California State University Northridge

SDFSA news

STUDENT DIETETIC & FOOD SCIENCE ASSOCIATION

FALL 2006

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President's Message

Dear Fellow Students, SDFSA Members, Faculty, and Alumni,

I wish to welcome new and returning members to the Student Dietetic and Food Science Association! It has been a quick, but very productive semester already. I have really enjoyed working with and getting to know you all and am looking forward to all of our events, and hope you are finding their usefulness to your careers as students, as well as in preparing for your future professions.

Being such a highly organized and active group, we are able to provide useful educational tools to students and other professionals. Our annual Dietetic Internship Symposium, which takes place every Fall, invites representatives from regional dietetic internship programs to discuss the uniqueness of their programs, as well as criteria for application. Our annual Career Symposium is a Spring event in which professionals in the areas of food science and dietetics are invited to discuss career opportunities within the field. Because of our fundraising and the funds membership contributes, SDFSA is able to make these and other events possible. We have also established the SDFSA Textbook Scholarship, in which we award a student member $250 to put towards their textbooks. In addition to this award, we also recognize a member with the SDFSA Outstanding Service Award.

I have been a member of SDFSA since Fall of 2005, which was when I first began attending CSUN. I have met so many wonderful people through the organization, including fellow students, as well as a network of professionals in the nutrition and food science industry. Through SDFSA, I have taken advantage of the many volunteer opportunities and have sat in on some tremendously interesting lectures and conferences. It has really helped me to become a better student, and continues to prepare me for all that's ahead.

The Student Dietetic and Food Science Association couldn't achieve all that it does without the involvement, enthusiasm and heart of each and every member. It is with great pride that I have accepted to be a leader of the group. We are *all* leaders, and should be very proud of all that we accomplish, as individuals and as a group. Thank you for your continued participation. Have fun and best of luck!

Sincerely,
Lisa Calanni

Advisor's Letter

Welcome to all of our SDFSA members! Every semester, the SDFSA family continues to be a top quality group. What is most impressive is how everyone works together as a true team, whether we are at a 7:00 am meeting, busily planning for and conducting workshops and events, or seeing one another in the hallway.

Our members embody exactly what is expressed as the "Purpose" of the Student Dietetic and Food Science Association: "…to provide the framework for meaningful student involvement, to stimulate professional interest, and to develop channels of communication between students, advisors, faculty, the Family and Consumer Sciences department, and the community in the areas of Dietetics, Food Science, and related fields."

It is a privilege to work along side every one of you!
Sincerely,

Dr. Lisagor
SDFSA Advisor

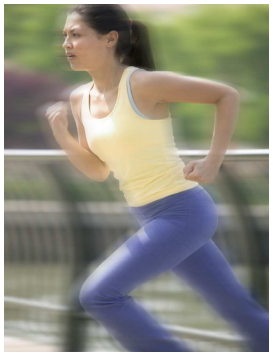
Exercise is Fun!

By Andrea Catomer

As college students, I know we all get stressed from time to time and one of the best things you can do to relax is exercise. Exercise does not only reduce stress levels but it also prevents bone loss, reduces cholesterol, blood pressure and risk for heart disease. Exercise also boosts our energy level and improves our self image. According to the U.S. Health and Human Services, physical inactivity contributes to 300,000 preventable deaths each year in the United States. It is not only important to exercise; you have to have a healthy diet as well.

There is always an excuse not to exercise. Here are some tips that might make exercising more appealing. Choose an activity that you are interested in. What ever increases your heart rate and recruits muscles is good to do. Aim for consistency, a little every day. Consider an exercise partner. Choose someone with the same interests and abilities. Add variety to your work out so you don't get bored. Remember it's good to start slow, maybe just 20 minutes a day and work up to 30 or 40 minutes. Some other tips to incorporate more physical activity each day: take the stairs instead of the elevator or park farther away from your destination or take a break from studying and walk around the neighborhood.

One of the most convenient and inexpensive types of exercise is jump roping. It is effective in trimming



your legs, thighs and hips. It works out your upper body more than running does. It also gives you sturdier ankles and feet and stronger wrists. It improves your balance and coordination. 10 minutes a day is equal to 30 minutes of running in terms of cardiovascular benefits. Remember that when you sweat you need to drink more water. Don't wait until your body is thirsty. Water helps prevent cramping, keeps the fluids in your body in balance and helps use food more efficiently.

It is good to know how to find your target heart to give your self the best aerobic work out. Subtract your age from 220 then multiply by your desired intensity (usually 70%) then divide by 6 for a 10-second pulse count.

Ex:220-20=200 x.70=140/6=23. 140 beats per minute or 10-second pulse count of 23.

