April Newsletter

The Weigh Station

Good News for Aging Brains

As our bodies age, our brain's ability to efficiently use glucose declines. Being in a state of ketosis not only provides an energy source, but it also helps with some unit properties that we will discuss in the aging process. If I haven't talked to you about it before or you have asked me the question, I will emphasize it again, properly functioning and healthy mitochondria are essential for wellness and longevity. Under conditions where oxidative stress is high following a heart attack, brain trauma or other injuries.

There is a definite mismatch between the energy demand of the brain and the supply of energy from glucose. These conditions, because of the deficit in glucose metabolism, lead to a buildup of lactic acid and other byproducts further contributing to the oxidative stress and the prevention of mitochondria from functioning correctly.

Recently several studies have shown that the ketogenic diet can stimulate the formation of new mitochondria as well as provide a more efficient energy source. Essentially, these new mitochondria are cleaning out the dirty tank and providing it with clean-burning fuel to be utilized throughout the rest of the body. As we age, another way to protect the brain is to enhance our anti-oxidation capacity. Over a lifetime we tend to build up free radicals and reactive oxygen species. This substance is created by mitochondria, both of which can bind to our cells and cause damage and increase inflammation in cellular DNA and other proteins.

There are free radicals floating around the body stealing electrons from other molecules like robbers on a crime spree going through a jewelry store. The stealing is referred to as oxidation. This process results in a chain like process. The robber is the free radical stealing the electron from the neighboring molecule. That molecule is now short on electrons, so that molecule joins in the robbery to replace its electron, therefore, creating further damage. As you can imagine, the damage to cells over time can be significantly accelerated with the aging process. However, there is a solution - antioxidants. Antioxidants contain extra electrons. They can be donated to free radicals to make them stable.
So, the solution for decreasing free radical damage and slowing the aging process could be to increase the body's production of antioxidants.

The three main differences in which the ketogenic diet may offer an oxidative benefit are as follows:
1. Ketone bodies break down has been shown to improve the amount of co-enzyme Q10 which is an antioxidant thereby decreasing free radical production.
2. Enzymes that prevent free radicals from forming has been shown to quadruple on the ketogenic diet. ~Dr. Ziegler 2003.
3. Mitochondria uncoupling proteins are proteins that have embedded themselves in the mitochondria. These proteins can help protect against the formation of reactive oxygen species. They have been shown to increase with the ketogenic diet.

Finally, a ketogenic diet stabilizes a substance known as HIF1 alpha, which has been shown to prevent tissue damage in the brain, improve blood flow to the brain, and activate specific growth factors to enhance brain metabolism under conditions of aging. Also, the inflamed formation may play a significant role in neurodegenerative and impaired cognitive function, as seen in diseases like Alzheimer's and Parkinson's disease. Ketogenic diets, when properly formulated and implemented have been shown to stop the anti-inflammatory response.

So, for many of you, I hope by now it is very clear that the ketogenic diet naturally improves longevity. The latest research on the ketogenic diet and longevity shows this to be true.
Among the 1st studies, they looked at the effect of the ketogenic diet on adipose tissue as well as several other markers of health in non-exercising patients. All of the participating patients ate the same number of calories. The only difference in their diet was the percent of fat and carbohydrates.
Then patients were divided into three groups. The first group was placed on the standard Western diet. Those patients ate a diet high in carbohydrates 43% fat 42% and relatively low protein 15%. The standard diet group ate protein 24%, carbohydrates 58% and lower in fat of 18%. The ketogenic group ate 70% fat, 20% protein and 10% carbohydrates. Within six weeks, body mass, body fat, liver, triglycerides, insulin, glucose, and total cholesterol were at the lowest in the ketogenic group.
This is one of the 1st studies that match protein levels in calorie. In fact, the ketogenic diet group had slightly less protein in the standardized group, yet saw more significant benefits, leading to the possibility of unique health metabolic standards induced by ketogenic in the liver and adipose tissue.

So, one of the last things I would like to point out to you is companies. Companies such as Human Longevity, Inc., are making exponential strides every day using the latest scientific technology to lengthen lifespans while improving the quality of life. Whether through a ketogenic diet, supplemental ketones, stem cell therapy, or a combination of all of the above. We soon will be living longer, healthier and more fulfilled lives.

It is clear from even our own experience at The Weigh Station, many patients have improved their mentation, blood pressure, diabetes, and skin diseases.

If you would like further information on the details of this newsletter, please don't hesitate to ask.

Blessings,
Chuck Shaffer, MD

The Link Between Vitamin D Deficiency and Obesity

There is a consistent association in the published literature between increasing BMI and lower levels of vitamin D3. Small and large studies have both reported an association between obesity and low serum vitamin D concentrations. It has also been reported that high body fat (not weight or BMI) content is related to low serum D concentrations. So why is vitamin D deficiency so common and what are the possible benefits of vitamin D supplementation on obesity?

Since the skin cancer guidelines came out to limit sun exposure, it seems that Vitamin D levels have taken a plunge. This is because in most healthy individuals, the body is able to convert to an active form of Vitamin D from the sun. Unfortunately, we also know that limited sun is just one of the many reasons for vitamin D deficiencies, especially in some obese populations. For example, Vitamin D intake has been reported as being lower in obese men, but not women, when compared to their non-obese counterparts. Low calcium and vitamin D intake have also been associated with obesity in both men and women.

