“Shake It Up! Modifying Traditional Foods and Recipes to Lower Sodium”

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OVERVIEW

By 2050 half of the US population will be Caucasian, but no longer the majority. The population will be evenly split between whites and minorities, with increased incidence of diet-related diseases—many sodium-related.

The 2010 US Dietary Guidelines recommend a reduction in the sodium content of the US food supply. However, departure from higher-sodium diets may not be acceptable by many Americans, including minorities to whom taste is notably paramount. Therefore, adherence to lower-sodium diets poses significant challenges to the food industry and consumers. Whether sodium reduction should affect all food categories or only a few, and whether it can be accomplished while preserving palatability and taste are fundamental concerns.

Sodium has important functions in foods and beverages, other than taste. Simply removing sodium from foods or dramatically reducing it may cause disinterest and disuse, particularly in highly flavorful foods, so common in the diets of American minorities.

To address these issues, the functions of sodium in our food supply will be discussed, with realistic ideas for sodium reduction, substitution and enhancement by other ingredients. Attention will be given to sodium reduction in the food industry as well as by consumers.

Traditional ingredients and dishes that are representative of US minorities will be featured, with realistic tips and techniques to transform time-honored recipes into healthier ones. Tastings will be available to demonstrate flavor enhancement with sodium reduction.
This presentation features:

1) Studies of daily sodium consumption less than 1,500 milligrams with implications for low sodium diets
2) Use of sodium substitutes and flavor enhancers in the food industry and by consumers
3) Applications of reduced sodium and flavor enhancement in US minority foods, recipes, menus and diets—with coordinated tastings.

LEARNING OBJECTIVES

Attendees will be able to:

- identify food-centered cultural traditions of common US minorities
- recognize food choices that impact diet-related diseases
- modify food choices to improve incidence of diet-related diseases
- lower traditional high-sodium ingredients; use flavor enhancement alternatives; improve reduced-sodium diet adherence
- apply reduced-sodium and flavor enhancement tips and techniques for product, food, recipe, menu and diet development
CARIBBEAN-STYLE BAKED FISH FILLETS

20 oz (568 g) bass, halibut or red snapper fillet, pin-boned and skinned
6 T (90 ml) fresh orange juice (acidity, flavor complexity)
2 tsp (10 ml) orange zest (acidity, bitterness, flavor complexity)
4 tsp (20 ml) lime juice (acidity, flavor complexity)
1/2 tsp (2.5 ml) sugar (counters acidity; creates full-flavor profile)
1/4 tsp (1.23 ml) salt (enhances flavor)
2 tsp (10 ml) extra virgin olive oil (rounds flavor, texture)
3/4 tsp (4 ml) jalapeno chili pepper, seeded; veins intact (adds heat, spiciness)
3 T (45 ml) chopped fresh cilantro (compliments orange zest, adds bitter finish)
8 oz (227 g) red or white onion (acidity, flavor complexity)
   sautéed in 2 tsp (10 ml) extra virgin olive oil until tender (rounds flavor, texture)

1. Preheat oven to 350°F (177°C).
2. Marinate fish in all ingredients except cilantro and sautéed onion for 1 hour in refrigerator.
3. Put sautéed onion in bottom of shallow baking dish.
4. Place fish on top of sautéed onions along with marinating liquid; cover with aluminum foil.
5. Bake about 15 minutes or until fish is cooked through (internal temperature of 140°F [60°C]).
6. Serve fish with cooking liquid and sprinkle of cilantro.

Notes:

1. Sugar and acidity from orange and lime juices, orange zest and onion counteract; raise flavor profile of fish.
2. Cilantro compliments orange zest with bitter finish.
4. Olive oil adds healthy fats; combines flavors.
5. Salt unifies flavors.

Yield: About 4 (4-5 ounce) servings

Nutrients: 411.75 calories, 24.2 g total fat, 4.05 g saturated fat, 2.425 g polyunsaturated fat, 15.5 g monounsaturated fat, 10.5 g carbohydrates, .875 g fiber, 21.25 g protein, 266.25 mg sodium
ENHANCED MASHED POTATOES

2 lbs (900 g) peeled Russet Burbank or Yukon Gold potatoes, cut into large pieces (natural sugar, starch)
6 T (90 ml) low-fat cultured sour cream (acidity, flavor complexity)
1/4 c (60 ml/g) low-fat milk (natural sugar)
2 tsp (10 ml) sugar (counters acidity, creates full flavor profile)
1 tsp (5 ml) monosodium glutamate (increases umami taste; creates full flavor profile)
1/4 tsp (1 ml) lemon juice (increases acidity, creates full flavor profile)
1/4 tsp (1 ml) salt (enhances flavor)
2 pinches white pepper (adds heat, spiciness)

1. Boil potatoes in water without salt.
2. Once potatoes are very tender, drain and mash.
3. Stir in remaining ingredients.
4. Check, adjust seasonings.

