

## Texas DPS Fitness Wellness Unit

Wellness Tips  
November 2018

November 2, 2018

### Solutions to Overcome the Imbalances of Sitting

Extended time sitting in a vehicle or at a desk, can cause muscle imbalances. While sitting, muscles on the back side of the body within the hips and upper back relax and become lengthened. Concurrently, muscles on the front side of the body at the hips and chest become shortened and tight. As a result, this can cause anteriorly shifted hips and/or forward rounded shoulders.

Over time, the potential for additional compensation increases, the longer misalignments exist. The compensations then can cause increased injury potential due to improper muscle firing and alignment of the spine. However, a few simple exercises can help overcome the imbalances of sitting by stretching the front side of the hips and chest. Additionally, time should be spent activating the muscles on the posterior side of the hips, the gluteus maximus, and the upper back.

**Hip Flexor Stretch** – Standing upright, step forward with right foot into forward lunge. Press hips forward and downward while keeping chest upright as well as lifting left arm and pressing up and back. Hold for 10-30 seconds and repeat for a total of 60 seconds. Then switch sides.

**Chest Stretch** – Standing or sitting upright, extend arms outward from the body making a 90 degree angle at the armpits. Then with straight arms, press the arms backwards while pointing the thumbs down towards the ground and keeping the arms elevated at a 90 degree angle at the armpits. Hold for 10-30 seconds and repeat for a total of 60 seconds.

**Glute Bridge** - Lying on the ground on the back, keep the feet on the ground and bend the knees until bent about 45 degrees. Then, while keeping the core tight, slowly exhale and press through the feet to lift the hips up off the floor to a position which there is a straight line from the knees to the shoulders, hold for a second, then return to the ground to repeat.

**T Raise** – Lying on the ground on the stomach, place the arms extended out to the side of the body with palms down to form a T with the body. Keeping the chest down, head neutral and arms extended out to the side, lift the arms upward to sky then back down under control and repeat. This can also be done in a Y position.

These exercises can help combat the short-term effects of sitting, yet it is also important to combat the long-term effects through activities throughout the day.

November 9, 2018

### Which sweetener is the best for our body?

Four categories of sweeteners include, plain old sugar, sugars that do not impact blood glucose levels or low glycemic index sugars (fructose, inulin, agave), sugar alcohols (sorbitol, mannitol, xylitol, erythritol), and nonnutritive sweeteners (aspartame, sucralose, stevia). When we eat sugar (glucose), blood glucose levels increase. Elevated blood glucose levels and high blood insulin levels have a direct link to type 2 diabetes and obesity. As a result, there has been a surge in low glycemic sweeteners, sugar alcohols, and nonnutritive sweeteners (artificial sweeteners).

Over the next few weeks, pros and cons of each will be discussed. This week the focus is on low glycemic index sweeteners.

Low glycemic index sugars (fructose, to include: inulin, agave)

Pros:

Blood glucose and insulin levels are not impacted as much when compared to glucose

Cons:

Brain does not receive signal to stop eating from fructose due to a lower impact on insulin levels which often results on over consumption of high fructose foods

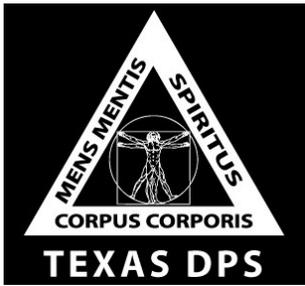
Increased blood-triglyceride levels from fructose

Insulin resistance, weight gain and stimulated appetite can occur when overeaten

Liver damage has been shown by recent research (Vos, M.B. and Lavine, J.E. 2013)

Bottom line: avoiding dietary fructose is not necessary as some very nutritionally dense foods, such as fruit and root vegetables, contain fructose. The real problem is the overconsumption of fructose from concentrated food sources such as processed foods and those with high fructose sweeteners (agave, inulin etc). So be on the lookout for what sweeteners you are consuming and check back in next week as another category will be discussed.





## Texas DPS Fitness Wellness Unit

Wellness Tips  
November 2018

November 16, 2018

### What is the skinny on sugar alcohols?

Sugar alternatives such as sugar alcohols are often used to create lower carb or lower glycemic index foods. As a result, some perceive them as a better choice for more frequent indulgence or perhaps as even being healthy – yet is that true?

Pros and cons of sugar alcohols, such as sorbitol, mannitol, xylitol, and erythritol, can help reveal details that may often be forgotten in the aforementioned perceptions.

Pros:

- Blood glucose and insulin levels are not impacted as much when compared to glucose

- Not as sweet as some nonnutritive sweeteners (stevia, aspartame, sucralose)

Cons:

- Sugar alcohols are fermentable, which means they feed gut bacteria creating the potential to cause severe gastrointestinal symptoms (watery stool, diarrhea, nausea, bloating and flatulence) when eaten in excess

- Evidence suggests that the sugar alcohols feed bacteria like E.coli in our gut causing inflammation and stimulation of the immune system, along with leaky gut (Payne, A.A., et al)

**Bottom line:** While excessive glucose is harmful, alternatives such as sugar alcohols can potentially cause harm as well. Consuming sugar alcohols in lieu of regular sugar has a different and destructive effect on the human body. As a result, be on the lookout for both glucose and sugar alcohols, despite sugar alcohols as often being touted as low carb and healthy.

Next week we will discuss another category of sweeteners, nonnutritive sweeteners like aspartame, sucralose, stevia.

November 30, 2018

### Nonnutritive sweeteners or artificial sweeteners

Nonnutritive sweeteners are substances that taste sweet but don't provide substantial calories. This category of sweeteners includes aspartame, sucralose, saccharin and stevia. These are often seen in diet sodas and other diet foods. While many claim stevia to be the more "natural" sugar substitute due to coming from the leaf of a plant, it still has the same pros and cons of the rest of the sweeteners in this category as seen below.

Pro's and Con's of Nonnutritive sweeteners or artificial sweeteners (aspartame, sucralose, saccharin and stevia) include:

Pros:

- Low in calories or no calories depending on the sweetener used

- Blood glucose and insulin levels are not impacted as much when compared to glucose for some individuals

Cons:

- Increased risk of obesity and metabolic syndrome has been linked to nonnutritive sweeteners in research (Rolls, B.J.)

- A significant increase in body weight was seen in animal studies where food intake remained the same but substituted nonnutritive sweeteners, implying that these sweeteners may affect metabolism or hormones (Polyak, E., et al.)

- Fertility issues and hormone imbalances have been seen with the usage of stevia, a popular choice at the moment, yet the amount is unknown and additional research is needed (Shannon M et al. and Melis MS)

Nonnutritive sweeteners like stevia may have some advantages, yet additional research is still needed. As for the other nonnutritive sweeteners, studies have shown that some people do have an insulin spike when ingested. This causes many different issues in the body, and consumption of these sugars should be limited or eliminated.

**Bottom line:** The take home message from the last few weeks is that there really is no way to cheat desserts or sugar. Our body knows what to do with regular sugar better than any of the manufactured or isolated substitutes; however we tend to eat too much, causing damage to our bodies. The goal is to watch your sugar intake, determine where you are getting sugar in your diet and slowly decrease the amount of sugar you are using. An occasional treat here and there won't kill us, but keeping the sugar consumption to a minimum will only make us feel and perform better.

