

COMMUNICATING *Food for Health*[®]

Delicious Ideas and Resources for Nutrition Education

April

Food News

Researchers at the University of Pennsylvania discovered they can lower the calorie content of meals significantly by “hiding” veggies in them!

Recipes

We created a few favorites with hidden veggies - find out how to make meatloaf, mashed potatoes and macaroni with a lot more veggies!

Client Handouts

The aroma-nutrient connection: fresh fruits and veggies are tops! PLUS how to make your own meals with hidden veggies.

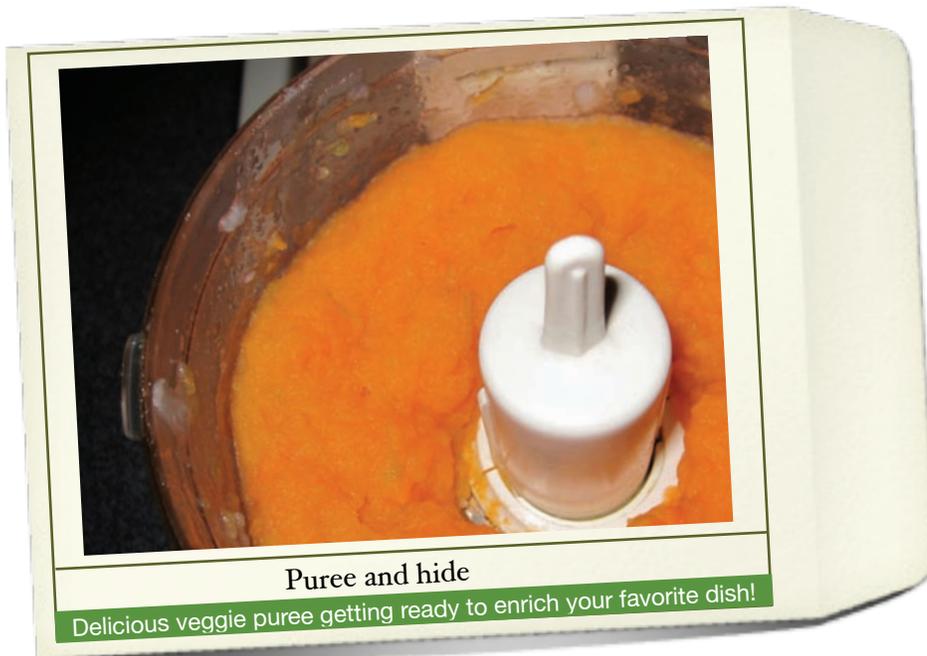
Presentation Ideas

Here is a fun game called Salad Twister! PLUS check out all of the May Food, Health and Nutrition Observances PLUS handout links!

Research

Vitamin D and heart failure by James J. Kenney, PhD, RD, LD, FACN.

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Puree and hide

Delicious veggie puree getting ready to enrich your favorite dish!

Supplements for Heart Failure Patients?

Last month we discussed the soaring costs from multiple trips to the hospital in patients with heart failure (HF) and the how more limiting salt intake more aggressively in stable ambulatory HF patients reduced those hospital admissions. This month we will look at other nutritional strategies that may also reduce morbidity and mortality in ambulatory HF patients.

Can Increased Omega-3 Intake Reduce HF?

In 2009 Harvard University, along with researchers in Sweden, published a study that followed about 40,000 men aged 45-79 without established heart disease or diabetes for six years. The men were divided into 5 groups based on their intake of seafood containing long chain omega-3 fatty acids. The lowest omega-3 group, which consumed no seafood, were about 33%

(continued on next page)

Consuming more Omega 3 Fatty Acids from Fish Is A Good Idea to Help Prevent or Even Reverse Heart Failure

more likely to be diagnosed with HF than those who were consuming about one serving of seafood a week.¹

A Japanese study also showed those who consumed more omega-3s from fish were significantly less likely to develop HF.² An American study failed to find an association between fish intake and HF but in the USA a large proportion of fish is fried, which is low in omega-3s and may be rich in trans fat and/or other harmful substances which may explain the apparent lack of benefit.

