

# CURCUMIN NEWS

**CONTENTS :**

- Cancer Research
- Multiple Sclerosis
- Alzheimer's
- Diabetes
- Muscle Injuries
- A Powerful Antioxidant
- Cataracts
- Psoriasis
- Alcohol Related Liver Damage

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## EXCITING NEW CURCUMIN STUDIES

I must apologize for the delay in producing this newsletter, but the simple fact is that it seems hardly a day goes by without new studies being published and new potential benefits disclosed. One of the most exciting areas of research relates to the effects of curcumin on the prevention and treatment of cancer. Whilst it is too early to promote this supplement as a solution to the problem, there is increasing evidence to show that it is an important weapon in the fight.

Other areas that have shown promise are those relating to multiple sclerosis and brain disorders such as Parkinson's, Alzheimer's and Huntington's. I can only pass on details of the research, but the fact that so much is being done indicates the excitement and level of interest in curcumin throughout the scientific community. For reasons of space, I have had to summarize the reports, but the full references are available, just e-mail me. I hope you will find this

newsletter of interest and will consider trying curcumin for yourself. Please let me know your results.



**Robert Redfern, Nutritionist, Author and Broadcaster**

### What is Curcumin?

Turmeric has long been revered as the foundation of an herbal program for health. In India's system of Ayurvedic medicine, it has been recognized for thousands of years as a key balancing and detoxifying herb and is considered to be one of the very best all-around herbs for general well being. Curcumin, is the main biologically active part of Turmeric, which only contains 4% curcumin. Over 500 references to articles on turmeric and curcumin have been published in peer reviewed professional journals.

It has been identified in pharmacology as:

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- Antibacterial
- Antiviral,
- Anti-fungal,
- Anti-yeast,
- Anti-allergenic,
- Anti-inflammatory,
- Anti-oxidant,
- Anti-spasmodic,
- Carminative,
- Diuretic, and
- Anti-tumour

Turmeric and Curcumin have traditionally been used to support those suffering from pain and inflammation:

- Acne, allergies,
- Ascites,
- Auto-immune disorders,
- Burns,
- Chicken pox,
- Diabetes,
- Digestive disorders,
- Liver problems
- Skin rashes,
- Tumours,
- Ulcers and
- Eye problems such as cataracts. (Read study below)

If that is not enough, Turmeric has been used for thousands of years by Indian Women to make their skin beautiful and blemish free.

## CANCER RESEARCH

*University of Illinois at Chicago*

Having noted that curcumin has been shown to prevent gastric and colon cancers in rodents, scientist set out to see why this should be. They carried out tests that showed that, in the test tube, curcumin inhibits the growth of Helicobacter pylori, a group 1 carcinogen and surmise that this may be the key factor.

*Cytokine Research Section, Department of Bioimmunotherapy, University of Texas M. D. Anderson Cancer Centre*

Curcumin (diferuloylmethane) is a polyphenol derived from the plant Curcuma Longa, commonly called turmeric. Extensive research over the last 50 years has indicated this polyphenol can both prevent and treat can-

cer. The anticancer potential of curcumin stems from its ability to suppress proliferation of a wide variety of tumour cells.

In several systems, curcumin has been described as a potent antioxidant and anti-inflammatory agent. Evidence has also been presented to suggest that curcumin can suppress tumour initiation, promotion and metastasis. Pharmacologically, curcumin has been found to be safe.

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## CANCER RESEARCH - Continued from page 1

*"...our results suggest that curcumin is a potent anti-proliferative agent for breast tumor cells and may have potential as an anticancer agent."*

Department of  
Bioimmunotherapy,  
University of Texas M. D.  
Anderson Cancer Center

*"Curcumin could be a potentially therapeutic anti-cancer agent, as it significantly inhibits prostate cancer growth..."*

New York's  
Columbia University

*"...curcumin seems to protect skin from the burns and blisters that often occur during radiation treatment."*

University of Rochester  
Medical Center

Human clinical trials indicated no dose-limiting toxicity when administered at doses up to 10 g/day. All of these studies suggest that curcumin has enormous potential in the prevention and therapy of cancer.

