Healthy Body, Healthy Brain

K-STATE Research and Extension
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FACT SHEET *2023 Annual Lesson Series*

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What you eat, how much you move, how well you sleep, and how you manage stress affects nearly every aspect of your well-being, including physical (body) and mental (brain) health. Research also shows a connection between heart and brain health. By keeping your heart healthy, you also lower your risk for stroke, dementia, and other brain problems.

Age-related cognitive decline is common. Alzheimer's disease is one of the top 10 leading causes of death in the United States and the fifth leading cause of death among adults aged 65 or older. While death rates for heart disease and cancer are declining, the death rate for Alzheimer's disease is increasing. It is a growing public health crisis in Kansas, with more than 55,000 people living with this disease. Other forms of dementia and cognitive decline are also increasing. In Kansas, 11.4% of people aged 45 and older have subjective cognitive decline (SCD) and 86,000 family caregivers bear the burden of these diseases. Other health issues come into play as 81% of those with SCD have at least one other chronic condition. Dementia, which is a general term for the impaired ability to remember, think, or make decisions, affects older adults predominantly, but it is not considered a part of normal aging.

In addition to dementia, SCD, and Alzheimer's disease, poor mental health can increase your risk for many health conditions including diabetes, heart disease, and stroke. Your mental health can change over time and be influenced by many factors. When demands placed on you exceed your resources and coping skills, your mental health could suffer. Having poor mental health does not mean that you have a mental illness, but poor mental health can lead to mental illness.

Here are some ways to protect the health of your body and your brain.

The brain/gut connection

It's been said, "you are what you eat" and now scientific evidence suggests diet plays a bigger role in brain health than previously suspected. There is strong evidence that indicates the human gut serves as type of a "second brain" that affects not only digestion but also mood, health, and thoughts.

According to an article from the Johns Hopkins University School of Medicine, the brain in the human gut is called the enteric nervous system, or ENS. It consists of two thin layers of more than 100

million nerve cells lining the gastrointestinal tract from the esophagus to the rectum. Research is discovering a link between the ENS and the human brain in which the two routinely communicate about changes in the body. The connection between these two systems may help explain the mental-physical relationship. Simply stated, foods that promote gut health not only may be good for you physically; they also may help your mental state, easing such conditions as depression and anxiety.

What are steps you can take to support digestive health and improve gut bacteria? Nine research-based ways have been identified:

Eat a diverse range of foods

Typically, American diets lack diversity and are high in fat and sugar, all of which reduce healthy bacteria in the gut. Dietary diversity and its resulting varied species of gut bacteria provides greater health benefits throughout your lifespan.

Eat a lot of vegetables, fruit, beans, and legumes

Considered "nutrition stars," vegetables, fruit, beans, and legumes provide many nutrients that support a healthy gut. They are also high in fiber, which supports the growth of healthy bacteria.

Eat fermented foods

Fermented foods are produced by bacteria or yeasts that convert sugars to organic acids or alcohol. They are high in beneficial bacteria, lactobacilli.

Examples of fermented foods include yogurt (especially plain, natural, or unsweetened types), kimchi, kefir, sauerkraut, tempeh, and kombucha.

Avoid artificial sweeteners

Studies have shown that artificial sweeteners negatively affect the microbiota and, in turn, work against healthy blood sugar levels.

Eat prebiotic foods

Prebiotic foods promote the growth of beneficial bacteria in the gut. Examples include onions, leeks, asparagus, bananas, oats, barley, and flax seed.

Breastfeed at least six months

Infants who are breastfed develop a healthy microbiota, which may provide protection against some diseases later in life.

Studies show that infants who are formula-fed have an altered microbiota, with fewer healthy bacteria, compared to those who have been breastfed.

Eat whole grains

Whole grains contain fiber and non-digestible carbohydrate substances. Since they are not digested, those substances move into the large intestine and are broken down to promote the growth of beneficial bacteria.

Consider more plant-based foods on your plate

Plant-based foods benefit the gut microbiota most likely due to their fiber content, but research also suggests vegetarians tend to lead healthier lifestyles compared to omnivores.

Eat foods rich in polyphenols

Polyphenols are naturally occurring plant compounds that often have antioxidant properties and are broken down and digested by the gut microbiota.

Good sources of polyphenols include apples, red wine, grape juice, dark chocolate, cocoa, olive oil, green tea, almonds, blueberries, and broccoli.

