



# ARBOR FARMS MARKET

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## Our September 2018 Newsletter for Healthy Living

### Blood Pressure and Cognition

**B**lood pressure is the force needed to push blood through your arteries coming from your heart to deliver oxygen-rich blood to your body. When your blood pressure is measured, you get a high value (systolic) and a low value (diastolic). The high number is the highest pressure that occurs in your blood vessels while your heart is contracting. The low value is pressure in your arteries between heartbeats when your heart is relaxed. A blood pressure reading of 120/80 millimeters of mercury (mmHg) is considered healthy.

High blood pressure (hypertension) is typically considered anything over 140/90 mmHg, although updated guidelines from the American Heart Association now have 130/80 mmHg as the cutoff for a diagnosis of hypertension. Having an elevation in just one of the two values may also be enough for a hypertension diagnosis. In the U.S., an estimated 1 in 3 have high blood pressure, and another 1 in 3 have prehypertension. Typically, your systolic



pressure offers the most information about how stiff your arteries are and how much pressure is needed to push blood around your body. Elevated systolic pressure is a major risk factor for cardiovascular disease and stroke.

Recent research suggests hypertension, especially elevated systolic pressure, may also raise your risk of dementia. Previous studies have already shown that stroke victims, even if it's a

minor stroke, are at increased risk of Alzheimer's, and this adds further weight to recommendations to get your blood pressure under control in order to protect your cognitive health. The study in question found that, in older adults, having an elevated average systolic blood pressure puts you at greater risk for brain lesions and tangles associated with Alzheimer's disease.

ogy textbooks, as much as 95 percent of hypertension is called essential hypertension, meaning the underlying cause is unknown. However, a number of factors have been identified as contributing to high blood pressure, including but not limited to: insulin and leptin resistance; elevated uric acid levels, and poor nutrition in childhood. One of the most important dietary changes needed to im-

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***"...the risk of brain lesions was higher in people with higher average systolic blood pressure."***

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The average blood pressure of the seniors enrolled in the study was 134/71 mmHg, and 87 percent of them were taking medications for high blood pressure. The participants were followed until death, or for an average of eight years. The average age at death was 89.

As reported in the press release: *"Researchers found that the risk of brain lesions was higher in people with higher average systolic blood pressure across the years. For a person with one standard deviation above the average systolic blood pressure, for example 147 mmHg versus 134 mmHg, there was a 46 percent increased risk of having one or more brain lesions, specifically infarcts ... the equivalent of nine years of brain aging. Those with one standard deviation above the average systolic blood pressure also had a 46 percent greater chance of having large lesions and a 36 percent greater risk of very small lesions."*

According to medical physiol-

prove high blood pressure is to eliminate or dramatically reduce sugar, especially processed fructose, in your diet. One 2010 study discovered that those who consumed 74 grams or more per day of fructose (the equivalent of about 2.5 sugary drinks) had a 77 percent greater risk of having blood pressure levels of 160/100 mmHg (stage 2 hypertension). Consuming 74 grams or more of fructose per day also increased the risk of a 135/85 blood pressure reading by 26 percent, and a reading of 140/90 by 30 percent.

Another dietary culprit is trans fat, which is responsible for atherosclerosis (hardening of your arteries) and is another trigger for hypertension. The easiest way to cut both sugar and unhealthy fats from your diet is to replace processed foods with real, whole foods. This will address not only insulin and leptin resistance but also elevated uric acid levels. A type of fat you may need more of is animal-based omega-3 fats.

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- The Power of Gratitude
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## The Power of Gratitude

Only 1 in 3 Americans reports being "very happy," and nearly 1 in 4 experience no life enjoyment at all. Fortunately, there's hope. Small changes in perspective and behavior can add up over time, and practicing gratitude is at the top of the list of strategies known to boost happiness and life satisfaction. If your happiness could use a pick-me-up,

*thoughtfulness) serve as the mechanism via which gratitude expressions facilitate affiliation. Insofar as gratitude expressions signaled interpersonal warmth of the expresser, they prompted investment in the burgeoning social bond."*

The ability to feel gratitude for little everyday things can also boost your willpower, improve your impulse con-

effects of gratitude. Gratitude actually triggers the release of antidepressant and mood-regulating chemicals such as serotonin, dopamine, norepinephrine and oxytocin, while inhibiting the stress chemical cortisol. These neurochemical effects are also why gratitude has been linked to reduced stress. Yet another reason is because it improves emotional resiliency. Lastly, gratitude has been shown to improve work performance. In one study, managers who expressed gratitude saw a 50 percent increase in the employees' performance. Considering more than half of all American workers say they're frustrated at or by work, it's quite clear there's a lot of room for improvement here, and gratitude could go a long way toward fostering a healthier work environment.

