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# Meetings

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## AOCS Conference on **Dietary Fats and Health**

### Dietary fats meeting next month

The Conference on Dietary Fats and Health that opens Dec. 6 in Chicago's Conrad Hilton Hotel comes at a time of increasing interest in diet and nutrition.

If you want to provoke an opinionated discussion among heart disease researchers, just mention the word cholesterol. During 1980, the Food and Nutrition Board touched off a media squabble among diverse groups by suggesting normal, healthy adults need not necessarily worry about reducing their dietary cholesterol.

A United Nations report, "Dietary Fats and Oils in Human Nutrition," met mixed reviews when it was published following a 1977 Food and Agriculture Organization expert consultation in Rome.

A U.S. Senate subcommittee report on dietary guidelines and a U.S. Department of Agriculture report on "Nutrition and Your Health" further reflect increasing concern about nutrition during the past decade.

The purpose of the AOCS-sponsored meeting next month is to provide a major international forum for objective discussion of the role of fats in health—what is known, what is being investigated, and to suggest future directions for research programs, educational efforts and information programs.

Besides AOCS, other organizations that have helped plan the conference include: American Dairy Science Association; American Dietetic Association; American Institute of Nutrition; American Medical Association; American Soybean Association; Institute of Food Technologists; National Dairy Council; National Heart, Lung and Blood Institute; The American Health Foundation; The Hormel Institute; The Nutrition Foundation; School of Clinical Medicine, University of Illinois (Urbana-Champaign); and the USDA's Human Nutrition Agency. Continuing education credit for the meeting is being offered by the American Dietetic Association, the American Medical Association, and the Hospital, Institution and Educational Food Service Society.

The first two days of the conference will focus on the source, chemistry and processing of dietary fats and their

role in normal metabolism. One day is planned for current views of lipids in coronary heart disease and one day for current research on relationships between dietary fats and health.

Dietary fat consumption worldwide is hard to quantify. Dietary fat may be in the form of visible fats (e.g., butter, margarine, cooking oils) or invisible fats (from meat, nuts, fish, eggs or other sources). Estimating visible fat consumption usually involves determining total supplies of visible fat available in a nation during a given year, and then subtracting exports and carryover stocks, thus yielding an apparent annual consumption estimate. Estimating invisible fat consumption is done on a similar basis, based on the fat content of other foodstuffs in the national diet.

The United Nations report on "Dietary Fats and Oils in Human Nutrition" estimated that about 60% of total dietary fat worldwide is from invisible fat sources. That report estimated total fat consumption in developing nations at 30 pounds per year (about 20 pounds of visible fat) and in developed nations at 101 pounds per year (58 pounds of visible fat).

Fats are a major source of calories in most diets, providing nine calories per gram compared to four calories per gram for protein and carbohydrate. The United Nations report estimated that fats supply about 14% of total calories in developing nations and 30% in developed nations (reaching 40% in the U.S. and affluent West European nations). As a developing nation improves its economic status, its consumption of dietary fat usually increases. India has become one of the world's major importers of fats and oils during the past decade as it has funds available. Oil-producing nations have increased fats and oils imports in recent years. Jan Randag, former president of the International Association of Seed Crushers, has noted that in the 10 years ending in 1979/80, developing nations' imports of oils and oilseeds had risen from approximately one million tons per year to six million tons per year.

In the U.S., apparent consumption of visible fats is now more than 6 million metric tons a year, or about 56 pounds

TABLE I. Visible Fat Consumption in the United States

	Butter		Lard		Margarine		Baking & frying fats		Salad & cooking oil		Other edible		All food	
	mil lb	per capita	mil lb	per capita	mil lb	per capita	mil lb	per capita	mil lb	per capita	mil lb	per capita	mil lb	per capita
1970	1,106	5.4	939	4.6	2,223	10.8	3,557	17.3	3,153	15.4	480	2.3	10,792	52.6
1975	1,021	4.7	615	2.8	2,386	11.0	3,666	17.0	3,860	17.9	428	2.0	11,295	52.7
1980	1,017	4.5	540	2.5	2,593	11.3	4,158	18.3	4,820	21.2	343	1.5	12,722	55.9

per capita (Table I). U.S. residents have been consuming less invisible fat (meat and eggs) in recent years and consuming more polyunsaturated vegetable oils. Many nutritionally aware Americans recognize the word cholesterol, but nutrition researchers do not yet agree on the role of cholesterol in heart disease. Elevated serum cholesterol levels are statistically linked to heart disease, but the links between dietary cholesterol and heart disease are less precise. The program on heart disease will explore this topic in some detail.

As lipids are an important component of cell membranes, any studies of abnormal cell function will include research on the role of lipids. The program on current research on lipids and cancer will explore topics currently being researched, including epidemiological reports.

