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## IN THE NEWS

### Anti-Inflammatories May Prevent Brain Cancer

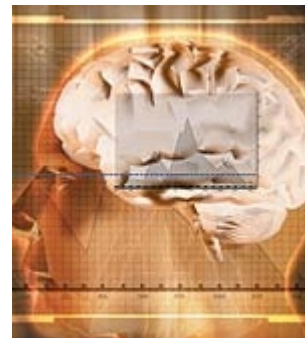
The use of non-steroidal anti-inflammatories (NSAIDs) such as aspirin, ibuprofen, and naproxen has been linked to lower incidences of a variety of pathological conditions, including colon, lung, breast, and prostate cancers, heart attack, dementia, and Alzheimer's disease. Reasoning that certain brain tumors and colon cancer cells derive from similar sources, Ohio State University researchers sought to determine whether NSAID use is also associated with a decreased incidence of brain cancer.<sup>1</sup>

The research team queried 236 patients with an aggressive, fatal brain tumor known as glioblastoma multiforme, and compared the patients' NSAID use with that of 401 healthy subjects of similar ages, genders, and ethnicities. Subjects who took at least 600 NSAID pills in the previous 10 years were considered regular users.

Subjects with the deadly brain tumor were less likely to have used NSAIDs regularly than healthy subjects. The study suggests that anti-inflammatory use confers some protection against the development of this deadly form of brain cancer.

The findings also add to mounting evidence that chronic inflammation underlies the development of numerous diseases, and that the use of anti-inflammatories—including natural anti-inflammatories such as Nexrutine®, curcumin, quercetin, apigenin, and resveratrol, among others—may prevent or reverse a variety of diseases.<sup>2-7</sup>

—Dale Kiefer



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### Dr. Roy Walford, Anti-Aging Research Pioneer



Dr. Roy Walford

The recent passing of Roy Walford, MD, will be felt in the life extension community for years to come.

Dr. Walford, professor emeritus of pathology at UCLA, was a pioneer in life extension research. Over the course of a remarkable career, he became a leading authority on the biology of aging and the use of caloric restriction to combat the effects of aging and disease. Dr. Walford authored several best-selling books, including *Maximum Life Span*, *Beyond the 120 Year Diet: How to Double Your Vital Years*, and *The Anti-Aging Plan: Strategies and Recipes for Extending Your Healthy Years*. He also published more than 300 scientific articles and was the recipient of numerous awards.

Dr. Walford's research focused on the biology and mechanics of aging from the standpoints of immunology and molecular biology. He discovered that restricting caloric intake in laboratory mice by about 50% could more than double their normal life span. Later human studies showed that caloric restriction could lower blood pressure, blood sugar, and cholesterol.

Dr. Walford applied his theory to his own life; for the last 30 years of his life, he consumed only 1,600 calories a day, far below the recommended calorie intake for a man of his age.

In 1991, Dr. Walford applied the low-calorie diet in the experimental Biosphere 2, a three-acre self-contained greenhouse in the Arizona desert. He and seven other researchers sealed themselves for two years in the closed ecological system. When food supplies ran low, Dr. Walford encouraged the others to follow a calorie-restricted diet, which produced dramatic weight loss and improved health.

Dr. Walford died in April from respiratory failure and complications from amyotrophic lateral sclerosis, commonly known as Lou Gehrig's disease. He was 79.

As best we can recall, Dr. Walford is the first member of Life Extension's Scientific Advisory Board to pass away. We did lose a doctor on our Medical Advisory Board to a rock climbing accident about 10 years ago.

—Stephen Laifer

## Acetaminophen Use Harms Kidneys

Long-term use of acetaminophen has been linked to kidney impairment, according to a study of analgesic use among middle-aged women.\*

Over the course of 11 years, 10% of study participants experienced about a one-third drop in their kidney filtration rate. The nearly 1,700 women recruited for the study were habitual users of the common painkiller, which is marketed both generically and as Tylenol®.

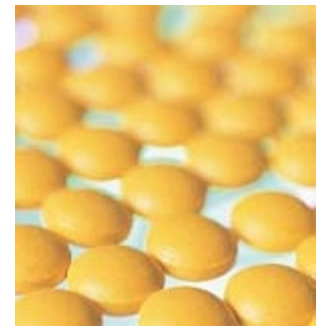
Life Extension has warned its readers about this hazard for more than a decade. The researchers stressed that other common NSAID painkillers, such as ibuprofen and aspirin, have not been associated with any adverse effects on kidney function. Only acetaminophen was linked to kidney damage in the current study.

The study results showed that women who took 1,500-9,000 acetaminophen tablets over their lifetimes had a 64% greater chance of developing kidney malfunctions. Women who took more than 9,000 pills doubled that risk.

The women, who participated in the Nurses' Health Study, contributed blood samples in 1989 and again in 2000. Samples were analyzed for changes in markers of glomerular filtration rate, an indicator of kidney health and efficiency.

Researchers note that more and more people are taking over-the-counter pain relievers for chronic pain and to guard against cardiovascular disease and stroke. Use of NSAIDs has been linked to a reduction in cardiovascular disease risk. The study findings suggest that physicians and their patients should reassess the advisability of routinely using acetaminophen.

