



## Dole Diet Center

### Polyphenols & Longevity

Eating Colorful Food Could Prolong Life



Last month we reported on a study which suggested eating fruits and vegetables may help you live longer. This month we offer more convincing evidence that a plant-based diet is linked to a longer, healthier life. This time the researchers reveal an association which might indicate why! The September 2013 multi-institutional study was published in the *Journal of Nutrition* and shows that survivors had a 14% higher level of a biomarker for fruit and vegetable consumption that comes from the antioxidant polyphenolic

compounds responsible for giving fruits and vegetables their vibrant colors.

A total of 807 men and women age 65 years and older from the Chianti region of Tuscany, Italy, were enrolled in the study. Immediately upon joining the study researchers estimated the participants' total dietary polyphenol (TDP) intake by the standard food frequency questionnaire or FFQ but in addition they also decided to measure the participants total urinary polyphenol (TUP) concentration. The appearance of these polyphenolic biomarkers in the urine indicates that these compounds actually passed through the body and is a direct measurement of the amount of these compounds the participants have been exposed to. The researchers hypothesized this measurement to be a more accurate indicator of actual consumption rather than the estimation they got from the FFQ. During the twelve years following their enrollment 34% (274) of the study participants had died, 41% (112) from cancer, 24% (66) from cardiovascular disease and 35% (96) from a variety of other causes. The authors then correlated the TDP (estimated) and TUP (measured) values with mortality using statistical models. After adjusting for potential confounders such as age, sex, BMI, smoking status etc. the baseline TUP was about 14% higher in study survivors versus the deceased while the baseline TDP was no different. Further analysis of the data revealed those in the highest third of TUP measurements had a 30% lower mortality rate than those in the lowest third. Again, the TDP was no different. The authors suggest that older participants with a low TUP measurement could be at higher risk of death thus a high dietary intake of polyphenols that you can only get from plant-based foods may be associated with longevity. This association was not picked out by the FFQ derived TDP.

So, what is the best way to increase your polyphenol intake? Simple, eat more delicious fruits and veggies! Not only might you live longer you could also enjoy healthier skin, lower blood pressure and even protection from cosmic radiation! So what do you have to eat to get to be in that top third of TUP discussed in the study? Well the FFQ can give us a good idea of that, with the top third of polyphenol consumption being equivalent to what you could get by eating about two cups of blueberries, or a red delicious apple and a banana each day, not much really when you consider that if you fulfilled the 9 to 13 servings of fruit and vegetable recommendation every day you would be way above this minimum!

### Hot News



DIET COULD DOUSE  
DIABETES

### In this Issue

#### Dole Diet Center

- POLYPHENOLS & LONGEVITY
- VITAMIN D SUPPLEMENTS & BONE DENSITY
- FAST FOOD TV ADVERTISING = OVERWEIGHT TEENS

#### Nutrition News Desk

- DIET COULD DOUSE DIABETES
- STRENGTH TRAINING FOR THOSE OVER 90
- DEPRESSION DIET

### Featured Recipe



Harvest Squash Maple  
Salad

## Vitamin D Supplements & Bone Density

### Supplement Efficacy in Question



Vitamin D supplements are in widespread use in the fight against dwindling bone density as we age, especially in the over-50s, but do they work? The answer is a resounding “no” according to a new meta-analysis recently published by New Zealand researchers. The October 2013 review paper, published in the *Lancet* found little or no increase in bone density in supplement takers leading to the conclusion that, at least as far as bone density is concerned, vitamin D supplements may be at best a waste of money!

The researchers identified 23 studies with an average total duration of two years and covering 4,000 participants, 92% of which were women with an average age of 59. From the 23 studies collected, 70 sets of individual statistical tests associating vitamin D supplementation with bone density were performed. So what did they find? Well, the overwhelming majority of these tests, 89%, showed no significant association at all, leading the authors to conclude “...the use of vitamin D supplements for osteoporosis prevention was inappropriate”. Now, 9% of the tests did show a small beneficial association but only one of these actually showed this across multiple bone mineral density test sites and 3% of the tests actually showed a negative association.

This is not the first time supplements have been shown to be less than useful. Since vitamin D is not very common in food (except for some cereals and fortified milk and orange juice) and vitamin D supplements apparently don't work, what can you do about it? The best way to get what you need is healthy sun exposure. Approximately 15 minutes with bare arms and legs easily gets you there, more time than that and you should wear sunscreen to protect your skin. The good news is that vitamin D is fat soluble so it accumulates in the fatty deposits of your body thus, the more you generate in the summer the longer your stored supply will last you through the winter. Avoiding sun exposure all together is a sure way to become vitamin D deficient. Not a good situation especially with inadequate levels being linked to a lack of appetite control, incontinence and in kids' faster weight gain.

