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Boston University
School of Medicine

News & Notes

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Fats commonly found in hydrogenated oils linked to heart disease

In one of the first studies to demonstrate a connection between heart disease and trans fatty acids, the type of fat commonly found in margarine and vegetable shortening, School of Medicine researchers have found that people with coronary artery disease have significantly higher levels of trans fatty acids than those without evidence of such disease.

This study, which was led by Edward H. Siguel, M.D., Ph.D., an adjunct assistant research professor of medicine, and Robert H. Lerman, M.D., Ph.D., an assistant professor of medicine, is the first to measure specific fatty acids in the blood of people with coronary artery disease and to distinguish the relative effects of trans, saturated, monounsaturated and polyunsaturated fatty acids. The results of the investigation, which were published in the April 15 issue of the *American Journal of Cardiology*, strongly suggest that high levels of trans fatty acids are an additional risk factor for cardiovascular disease, even after considering the adverse effects of saturated fatty acids.

Trans fatty acids are formed when unsaturated fatty acids are subjected to heat or chemical processing. The most common altering process is hydrogenation, which many food manufacturers use to make the normally unstable polyunsaturated fatty acids more stable, increasing their shelf life. Hydrogenation changes the structure of the unsaturated fatty acid molecules, making them similar to saturated fatty acids.

Essential fatty acids

In particular, hydrogenation eliminates or decreases the amount of polyunsaturated fatty acids in foods. Unlike the two other most common types of fatty acids, saturated and monounsaturated, polyunsaturated fatty acids cannot be manufactured in the human body and must therefore be derived from the diet. For this reason, they are also known as essential fatty acids (EFAs).

Polyunsaturated fatty acids—which are commonly found in fresh vegetables, and soybean, walnut, safflower, sunflower, canola and corn oils—have several essential functions in the body, including the production of hormones, the maintenance of proper membrane function and the regulation of other processes.

Siguel said that, although the effects of trans fatty acids are still unclear, these results suggest that trans fatty acids may “compete” with polyunsaturated fatty acids, which are believed to regulate lipid levels in the body. It is not known whether trans fatty acids actually disrupt the processes regulated by polyunsaturated fatty acids, but when the body does not get enough polyunsaturated fatty acids in the diet, according to Siguel, it tries to compensate by overproducing monosaturated fatty acids.

In individuals with a proper balance of fatty acids, the membranes of the cells are fluid enough to allow the proper passage



Match Day '93 was a success for the School of Medicine's fourth-year students: More than half of the 127 students participating in the competitive National Residency Matching Program (65) received their first choice for placement programs while another 22 received their second choice. Pictured above, students Calvin Kuan and Ann Tong excitedly open their envelopes to learn where they'll perform their residencies. (photo by David Herwaldt)

of nutrients and waste in and out of the cell. An overabundance of saturated fat could cause the cell membrane to harden, interfering with optimal cell function. Individuals who ingest too much saturated fat adapt to their diet by making more cholesterol, which softens the membranes.

In this study, the researchers noted that the 47 patients who had documented coronary artery disease had higher cholesterol and saturated fatty acid levels, as well as higher trans fatty acid levels, than the 56 healthy controls. Moreover, the patients with heart disease also showed biochemical evidence of essential fatty acid deficiencies.

While variable factors such as age, sex, genetics and weight make it impossible to prove a causal relationship between trans fatty acids and heart disease, the authors of the study recommend that people with high levels of trans fatty acids in their blood reduce their intake of foods that contain hydrogenated oils, such as margarine, vegetable shortening and commercially prepared pastries and breads. Food labels indicate whether such oils are present.

Bernard Bandler, psychiatry chair, dies at age 88; memorial held

Bernard Bandler, M.D., former chairperson of the Division of Psychiatry at the School of Medicine, died March 9 at the age of 88. A member of the faculty since 1947—when the division had

only six staff members—Bandler served as chairperson of the division from 1958 until his retirement in 1970.

Louis Vachon, M.D., the current chairperson of the division, described Bandler as “an administrator of exceptional talent and forcefulness” who was instrumental in planning the building of the Solomon Carter Fuller Mental Health Center on the Medical Campus. The School of Medicine paid tribute to Bandler at a memorial service held on May 4.

A native of New York, Bandler received his undergraduate and master’s degrees at Harvard University and taught philosophy there for two years. In 1933, he entered Columbia University in order to study medicine. After graduating in 1938, he completed an internship in Cincinnati. Before coming to the School of Medicine, he was a staff neurologist at Boston City Hospital; assistant resident in psychiatry at Massachusetts General Hospital, and an instructor at Harvard Medical School. Among his professional accomplishments, he served as president of both the American Psychoanalytic Association and the American College of Psychoanalysis.

