

Health Hunter[®]

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N E W S L E T T E R

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RECNAAC cancer research update

Joseph Casciari, Ph.D.

The RECNAAC project marked its 9th anniversary in February with a "Lunch and Lecture" presentation at The Center for the Improvement of Human Functioning International. Dr. Hugh D. Riordan, RECNAAC Project Director, began the lecture by showing a clip from his original RECNAAC project announcement in 1989. The project's stated goal has been to learn why cancer develops and how it can be safely treated and prevented. The RECNAAC project got its name from Zelma Barackman, a breast cancer patient who has survived fourteen years since using The Center's approach to fight her disease.

...the key to finding successful treatments for cancer is knowing where to look...

According to Dr. Riordan, the key to finding successful treatments for cancer is knowing where to look, and being willing to search in unusual places. The RECNAAC project has based its search on learning how nutrient deprivation affects cellular behavior and examining how host responses to cancer can be improved. Although the funding target for RECNAAC has not been met, the RECNAAC staff has made significant progress in finding new and safe cancer treatments.

Neil Riordan, RECNAAC Project Manager, described an exciting new area of research based on training immune cells to fight cancer. Recent studies indicate that a specialized immune

cell called the dendritic cell may be the key to mounting an effective immune response against cancer. Dendritic cells, named for the long branches protruding from their membranes, work by locating foreign antigens and presenting these antigens to T-cells. The T-cells then attack any cells that contain the antigen. Experimental studies show that cancer bearing animals given an infusion of dendritic cells "trained" with tumor antigens have cure rates exceeding fifty percent.

Dendritic cell therapy has entered the clinical trial phase, and the RECNAAC project is beginning work in this area. The clinical protocol involves isolating white blood cells from patients and treating them to induce dendritic cell growth. The dendritic cells are then 'pulsed' with antigens from tumor cells, given time to mature, and re-infused into the patient. Dendritic cell research at RECNAAC started in the fall of 1997. The methodology for growing dendritic cells is now up and running, and RECNAAC has received approval from The Center's Institutional Review Board to begin clinical trials with dendritic cell therapy. In the meanwhile, research is ongoing to improve methods for dendritic cell growth, to discover new tumor antigens, and to optimize antigen 'pulsing' procedures.

In an effort to discover new anti-cancer agents, Dr. Xiao Long Meng has been isolating extracts from herbs and natural products and testing their effects on tumor growth. Dr. Meng described a promising new plant extract he has recently isolated and tested ex-

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Green tea, cancer preventative or...

EGCG, a substance contained in green tea, looks very promising as a cancer preventative agent, if not treatment, according to the research of Jerzy Jankum, Ph.D., associate professor of urology and of physiology and molecular medicine at the Medical College of Ohio in Toledo.

EGCG inhibits a process by which cancer gains entry to cells in order to form metastases (or spread from one part of the body to another). Currently, a drug used for this process becomes toxic at 20 mg. By contrast, a cup of green tea contains up to 150 mg of EGCG and it appears that one can safely drink up to 10 cups a day—as many people do in some parts of the world.

Jankum points out that green tea has not been proven in clinical trials as either a preventative or treatment for cancer, but adds, "I never used to drink green tea. But now I drink two cups a day." Clinical trials are soon to begin at two major cancer centers in the United States. [H]

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Nutritional Medicine

by Ron Hunninghake, M.D.

The inner face of cancer

What does cancer look like? We have all seen the faces of advanced cancer patients. Pale, hollow, grey...too often it is the face of imminent death.

There was a time in every cancer patient's history when they themselves looked into the face of cancer. What they saw is a strange mixture of scientific statistics, friends, and family members they knew who had cancer, stories they have read, and the words and attitudes their doctors have conveyed to them about their personal prognosis. This is the inner face of cancer into which they looked. What did they see?

Did they see death, despair, hopelessness? Did they see an impossible maze of toxic chemotherapy, radiation burns, numbing fatigue, and relentless pain? Did they see the extreme loneliness of a diagnosis that carries the im-

port of a death sentence?

Or did they see a fascinating opportunity, in the face of death, to make life changing decisions, health enhancing dietary and lifestyle changes, psychological, emotional, and spiritual breakthroughs in relationships and in other areas that had heretofore stymied their own growth and development?

What face did they choose to put on cancer? Did they even know they had a choice? Does it even make a true difference?