One possibility is that obese individuals expose less skin to the sun less often than non-obese individuals, due to self-consciousness. BMI, percent body fat and sunbathing have been shown to be related in a population-based sample, although a different study found no relationship of individuals aged over 65 years. This may be because as we age, our ability to synthesize Vitamin D in the skin declines.

Interestingly, adipose tissue (AT) in obese women expresses the enzymes for both the formation of vitamin D and for degradation of vitamin D. Subcutaneous AT has also been found to have less of one of the enzymes responsible for active vitamin D suggesting that the ability to activate Vitamin D is impaired in obesity. Much of the vitamin D produced in the skin or through diet is distributed in fat cells and therefore obese people may take in as much vitamin D from the sun, food, or supplements as people who are not obese, but their blood levels tend to be lower due to their higher blood volume. Oral doses of vitamin D resulted in a 57% lower increase in active vitamin D in obese individuals compared non-obese. These stats may indicate that higher doses of vitamin D for the obese population are warranted.

In conclusion, it is important for everyone to have their vitamin D levels checked. Especially if you live north of Georgia during the winter months. However, if your BMI is greater than 35 it is imperative to have your levels checked due to the most current research that shows vitamin D levels are lower in obese populations. Dosing for the treatment of vitamin D deficiency in obese individuals should also be monitored closely and adjusted accordingly.

Sources:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3705328/

https://www.webmd.com/vitamins-and-supplements/news/20101217/obesity-linked-lower-vitamin-d-levels#1

Recipe of the Month: “Egg Roll” Stir fry

Makes 4-6 servings

Ingredients:

1 pound ground beef or pork
1 large onion, diced
1 small head of cabbage
2-3 carrots
4-5 cloves garlic, minced
1 tablespoon grated fresh ginger
1/2 teaspoon black pepper
2 tablespoons sesame oil
1 tablespoon vegetable oil
1/4 cup soy sauce

Instructions:

Cook and crumble ground meat with onions in a very large skillet until meat is cooked through. Do not drain. You’ll need to select a skillet large enough to contain all the cabbage – divide everything evenly into two skillets if necessary.

While meat and onions are cooking cut cabbage into thin shreds; set aside. Peel carrots with a vegetable peeler then either dice small or use the peeler to shave off thin slices; set aside.

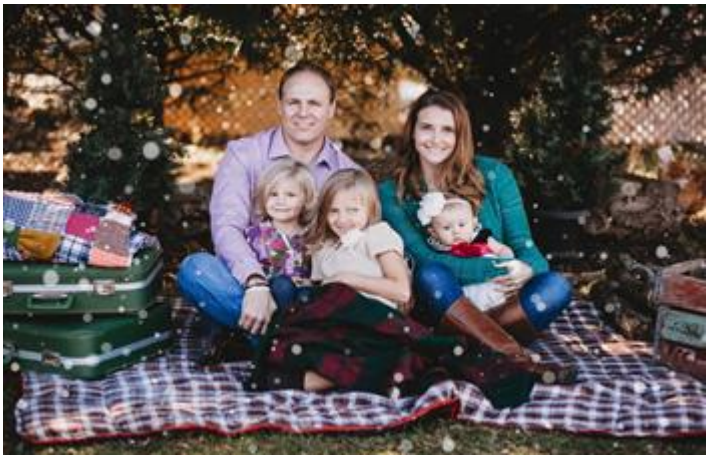
Combine garlic, ginger, pepper, sesame oil, vegetable oil and soy sauce in a small bowl and stir to combine; set aside.

Add cabbage and carrots to ground meat then cook and stir over medium-high heat for 3-4 minutes. Add soy sauce mixture then stir well.

Reduce heat to medium and continue cooking for 5-10 minutes or until cabbage is tender.

Notes:

- Substitute two bags coleslaw mix for cabbage and carrots if desired.
- I like ground pork or white turkey in this best!
- Substitute 1 teaspoon ground ginger for fresh if needed.



In 2008 I began my journey working at The Weigh Station. I remember walking into the old office on Patricia Lane and meeting Dr. Shaffer for the first time. We had a great conversation about why limiting carbohydrates was a "taboo subject" and how mainstream medicine didn't always agree with that dietary approach. He also said it was rare to find a dietitian that would take his side. Little did Dr. Shaffer know how frustrated I had become with mainstream medicine for that reason! I could see his passion and knew I had a connection with him in the way we thought and cared about helping patients achieve weight loss and improve their health.

Throughout my time spent at The Weigh Station I have met some amazing people both patients and coworkers alike. I have learned so much from Dr. Shaffer and from our patients about what the journey of weight loss really feels like, from the struggles to the celebrations, each person's journey is a bit different. It is our job as practitioners to guide you through your unique journey. In fact, by maintenance, we don't see you as patients, we get to know you as friends!

This is why writing this letter is so difficult. As I became a member of The Weigh Station family, I was also growing a family of my own. Starting out newly married with no kids in 2008 to now having been married for 10 years with three beautiful girls, this season of my life has been wonderful yet chaotic. A new opportunity to simplify my day to day routine was recently presented. After prayerfully considering it, I have decided to pursue a new position. I feel very strongly that The Weigh Station has prepared me for this new chapter and I am beyond grateful for the opportunity I have had to work with such wonderful, passionate, caring individuals as the Shaffer's and cherish the time I have had getting to know our patients and watching their weight loss journeys unfold.

I want everyone to know that leaving The Weigh Station will not be easy! I wish everyone the best in their continued weight loss journey!

Sincerely,

Tricia Foley, MS, RD, CLT