There are so many obese people in this world, including children. We need to set a good example for the younger generations. This could include our brothers, sisters and even our own children. Start making good habits for yourself. Stay active and stay healthy!!

http://manbir-online.com/cardiac/exercise-7.htm

http://www.justmove.org/fitnessnews/hfindex.html

www.healthylivingtoday.net

Childhood Obesity

By Alia Maggio

Childhood obesity is a national epidemic spreading fast throughout our country. It is more prominent now in our society than it ever has been. Obesity leads to an increased risk of heart disease as well as high blood pressure. If not taken care of, childhood obesity can become adult obesity. This can further lead to Type II Diabetes.

There are many causes of childhood obesity. One cause is children are not being physically active. Children become planted in front of the television or computer for hours a day playing video games or watching their favorite after school programs. Parents should monitor children's activities and encourage them to be physically active.

Parents do not always monitor what their child is eating. More families have both parents working than before, which means that no one is home with the children after school. Without the supervision in deciding what to eat, children pick foods high in fat and calories that taste better than healthier snacks such as fruits and vegetables. A helpful alternative is for parents and children to discuss together healthy food choices.

What happens when the family can't afford nutritious food? Low income families can be allocated food stamps. The only problem is that if parents are trying to feed a large family, produce is much more expensive and less filling than foods high in fat and lower in nutritional value. These parents want their children's stomachs to be full, but it isn't always with nutritious foods.

Parents play a big part in determining if their child will become obese. Obese parents are a telltale sign that their children will also be obese. Healthy decisions made when young greatly influence a child's eating habits as he grows older. Get the child to assist in picking healthy foods at the grocery store. Eat dinner as a family at the dinner table. Take this time once a day to develop good eating habits and share quality time together. Exercising with children teaches them to be active. Childhood obesity is an epidemic, but with the right tools such as education and knowledge, it can be stopped.

Childhood Obesity. 2 May. 2005. American Obesity Association. 30 October 2006.<http://www.obesity.org/subs/childhood/>

Avoiding Childhood Obesity. BUPA. 30 October 2006. <http://hcd2.bupa.co.uk/fact_sheets/html/child_obesity.html >

Spinach Stuffed Chicken Roll-ups

By Celia Ferreira

Ingredients:
1 med. sweet onion, halved and sliced
1 med. jalapeno, diced with seeds
¼ tsp. (1.25mL) freshly ground black pepper
2 Tbsp. (30mL) finely chopped parsley
1 ½ c. (360mL) frozen chopped spinach, thawed & drained
4 sm. skinless boneless chicken breasts
2 Tbsp. (30mL) Molly McButter, divided
¾ c. (180mL) bread crumbs
2 egg whites

Instructions:
1. Preheat oven to 350?F.

2. Spray a non-stick skillet with cooking spray and sauté the onion and the jalapeno with the black pepper for about 7 minutes until the onion begins to soften. Remove from heat and stir in the parsley and the spinach.

3. Place the chicken, one piece at a time, into a strong plastic zip lock bag. Using a cooking mallet or marble rolling pin, pound the chicken until flat, to about 1/4 inch. Remove the chicken from plastic bag and lay on a plate. Sprinkle the top of each piece of chicken with 1/2 Tbsp. Molly McButter.

4. Spread 1/4 of the onion and spinach mixture onto the chicken making sure it is evenly distributed over the chicken. Starting on one side, roll the chicken with the vegetable mixture inside.

5. In a shallow dish, whisk the egg whites together with 1 Tbsp. water. Spread the bread crumbs onto a flat plate. Carefully dip the chicken roll-ups in the egg white and roll in the breadcrumbs. Place on non-stick baking sheet and bake for 25 - 30 minutes.

Nutritional Information
Per Serving: 6 Oz.
(170g)

Calories: 334
Protein: 50 g
Carbohydrates: 18 g
Total Fat: 6 g
Saturated Fat: 2 g
Unsaturated Fat: 3 g
Cholesterol: 120 mg
Sodium: 613 mg
Potassium: 673 mg
Fiber: 3 g

