RECNAC cancer research update

Joseph Casciani, Ph.D.

The RECNAC project marked its 10th anniversary in February with a Lunch and Lecture presentation at The Center for the Improvement of Human Functioning International. The RECNAC project got its name from Zelma, a former public health nurse and breast cancer patient who survived fourteen years since using The Center’s approach after a lumpectomy. RECNAC is cancers spelled backwards, and the project’s stated goal has been to reverse the increased incidence of cancer worldwide by learning why cancer develops and how it can be prevented.

Twenty metastatic renal cancer patients will be treated free of charge for a one year period.

safely treated and prevented. While the goal has not yet been reached, RECNAC scientists have made progress in developing novel therapeutic approaches to fight cancer. The 10th anniversary presentation highlighted protocols developed from RECNAC research that are now nearing or entering the clinical stage.

Dr. Hugh D. Riordan, RECNAC Project Director, began the lecture by sharing a case study of a woman with metastatic renal (kidney) cancer, a form of cancer not yielding to conventional therapies. After undergoing treatment with a combination of high dose ascorbate and other nutrients, as per a protocol based on RECNAC research, this patient is now cancer free. Her success, and that of others, has led the RECNAC project to announce the commencement of a phase I clinical trial using this protocol. Twenty metastatic renal cancer patients will be treated free of charge for a one-year period. The Center is currently seeking patients for this trial.

What makes the RECNAC project unique, according to Project Manager Neil Riordan, is the mandate to achieve its goals within an eleven year time frame. This has encouraged the project’s twelve scientists to focus on therapeutic strategies that can be taken to the clinic in a timely fashion. Riordan mentioned three areas of RECNAC research that are beginning or nearing the clinical trial stage: the use of plant and bacterial extracts that inhibit tumor growth and angiogenesis, the use of high dose vitamin C in combination with lipoic acid and other antioxidants, and immune therapies based on dendritic cells and cytokines produced by white blood cells.

In an ongoing effort to isolate new anti-cancer agents from natural sources, the RECNAC project has developed two extracts that are candidates for clinical trials. Experiments were first conducted to test the ability of these extracts to kill tumor cells, stimulate immune cells, and prevent angiogenesis, the process whereby tumors induce new capillaries to grow toward them. After these in vitro screening studies, the most promising extracts were tested in animal tumor models at the Beijing Tumor Institute. Dr. Xiao Long Meng shared recent results of animal studies with a novel bacterial cell wall extract. This extract inhibited tumor growth in vivo by eighty percent at doses non-toxic to host mice. To illustrate the safety of this extract, Dr.

March of Dimes promoting folic acid to curb birth defects

Hugh Riordan, M.D., first said many years ago, “Giving every female of childbearing age in Sedgwick County a folic acid supplement during the childbearing time to reduce neural tube defects would be cheaper than caring for one child with Spina Bifida.”

The secret is you have to be taking folic acid, a B vitamin, before you are pregnant. Starting after you are pregnant, the damage has already been done.

Research showing the link between low folic acid and neural tube defects has been available for years.

One half of all pregnancies in the United States are unplanned, according to expert estimations. This makes getting 400 micrograms of folic acid from either food or supplements more important for females of childbearing age.

Now, the March of Dimes has climbed on the folic acid bandwagon and plans to spend $10 million over the next three years promoting its benefits to women and their children.

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The word

"Sticks and stones can break my bones, but words will never hurt me."

Let's try an experiment.

Go to a mirror. Look yourself square in the eye, and repeat out loud: "you have cancer!" Say it with conviction. Say it with a tone of resignation, kind of like a death sentence being read at the end of a trial... your trial.

Try it! And don’t fake it. Play it for real... and see how you feel.

Well... how did it feel? Sobering? Scary? Depressing? Chilling?

What if I now told you it was true. You have cancer.

What? Preposterous! I have no pain. I have no lumps or bleeding. You don't know what you are talking about! I don’t like this game!

Wait a minute. It's only a word. Why get upset? A word can't hurt you, can it?

But you do have cancer. Science tells us that cancer comes and goes all the time in our bodies. We have an immune surveillance system that watches for emerging cancer cells. It is supposed to get rid of them before they can get established. So you better take good care of your immune system! Remember, it is listening to what you are thinking and feeling. It is sensitive to fear, to depression, to resignation.

Go back to the mirror, now, and this time, tell yourself it is only a word... but a powerful word in our culture. One that evokes deep feelings and scary images... thoughts, feelings, and images that can affect the functioning of your immune system.