After his retirement, Bandler served for two years at the National Institute of Mental Health as acting chief of the psychiatry training branch and acting director of the division of manpower and training. He remained active throughout his retirement, contributing a chapter to the book *How Psychoanalysis Looks at Aging*, which was published last year, and recently completed a book-length study of Jane Austen.

Bandler is survived by his widow, Louise; a son; five daughters; ten grandchildren, and three great-grandchildren.

New AHA guidelines say aspirin not to be used universally for stroke, heart attack

While the regular use of aspirin may prevent strokes and second heart attacks, and prevent complications from bypass surgery and coronary angioplasty in certain individuals, it should not be used by everyone, a new set of American Heart Association guidelines says.

“This is the first time the AHA has developed a comprehensive set of guidelines for physicians on the use of aspirin in cardiovascular disease,” said Pantel S. Vokonas, M.D., one of the authors of the guidelines and a professor of medicine and public health at the School of Medicine and the Boston VA Medical Center.

The report synthesizes research spanning 25 years to formulate specific recommendations, which were published in the February issue of the journal *Circulations*. The researchers stressed the need for patients to contact a physician before initiating an aspirin regimen, because of the increased risk of certain side effects associated with regular aspirin use. These risks include gastrointestinal upset, gastrointestinal hemorrhage and hemorrhagic stroke.

“Aspirin is ubiquitous,” said Vokonas, “but it is not innocuous.” Vokonas also said that although aspirin was recommended for primary prevention of heart attacks in older men with established risk factors, there was not enough data available on women to issue definitive recommendations. He added that the ongoing Women’s Health Study, an investigation of aspirin use among 40,000 female nurses, might provide such data.

BUSM research aids in discovery of Huntington’s disease gene

By confirming the existence of a new mutation of the gene believed to cause Huntington’s disease, Richard Myers, Ph.D., an associate professor of neurology at the School of Medicine, played a critical role in the discovery of the gene announced on March 24.

Myers studied two New England families who appeared to violate the known rules of genetic transmission. He observed that a single member of each of these families appeared to have the disease, while the parents and other siblings were unaffected. For each family member, Myers compared the chromosome suspected to contain the defective gene and confirmed that what he had observed was indeed a new mutation of the gene in question.

Myers was part of the international collaboration that cloned the gene for Huntington’s disease. The results were published in the March 25 issue of the journal *Cell*.

Pediatricians may contribute to parents’ fears about high fevers

A survey of 151 Massachusetts physicians has revealed that physicians may inadvertently be contributing to parents’ “fever phobia” by presenting mixed messages.

“Parents are frightened of fever, and pediatricians contribute to this [fear] by not educating parents about the difference between a high fever and a harmful fever,” said Ariane May, M.D., a fellow in pediatrics at the School of Medicine and a pediatrician at Boston City Hospital.

The survey, which was published in the journal *Pediatrics*, asked physicians for their own views on fever, how they treated it, and what they told parents about it. Thirty-eight percent of the physicians said that they believed any fever could be harmful to a child, yet, in practice, 88 percent said that they would not awaken a sleeping child with fever to give him medication.

May said also that because physicians give children fever reducing medications, such as Tylenol, without explaining that the purpose of such medication is simply to relieve the child’s symptoms, the parents believe that the fever is harmful. In fact, medical literature does not show that a fever under 107 degrees is harmful, according to May. While the exact purpose of fever is unknown, research suggests that it could be one way the body fights infection.

Folic acid can reduce neural tube defects by up to 60 percent

A case-control study of more than 3,000 women has found that a 0.4 milligram daily supplement of folic acid—the amount commonly found in multivitamin preparations—taken around the time of conception can reduce the risk of neural tube defects by up to 60 percent. A relatively high intake of folic acid in the diet was also found to reduce the risk.

Folic acid, a B vitamin found in leafy greens, citrus fruits and yeast, was effective in reducing the risk of defects when it was



Pharmacology graduate student Emil Adamec, pictured at left, received a travel grant from SmithKline Beecham Pharmaceuticals for his abstract "The Effect of Extracellular ATP and UTP on Calcium Signaling in Rat Pheochromocytoma PC12 Cell Line." Adamec presented his abstract at the 22nd Annual Meeting of the New England Pharmacologists. Pictured with Adamec are, at far right, David H. Farb, Ph.D., chairperson of the Department of Pharmacology and Experimental Therapeutics, and executives from SmithKline Beecham Pharmaceuticals.

taken during the periconceptional period, 28 days before through 28 days after the last menstrual period. The researchers did not find an appreciable reduction in risk among women who did not take a folic acid supplement daily or who began using it in the second month of pregnancy. Because a large percentage of pregnancies are unplanned, however, Allen Mitchell, M.D., the associate director of the Slone Epidemiology Unit and the principal investigator of the project, said he supports the recent federal guidelines that urge all women of childbearing potential to ensure that they receive the recommended daily allowance of folic acid.