This is the inner face of cancer, highly subjective and personal, that each cancer patient must confront...and stare down, in order to survive. Do not be afraid to look, with determination and the smile of inner confidence. Eventually, you can learn to love that cancer to death. [H]

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perimentally. Not only does this extract show toxicity against tumor cells in a dose dependent manner, but it also inhibits angiogenesis, the process whereby tumors induce new capillaries to grow toward them. Since angiogenesis provides tumors with the necessary blood supply for growth and metastasis, scientists have been looking for ways to inhibit it.

Dr. Meng's new plant extract has recently been tested against three mouse tumor models at the Beijing Tumor Institute. In these models, an agent that inhibits tumor growth by thirty percent is considered promising. Dr. Meng's plant extract inhibited tumor growth by fifty to seventy percent!

The *RECNA*C project has devoted considerable effort investigating the potential of high dose ascorbate therapy, and Dr. Joseph Casciari provided an update of *RECNA*C's progress in this area. Dr. Casciari tested ascorbate efficacy using colon cancer cells grown in three dimensions inside hollow fibers, and found that ascorbate induced a process called "apoptosis" in these tumor cells. Apoptosis is a form of pro-

grammed cell suicide that is critical for regulating normal tissue growth, but is thought to be defective in tumor cells.

*RECNA*C scientists also measured the ascorbate levels that are achieved during typical high dose infusions. Preliminary data indicate that, relative to healthy people, cancer patients and flu sufferers attain lower plasma ascorbate levels for a given dose. Perhaps the body's demand for ascorbate increases with illness. Blood ascorbate levels during 60 gram infusions were high enough to kill prostate cancer cells in Petri dishes, but not high enough to kill colon cancer cells grown inside hollow fibers. *RECNA*C scientists are testing combination therapies to increase ascorbate sensitivity. One novel approach has been shown to decrease the ascorbate dose required for tumor cell killing by a factor of four.

Dr. Nina Mikirova described ongoing experiments to determine the effects of electric and magnetic fields (EMF) on cancer cells. Low frequency EMF is reported to affect several aspects of cellular physiology, including

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Continued from page 2

DNA synthesis, immune cell response, and membrane signaling. However, reports from different laboratories vary in precisely what these effects are. Dr. Mikirova has developed an experimental system to treat cells with EMF fields in excess of 100 Gauss. Experiments thus far suggest that EMF can enhance the toxic effects of ascorbate against tumor cells. Dr. Mikirova is complementing these experiments with mathematical modeling of EMF effects on charged particles.

Finally, Paul Taylor described a new instrument acquired by *RECNA*C, the flow cytometer. A flow cytometer is a versatile particle counter that analyzes cells one at a time by hitting them with a laser. The flow cytometer can detect fluorescent markers that stain cells with certain properties. This allows, among other things, the detection of cells undergoing cell division or apoptosis. Populations of white blood cells can also be analyzed to determine the fraction of various specific cell types. The flow cytometer is a major weapon in the *RECNA*C arsenal.

The *RECNA*C Project is scheduled to continue until December 31, 1999. [H]

Interesting statistics

- Approximately 40 percent of internet use is by people looking for health or medical information. *Source: New Physician, October, 1997*
- Only 24 percent of Americans exercise regularly. An estimated 52 percent exercise occasionally. *Source: The Surgeon General's report on Physical Activity and Health, Atlanta: Centers for Disease Control and Prevention, 1996*
- There are 107,000 people hospitalized each year for stomach bleeding caused by nonsteroidal anti-inflammatory drugs. Of these, 12 to 15 die of stomach bleeding. *Source: Gurkirpal Singh, Stanford University School of Medicine, Palo Alto, CA* [H]

HEALTH HUNTERS AT HOME

Walking

The other day the 1998 issue of the New England Hiking Holidays brochure came in the mail. It lists several guided hiking trips one can take in the United States as well as in Great Britain, Ireland, France, Switzerland, and Austria.

Since I sent for my initial copy several years ago, it arrives every year reminding me that spring is coming and the outdoor hiking season is at hand. This got me thinking about walking.

Winter is a tough time to walk in Kansas. It is cold, rainy, snowy, or windy—or a combination of all the above. One can plan on windy.