Invited lectures at the conference will be published as an AOCS monograph next year and distributed to all conference registrants; additional copies will be available from AOCS. □

### Registration

Persons who have preregistered for the Conference on Dietary Fats and Health will be able to pick up their identification badges, program and other conference materials beginning at noon, Sunday, December 6, in the Conrad Hilton Hotel.

The hotel's information desk can provide the name of the specific room, which also will be posted on the hotel's list of daily functions.

Persons who wish to register on site will be able to do so starting at the same time and in the same room.

### Social events

Two all-conference social events are scheduled during the meeting. There will be a cocktail reception the evening of Sunday, December 6, in the Conrad Hilton Hotel. An informal social hour is set for Thursday evening, December 10, also in the Conrad Hilton.

## Scientific sessions

### MONDAY, DECEMBER 7, 1981

#### Basic Overview of Fat Chemistry and Technology—

Chairpersons: H.J. Dutton, The Hormel Institute, Austin, MN, and Ragnar Ohlson, Karlshamns Oljefabriker, Karlshamn, Sweden

Sources, Chemistry and Processing of Oil and Fats—Frank Norris, consultant, Chicago, Illinois

Sources and Consumption of Nutrient Fat—Robert L. Rizek, U.S. Department of Agriculture, Hyattsville, Maryland

Structure and Physical Properties of Fats—Ragnar Ohlson, A.B. Karlshamns Oljefabriker, Karlshamn, Sweden

Hydrogenation of Fats—Robert C. Hastert, Harshaw Chemical Co., Beachwood, Ohio

Fat Stability and Deterioration—G. Billek, Unilever Forschungsgesellschaft, Hamburg, Germany

#### Session I-A

Gas Chromatography—Hal Slover, U.S. Department of Agriculture, Beltsville, Maryland

Thin Layer Chromatography—H.K. Mangold, Federal Center for Lipid Research, Münster, Germany

Some New Mass Spectrometric Techniques for Lipid Analysis—George Waller, Oklahoma State University, Stillwater, Oklahoma

HPLC of Lipids—E.G. Perkins, University of Illinois, Urbana, Illinois

Chemical Methods—H.J. Dutton, The Hormel Institute, Austin, Minnesota

Some Applications of High Resolution Nuclear Magnetic Resonance to the Study of Lipids—James N. Shoolery, Varian Associates, Palo Alto, California

### TUESDAY, DECEMBER 8, 1981

Role of Fats in Nutrition—Chairpersons: Joyce Beare-Rogers, Health and Welfare, Ottawa, Canada, and J.J. Gottenbos, Unilever Research, Vlaardingen, The Netherlands

Nutritional and Physiological Role of Fats—Fred Mattson, University of California-San Diego, La Jolla, California

Essential Fatty Acid Deficiencies in Man—Ralph Holman, The Hormel Institute, Austin, Minnesota

Prostaglandins—W.E.M. Lands, University of Illinois Medical Center, Chicago, Illinois

Cholesterol Metabolism—Erwin Mosbach, Beth Israel Medical Center, New York, New York

Lipids in Pre- and Post-Natal Development—Claudio Galli, University of Milan, Milan, Italy

#### Session II-A

Isomeric Fats—Edward A. Emken, USDA Northern Regional Research Center, Peoria, Illinois

Metabolic Effect of Isomeric Octadecenoic Acids—Ralph Holman, The Hormel Institute, Austin, Minnesota

Tissue Distribution: Animal Tissue—Randall Wood, Texas A&M University, College Station, Texas

Tissue Distribution: Human Tissue—John Ohlrogge, USDA Northern Regional Research Center, Peoria, Illinois

Nutritional Effects of Isomeric Fats—J. Gottenbos, Unilever Research, Vlaardingen, The Netherlands; F. Kummerow, University of Illinois, Urbana, Illinois; D. Kritchevsky, The Wistar Institute, Philadelphia, Pennsylvania; and T. Applewhite, Kraft Inc., Glenview, Illinois

#### Session II-B

Vitamin A—James A. Olson, Iowa State University, Ames, Iowa

Vitamin D—H.K. Schoes, University of Wisconsin, Madison, Wisconsin

Vitamin K—John E. Suttie, University of Wisconsin, Madison, Wisconsin

Vitamin E—Samuel B. Tove, North Carolina State University, Raleigh, North Carolina

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### WEDNESDAY, DECEMBER 9, 1981

#### Current Views on Lipids in Coronary Heart Disease —Chairperson: David Kritchevsky, The Wistar Institute, Philadelphia, Pennsylvania

Epidemiology of Coronary Heart Disease—Lewis H. Kuller, University of Pittsburgh, Pittsburgh, Pennsylvania

