

National Pecan Shellers Association 2008 Annual Meeting

Tree Nuts and Health: An Update

Maureen Ternus, M.S., R.D.

Topics to be Covered:

- ❑ Tree nut research
- ❑ 2007 Nuts & Health Symposium
- ❑ Professional outreach

RESEARCH

EPIC Study

The purpose was to describe and compare consumption of total nuts and seeds and different types of nuts and seeds in men and women participating in the EPIC study (37,000 participants from 23 centers in 10 European countries)

Published in the November 2006 issue of the *British Journal of Nutrition*

European Prospective Investigation into Cancer and Nutrition (EPIC)

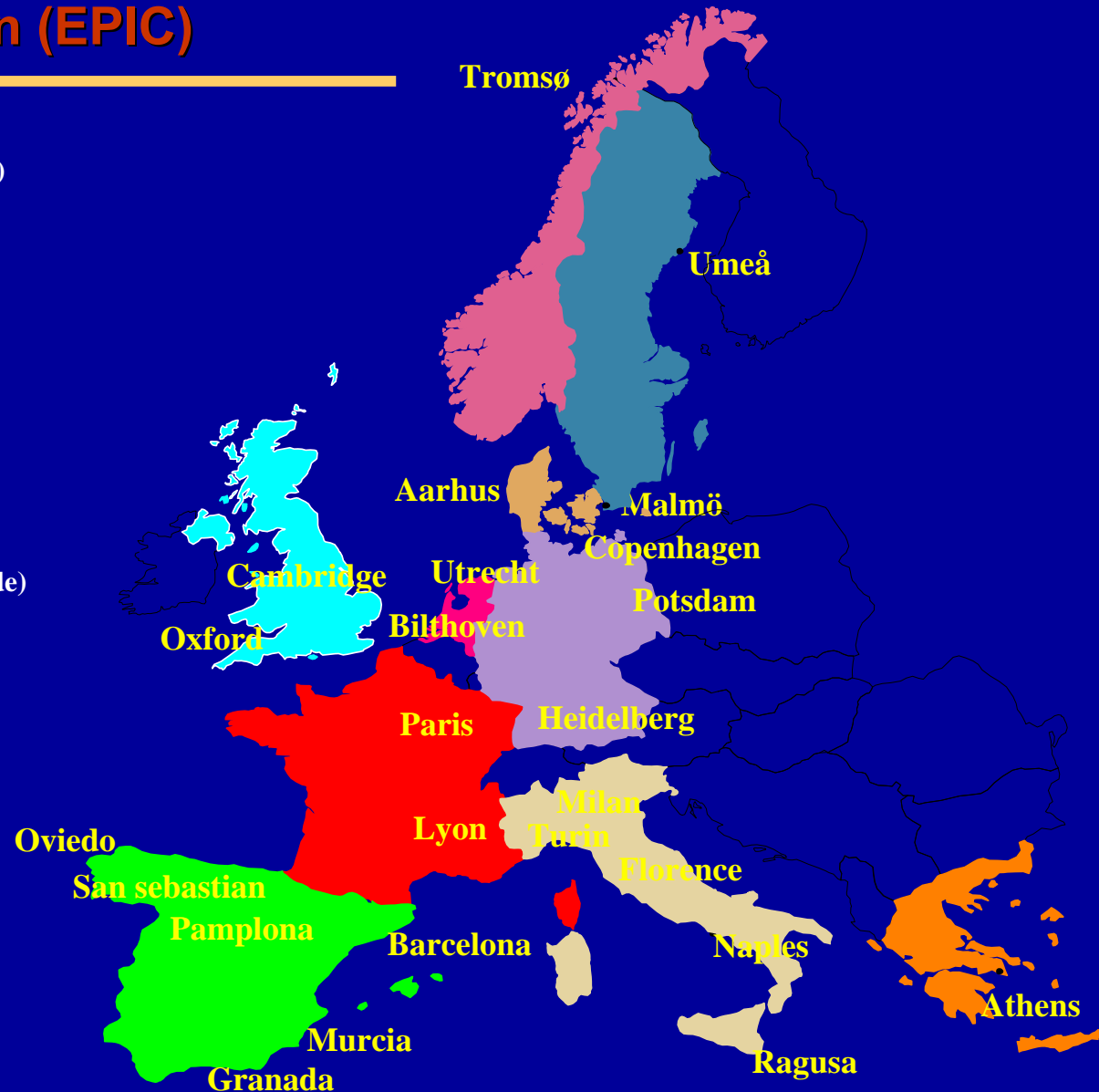
	Tromsø		Paris (nationwide)
	Umeå Malmö		Turin Milan Florence Naples Ragusa
	Aarhus Copenhagen		Oviedo San Sebastian Pamplona Murcia Granada
	Oxford Cambridge		Athens (nationwide)
	Potsdam Heidelberg		
	Utrecht Bilthoven		

