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Highlights from Recent Conferences

By Jack Challem, Editor & Publisher

THE NUTRITION REPORTER recently attended two conferences, and obtained abstracts and information on another nutritional medicine meeting. Here are some of the highlights.

THE UN/WHO CONFERENCE ON HEALTHY AGING, *New York, April 29, 1996.*

Two messages, one somber and one hopeful, emerged from a conference on healthy aging, organized by the UN and World Health Organization, with help from corporate sponsors ASTA Medica and Henkel Corporation. First, the health care needs of an aging worldwide population will likely overwhelm government budgets in 25 years. Second, this disaster can probably be avoided by encouraging people to eat vitamin-rich fruits and vegetables and to take vitamin supplements.

Most of the researchers making presentations agreed that free radical damage and the resulting "oxidative stress" were among the most basic causes of age-related diseases, such as cardiovascular disease and cancer. They all recommended that people eat more fruits and vegetables, rich in protective antioxidants, and most also urged the use of vitamin supplements.

"The evidence is now undisputed that diet and nutrition are directly linked to many of the chronic diseases afflicting older adults." said Jeffrey Blumberg, PhD, associate director of the USDA Human Nutrition Research Center on Aging at Tufts University, Boston.

Lester Packer, PhD, and Bruce N. Ames, PhD, both professors at the University of California, Berkeley, noted that free radical damage from poor diets was biochemically comparable to people irradiating themselves. In both instances, large numbers of unquenched hydroxyl free radicals damage deoxyribonucleic acid (DNA), accelerating cellular aging.

Packer emphasized the benefits of the "antioxidant network," which includes vitamins C and E, the carotenoids and flavonoids, alpha-lipoic acid, and selenium. Alpha-lipoic acid is a relatively recently recognized, potent antioxidant.

Free radicals aren't the only danger, according to Ames. Deficiencies of some nutrients, such as folic acid, cause DNA to fall apart, increasing the risk of cancer.

"People who are eating bad diets are really doing themselves in," Ames said. "I think folic acid is one of the big vitamin deficiencies around the world. I really think we are going to have to supplement with folic acid big time."

Supplements could also reduce the cost of health care. According to David Dranove, PhD, a business professor at Northwestern University in Evanston, Ill., the benefit-to-cost ratio for many types of prevention could range from 10 to one all the way up to 100 to one. Yet most of the $10 billion spent each year on medical research in the United States goes to treatment, not prevention. Companies don't want to invest in such studies unless they are likely to market a patented product, and most vitamins cannot be patented, he said.

NUTRITIONAL MEDICINE TODAY, *Vancouver, Canada, May 2-5, 1996.*

The 25th annual international Nutritional Medicine Today conference drew physicians and researchers from 14 nations, including the United States, Canada, Brazil, France, and Japan.

One of the speakers, Murray Vimy, DMD, a practicing dentist and associate professor at the University of Calgary, discussed the risk of mercury toxicity from dental amalgams (fillings). He criticized the dental profession, saying it was led by engineers who mistakenly believe that "because dental material is durable, it's also biocompatible."

The problem, he said, is that chewing releases mercury from amalgams and the metal migrates to the brain, liver, kidneys, and other organs. It even increases the risk of dental disease.

In one study, Vimy found that chewing released large amounts of mercury from fillings—and the more fillings people had, the more mercury was released. It took about 90 minutes after eating for mercury levels to return to normal. Where does the mercury go? In an experiment with pregnant sheep, mercury from fillings quickly entered the blood, amniotic fluid, and fetal blood. Much of the mercury deposited in the mother's liver, kidney, stomach, and jawbone.

People exposed to mercury on their jobs have higher than average levels of dental disease, and studies have shown that mercury released from amalgams settles in

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periodontal tissues. "So what is going to happen when you put the mercury right into the mouth?" Vimy asked.