Several breast tumour cell lines, "including hormone-dependent and -independent and multi-drug-resistant (MDR) lines," respond to anti-proliferative effects of curcumin. Aggarwal et. al. examined cell lines "including the MDR-positive ones," and found they were all "highly sensitive to curcumin. The growth inhibitory effect of curcumin was time and dose dependent... Overall our results suggest that curcumin is a potent anti-proliferative agent for breast tumour cells and may have potential as an anti cancer agent."

**New York's Columbia University**

In two recent studies, scientists researched curcumin's therapeutic potential against prostate cancer. In one case last year, the scientists discovered that curcumin had a powerful ability to induce apoptosis (cell death) and inhibit prostate cell proliferation in vitro by interfering with the cells' protein signal-

ing pathways that typically begin the growth process.

Just recently, the researchers extended those findings to determine if they could achieve similar results in an animal model. In their latest study, the researchers found that prostate cancer cells that had been injected subcutaneously into mice, which had been fed a diet of 2% curcumin for six weeks, were unable to develop extensively and underwent significant apoptosis. "Curcumin could be a potentially therapeutic anti-cancer agent, as it significantly inhibits prostate cancer growth... and has the potential to prevent the progression of this cancer to its hormone refractory state," the study authors concluded.

**St. Luke's Roosevelt Hospital Centre, Columbia University and Strang Cancer Centre Research Laboratory, New York, New York.**

A pure curcumin preparation was administered in an open label study to five patients with ulcerative proctitis and five with Crohn's disease. All proctitis patients improved, with reductions in concomitant medications in four, and four of five Crohn's disease patients had lowered CDAI

(Crohn's disease activity index) scores and sedimentation rates. This encouraging pilot study suggests the need for double-blind placebo-controlled follow-up studies.

**Loyola University Medical Centre research**

Rates of childhood leukemia in Asia are much lower than in Western countries, according to Loyola researchers, who say this may be due in part to the protective effect of turmeric, a spice that's common in Asian cooking.

"Some of the known risk factors that contribute to the high incidence of childhood leukemia are the interaction of many lifestyle and environmental factors," Loyola professor Moolky Nagabhushan said in a prepared statement.

"These include prenatal or postnatal exposure to radiation, benzene, environmental pollutants and alkylating chemotherapeutic drugs. Our studies show that turmeric - and its colouring principle, curcumin - in the diet might mitigate the effects of some of these risk factors," Nagabhushan said.

The research was presented on September the 9th, in London, at a conference on childhood leukemia.

## RADIATION TREATMENT

**University of Rochester Medical Center  
-James P. Wilmot Cancer Center**

Cancer researchers at the university have found that curcumin seems to protect skin from the burns and blisters that often occur during radiation treatment.

In the study, 200 mice were given three different doses of curcumin for five to seven days. On the fifth day, mice were given a single dose of radiation and scientists waited 20 days to assess skin damage. The mice that received curcumin had minimal skin damage caused by radiation.

Scientists also found the substance suppresses development of new cells in the area of tumor, thus furthering the effectiveness of radiation. While doctors are not ready to say that curcumin is the answer to preventing skin damage, researchers believe the results demonstrate the need for more extensive study.



## CURCUMIN RESEARCH WITH MULTIPLE SCLEROSIS, ALZHEIMER'S AND DIABETES

### Multiple Sclerosis

**Dr. Chandramohan Natarajan, of Vanderbilt University in Nashville, Tennessee**

In their 30 day study, Dr. Natarajan's team administered 50 and 100 microgram doses of curcumin, three times a week to a group of mice bred to develop experimental autoimmune encephalomyelitis, (EAE) the animal mode of MS. They then monitored the mice for signs of MS-like neurological impairment.