Throughout the winter, my co-worker Dean and I walk a mile almost every morning at The Center. We do this for a break in the day. As you know, the stereotypical American break is often a cup of coffee and a donut, or maybe a candy bar with the coffee. The nice thing about the walk break is that it is lower in calories and cheaper than these alternatives (the cheaper always appeals to me.)

Usually when Dean calls to see if I am free to walk, I am ready in spite of the weather. On those occasions that I may think the weather is too bad to walk, his phone call will get me going. When we get back, I am refreshed and ready to continue my work with a clearer head and renewed enthusiasm.

Another walker reminds me almost daily of one of the best byproducts of walking. I live in a particularly pleasant area for walking. When we moved a little over two years ago, there was a rather tall, pleasant woman who lived around the corner and down the block from us. She was, though, a bit on the pudgy side.

A little over a year ago, she started walking. She, like many people in the neighborhood, walks daily no matter what the weather. As her pace picked up, her face became leaner and her smile grew bigger. Now, when she walks through the neighborhood with her brisk pace, arms swinging, she is much leaner, walks more erect, and obviously enjoys her daily walk and all she gets from it. Walking is a wonderful way to slowly and successfully lose weight.

Another nice thing about walking is that you don't have to invest in a lot of equipment or join an expensive health club. You just need to step out the door.

My neighbor started her walking in what she wore to work in the yard—baggy jeans, a loose sweatshirt, and inexpensive tennis shoes. As her pace quickened over time, her wardrobe has evolved to match the priority she now places on walking. But, she started with what was at hand.

Dr. Riordan thinks one should walk in as flimsy a shoe as you can. Barefoot is even better. We have a barefoot trail around the pond at The Center. This way, the small muscles in the foot have a chance to be exercised. He feels that people wearing walking shoes designed to support the foot don't exercise the small muscles in the foot, allowing these muscles to diminish in strength.

Again, my neighbor would tend to agree since she started with the shoes she was wearing rather than rushing out and purchasing the "perfect shoe."

I have a large stack of things on walking that I wanted to share with you, but they will have to wait for another time. For now, I wanted to share a little more about the hiking tours.

New England Hiking Holidays offers many different hiking adventures, from as short as 2 days to as long as full 8-day trips. The meals sound wonderful and you stay in delightful bed-and breakfast inns along the way.

One of the nicest things about the tours is the guides. There are always two—one for the brisk walkers at the front of the pack and one for the more leisurely walkers who want to absorb the local scenery.

If you would like more information or a colorful brochure that lists all their tours for the upcoming hiking season, call 1-800-869-0949 and they will be glad to send you one.

My total reward for giving you this information is (a) another reminder that spring does follow winter and (b) a lot of pleasant daydreams about hiking in wonderful environments. [H]

—Richard Lewis

INFORMATION WORTH KNOWING

The best medicine does not merely combat germs or suppress symptoms, but rather works hand-in-hand with the body's natural healing system. Our bodies have built-in systems to self-regenerate so that we can spontaneously heal. Dr. Andrew Weil has written in a skilled and articulate manner describing our "innate, intrinsic nature of the healing process." Our questions this month are taken from his book, *Spontaneous Healing*.

1 During Dr. Weil's years of searching for a way to practice medicine in a healing way, he discovered _____.

- a. the body wants to be healthy
- b. healing is a natural power
- c. the body is a whole and all the parts are connected
- d. all the above

2 Teachings learned in medical school influence the way a doctor treats patients. _____ can lead to undue pessimism on the part of the medical community.

- a. A focus on disease rather than on healing
- b. Limitations of a conceptual model for healing
- c. The deficiencies of medical research regarding healing
- d. all the above

3 Dr. Weil considers the placebo response (a belief that medicine will work and the patient will get better even with an inert substance) as a nuisance.

- a. True
- b. False

4 DNA is the macromolecule that defines life. In a sense, _____ are the "hands" that carry out DNA instructions.

- a. zygotes
- b. enzymes
- c. daydreams
- d. all the above

5 Healing is an inherent part of each of us. DNA has all the necessary information to manufacture enzymes to repair itself.

- a. True
- b. False

6 Although *H. pylori* can play a part in a person developing ulcers, not all people who have the bacterium develop ulcers and not all people who have ulcers have the *H. pylori* bacterium. The confounding part seems to be _____.

- a. variations in our resistance to the bacterium
- b. what day of the year it visits us
- c. whether the bacterium is male or female
- d. all the above

7 Although we may not be able to control all the things that lead to sickness or health, one of the areas over which we can have some control is the food we eat. We can _____ we consume.

