

MU HEALTH BUZZ

CHSE- DPT

4/7/2017

Volume 1—No 5

EXERCISE AND PARKINSON'S

THE EFFECT OF EXERCISE ON THIS DISEASE



Parkinson's is a disease that affects millions of people at various ages of adulthood. It can be a severe disease, which robs people of their ability to control their movements by affecting their gait, balance, and motor coordination. It can also cause moderate to severe tremors. NPR.com published an article called "Fight Parkinson's: Exercise may be the Best Therapy," which describes the benefits of exercising and how it can reduce the negative effects of Parkinson's Disease. The article discusses how a man, Mike Quaglia, began seeing Parkinsonian symptoms when he was just 42 years old. Over the years, the disease started taking a toll on him and his life which caused him to start having symptoms of depression. Then he found out about a program called Rock Steady Boxing, where trainers teach people with Parkinson's how to box.

Since he started the program, Quaglia says that on the days he boxes, he doesn't need to take his medicine until 6 hours after the exercise as opposed to 3 hours on days he does not. His depression has been lifted and he has much more self-confidence. According to NPR, research has shown that exercise can improve some of the major symptoms of Parkinson's including problems with gait, balance, tremors, and motor coordination. Boxing is just one activity that people with Parkinson's have tried in order to combat their symptoms. Other forms of exercise include Tai Chi, drumming, dancing, and regular lifting and stretching programs. Those with the disease have said how doing some form of exercise allows them to push their bodies to new limits and ac-

complish things they didn't know they could previously - further proving the positive effects of exercise on people with Parkinson's Disease.⁴

OBESITY AND CARBOHYDRATES

THE AMY1 ENZYME'S INDIVIDUAL VARIABILITY

There are many reasons why people become obese, but some of the major reasons include a lack of exercise in combination with an unhealthy diet. However, after a recent study, it has been concluded that obesity can also be related to how our individual bodies uniquely digest carbohydrates. AMY1, an enzyme that typically contains two copies of a gene, can actually have number variability within different people.

People with a larger number of the AMY1 enzyme have been more inclined to include starches in their diets. Because there is more digestion occurring in those with more copies of AMY1, it is less likely that those individuals will become obese. However, certain individuals have less copies of this enzyme, resulting in a higher risk of becoming obese. This variability in the AMY1 enzyme is just one example of how there is not a "one size fits all" approach to combatting obesity in our society.

Understanding all obesity factors, like recognizing how one's body digests carbohydrates, can give people more insight on their bodies and, in turn, could influence new behaviors for weight loss. Educating the members of society of this person-to-person variability for obesity factors could eventually lead to more weight loss and a healthier culture.³



FOOD'S IMPACT ON ATTITUDE

FOODS THAT CAN PUT YOU IN A GREAT MOOD!

Have you ever felt great after eating something and didn't know where the boost in your spirits came from? As it turns out, there are a few key nutrients found in certain foods that can actually give you a natural rise in happiness and positivity. Omega-3 Fatty acids, fiber, and Vitamin B-6 can control sugar levels, improve neurotransmitters, and increase nerve function. Omega-3 Fatty acids support the development of the brain, eyes, and nerves. They can also support serotonin and dopamine transmission, therefore improving mood. You can find these acids in their best form in wild fatty fish, like salmon. Vitamin B-6 is essential for the formation of neurotransmitters like serotonin and dopamine which is good for controlling depression and migraines. This vitamin is easily found in salmon, bananas, and garbanzo beans. Finally, fiber is a great nutrient for preventing spikes and drops in blood sugar, which can keep you feeling energized longer without getting too sluggish. You can find fibers in many fruits and vegetables. So eat right for a healthier and happier you!⁵

The Health Letter is an initiative of the DPT students with a view to inform and educate the Misericordia Community in health matters that impact general public health. The Health Letter is published during the spring semester biweekly.

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MEDICAL MARIJUANA

IS IT REPLACING OTHER DRUGS?