The MIND eating plan

The MIND (Mediterranean-DASH Intervention for Neurodegenerative Delay) eating plan was developed by Martha Clare Morris, Ph.D., a Rush University nutritional epidemiologist, and her colleagues. The MIND diet is a hybrid of the Mediterranean and DASH (Dietary Approaches to Stop Hypertension) diets. While both diets have been found to reduce the risk of cardiovascular conditions, the MIND diet has been shown to reduce risks of Alzheimer's and dementia. Dr. Morris specifically noted that people who adhere even moderately to the MIND diet had a reduction in their risk of Alzheimer's.

The MIND diet has 15 dietary components, including 10 "brain-healthy food groups" including:

Green leafy vegetables — every day or at least 6 servings per week; serving size is 1 cup cooked, 2 cups raw; examples: kale, spinach, cooked greens

Other vegetables — at least one serving/day; serving size is ½ cup; examples: asparagus, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, eggplant, green beans, mushrooms, onions, okra, snow peas, squash, bell peppers, sweet potatoes, tomatoes

Nuts — every day or at least 5 times per week; serving size is 1 ounce; eat a variety of nuts

Berries — at least 2 times a week; serving size is 1/2 cup; examples: blueberries, strawberries, raspberries and blackberries

Beans — every other day or at least 3 servings per week; serving size is ½ cup; examples: all beans and lentils

Whole grains — 3 servings per day; serving size is 1 ounce, ½ cup cooked, or 1 slice; examples: oatmeal, quinoa, brown rice, whole-wheat pasta, 100% whole-wheat bread

Fish — at least 1 serving per week; serving is 3 to 5 ounces; examples: salmon, sardines, trout, tuna, tilapia, cod, mahi mahi, halibut

Poultry — at least 2 servings per week; examples: white meat/skinless chicken or turkey

Olive oil — use as main oil; 2 servings each day, 1 teaspoon serving size; examples: consider extra virgin olive oil

Wine — no more than 1 serving per day; serving size is 5 ounces (Note: Drinking less is better for health than drinking more. If you don't currently consume alcohol there is no benefit in starting.)

Limit:

Red meats — no more than three servings per week; serving size is 3 to 5 ounces per serving; examples: beef, pork, lamb, ham, hot dogs, sausages, bacon, salami

Butter and stick margarine — less than 1 tablespoon per day

Cheese — Less than 1 ounce per week

Sweets and sweetened beverages — no more than five servings per week; examples: highly processed foods, desserts, candies, ice cream, cookies, cakes, donuts, soda, and others

Fried and fast food — no more than 1 serving/meal per week

"Exercise" your brain

It has been stated, what is good for your heart is good for your brain, meaning your actions are either benefiting or harming your body including your brain. The effects of physical activity are far-reaching, affecting mental health and wellness. Some benefits of physical activity include:

- Promotes cardiovascular health.
- Improves blood flow to the brain.
- Reduces inflammation.
- Improves cognitive health — helping you think, learn, problem-solve, and enjoy an emotional balance.
- Lowers levels of stress hormones.
- Improves memory.
- Reduces anxiety or depression.
- Improves quality of sleep.
- Helps you connect with others socially, which contributes to living longer.
- Is effective in managing stress and stressful events.

Physical activity recommendations include at least 150 minutes a week of moderate-intensity activity, such as brisk walking, and at least 2 days a week of muscle strengthening activities for people 18 to 64 years. The same applies to adults ages 65 and older, with the addition of activities to improve balance. For more details see the Physical Activity Guidelines for Americans, 2nd edition, ***health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf***

Manage your stress

Stress can change how your brain functions. It affects your memory, mood, and anxiety, and it also promotes inflammation. This, in turn, affects heart health. Here are ways to protect yourself from the damaging effects of stress.

Focus on what you can control in your situation. Stick to a routine as much as possible, even though stress is often unpredictable.

Take care of yourself. Eat healthfully, get regular exercise (a good stress management tool), get good sleep, limit alcohol to one 5-ounce glass of wine/day (women) or two for men, avoid smoking, and engage in deep breathing exercises, stretching, and/or meditation.

Connect with others and avoid isolation. Confide in people you trust about your situation and how you are feeling. Also, connect with your community and/or faith-based organizations.