Tell yourself that you are bigger than this word. You are the power giver... so you can also take it away. Don’t give your power to a word! Give it to yourself. Give it to The Higher Power within you. Give it to the wonderful ability of the body to heal. Give it to your own resourcefulness to find a way out of any health predicament, using the best of all known therapies.

Cancer doesn’t really deserve the negative homage we as a culture give it. Within yourself, right now, transfer that power to I can heal!!

Meng compared it to cyclophosphamide, a commonly used chemotherapeutic agent. The dose of the bacterial extract that was lethal to half of the treated animals was roughly twenty-five times higher than that of cyclophosphamide. Moreover, tumor growth inhibition was achieved at concentrations fifty times lower than the lethal dose. Because of this combination of efficacy and safety, this bacterial extract is being considered along with the plant extract Dr. Meng described at the 1998 RECNAC update for Phase I clinical trials in the near future.

Dr. Riordan has been interested in the use of intravenous vitamin C as an anti-cancer agent for 20 years. Vitamin C is thought to improve immune system function, strengthen the extracellular matrix, and improve patient well-being. In addition, it has been shown to be preferentially toxic to tumor cells at high doses. The main question for RECNAC scientists has been whether the doses required for tumor toxicity can be safely reached during IV administration. Dr. Casciari presented a detailed analysis of this issue. Vitamin C concentrations required to kill tumor cells grown in three dimensions were compared to pharmacokinetic data on ascorbate (vitamin C) levels attained during infusion. The analysis revealed that vitamin C at safe and achievable doses was toxic to tumor cells when combined with lipoic acid, an antioxidant that increases vitamin C efficacy. Dr. Casciari presented three case studies on cancer patients treated with a combination of vitamin C and lipoic acid. Some benefit was obtained in all three cases, including stabilization of platelet counts in one patient and a nine-fold decrease in tumor marker levels in another. One of the patients has continued on page 3.
been cancer free for the past eight months. The Center is thus planning to use the combination of vitamin C and lipolic acid together with immune stimulators in a Phase 1 clinical trial with metastatic renal cancer patients.

RECNAC scientists also are working to improve the immune system's response against cancer. To highlight the importance of immune response, Neil Riordan cited a study indicating that breast cancer patients who demonstrated some immune reaction against their tumor cells had a much better prognosis than those who did not. Dr. Casciari then provided an update of RECNAC immunotherapy system research. The goal of this research is to stimulate the cell mediated arm of the immune system. Cell mediated immunity involves the recognition and killing of altered host cells, including tumor cells, by T-lymphocytes. One method for stimulating cell mediated immunity is to administer cytokines or other biological response modifiers, including some of the natural product extracts described above, to patients. Cytokines are chemical substances that trigger and regulate immune response. RECNAC is in the process of developing protocols for using a patient's own blood cells to produce cytokines that stimulate cell mediated immunity.

Another approach toward immunotherapy involves the ex vivo growth of dendritic cells. Dendritic cells are antigen presenting cells responsible for training T-lymphocytes to recognize tumor cells as targets. RECNAC scientists have succeeded in growing mature dendritic cells from patient blood samples, and have demonstrated that these dendritic cells can induce T-lymphocytes to mount an immune response against tumor cells in the laboratory. Immunotherapy research will be a major focus of the RECNAC project in the coming year. To this end, a small clinical research facility in San Jose, Costa Rica, has been established to more rapidly assess the clinical applicability of immunotherapy. Limited clinical trials began last year and will be expanded during 1999.

To receive a video tape of the informative RECNAC research presentation, see the order form on page 7.

HEALTH HUNTERS AT HOME

Y2K problems: it is more than computers

We have all heard news reports for the last couple of years about the impending crisis with computers shutting down as the year 2000 rolls around—the Y2K crisis.

The doomsayers believe we will be left in the dark with all infrastructure shut down and we will have anarchy throughout the land because all government agencies will be in disarray.

On the computer problem, we are making great strides. Various government agencies have reprogrammed their computers to correct the problem. Industry is even farther ahead. But there is another Y2K problem on the horizon.

It is us. We seem to be getting our computers healthy by the year 2000, but we are still lagging behind. At least those other people are lagging. You and I are doing all right.

In the early 90's, the U.S. government started a program to have every American running—or at least briskly walking—toward the healthful year 2000. They called it the Healthy People 2000 plan.

