NUTRITION NEWSLETTER

Educating our community one bite at a time

Fall 2016

Ingredients

The New Plant-Based Nutrition & Sustainable Agriculture Program

Grow it! Cook it! Eat it! And reap the benefits!

The Department of Nutrition and Foods in collaboration with the Department of Horticulture, is excited to announce the launch of the new Plant-Based Nutrition & Sustainable Agriculture (PBNSA) certificate program beginning Fall 2017. Students completing this program will learn how to grow the food, how to prepare the food, and the nutritional and environmental benefits of a plant-based lifestyle.

"I'm thrilled to be part of such a cutting-edge and practical new program," said Timaree. "With Sacramento being recognized as a Farm-to-Fork Capital, our Nutrition and Foods Department deeply committed to optimal health by way of whole, plant-based food, and the collaborative relationship with our strong Horticulture Department, it is a natural fit!"

The certificate program consists of three classes: NUTRI 303 Plant-Based Nutrition, NUTRI 331 Plant-Based Food Principles and Preparation, and HORT 313 Sustainable Agriculture.

"We're hoping to show people what they can do in their own yards and also open up some career opportunities for new students

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What's Our Secret?

I know what you are thinking…"I'd eat more broccoli if it didn't ***smell so bad*** when I cook it!" This goes for cabbage, cauliflower, Brussels sprouts and all of the nutrient-packed cruciferous vegetables. So how do you minimize the odor that results from cooking these vegetables? When heat rises (such as during cooking), it speeds up the enzyme in the vegetable that produces the sulfuric smell. The smell gets stronger when it is overcook. So, the best way to minimize the smell is to cook the vegetable quickly in high heat. Putting broccoli in a pot of ***boiling*** water will inactivate the enzyme. Avoid covering the pot so that the sulfur compounds can escape and cook for only a few minutes.

Ask the Nutrition Experts:

I do not have high blood pressure, but I am hearing a lot about cutting back on sodium. Do I need to do this if I am otherwise healthy?

Great question! Sodium in our diet mainly comes from salt. Salt is composed of sodium and chloride. However, the nutrient of most concern to the health of individuals is sodium. Sodium is required for nerve and muscle functions. Sodium also helps the body maintain fluid and electrolyte balance.

Something to remember is: water goes where sodium goes. Thus, if you eat a lot of sodium, you should expect a lot of fluid retained in the body. (You might notice this if you ate a lot of salty foods and the next day, you experience your shoes or your rings are tighter on you. The slight swelling is due to fluid retention from the excess salt/sodium consumed.)

Why should people be concerned about their sodium intake? The higher fluid volume means higher blood volume. This increased blood volume makes the heart work harder in order to pump the blood throughout the whole body via the circulatory system. If the kidneys are unable to excrete the higher level of sodium (and therefore fluid), it will result in a raise in the blood pressure (hypertension).

The fact is the typical American eats way too much salt. Based on the National Health and Nutrition Examination Survey, the average intake of sodium is ~3,400 mg/day. What may be surprising is that the human body only needs roughly 500 mg of sodium a day to maintain normal functions. Therefore our average intake is approximately 7-times greater than what you need! In reality, it is very difficult to eat only 500 mg of sodium a day. Even unsalted fresh fruits and vegetables contain sodium. The natural sodium found in unadulterated foods contributes 12% of the sodium intake for the average individual. Seventy-seven percent of the sodium you eat comes from processed foods. The rest comes from added salt during cooking or at the table. The New Dietary Guidelines for American states that most adults should consume no more than 1,500 mg of sodium a day.

So, do you need to restrict your salt if you are otherwise healthy? The answer? It is probably a good idea to do so. If you do not have any risks, it is still important to keep your sodium intake to ~1500 mg/day. Why put more stress on the body (especially your heart which has to pump all the extra volume and your kidneys which has to filter out the sodium from your body)? A high sodium intake is also linked to more calcium loss (from the bones). This will put you more at risk for osteoporosis. The smarter choice would be to keep your sodium intake to a minimum by limiting your intake of processed foods and avoid adding salt to your meal.

Recipe You Must Try: Mahoney's Stuffed Portabella Mushroom

Ingredients:
4 large Portobello mushroom (cleaned & stemmed)
1 ½ cups cooked brown rice
1 large sweet potato (baked & chopped)
2 stalks celery (chopped)
3 green onions (chopped)
1 bunch Swiss shard (chopped)
2 cloves garlic (chopped)

Spices (amount to taste):
Cumin, turmeric, onion powder, chili flakes, salt & pepper

Procedure:
Over medium heat, cook celery, onion, garlic, & Swiss chard until chard has wilted, adding a few tablespoons of water or vegetable broth, if needed (to prevent burning). Add all spices to taste, & cook for 5-10 minutes before adding rice and sweet potatoes.