- 10 European Countries

- 23 Centers

- Over 520,000 participants

- Ranging in age from 35-70 years



EPIC Study

Intake was assessed in three different categories:

1. Consumed as Whole:

- Eaten as whole, as part of a snack, sprinkled on salad, etc.

2. Consumed from Hidden Sources:

- Eaten as ingredients in recipes or in commercial products (breads, cereals, confectionaries, sweets)

3. Consumed as Spreads:

- Eaten as spreads, including commercial spread products

EPIC Study Results

Most nuts consumed as *whole* are tree nuts, followed by peanuts.

- ❑ Most common tree nuts are almond, hazelnut, pistachio and walnut
- ❑ True for most EPIC countries
- ❑ These 4 tree nuts collectively account for 85.6% of all tree nut consumption

EPIC Study Results

Large heterogeneity of intake of nuts consumed as *whole* across EPIC countries:

- ❑ Diversity of intake pattern in different countries
- ❑ Tree nuts are the most popular in all EPIC countries except Netherlands, Norway and Sweden where peanuts are more popular
- ❑ Clear geographic trend in intake of all tree nuts from Northern Europe (low) to Southern Europe (high)
- ❑ Compared to women, men consume tree nuts less often but have larger portion sizes



Diabetes Study

“Effect of nuts on glycemic control and cardiovascular disease risk factors in non-insulin dependent diabetes”

David Jenkins, et al., University of Toronto



Diabetes Study

- ❑ 72 subjects have completed the study and another 8 are currently enrolled
- ❑ 120 subjects are expected to complete the study by the end of 2008
- ❑ Study has been extended informally



Tree Nuts and Heart Disease: A Meta-analysis

- ❑ Conducted by Dr. Joan Sabaté at Loma Linda University, Loma Linda, CA
- ❑ The analysis looks at over 20 studies including those originally compiled for the health claim petition in 2003
- ❑ The manuscript will be submitted for publication



U.S. Nut Consumption Analysis

- ❑ Will determine the nutritional contribution of nuts and nut products to the U.S. population using National Health and Nutrition Examination Survey (NHANES) data from 1999-2004
- ❑ Will determine relationship of nuts and nut products consumption to certain health parameters (i.e., blood pressure, blood lipids, blood folate parameters, and C-reactive protein) and risk of metabolic syndrome



U.S. Nut Consumption Analysis

- Preliminary data was presented at the INC NREF sponsored session on plant foods and the U.S. Dietary Guidelines at the 5th International Congress on Vegetarian Nutrition, March 6, 2008
- The findings will be published in several papers



2007

*Nuts & Health
Symposium*



INC - NREF

**NUTRITION
RESEARCH
and
EDUCATION
FOUNDATION**

2007 Nuts & Health Symposium

- ❑ Review worldwide nut research over the last decade.
- ❑ Determine what areas of research the industry should focus on in the future.
- ❑ Publish proceedings that will assist the 2010 USDA Dietary Guidelines Advisory Committee assess the role of nuts in a diet for Americans.