After balancing successes and failures, those responsible for the program slipped it to 2010 instead of 2000.

There have been successes. The program goal of having 80% of those companies with over 750 employees make exercise facilities available to employees was exceeded. The number has reached 83%. But here in Wichita, one company, with a beautiful facility for their employees to use, reports that only 22 to 25% of their employees use the gym. This is probably common across the country.

The goal for Healthy People 2000 was to get people exercising 30 minutes a day, five days a week. Now, the problem seems to be getting people to use the facilities.

Harold Kohl, director of research at Baylor Sports Medicine Institute, reports that various research shows 35 to 40 percent of Americans don't exercise at all. That is a big bag of couch potatoes.

The journal, Science, in 1998 found that 54 percent of Americans are more heavy than healthy. It is not only a big bag, but a heavy one, too.

"OK," you say, "I walk regularly so I am holding up my end of the bargain." I felt that way, too. Dean and I walk at least two miles a day during the week. I walk the dog and go walking with my wife sometimes.

But, this Y2K fitness problem got me thinking. Am I really doing enough? When was the last time I worked consciously to get a couch potato to go walking?

WE NEED TO EVANGELIZE!

We believers need to invite others to enjoy what we have come to enjoy on a daily basis. Exercise is a priority in our lives. We set aside time daily for a walk rather than see if we can squeeze it in if any time is left in our busy day.

This evangelizing requires a little extra time on our parts. When you invite a friend to walk with you on a regular basis, they may say, "I have watched you walk and I will never be able to go that fast or that far."

You answer can quickly be, "That is all right. You set the speed at which you can walk comfortably and I will follow your lead. The reason for the walk is to enjoy the out-of-doors and the conversation, not the speed. And as far as distance goes, the time we spend walking is more important than the distance."

Let me give you an example of how it works. We have a woman here at The Center whose doctor had recommended very strongly that she lose some weight—well, quite a bit of weight.

Her doctor had used the program she was suggesting to our staffer and was looking pretty good. Our staffer decided to give it a try.

This program combined diet and exercise, with the emphasis on exercise. Now, almost a year later, she has lost 134 pounds and she has become a lifelong exerciser—walking an hour every day. And the staffer looks good, too.

She said recently, "From this program, I realized just how valuable exercise is to me, not only to keep the weight off, but for my total well-being." That is what we need to offer our friends.

—Richard Lewis
**INFORMATION WORTH KNOWING**

*Why People Don't Heal and How They Can* by Caroline Myss, Ph.D., explores why some people fail to heal. It seems that many people may be as afraid of healing as they are of illness. When they understand how fear and other negative emotions affect healing, they may more easily identify how they are interfering, consciously or unconsciously, with their own healing process. Illness can be a catalyst for expanding personal consciousness as well as for understanding the greater meaning and mystery of life. Although illness can serve a deeper meaning, you do not have to become sick to understand your spirit and heal your life.

1. Prior to 1972, the general view was that anyone who sought the help of a psychologist or a psychiatrist was _____________.
   a. before their time
   b. mentally ill
   c. enlightened
   d. all the above

2. The therapeutic age gave rise to a new dimension of thought. It opened up the inner world behind our eyes and gave birth to the concept “we create our own ________.”
   a. reality
   b. Karma
   c. being
   d. none of the above

3. Each of us has hundreds of circuits of energy connecting to us, energy that different cultures have named in various ways including the Indian prana, which the Chinese call ch’i, and Christians refer to as grace or the Holy Spirit.
   a. True
   b. False

4. We each have a daily supply of energy that one could think of as our energy bank account. If we invest it wisely, then we have the energy we need. Positive investments will result in positive returns. Negative investments will create debt. You only have two ways to obtain the energy you need. One source is the energy of ________.
   a. sun
   b. your diet
   c. other people
   d. all the above

5. The other source of additional energetic cash is the energetic resources held in your own ________.
   a. cell tissue
   b. blood stream
   c. hormones
   d. all the above

6. Holding on to past events in our history can use up our energy. This is true of only the negative events not the positive events.
   a. True
   b. False

7. Myths about healing serve to weaken the body rather than heal it. They sometimes seem to be stronger than our optimistic beliefs about the possibility of healing. That is because hopeful, optimistic beliefs are about the ________.
   a. future
   b. past
   c. reality
   d. all the above

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**Case of the month**

When this 47-year-old woman came to The Center in February, 1997, she had a myriad of complaints, including chronic fatigue, aching shoulder muscles, insomnia, memory loss, teeth and jaw aches, nervousness, ringing in her ears, generalized pain, and cold feet. The insomnia was a major problem. She just couldn't get any sleep.