A recent study by Dr. Gheorghide and others at Northwestern University randomly assigned a group of 133 subjects with stable HF to receive either a placebo or 2g of long-chain omega-3 fatty acids. After two years, the patients receiving the omega-3 supplement showed a 10.4% increase in heart function while the average heart function of those on the placebo declined another 5%. They also observed a 6.2% increase in blood oxygen levels in the omega-3 group and an average decrease of 4.5% in the placebo group. Aerobic exercise capacity increased 7.5% in the omega-3 group and fell 4.8% in the placebo group. And hospitalization over 2 years was 30% for those on

the placebo but only 6% for those on the omega-3 supplement. The results were published in the *Journal of American Cardiology* online Jan. 5, 2011.

In about half of HF patients there is a large build-up of fibrotic (scar-like) tissue in the heart that so stiffens the heart its pumping efficiency is severely compromised. This leads to what is called diastolic HF. A recent study using an animal model of HF found that omega-3 fatty acids helped prevent the buildup of this fibrotic tissue in the heart by blocking TGF-beta1 activation of a metabolic pathway leading to the production of more collagen by heart cells.³

Bottom Line: Omega-3-rich seafood should be part of a heart healthy diet and those who consume little or no fish may well benefit from a daily 0.5 to 2g Omega-3 supplement.

Can CoQ10 Supplements Improve Exercise Tolerance in HF Patients?

Italian researchers looked at the impact of a supplement of 100mg of CoQ10 in a group of 23 patients with HF. Compared to those receiving the placebo those taking the CoQ10 showed a 9% increase in their heart's functional capacity as measured by peak oxygen

consumption during exercise. This study also showed a 38% improvement in blood flow as measured by dilation of the brachial artery.⁴ Other studies show increased mortality in patients with HF and low levels of CoQ10 in their blood. Most HF patients will be on statin drugs, which are known to reduce the body's production of CoQ10.

Bottom Line: Given the low risk of harm coupled with growing evidence of potential benefit for some HF patients it seems reasonable to suggest HF patients take a supplement with about 75 to 150mg, particularly if they are taking statin drugs.

By James J. Kenney, PhD, RD, FACN.

References:

1. Levitan EB, et al. *Eur Heart J* 2009;30:1495-1500
2. Yamagishi K, et al. *Am Coll Cardiol* 2008;52:988-96
3. Chen J, et al. *Circulation* 2011;123:584-93
4. doi:10.1093/eurheartj/ehl158

FOOD NEWS YOU CAN USE

Researchers at the University of Pennsylvania completed a study¹ that shows that hiding veggies in foods is an effective strategy to get people to eat more veggies and significantly fewer calories. This is because nonstarchy veggies are the foods that are the lowest in calorie density. For example, lettuce is a lot lower in calorie density than refined starch, fatty meats, cheese and many other common foods in our marketplace.

The researchers wanted to find out whether or not they could make a difference in their subject's calorie intake by adding pureed vegetables to foods to lower the calories and calorie density of the meals. They realize that many people eat too many calories and not enough vegetables. The subjects ate as much as they wanted for breakfast lunch and dinner in the lab for 3 weeks. The subjects ate meals that were either standard 100% or containing two different variations of vegetable purees: 75% and 85%. They rated hunger before and after they ate.

The researchers found that they

could decrease calories by 200 to 350 when veggies were added. The more pureed vegetables added meant more calories reduced. The ratings of hunger did not change significantly. The amount of calories consumed from veggies varied between 270 and 487.

Researches concluded that large amounts of pureed veggies can be incorporated into various foods to help decrease calories and to get everyone eating to increase their vegetable intake.

1. Blatt, A. D., Roe, L. S., Rolls, B. J., *Am J Clin Nutr* April 2011 vol. 93 no. 4 756-763
<http://ajcn.org/content/93/4/756.short?rss=1>

The types of dishes that lend themselves well to the addition of purees include:

- soups
- stews
- casseroles
- pasta dishes
- chili

Visit the freezer section of your grocery store and stock up on good deals for frozen veggies.

The nonstarchy varieties are the lowest in calories and these include cauliflower, broccoli, spinach, asparagus and peppers. Winter squash is very convenient and tasty in frozen form and we like adding that to chili.

Seasonal varieties of summer squash, spinach and broccoli can be cooked, pureed and frozen so they are ready to throw into pasta, casseroles and stews as you make them.