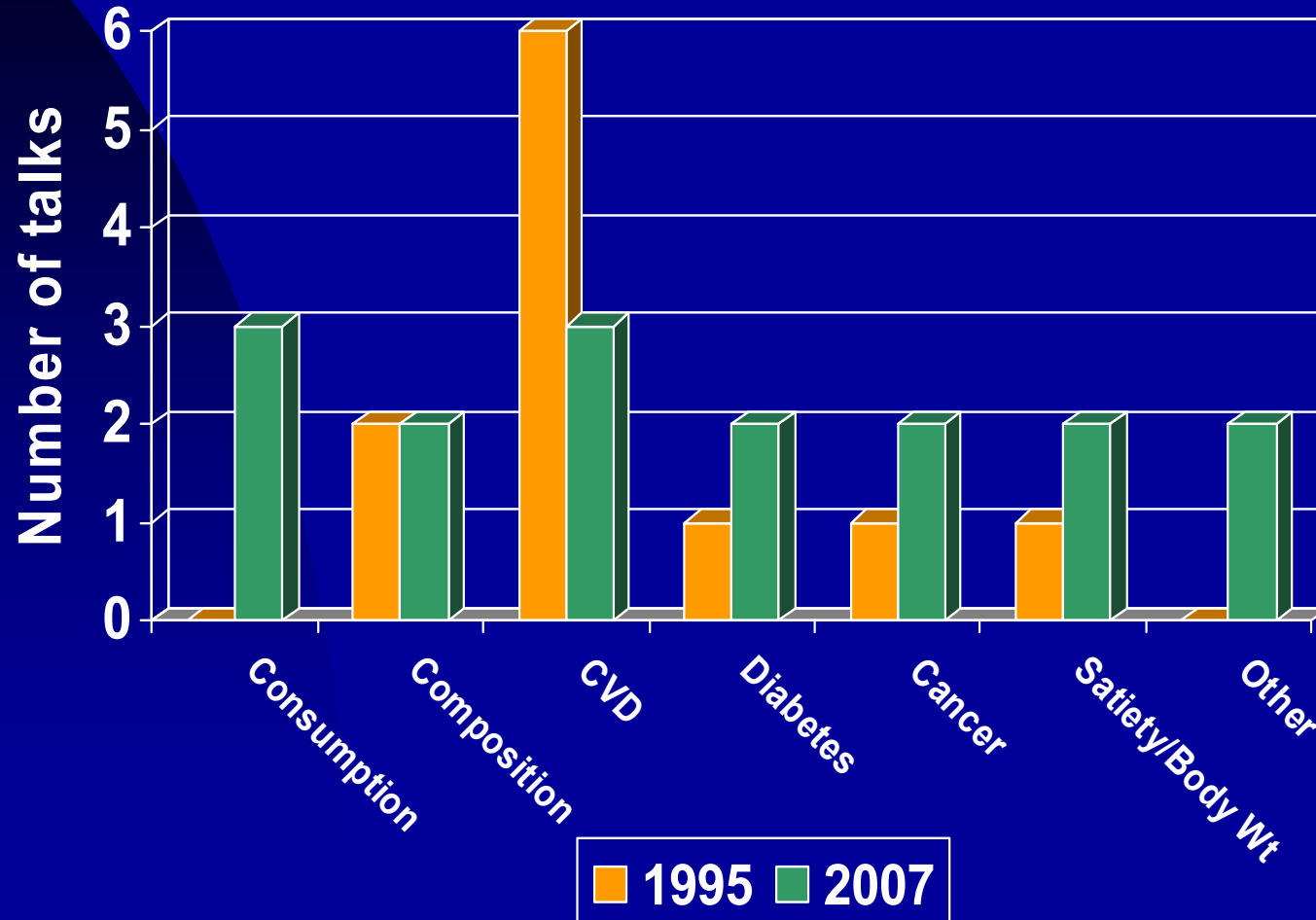
2007 Nuts & Health Symposium

- ❑ Meeting dates: March 1-2, 2007
- ❑ Location: University of California at Davis—home of the new USDA Western Human Nutrition Research Center (WHNRC)
- ❑ 25 experts invited from around the world to discuss nut research
- ❑ Proceedings were published in the September 2008 issue of the *Journal of Nutrition*