The emotion of gratitude also has myriad physical benefits, actually producing measurable effects on a number of bodily systems, and correlating positively with self-rated physical health in general. Grateful people are also more likely to engage in healthy activities and self-care, such as exercising regularly, eating well and getting regular medical wellness checks. Other studies have found that gratitude: improves cognition; lowers blood sugar; helps lower high blood pressure; reduces inflammation; improves sleep quality and quantity; and, improves heart health.



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***"The emotion of gratitude correlates positively with self-rated physical health."***

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commit to cultivating an attitude of gratitude every day. Not only will it pave the way to life satisfaction, but research also confirms it benefits both sanity and physical health. Enhancing your health and well-being, then, may be as simple as taking the time each day to reflect on what you're thankful for.

Relationships tend to play a big role in one's perception of happiness, and research has demonstrated gratitude is the single best predictor of relationship satisfaction. It also boosts your sense of pleasure in general. This effect has been traced back to gratitude's ability to stimulate your hypothalamus (a brain area involved in the regulation of stress) and ventral tegmental area (part of your brain's "reward circuitry," an area that produces pleasurable feelings).

Gratitude has also been shown to play a significant role in your ability to expand your social circle and make more friends. According to the authors of this study: *"This experiment ... provided evidence that perceptions of interpersonal warmth (e.g., friendliness,*

control and make you a more patient person, all of which allow you to make more sensible decisions — including decisions concerning your health and finances. Interestingly, gratitude is associated with a link to increased happiness via a neural link to generosity.

Gratitude is actually a form of generosity, because it involves offering or extending "something" to another person, even if it's only a verbal affirmation of thanks. Generosity, in turn, is neurally linked to happiness. In other words, your brain is actually wired to boost your happiness when you commit acts of generosity, even when no money is involved.

Considering its ability to boost happiness and social connectivity, it's no surprise gratitude has been shown to combat depression. Experiments have demonstrated that getting in the habit of listing three things you're grateful for each day results in considerable improvements in depression, sometimes in as little as two weeks. There's even biochemical support for the antidepressive

Research has shown those with the highest serum levels of omega-3 also have the lowest blood pressure readings. On average, their systolic pressure was 4 mmHg lower and their diastolic pressure was 2 mmHg lower compared to those with the lowest omega-3 blood levels. The best way to boost your omega-3 is to eat plenty of oily fish that are low in sardinemerccury and other pollutants. Good options include wild-caught Alaskan salmon, sardines and anchovies. You might also consider taking a high-quality krill oil supplement.



Another food that has been

found to have a beneficial effect on blood pressure is beets. In one small placebo-controlled trial, one glass (250 milliliters or 8.5 ounces) of beetroot juice per day for one month reduced blood pressure in those diagnosed with hypertension by an average of 8 mmHg systolic and 4 mmHg diastolic pressure. This 8/4 mmHg reduction is very close to that provided by blood pressure medications, which typically can reduce blood pressure by about 9/5 mmHg, and for many it was enough to bring their blood pressure down to normal levels. The treatment group also saw a 20 percent improvement in blood vessel dilation capacity and a 10 percent reduction

Reference: *Medical News Today* December 17, 2016. *Medical Daily* March 27, 2017. *Emotion* 2015 Feb; 15(1):1-5. *Emotion* 2016; 16 (4):421-25. PubMed "Personality and Individual Differences" 2013 Jan; 54(1):92-96. *Psychology Today* November 9, 2011.

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## Blood Pressure and Cognition *(continued from page 1)*

in arterial stiffness. The beneficial effects are related to the nitrate found in beetroot juice. Your body converts the nitrate into bioactive nitrite followed by nitric oxide (NO), the latter of which helps relax and dilate your blood vessels, and helps prevent blood clots. Other vegetables high in nitrates include arugula, butter leaf lettuce and spring greens. Vigorous exercise triggers NO production in your body and, ideally, you'd both eat nitrate-rich veggies and get plenty of exercise to keep both your brain and body fit.

Reference: *American Heart Association* November 13, 2017. CDC.gov, *High Blood Pressure Fact Sheet*. *Neurology* July 11, 2018. *Rush.edu* July 11, 2018. *Journal of the American Society of Nephrology* 2010 Sept. 21(9):1543-9. *WebMD* November 13, 2016. *Medical News Today* July 20, 2016.

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## Red Tide and Run-Off

Florida is well-known for its aquatic wildlife — a natural resource that is now being rapidly decimated by the influence of factory farms and chemical agriculture, combined with the unpredictable forces of nature. Over the

chobee. Phosphorous-rich manure is leaching from the factory farms in the north, while fertilizer-rich water gets pumped into the lake from the south, and it is these fertilizer chemicals, primarily phosphorus but also nitrogen, that

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***“The explosion of wildlife-killing algae in the area is largely a result of agricultural runoff.”***

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past 10 months, scores of manatees, dolphins, turtles, eels, crabs and other marine animals have washed ashore, dead, killed by toxic *Karenia brevis* algae — known as red tide — which now covers the east and west coasts.