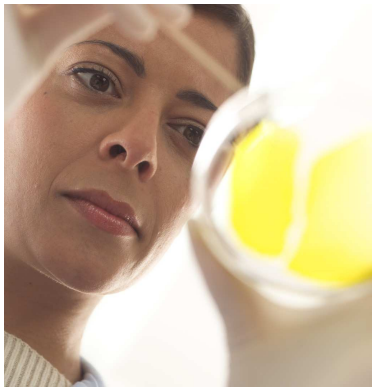
Some Food for Thought

By Emilia Janeke

When viewing yourself and the people around you, it does not seem likely that the invariable exterior physique is constantly changing internally on a cellular level (Berg et al., 2002). The human body, in particular, consists of billions of cells in which homeostasis needs to be constantly maintained (Germann et al., 2005). The food we eat affects us on an intracellular and systemic level. In particular, the types of oil consumed affect the cells and the immune response of the human body (Gropper et al., 2005). Does your regular diet include fish, flaxseed, canola oil, soybeans or walnuts? These foods, as part of a balanced diet, are rich in the essential fatty acids, alpha-linolenic acid and linoleic acid. Human and animal cells lack the ability to produce the desaturase enzyme, a catalyst responsible for introducing a double bond beyond the n-9 position from the methyl end in a fatty acid. Therefore, the two fatty acids, linoleic (omega-6) and alpha-linolenic acid (omega-3) are considered to be essential fatty acids since they are not synthesized endogenously (Forse et al., 1994).

Also known as omega-3 and omega-6 fatty acids, these essential fatty acids are required for their intracellular utilization. As part of the phospholipids membrane of cells in mammalian tissues, alpha-linolenic acid, linoleic acid and their metabolic derivatives are necessary for the metabolism and integrity of the cell membrane fluidity, receptor orientation and intercellular communication (Gropper et al., 2005).

Once inside the cell membrane,



the alpha-linolenic acid functions as a precursor for the formation of eicosapentaenoic acid (EPA) and dicosahexaenoic acid (DHA), both necessary in the proliferation of anti-inflammatory and anti-aggregatory eicosanoids Whereas arachadonic acid produces inflammation-inducing eicosanoids, EPA produces less active or inactive eicosanoids that have shown to improve the immune response in cells (Forse et al., 1994).

The presence of the type of eicosanoids determines whether the cell is in a state of pro-inflammation, anti-inflammation or a balance in between. The balance between eicosanoids produced from omega-6 and omega-3 correlate to the immune response and vascular tone. This emphasizes the importance of maintaining the ratio (in the diet) of alpha-linolenic fatty acid with its counterpart, linoleic fatty acid. The type of essential fatty acid consumed determines the eicosanoids produced which regulates the plasma membrane fluidity and subsequently, the immune response (Forse et al., 1994).

Berg, J. M., Tymoczko, J. L., & Stryer, L. (2002). *Signal-Transduction Pathways: An Introduction to Information Metabolism. In Biochemistry*, 5th edition ed., New York: W.H. Freeman and Company, pp. 395-424

Forse, R. A., Bell, S. J., Blackburn, G. L., & Kabbash, L. G. (1994). *Perioperative Feeding: Nutrition and Immunity in Diet, Nutrition, and Immunity*, Florida: CRC Press, Inc, pp. 51-56

Germann, W. J. & Stanfield, C. L. (2005). The Urinary System. In *Principles of Human Physiology,* 2nd edition ed, San Francisco: Pearson Benjamin Cummings, pp. 609-645

Gropper, S. S., Smith, J. L., & Groff, J. L. (2005). Lipids. In *Advanced Nutrition and Human Metabolism*, 2nd edition ed., USA: Thomson Wadsworth, pp. 128-165

Soy: Is it Really Beneficial?

By Sarah Kang

Soy can be beneficial when added to a diet that has a various selection of food. However, controversies exist for a few populations, such as postmenopausal women, because there may be a higher risk of breast cancer, according to some studies. The main concern is focused on soy supplements that are in the form of pills or powders.

Isoflavins, found in soy have been discovered to have a weak form of estrogen that may cause cancer. The opposing studies claim that soy may prevent cancer. Further research is needed to determine which information is correct.

It is wiser to stick to whole soy food products such as tofu, soy nuts, soy beans or foods that have added soy proteins. Soy is a good substitute for animal products because of the lower fat content. The proper serving can also lower cholesterol, particularly low-density lipoproteins (LDL), also known as the "bad cholesterol." Overall, this leads to a lower risk of heart disease. "Whole soy foods also are a good source of fiber, B vitamins, calcium, and omega-3 essential fatty acids, all important food components" (Henkel, 2000).

Therefore, unless there are some health limitations, try to incorporate soy into your diet. You should also try to include all the food groups of the food pyramid in moderation. If you have not had soy before, the American Dietetic Association suggests to add small amounts or substitute certain ingredients of a recipe with soy. If you would like further information, check out American Soybean Association (www.amsoy.org).

