



# ARBOR FARMS MARKET

2103 West Stadium - Boulevard Plaza  
Ann Arbor - 734-996-8111 - arborfarms.com

## Our September 2017 Newsletter for Healthy Living

### Sugar and Depression

**F**oods have an immense impact on your brain, and eating whole foods is an effective strategy for supporting both your physical and mental health. Based on the evidence, avoiding sugar is an important prevention and treatment strategy for anxiety and depression, both of which are rising in prevalence. A number of studies have linked high-sugar diets to a higher risk of depression. Most recently, researchers at the Institute of Epidemiology and Public Health at University College London found that men consuming more than 67 grams of sugar per day were found to be 23 percent more likely to develop anxiety or depression over the course of five years compared to those whose sugar consumption was less than 40 grams per day. This held true even after accounting for other contributing factors, such as socioeconomic status, exercise, alcohol use, smoking, other eating habits, body weight and general physical health. The authors noted: *"Sweet food has been found to induce positive feelings in the short-term. People experiencing low mood may eat sugary foods in the hope of alleviating negative feelings. Our study suggests a high intake of sugary foods is more likely to have the opposite effect on mental health in the long-term."*



While this study could neither ascertain a mechanism for the link between sugar consumption and depression risk, nor could it establish causation, it adds support to other studies that have

found the same link. For example, research published in 2002, which correlated per capita consumption of sugar with prevalence of major depression in six countries, found "a highly significant correlation between sugar consumption and the annual rate of depression." A Spanish study published in 2011 linked depression specifically to consumption of baked goods. Those who ate the most

depression and schizophrenia, and animal models suggest this may actually be a causative factor; affects dopamine, a neurotransmitter that fuels your brain's reward system (hence sugar's addictive potential) and is known to play a role in mood disorders; damages your mitochondria, which can have body-wide effects. Your mitochondria generate the vast majority of the energy (adenosine

---

***"Researchers found a highly significant correlation between sugar consumption and ... depression."***

---

baked goods had a 38 percent higher risk of depression than those who ate the least. Similarly, a 2016 study found a strong link between high-sugar diets (high-glycemic foods such as processed foods, sweetened beverages and refined grains) and depression in postmenopausal women. The higher the women's dietary glycemic index, the higher their risk of depression. A diet high in whole fruit, fiber, vegetables and lactose was associated with lowered odds of depression. A number of other studies have also identified mechanisms by which excessive sugar consumption can wreak havoc on mental health.

For example, eating excessive amounts of sugar: contributes to insulin and leptin resistance and impaired signaling, which play a significant role in mental health; suppresses activity of brain derived neurotrophic factor (BDNF), a key growth hormone that promotes healthy brain neurons. BDNF levels tend to be critically low in both

triphosphate or ATP) in your body. When sugar is your primary fuel, excessive reactive oxygen species (ROS) and secondary free radicals are created, which damage cellular mitochondrial membranes and DNA. Needless to say, as your mitochondria are damaged, the energy currency in your body declines and your brain will struggle to work properly. Healthy dietary fats, on the other hand, create far fewer ROS and free radicals.

Fats are also critical for the health of cellular membranes and many other biological functions, including and especially the functioning of your brain. Among the most important fats for brain function are the long-chained animal-based omega-3 fats DHA and EPA. Not only are they anti-inflammatory, but DHA is actually a component in every cell of your body, and 90 percent of the omega-3 fat found in brain tissue is DHA. Excessive sugar intake promotes chronic inflammation which, in the long term,

continued on page 2

### What's Inside This Issue

- Good News on Green Tea
- September Specials
- Tears and Dry Eye
- September Monthly Coupon

---

## Good News on Green Tea

If not for the fact it's been scientifically proven, you might say the health advantages of green tea are legendary. Many of these have been known to ancient healers for millennia, but unfortunately green tea has shifted far into the background for most Americans, undoubtedly because it pales in comparative popularity to the bold brew

negative effects of this notoriously nutrition-deficient approach to food. While the initial study was done on mice, scientists believe the same antioxidant effects would apply to humans. The researchers' goal was to investigate the protective effects of EGCG treatment on insulin resistance and memory impairment induced by a high-fat and high-

consuming EGCG is extremely compelling. In addition, the mice eating the HFFD were heavier than those eating the regular diet, and significantly heavier than the HFFD mice supplemented with EGCG. Further, the HFFD mice showed greater memory impairment than the others. These aren't the first positive results; one study highlighted the effect of drinking green tea on breast cancer due to the high catechin content. Additionally, green tea aficionados who drink at least five cups per day were shown in another study to have a 28 percent decrease in their heart disease risk (the black tea also tested in the study reflected no such benefit).

