Unit 1: Nutrition Trends

Unit Overview


A survey by the U.S. Department of Agriculture as to what Americans are eating and the *trends of our food consumption* since the 1970s are reviewed. The trends for the consumption of vegetable and fruit, flour and cereal, meat, poultry and seafood, dairy, milk, fats and oils, beverages, and sweeteners are presented.


Functional foods are on the forefront of discussion among scientists and public alike. Supermarket shelves are full of “functional foods” that promise health benefits beyond basic nutrition and sometimes claim miraculous cures. Is there any truth to these claims? This article discusses the regulation of these health claims by the FDA, the possibility of modifying foods to regulate gene expression and fight disease, and the dangers of believing everything you read on food labels.


Beware when you enter your supermarket! Even though the *health claims on packaged foods* have dramatically increased, consumers need to be educated and vigilant as to the choices they make. Avoiding the center aisles, demanding high nutrient density, reading and decoding food labels, and focusing on foods in the perimeter of the supermarket will help the consumer make wise food choices.


With everyone aspiring for a healthier lifestyle these days, it is not surprising that nutrition fads tend to come and go. The author reviews the top ten nutrition trends for 2008. Trends such as use of functional foods in place of prescription medications, eating of organic, ethnic foods becoming the norm, and a novel attentiveness to healthful weight loss are just a few that made the list.


The Organic Center was founded in 2002 and has recently launched a campaign titled Mission Organic 2010, with the goal to expand organics sale in the American market from its current 3% to 10% by 2010. This article encourages people to buy organic and reminds them the reasons why it is beneficial for their bodies as well as the earth’s well-being.


The slow food movement rose as a reaction to fast food, convenience cuisine, and a fast life pace. Buying *fresh local produce*, remembering the way grandparents cooked, slowing down and enjoying the taste of food, and preserving *traditional foods* and cooking methods is what the slow food movement is all about. A history of the origin of the movement and how it is starting to be introduced into the culinary arts and school wellness programs are discussed.
7. Schools Can Taste Good, Katherine Gigliotti, State Legislatures, December 2006

The Edible Schoolyard Project was initiated by Chez Panisse’s chef, Alice Waters, from the need to address hunger and nutrition problems of children in the Berkeley area by creating school gardens and farm-to-school programs. Building partnerships with the school system, state legislature, foundations, local nonprofits, the health community, and businesses helps reach at-risk children, prevents malnutrition, and teaches them healthy eating habits.

8. The Potential of Farm-to-College Programs, Kathleen A. Merrigan and Melissa Bailey, Nutrition Today, August 2008

Farm-to-college programs (FTC), in which colleges and universities purchase food directly from farms instead of large distributors, are becoming popular today with the increasing demand for locally grown food. More than one hundred colleges and universities in the United States have begun or plan to implement an FTC program. This article uses Tufts University as a model to demonstrate the barriers to FTC’s implementation and why it is especially difficult for schools in the Northeast region of the United States to have successful FTC programs.

Unit 2: Nutrients

Unit Overview


Forty percent of Americans are taking vitamins, but with the changing every day, scientific evidence on the effects of vitamins on health and disease, consumers are confused as to which vitamins and how much to take. Recent evidence on folic acid and selenium caution the use of high amounts of these nutrients especially when certain foods have been fortified with folic acid. On the other hand, scientists are concerned with the population taking too little vitamin D since this vitamin has been shown to be involved in diabetes, cancer, multiple sclerosis, arthritis, and periodontal disease.

10. Putting Sugars into Perspective, Food Insight, November/December 2006

This article provides a short review of sugars in foods and the difference between added and naturally occurring sugars. The connection between sugars and weight gain is addressed and recommendations for enjoying sugars in moderation are presented.


You have no doubt seen the numerous advertisements for omega-3 fatty acids on food labels throughout the grocery store. Most labels are misleading though and do not differentiate between the beneficial and the not-so-beneficial omega-3 fatty acids. This article provides advice on how to intelligently interpret the abundant claims about omega-3 fatty acids.