Henkel, J. (2000), Soy: Health Claims for Soy Protein, Questions About Other Components. Retrieved October 18, 2006 from www.fda.gov/fdacfeatures/2000/300_soy.html

Black Bean and Avocado Crostini

By Kathy Lee

Makes 8 servings
Preparation time: 45 minutes

Ingredients:
24 baguette slices, ¼-inch thick
¼ cup garlic and parsley butter (see recipe below)
½ cup Vidalia onion, small dice
2 plum tomatoes, small dice
¾ cup cooked or canned black beans, drained and rinsed
1½ tablespoons cilantro, chopped
1 teaspoon white wine vinegar
1 teaspoon salt, or to taste
½ teaspoon freshly ground black pepper, or to taste
2 avocados
2 tablespoons lime juice
1 garlic clove, minced
¼ teaspoon chili powder
1/8 teaspoon ground cumin
24 cilantro or parsley leaves, washed

Instructions:
Preheat the over to 400F.

Toast the baguette slices in the oven for 5-7 minutes, or until the outside edges are golden brown. Spread each baguette slice with approximately ½ teaspoon of the garlic butter. Reserve the toasts until needed.

Combine the onion, tomato, black beans, cilantro, and vinegar. Season with salt and pepper.

Peel and core one of the avocados and dice into ¼-inch pieces.

Combine the avocado with 1 tablespoon of the lime juice. Add garlic, chili powder, and cumin. Season with salt and pepper.

Peel and core the remaining avocado. Slice each half into 8 slices. Sprinkle the avocado with the rest of the lime juice to prevent browning.

Spread 1 teaspoon of the avocado mixture on each crostini. Top with 1 tablespoon of the black bean mixture.

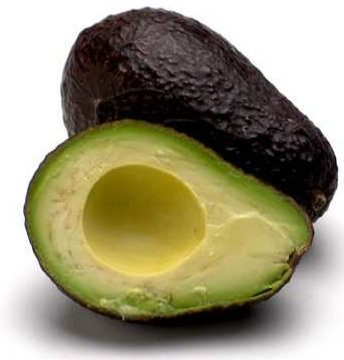
Garnish with an avocado slice and a cilantro or parsley leaf.

Garlic and Parsley Butter
1/3 cup softened butter
1 garlic clove, minced
1½ teaspoon chopped parsley

Mix together softened butter, garlic and parsley.

What are the health benefits of avocados?

Avocados are a rich source of monounsaturated fatty acids—the "good" fat that may help to lower cholesterol. In fact, the avocado is virtually the only fruit that has monounsaturated fat. Avocados are also a good source of potassium, a mineral that is important for fluid balance in the body, aids in muscle contractions and helps to regulate blood pressure. In addition, avocados contain folate and are a huge source of fiber (10 grams to be exact).



Try incorporating more avocados in your diet for variety as well as good nutrition. Replace the mayonnaise in your sandwich with slices of avocado. You can also spread mashed avocados onto your bagel instead of cream cheese or butter. A recommended serving size for avocados is 2 tablespoons which provides 5 grams of fat and 55 calories. In comparison, a 2 tablespoon serving of butter packs 23 grams of fat and 200 calories[1]! Thus, although avocados have a high caloric and fat content, the positives truly outweigh the negatives.

"Nutrition." Fresh California Avocados. 2006. 7 Nov 2006 http://www.avocado.org/healthy_living/nutrition.php.

Savory Moussaka with Pumate Béchamel

By Mary Lou Marinas

Sorghum syrup, an ingredient in this tasty dish, is one of the top 20 antioxidants. Read more about the power of antioxidants on page 9.

Yields: 8 servings
Preparation Time: 1 hour

Meat Mixture:
2 teaspoons olive oil
1 pound lean ground turkey or ground soy protein
1 cup chopped red onion
¾ cup dry red wine
1 ¾ cups tomato sauce
1 tablespoon chopped fresh oregano or 1 teaspoon dried
1 teaspoon ground nutmeg
1 teaspoon ground cinnamon
1 tablespoon sorghum syrup or dark honey

Béchamel Sauce:
3 tablespoons olive oil
½ cup chopped green onion (green and white parts)
¾ cup finely chopped sun-dried tomatoes (pumate)
Salt and pepper to taste

Moussaka:
1 medium eggplant (about 1 ¼ pounds), washed, halved lengthwise, and sliced crosswise into 1/4-inch-thick rounds
Salt and pepper to taste
1/3 cup grated Parmesan cheese

Prepare meat mixture: Heat olive oil in a large saucepan over medium-high heat. Add turkey and onion. Cook, stirring to break up turkey, until it is no longer pink, about 5 minutes. Add wine, tomato sauce, oregano, spices, and sorghum syrup. Simmer, stirring occasionally, until mixture thickens and is almost dry, about 30 minutes. (Can be prepared one day ahead. Cover tightly and refrigerate.)