---

***“Drinking green tea may be a more acceptable alternative to medicine (for) combating obesity.”<sup>1</sup>***

---

known as coffee and the derivatives thereof. It's unfortunate because green tea contains a particularly powerful ingredient researchers have recognized for some pretty spectacular benefits.

The latest studies indicate a new interest that shouldn't be taken lightly. To unpack the benefits, there's one compound in particular — antioxidant catechins — with potential for your mind as well as your body. As the researchers explain: *“Green tea is the second most consumed beverage in the world after water, and is grown in at least 30 countries. The ancient habit of drinking green tea may be a more acceptable alternative to medicine when it comes to combating obesity, insulin resistance and memory impairment.”*



How sad is it that a meal regimen loaded with sugar and all the wrong fats is often referred to as “the Western diet?” But a new study shows that epigallocatechin-3-gallate, or EGCG, is a catechin that may help counteract the

fructose (HFFD).

The researchers divided 3-month-old mice into three groups and gave each group a different diet: the control group, a high-fat and high-fructose diet, and a HFFD plus EGCG. Although more research is needed to know exactly how much EGCG is needed, here's what they found four months later: EGCG prevented HFFD-elicited memory impairment and neuronal loss; EGCG significantly ameliorated insulin resistance and cognitive disorder by upregulating the insulin receptor response having to do with brain-signaling pathways; long-term HFFD-triggered neuroinflammation was restored by EGCG supplementation, in part by inhibiting the expression of inflammatory mediators; EGCG also reversed high glucose and glucosamine-induced insulin resistance in neuronal cells by improving the oxidized cellular status and mitochondrial function.

Those are some pretty dramatic improvements — and to think the same may be available to humans simply by

Forbes noted that most studies on green tea have been done on people in Asia, or at least on people eating what is considered an Asian diet, which is quite different from what is typically consumed in the U.S. However, believing the findings to be a sort of green light to gastronomical cart blanche is a move in the wrong direction, Forbes cautioned. “It's more an exploration of how powerful the effects of dietary antioxidants can be.”

Authority Nutrition lists other possible advantages of green tea extract and/or supplementation, connected to a number of clinical studies: promotes heart, liver and brain health, improves skin, and reduces cancer risk; benefits exercise and recovery beyond exercise; helps with weight loss; improves liver health, and helps lower blood sugar.

Reference: *Forbes* July 31, 2017. *Carcinogenesis* November Vol. 27, Issue 7, 1 July 2006, p. 1310-5. *American Journal of Clinical Nutrition* Jan. 19, 2011. *Authority Nutrition* 2012-2017.

---

## Sugar and Depression, *continued from page 1*

disrupts the immune system, thereby raising your risk of depression. A 2004 cross-cultural analysis of the relationship between diet and mental illness found a strong link between high sugar consumption and the risk for depression and schizophrenia. It also concluded that dietary predictors of depression are similar to those for diabetes and heart disease. One of the hallmarks of these diseases is chronic inflammation, which sugar is a primary driver of.

So, excessive amounts of sugar can truly set off an avalanche of negative health events — both physical and mental. According to the World Health Organization, depression is now the lead-

ing cause of ill health and disability worldwide, affecting an estimated 322 million people, including more than 16 million Americans. Globally, rates of depression increased by 18 percent between 2005 and 2015. According to the U.S. National Institute of Mental Health, 11 percent of Americans over the age of 12 are on antidepressant drugs. Among women in their 40 and 50s, 1 in 4 is on antidepressants.