2007 Nuts & Health Symposium Speakers

- Jeffrey Blumberg, Tufts University, *USA*
- Frank Hu, Harvard School of Public Health, *USA*
- Mazda Jenab, International Agency for Research on Cancer (EPIC study), Lyon, *France*
- David Jenkins, University of Toronto, *Canada*
- Carl Keen, UC Davis, *USA*
- Janet King, University of California at Berkeley, *USA*
- Penny Kris-Etherton, Penn State, *USA*
- Rick Mattes, Purdue University, *USA*
- Gerhard Rechkemmer, Technical University of Munich, *Germany*
- Emilio Ros, Barcelona, *Spain*
- Joan Sabaté, Loma Linda University, *USA*
- Frank Sacks, Harvard School of Public Health, *USA*
- Linda Tapsell, University of Wollongong, *Australia*
- Katherine Tucker, Jean Mayer USDA Human Nutrition Research Center on Aging, *USA*

Comparison of 1995 and 2007 Programs



2007 Nuts & Health Program

- Session I: Nuts and a Healthy Diet
- Session II: The Impact of Nuts on Satiety and Maintenance of Healthy Body Weight
- Session III: Nuts and Diabetes
- Session IV: Nuts and Heart Disease
- Session V: Nuts and New and Emerging Research
- Session VI: Nuts and Health: Where Do We Go From Here?
- Recommendations

Session I: Nuts and a Healthy Diet

Main Conclusions: Session I

- ❑ Nut eaters have higher intakes of PUFA, potassium, folate, magnesium and fiber.
- ❑ Nuts are a good source of phytosterols, flavonoids, and proanthocyanidins; these bioactive compounds may reduce risk of chronic disease through antioxidant actions.
- ❑ About 60% of nuts are consumed as snacks in the US; if nuts replace refined carbohydrates in snacks, they could improve dietary quality.

Research Needs: Session I

- ❑ Determine nut phytochemical profiles, bioavailability, and effect of processing on these endpoints.
- ❑ Data on how nuts are used in the diet—what they replace, how they are eaten, and effect on biomarkers of disease (lipids, glucose tolerance, body fat).

Session II: The Impact of Nuts on Satiety and Maintenance of Healthy Body Weight

Main Conclusions: Session II

- ❑ Epidemiological and clinical trials document that moderate nut consumption provides health benefits without posing a threat to energy balance/weight.
- ❑ Nuts can be included in weight loss diets without compromising efficacy.
- ❑ There are mechanisms to account for the less than predicted effects of nut consumption on body weight (i.e., high satiety value, inefficient absorption).

Research Needs: Session II

- ❑ What is the effect of nut consumption on total diet quality?
- ❑ What are the health benefits of specifically replacing selected snacks (i.e., low nutrient dense, high carbohydrate) with nuts?
- ❑ What are the effects of including nuts in weight reduction regimens on adherence, weight loss and maintenance of reduced body weight?

Session III: Nuts and Heart Disease

Main Conclusions: Session III

- ❑ Substantial epidemiologic evidence indicates the beneficial effects of nut consumption on CHD incidence.
- ❑ Higher consumption of nuts is also associated with lower mortality (especially CVD mortality) in men and women.
- ❑ The benefits of nuts may be partly mediated through their anti-inflammatory effects.

Research Needs: Session III

- ❑ Assess nut consumption and risk of heart failure
- ❑ Evaluate nut consumption and progression from diabetes to heart failure
- ❑ Study the additive effects of physical activity with a high nut diet on CVD risk factors

Session IV: Nuts and Diabetes

Main Conclusions: Session IV

- ❑ Nut consumption is associated with reduction in CHD & CHD risk factors of key importance in diabetes.
- ❑ Nut consumption is associated with a reduction in gallstone disease, as an indicator of metabolic syndrome.

Research Needs: Session IV

- ❑ Longer-term intervention studies of diets including nuts on the development of type 2 diabetes in high risk groups (impaired glucose tolerance).
- ❑ Studies to assess dietary patterns which include nuts to lower glucose and improve fatty acid profile in both prediabetes and diabetes and assess their effects on risk factors.
- ❑ Assess effects of nut consumption on body composition, fat distribution and energy expenditure.

