This month’s Take Charge of Your Health topic is about the impact exercise can have on cognitive functioning. Cognitive functions are brain-based skills needed to carry out any task from the simplest to the most complex. When people have trouble remembering simple tasks, learning new things, reasoning or problem-solving, they have a cognitive impairment. This impairment can range from mild to severe and is more common as people age.

There are many ways to combat cognitive impairment. One way is through exercise. Of its many benefits, exercise increases a person’s heart rate, which pumps more oxygen and other nutrients to the brain to keep it healthy. Another benefit of exercise is that it reduces stress, which may help people cope with life’s challenges. Now, more than ever, we continue to deal with effects of the COVID-19 pandemic, having a strong coping mechanism is important. COVID-19 has changed the way we live. In terms of exercising, the pandemic has left people scrambling to find creative ways to exercise at home. There are still many things that we can do to keep our bodies and minds moving inside our homes and in our communities while we may not have access to gyms. As the weather warms up, it’s a great time to put outside for a walk or a jog because one of the many reasons people enjoy exercising is that it reduces stress, influences weight management and improves mood. People often do not always think of exercise as a way to improve brain health.

“I typically refer to exercise as a ‘sledgehammer’ to the body,” says Dr. Erickson. “That sounds terrible, but exercise seems to influence so many different cellular and molecular systems throughout the body. It benefits people, the circulatory system, blood pressure, vasculature to the heart, and the brain.”

Dr. Erickson reports that African Americans and Latinx populations are at greatest risk for dementia and have the greatest risk for dementia at earlier ages—but researchers do not yet know the basic science processes that underlie beneficial outcomes to the human brain. The connection between exercise and cognitive function, Dr. Erickson is trying to elucidate how much exercise—and how often and for how long—can have the most benefit for the brain. His lab’s IGNITE study is designed for people 65 and older to engage in exercise of various intensities and frequencies. The goal of the project’s goal is to closely examine how much exercise is needed to have an effect on the risk of dementia or cognitive decline.

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One area of research with potential positive effects on cognitive function is exercise. Many people know the healthful effects exercise has on the body and mood. But researchers are learning more about how exercise can also help brain function.

“We know that exercise is a good way of influencing the brain in a number of ways,” says Kirk Erickson, PhD, professor of psychology at the University of Pittsburgh. “It influences both the production and secretion of a variety of different chemicals in the brain, including certain neurotransmitters and growth factors. This increased release of neurotransmitters influences the functioning of neurons, the communication between different parts of the brain and the integrity of various brain regions that we know are affected by aging. Exercise increases the areas that are more sensitive to aging to benefit from exercise.”

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Another arm of Dr. Erickson’s research is geared toward understanding the disparities that exist in dementia between black and brown populations and white populations. Dr. Erickson reports that African Americans and Latina/Hispanic populations are at greatest risk for dementia and often express the onset of symptoms at younger ages—but researchers do not know why the EARCT study, open only to African Americans, randomizes people to a group that participates in a form of dance or a group that participates in the cultures of Africa. The study is meant to compare and contrast the effects of physical activity and educational/instructional treatment on brain health.

As most people know from well-published research, exercise has numerous positive effects on the body. Among other benefits, exercise has been shown to reduce blood pressure, influence weight management and improve mood. People often do not always think of exercise as a way to improve brain health.

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In addition to advancing the whole-body benefit of exercise, Dr. Erickson says that, although it is better to start early in life, it is never too late to start exercising and experience its positive effects. Some study participants have told him that they think it is too late or that they are “destined” by genetics to develop certain health conditions.

“We still have so much to learn about how exercise helps brain health,” he says, “but we know it does. It’s never too late to think positively or be proactive about making exercise a habit for a healthier lifestyle.”

To learn more about the IGNITE study, visit https://pittplusme.org/studyarms/public-arms/public-arms?study=ADDRESS&studyId=001 or call 412-463-4588. To learn more about the EARCT study, visit https://pittplusme.org/studyarms/public-arms/public-arms?study=ADDRESS&studyId=000 or call 412-463-4588. To learn more about the REACT study, visit https://pittplusme.org/studyarms/public-arms/public-arms?study=ADDRESS&studyId=002 or call 412-463-4588. To learn more about the EARCT study, visit https://pittplusme.org/studyarms/public-arms/public-arms?study=ADDRESS&studyId=003 or call 412-463-4588.