Misconceptions abound about the need and use of minerals. Less than one-third of Americans consume the recommended amounts of calcium, magnesium, or potassium while sodium intakes are skyrocketing. Major food sources for these nutrients are presented.


In the past, scientists thought that Vitamin D played a role in bone mass and strength, but recently evidence on the role Vitamin D plays on diabetes, the immune system, and various cancers has exploded. Food sources of Vitamin D and reassessing of dietary recommendations are covered.


Most Americans are only consuming half of the recommended levels of fiber even though there is evidence that fiber is linked to a reduced risk of diabetes, colorectal cancer, and obesity. Now food companies have discovered how to put fiber into many foods that do not normally contain it. The only problem is that isolated fiber may not have the same benefits of intact, naturally occurring fiber. This article informs consumers on what they need to know about fiber and where they can find fiber in food to reap its benefits.

Unit 3: Diet and Disease through the Life Span

Unit Overview

15. Diet Does Matter: Nutrition’s Role in Cancer Prevention and Treatment, Marie Spano, Today’s Dietitian,
Even though a large percentage of the population still views diet and nutrition as a tool for weight gain or loss, nutritionists have documentation on the relationships between what we eat and cancer prevention and development. Additionally, supporting the cancer patient nutritionally during cancer treatment leads to fewer side effects and improved outcomes.


The popular topic in nutrition these days seems to be the “anti-inflammatory” diet. Inflammation has been shown to be a risk factor in cardiovascular disease, obesity, diabetes, and a number of other chronic diseases. There are questions though as to whether there is enough science to support dietary recommendation of an anti-inflammatory diet. The good news is that the diet makes sense even without the science to back it up—it’s a traditionally healthy diet with little risk of harm.


The metabolic syndrome is a combination of abdominal obesity, increased blood pressure and blood lipids, and insulin resistance. This syndrome has been increasing with the rise in obesity and the aging of the U.S. population. A review of this syndrome and the role of diet and exercise in prevention and reversal are discussed.


Research has revealed that what we eat not only affects our health but is also a major factor of longevity. Researchers discuss the benefits of caloric restriction and the consumption of antioxidant-rich foods that can help add years to our lives.


Alzheimer’s disease is costly for both patients and the health care industry. It is time to put our wallets away though, because there are many cost-effective, scientifically proven ways to prevent this degenerative disease. A diet high in monounsaturated fats, long-chain omega-3 fatty acids, and antioxidants is just one of the few suggestions Oliver Tickell offers in this article.


Recent scientific evidence necessitated new diet and lifestyle recommendations by the American Heart Association. Prevention through diet and lifestyle are emphasized along with a focus on obesity, our major nutritional public health concern. Balancing caloric intake and physical activity, consuming more vegetables and fruits, choosing whole-grain, high-fiber foods, consuming fish regularly, limiting fats and cholesterol, minimizing added sugars, and consuming little or no salt are the new, major recommendations.


This article reviews several recent reports on eating behavior, exercise, and high-risk behaviors of school children. The school vending pyramid is presented and discussed along with data on the decrease of physical education in many schools. Agreements among the Alliance for a Healthier Generation and major beverage distributors and snack food producers to substitute soft drinks and high-fat and sugar snacks with healthier items are steps in the right direction.

**Unit 4: Obesity and Weight Control**

**Unit Overview**


With the discovery of ghrelin, the “hunger hormone,” our understanding of individual differences in our ability to lose weight is better understood. This article documents from research the role of gut hormones, especially ghrelin, in obese humans and animals; the source of calories and their effect on gut hormones; and sleep deprivation and its effect on the “hunger” hormone.


Globalization is causing third world countries to mimic the unhealthy Western diet that contributes to obesity. Sweetened beverages are just one example of components of the Western diet that have crept into societies around the world. It is not diet alone, but also the sedentary Western way of life also that has been adopted by many developing countries. This article presents the need for intervention before it is too late.