While previous studies have demonstrated that folic acid can reduce both first-time and recurrent neural tube defects, this investigation, published in the March 10 issue of the *Journal of the American Medical Association*, is the first to show that first-time defects can be reduced with such a small amount of folic acid. Among the most common neural tube defects are spina bifida, which occurs when the bony casing around the spinal cord fails to close, and anencephaly, a condition in which major parts of the brain and skull are missing.

Economic restructuring key to recruiting more medical students to primary care

Despite the best efforts of medical academic leaders to make primary care an attractive alternative to the higher paying specialties, adequate numbers of American medical students will not choose primary care unless there are greater economic rewards

for generalists, wrote Norman Levinsky, M.D., chairperson of the Department of Medicine, in the March 4 issue of *The New England Journal of Medicine*.

Currently, 13 percent of American medical school graduates are entering primary care, while most experts say that 50 percent are needed to provide quality medical care. Levinsky said that both the "practice and economic issues" that make many current generalists dissatisfied must be resolved in order to recruit sufficient numbers of good American students to primary care.

From 1989 to 1992, the number of American medical graduates entering primary care dropped by nearly 20 percent. If the trend continues, wrote Levinsky, then 87 percent of this year's graduating class will become specialists. Moreover, he said, the students who enter primary care increasingly tend to come from the bottom half of their graduating class. While there are no data to indicate a negative effect on patient care, Levinsky said that it is "undesirable" for primary care physicians to be recruited from "academically less able students."

Many experts say that in order to efficiently meet this country's health care needs, 50 percent of all physicians should be generalists. Yet, in addition to facing lower pay scales, many generalists also face a loss of control over clinical decision-making. In order to meet economic demands, generalists must shorten the time available to each patient for an office visit. "If we wish to recruit a much larger portion of able American students into primary care," wrote Levinsky, "we must put our mouths where the money is."

Chobanian receives Abbott Award for cardiovascular research achievements

Dean Aram V. Chobanian will be presented with the 1993 Abbott Award for outstanding achievement in cardiovascular research by the American Society of Hypertension at its annual meeting on May 20 in New York City. He also will present the Special Lecture of the society, which will be entitled "Hypertension, Vascular Injury, and Atherosclerosis."

Carmen receives AACP/McNeil Award for Excellence in Community Psychiatry

Elaine Carmen, M.D., a professor of psychiatry in the Division of Psychiatry, has been selected by the American Association of Community Psychiatrists (AACP) as the fifth recipient of the AACP/McNeil Award for Excellence in Community Psychiatry. Each year, this award is granted to a community psychiatrist who is recognized for outstanding contributions to the field of community psychiatry and for promoting quality psychiatric care in community settings. Carmen, who also is director of psychiatry and medical services at the Dr. Solomon Carter Fuller Mental Health Center, will be presented with the award at the AACP's meeting on May 25 in San Francisco.

Course to focus on care of hypertensive and post-myocardial infarction patients

A course titled "Recent Advances in the Treatment of Hypertensive and Post-Myocardial Infarction Patients" will be conducted by Dean Aram V. Chobanian, with additional speakers participating, on June 2, in the Keefer Auditorium. This half-day course is intended to improve the knowledge base and management skills of internal medicine specialists, family practitioners, cardiologists and fellows in the treatment of patients with hypertension or those who have suffered myocardial infarction. There will be a review of the new recommendations of the Fifth Joint National Committee on Hypertension report, the criteria for selection of therapy of various hypertensive subgroups, and the management of patients' post-myocardial infarctions. Didactic instruction will be accompanied by case studies and open discussion.

In addition to Dean Chobanian, the speakers for the program will include Eugene Braunwald, M.D., the Hersey Professor of

Medicine at Harvard Medical School; Haralambos P. Gavras, M.D., a BUSM professor of medicine; Thomas J. Ryan, M.D., a professor of medicine and chief of cardiology at BUSM, and Charles P. Tiffet, M.D., an associate professor of medicine.

For further information, please contact the Department of Continuing Medical Education at x4605 (638-4605).

Chaudhury, Rao present at conference

Anjan K. Chaudhury, M.D., director of the Perinatal Testing Unit and an assistant professor of obstetrics and gynecology, and **Chino Rao, Ph.D.**, division director for Strategic Systems at Boston City Hospital, presented "Use of Object-Oriented Technology and Multi-Media Communications to Support and Enhance Networks of Care" at the Health Care Information Technology Solutions Conference in Washington, D.C. on April 14. The conference was sponsored by the National Managed Care Congress.

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