- a. reduce the amount of "empty" calories
- b. reduce the amount of wrong fats
- c. increase the amount of omega-3 fatty acids
- d. all the above

• FOR ANSWERS, SEE PAGE 7 •

Case of the month

A 50-year-old male first came to The Center in the winter of 1996. The month before coming, he had surgery to remove a cancerous bladder tumor.

Before this, he was an energetic man who worked out regularly, ate well (he thought), and generally took very good care of himself. His only other brush with the medical world came from knee injuries during his college days.

As a result of the laboratory work which he did during his initial evaluation, he began several therapies. For instance, the lab showed he had a parasite, *blastocystis hominis*, and we began treating this with Vermox, followed by an herbal combination. This got rid of the parasite.

He also started taking flax oil capsules to correct a misbalance in his fatty acid profile and Emergen C to improve his vitamin C level and increase his potassium level, shown to be low in his potassium/sodium ratio. Other nutrients were added when appropriate as therapy began.

In addition, he began intravenous vitamin C two times a week. This was started at 15 grams of vitamin C per time and worked up to the level that further laboratory results showed to be best for him.

Today, he continues as an active business executive and still works out regularly. He has improved his diet to the point where his recent potassium/sodium ratio was in the excellent range. This ratio may be used as a way to see how much whole foods one is eating as opposed to processed foods. Whole foods are naturally high in potassium, as well as other nutrients and phytochemicals to nourish the body to work better with cancer, and low in sodium to help keep the potassium/sodium ratio high in the blood.

At his last visit, he told the doctor that he feels great. He has no problems with his urine. He is drinking a lot of water. He is glad to see his lab work improving. His bowel function is good with bowel movements twice a day. He sleeps better than he has in a long time. He is eating a lot more fruits and vegetables with buffalo as his usual meat source.

Progress is impossible without change, and those who cannot change their minds cannot change anything.

—George Bernard Shaw

Cancer—why?

A lot reflects on diet, lifestyle, or in picking the right parents.

Why is cancer so prevalent in today's society? Why is a much larger percentage of people struck with cancer today than 50 years ago? Is it our lifestyle? Is it that our lifespan is longer? Or is it a combination of all?

My belief is that it is definitely a combination of everything. So the question is, how do we combat this? Perhaps we need to change our lifestyle. Try a nutritional diet, including vitamins and minerals. Eat more whole foods, try a regular exercise program, avoid smoking, lower our stress levels, and perhaps find a happy balance in our lives. Above all we need to have a positive attitude toward life and respect our fellow mankind.

I further believe the use of pesticides in our fields and preservatives in our processed food supplies has increased 100% since my birth in 1916.

One more positive thing we can all do is to write to our congressmen to further encourage them to do more to improve our environment and water supply.

We need to be concerned for future generations. Our attitudes today can help them have a better tomorrow.

—Nelda Reed

Herbal History

Nettle

Nettle, stinging nettle, great stinging nettle. It goes by many names in Europe and the United States. The botanical name is *Urticaceae*.

Nettle grows about two to four feet tall in waste spaces, by woodsides, in hedges, and in gardens. Its small, green flowers appear starting in June and continue through September. It may be recognized by its dull green stems armed with minute hairs or prickles which transmit a stinging fluid when pressed—thus its name. It multiplies by sending out branching roots with fresh shoots and many fibers.

Today, it is commonly used by herbalists for its allergy controlling characteristics. Historically, it has had many other uses such as an astringent, a tonic, and a diuretic.

The leaves and roots are generally used for medicinal purposes since, the

writers of the last century believed, they "yield their virtues to water." Young shoots have been boiled and eaten as a remedy for scurvy.

The seeds may also be prepared in strong tincture with full strength alcohol, "the dose of which, for goiter, would be from a fraction of a drop to 10 drops. Dr. J. D. McCann (*Ec. Med. Gleaner*, 1893, p. 62) praised this agent as a remedy for eczematous affections and relates a case of stubborn eczema of the face, neck, and ears that readily and completely cured by the following local application [directions for the mixture followed]." Warts were even removed by stinging nettle, according to another author in the 1800's.

Stinging nettle had non-medical uses as well. A fabric, known as nettle cloth, was woven from the long fibers of the plant.