Preheat oven to 350°F. Lightly coat a 13 x 9-inch glass baking dish with olive oil spray.

Prepare béchamel sauce: Heat olive oil in a 2-quart saucepan over medium heat. Whisk in flour and pepper. Cook 1 to 2 minutes, stirring constantly with a whisk. Add garlic and cook until softened; do not brown. Pour in soymilk and broth all at once. Simmer over low heat, stirring constantly, until thickened and bubbly. Remove from heat; stir in green onion and tomatoes. Season with salt and pepper. Set aside.

Assemble moussaka: Arrange half of eggplant in bottom of prepared dish. Season with salt and pepper. Add meat mixture and spread in an even layer. Top with remaining eggplant. Press down lightly with palm of your hand to evenly distribute. Season with salt and pepper. Pour hot béchamel sauce over the eggplant. Sprinkle with cheese

Bake about 1 hour, or until golden and bubbling on edges. Cool 10 minutes before serving.

Nutrient Analysis:
per 4 ½ x 3 ¼-inch piece

CALORIES: 274
PROTEIN: 16 g
CARBOHYDRATES: 19 g
TOTAL FAT: 13 g
Saturated Fat: 3 g
Polyunsaturated Fat: 2 g
Monounsaturated Fat: 7 g
CHOLESTEROL: 48 mg
FIBER: 5 g

Protein Malnutrition in the U.S.

By Lisa Calanni

Protein malnutrition affects one in four children worldwide (World Hunger Facts). It is most prevalent in underdeveloped countries, where populations cannot consume sufficient caloric needs. Although protein malnutrition is less prevalent for children in the United States, it is increasingly affecting more and more children. This is not because of undernourishment, but rather, because of over consumption of food. In fact, because of the overabundance in food the U.S., the population, on average, is consuming more than double the recommended amount of protein (Pasonisi & Contaldo, 2006).

Protein is a macronutrient, which

means we need to consume a relatively high amount to sustain many of our biological functions. Proteins are required for blood clotting, cell repair, growth, immune function, and hormone and enzyme production. Consuming protein in the diet supplies nitrogen, is needed for amino acids, the building blocks of the proteins in our bodies (Wardlaw & Smith, 2006, p. 185).

Protein-rich foods are readily available, as necessities as well as luxuries in our daily lives. Protein comes from a wide variety of sources, including animal (E.g. meat, dairy), plant sources (E.g. soy, quinoa, broccoli), meal supplements (E.g. energy bars, whey or soy protein shakes).

The United States Department of Agriculture recommends daily intakes of protein, and other nutrients. As of 2005, based on a 2000 calorie diet, average recommendations for protein intake for healthy children is 13-19 g/day, 46 g/day for adult women and 56 g/day for adult men (Dietary Guidelines for Americans). With this in mind, a 6 oz portion of chicken breast is about 30 g of protein. Certain meal supplement bars contain up to 30 g of protein. A 16 oz glass of a common blended juice smoothie is 20 g, plus an additional boost of 7 g of protein.

We are sent so many mixed messages about nutrition and fad diets. The Physicians Committee for Re-

sponsible Medicine suggests that high protein/low-carb diets induce ketosis, which disturbs the body's acid-base balance, leading to health problems ranging from dehydration to death (Analysis of Health Problems Associated with High-Protein). Excess protein can increase calcium loss in the urine and lead to osteoporosis. Excess protein many overburden our kidneys by having to excrete the excess nitrogen as urea. Excess animal protein may contribute to kidney stone formation. Consuming protein in moderation and choosing healthy sources of protein will greatly reduce your risk of acquiring these diseases, or slow the decline in kidney function for those with kidney disease or diabetes (Wardlaw & Smith, 2006, p. 208).

Even though protein is biologically important, a protein-rich diet can increase the risk for disease. It is important to choose healthy sources of protein and consume them and other foods in moderation, according to U.S.D.A. guidelines. Whether in excess or deficient, protein malnutrition is a global problem, but it can be reduced by offering appropriate food options to our children.

1. *World Hunger Facts 2006*. 8 September 2006. World Hunger Education Service. 11 November 2006 <http://www.worldhunger.org/articles/Learn/world%20hunger%20facts%202002.htm>.

2. Pasonisi, Fabrizio, and Franco Contaldo. "High-protein diet, obesity, and the environment." *American Journal of Clinical Nutrition.* 83 (2006): 387-91.

3. Wardlaw, Gordon M., and Anne M. Smith. *Contemporary Nutrition.* New York: The McGraw-Hill Companies, Inc., 2006.

4. *Dietary Guidelines for Americans 2005*. 12 January 2005. Healthier US.Gov. 12 November 2006 <http://www.healthierus.gov/dietaryguidelines/index.html>.