—Dale Kiefer



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## Fatty Acids Reduce Atrial Fibrillation Risk



Regular consumption of fish containing omega-3 fatty acids—but not fried fish—reduces the risk of atrial fibrillation, according to the results of a Harvard study.\*

Atrial fibrillation, the most common arrhythmia in clinical practice, affects more than 2 million Americans. Risk factors, including valvular or coronary heart disease and higher systolic blood pressure, all increase with age. Adding fish to the diet has long been associated with lower blood pressure, less systemic inflammation, and improved left ventricular function.

The Harvard researchers assessed the dietary intake in 1989-90 of 4,815 adults aged 65 and older. During 12 years of follow up, the incidence of atrial fibrillation was determined using hospital discharge records and annual electrocardiograms.

In all, 980 cases of atrial fibrillation were reported. Case analyses revealed that the incidence of atrial fibrillation was 28% lower in those who ate tuna or other broiled or baked fish one to four times weekly, and 31% lower in those who ate such fish or more times per week.

While fish high in omega-3 fatty acids may be cardioprotective, the process of frying fish can alter its nutrient content, increasing omega-6 fatty acids, trans fatty acids, and oxidation products, especially if oils are reused for frying.

The researchers concluded: “Among elderly adults, consumption of tuna or other broiled or baked fish, but not fried fish or fish sandwiches, is associated with lower incidence of [atrial fibrillation]. Fish intake may influence risk of this common cardiac arrhythmia.”

—Stephen Laifer

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### Reference

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## IN THE NEWS

### Green Tea Slows Brain Aging in Mice

Japanese scientists recently announced that antioxidants in green tea significantly slowed brain aging in laboratory mice.<sup>1</sup>

Green tea catechins slowed or halted symptoms of cognitive decline and senescence in mice specially bred for accelerated brain aging. The mice served as a model of age-associated senescence in humans. Catechins are a class of natural compounds (including epigallocatechin gallate, or EGCG) that neutralize free radicals, preventing oxidative damage.

Previous research has indicated that age-related cognitive dysfunction is associated with damage to brain tissues caused by oxidation.<sup>2</sup> The brain requires significantly more oxygen than other tissues and produces proportionally more free radicals, rendering it particularly susceptible to oxidative damage. Previous experiments have shown that antioxidant compounds such as garlic extract and vitamin E can improve oxidation-induced brain decline in laboratory animals.<sup>3-5</sup>

In the Japanese study, scientists gave green tea catechins daily to one group of mice and withheld catechins from a second group. At the end of 12 months, they tested both groups' ability to learn certain tasks. The animals' brains were subsequently examined for physical differences. Mice that received catechins performed significantly better on memory and learning tasks than mice that did not receive the antioxidants. The mice given green tea also had significantly healthier brain tissue upon post-mortem examination.

The scientists concluded that green tea catechins prevent age-associated cognitive decline.

—Dale Kiefer



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### Ginger Inhibits Inflammatory Activity



Although mainly familiar to Westerners as a pungent cooking ingredient, ginger rhizome (*Zingiber officinale*) has long been used in the Far East to treat ailments such as nausea, headache, and knee pain resulting from osteoarthritis.

Last winter, scientists in Texas examined ginger root extract's effects on cartilage cells that had been removed from osteoarthritic pigs and grown in the laboratory. Arthritis occurs when cartilage degrades and becomes inflamed in the knee or other joints. The researchers concluded that ginger extract inhibited the production of nitric oxide and prostaglandin E2, both of which are implicated in the inflammatory cascade that accompanies arthritis.<sup>1</sup>

Japanese scientists recently isolated a component of one species of ginger that exhibits powerful anti-inflammatory properties in human cells. Known as Zerumbone, the chemical also markedly suppressed the growth of, and induced apoptosis in, leukemia and colon cancer cells in the laboratory.<sup>2</sup>

A number of studies have indicated that ginger offers significant anti-inflammatory activity.<sup>3-6</sup> Still others have shown that ginger relieves inflammation by inhibiting inflammation mediators such as prostaglandin E2 and thromboxane B2. Ginger is exceptionally well tolerated and has an excellent safety record.

—Dale Kiefer

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## Vitamin K2 Cuts Risk of Liver Cancer

Nearly 8% of women with viral cirrhosis of the liver are at increased risk of developing liver cancer. Now Japanese scientists have discovered that vitamin K2 can significantly decrease their chances of developing liver cancer.

The study, published in the *Journal of the American Medical Association*, found that vitamin K2 decreases the risk of developing hepatocellular carcinoma in women with viral cirrhosis, possibly by delaying the onset of carcinogenesis.\* The researchers recruited 40 women diagnosed with viral liver cirrhosis, of whom 21 were randomly assigned to treatment with 45 mg per day of vitamin K2. All of the patients received symptomatic therapy for ascites (the abnormal buildup of fluid in the abdominal cavity) and dietary advice.

During more than seven years of follow-up, the cumulative proportion of patients with hepatocellular carcinoma was significantly smaller in the treatment group (2 of 21 patients) compared to the control group (9 of 19 patients). All cases were newly diagnosed and in the initial stages of cancer. The annual incidence of hepatocellular carcinoma was 1.6% in the treated group, compared to 8.8% in the untreated group and 7.9% in the general cirrhotic population.

The researchers believe that geranylgeraniol—a side chain of vitamin K2—induces cell death in tumor cells, suggesting that geranylgeraniol might play an important role in inhibiting cell growth.

They wrote, “The study indicates that vitamin K2 decreases the risk of hepatocellular carcinoma to about 20% compared with the control group,” adding that these preliminary results should be confirmed in multicenter, randomized controlled trials.

—Stephen Laifer



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