Researchers have recently observed a **strong association between different types of cancer and excess weight**. The effects of insulin and estrogens on cancer of the liver, colon, pancreas, kidney, breast, and uterus are presented. Using the BMI and waist circumference to assess your risk and suggestions to prevent increase in central obesity are discussed.

25. **Are We Setting the Stage for Obesity and Poor Oral Health?**, Terri Lisagor, *Today's Dietitian*, September 2007

This article discusses the many factors that have resulted in our country’s rising obesity rates and poor dental health. Lisagor stresses the fact that childhood is the time we must intervene in order to make positive changes and that collaboration of parents, healthcare professionals, schools, government, the food industry, and media is a must in order to deliver a consistent message to children.


This article compares four popular diets in real-life conditions and reports some of the roadblocks dieters are faced with in order to lose and maintain weight.


The probability of being heavy as an adult depends, among other factors, on the weight a baby gains before the age of two. Also, eating and activity patterns learned in childhood tend to persist over time. This article gives us practical advice on the **nutritional needs and activity of infants, toddlers, preschoolers, and school kids to prevent obesity**.

### Unit 5: Health Claims

#### Unit Overview


With the amount of technology we have in the twenty-first century the speed of communicating scientific results is greater than ever before and the possibility of miscommunication is equally as great. This article explains and makes us aware that even if the scientific protocol, study design, data collection, and analysis are impeccable, it is still possible to report the findings in a confusing and biased manner.


With consumers spending more than 20 billion dollars on dietary supplements in 2004, a good look at the **safety and regulation of the dietary supplement industry** needs to be taken. Consumer perceptions about supplements, the history of dietary supplement regulation, and ways to protect the consumers are discussed.


As the demand for **organic products** has dramatically increased and mega companies are becoming involved in selling organic foods, they look beyond the United States to supply them with organic products. So the standards set by the organic movement are being compromised. Do big business and organics mix? This article addresses many similar questions and examines the future of organic food and agribusiness.

31. **“Fountain of Youth” Fact and Fantasy**, *Tufts University Health & Nutrition Letter*, May 2008

Antioxidant supplements are extremely available in today’s world. Most all American’s have a diet available to them that provides sufficient levels of the nutrients they need, but many choose to take supplements instead. This article describes what you really need to know about obtaining your antioxidants from diet alone versus getting them from supplements.


Phytosterols are naturally occurring compounds of plants, which when added to foods, are able to lower low-density lipoprotein cholesterol, decreasing the risk of heart disease. The **advantages and disadvantages of consuming phytosterol-fortified foods** are presented, along with practical suggestions on how to incorporate them into your diet.


The supplement business is experiencing a huge transformation. Consumers are not buying the old single-nutrient supplements but opt for combinations or condition-specific supplements. This article reveals why the baby boomer generation is quickly embracing supplements for specific health conditions and why members of generation Y are going for nutrition and sports-performance type supplements.
34. Brain Food, Linda Milo Ohr, Food Technology, September 2008

There has been a recent interest in brain health owing to the growing incidence of Alzheimer’s and cognitive decline in old age. Because of this, there are several new products related to cognitive function in the market. This article provides information on foods, food components, and other products that are thought to improve mental health.

Unit 6: Food Safety/Technology

Unit Overview

35. Is Your Food Contaminated?, Mark Fischetti, Scientific American, September 2007

New technologies are being developed in order to protect our food supply from bacterial contamination or even intentional contamination. Radio-frequency identification tags is one of the new technologies described in this article. However, widespread adoption of this new equipment will not happen until government regulations are enacted.


Controlling Salmonella and Campylobacter bacteria in chickens is of critical importance in preventing food-borne illness caused by chicken consumption independent of organic or conventionally grown practices. The role of the USDA’s Food Safety and Inspection Service is explained, and what the consumer can do to prevent bacterial contamination is presented.


