

nonenzymatic antioxidants have demonstrated great adaptation to acute and chronic exercise. The delicate balance between pro-oxidants and antioxidants suggests that supplementation of antioxidants may be desirable for physically active individuals under certain physiological conditions by providing a larger protective margin.

PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE, 1999, Vol 222, Iss 3, pp 283-292

Genetic Link: periodontal disease, clotting factor and heart disease

A study found increased levels of the blood-clotting factor, fibrinogen, in persons with periodontitis. Elevated fibrinogen levels in the blood are known to be an independent risk factor for cardiovascular disease by increasing the propensity for blood clots. There is a relationship between cardiovascular disease and the gene for fibrinogen. The study found that persons with periodontal disease are more likely to have a rare form of the gene responsible for fibrinogen activity than persons with no periodontal disease. People with the rare form of the fibrinogen gene (H2H2) produce higher levels of fibrinogen than those with the more-common gene. Results showed that 16% of the periodontal-disease group had the rare form, compared to none of the healthy participants. Since the production of fibrinogen can be stimulated by an infection, people with the rare gene who also have a chronic infection such as periodontal disease may produce higher levels of the clotting factor, thus putting themselves at even higher risk for heart disease. The study provides another potential link between chronic infections, such as periodontal disease, and atherosclerotic heart disease. The findings present the possibility of using these measures as a diagnostic tool to identify people at potential risk for heart disease. The study was supported by a grant from the National Institutes of Health.

ANNUAL MEETING OF THE INTERNATIONAL ASSOCIATION FOR DENTAL RESEARCH, May 2000, Research at U of Buffalo School of Dental Medicine

Treating chronic insomnia without drugs

A study at the American Academy of Sleep Medicine indicates that non-pharmacological therapies produce reliable and durable changes for chronic insomnia sufferers. The data indicate that between 70% and 80% of individuals treated with nonpharmacological interventions benefit from treatment. For the typical individual with persistent insomnia, treatment is likely to reduce the main target symptoms of sleep onset latency and/or wake time. Sleep duration is increased by a modest 30 minutes and sleep quality and individual's satisfaction with sleep patterns are significantly enhanced. Sleep improvements achieved with these behavioral interventions are sustained for at least 6 months after treatment completion. Three treatments meet the American

Psychological Association (APA) criteria for empirically-supported psychological treatments for insomnia: 1) Stimulus control, 2) progressive muscle relaxation and 3) paradoxical intention. Three additional treatments meet APA criteria for probably efficacious treatments: 1) Sleep restriction, 2) biofeedback and 3) multifaceted cognitive-behavior therapy. Additional outcome research is needed to examine the effectiveness of treatment when it is implemented in clinical settings (primary care, family practice).

SLEEP, 1999, Vol 22, Iss 8, pp 1134-1156

Caloric intake and aging

Caloric restriction (CR) increases maximum life span in rodents while lessening the development of age-associated pathological and biological changes. Although nearly all of the rodent studies have initiated CR early in life (1-3 months of age), CR, when started at 12 months of age, also extends maximum life span in mice. Two main questions face investigators of CR: 1) the mechanisms by which CR retards aging and diseases in rodents. There is evidence that CR may act, at least in part, by reducing free radicals. A CR-induced decrease in free radicals appears to be most profound and may derive from lower mitochondrial production of free radicals, 2) whether CR will exert similar effects in primates. Studies on CR in rhesus monkeys (maximum life span similar to 40 years) support the notion of it working in humans. Rhesus monkeys were subjected to a 30% reduction of caloric intake starting at either 1989 or 1994 when they were similar to 10 years old. Data from various trials suggest that CR can be safely carried out in monkeys and that certain beneficial physiological effects of CR that occur in rodents (e.g., decreased blood glucose and insulin levels, improved insulin sensitivity, and lowering of body temperature) also occur in monkeys. Whether free radical stress in monkeys is reduced by CR will be known by the year 2001, while effects on longevity and diseases should be clearly seen by 2020.

TOXICOLOGICAL SCIENCES 1999, Vol 52, Iss 2, Suppl S, pp 35-40

Diet and cancer prevention

Diet can play a major role in cancer prevention. The international differences in cancer incidence are largely accounted for by lifestyle practices that include nutrition, exercise and alcohol and tobacco use. About 50% of cancer incidence and 35% of cancer mortality in the U.S., represented by cancers of the breast, prostate, pancreas, ovary, endometrium and colon, are associated with Western dietary habits. Cancer of the stomach, currently a major disease in the Far East, relates to distinct, specific nutritional elements such as excessive salt intake. For these cancers, information is available on possible initiating genotoxic factors, promoting elements, and prophylactic agents. In general, the typical