Session V: New and Emerging Research

Cancer

- Little experimental data
- Epidemiology- suffers from survey flaws that prevent identification of nut specific effects

Main Conclusions: Allergies

- ❑ New studies on prevalence in Europe, and fatality/severity rates. Incidence is increasing.
- ❑ Improvements in detection, diagnosis and control, labeling
- ❑ Some progress in reducing allergen in peanuts
- ❑ Roasting may reduce allergen in peanuts
- ❑ Thresholds known for peanuts, not others

Research Needs: Allergies

- More data needed on prevalence – only in Europe now. Reasons for increased prevalence, change in prevalence with age (especially tree nuts)
- More research needed on severity
- Sensitization – little on peanuts, nothing on others
- Research on allergen control programs

Research Needs: Allergies

- ❑ Research-driven labeling
- ❑ Effects of processing on allergenicity especially tree nuts.
- ❑ Cross-reactivity across nuts

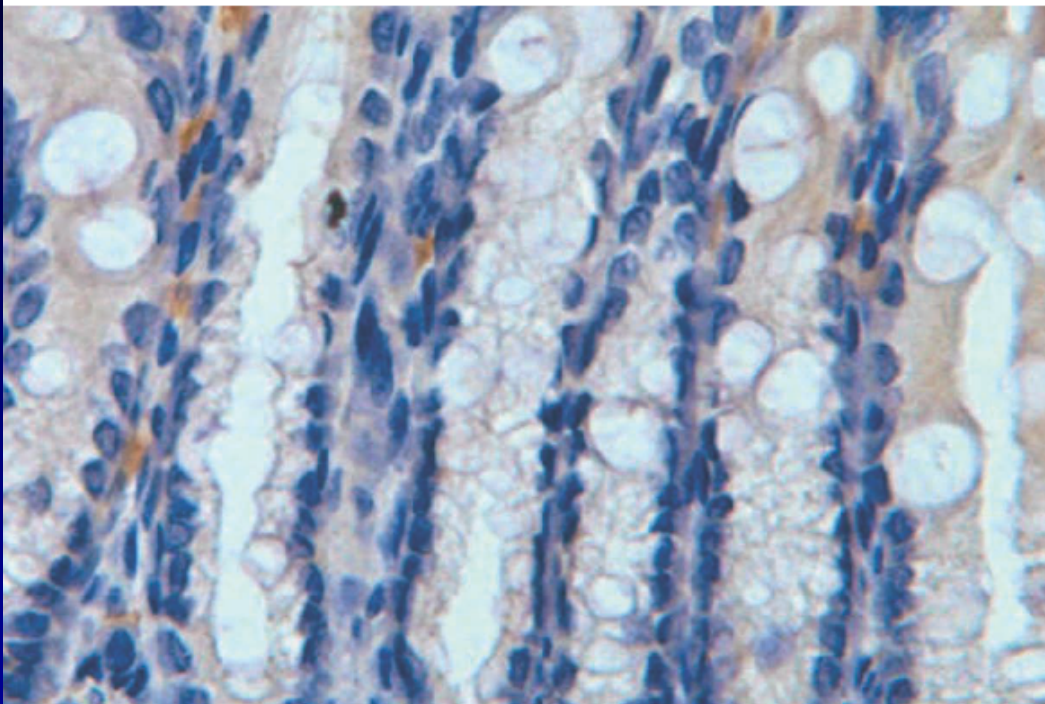
PROFESSIONAL OUTREACH

September 2008 • Volume 138 • Number 9

JN

THE JOURNAL OF NUTRITION

A Publication of the American Society for Nutrition • www.nutrition.org



Resveratrol and human platelet nitric oxide production
Adiponectin gene variants and insulin sensitivity in men
HIV infection and reduced dietary diversity in South African children

Supplements:

2007 Nuts and health symposium

Influence of diet on infection and allergy in children

Publicity for Proceedings

- Press release sent to major newspapers and magazines.
- New York Editor Desk-side briefings in October
- Reprints will be distributed to the AHA INAP members



