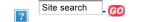
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Turmeric possible fighter of diseases

## Frank Greve

Knight Ridder Newspapers Oct. 15, 2005 12:00 AM

WASHINGTON - Turmeric, the Asian spice that adds the yellow color to curry, not to mention French's mustard and Hindu priests' robes, has yet another life: It's a promising potential weapon against several cancers, Alzheimer's, cystic fibrosis, psoriasis and other diseases.

"We know that it's an effective preventive at low doses," said Dr. Bharat Aggarwal, of the experimental therapeutics department at the M.D. Anderson Cancer Center in Houston. "The question is whether larger doses can be therapeutic" for disease sufferers.

At least a dozen clinical trials on humans are under way in the United States, Israel and England to test the safety and dosages of turmeric's main ingredient, curcumin. It's a hot topic in health journals, too, cited 967 times since 2000 in articles reported on PubMed, the National Library of Medicine's research service. advertisement

The spice, which is a relative of ginger, comes from the stems of the root of a large-leafed plant widely grown in Asia, especially in the province of Maharashtra in southwestern India. The stems are boiled, dried and crushed to a powder that has a bitter woody taste and is widely used as a spice and in folk medicines to cure stomach ailments and skin lesions. Turmeric was in use when the first Westerner, Marco Polo, visited the region in the 13th century.

Low rates among Indians for colorectal, prostate and lung cancers as well as coronary heart disease and Alzheimer's first drew Western researchers to curcumin. While genetics might explain the low incidences, the rise in rates among Indians whose parents had moved to Western countries suggested a dietary cause. Subsequent lab tests on diseased cells and in mice strengthened claims for curcumin.

It's been demonstrated in animals to protect the liver, inhibit tumors, reduce inflammation and fight some infections. Curcumin has antioxidant and anti-inflammatory properties, according to researchers, and may help lower cholesterol.

Unlike newly invented pharmaceuticals, "we know a lot about



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curcumin because it's been used widely for many years," said Dr. Christopher Goss of the University of Washington Medical Center in Seattle. He's recruiting cystic fibrosis patients for a Phase I study of curcumin's safety and efficacy. The patients will take up to 3 grams daily, six of the biggest pills that U.S. pharmacies sell. That's more than 50 times the amount of curcumin in a portion of curry.

Goss also will be seeking insight into findings reported last year in the journal *Science* that curcumin corrects the cystic fibrosis defect in mice. The defect, which suppresses a mutant protein essential to cell health, results in thick mucous that fatally clogs the lungs and pancreas. Researchers from Yale University and the University of Toronto found that curcumin treatment released the protein and enabled cells and membranes to function normally, at least in mice.

Cystic Fibrosis Foundation Therapeutics Inc., a non-profit drug-research arm, sponsored this study and Goss'. Among Indians and Pakistanis living in England, the cystic fibrosis rate is 1 in 10,000, according to an epidemiological study. That compares with 1 in 2,500 among Caucasians. Rates in India and Pakistan are unknown.

The U.S. National Institute on Aging has launched a clinical trial to assess the safety and efficacy of curcumin for mild to moderate Alzheimer's disease. A report in the *Journal of Biological Chemistry* in December found that in mice injected with a chemical that mimics Alzheimer's, curcumin reduced by half the buildup of knots in the brain called amyloid plaques, which have been linked to Alzheimer's.

M.D. Anderson, the Houston cancer center, has small trials under way testing curcumin on pancreatic and bone-marrow tumors. Colon cancer studies using curcumin are under way elsewhere.

All trials are in the earliest and easiest of four stages, preceding any Food and Drug Administration approval of a curcumin-based pharmaceutical by many years. Many drugs that look promising in mice fail to deliver in humans or prove to have dangerous side effects.

In the less-regulated dietary supplement industry, curcumin's popularity is surging. Grant Ferrier, the editor of *Nutrition Business Journal*, projects sales of \$20 million in 2005 compared with \$15 million last year.

Curry Pharmaceuticals of Research Triangle Park, N.C., which hopes in the long run to sell a purified chemical analog of curcumin, is working on a curcumin salve for skin diseases such as psoriasis.

Curcumin consumed in small amounts from an early age may ward off some Western ailments, Aggarwal said. But once someone's contracted these diseases, curcumin's ability to counteract them is largely unproved.

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