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In the News

Dietary Vitamin A May Be Safer For Elderly

Elderly Americans should probably rely more on fruits and vegetables for their vitamin A rather than on daily supplements. According to a recent study by the Human Nutrition Research Center on Aging at Tufts University, prolonged, daily use of multi-vitamins may cause low-level vitamin A toxicity.

The study surveyed 562 men and women over age 60. Of the half that took multi-vitamin and mineral supplements, five who had taken them for more than 5 years had two or three times normal levels of retinyl esters in their bodies. Four of the five had early signs of liver damage, an indication of chronic toxicity.

When retinyl esters enter the blood, they can convert to free retinol, which is toxic. The study indicates elderly seem more likely to have buildups of these esters than younger people. According to USDA's Agricultural Research Service (ARS), vitamin A needs can be met by eating fruits and vegetables that are high in beta carotene, a nontoxic source. Carrots, squash, tomatoes, dark-green leafy vegetables, peaches, and apricots all contain high levels of this vitamin A source.

For more information, contact nutritionist Stephen Krasinski, (617) 956-5864.

Vitamin C Helping Hypertension

Vitamin C supplements may someday be prescribed for mild hypertension if recent findings hold up under more intensive research.

In a recent study by ARS and Alcorn State University in Mississippi, an extra gram (1,000 mg) of vitamin C each day for 6 weeks significantly reduced blood sodium levels, as well as sodium-potas-

sium ratios, in 12 men and women who had mildly elevated blood pressure. No change occurred in eight participants with normal blood pressure, says physiologist/nutritionist David Trout with USDA's Carbohydrate Nutrition Laboratory in Beltsville, MD.

The supplements also lowered systolic pressure in the hypertensive participants but did not affect their diastolic pressure, the figure that most often concerns doctors, says ARS.

For more information, contact David Trout, (301) 344-2386.

Warming Up to Dietary Iron

Dietary iron may do more than prevent tired blood. It may also quell chattering teeth. A new study indicates that a person's ability to regulate body temperature may depend on daily iron intakes.

In the USDA study, six healthy young women consumed less than one-third of the recommended dietary allowance of iron and then used supplements to meet their daily needs. When they were exposed to cool temperatures, the women lost 29 percent more body heat and produced 9 percent less heat after the low-iron period than after the supplemental period, according to physiologist Henry Lukaski with USDA's Grand Forks Human Nutrition Research Center.

Other studies conducted at the Grand Forks, ND, center indicate that low copper or iron levels may also impair sleep. According to James Penland, a research psychologist there, women with low copper and iron appear to need more sleep and have more difficulty getting quality, restful sleep.

For additional information on iron and its connection with body temperature regulation, contact Henry Lukaski, (701) 795-8429. For information on the

relationship between mineral levels and sleep, contact James Penland, (701) 795-8471.

New Method for Measuring Dietary Fiber

ARS's Nutrient Composition Laboratory in Beltsville, MD, has developed a simplified method for measuring dietary fiber in foods. The new method allows chemists to analyze more samples in half the time and at half the cost.

The method could help speed up availability of fiber information on foods if the procedure is validated in further tests being arranged by USDA's Human Nutrition Information Service (HNIS).

USDA chemist Betty Li says the new procedure may actually be better than the official U.S. method for distinguishing between soluble and insoluble fibers—an important point since each type reportedly has different health benefits. Eventually, both values will be listed in HNIS's Agriculture Handbook 8.

For more information, contact Betty Li, (301) 344-2466.

A More Complete Soybean

Soybeans and other legumes will provide a more complete protein composition when a corn gene with enhanced sulfur content can be bio-engineered into the crops. Legumes are often very low in sulfur-containing amino acids.

Scientists already inserted corn's high sulfur storage protein gene into tobacco cells, which in turn produced plants with unusually high levels of sulfur amino acids. However, before such varieties of soybeans can be developed on a large scale, scientists must produce seed-bearing soybeans and other plants from the bio-engineered cells, says plant

physiologist Eliot Herman of USDA's Plant Molecular Genetics Laboratory in Beltsville, MD.

For additional information, contact Eliot Herman, (301) 344-3258.

The Most Flavorful Peanuts

When it comes to flavor, U.S. peanuts fare better in world markets than those grown by three of our competitors, China, Argentina, and Malawi, according to preliminary results from a joint ARS-industry study.

Heading the research for USDA, chemist John Vercellotti says the first year findings suggest that U.S. peanuts have the highest intensity of roasted peanut flavor, less bitterness, and fewer off-flavors. Chemical analysis of the peanuts supports the findings, says ARS. Vercellotti, who works for ARS's Food Flavor Quality Research Division in New Orleans, LA, adds that more studies are planned over the next 2 years to confirm these results. The studies will be a part of an overall strategy to increase U.S. peanut exports, he says.

For more information, contact John Vercellotti, (504) 286-4421.

Eliminating Salmonella from Poultry

Attempts to cut salmonella contamination in fresh poultry by washing chilled



Salmonella bacteria are hard to wash off poultry because they hide in the ridges and crevices of the skin.

products before packing may not be as successful as previously thought.

ARS research shows that salmonella bacteria are hard to wash off poultry be-

cause they hide in the ridges and crevices of poultry skin, says USDA food technologist Huda Lillard. These ridges become more pronounced, sheltering the bacteria even more, when the carcass is immersed in water. Salt water is more effective, but still removes only a small percentage of the contaminants, says Lillard, who is based at the Richard B. Russell Research Center in Athens, GA.

Research on how to eliminate salmonella contamination in processed poultry is continuing. For information, contact Huda Lillard, (404) 546-3567.

New Uses for Traditional Spices

Nutmeg and mace, traditional favorites for flavoring holiday foods, may one day be used as natural controls for insects that infest stored wheat and other cereal grains, says Helen Su, a research chemist at USDA's Stored Product Insects Research and Development Laboratory in Savannah, GA.

Recent studies conducted by ARS showed that oil extracts from these spices killed 10 to 20 percent of two beetle pests and 30 to 40 percent of rice weevils. The extracts, sprayed on wheat at concentrations of 2,000 parts per million, repelled rice weevils for 4 months.

For additional information, contact Helen Su, (912) 233-7981. ■