Stock up on canned veggies without salt - our favorites include tomatoes, especially ones that are flavored with herbs.

Best Puree Ideas

- Add more **pureed tomatoes and veggies** to pasta.
- Add a layer of **pureed spinach and mushrooms** to lasagna.
- Add more **pureed tomatoes and winter squash** to chili.
- Add **pureed cauliflower** to mashed potatoes. We find you can add the cauliflower half way through the cooking process for the potatoes and then puree them all together.
- Add **pureed carrots** or winter squash to macaroni and cheese.
- Pasta dishes are among the easiest to prepare with more veggies. We like to roast them and add them to pasta and then make a **sauce from pureed roasted veggies and tomatoes**. Sometimes we end up with way more veggies than pasta in our dishes.
- **Soups** are a delicious way to enjoy more veggies. You can puree them completely or just part way.
- **Rice** can be made green by pureeing broccoli and spinach in the liquid. Add that green liquid to the rice, along with herbs and you have a lovely green rice!

Hidden Vegetables Save Calories!



Half n Half Meat Loaf

- 1 pound lean ground turkey
- 1 pound frozen stew veggies
- 1 can whole tomatoes, no salt
- 1/2 tsp onion powder
- 1/2 tsp garlic powder
- 1/4 tsp black pepper
- 1/4 tsp poultry seasoning
- 1/2 cup seasoned bread crumbs
- Ketchup, about 2 tablespoons

Directions:

1. Cook the veggies in the micro-

wave for 10 minutes or until really tender.

2. Puree the cooked veggies with the tomatoes in a food processor.
3. Stir the turkey, puree, seasonings and bread crumbs together. Place into oiled loaf pan, top with ketchup and bake at 375 for 1 hour or until done.
4. Allow to sit out for 10 minutes; cut and serve from the pan.

Serves 10. Each slice (4 ounces): 100 calories, 1 g fat, 0 g saturated fat, 0 g trans fat, 21 mg cholesterol, 191 mg sodium, 10 g carbohydrate, 1 g fiber, 12 g protein. (Compare to 520 calories and 36 g of fat for regular meatloaf!)

Mashed Cauli Taters

- 1 pound yukon gold potatoes
- 1 pound frozen cauliflower florets

- 1 teaspoon butter
- 1/4 tsp black pepper
- 1/2 tsp garlic powder
- 1/4 cup skim milk

Directions:

1. Peel the potatoes and cut them in quarters. Cook them in boiling water with the cauliflower until they are very tender, about 30 minutes.
2. Drain off the water, mash with a potato masher and then whip smooth with electric beaters. Add the butter, seasonings and skim milk. Dab with additional butter or margarine. Serve hot.

Serves 8. Each 1/2 cup serving: 66 calories, <1 g fat, 0 g saturated fat, 0 g trans fat, 1 mg cholesterol, 19 mg sodium, 14 g carbohydrate, 2.5 g fiber, 2 g protein. (Compare to 270 calories and 11 g of fat for regular mashed potatoes!)



We used 2.5 pounds of vegetables in this entire meal. It was tested and approved by 3 teenage boys! Overall this entire meal (meatloaf, mashed potatoes and macaroni) saved 624 calories compared to regular versions at a restaurant!

Carrot Mac

- 8 ounces sliced carrots
- 1 family-size (14.5 oz) box macaroni and cheese
- 1/2 cup skim milk

Place the carrots in a pan with a little water; cover and microwave 10 minutes or until very tender. Puree with a little water and set aside. Cook the macaroni until al dente - with a slight bite. Drain and rinse.

Blend the milk with the carrot puree and the cheese pack from the macaroni. Add the puree cheese sauce to the noodles and reheat in oven or microwave. Serve hot.

Serves 6. Each 1/2 cup serving: 290 calories, 4 g fat, 1.5 g saturated fat, 0 g trans fat, 9 mg cholesterol, 587 mg sodium, 51 g carbohydrate, 1 g fiber, 12 g protein.

Aroma Nutrient Connection

My grandmother used to say that “if it smells good it tastes good”, but science has increasingly discovered that if it smells good it may also be good for you.