Dietary Recommendations Regarding Nuts

DIETARY GUIDELINES 2005:

Recommend that vegetarians of all types substitute **1½ ounces of nuts** and $\frac{2}{3}$ cup of legumes for 5½ ounces of meat, poultry and/or fish

Dietary Recommendations Regarding Nuts



Meat, poultry, fish, dry beans, eggs and nuts group

USDA “MyPyramid”

- ❑ Nuts are recommended as a snack or as a substitution for other saturated-fat-containing protein
- ❑ ½ ounce of nuts is equivalent to 1 ounce of meat and 1 teaspoon of oil

USDA Dietary Guidelines 2010

- ❑ Submitting nominations for Dietary Guidelines Advisory Committee (DGAC) members
- ❑ Providing DGAC with information on the health benefits of nuts

10th Asian Nutrition Congress

September 9-13, 2007, Taipei, Taiwan

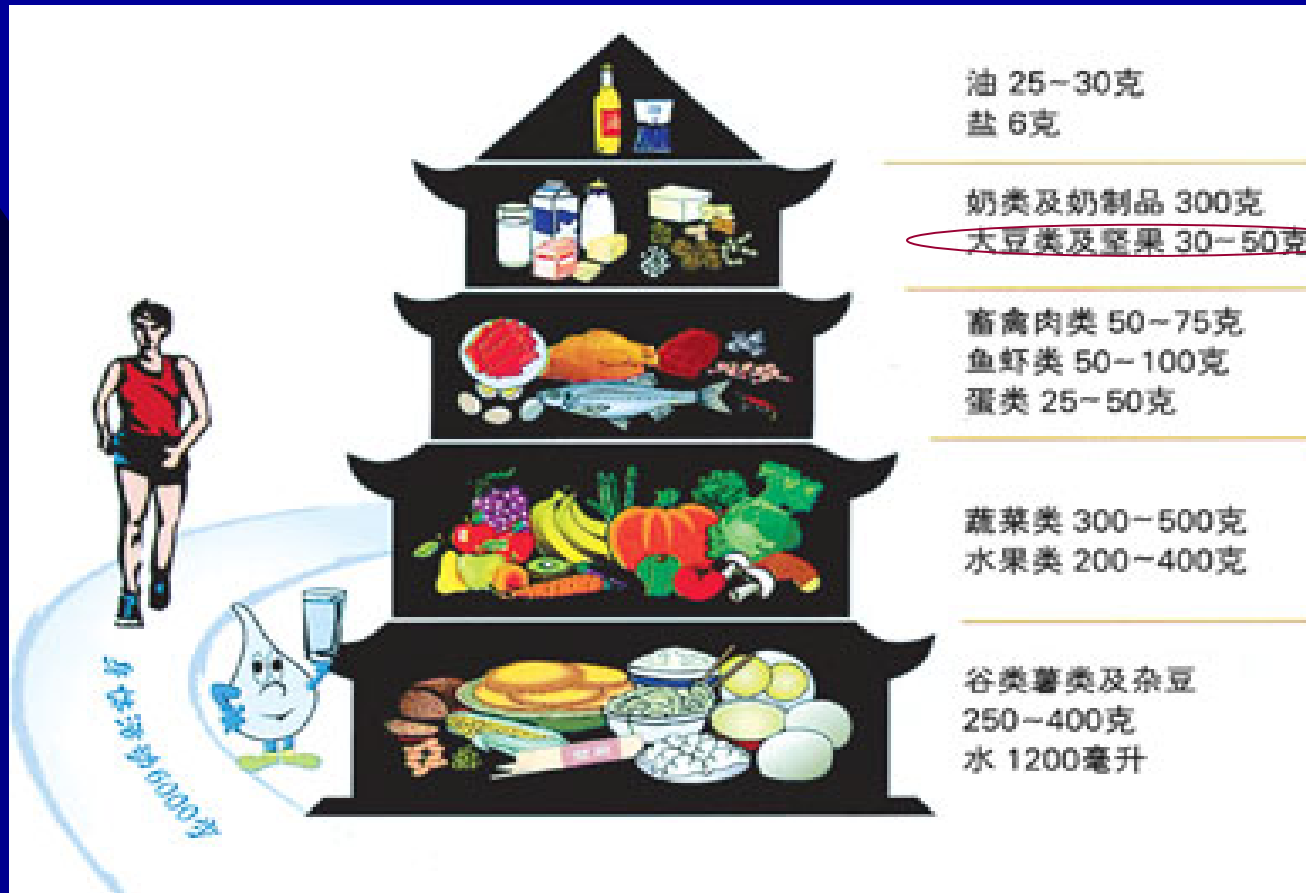
- ❑ The conference is held once every 4 years
- ❑ It attracts approx. 3000 attendees
- ❑ First time nuts and health had been highlighted to Asian health influencers, researchers and policy makers from organizations like WHO and FAO.