She was no longer able to clean her house, help with the family farm, or participate in community organizations and her church, all of which she had done before.

From the laboratory work done during her initial appointment, she found that she had several food sensitivities, blastocystis hominis (a parasite), generally low amino acids, and low vitamin C in both her blood plasma and her urine. Other nutrients that tended to be low included vitamins A and B2 and the trace minerals chromium and selenium. Her fatty acids were out of balance and her thyroid numbers tended towards the low side.

She began addressing these problems by starting to correct the nutritional problems, getting the thyroid working better, and getting rid of the parasite. In addition, she read several books to begin to gain insight into her problems and solutions.

Further testing was done as she progressed. Her hormone levels were checked and her estradiol level was below detectable levels. This, along with the nutrient problems initially discovered, could cause her poor sleep, fatigue, and aching problems.

She began a two pronged approach to hormone replacement—natural hormone supplementation and reading the book by Elizabeth Vliet, M.D., *Screaming to Be Heard*.

As of her last appointment, Ron Hunninghake, M.D., said “She has come a long way in the last two years.”

She said, “It has been a long two years. But now I feel better and look better. People even stop me on the street and tell me how much better I look. I’ve gained nine pounds, which I needed. I am back working in my house, on the farm, in the community, and my church. I am more confident and, most important, I sleep better.”

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**FREE Red Cross Adult CPR training will be offered here at The Center on Saturday, March 20 at 9:00 a.m. Pre-registration is required. To enroll, call 268-0844 or visit www.redcross.org/ks/wichita.**
I don’t give cancer a chance

When I started with Dr. Riordan in January, 1980, along with being what he called a “near basket case,” I had one more concern—CANCER. Cancer ran rampant in my maternal family. I asked Dr. Hugh if he could assure me that I would not get cancer. He said no way could he guarantee such a verdict, but he had some suggestions that could prove beneficial.

Some suggestions he made were a series of B vitamins, antioxidants (A, C, & E), green tea to replace coffee, and carrot juice, along with other changes in my diet and establishing a regular exercise program. I made immediate changes, like going from 6 or more cups of coffee daily to an occasional cup when eating out. I stopped all dairy products, as well as margarine. I use only olive oil for seasoning as needed.

One of Dr. Hugh’s suggestions was that I drink more water (at least two quarts per day). For better water, we purchased a filter to use on our faucets. This has proven quite satisfactory with frequent changes of filters.

I use an ionizer in my bedroom so that I can breathe pure air as I sleep. I established a regular exercise program and use an “exercise pole” on a daily basis.

In 1980, I bought a copy of The Wonderful World Within You and have followed many suggestions therein. You can get a copy of it at The Center.

It has also helped that I had a loving mate and we were able to work our change in living habits much more easily together.

Now, 19 years later at age 82, I am among those “supposedly cancer free.” I can only say it takes dedication.

Following is a quote by Phillip Brooks that I refer to for help:

Miracle

“Do not pray for easy lives; pray to be stronger men. Do not pray for tasks equal to your powers; pray for powers equal to your tasks. Then the doing of your work shall be no miracle, but you shall be a MIRACLE. Every day you shall wonder at yourself, at the richness of life which has come to you by the grace of God.”

—Nelda Reed

Herbal History

Yarrow, Achillea millefolium

Yarrow has been used for centuries as a medicinal plant. In North America, at least 58 tribes used yarrow to treat coughing, throat irritation, and to stop bleeding.

For instance, the Cheyenne used the fresh or dried plant to brew a tea for colds and slight nausea as well as the three above. Because the tea stimulated sweating, they used it to break a fever and alleviate the symptoms of a cold.

The Cheyenne also used the above ground part of the plant to make a tea to treat respiratory diseases such as tuberculosis. This tea was also used to treat heart problems and chest pain. In addition, they would chew the leaves and rub the chewed leaves on their bodies to soothe unknown ailments.

The Blackfeet used a tea made from the yarrow plant as a diuretic. They believed that all sickness would pass with the urine.

The Lakota dried the entire plant, chewed it, and placed it on a wound to stimulate healing. A tea made from the leaves of the plant was used to treat coughing, whooping cough, and fainting. Other tribes used various parts of the plant for sore gums, earaches, stomachaches, and much more.