A surprising fact about fruits and vegetables is that the substances that give them their appealing aromas (called “volatiles”) are manufactured on the same biochemical assembly line that produces the nutrients. In tomatoes for example, practically every one of the compounds that makes their fragrance and taste attractive is derived from a health-promoting nutrient.

Although tomatoes aren’t the only examples of this aroma-nutrient connection, they have been a focal point of much of the research on this subject. As in many natural foods, the attractive fragrance and flavor of a ripe tomato comes from a complex mixture of volatiles. However, the tomato also contains human nutrients including carbohydrates like fructose and glucose, small amounts of unsaturated fatty acids and essential amino acids, and micronutrients like vitamin A and lycopene. But what’s significant about this is that the tomato plant manufactures the fruit’s attractive volatiles from the nutrients that benefit us. For example, two of the tomato’s aroma volatiles, beta-ionone and a

“heptanone”, are biosynthesized from vitamin A while most of the alcohols, ketones, and aldehydes that are also part of the mixture come from corresponding fatty acids, amino acids, or lycopene. Consequently, not only does the tomato produce human nutrients, it advertises their presence through the scent and flavor of its fruit. This yields a mutually beneficial quid-pro-quo in which we get nutrition and the plant gets to disperse its seeds. However, in some foods the link between nutrient content and aroma is broken, usually by human intervention.

For example, many of us have tasted or, more accurately, not tasted, varieties of cultivated tomatoes whose flavor has been bred away in attempts by farmers to increase shelf-life or crop yield. However, in many cases these fruits are no less nutritious than their more flavorful cousins. It is only that cultivation has inadvertently broken aroma-nutrient connection by disrupting the production of the volatiles from the nutrients.

On the other hand, the link can also be broken when the fragrance and flavor of a food advertise nutrients that really aren’t there. Good examples of this kind of disconnect are soft drinks and candies. These “foods”, have plenty of flavor, but that flavor

has little to do with nutritional content.

The take-home lesson is that grandma was right, but only when it comes to natural foods. For others, a pleasant aroma (or lack of it) might just be false advertising.

By Dale E. Vitale, PhD
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References

Goff, S.A. and Klee, H.J., Plant Volatiles: Sensory Cues for Health and Nutritional Value?, *Science* 2006, 311, 815-819.

Klee, H.J., Improving the flavor of fresh fruits: genomics, biochemistry, and biotechnology, *New Phytologist* 2010, 187, 44-56.

USDA, National Nutrient Database, <http://www.nal.usda.gov/fnic/foodcomp/search/>, accessed 03/04/2011.



Sneaking in the Veggies

Barbara Rolls, PhD, RD and her staff at the University of Pennsylvania found they could lower the calories of meals by adding vegetable purees. Everyone enjoyed the food and they ate 200-350 fewer calories per meal!

Here are ways you can sneak in more veggies for your meals at home. It is a good idea to get everyone eating more veggies which bring more fiber and nutrients. The good news is that they lower the calories, too.

Follow these tips:

1. Match up the colors:

- **Orange** - carrots, winter squash; add pureed orange veggies to cheesy dishes like cheese dip, macaroni and cheese or casseroles.
- **Red** - tomatoes, beets; add red pureed veggies to chili, pasta, meatloaf, stews and casseroles
- **Yellow/white** - cauliflower; add pureed cauliflower to mashed potatoes, cream soups
- **Green** - broccoli, zucchini - add this to pasta sauce or rice dishes.

2. Cook until soft. In order for a puree to be nice and smooth and just slip in to a dish, be sure you cook the vegetables a little softer than you would for serving as a side dish. Puree in a food processor or blender.

3. Use about 25-33% veggies to start. We went up to half

the amount in some recipes but we think using a little less ensures success.

Best uses:

- **Chili** - add one extra can of tomatoes; add one cup diced or pureed pumpkin/winter squash
- **Pasta** - use more sauce; add pureed broccoli and chopped spinach - the spinach looks like herbs
- **Mashed potatoes** - use 2/3 potatoes and 1/3 cauliflower
- **Macaroni and cheese** - add 1 cup pureed carrots
- **Casseroles** - add 2 cups pureed veggies to most casserole recipes
- **Pizza** - put one more cup of chopped veggies on top
- **Rice** - add one or two cups of veggies to the liquid and puree in the blender. We like green stuff like spinach and herbs.
- **Meatloaf** - 2/3 lean meat, 1/3 pureed stew vegetables.



