Spice Up Your Cuisine To Help Protect Against Heart Disease, Cancer, Diabetes

Adding herbs and spices to your food may do more than make a meal tasty, it may keep you healthy. Potent plant compounds in herbs like cinnamon and rosemary have antioxidant, anti-inflammatory and antibacterial actions that scientists suggest might help do everything from normalize blood glucose levels and protect the heart to improve mood and boost brain function—even repel cancer cells.

Much of the research is preliminary and in rodents, but it expands our thinking of what flavoring food can do. Here, *EN* updates you on the latest research.

Chili Powder—Though it seems odd that capsaicin, the substance that gives chili peppers and chili powder their fiery heat, would act as a pain reliever, it has indeed been used for years as a topical cream to help people with arthritis, shingles and psoriasis. Experts suspect capsaicin works by first stimulating pain receptors via the skin and then shutting them down.

Now, scientists think this principle can help inside the body too. By combining the local anesthesia lidocaine (Xylocaine) with capsaicin, Harvard scientists were able to block pain receptors, yet leave touch and motor sensors intact, causing controlled numbness. Though tested only on rats so far, researchers are confident the finding could eventually transform the way surgery is performed. In laboratory studies... (continued on page 4)

4 New Ways Vitamin K May Benefit Your Body; Why You Might Need More

In 1929, a Danish researcher discovered the key to stanching blood flow, aptly naming it vitamin K, for “koagulation.” By the end of the century, K’s role in blood clotting remained its only claim to fame. Now, scientists are discovering the nutrient’s possible participation in bone strength, heart health, control of inflammation and prevention of diabetes.

“There are plenty of potential roles for vitamin K on the horizon that were unthinkable 10 or 20 years ago,” says John Suttie, Ph.D., a vitamin K researcher retired from the University of Wisconsin.

Given a recent flurry of headlines, it seems vitamin K is poised for stardom. Is all the hype warranted? Or should we curb our enthusiasm? *EN* investigates.

Vitamin K 101. Vitamin K1, also called phylloquinone, is the primary form of the vitamin in our diet and the form needed for coagulation. Dark green leafy vegetables, including kale, spinach, and broccoli, are brimming with phylloquinone. Additional sources of K1 include fruit, vegetable oils and dietary supplements.

The body needs phylloquinone to manufacture menaquinone-4 (MK-4), which is relatively high in brain tissue, though its function there is still unknown. MK-4 is just one of many menaquinones that collectively make up vitamin K2. Some are found in foods like meat, cheese, egg yolks and natto (fermented soybean). Others appear to be produced by bacteria that live in your intestinal tract, says Sarah Booth, Ph.D., director of the Vitamin K Laboratory at Tufts’ Human Nutrition Research Center on Aging in Boston.

Not much is known about the amount of vitamin K we need; the current recommendations for adequate amounts simply reflect the average American intakes—90 micrograms of K daily for women; 120 for men. Most healthy adults get enough K for their blood to clot properly. Too much becomes a potential problem only when taking the drug Coumadin (warfarin), a commonly prescribed blood thinner, as K interferes with its action (see “Clearing Up the Quandary,” page 6). But hints that vitamin K has other potential... (continued on page 6)
4 New Ways Vitamin K May Benefit; Do You Need More?

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functions has sparked speculation that we might need more than we are getting.

K for Stronger Bones? Vitamin K activates the conversion of a bone-building protein called osteocalcin that shores up bone tissue and reduces the likelihood of fractures. And several studies point to a link between K intake and hip fractures. Using data from the Nurse’s Health Study, Harvard researchers found that getting more than 109 micrograms of vitamin K daily reduced the risk of hip fracture over 10 years in more than 71,000 middle-aged women. Similarly, Booth found a relationship between K and the incidence of hip fracture in a group of nearly 700 older men and women. Those who took in about 250 micrograms a day of vitamin K, from both food and supplements, experienced fewer broken hips than those who got only about 50 micrograms daily.

Moreover, a review that pooled the results of 13 studies concluded that people who took supplemental vitamin K suffered less bone loss and a whopping 80% fewer fractures than those who did not take extra K. These and other similar findings are encouraging. And yet, there’s no rush among researchers to anoint vitamin K as the new calcium for bones. Why not?

So far, controlled clinical trials have failed to establish a direct link between vitamin K, bone density and fracture risk. The results of Booth’s clinical trial, published in the April Journal of Clinical Endocrinology & Metabolism, found that taking 500 micrograms of K1 along with 600 milligrams of calcium for three years did nothing to improve bone density in 452 men and women in their 60s and 70s.

Though the research does not support K supplementation for everyone, there is evidence to suggest that some people—particularly women over 50—may need more K than they are getting to produce the bone-building osteocalcin they need.

High doses of menaquinones have been used to treat osteoporosis in Japan for years, so does that mean they are the answer to stronger bones? Booth again urges caution, saying that supplemental forms of menaquinones have not been studied sufficiently, especially for how they interact with drugs like Coumadin.

K for Heart Health? Even fewer studies exist regarding vitamin K’s role in heart health. Still, Wisconsin’s Suttie says it’s even more likely that K benefits blood vessels than bones. How? Vitamin K is capable of activating compounds that suppress calcification—so-called hardening—of the arteries, which constricts blood flow, eventually causing a heart attack or stroke.

One study of 113 postmenopausal women suggests a link between vitamin K intake and thickening of the aorta in the abdomen. Women with no known blockage of blood vessels ate an average of 43 micrograms more K on a daily basis than women with clogged aortas.

A Dutch study also found that of more than 4,800 volunteers, those who consumed the most menaquinones over 13 years suffered less arterial calcification and were less likely to die from heart disease or any other cause. Yet phylloquinone intake did not affect the results, leading the researchers to conclude that menaquinones were indeed the protective factor. Ironically, the primary sources of menaquinones in the study were foods rich in saturated fat, like high-fat cheeses.

K to Tame the Flame? Vitamin K may reduce the inflammation associated with chronic conditions, such as heart disease. Just this year, Tufts University researchers linked high levels of vitamin K1 in the blood and the diet with low levels of 14 markers of inflammation in the body of nearly 1,400 middle-aged men and women.

That’s good news for anyone prone to arthritis, as are the results of a study from Boston University School of Medicine, which found that in a group of 672 middle-aged and older people, those with higher blood levels of K suffered significantly less osteoarthritis of the knee.

K for Better Blood Glucose Control? Vitamin K may also play a part in deterring diabetes. Booth and her colleagues recently found an association between vitamin K intake and improved insulin sensitivity—a marker for better blood glucose control—in a preliminary study of more than 2,700 men and women of all ages. Those who consumed 280 micrograms or more daily of vitamin K from foods and supplements showed better insulin sensitivity than those getting an average of 63 micrograms a day.

The Bottom Line on K. There’s a lot we still don’t know about vitamin K. But it’s clear it likely does much more than just help your blood clot. Despite some uncertainty, getting more K would probably benefit older women. And eating more K-rich foods would improve intake of other nutrients, especially fiber, folate, magnesium and potassium, all key to helping prevent a host of chronic conditions.

—Elizabeth M. Ward, M.S., R.D.