5. *Analysis of Health Problems Associated with High-Protein, High-Fat, Carbohydrate-Restricted Diets Reported via an Online Registry*. 25 May 2004. Physicians Committee for Responsible Medicine. 12 November 2006. <http://www.pcrm.org/news/registry_report.html>.

Spinach & E-coli

By Celia Ferreira

On September 14, 2006 the Food and Drug Administration (FDA) advised individuals not to eat bagged spinach because it had been linked to Escheria coli serotype 0157:H7 (1). This type of bacteria, also known as E.coli, is associated with the consumption of fresh spinach. "E.coli is found naturally in the intestinal tract, and only causes problems when fecal matters get in the food or water supply….Undercooked meat….Unpasteurized (raw) milk, unpasteurized apple juice or cider, raw sprouts, dry cured salami, fresh produce (especially manure fertilized), yogurt, sandwiches, and water"(2). Some symptoms of E. coli are diarrhea, bloody stools, and HUS (Hemolytic Uremic Syndrome.

On September 15, 2006 bagged spinach was recalled (3). The FDA added fresh spinach and fresh spinach containing products to the recall. On September 21, 2006 three counties (Monterey, San Benito, and Santa Clara) that grow spinach were said to have been the only ones connected to the outbreak. As of October 12, 2006, 199 people were reported ill. Since then, illnesses have declined dramatically. The FDA, state of California, Center for Disease Control, and USDA continue to look into the connection of leafy greens and E.coli (2).

The FDA posted the *2004 Produce*

Safety Action Plan in a letter to California firms that grow, pack, process, or ship fresh-cut lettuce; in order, to express the action plans necessary for the safety of these products (4).

Contacts for more information are the FDA website: http://www.fda.gov/oc/opacom/hottopics/spinach.html or 1-800-CDC-INFO.

1. "Ongoing Multistate Outbreak of Escherichia coli serotype 0157:H7 Infections Associated with Consumption of Fresh Spinach---United States, September 2006." MMWR Weekly. 29 September 2006. 4 November 2006 <http:www.cdc.gov/mmwr/preview/mmwrhtml/mm5538a4.htm>

2. Brown, A.. (2004). Understanding Food: Principles and Preparation. 2nd Ed. Wadsworth: Belmont , pp. 58-59, 324.

3. "RLB Food Distributors Issues a Multiple East Coast States Recall of Fresh Spinach Salad Products for Possible E.coli Contamination." Recall—Firm Press Release. 19 September 2006. 4 November 2006 <http://www.fda.gov/oc/po/firmrecalls/rlb09_06.html>

4. "FDA Statement on Foodbourne E.coli 0157:H7 Outbreak in Spinach." FDA News. 12 October 2006. 4 November 2006 <http://www.fda.gov/bbs/topics/NEWS/206/NEW01489.html>

Three Spinach Safety Tips:

- **Look for the "Enjoy Thru" date to make sure that the bag of spinach is fresh.**
- **Wash all vegetables thoroughly (with a vegetable brush when appropriate) to remove soil, microorganisms, pesticides, and herbicides. Washing should be quick, because most vegetables absorb excess water when soaked. (2)**
- **Practice food safety by washing and/or cooking foods thoroughly, and always wash your hands.**

Down to the Bone!

By Emilia Janeke

Within our body there exists a multitude of harmonic equilibria- one of which is the balance of calcium between blood and bone. Although bone might seem a lifeless tissue, bone is in a constant reformation process known as bone remodeling (Marieb & Mallatt, 2003). Bone density is reliant on the dietary intake of calcium (Mahan Escott-Stump, 2000). If blood calcium levels are not maintained through dietary intake, calcium is supplied to the blood by resorption from the bones (Gropper et al, 2005). The balance between bone deposition, maintained by osteoblasts, and bone removal, maintained by osteoclasts, should be at equilibrium to maintain bone mass (Marieb & Mallatt, 2003). Due to the requirement of calcium in cardiac and skeletal muscle, blood calcium is regulated by three hormones: parathyroid hormone (PTH), calcitonin and estrogen (Mahan & Escott-Stump, 2000).

Calcium, present in crystal salts in the bone such as hydroxyapatite, is the most abundant mineral in the body and is considered to maintain bone strength. This macromineral is present in dairy sources including milk, cheese and yogurt in amounts of 300 mg per cup (Whitney & Rolfes, 2002).