PRESENTATION IDEAS

Here is a way to make salads fun for the kids and play Twister Salad by Sean Tuohy.

WHAT YOU NEED:

- Markers
- Two Posterboards
- Darts

On each posterboard, draw a pie with slices big enough to write in because you are going to write the letters nice and big so everyone can read them from far away. The number of slices you must draw is up to you- you will fill in each slice with a food name, but keep in mind that you must have an even number of pie slices. In each blank space you need to write down some type of salad fixing, alternating between healthy (a veggie of some kind) and then unhealthy (cheese, fatty salad dressing or bacon bits) slices next to each other. Ensure that the pies do not repeat foods- if you write "lettuce" on one, you cannot write it on the other.

An example should look like this:

- Tomato
- Ranch Dressing
- Cucumber
- Bacon Bits
- Lettuce
- Cheese

Once you have put all the food products put the board you need

to put down points that each is worth. The points are based on the balance between nutrient content and calories. Fatty items get 0 points while nutritious items like veggies and lettuce and lowfat dressings get 50 points.

Now that your game board is set up you need to put it on to a wall. After making two even teams of players, have them stand about five feet away from the board. The teams need to make a salad with a total calories for whatever amount you want, let's say 500. Each player has one try to throw a dart at the board and to make the salad. Before the game begins, one player should be picked to throw last (hint: this should be the person with the best aim because they will be throwing from ten feet from the board and they will have only two tries). The first three players go up and throw the dart and hit the board. They have to add together the calories from each food they hit.

After the last player has thrown the dart, twice, each team has to go and add up the total points they have gained. The team with a score closest to the 500 points is the winner.

By the end of the game the players should understand how to make a good, tasty, and healthy salad.

Salad presentations are ready now to wow your clients and service staff on serving great looking salads. Visit our new bookstore:

More recipes and handouts from our 2 new books are located at the new website,
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May

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(from member library):

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In season now:

Fruit: cherries, avocado, limes

Vegetables: salad greens-endive, romaine, radicchio, peas, mushrooms, celery, onions, artichokes, potatoes

Does Vitamin D Deficiency Promote Heart Failure?

A study of 41,504 patients, who had at least one measured 25-OH-D level, found the prevalence of vitamin D deficiency (≤ 30 ng/ml) was 63.6%. Vitamin D deficiency was associated with highly significant ($p < 0.0001$) increase in the prevalence of diabetes, hypertension, hyperlipidemia, and peripheral vascular disease. Also, those without CV risk factors but with severe vitamin D deficiency had an increased likelihood of developing diabetes, hypertension, and hyperlipidemia. The vitamin D levels were also highly associated with coronary artery disease, myocardial infarction, heart failure, and stroke (all $p < 0.0001$), as well as with incident death, heart failure, coronary artery

disease/myocardial infarction (all $p < 0.0001$), stroke ($p = 0.003$). The authors conclude their data has "... confirmed a high prevalence of vitamin D deficiency in the general healthcare population and an association between vitamin D levels and prevalent and incident CV risk factors and outcomes. These observations lend strong support to the hypothesis that vitamin D might play a primary role in CV risk factors and disease."¹ Another study presented last August at a meeting of the European Society of Cardiology followed 548 patients who had been hospitalized for HF and had had their vitamin D levels checked at the time of diagnosis. After 18 months 165 had died and 142 were hospital-

ized again. The researchers observed that over the next 18 months those with low levels of 25-OH-D level in their blood (< 29.6 nmol/L) were 30% more likely to die or require repeat hospitalization than those with a 25-OH-D level above 43.9 nmol/L.

Bottom Line: HF patients should be checked for low levels of vitamin D in their blood and those with < 40 nmol/L should be given an adequate supplemental dose vitamin D3 (perhaps 2000 to 4000 IU) to attain adequate tissue levels.

By James J. Kenney, PhD, RD, FACN.

1. Anderson JL, et al. *Am J Cardiol* 2010;106:963-8

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ISSN 1070-1613

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