## March 2018 Health Notes by Evelyn Ames

### *Benefiting your Brain by Walking*

"Walking is the best medicine," Hippocrates (c. 460 – c. 370 BC

We don't need to devote much effort to the act of walking; usually we walk with a rhythmical stride. "When we stroll, the pace of our feet naturally vacillates with our moods and the cadence of our inner speech; at the same time, we can actively change the pace of our thoughts by deliberately walking more briskly or by slowing down," This allows us to let our minds wander and creative thoughts and insights to easily occur.

Researchers at Stanford (Oppezzo and Schwartz, her colleague) have found that going for a walk may be the most practical way to generate creative thinking anytime during the day. To see if walking was the source of creative inspiration rather than being outdoors, an "experiment with 40 participants compared responses of students walking outside or inside on a treadmill with the responses of students being pushed in a wheelchair outside and sitting inside." The students who walked, whether indoors or outside, came up with more creative responses than those either sitting inside or being pushed in a wheelchair outdoors. "While being outdoors has many cognitive benefits, walking appears to have a very specific benefit of improving creativity."

Researchers at New Mexico Highlands University found that the foot's impact during walking sends pressure waves through the arteries that significantly modify and can increase the supply of blood to the brain. "The NMHU research team and others previously found that the foot's impact during running (4-5 G-forces) caused significant impact-related retrograde (backward-flowing) waves through the arteries that sync with the heart rate and stride rate to dynamically regulate blood circulation to the brain." They found that though there is lighter foot impact associated with walking compared with running, walking still produces larger pressure waves in the body that significantly increase blood flow to the brain. In addition, walking, when compared to pedaling, is more effective in increasing blood flow. The lead author (Greene) reported that "one year of walking increased functional connectivity between aspects of the frontal, posterior, and temporal cortices within the Default Mode Network and a Frontal Executive Network." These are two brain networks central to brain dysfunction in aging. "There is a continuum of hemodynamic effects on human brain blood flow within pedaling, walking and running. Speculatively, these activities may optimize brain perfusion, function, and overall sense of wellbeing during exercise."

We may not be a Beethoven, who has been described as spending considerable time walking in the country. Consider his 6th Symphony with depictions of sunshine, raindrops building to a violent thunderstorm with thunder and lightning, winds and sheets of rain. "The storm eventually spends itself, with an occasional peal of thunder still heard in the distance. There is a seamless transition into the final movement, including a theme that could be interpreted as depicting a rainbow." So, as our seasons change from winter to spring, imagine the many places we can wander (and let our creative thoughts flourish) in our beautiful Whatcom County!

Resources: https://www.sciencedaily.com/releases/2017/04/170424141340.htm
https://www.psychologytoday.com/blog/the-athletes-way/201404/why-does-walking-stimulate-creative-thinking
https://www.inc.com/jessica-stillman/the-science-of-why-you-do-your-best-thinking-while-walking.html
https://www.psychologytoday.com/blog/the-athletes-way/201506/hippocrates-was-right-walking-is-the-best-medicine