While a number of different factors can contribute to depression, research is confirming that diet plays an enormous role. Radically reducing or eliminating sugar and artificial sweeteners from your diet can be a crucial step

to prevent and/or address depression. One simple way to dramatically reduce your sugar intake is to replace processed foods with real whole foods. Eating plenty of fruits and vegetables is associated with lower odds of depression and anxiety, an effect ascribed to antioxidants that help combat inflammation in your body. Other simple strategies for minimizing your risk of depression are regular exercise, outdoor time, restorative sleep, and supplements including St. John's Wort, a medicinal plant, and SAM-e, an amino acid derivative.

Reference: *Scientific Reports* July 27, 2017 (7):6287. *Medical News Today* July 28, 2017. *Depression and Anxiety* Oct. 30 2002, DOI: 10.1002/da.10054. *American Journal of Clinical Nutrition* June 24, 2015, doi: 10.3945/ajcn.114.103846. *Current Opinion in Clinical Nutrition and Metabolic Care* 2013 July; 16(4):434-9.

---

---

## Tears and Dry Eye

Although many accept declining eye sight as a part of natural aging, it is really more of a side effect of our modern lifestyle. Aging does not automatically equate to failing vision, cataracts or dry eyes, provided you've prop-

When your eye is healthy, a continuous bath of basal tears will cover and protect your cornea. This is the clear, dome-shaped outer surface of the eye over the pupil. Every time you blink, these basal tears nourish the cells of the

factors that increase your dry eye. **N-acetyl-cysteine** is a derivative of the amino acid L-cysteine, NAC has antioxidant properties and is used by ophthalmologists to treat corneal abrasions and ulcers, and dry eye. **Omega-3 fats**, which your body begins using before you are born to help develop your vision. Their benefits continue through adulthood, and omega-3 may be a useful

---

***“Tears are actually a complex mix of mucus, water, fatty oils and different proteins.”***

---

erly nourished your eyes through the years. Unfortunately, statistics demonstrate that many Americans are suffering the effects of years of poor lifestyle choices. In people over age 40: 24.4 million people have cataracts; 2.7 million have glaucoma; 4.2 million suffer impaired vision, and 4.88 million suffer dry eye. You may have experienced some of the symptoms of dry eye after having been outside in windy conditions or a long day wearing contact lenses. These symptoms may include a scratchy sensation over your eye, or feeling as if there is something in your eye. It may feel as if your eyelids are heavy, be more difficult to blink or you may experience blurred vision.

In the past, dry eye was treated by adding moisture, such as normal saline. Today, there is a better understanding of the complexity of some of the substances in your tears and how they function in your eye. There are several layers to the tears your eyes produce naturally, and up to 1,500 proteins. Tears are actually a complex mix of mucus, water, fatty oils and different proteins designed to keep the surface of your eye smooth and protected from environmental pathogens and irritants.

You have three different types of tears and each has a different chemical mix produced by three different glands. Meibomian glands produce an outer, oily layer that keep your tears from evaporating too quickly, thus enabling the tears to remain on your eye and protect the organ. Lacrimal glands produce the middle layer of watery tears and water-soluble proteins that help to nourish the cornea and conjunctiva, or mucous membrane covering the entire front of the eye and inside of your eyelids. Goblet cells produce the innermost mucin layer of tears, or glycoprotein component of mucous. This binds the water from the aqueous layer produced by the lacrimal glands to ensure your eye remains wet.

cornea. The second type of tear is called reflex tears. These are produced in reflex to an irritant in the eye, or exposure to external irritants such as wind, smoke or onions. The third type of tear is emotional tears, produced after a powerful emotional stimulation.

When insufficient tears are produced, or the composition changes, it can affect both the health of your eye and your vision. Eyesight may be affected as adequate amounts of tears on the surface of your eye affect how your eye focuses light and color. Dry eye can result from an immediate environmental stimulus, such as a windy day, or can turn into a chronic condition if there's a problem with your tear glands. There are two main types of chronic dry eye: deficiency, triggered by an inadequate production of tear volume, and evaporative, which is triggered by an acceleration of tear evaporation due to poor-quality tear production.