Place mushrooms in an oven safe dish and add filling. If desire, sprinkle with whole grain panko breadcrumbs, crush walnuts. Bake 350° F, 20-30 min. until the mushrooms softened.

Treating Depression at the Produce Aisle

By Pamela Emmons, Nutrition Student

Can eating dark leafy greens make you feel better?

Researchers Lisa Bodnar and Katherine Wisner report that eating legumes, whole grains, green vegetables, and other foods high in folic acid not only reduce the risk for depression, they also can increase the effectiveness of treatment for the disorder.

The link between folate and depression has been well established. In 1962, Victor Herbert eliminated folate from his diet for four and a half months. He suffered from insomnia, forgetfulness, irritability, and other signs of depression. What's more, all the symptoms disappeared after just two days of re-ingesting foods with folate.

Depression is one of the most prevalent emotional illnesses and comes with symptoms like fatigue, generalized pain, insomnia, and hopelessness; it can greatly reduce a person's quality of life.

Inadequate levels of certain chemical messengers, or neurotransmitters, in the brain may cause depression. These neurotransmitters are serotonin, norepinephrine, and dopamine. Serotonin controls sleep, appetite, mood, and behavior. Norepinephrine regulates pleasure and arousal. Dopamine oversees sleep patterns and the ability to focus. Two of the byproducts of folate metabolism are methyltetrahydrofolate (MTHF) and tetrahyrdrobiopterin (BH4). MTHF is a building block of serotonin, norepinephrine, and dopamine. The rate of release of these chemicals is controlled by BH4. Because low levels of these neurotransmitters are a cause of depression, and folate is necessary for their synthesis and availability, it follows that low levels of folate can lead to the depression.

Most antidepressant medications are formulated to increase the levels of serotonin, norepinephrine, or dopamine. Unfortunately, they have only a 53% success rate of relieving symptoms and have many side effects, such as sleep disturbances, weight gain, nausea, and decreased sexual desire. With the medication's unwanted side effects and low effectiveness, patients and doctors are looking for alternative remedies and cures that are more effective.

Increasing folic acid may be the answer. In their study, Bodnar and Wisner compared patients with low levels of folate to those with normal levels in a 12-week course of fluoxetine, a common anti-depressant. They found a 45% positive response rate among those patients with normal folate levels, compared to only 7% in those with low levels of folate. Furthermore, those in the low folate group had a 43% chance of relapse compared to only a 3% rate of returning symptoms for those patients with adequate folate levels.

In addition to folate, a high consumption of fruits and vegetables provides antioxidants that may decrease the damaging oxidative stress that can lead to depression. In a study with ~300,000 subjects, those who consumed more fruits and vegetables had a lower chance of developing depression. This was not observed in subjects who were given antioxidant or folate supplements. The protective factor came from eating fruits and vegetables.

Depression continues

Eating your fruits and vegetables is an inexpensive remedy for reducing the risk for depression. Best of all, there are no negative (and only positive) side effects!

Did You Know…

With Halloween just around the corner, it might be good to know just how much each those little *fun* snack size candy stack up. http://blog.calorieking.com/2012/10/halloween-top-15-mini-size-candy-bars/

Compare the numbers below with what is recommended daily intake for an average healthy adult (Daily Value):

Daily Value	Cal 2000	Fat (g) 65 g	Carb 300 g
3 Musketeers, 1.6 oz	63	2	8
Almond Joy, 0.6 oz	80	4.5	10
Baby Ruth, 1.3 oz	85	4	12
Butterfinger, 0.75 oz	100	4	15
Heath, 1 piece, 0.5 oz	77	5	9
Hershey's miniature assortments, 0.3 oz	42	2.6	5
Kit Kat, 0.25 oz	35	0.2	4.5
M&M's, plain, 0.5 oz	73	3	9
M&M's, peanut, 0.6 oz	90	4	9
Milky Way, 0.6 oz	75	3	12
Mounds, 0.6 oz	80	4.5	10
Nestlé's Crunch, 0.4 oz	60	3	9
PayDay, 0.7 oz	90	10	24
Reese's Peanut Butter Cups, 1 cup	110	6.5	12
Reese's sticks, 1 stick	90	5	10
Snickers, 0.6 oz	80	4	10.5
Twix, 3 mini pieces, 1 oz	150	8	20

What Changed for Me – From a CRC Adjunct Faculty

By Timaree Hagenburger; published in the Lodi News Sentinel

A letter from Greg Mahoney (adjunct professor in BIT/Green Building) to Timaree:

You probably have many examples of how people can benefit from a plant-based diet, if so feel free to hit delete. I thought I should share my story because my doctor told me that a plant-based diet would NOT have the effect of improving my cholesterol levels enough to get off of statins. He told me that I would have to take statins for the rest of my life or risk a stroke or heart attack.