Get organized to better manage your situation. If you are feeling stressed by a large task, divide it into small groups of tasks or layers. This can help you feel less overwhelmed.

Reframe your stress. It is impossible to live a life without stress and doing so would likely be uninteresting. Focus on how you can respond to stress in a healthier way instead of trying to eliminate it.

Sleep is time well spent

Restful, restorative sleep is vital to your overall health. Sleep is important for your heart and other organs to function and it allows the brain and body to slow down and engage in the process of recovery and renewal. Sleep is especially important during stressful times.

Adults need seven to nine hours of sleep, and children and teens need even more. Here are tips to help you improve your sleep habits.

Establish a sleep routine. Go to bed and get up around the same times each day. Prepare for a good night's sleep with activities that help you relax and avoid exposing your eyes to computer or phone screens.

Check your sleep environment. The best is a room that is dark, quiet, cool, and comfortable. Don't let pets or phones disturb your sleep. Don't watch TV, read, or work in your bedroom.

Don't drink alcohol near bedtime. It may help you fall asleep quicker, but it reduces rapid eye movement (REM) sleep, the stage of sleep when you dream. REM sleep happens about 90 minutes after you fall asleep and is restorative.

Avoid heavy or spicy meals 3 hours before bedtime and caffeine at least 5 hours before bedtime.

Exercise can improve your ability to sleep so get some activity during the day.

Pay attention to cues from your body. If you feel very sleepy earlier than usual, go to bed. Your body may be fighting off an infection or needing more time to recover from high mental or physical demands.

Challenge Your Brain

Keeping your mind active is important for both brain and overall health. Along with taking steps to maintain your physical health with daily activities such as diet and movement, there are several ways you can exercise your brain to keep it active.

Keep these three principles in mind:

Mix it up! Why pick just one? Take part in multiple activities that bring you enjoyment. Having a variety of cognitive exercises helps to keep your thinking clear longer.

Do things often. Make sure you're engaging your brain as frequently as possible. You may not be able to visit a museum every day, but reading and puzzles can be done daily. Try to do more complex activities (visiting museums, playing a musical instrument, etc.) as often as you can.

Challenge yourself. Your brain will thank you if you commit to activities that require active thinking. Don't just read a book, but discuss it with a friend afterward. Instead of playing the same songs on an instrument, learn a new piece of music. Learning a new language or game might be difficult, but stick with it!

It may seem like a lot, but you can make small improvements every day to improve your brain health.

Glossary of Terms

Subjective Cognitive Decline (SCD) – Self-reported memory problems that have been getting worse over the last year. In Kansas, 1 in 9 people aged 45 and older are experiencing SCD.

Dementia – This is a general term for the impaired ability to remember, think, or make decisions that interferes with everyday activities. While it affects older adults predominantly, it is not a part of normal aging.

Alzheimer's Disease – This is the most common type of dementia and is a progressive disease. It involves parts of the brain that control thought, memory, and language. Alzheimer's begins with mild memory loss and as it progresses, it can seriously affect a person's ability to carry out daily activities.

Mental Health – This encompasses emotional, psychological, and social well-being, and affects how you think, feel, and act. Your mental health also guides how you handle stress, relate to others, and make healthy choices. It is important to know that poor mental health and mental illness are not the same. One can experience poor mental health and not be diagnosed with a mental illness.

Mental Illness – These are health conditions involving changes in emotion, thinking, and/or behavior. Those with mental illness experience distress and/or problems functioning in social, work, or family activities. Mental illness is common and most often it is treatable.

MIND Diet – The MIND diet is a brain-healthy diet that stands for Mediterranean-DASH Intervention for Neurodegenerative Delay. It's a hybrid of the DASH diet (Dietary Approaches to Stop Hypertension) and the Mediterranean diet, and it focuses on food groups in each diet that can boost your brainpower and protect it from age-related problems like Alzheimer's disease. (WebMD)

Processed Foods

1) Minimally processed foods have been pre-prepped for convenience such as bagged spinach, cut vegetables, and roasted nuts. Minimally processed foods have a place in a healthy diet.

2) Heavily processed foods include ready-to-eat foods such as crackers, deli meat, chips, and frozen dinners. Heavily processed foods should be avoided when possible.

Enteric Nervous System, or ENS, is the brain in the human gut. It consists of two thin layers of more than 100 million nerve cells lining the gastrointestinal tract from the esophagus to the rectum.

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