Although one might not necessarily guess, vegetables contain calcium

also! The bioavailability of calcium in vegetables is up to approximately 50% due to the oxalate content in vegetables. Turnip (197 g/cup), broccoli (83 mg/cup), cauliflower and kale could be consumed as sources of calcium. Fish, including sardines (consumed with bones), oysters and clams contain up to 112 mg calcium per cup. The presence of calcium in the insoluble salt form, requires an acidic environment to ensure the absorption of the calcium ion in the intestinal lumen. Food sources of vitamin C, such as fruits, should be consumed with calcium intake to maximize the number of calcium ions that enter the blood (Gropper et al, 2005). Vitamin D, the fat soluble vitamin associated with the prevention of osteoporosis, is also associated with calcium absorption in the gastrointestinal tract (Whitney & Rolfes, 2002). This fat-soluble vitamin can be obtained through dairy products such as milk (0.8-1.3 mcg/100 g), cheese (<1 mcg/100 g) and yogurt, in addition to saltwater fish such as herring, tuna, salmon and sardines at approximate amounts of 5-40 mcg/ 100g (Gropper et al, 2005) and can also be absorbed with fifteen minutes of sunshine a day! (Whitney & Rolfes, 2002)

The take-home message is to monitor calcium intake on a daily basis to ensure adequate intake because the body we live in requires this macromineral in order to sustain life within us.

German, W. J. & Stanfield, C. L. (2005) *Principles of Human Physiology*, *Second Edition*, San Francisco: Pearson, p.629

Gropper, S. S., et al. (2005) *Advanced Nutrition and Human Metabolism, Fourth Edition,* p. 343-352

Mahan, L. K., Escott-Stump, S. (2000) *Krause's Food, Nutrition and Diet Therapy, Eleventh Edition*, p. 792-814

Marieb, E. N., Mallatt, J. (2003) *Human Anatomy, Third Edition*, San Francisco: Benjamin Cummings, p.139-143

Whitney E.N, Rolfes S.R. (2002) *Understanding Nutrition, Ninth edition*, Belmont: Wadsworth, p. 403-409

Antioxidants: The Fountain of Youth

By Mary Lou Marinas

Aging is inevitable. It is not a decision we are allowed to make for ourselves. Aging is a part of life, and we must accept it for all it is worth. The American population increased by eighty million between 1946 and 1954. Those who were born during this period were nicknamed, "The Baby Boomers." This large segment of the American population redefined each stage in life, and now it is their time to redefine retirement.

Anti-aging medicine incorporates four multidisciplinary approaches, one of which is through diet. Each day, scientists from around the world are discovering new anti-aging secrets, and many of these newly discovered secrets are derived straight from the foods we own in our kitchens and commonly see at the grocery store. The foods we eat are not only used to feed our bodies, but they are also used for scientific research under the microscope lens. Frequent findings of foods' medicinal properties are astounding. Since food has the power to heal, it also has the capability of reversing many degenerative symptoms associated with aging.

The air we breathe is a paradox. We cannot live without oxygen; we all know this. Oxygen, although essential to our lives, can be very harmful. In everyday situations, we can see the consequence of exposing metals or food to oxygen over a prolonged period of time. The metal will eventually rust, and the food will eventually spoil. Similarly, our bodies respond to oxygen the same way. Some oxygen molecules, called free radicals, are very reactive. These free radicals produce undesirable changes in our bodies, which affect our health and results in aging. Affected cells surrounding the free radical contain DNA, our individual genetic blueprints. If the DNA becomes mutated, progressive changes occur which may result in cognitive impairment, cancer, arthritis or other degenerative diseases.

One theory associated with anti-aging and diet requires a lower-calorie meal plan to support the oxidative balance. The concept of nutrient density couples the low-calorie theory. Nutrient density means certain foods have higher levels of antioxidants, vitamins and minerals in a given serving size. This boils down to minimizing our consumption of nutrient-poor foods and maximizing our consumption of nutrient-dense foods.

Antioxidants possess the ability to scavenge harmful, free radicals and are our first line of defense when it comes down to the war against aging. So, which foods have the highest levels of antioxidant compounds? The table below lists some of the top antioxidant-rich foods.

One can receive the benefits of antioxidants by incorporating the ingredients into your favorite recipes; however, eating antioxidant rich foods throughout the day will have the greatest impact. Dietary antioxidants last in the bloodstream for only six hours with the exception of carotenoids. Regular intake, throughout the day, assures adequate antioxidant levels in the blood at all times.

A lifelong diet rich in antioxidants cannot ensure a prolonged life, but it can result in a healthier one. Improvements in your vision, memory, regularity, youthful appearance, etc. are some of the priceless gifts a proper diet can offer. The human body cannot live forever, but with proper dietary approaches you can slow the pace of the aging process and enjoy many healthy and happy years.