There are health conditions that affect both the quality of the tears your body produces and the amount of tears produced. Health conditions that may trigger one of the two reasons for chronic dry eye include lasik surgery, diabetes, thyroid disorders, hormonal changes and rheumatoid arthritis. Environmental conditions that may contribute to the development of situational dry eye include wind, smoke, medications, seasonal allergies and extended computer time. Symptoms of dry eye usually fluctuate during the day as the amount of tear production or quality of your tears may vary.

While recommended treatments may include tear-stimulating drugs, artificial tears or eye drops to control the inflammation caused by the dry eye, like all other health conditions, prevention is your best medicine. The following strategies may help prevent problems with reduced tear production or poor-quality tears, or help reverse the current pattern as you reduce the environmental

### **Michigan Grass-fed Beef:** *Humanely-raised at Lamb Farm in Manchester, MI*



### **Porterhouse & T-Bone Steaks only \$13.99/lb**

remedy for dry eye. In a study with more than 450 participants, a daily dose of 360 mg EPA and 240 mg DHA helped reduce symptoms of dry eye in people whose condition was aggravated by computer use. You can boost your omega-3 by eating foods like wild-caught salmon, sardines and anchovies, or by taking a supplement. **Rigorous exercise** fosters blood flow, helps regenerate tissues and, by increasing heat, promotes the release of oils in the eyes.

There are also environmental factors you can modify that may help reduce situational dry eye, and reduce the influences that may aggravate chronic dry eye. Although simple, the end results may improve your quality of life and reduce your daily discomfort. Cut back on screen time and take periodic breaks to rest your eyes. Wear blue-blocking glasses in the evening to reduce eyestrain and increase melatonin production before you sleep. Closing your eyes for a minute and blinking repeatedly may help distribute your basal tear layer more evenly across your eye. Eliminate your exposure to secondhand smoke.

Reference: American Academy of Ophthalmology, Eye Health Statistics. National Eye Institute, Facts About Dry Eye. All About Vision, Eye Benefits of Omega-3 Fatty Acids

---



# ARBOR FARMS MARKET

PRSRST STD  
US POSTAGE  
PAID  
ANN ARBOR MI  
PERMIT NO 150

2103 West Stadium - Boulevard Plaza  
Ann Arbor - 734-996-8111 - arborfarms.com

## \$2 OFF

your next purchase  
of **\$15 or more** at  
**Arbor Farms Market.**

Limit one coupon per visit. No cash value.  
Valid through Sept. 30, 2017.

## September Specials



Enjoy  
Michigan's Harvest



Effective Sept. 4 - Sept. 17

### Arriving in September: Local Produce from Local Growers

Lamb Farm - Manchester	Homer Organic Farms
Almar Orchard - Flushing	Schwartz Farm - Quincy
Seeley Farm - Ann Arbor	Graham's Organic - Rosebush

Organic Bartlett Pears.....	\$1.99/lb
Organic Blackberries, 6 oz. pkg.....	\$2.99
Organic Seedless Grapes, Red or White.....	\$2.99/lb
Grass-fed Beef Rump Roast.....	\$6.49/lb
Miller Poultry Pick of the Chick.....	\$1.99/lb
Faroe Island Salmon Fillets, farmed Scotland.	\$14.99/lb
Michigan Grass-fed T-Bone Steaks & Porterhs	\$13.99/lb
Michigan Sweet Corn, in the husk.....	4/\$1.99
Michigan Organic Tomatoes.....	\$2.99/lb

Effective Sept. 4 - October 1

Maple Hill Organic Yogurt, assorted 6 oz.....	4/\$5
Nature's Path Organic Cereals, asstd. 10-14 oz.....	2/\$6
Clif & Luna Bars, assorted 1.5-2.4 oz.....	5/\$5
Vegan Rob's Puffs & Chips, assorted 3.5 oz.....	2/\$4
North Peak Siren & select 6/12 oz.....	\$8.99
Chehalem Chardonnay, 750 ml, Oregon.....	\$15.99
Mill Creek Hair Care, entire line.....	20% OFF
Solaray Vitamins & Herbs, entire line.....	20% OFF



Serving Ann Arbor  
since 1979



Shop  
Local

Keep your \$\$\$  
in Michigan

**Nordic Naturals Omega-3/Fish Oils... 20% OFF entire line!**