Food of the Month

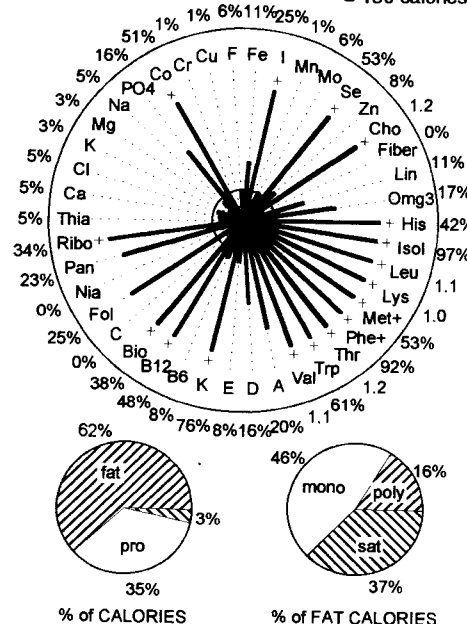
by Donald R. Davis, Ph.D.



NutriCircle

2 large
= 150 calories

EGGS are regaining respect as more authorities realize that they have little effect on blood cholesterol or heart disease. For those who enjoy eggs, they are versatile, inexpensive, and nutritious. Of the 42 nutrients shown here, 30 are adequately supplied compared with calories, especially amino acids, vitamins, and choline. Omega-3 fatty acids also stand out, even in these eggs from corn-fed hens. But eggs from wild birds and hens that eat abundant greens, insects, and other sources of this beneficial fat contain 10 to 20 times more than shown here—making them similar to fish, which strongly reduces the risk of heart disease.



The length of each bar shows the amount of one nutrient. If a bar extends out to the inner circle, the food has enough of that nutrient to match the calories it contains. The numbers show nutrient amounts in RDAs per serving shown. The pie charts show the sources of calories (left) and the types of fat (right).

Should cancer patients exercise?

Yes, according to the research of Fernando Dimeo, a sports medicine doctor at Berlin University's medical center.

Prior to his research, the common belief was that cancer patients undergoing chemotherapy were too fragile to stress their bodies with exercise.

Dimeo had 33 patients who were on high dose chemotherapy exercise 30 minutes a day on a specially designed bicycle while still in their bed. He found that patients who did not exercise showed a 27 percent drop in their physical fitness when compared to the exercisers. He also found that the exercising patients had milder pain and required less pain medicine.

Mental Medicine

by Marilyn Landreth, M.A.

Olympic dreams

The winter Olympics are over for another four years. Watching all the excitement, courage, and tradition of the Olympics, I thought if we trained for life like athletes train for the Olympics, would we be better off? Most of the competitors are in prime condition. They work to prepare for the competition both mentally and physically.

Skiers competing from a country where it does not snow and Luge competitors from a country where it never freezes are all part of the Olympic dream. These are athletes who are striving to attain their goal of getting to the Olympics and hopefully getting a gold medal.

No matter how rigorously they train, there are several factors they cannot control. Getting sick on the day of the event can be devastating as can competing with an injury. Problems with

the conditions such as weather can all play a part in determining who wins.

How athletes deal with the disappointment of losing can be reflected in the way we all handle disappointment in real life. Some react with bitter disappointment and some with confidence that they did the best they could do. Few have had the ability to smile a real smile when they made a mistake.

One such person was Janet Lynn in the 1972 Winter Olympics in Japan. She was a favorite to win the gold medal in skating until she fell doing a jump. She picked herself up, smiled a real smile and finished her number with joy. Janet is still a national hero in Japan even after 26 years. She said she was always an optimistic person. Few Japanese remember who won the gold, but they do remember Janet Lynn. FH

CENTER UPDATE

Heart disease and B vitamins

By now, you have heard that excess homocysteine in the blood can cause heart disease. And, the best way to reduce homocysteine in the blood is to take adequate vitamins B6, B12, and folate (also called folic acid).

Research into the relationship between homocysteine and atherosclerosis (artery blockage) was started back in the 1960's by Kilmer McCully, M.D. at Harvard University. He published his first paper describing this subject in a 1969 issue of the *American Journal of Pathology*.

This research, that could have possibly saved many lives over the ensuing years, earned him the scorn of his colleagues and eventual dismissal from his Harvard post.