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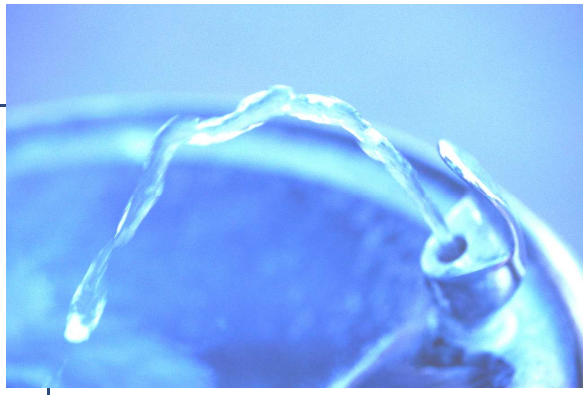

TOP 20 ANTIOXIDANT-RICH FOODS

1. Cocoa powder	11. Kale
2. Cabernet Sauvignon	12. Chardonnay
3. Sorghum flour	13. Blueberries
4. Pomegranates	14. Cherries
5. Sorghum syrup	15. Red raspberries
6. Plums	16. Strawberries
7. Blackberries	17. Spinach, raw
8. Cabbage, purple	18. Oranges
9. Ground flax	19. Watercress
10. Stone-ground cornmeal	20. Raisins

Watercress, Walnut, and Mandarin Orange Salad

By Reima Saleem

Ingredients:
6 bunches watercress, cleaned and half the stem removed
½ c. walnut halves
1 c. mandarin orange segments
½ c. red onions, thinly sliced
1 c. olive oil
½ c. orange juice
1 Tbsp. Big 'N Bold Monterey or Key West spice blend

Directions:
Combine watercress, walnuts, orange segments, and red onion. Toss lightly to combine. Mix olive oil, orange juice, and seasoning. To assemble, place watercress mixture onto plates and drizzle with dressing. You may also combine the dressing with the watercress mixture in a large bowl and mix gently to coat.

Healthy Ingredients for a Healthy Salad

This salad is healthy and easy to make! The **watercress** is full of vitamins and minerals, and also aids in digestion, healthy skin, and protein absorption. Studies have shown that **walnuts** can lower the bad cholesterol, LDL, protect the heart from saturated fat, and cut the risk of heart disease by 50%. Walnuts are also rich in fiber, B vitamins, Vitamin E, and Magnesium. Another healthy addition to this salad are the **Mandarin oranges** which are full of Vitamin C, Thiamine, folate, and fiber, which aids in the digestion of food. Both cooked and raw red onions can increase blood circulation and can reduce high cholesterol. **Olive oil** is full of Vitamins E and K, antioxidants, and high in monounsaturated fat. It is found to protect the body against cancer, coronary heart disease, and aging. **Orange juice** is high in Vitamin C, Potassium, folate, and Thiamin. It helps maintain the cardiovascular system and immune system. This salad is full of healthy ingredients and it also tastes great too! It is very simple to make, even if you are in a hurry! **Enjoy!**

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Picture Page

7 a.m. SDFSA meeting!

Clubs & Organizations Fair 2007

Mary Lou Marinas and Lisa Calanni represent SDFSA at the New Student Orientation Clubs & Organizations Fair 2007!

Acapulco night fundraiser

Joe Dixon, Krista Petty, & Mica Nickson look on while Dr. Lisagor helps Ashley Barton keep her eyes open for the photo!

Caroline Ohebsian, Joe Dixon, Krista Petty, Mica Nickson, Ashley Barton, Cathy Fusano, Geri Lorenzana, Diana Benitez, Dr. Lisagor, Lisa Calanni, Mary Lou Marinas, & Celia Ferreira enjoy an Acapulco dinner.

Dietetic Internship Symposium

Editor's Thank You

We would like to thank all the SDFSA officers and members who contributed to the Fall 2006 newsletter! Special thanks to Dr. Lisagor, for all of her hard work and dedication to SDFSA. Although this was a busy semester, all of the SDFSA members made it memorable! We appreciate everyone's hard work. Have a fun, healthy, and safe break!

Happy Holidays,

Dahlia & Krista

SDFSA
STUDENT DIETETIC & FOOD SCIENCE ASSOCIATION

A Special Thanks to Our SDFSA Members

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Ellen Luong
Alia Maggio
Mary Lou Marinas
Coronel Maritess
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Jessica Salsburg
Shahrzad Sayari
Tamana Seved-Kazemi
Amanda Shin
Aida Soghomonian
Yalda Souri
Karina Souw
April Stahl
Pat Spencer
Bray Stubblefield
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Linda Valenzuela
Shani M. Verchick
Tatiana Vysotsky