vascular dementia is caused by atherosclerosis or micro-bleeds in the small blood vessels of the brain. Preventing or controlling atherosclerosis can help lower the risk of vascular dementia.

**Stroke.** Stroke is caused when a large blood vessel in the brain is blocked or bleeds. Stroke is usually due to other problems such as high blood pressure, atherosclerosis and diabetes. Preventing or controlling high blood pressure, atherosclerosis and diabetes can help lower the risk of stroke.

There are many actions which can lower the risk of high blood pressure, atherosclerosis and diabetes.

- Prevent high blood pressure or keep blood pressure under control.
- Prevent diabetes or keep diabetes under control.
- Maintain a healthy weight.

- Be physically active each day.
- Abstain from smoking.
- Choose foods with less saturated fat and trans fat. When consuming fats choose more unsaturated fats and oils.
- Choose foods with less added sugar.
- Choose and prepare foods with less added salt and sodium.
- Use alcohol in moderation.
- Consume enough fruits, vegetables, whole grains, beans, peas, lentils, seafood and low-fat milk.

## **MyPlate Messages Promoting Brain Health**

Several of the MyPlate messages can help promote brain health.

### **Build a Healthy Plate**

- Make half your plate fruits and vegetables.
- Switch to skim or 1% milk.
- Make at least half your grains whole.
- Vary your protein choices.
  - Twice a week, make seafood the protein on your plate.
  - Eat beans, peas and lentils, which are a natural source of fiber and protein.
- Adults 50 years of age and older are encouraged to include foods fortified with vitamin B12 or take a dietary supplement containing vitamin B12.
- Drink ample fluid each day.

## **Cut Back on Foods High in Saturated Fats, Added Sugars and Salt**

- Choose foods and drinks with little or no added sugars.
- Look out for salt (sodium) in foods you buy.
- Eat fewer foods that are high in saturated fats.
  - Make major sources of saturated fats occasional choices, not everyday foods.
  - Select lean cuts of meats or poultry and fat-free or low-fat milk, yogurt and cheese.
  - Switch from saturated fats to unsaturated oils when preparing food.

## **Eat the Right Amount of Calories for You**

- Enjoy your food, but eat less.
- Cook more often at home, where you are in control of what is in your food.
- When eating out, choose lower calorie menu options.
- If you drink alcoholic beverages, do so sensibly.

## **Be Physically Active Your Way**

- At least 150 to 300 minutes of moderate-intensity physical activity a week, or 75 to 150 minutes of vigorous-intensity physical activity, or an equivalent combination of moderate and vigorous-intensity physical activity.
  - If you cannot meet this guideline, be as physically active as your abilities and conditions will allow.

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