Another speaker, William J. Walsh, PhD, was doing chemistry and physics research at the Argonne and Los Alamos national laboratories before becoming interested in nutrition. While doing volunteer work with inmates at the Stateville Penitentiary in Joliet, Ill., he started to wonder whether the inmates' criminal behavior was entirely the result of their upbringing.

So Walsh decided to scientifically compare the mineral levels of 48 pairs of brothers under age 18. In all cases, one brother was considered an "all-American boy" and the other very violent. Walsh wasn't sure what he would find. It turned out that the violent brothers had one of two distinct patterns of mineral imbalances.

These two mineral patterns remained consistent, regardless of race, when Walsh went on to compare mineral levels between violent imprisoned criminals and normal law-abiding people. One of the patterns was characterized in part by a high copper-to-zinc ratio. These people had severe mood swings and violent behavior, but they later expressed remorse.

The other mineral pattern consisted of very low copper and zinc, but high sodium, potassium, lead, and cadmium levels. These people were cruel and violent, pathological liars, and fascinated by fire. They showed no remorse for their actions. Subsequent studies by Walsh, now director of the Carl Pfeiffer Treatment Center in Naperville, Ill., found this mineral pattern common among mass murderers and death-row inmates. □

HUMAN VIRAL DISEASES: SELENIUM, ANTIOXIDANTS AND OTHER EMERGING STRATEGIES OF THERAPY AND PREVENTION, ***Otzenhausen, Germany, April 19-21.***

Over the past 20 years, the perception of selenium has changed from a toxic metal to an essential nutritional mineral. Now, researchers are studying its potential role in controlling viral infections, the focus of this conference.

Many of the researchers noted that free radicals damage DNA and appear to cause viral mutations. Professor Ernst Peterhans of the University of Berne explained that most viruses, either directly or indirectly, activitate the body's production of free radicals as part of the immune response. "Do viruses 'use' oxidants as a means of increasing their rate of evolution?" he asked.

A lack of free radical scavengers could be one of the mechanisms promoting viral mutations. Melinda A. Beck, PhD, of the University of North Carolina, and Orville A. Levander, PhD, of the USDA, described how "host" deficiencies of either selenium or vitamin E prompt mutations during a coxsackievirus infection. The mutations transform the virus from a relatively mild strain to one that attacks heart tissue. Once mutated, the virulent strain of coxsackievirus can infect the heart muscle of animals with adequate dietary selenium and vitamin E. The combination of selenium or vitamin E deficiencies and coxsackievirus infection is regarded as the cause of Keshan disease, a form of heart failure.

Prof. Shu-Yu Yu of the Chinese Academy of Medical Sciences described an intervention trial in which selenium-enriched table salt was provided to about half of the 130,000 people in five towns. After eight years, follow-up data showed a 35 percent reduction in liver cancer among people consuming selenium. When selenium-enriched salt was removed, the rate of liver cancer began to increase.

In a related clinical study, Yu gave supplements of selenium (200 mcg/day) to 113 people and placebos to another 113. After four years, liver cancer was diagnosed in seven of the people not receiving selenium; no liver cancer cases were identified among those getting the supplement. Again, after supplementation was stopped, the rate of liver cancer rose to match that of the unsupplemented group, "demonstrating that a continuous intake of selenium is essential for the prevention of carcinogenesis."

Gerhard N. Schrauzer, PhD, of the Biological Trace Element Research Institute, San Diego, related studies on a retrovirus regarded as a weak cancer-causing agent in mice. However, the retrovirus causes an 80-90 percent incidence of breast cancer among mice eating low-selenium diets. According to Schrauzer, Japanese women may have a low incidence of cancer, compared to American women, because their diets contain higher levels of selenium.

Will Taylor, PhD, and C. S. Ramanathan, PhD, of the University of Georgia, Athens, described how the Ebola virus appears to have genes that program a large number of selenium-containing proteins. When a person is infected with Ebola, these selenium-containing proteins could create an "unprecedented selenium demand." If an infected person did not consume enough selenium, the virus would cause severe cell damage leading to the hemorrhaging characteristic of Ebola infections. □

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