This issue of Healthy Camels, written by Dr. Karyn Fabo is dedicated to the benefits that exercise has for our brains. Dr. Fabo is a Campbell University pharmacy practice resident with East Carolina University Family Medicine in Greenville, North Carolina.

The benefits of physical exercise for weight management and for the heart are well-known by many. Have you ever thought about the benefits that exercise may have for your brain as well? Exercise has been shown to provide multiple benefits to the brain including improved mental performance and control of emotions and stress levels. These benefits are seen across all ages as well, including school-aged children, adults, and the elderly. Remembering this should give an extra incentive to participating in a regular exercise program.

Aerobic exercise has been shown to have an impact on mental performance beginning in young children. Based upon the results of studies in children, there is a robust belief that participating in physical activity regularly is related to improvement of brain function and thinking, thereby having a positive impact on a child’s academic performance. These results emphasize the importance of exercise on mental development in children at a time when physical education programs in schools are decreasing due to a lack of funding. Illinois is the only state that requires daily physical education in first to twelfth grade. It was reported by the Centers for Disease Control and Prevention that approximately 25 percent of children do not participate in physical activity outside of school. In 2001, reports showed that children spent an average of 4.8 hours each day watching television, on the computer, or playing video games. It is important to encourage your children to engage in physical activity at home. Increasing the physical activity of children is easier when you are able to choose a form of aerobic exercise that children enjoy and think of as fun. Dance lessons and participation in sports teams are structured forms of physical activity that your children may look forward to and enjoy. Other fun activities for children and the whole family that involve aerobic exercise include nature walks, climbing trees, roller-skating, and playing hide-and-seek. Encourage your children to become more active, limiting time watching television or using electronics, as exercise can have a positive impact on brain development and performance in school.

The benefits of exercise on the brain are not only seen during brain development in children, but remain as we age. Gradual declines in thinking, and increased risk of memory impairment, develop as individuals get older. One study focused on adults from 45 to 88 years of age that had no obvious signs of trouble with memory or dementia. These individuals were asked to report how much they walked, jogged, or ran over the past ten years. This study has shown that people with a history of exercising throughout their lives were protected from brain damage, despite having a gene that increases the risk of developing Alzheimer’s disease. It is thought that exercise may help turn on enzymes in the brain that can break down the amyloid plaques, which lead to the development of dementia. Another study, examining men and women 60 years of age and older, demonstrated that those people who engaged in more intense physical activity performed better on tests involving general thinking skills, memory, and attention. Aerobic exercise is able to strengthen the connections between your brain cells, allowing your brain to better store and
process information. This is the reason that exercise may help in warding off Alzheimer’s and Parkinson’s disease, which develop due to a progressive loss of these brain cells.

Are you concerned that you are too old or that it is too late for you to obtain the benefits that exercise may have for your brain? Do not worry. A group of individuals from the ages of 60 to 75 years that participated in little to no exercise were introduced to an exercise regimen. These people either participated in the aerobic exercise of walking or non-aerobic exercise of stretching three times a week. The individuals that began to go on long walks of up to 90 minutes three times weekly showed improvements on their thinking and memory testing, as well as being more fit. The benefit to the brain was not shown in the non-walking group. Aerobic exercise can improve memory and reasoning skills even after age the age of 70 years. It is never too late to start exercising, which can be as simple as taking a walk a few days a week.

Exercise not only has benefits for your brain on thinking and memory, but it has also been shown to provide benefits for mood as well. When individuals are feeling down or anxious, often, exercising is the last thought to cross their minds, but it can make a difference once someone is motivated. The link between exercise and mood improvement is not entirely understood. Exercise can help lessen depression and anxiety in a number of ways that include the release of feel-good brain chemicals (endorphins and neurotransmitters). The increase in body temperature from exercise has also been shown to have a calming effect. Psychologically, exercise can allow people to gain confidence, be distracted from their worries, and cope in a healthy way. By exercising, individuals are able to stop thinking about how badly they feel and escape the cycle of negative thoughts that worsen anxiety and depression. Exercise includes a wide variety of activities that increase activity that can help you feel better. Consider activities such as gardening, washing your car, or walking around the block as they can provide benefit as well. Any activity that increases movement can help improve your mood.

When deciding to exercise, remember the benefits it has for your brain, not only your body. Aerobic exercise can improve thinking and memory beginning in children and extending into older adults as well. Depression, anxiety, and stress can be decreased by participating in an exercise regimen.

References