Dr. Robert Tauer, at the Centers for Disease Control and Prevention, answers questions about bacterial outbreaks in fruits and vegetables, the reasons for food borne illnesses to be on the rise, antibiotic resistance in humans, and others. Types of bacteria, major symptoms, foods causing outbreaks, and length of illness are tabulated.

38. Seafood Safety: Is Something Fishy Going On?, Matthew Robb, Today’s Dietitian, November 2004

Mercury, dioxin, and polychlorinated biphenyls (PCBs) are environmental contaminants that bioaccumulate in larger and older fish. The public is rightfully concerned as to whether and how much fish they should be eating based on their deleterious effects on health. Robb presents background information on research and FDA and EPA directives, and discusses the use of fish oil supplements as an alternative to contaminated fish.


Meat products go through thermal treatment to kill bacteria and pathogens before consumption, but fresh fruits and vegetables are not treated and often consumed raw. Irradiation could offer a solution to this problem, inactivating the pathogens on fresh produce. This article describes different types of radiation and its positive and negative effects on different characteristics of produce.

40. The E. Coli Outbreak: Lettuce Learn a Lesson, Sharon Palmer, Today’s Dietitian, January 2007

Food safety has focused primarily on the processing and handling of raw meat and poultry but after deaths occurred due to spinach contamination by E.coli, it necessitated the inclusion of produce farms. The reasons and interrelations among wandering livestock, worker hygiene, irrigation practices, animal husbandry, and feeding practices are explained. Steps taken by food processors and growers to eliminate new outbreaks are described.

41. Produce Safety: Back to Basics for Producers and Consumers, Food Insight, March/April 2007

Have you ever wondered what you can do to protect yourself against food-borne illness? This article informs consumers of steps they can take to reduce their chances and also summarizes what food producers and regulators are doing to protect their customers from harm.

Unit 7: World Hunger, Nutrition, and Sustainability

Unit Overview

42. A Question of Sustenance, Gary Stix, Scientific American, September 2007

Thanks to globalization, the Western diet is now seen all over the world. This article points out that developing countries that are dealing with problems of starvation are simultaneously dealing with problems of obesity. With
over-the-counter weight loss drugs and a questionable food guide pyramid, are we really solving the obesity epidemic or just masking the real problem?

43. Pushing Beyond the Earth’s Limits, Lester R. Brown, *The Futurist*, May/June 2005

A global view of the increasing demand for food and water for irrigation and its effects on the shrinking water supplies is discussed by Lester Brown. The effects of rapid industrialization, rising incomes, and rising high temperatures signal the need for proactive measures to protect the environment and thus succeed in reaching the World’s Food Summit goal of reducing the number of hungry people worldwide.


Organic crops use 25% less energy than chemically produced crops, give higher yields, emit less greenhouse gases, and encourage biodiversity, which maintains soil fertility and supports natural pest control. These are just a few of the reasons for us to begin to implement organic farming practices if we are going to be able to feed the growing population.


In response to consumer demands, food companies are finding ways to improve the sustainability of their processing and packaging operations and be more environmentally conscious. From green plants that save energy to reducing or modifying packaging material, this article will tell you how these companies are trying to deal with the problems facing our environment.


Water tables all over the world are depleting at an alarming rate. What many people don’t realize though is that with a shortage of water also comes a shortage of food; water is necessary to raise livestock and grow crops. This article raises awareness, reveals how serious the world’s water crisis is, and puts forth ideas on how we can resolve the problem.

47. Produce to the People, Constance Matthiessen and Anne Hamersky, *Sierra*, November/December 2006

Poor areas in the United States are being transformed with the creation of community gardens that grow fresh produce, offering benefits not only for health but also for food security and new skills for homeless teens. The advantages and benefits of community gardens and farmers’ markets to the individual and society are presented.

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