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IN THE NEWS

Magnesium Shown to Lower Heart Disease Risk



Greater intake of magnesium appears to lower one's risk of developing coronary heart disease, according to a study recently published in the *American Journal of Cardiology*.¹

Researchers analyzed data for more than 7,000 male participants in the Honolulu Heart Program, which began in the mid-1960s. Nearly 1,500 of these men developed coronary heart disease during the 30-year study period.

The researchers discovered that the more magnesium the men consumed, the lower their risk of developing heart disease. The men who consumed the lowest amounts of magnesium were approximately twice as likely to develop coronary heart disease as those men who consumed the highest.

The researchers noted that these findings are consistent with those of other studies such as the Atherosclerosis Risk in Communities Study² and the National Health and Nutrition Exam Survey,³ in which higher blood levels of magnesium were associated with lower coronary heart disease risk.

"Magnesium deficiency is believed to have adverse cardiovascular consequences, including broad and complex effects on hypertension, diabetes, cardiac arrhythmias, atherosclerosis, and sudden cardiac death," the researchers concluded.

References

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2. Liao F, Folsom AR, Brancati FL. Is low magnesium concentration a risk factor for coronary heart disease? The Atherosclerosis Risk in Communities (ARIC) Study. *Am Heart J*. 1998 Sep;136(3):480-90.
3. Gartside PS, Glueck CJ. The important role of modifiable dietary and behavioral characteristics in the causation and prevention of coronary heart disease hospitalization and mortality: the Prospective NHANES I Follow-up Study. *J Am Coll Nutr*. 1995 Feb;14(1):71-9.

Night-Shift Work, Melatonin Deficiency Linked to Colorectal Cancer

Night-shift work may greatly increase your risk of developing colorectal cancer, according to data from the ongoing Nurses' Health Study.

In their study of nearly 80,000 female nurses, researchers at Brigham and Women's Hospital in Boston, MA, found that those women who worked night shifts at least three times a month for 15 years or more were 35% more likely to develop colorectal cancer.*

The researchers believe that melatonin deficiency may be the culprit, as environmental light decreases the release of melatonin in the body, which usually peaks in the middle of the night. "Melatonin has well-established anticarcinogenic properties, and a link between light exposure at night and cancer risk through the melatonin pathway could offer one plausible explanation for the increased risk we observed," they wrote in the *Journal of the National Cancer Institute*.



Several studies have already demonstrated a link between night-shift work and breast cancer. Moreover, previous research has supported the link between melatonin deficiency and the development of colorectal cancer.

"The finding that colorectal cancer patients had plasma levels of melatonin lower than healthy control subjects suggests a

possible link between low melatonin levels and the enhanced development of colorectal cancer in humans,” stated the researchers.

References

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Fried-Food Ingredient Acrylamide Alters DNA

Acrylamide, a substance found in high concentrations in tobacco smoke, has been linked to cancer in laboratory animals. The fairly recent discovery of acrylamide in a variety of fried and starch-based food products led to a flurry of research to examine its possible ability to cause cancer. The World Health Organization and the Food and Agriculture Organization of the United Nations held an emergency meeting last year in Switzerland to discuss these possible health complications.

A new report in the Journal of the National Cancer Institute provides proof that acrylamide can lead to cancer-causing DNA changes in mammalian cells.* Scientists at the Beckman Research Institute at the City of Hope National Medical Center in Duarte, CA, found that treatment of mouse embryonic fibroblast cells with acrylamide induced the formation of DNA adducts and increased the frequency of mutations at specific locations along the gene, both of which may be instrumental in tumor formation.



In a statement to Life Extension, researcher Dr. Ahmad Besaratinia wrote: “The overall observations support the theory of the involvement of acrylamide in DNA adduct formation and induction of mutations, both relevant for cancer. Although the exact mechanism of action for acrylamide still remains to be fully determined, the current data are in favor of a DNA-damaging property of acrylamide partially leading to mutations. The observations made in the present study warrant further investigations into the cancer-causing effects of acrylamide in humans.

Editor's Note: *Chlorophyllin and indole-3-carbinol (I3C) are the best supplements to protect against damage from the formation of DNA adducts. If you eat baked or fried carbohydrates, it makes sense to ingest chlorophyllin and/or I3C at the same time.*

References

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FDA Warns Against Menopausal Hormone Therapy

The US Food and Drug Administration (FDA) recently launched a nationwide information campaign to “raise awareness about the recent findings on the risks and benefits of menopausal hormone therapy.”

It is estimated that more than 10 million American women use hormone replacement therapies such as estrogens or estrogens with progestins. While it was previously believed that these hormones could protect against many illnesses, newer research is disproving this notion. In fact, recent studies have been halted when these hormones were found to be generally more harmful than beneficial.

The FDA acknowledges that menopausal hormone therapy may have some benefit in reducing hot flashes, treating vaginal dryness, and slowing bone loss, but urges that these benefits be weighed against “the recent findings of increased risk of heart disease, strokes, breast cancer, and other serious health concerns associated with the use of these therapies.”



The FDA has modified the approved indications for menopausal hormone therapies to clarify that these drugs should be used “only when the benefits clearly outweigh the risks.”