## Fast Food TV Advertising = Overweight Teens

### Ability to Remember Ads Increases Obesity Risk



Teenagers love TV and fast food chains know this so, perhaps it's no surprise that a new study suggests that this type of advertising really works. The 2013 multi-author study which appeared in the *American Journal of Preventive Medicine* found that teens with a high ability to remember fast food advertising were not only more likely to be obese but that, according to the authors, are more likely to adopt behaviors such as consumption of calorie-dense foods in the future perpetuating a vicious cycle of excess!

Between the fall of 2010 and spring of 2011 about 6,500 eligible U.S. households were contacted via a random-digit-dial telephone method. About 2,500 of these calls resulted in a young person age 15 to 23 years completing a web-based survey which measured the participants' ability to recall a random set of 20 images associated with fast food restaurant TV advertising (brand names removed). They were then questioned on whether they could recall seeing the advertisement, whether they liked it and if they could correctly identify the brand. This “cued-recall assessment of youth TV fast-food advertising receptivity” or TV-FFAR for short produced a score which was then correlated with the teen's BMI. Amazingly, for every point increase in TV-FFAR, equivalent to answering yes to the above questions and correctly guessing the brand

for two fast food restaurants, the odds of obesity were increased by a whopping 19%

This uncanny ability to remember TV-based fast food ads could be a sign you're watching too much TV which gets a bad rap anyway when it comes to your health. Too much "tube" time is associated with higher blood pressure, increased caloric intake resulting in obesity (especially in kids) and a reduction in the time we spend outside in the great fresh air. We shouldn't forget that a simple walk outside surrounded by nature in all its colorful glory can boost cognitive recall by as much as 20%.

## Nutrition News Desk

### Diet Could Douse Diabetes

Celebrate Diabetes Awareness Month by Going Mediterranean



November is American and National Diabetes month, a disease which affects nearly 26 million people in the U.S. and is estimated to cost the country as much as \$245 billion. Now, hot off the presses, a November 2013 study by Italian, U.S. and Greek researchers demonstrates nearly a 20% reduced risk for developing this debilitating disease if your diet resembles that of a low GI version of the Mediterranean diet.

The 2013 study appeared in the journal *Diabetologia* and analyzed the data obtained from a Greek population as part of the *European Prospective Investigation into Cancer and Nutrition* (EPIC) study. A total of 22,295 participants were enrolled between 1994 and 1999 and monitored for an average of 11.3 years. All participants completed a validated food frequency questionnaire (FFQ) to assess diet. Conformity to the traditional Mediterranean diet, defined as containing vegetables, legumes, fruit and nuts, cereals, fish and seafood, as well as a high ratio of mono-unsaturated to saturated fats and moderate alcohol, was assessed by calculation of a Mediterranean Diet Score (MDS) ranging from 0 (minimal adherence) to 9 (maximal adherence). Points were accumulated for above average consumption of these foods. Points were also accumulated for below average consumption of dairy, meat and meat products. Participants' incidence of type 2 diabetes was identified from medical records. During the study 2,330 incidences of type 2 diabetes were recorded. A statistical analysis demonstrated that those in the top 25% (MDS = 6 or higher) of conformity enjoyed an 18% lower risk of developing type 2 diabetes than those in the bottom 25% (MDS = 3 or lower) of conformity.

The take home message here is to "Go Mediterranean" by upping your fruit and vegetable consumption, getting most of your protein from fish and legumes and making sure your fats are the healthy kind while enjoying the occasional glass or two of red wine if you like. Not surprising advice since vegetables, fish, healthy fats and nuts are so very good for you. Plus, see our article from last month's DNN for other potential diabetes fighting weapons to include in your health arsenal.

### Strength Training for Those Over 90

Mobility Improves More When Lifting Weights



It's official... you're never too old to pick up the weights! A new study by Spanish researchers published in the journal *Age* has reported dramatic benefits in the muscle strength of the over 90 crowd with simple bi-weekly exercises over a three-month period.

The September 2013 randomized controlled human clinical trial

monitored 24 institutionalized individuals, average age of 91.9 years, from the Pamplona region in Spain who were randomized into either exercise or control groups. The exercise group completed a three-month long bi-weekly multicomponent exercise program composed of muscle power training (8 to 10 reps at 40-60% of the one-rep maximum), balance and gait retraining. The control group did perform mobility exercises 4 days per week but these passive movements were not considered as weight training. Upper and lower limb strength and power tests were performed as well as walking speed over 5 meters. Other assessed components included the ability to rise from a chair and the incidence and risk of falls from questionnaires. The results showed that even at age 90 and above, the exercise group showed improvements in many of the tests. Walking speed, in particular, which remained constant for the exercise group slowed by 8% in the control group; fall incidence which dropped to “zero” in the exercise group but was still significant in the control group; and rising from a chair test, performed by counting the number of times the person could rise from a chair and sit down again in 30 seconds, this measure alone increased by a whopping 58% (from 6.2 to 9.8 times) in the exercise group but dropped slightly in the control group. These observations tied in nicely with increases in hand grip, hip flexion, knee extension strength as well as maximal power measures.