Lake Okeechobee, which is the source of the problem, is also choked by another algal organism — blue-green cyanobacteria. Both the red tide organism and cyanobacteria are fed by excess nutrients such as phosphorous and nitrogen from agricultural fertilizers. These toxic algae also pose a threat to human health. Exposure through inhalation may trigger respiratory distress; topically it may cause skin rashes, while accidental ingestion can lead to vomiting and kidney failure.

As reported by One Green Planet: *“[T]oxic algae is spreading through the coastal waters of South Florida, causing what is known as a ‘red tide’ to form, and it is killing wildlife at alarming rates due to lack of oxygen. The explosion of wildlife-killing algae in the area is largely a result of agricultural runoff linked to the Big Sugar industry.”* The red tide, which covers an estimated 100 miles of coastline and stretches miles offshore, has persisted for 10 months and still shows no signs of abating. The waters of Lake Okeechobee originally drained south into the Everglades, “one of the most biologically diverse regions on Earth.” Over time, however, swampland was transformed into farmland. Then, in 1928, a massive hurricane hit the area; to prevent a repeat of this deadly event, the Herbert Hoover dike was built around the lake. Instead of draining south, the lake now drains to the east and west coasts via man-made canals. As Okeechobee no longer fed water into the Everglades, more swampland dried up, and the sugar industry moved in, while cattle ranches congregated to the north of the lake.

Together, these industries have created a perfect storm in Lake Okee-

chobee. Phosphorous-rich manure is leaching from the factory farms in the north, while fertilizer-rich water gets pumped into the lake from the south, and it is these fertilizer chemicals, primarily phosphorus but also nitrogen, that feed the toxic algae in the lake. According to University of Miami scientists, *K. brevis* blooms were thirteenfold to eighteenfold more abundant along the southwest Florida coast between 1994 and 2002 compared to 1954 to 1963, and the reason for this was human-released nutrients such as fertilizer runoff.

A major problem with the sugar cane fields is that they still use the old system of back-pumping excess water from the fields into Lake Okeechobee. According to Martin County district data, an estimated 8.7 billion gallons of nutrient-rich water from the sugar fields in the south were back-pumped last year. The back-pumping, combined with two serious storms, Harvey and Irma, created a situation where an unusual concentration of cyanobacteria formed in the lake, starting around October 2017. The water from Lake Okeechobee, thick with algae, then flows through the canals to the ocean on the east and west coasts, slowly spreading outward. The concentration of nutrients in the water also allows the red tide to persist far longer than normal. It’s been 10 months, and it still shows no signs of abating.

Aside from synthetic fertilizers and manure, there’s yet another nutrient source that appears to play a role in toxic algal blooms: sewage sludge, also known as biosolids. This human waste is frequently used as a “natural” fertilizer. A July 15, 2018, article in the Florida Times-Union reported a breakout of algae bloom at the head of St. Johns River — a typically pristine area — may have been caused by the sludge runoff. While the Florida Department of Environmental Protection has shied away from blaming sludge, it has agreed to study the problem. According to researchers, there’s been a significant increase in the use of sludge in the area, starting in 2013. Since 2012, the amount of phosphorous added to the upper basin has more than doubled. In 2016 alone, 70,000 tons of sewer sludge were al-

lowed to be disposed in the river’s upper basin. Chemicals known to be problematic in the part per billion or trillion in water and air are concentrated millions of times higher in sewage sludge which, when applied to farmland, deposit these toxins into the soil. Rain and irrigation runoff then transport the toxins into waterways and groundwater.

What’s more, biosolids are not counted toward fertilizer use. This loop-

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hole can give the false appearance that agricultural fertilizers aren’t as big a problem as you might think. Farmers may proudly claim they’ve cut down on fertilizers, when in fact they’ve just switched to biosolids, which aren’t counted, yet deposit even more toxins and result in the same kind of environmental devastation, including algal blooms in waterways.

Florida is not alone in its struggle. That our agriculture is causing such enormous environmental devastation is inexcusable. There’s no reason for this insanity, as there are solid, proven ways to farm without synthetic fertilizers and other toxic chemicals, including glyphosate. On an individual level, you can help by buying food from organic farmers who rely on natural methods and soil-regenerative techniques, such as no-till, cover crops, composting and livestock integration. This will naturally help you to eat better too, since typically only real whole foods are grown this way, while most processed foods are the product of destructive industrial nitrogen fertilizer-laden and glyphosate-heavy agriculture.

Reference: *One Green Planet* August 6, 2018. *TCPalm.com* August 14, 2017. *Harmful Algae* 2007; 6(2):232-52. *Florida Times-Union* July 15, 2018.

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