“Postmenopausal hormone therapy is a major personal decision for women, and they should be armed with the latest key facts and useful tools to make the best decision for their needs,” FDA Commissioner Dr. Mark McClellan said at a news conference.

“It is very important that women realize that this beneficial therapy also carries significant risks,” said McClellan. “Our recommendation is that if you choose to use hormone therapy for hot flashes or vaginal dryness, or if you prefer it to other treatments to prevent thin bones, take the lowest dose for the least duration required to provide relief.”

Editor's Note: *The Life Extension Foundation first warned against the dangers of hormone replacement therapy years ago.*

IN THE NEWS

Oral Estrogen May Increase Body Fat



A study from Brazil suggests that oral estrogen replacement therapy may decrease lean body mass and increase total body fat mass in certain women.

The researchers examined 23 postmenopausal women who had previously undergone a hysterectomy.* Thirteen of the women took oral-conjugated estrogen pills, while the other 10 used “transdermal” estrogen skin patches.

The researchers found that the women taking the oral pills demonstrated a decrease in lean body mass, an increase in total body fat mass, no change in total bone mass or total bone mineral density, and a decrease in lipid oxidation. The patch-using women demonstrated an increase in lean body mass, no change in total body fat mass, an increase in total bone mass and in total bone mineral density, and an increase in lipid oxidation. Neither group exhibited a significant change in weight, visceral adipose tissue areas, or energy expenditure.

Some of these findings may be related to the fact that oral estrogen decreased insulin-like growth factor 1 (IGF-1) levels while transdermal estrogen had no effect on IGF-1.

The researchers concluded that “lean body mass loss associated [with] oral estrogen could be related to a chronic suppression of IGF-1 levels which, in turn, plays a major endocrinological role thanks to its powerful anabolic action, as well as nitrogen retention [and] protein synthesis stimulation, especially in muscle cells, thus preventing protein catabolism.”

References

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Estrogen-Progestin Therapy Fails to Slow Atherosclerosis

A recent study found that estrogen-progestin therapy failed to slow the progression of coronary-artery atherosclerosis (plaques in the arteries that feed the heart muscle) in postmenopausal women with the disease.

For their study dubbed the Women’s Estrogen-Progestin Lipid-Lowering Hormone Atherosclerosis Regression Trail (WELL-HART), researchers randomly assigned 226 postmenopausal women with known coronary-artery atherosclerosis to one of three groups: a control group that received “usual care,” an estrogen group that received 17b-estradiol therapy, or an estrogen-progestin group that received the 17b-estradiol plus medroxyprogesterone.*

The study found no significant difference between the three groups in the progression of atherosclerosis as seen on the cardiac angiograms.

The researchers noted, however, that these results are “strikingly different” from those of the Estrogen in the Prevention of Atherosclerosis Trial (EPAT) study, in which oral 17b-estradiol alone slowed thickening of the carotid artery wall. The time from menopause was 5-10 years less in the EPAT study than in the WELL-HART study, however, which suggests that hormone replacement therapy may play a role in preventing coronary artery disease early after menopause, but may become detrimental after a certain number of years.



References

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For Heart-Attack Victims, Angioplasty Worth the Wait

New research suggests that angioplasty is superior to clot-busting drugs in the treatment of acute heart attacks. A heart attack occurs when one or more coronary arteries that feed the heart muscle becomes suddenly clogged and the heart muscle begins to die. Angioplasty is an invasive procedure in which cardiologists, guided by x-rays, open clogged coronary arteries by feeding a catheter to the heart from an artery in the groin.

A study published in the New England Journal of Medicine suggests that angioplasty is superior to fibrinolytic therapy (clot-busting drugs), even if the patient has to be transferred to another hospital before initiating treatment.*



Researchers in Denmark randomly assigned more than 1,500 heart-attack patients to treatment with angioplasty or fibrinolytic therapy. They discontinued the study earlier than planned when it was determined that patients who received angioplasty fared much better, even if it took up to two hours to receive treatment.

The researchers found that patients who received angioplasty were 75% less likely to have another heart attack during the 30-day study period than those receiving fibrinolytic therapy, and were therefore less likely to die or suffer from a disabling stroke.

“A strategy for reperfusion involving the transfer of patients to an invasive-treatment center for primary angioplasty is superior to onsite fibrinolysis, provided that the transfer takes two hours or less,” the researchers concluded.

In an editorial accompanying the article, Alice K. Jacobs, MD, a cardiologist at the Boston University Medical Center, stressed the importance of recognizing heart-attack symptoms and immediately activating emergency medical systems when symptoms do occur.

“When available and performed by experienced operators at high-volume centers, primary percutaneous coronary intervention [angioplasty] saves 20 lives and results in 60 fewer events for every 1,000 patients treated,” wrote Jacobs. “This suggests that primary percutaneous coronary intervention is indeed worth the wait.”

Editor’s Note: *In the Disease Prevention and Treatment protocol book, Life Extension has advocated angioplasty over fibrinolytic therapy for years. As stated above, recognizing heart-attack symptoms and immediately calling for an ambulance are the most important steps you can take in the event of a heart attack.*

References

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