By day 15, those mice that had not received curcumin had a marked progression of EAE with complete paralysis of both hind limbs. In contrast, mice given the 50-microgram dose of the curry compound showed only minor symptoms, such as a temporarily stiff tail. And mice given the 100-microgram doses appeared completely unimpaired throughout the 30 days of the study.

The results did not surprise Dr. Natarajan. In Asian countries, such as India and China, where people eat more spicy foods and more yellow compounds like curcumin, reports of MS are "very, very rare".

**M.R., A multiple sclerosis sufferer, West Midlands, UK**

This lady has suffered from MS for many years, but obtained substantial relief from taking supplements including serrapeptase and curcumin. She had run out of curcumin and was due to go on holiday when she noticed that some of her symptoms were starting to return. Worried that her holiday would be ruined, she contacted her supplier who rushed her a pot of curcumin. She quickly recovered and had a lovely, well-deserved holiday.

**Alzheimer's Disease  
UCLA and the Department of Veterans Affairs, USA**

Ongoing research indicates that curcumin has potent anti-inflammatory and antioxidant activities and can suppress oxidative damage, inflammation, cognitive deficits, and amyloid accumulation, which are primary factors in Alzheimer's Disease.



### Diabetes

Curcumin has recently enhanced cutaneous wound healing in diabetic mice. Previous studies showed that curcumin could enhance cutaneous wound healing in rats and guinea pigs. Both oral and topical curcumin were effective in the diabetic mice. Earlier re-epithelialization and improved neovascularization were among the healing processes observed in curcumin-treated animals. The researchers concluded that curcumin might be of benefit in helping to overcome diabetic-impaired healing processes.

## WIDER APPLICATIONS

### A Powerful Antioxidant - Dusseldorf University,

Pharmaceutical preparations derived from natural sources such as vegetables often contain compounds that contribute to the antioxidant defence system and apparently play a role in the protection against degenerative diseases. In a study at Dusseldorf University, commercial preparations containing extracts of turmeric, artichoke, devil's claw and garlic or salmon oil were investigated to compare their antioxidant properties.

All fractions of the turmeric extract preparation exhib-

ited pronounced antioxidant activity, which was assigned to the presence of curcumin and other polyphenols and were superior to garlic, devil's claw, and salmon oil. Curcumin stimulates production of glutathione, which is the body's own antioxidant.

### Muscle Injury

Although the data is preliminary, it appears that when curcumin is taken orally, it has the ability to home in on injured muscle. Once there, it changes the biochemistry of baby muscle cells, causing them to grow faster and clump together quicker to create new

tissue. According to the study, curcumin caused muscle cells to fuse together twice as fast as they ordinarily would. The effects of curcumin are felt early on - right after injury when the body first sends out the repair squads. So if you want to try curcumin for muscle regeneration, make sure you take it as soon as the injury occurs. The authors of the study predict that curcumin may be useful not only for accidental injuries or sports, but also to help repair surgical damage.

### Effective Absorption

The medicinal properties of curcumin obtained from *Curcuma Longa L.* cannot be

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**M.R., West Midlands, UK**

*"In Asian countries, such as India and China, where people eat more spicy foods and more yellow compounds like curcumin, reports of MS are very, very rare."*

**Dr. Chandramohan Natarajan**



## Naturally Healthy Publications

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*continued from page 3*

utilised because of poor bio-availability, due to its rapid metabolism in the liver and intestinal wall. In this study, the effect of combining Piperine, an extract of black pepper, was evaluated on the bio-availability of curcumin in rats and healthy human volunteers. When curcumin was given alone, in the dose 2 g/kg to rats, moderate serum concentrations were achieved over a period of 4 h. Concomitant administration of Piperine 20 mg/kg increased the serum concentration of curcumin for a short period of 1-2 h post drug. The bio-availability was increased by 154%. On the other hand in humans after a dose of 2 g curcumin alone, serum levels were either undetectable or very low. Concomitant administration of Piperine 20 mg produced much higher concentrations from 0.25 to 1 hour after consumption. The increase in bioavailability was 2000%. The study shows that in the dosages used, Piperine enhances the serum concentration, extent of absorption and bioavailability of curcumin in both rats and humans with no adverse effects.