Diet and Heart Disease—A Critical Evaluation—A.E. Harper, University of Wisconsin, Madison, Wisconsin

Conversion of the Diet-Heart Hypothesis to a Theorem—Peter Herbert, Brown University, Providence, Rhode Island

The Effects of Dietary  $\omega$ -3 Fatty Acids on the Plasma Lipids, Lipoproteins and Platelet Function—W.C. Connor, University of Oregon Health Science Center, Portland, Oregon

Lipoproteins, Structure and Function—Angelo Scanu, University of Chicago, Chicago, Illinois

Hyperlipidemia, Genetics and Environmental Factors in Coronary Heart Disease—Thomas Bersot, Gladstone Foundation, San Francisco, California

#### Session III-A

Lipoprotein Fractionation—Frank Lindgren, University of California, Berkeley, California

Apolipoprotein Profiles of Dyslipoproteinemias—Peter Alaupovic, Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma

Lipoprotein Lipase—Louis Smith, Baylor College of Medicine, Houston, Texas

Lecithin Cholesterol Acyltransferase (LCAT)—T. Nishida, University of Illinois, Urbana, Illinois

#### Session III-B

Introduction to Effects of Diet on HDL—Gary Nelson, NIH Lipid Metabolism Branch, Bethesda, Maryland

Effects of Dietary Carbohydrate and Fat on HDL Structure and Composition—Richard L. Jackson, University of Cincinnati College of Medicine, Cincinnati, Ohio

Effects of Polyunsaturated vs Saturated Dietary Fat on Nonhuman Primate HDL—Lawrence L. Rudel, Wake Forest University, Winston-Salem, North Carolina

Effects of Varying Dietary Polyunsaturated Fat on the Serum Lipoproteins of Normal Man—Virgie Shore, Lawrence Livermore Laboratory, Livermore, California

Effects of Dietary Fatty Acids on Plasma HDL and LDL Cholesterol Levels—Fred Mattson, University of California-San Diego, La Jolla, California

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### THURSDAY, DECEMBER 10, 1981

#### Current Research on Lipids and Cancer—Chairpersons: K.K. Carroll, University of Western Ontario, London, Ontario, Canada, and Willard J. Visek, University of Illinois, Urbana, Illinois

Epidemiological Evidence Associating Lipids with Cancer Causations—O.M. Jensen, Daisher Cancer Registry, Copenhagen, Denmark

The Relationship of Lipids to Experimentally Induced Cancer—K.K. Carroll, University of Western Ontario, London, Canada

Experimental Research on Lipid-Protein Interactions in Hormone-Dependent Cancer—W.J. Visek, University of Illinois, Urbana, Illinois

Experimental Research on Lipids and Intestinal Cancer—Bandaru S. Reddy, The American Health Foundation, Vallhalla, New York

Antioxidants and Carcinogenesis—Paul McCay, Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma

#### Session IV-A

Lipids, Hormones and Mammary Tumorigenesis in Rodents—Clifford W. Welsch, Michigan State University, East Lansing, Michigan

Lipids, Lipogenesis and Growth in Mammary Tumor Model Systems—Samuel Abraham, Children's Hospital Medical Center, Oakland, California

The Relationship of Obesity to Estrogen-Dependent Cancer in Humans—P.K. Siiteri, University of California-San Francisco, San Francisco, California

Retinoids—Richard C. Moon, ITT Research Institute, Chicago, Illinois

#### Session IV-B

Mutagenesis—W.R. Bruce, Ontario Cancer Institute, Toronto, Canada

Lipids, Intestinal Flora and Large Bowel Cancer—M.J. Hill, Central Public Health Laboratory, London, England

Lipoprotein—Helen Shu, University of California, Berkeley, California

Serum Cholesterol and 20-Year Cancer Mortality in Evans County, Georgia—H.A. Tyroler, University of North Carolina, Chapel Hill, North Carolina

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### FRIDAY, DECEMBER 11, 1981

#### Emerging Research on Dietary Fats and Nutrition—Chairperson: E.G. Perkins, University of Illinois, Urbana, Illinois

Lipoprotein Regulation of Immune Cell Function—T. Edgington, Scripps Clinic and Research Foundation, La Jolla, California

Atherogenic Effects of Oxidized Cholesterol—C. Bruce Taylor, Veterans Administration Hospital, Albany, New York

Aging and Lipid Metabolism—Jon Story, Purdue University, West Lafayette, Indiana

Multiple Sclerosis—Bernard Agranoff, University of Michigan, Ann Arbor, Michigan

Interaction of Lipids with Nutrition, Cancer and Coronary Heart Disease—David Kritchevsky, The Wistar Institute, Philadelphia, Pennsylvania

Recommendations for Future Research, Education, and Information Programs—conference officials □