The medical use of marijuana since its legalization in many states is causing a shift in the use of prescription drugs. In 2013 there was an estimated \$165.2 million in savings in Medicare costs. These savings were on prescription drugs related to conditions that are also treated with medical marijuana. The savings represent a shift in how patients want to treat symptoms related to their medical conditions. According to researchers in the field, the cost changes “suggest people are really using marijuana as medicine and not just using it for recreational purposes.” A study in an article on livescience.com reviewed claims over the course of three years by people enrolled in Medicare Part D. These claims related to eight major conditions that are treated with medical marijuana including: anxiety, depression, glaucoma, nausea, pain psychosis, seizures, sleep disorders, and spasticity. The main focus of these conditions was glaucoma. This is due to the prevalence of this condition and the fact that it is most commonly associated with medical marijuana as a treatment in Google searches. In almost all medical conditions there was a decrease in the number of other prescription drugs, and an increase in medical marijuana. This translates to greater patient interest in trying alternate forms of treatment for their conditions. Based on this evidence, Medicare would have saved roughly \$468 million on prescription drugs if all the states legalized medical marijuana. The article does provide a disclaimer that the study does not prove a cause-and-effect relationship between medical marijuana and Medicare costs, although it is clear that there is a relationship between the two.²

OMEGA-3 FATTY ACID

HOW IT IMPACTS INFANTS

The polyunsaturated fatty acid (PUFA) omega-3 is frequently discussed as a potential remedy to a variety of medical conditions such as heart disease, stroke, and inflammatory conditions such as arthritis. The proposed mechanism of action of PUFAs involves their vital role in the formation of eicosanoids, prostaglandins which regulate inflammatory processes responsible for pathology. Docosahexaenoic acid (DHA), is a PUFA derived from omega-3 and has marked anti-inflammatory qualities. It is notably present in fish that are low in mercury (salmon, trout, herring and anchovies). In the United States, DHA has been marketed by baby formula producers as “brain

nourishing” and DHA infused formula has been a staple on the market since the FDA approved its use in 2002. Prior to this approval studies suggested that formula-fed infants had lower levels of brain DHA than breast-fed infants and that adding DHA to formula could increase cognitive and vision development. According to the New York Times, “Today, all major formula brands sold in the United States contain DHA.” However, a recent systematic Cochrane review combining randomized and controlled data from 15 trials tracking children into mid-childhood, found no significant developmental advantages of DHA infused formula. This seems to run counter to other studies which show benefits of DHA consumption in pregnant women. Partly to blame for the difficulty of elucidating the effects of DHA is the lack of a baseline DHA since it is obtained through diet, mainly through fish, and since the western diet is generally poor in DHA rich foods. Perhaps a logical conclusion to draw from this use of DHA and the debate surrounding its effects, would be to simply eat more fish.¹



ALTERNATIVE TREATMENT FOR LOW TESTOSTERONE WITH ENCLMOPHINE CITRATE

Low testosterone is a problem that millions of men are affected by. The symptoms of this condition are fatigue, loss of muscle mass, increase in body fat, depression, erectile dysfunction, and low libido. The typical treatment for this is testosterone injections or gels. The problems with these treatments aren't that they don't increase testosterone, but they do it at the expense of sperm production. This means that men have their testosterone boosted, but due to it being exogenous testosterone, the body tells the testis to stop producing testosterone all together, which compromises the production of sperm in the negative feedback loop. A new treatment, enclomiphene citrate, is a derivative of the selective estrogen receptor module clomiphene citrate and is shown to increase the body's own natural testosterone production. It increases the body's Luteinizing hormone (LH) and Follicle-stimulating hormone (FSH) as well, which both have direct effects on testosterone production, sperm production, and

quality. That means that this drug can be used to treat low testosterone and could ultimately replace expensive, synthetic testosterone injections and the side effects that come with them. This treatment is still in its trial phases but has been shown to improve secondary hypogonadism (the result of low testosterone due to the pituitary gland as opposed to the testes). Maybe one day this drug can be used for men to treat low testosterone without compromising the ability for them to have children like injections and gels do.⁶

SPIRITUAL RETREATS

HELPING YOUR EMOTIONAL WELL-BEING

Have you ever thought about going on a spiritual retreat? If not, then this might change your mind. Researchers at Thomas Jefferson University in Philadelphia say that spiritual retreats can be great for your emotional well-being! They concluded that a normal 7-day retreat can cause a reduction in both dopamine and serotonin transporter binding, which are the “feel-good” hormones in the brain. Reduced binding means more of these hormones are available for your brain, which in turn means a more positive attitude! The best part about this study is that it can affect any person of any religion wishing to practice their faith on a spiritual getaway!⁷



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