10th Asian Nutrition Congress

September 9-13, 2007, Taipei, Taiwan

- ❑ The nut session was held on September 11th
- ❑ 5 speakers highlighted the major outcomes from the 2007 Nuts & Health Symposium
- ❑ Proceedings were published in the January 2008 issue of the *Asia Pacific Journal of Clinical Nutrition*

Chinese Food Pagoda



Soy and nuts are on the 4th floor, recommended to eat 30-50g serving. The pagoda was recently updated to include the water droplet and the exercising man.

Korean Nutrition Society

- ❑ In 1995 nuts were included in the protein group and the recommended serving size was 13 grams
- ❑ In 2000 nuts were moved out of the protein group into the fat group and the serving size was decreased to 8 grams
- ❑ Korea is now discussing whether or not to move nuts back into the protein group

ALLERGY PROJECTS

- ❑ Research review paper on tree nut allergies
- ❑ A one-hour webinar with Dr. Steve Taylor, from the Food Allergy Research & Resource Program (FARRP) at the University of Nebraska, to educate nut processors on “allergy issues and safe nut processing practices”

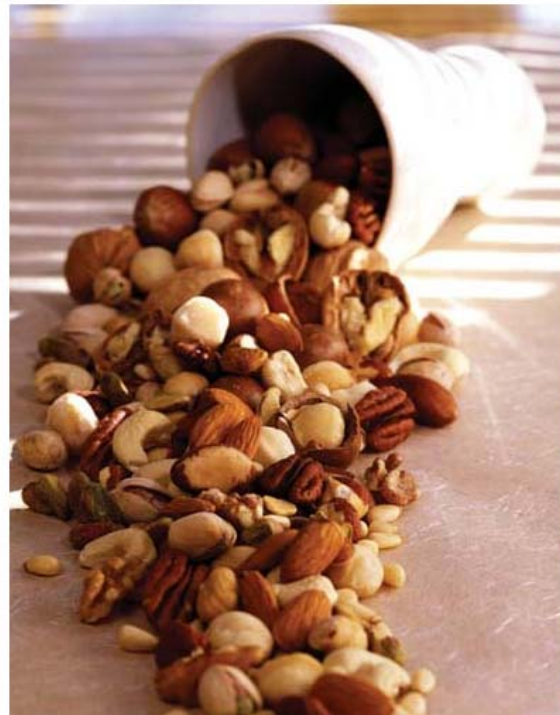
NEW BOOK ON TREE NUTS

“Tree Nut: Nutraceuticals,
Phytochemicals and Health Aspects”

International Tree Nut Council Nutrition Research & Education Foundation



nuthealth.org



Check out our Recipe Book.

The International Tree Nut Council Nutrition Research & Education Foundation (INC NREF), a non profit organization, represents nine tree nuts: almonds, Brazil nuts, cashews, hazelnuts, macadamias, pecans, pine nuts, pistachios, and walnuts. The INC NREF is dedicated to promoting new product development and supporting nutrition research and education.

Consumer Information

General nutrition information about nuts, as well as cooking tips

Nutrition Research

Brief summaries of nut research studies

Nut Information

Get nutritional information on all of your favorite nuts

Press Room

Press releases and other breaking news

GO NUTS, GO HEALTHY