The use it or lose it adage is true for all ages, and muscle strength training has health benefits for everyone but especially so as we age since we lose muscle mass. Exercise not only improves our physiques and helps us lose weight, it also improves our brains. Aerobic exercise is good for you as well!

## Depression Diet

The Worse Your Diet the Greater Your Risk of Depression



Ever have that sinking feeling? Well, with the darker months of winter fast approaching we can all feel a little depressed about this time of year. How about fixing that by fixing our diet? A new study asked what foods appear to make us more depressed and why and they came up with some fascinating results.

The 2013 Harvard study published in the journal *Brain, Behavior, and Immunity* compared the eating habits from food frequency questionnaires (FFQs) of 43,685 depression-free participants (aged 50 to 77 years) as part of the *Nurse's Health Study*. These participants were monitored for 12 years between 1996 and 2008 during which 2,594 documented cases of depression were identified. In addition, the researchers also established an inflammatory dietary pattern (IDP) score based on the effects of various foods on the plasma levels of the following three classic biomarkers for inflammation: C-reactive protein (CRP), interleukin-6 (IL-6) and tumor necrosis factor  $\alpha$  (TNF- $\alpha$ ) receptor 2.

Once established, this score was calculated for the study participants. Analysis of the data revealed that those in the top 20% of IDP scores (i.e., those with the greatest inflammation status) showed a 41% increased risk of depression compared to those in the bottom 20% of IDP scores. Since they knew what foods caused these changes in IDP scores the authors were able to assign types of foods to higher or lower IDP scores. It appears green leafy vegetables (spinach, lettuces etc.), yellow/orange vegetables (carrots, yellow squash, sweet potatoes), wine, coffee and olive oil were all associated with low IDP scores. Sugar-sweetened soft drinks, diet soft drinks, refined grains (e.g., white bread, bagels or muffins, white rice, pasta and pancakes or waffles), red meat and margarine were associated with high IDP scores. So a poor diet gives you a higher IDP score which in turn is associated with a higher risk for depression. Also, the researchers found a dose-response relationship between IDP scores and depression risk which means that if your diet gets any worse you're even more likely to be depressed.

So, put a smile on your face this winter by loading up on delicious fruits and vegetables and lay off the red meat, sugary drinks and refined grains if you want to avoid diet-induced chronic inflammation. Other great ways to avoid depression are practicing yoga, eating foods containing zinc and, this may be challenging, try avoiding comfort foods as research suggests they really aren't comforting in the long run!

## Featured Recipe

### Harvest Squash Maple Salad

#### Ingredients

- 3 acorn squash of the same size
- 3 tablespoons olive oil
- 3 tablespoons butter, divided
- 1/2 cup rye or multi-grain bread, cut into 3/4-inch pieces
- 1 Granny Smith apple, skin on, cut into 1/2-inch pieces
- 2 teaspoons maple syrup
- 1 package DOLE® All Natural Perfect Harvest Kit
- Salt and freshly ground black pepper to taste



**Serves:** 4

**Total Time:** 50 min.

#### Directions:

1. Heat oven to 375°F. Line two cookie sheets with aluminum foil. Peel and seed one of the acorn squash. Cut squash into 1-inch pieces and season lightly with salt and pepper. Place on a 12-inch piece of aluminum foil and fold the ends of the aluminum over squash and seal to form a pouch. Place on cookie sheet.
2. Cut remaining 2 squash crosswise in half; remove seeds. Cut off the top and bottom ends of the squash so that each half will stand squarely on the plates. Brush each with a few drops of olive oil, season lightly with salt and pepper; place on second cookie sheet.
3. Place both cookie sheets in the oven. Bake squash packet for 30 minutes. Bake squash halves until almost cooked through, 30 to 35 minutes. Set aside to cool.
4. Melt 1 tablespoon of the butter in a 10-inch skillet over medium heat until sizzling. Add bread cubes. Cook on each side 3 to 4 minutes or until browned; set aside. Melt the remaining butter in same skillet until sizzling; add apple. Cook and stir 2 to 3 minutes. Stir in maple syrup and continue to cook 1 minute. Remove from pan; set aside.
5. Combine all DOLE Perfect Harvest Kit ingredients in a large bowl. Add cooked squash pieces, browned bread and maple apples. Toss well; season lightly with salt and pepper.
6. Transfer squash halves to 4 serving plates. Spoon salad into center and serve.

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