In November, I had a lipid panel done to establish my baseline cholesterol levels without taking statins. My diet was what many would consider *clean*: lots of fruits and vegetables, oatmeal every day, mostly chicken and fish, with red meat every now and then. No fast food, very little processed foods. My weakness was burritos; I still ate them regularly. I also used butter and cheese liberally in my diet.

I started a mostly vegetarian diet at the beginning of the year. My activity levels were the same; I try to exercise most weekends but no exercise regimen. I attended one of your presentations of Forks Over Knives, which inspired me to experiment with a whole food, plant-based diet in February (no meat, no dairy, no processed foods). After eating this way for three weeks, I had a lipid panel done.

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(See Greg's Portabella Mushroom recipe on page 2.)

What's In?

BROCCOLI!

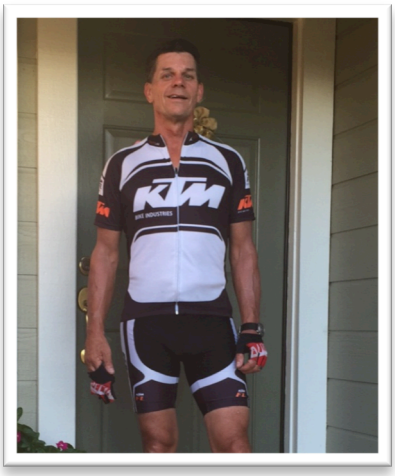
Broccoli is part of the cruciferous vegetable family and is considered a nutrient dense food (lots of nutrients for very few calories). It is high in phytochemicals and antioxidants that can lower the risk for cancer.

Only 30 calories in one cup serving.

Broccoli is a great source of vitamin C, A, B6, folate, K, as well as fiber. Plus, it is low in calories; there are only 30 calories in one cup serving. Fiber prevents constipation and can helps maintain the body's immune system. Broccoli has also been recognized as helping to lower blood cholesterol level and risk for coronary artery disease.

To keep broccoli fresh, make sure you store it unwashed in a perforated bag in the vegetable crisper in your refrigerator. Eat it within a few days.

What Changed for Me - continue



BEFORE

Baseline – *clean* diet, no medications:

Total cholesterol	264
LDL	201
HDL	45

Plant-based diet, no medications:

Total cholesterol	165
LDL	102
HDL	45

I am now completely off statins and my cholesterol levels are in the normal and safe range.

I should have mentioned that I had been on statins for about 8 years with some unfortunate side effects. Another benefit was losing 17 pounds *WITHOUT* reducing the amount of food I ate, just changing the food I ate. I shared my results with my brother who also has high cholesterol and he and his family are considering going plant-based. This really hits home for our family because we are in the midst of taking care of my parents, who are struggling with cognitive issues and other health problems. I want to break the cycle, so that my wife and I don't burden our children as we age.

1st Update: I'm down from 185 lbs. to 163 lbs., am riding 70 miles round trip to work a few times each week and 40-50 miles on Sat/Sun. I also ride my dirt bike for 2 hrs./wk.

AFTER

I was even recognized by the City of Davis as the employee who put in the most miles during Bike to Work month in May.

While my initial motivation was to get off medications, I could not believe that I was losing weight effortlessly. I had always kept my weight in check by eating less, but I felt like I was starving and the pounds always came back. Now, I can eat as much as I want. I also had to get used to people making comments about my appearance on a regular basis. They say, "I want to look like you –by this time next year." Many, however, are on the same path that I was, with their version of "eating clean" including fish and chicken. It was not until I transitioned to plant-based, whole foods, was I able to eat as much as I wanted and become healthier with every bite.

2nd Update: I am doing well on my quest for health. The last time I weighed 160 lbs. was 16 years ago and it was the result of 5 straight weeks of starvation. I was counting points using the Weight Watchers method and although I thought I was successful at reaching that goal weight, I was hungry all the time. **I am still losing weight by eating whole-food, plant-based diet.**

Plant-Based Nutrition & Sustainable Agriculture

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who decide that they want to try small urban production," said Horticulture Professor Dave Andrews, who will teach the Sustainable Agriculture course. "It's been quite lucrative as a business and career opportunity for students to do urban agriculture." The northeast area of campus is currently designated to be the location for the sustainable garden. The goal is to grow the garden without the use of conventional fertilizer and make it an organic garden, but the process (of organic certification) takes 3 years to complete.

There are a lot of success and interest in this field and they range from farmers, urban farmers, restaurants, chefs, and even K-12 school gardens. This program is created to formalize and provide the education to support this career path. Not only will the students learn the theories, but they will also apply them in the food lab and garden.

-Courtney Fong contributed to this article.

Feedback? Comments? Questions? Contact us!
We love to hear what you think about our newsletter.

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