Over the years, Dr. McCully began to win converts to his position that there may be a cause for atherosclerosis other than cholesterol and that vitamins may be the solution. He continued to publish his research in peer reviewed journals and, in 1997, published a book on homocysteine and atherosclerosis.

Dr. McCully's final vindication came with the February 4 issue of *The Journal of the American Medical Association*. Eric Rimm, Sc.D. and colleagues at the Harvard School of Public Health published a paper about folate, vitamin B6, and homocysteine. Dr. McCully wrote the accompanying editorial.

"The results of the study of Rimm, et al., and previous studies strongly support the validity of the homocysteine theory of atherosclerosis. An important finding of the current study is that daily intakes of 400 [micrograms] of folate and 3 mg of B6 are required to minimize cardiovascular [illness and death]," McCully wrote.

Rimm and his colleagues observed 80,082 women for 14 years looking at the effects vitamin B6 and folate have on heart disease. Their conclusion? "The results suggest that intake of folate and vitamin B6 above the current recommended dietary allowance may be important to primary prevention of [coronary heart disease] among women." Men should take note, too. FH

Editor's note: Recent coverage of B vitamins and homocysteine has been so great. So here is a sampling.

Vitamins slow atherosclerosis

High homocysteine, an amino acid, circulating in the blood is an independent risk for vascular disease, wrote John Peterson and David Spence with the Stroke Prevention and Atherosclerosis Research Centre in London, Ontario, Canada. The letter appeared in a recent issue of *The Lancet*.

Because folic acid and pyridoxine (B6) are cofactors with the two principal enzymes in the metabolism of homocysteine, "vitamin treatment reduces homocysteine," in the blood vessels, the researchers concluded. Either folic acid or vitamin B6 will return homocysteine to normal in half the cases, and the combination in 95%, with improvement in blood vessel wall function.

Vitamins help stroke survivors

Vitamin B6, B12, and folic acid reduced two chemicals in the blood of stroke survivors, Dr. Richard Macko with the University of Maryland told those attending a recent stroke conference of the American Heart Association.

Macko said homocysteine tends to damage blood vessels which can cause strokes and heart attacks. The other chemical, thrombo-modulin, is an indication that damage has occurred to the vessels.

Coffee consumption, smoking, and low folate lead to high homocysteine

"In the present study, we showed that low folate intake was also associated with an increased proportion of subjects with high homocysteine, and thus had an effect similar to that of smoking," wrote Ottar Nygard with the University of Bergen, Norway in *The American Journal of Clinical Nutrition*.

In a previous study, Nygard found smoking and coffee consumption contributed to high homocysteine. FH

Answers from page 4

- 1 d. When the body is in complete balance it runs better and attempts to get back to that balance whenever it is out of balance.
- 2 d. Focusing on healing rather than on disease, having a conceptual model for how the body heals, and research focusing on healing can all have an influence that is positive on the healing process.
- 3 b. Weil regards the placebo response as an example of how the mind can elicit healing.
- 4 b. "A great deal of the genetic code specifies the manufacture of enzyme molecules, which, in turn, oversee the chemical reactions that develop the genetic code into biological reality."
- 5 a. The healing system is always working. It can recognize damage to our system, remove it, and replace it with a normal structure.
- 6 a. Variations in the host's susceptibility determine whether the microorganism is capable of causing disease or if it lives in harmony with the host.
- 7 d. Lifestyle, including the foods we eat, significantly influences our chances of contracting diseases and affects our ability to heal. H

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by *Andrew Weil, M.D.*

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with *Donald Davis, Ph.D.*
 & *Hugh Riordan, M.D.*

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with *Marilyn Landreth, M.A.*

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30 Yoga	31			

APRIL

LUNCH AND LECTURE CLASSES

Call for Spring Classes brochure

Antioxidants disappear in smoke

French men who smoke have higher oxidative stress on their body systems and lower antioxidant reserves to battle the oxidative stress, reports Karine Marangon and her colleagues in *The American Journal of Clinical Nutrition*.

After collecting food diaries, measuring vitamins A and C along with carotenoids as well as markers for oxidative stress in the blood plasma in 459 French men between the ages of 23 and 57, the researchers found that smokers eat fewer fruits and vegetables than nonsmokers.

In addition, "smoking had an adverse effect on antioxidant status; vitamin intakes were reduced in smokers and plasma antioxidant indexes were altered independently of dietary intakes," Marangon wrote.

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