Yarrow found its way into folk medicine use as the settlers moved west. Constantine Rafinesque wrote in his 1830 Medical Flora or Manual of Medicinal Botany of the United States, “Yarrow common to Europe and America. Whole plant used. ... Used for hemorrhoids, dysentery, hemotysis, menstrual afflictions, wounds, hypochondria and cancer. The American plant is stronger than the European and has lately been exported for use.”

Source: Medicinal Wild Plants of the Prairie by Kelly Kindscher

Food of the Month

by Donald R. Davis, Ph.D.

PORK can have less fat than roasted chicken with skin, if it is lean like the loin roast or chops shown here. A 3-ounce serving contains 7 g of fat and 2.5 g of saturated fat, both less than in two pats of butter. But unlike butter, margarine, or fatty baked goods, pork also has many other nutrients. Relative to its calories, pork contains at least adequate amounts of nearly all B vitamins, potassium, magnesium, phosphate, selenium, zinc, cholesterol, and all essential amino acids. If you have been avoiding pork for its fat, consider substituting a lean cut of pork for roasted or fried chicken, butter, or other fat in your diet.

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).
Mental Medicine
by Marilyn Landreth, M.A.

Graying of baby boomers

With the graying of the baby boomers, you read more and more about how to stay young and healthy. Fred Astaire once said, “Old age is like everything else. To make a success of it, you’ve got to start young.” Looking at the baby boomer generation we can see that they certainly started young fighting the effects of aging with exercise, healthy diet, and changing risky lifestyles to healthier ones.

All that is good. It is important to take care of your body by feeding it a good diet and stretching it to keep it as supple as possible. Coming out of the Great Depression, baby boomers were the first ones in a long time to learn that they could reach for the stars and be successful in many things. They learned to deal with their stress (some of them), used their imagination to expand their mind, and go beyond the “box.”

It will be interesting to see how the boomers will change the whole aging scene. Can you imagine nursing homes with jogging trails, mind expansion rooms, massage rooms, and breakfasts of wheat germ and yogurt, just to name a few things that come to mind. Don’t laugh; already many homes are adding some modified versions of the above. The boomers have never done anything like other generations and I am sure they will add their own unique touch to growing older and better.

Research identifying people who continue to enjoy their life, no matter what their age or physical condition, has found that they were the ones who have always had an appreciation for life or learned to appreciate their life after a major problem. Maybe Fred Astaire was not completely correct. While some people need to start early to make a success of aging, maybe it is never too late to start appreciating our life.

This month’s mental medicine: “People spend so much time making the journey to happiness that they fail to realize it is the journey itself that is happiness.”

CENTER UPDATE

Pyramid eating redesigned for older adults

A few years ago, The Center painted the then new food pyramid on the west face of The Center’s pyramid.

The Center felt it would be a reminder showing how we can reduce the fats and sugars in our diet and increase fruits and vegetables to help prevent cancer, heart disease, and other degenerative diseases. After all, a 40-foot tall food pyramid is hard to ignore.

Recently, people from Tufts University began looking at the food pyramid as it applies to older adults. Should it, they asked, reduce the pyramid requirements to fit the needs of older eaters?

Here are the recommendations for people who want to eat according to the food guide pyramid, but just can’t force down that much food.

With the pyramid for older adults, “The differences really have to do with making sure within each category, you pick nutrient-dense foods,” said Alice Litchtenstein, a registered dietitian at Tufts.

Fruits and vegetables are among the foods highest in nutrient density. These should be primary choices rather than dropping down to breads and pastas on the bottom of the pyramid. Meat and dairy should be the next choice with breads and pastas following in a distant fourth.

The Tufts pyramid does go so far as to suggest dietary supplements such as calcium and vitamins D and B12. The recommended amount of calcium doubled and vitamin D tripled for older women, “We recommend elderly people ensure they get enough B12 either by eating fortified cereals or actually taking a supplement that contains B12,” said Robert Russell, a gastroenterologist at Tufts.

Cancer food fight

Tomatoes and potatoes gained headlines recently as cancer fighters—tomatoes for their phytochemicals and potatoes for their fiber.

“Tomatoes are rich in several phytochemicals believed to have anticancer characteristics,” said Dr. Edward Giovannucci, the head of the tomato project.

