BALANCING ACT

Brain science can help us stand tall

By Janel States James

Falling is a significant issue for the aging, and according to a new study released by the Center for Disease Control and Prevention, age-related falls are on the rise, with nearly 800,000 hospitalizations per year. In fact, the number of older Americans who die from fall-related injuries has increased a whopping 31 percent over the last decade, with one out of four older people falling each year and one out of five of those sustaining a fall-related injury like head trauma or a hip fracture.

The cause of a fall may be hard to pinpoint and can range from prescription medications to ear infections, from low blood pressure to eye muscle imbalance. Some balance issues may start suddenly and without a known cause. To prevent falls, the National Council on Aging has several recommendations, including checking your vision, making home improvements, assessing medications, and beginning a regular exercise program.

S. Christina Boyd of High Point Strategies teaches an exercise program geared to improve balance in seniors. Her "Stand Tall, Don't Fall" classes, held at the Joe C. Montoya Community Center in Flagstaff, take a different approach to balance using newer techniques from the field of brain science to rebalance both the body and the brain.

"A typical balance class works with balance exercises: standing on one leg, getting up and down, and turning around," says Boyd. "I use sensory motor movement and sensory stimulation, which deals with the neurology of the body. That's why this is unique."

According to Boyd, there are three dimensions to the brain-body system, cross

"A stroke can do that for sure, as well as multiple sclerosis and Parkinson's, because it has to do with brain signals that get a little confused," she says. Structural changes such as kyphosis, which is also related to aging, may impact balance as the brain compensates, or does not compensate, to this change in the body.

Also, if the front and back of the brain are not in balance, "it can activate the Achilles tendon guard reflex, which can throw the body off," she says. "So, if you lean forward a little bit or trip a little bit, it can be more difficult to regain your balance, and that can lead to a fall."

While not everyone who comes to Boyd's class is already coping with a balance issue, many are, and they are often people who might find it difficult to participate in a traditional balance program.

"You can actually do the whole class sitting down," says Boyd. "I let people know that the class is not about building muscle, although we do work on strengthening the core, releasing or strengthening the shins, and releasing and making flexible the ankle. Flexible ankles and strong shins are important, but that's not the focus here. Even someone with very limited movement can benefit from the class."

One of the most amazing things, says Boyd, is how quickly her clients see results, usually by the eighth session.

"It is very exciting to see people who have struggled for so long get better. I had a patient who had had a stroke come to class still dragging one leg. He's not dragging his leg anymore, and it didn't take very long."

It is not only the aging who can benefit from the exercises, says Boyd. Stress, a car accident, or a sudden trauma can also contribute to trouble in the brain-body system, and neural training can help people in these situations regain optimum function.

Additionally, the effects of training often go beyond the physical, says Boyd. Neural integration can lead to an increase in physical comfort, release of tension and anxiety, better vision, improved cognitive control, and an improved ability to communicate.

"We can bring the brain into whole brain function," she says, "and as a result of that, many of the challenges people face disappear." ⛰

"WE ARE CROSS LATERAL IN NATURE: THE RIGHT BRAIN CONTROLS THE LEFT SIDE AND THE LEFT BRAIN CONTROLS THE RIGHT SIDE. THIS IS HOW WE USE OUR EYES, AND IT'S LITERALLY HOW WE WALK IN A STRAIGHT LINE."

lateral, top and bottom, and front and back. For example, she says, "We are cross lateral in nature: the right brain controls the left side and the left brain controls the right side. This is how we use our eyes, and it's literally how we walk in a straight line."

Through a series of exercises, her clients work on fluid transfer of brain impulses across the midline, or the corpus callosum, which connects the two hemispheres of the brain. Some people have trouble crossing this midline, which can lead to difficulties with balance or other movements, to the point that they cannot reach across their bodies to pick something up. While these problems are sometimes present in a person from childhood, they can also result from aging.