Notes:

1. Acid from sour cream and lemon juice counteracts natural and added sugar; raises flavor profile of potatoes.
2. Up to 6 cloves garlic can be added to potatoes during boiling; then mashed with potatoes.
3. Optional ingredients: curry powder, fresh herbs, mustard, Parmesan cheese, pesto, red wine, roasted bell peppers, wasabi

Yield: About 8 (4-ounce) servings
Nutrients: 102.375 calories, 1.475 g total fat, .875 g saturated fat, 0.1 g polyunsaturated fat, 0.4 g monounsaturated fat, 20.15 g carbohydrates, 2.725 g fiber, 2.65 g protein, 179.95 mg sodium
GREEN BEANS WITH ONIONS, PARMESAN CHEESE AND TOMATOES

8 oz (225 g) small green beans (haricots verts)
2 tsp (10 ml) extra virgin olive oil (rounds flavor, texture)
1/4 c (60 ml) water (reduces amount oil)
2 oz (1/2 c) (56 g) finely chopped onions (sweetness; flavor complexity)
1/2 clove garlic, minced (flavor intensity)
2 T (30 ml) finely grated (and freshly grated) Parmesan cheese (enhances salty, umami flavors)
4 tsp (20 ml) minced chives (astringency, freshness)
1/4 c (60 ml) diced tomatoes (acidity, color, sweetness)

1. Cook green beans in salted boiling water.
2. When tender, plunge into ice water; remove, rinse and reserve.
3. In a small sauté pan over low heat, cook onions with water and olive oil. Add more water if necessary. When tender, water should evaporate from pan.
4. Add garlic to onions; cook for additional 2 minutes, or until garlic thoroughly cooked.
5. Add green beans; cook until heated through.
6. Add cheese, chives and tomatoes; toss and serve.

Yield: About 2 (4-ounce) servings
Nutrients: 109.5 calories, 6.05 g total fat, 1.5 g saturated fat, 0.6 g polyunsaturated fat, 3.7 g monounsaturated fat, 11.6 g carbohydrates, 4.45 g fiber, 4.4 g protein, 91.45 mg sodium

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REFERENCES

Articles


Faculty of Life Sciences (LIFE). Danish Science Communication, University of Copenhagen, December 16, 2008 - 12:54, Psychology & Sociology.


**Books**


**Book Chapters**


**Websites**


**Other**

Cooking Healthy with Great Taste. Ajinomoto, USA, Inc., Paramus, N.J.

Experience Flavor. Lawry’s Foods, Inc. Monrovia, CA.


Sweet, Sour, Salty, Bitter and Umami. Umami Information Center, Tokyo, Japan.
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Jacqueline is President/Owner of Jacqueline B. Marcus & Associates, Food & Nutrition Consulting, in Highland Park, Illinois. She holds a Bachelor of Science Degree in Consumer Science and a Master’s Degree in Food Science and Nutrition from Northern Illinois University in DeKalb, Illinois, and a Certificate of Professional Continuing Education in Gerontology from the University of Illinois in Champaign-Urbana, Illinois.


Jacqueline was Associate Professor and Department Chair of Culinary Nutrition at Kendall College School of Culinary Arts; Assistant Professor of Nutrition at the Cooking and Hospitality Institute of Chicago (CHIC); and taught at the United States Navy, and Colgate and Northwestern University, among other academic institutions.


Jacqueline is past Chairperson of Food and Culinary Professionals (FCP) Sports and Cardiovascular Nutritionists (SCAN), dietetic practice groups of the American Dietetic Association. She received the American Dietetic Association Foundation Excellence Award for Private Practice, and is a Charter Fellow of the American Dietetic Association. Jacqueline was highlighted as a “Ground Breaker” and “Off-the-Beaten Path Dietitian” by Restaurants and Institutions, and distinguished as an “Outstanding Food and Nutrition Consultant” in Nation’s Restaurant News OnSite, among other honors.

Jacqueline focuses her work on flavor enhancement, emphasizing the nutrition and health value of great tasting food for all people and ages. She recently completed an innovative text that integrates nutrition, food science, and the culinary arts: Culinary Nutrition: The Science and Practice of Healthy Cooking, which will be published by Elsevier in 2013.