Lycopene, one of the phytochemical compounds in tomatoes that turn into carotenoids, has become the favorite of several other researchers besides Dr. Giovannucci. These compounds are a rich source of antioxidants.

“It is good to eat tomatoes as a part of a diet that is rich in other fruits and vegetables,” added Dr. Moshe Shike, director of the Cancer Prevention and Wellness Program at Memorial Sloan-Kettering Cancer Center in New York.

Potatoes, with their skins, and other vegetables have been shown to help prevent colon cancer because of their high fiber content. But a recent research study discounted the fiber idea as a cancer preventative.


After looking at 39 studies on cancer and fiber, he found overwhelming evidence supporting a high-fiber diet—not only for cancer prevention, but reducing the risk of heart disease, high cholesterol, and non-insulin-dependent diabetes as well.

Professor McVie prefers a variety of high-fiber vegetables to go along with the potatoes to keep cancer on the defensive.

Tobacco compound found in fetal fluids

As early as the seventh week of pregnancy, a tobacco metabolite accumulates in both the blood and the fluid surrounding a fetus in women who smoke as well as those who are exposed to smoke in the home or workplace, according to a study in the journal, Obstetrics and Gynecology.
Answers from page 4

1. George McGovern's running mate, Thomas Eagleton was removed from the democratic ticket because he had undergone psychotherapy.

2. The idea that we had ultimate personal, spiritual power took over the imagination and self-responsibility became a new power word.

3. This energy gives us the juice we need to feed our physical bodies, our minds, and our emotions.

4. You will look to others to boost your self-esteem. It usually does not work because it becomes a drain on their energy.

5. Keeping your physical body energized feeds your creativity, your relationships, and your optimism.

6. Not being able to let go of the fact that we are no longer twenty can be something we need to release.

7. Illness is a reality and the myths that support it are in the present time. Healing is intangible.

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SPECIAL DISCOUNTS

| Audio Tapes: Regular Price—$7.95; Health Hunter Price—$7.16 |
| Video Tapes: Regular Price—$19.95; Health Hunter Price—$17.95 |

WHY PEOPLE DON'T HEAL AND HOW THEY CAN by Caroline Myss, Ph.D.
Both practical and visionary, this book presents an account of the development of human consciousness and spirituality over the ages. Dr. Myss also examines how your "biography can become your biology." Softcover.
Retail Price: $14.00
Health Hunter: $12.60

MACROBIOTIC DIET PROS AND CONS with Donald R. Davis, Ph.D.
Macrobiotics is a religious philosophy with many beneficial teachings about foods and nutrition. It highlights whole foods, especially brown rice, vegetables, soy products, sea vegetables, and beans. However, it excludes or limits other whole foods, especially animal products. Appropriate changes in Macrobiotic teachings have been accepted by key leaders. If these are adopted, Macrobiotic nutrition teachings are worthy of consideration by all of us.

GINGER: For Better Gut Function with Ron Hunninghake, M.D.
Ginger is a common spice with uncommon health promoting properties. Its primary site of benefit is the gut, with reports of successful stomachache alleviation, nausea and diarrhea control, and reflux management. However, it possesses a wide array of other pharmacological properties: antioxidant effects, prostaglandin regulation, inhibition of platelet aggregation, lipid lowering effects, bile flow enhancement, cardiovascular benefits, and even antibiotic activities.

RECNAC 1999 CANCER RESEARCH UPDATE with RECNAC Staff
This presentation involved the entire RECNAC professional staff. Learn what we have discovered in our quest to develop effective cancer therapies that are not toxic to normal cells. Case studies are presented as well as the latest information derived from our research activities here, in China, and in Costa Rica. Audio cassette & video tape.

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# Nursing moms need extra folate too

"Lactation is very nutritionally demanding," noted Mary Frances Picciano, a professor of nutrition at Pennsylvania State University.

She added that breast-feeding is as demanding nutritionally as three pregnancies. Because of this, mothers need to be as conscious of the folate levels during nursing as they were before and during their pregnancy.

In the 42 breast-feeding women studies by Picciano and Amy Mackey, the researchers found that a daily supplement of folic acid was key in maintaining healthy levels of the vitamin.

They also found that mothers who supplemented their diet with folic acid passed more folate on into their milk, providing an ample supply for the child.

They reported their results in a recent issue of the *American Journal of Clinical Nutrition*.

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### Upcoming Events...

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### APRIL

1. Sounds for Healing
6. LUNCH & LECTURE CLASSES BEGIN