**Important** - For optimum benefit look for a product supplying 500mg of Curcumin and 3mg of Bioperine for maximum absorption.

## CURCUMIN - NEW HOPE FOR EYESIGHT

### Cataracts

**Kalyan Ray, DHNS National Institute of Nutrition in Hyderabad.**

Eye lens contain a high amount of protein - 90 per cent of which belong to a class known as crystallins (called thus because the ancient Greeks considered the lens to be 'ice-like' in appearance). Their ordered arrangement inside the lens leads to vision. Everybody is born with alpha or beta and gamma crystallins for vision.

Cataracts form when through a cascade of biochemical activities, these soluble and stable proteins become insoluble and accumulate in the lens. Oxidative stress to the lens, age and chronic exposure to near ultra-violet light are some of the causes that trigger cataract. In addition, diabetes is a key factor as it distorts the ordered arrangement of lens proteins.

The Hyderabad team chose to investigate the potential of food components like antioxidants, micro-nutrients, spice and herbal extracts for preventing or postponing cataract formation. "Our ultimate goal is to find out nutritional and dietary means to prevent or postpone cataract formation" says Dr. Reddy, who recently won an Indian Council of Medical Research award for his research.

### Psoriasis

**M.C.Y. Heng, M.K. Song, J. Harker and M.K. Heng, Los Angeles**

Psoriasis is a disfiguring and irritating skin condition that is notoriously difficult to treat.

The condition varies both in severity between sufferers and even from day to day for the sufferer. It is believed that, whilst there is a genetic factor, the trigger can be an injury or infection to the skin

When the recovery process is taking place, a substance called Phosphorylase Kinase in the skin, promotes the

production of ATP in cells. Once the recovery is complete, the process stops, but in the case of psoriasis, the process continues and over production of skin cells takes place, resulting in the typical scaly rash. The researchers sought to inhibit the activity of the Phosphorylase Kinase

by the use of Curcumin in one group and calcipotriol (an ingredient in Psoriasis creams) in another. They discovered that whilst both groups showed significant reduction, Curcumin was twice as effective as the col-potriol.



## ALCOHOL RELATED LIVER DAMAGE

**Washington, Mar 20 (ANI):** A new study has found that a Curcumin, may prevent alcohol-related liver damage.

The study on rats has found that the substance stopped the changes caused by excessive alcohol consumption that lead to liver disease.

The research, published in American Journal of Physiology - Gastrointestinal and Liver Physiology, adds to the repertoire of benefits already shown by curcumin. However, it does not mean that people eating curries can safely drink more alcohol, warns Kalle Jokelainen, one of the team of Finnish and American researchers.

"Curcumin is not harmful, and it may protect your liver from liver disease if you have very high amounts - but this has only been seen in rats," he says.

For the study, the team gave rats fish oil with either ethanol or dextrose added for four weeks. The rats that also received doses of Curcumin did not develop the fatty livers, necrosis and inflammation seen in those not given the spice extract.

Furthermore, the doses used in the experiments were much greater than would ever be used in cooking with turmeric, he says. Alcoholic liver disease is a serious problem, he says, but the answer is to drink less. Jokelainen, at Helsinki University Central Hospital, said that Curcumin somehow blocks the activation of a key molecule called nuclear factor kappa B (NFkB). This molecule directs the chain of events that leads to inflammation and death of tissue. It is activated by many stimuli including radiation, heat shock and endotoxins - the toxins associated with bacteria.

"If you drink too much, that leads to leaky gut syndrome," Jokelainen told New Scientist. "Somehow endotoxins from the gut reach the blood and are carried to the liver. The liver is a filter and inactivates the endotoxin, but the price paid is that NFkB is activated." (ANI)