When Cancer Exists in the Mind | FROM THE DIRECTOR

ANNE COSCARELLI, PhD

“Getting diagnosed with cancer was a very scary experience. I wondered about what my treatments would be like and whether I could survive both the treatments and the cancer. But here I am, off treatments, no evidence of disease, as they say, and recovering. I am eating healthy foods, exercising and trying to figure out the new normal. But there are times, when that worry bee works its way into my brain and I start to wonder, am I really cancer free? Will this cancer stay away forever?” - anonymous patient

This quote from a patient represents a most common experience that individuals diagnosed with cancer face as they move from patient in treatment to a person with no detectable evidence of disease when their primary cancer treatments are behind them. There is such a strong hope and wish for life to return to normal, to be worry free and healthy. Many individuals embark on a plan of wellness that includes diet and lifestyle changes, psychological changes that can include reduction in stress, greater appreciation for life, stronger commitments to friends and family and a renewed spiritual growth—the seeds of post-traumatic growth that we discussed in a previous article. However, despite these efforts, there appears to be a pretty uniform struggle that many individuals face after being treated for cancer which is "fear of recurrence."

As many patients learn in the process of their cancer diagnosis, one of the unique traits of cancer is that it has this devious ability to send microscopic cells through the bloodstream and lymph system which can find harbors in other organs. For reasons not always fully understood, these tiny cells sometimes rest and do no damage, while others seem to begin to divide and replicate, sending signals to local blood vessels to send connections for nourishment. As this happens a new tumor, looking just like the first one, pops up in some other location threatening to do more damage. It is this sneaky possibility, and our lack of ability to know in advance whether these cells have traveled and found a comfortable place to reside and grow, or whether the body somehow isolates and removes them making them no longer a threat to the patient, that is so frightening. The problem is that it leaves this unknowable question for patients, “Does cancer still exist and will it come back to bother me?”

As a psychologist, I see the devious nature of this possibility as even more threatening because I consider whether cancer exists not just in the body, but in the mind. In fact, when the worry of cancer exists, cancer is present in the mind. So the treatment of cancer is not just treatment of the disease of the body, but the invasion of the mind, there are techniques that are useful to address “cancer of the mind” and these are the substance of my article. Cancer treatment and survivorship care needs to include education about how cancer can be harbored in the mind and what to do about it.

First we must understand cancer of the mind. When people are first diagnosed, cancer is very much in their mind. Cancer's implications and worry are in the forefront of everyday existence. Cancer treatments, scans, blood tests, visits to the doctor, and side effects of treatment keep cancer front and center. Patients often struggle to find a moment of peaceful mind where cancer is not fully present in wakeful consciousness. As biological treatments are initiated to eradicate the cancer from the body through surgery, chemotherapy, radiation therapy and other biological and targeted approaches the individual must look for treatments that help with managing the impact of cancer on the mind. Support groups, talking with friends and families, funny movies and other distracting techniques are often employed as ways to manage cancer of the mind. War terms are often used to describe the cancer experience such as fight, battle and destroy. For many, it is biological and psychological warfare. For others, less aggressive terms feel more comfortable, but no matter the terminology, the experience is one in which cancer resides in the forefront of daily existence. As the disease is brought under control, as treatments complete, there is a glimmer of hope that cancer can recede from the foreground and into the background. Biologically this often happens more quickly than psychologically, but over time it does begin to recede—for some more quickly than for others. However, there are times when cancer comes back into the foreground and these are usually at times of scans, doctor visits, anniversaries of diagnosis, when the media talks about cancer, or someone you know well or even at a distance hears the words, "It is cancer." When celebrities are diagnosed and speak out, when books and newspaper articles are published, cancer moves back to the forefront of the mind. During these times, the memories of the cancer experience are triggered and they bring the anxiety and worry that cancer may still exist or could come back. It is at these times that cancer exists fully in the mind.

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In a study of nurses who were survivors of cancer, one woman wrote so accurately of this experience, "Someone likened cancer to a pink elephant, and the pink elephant is supposedly right there in front of your face, you know... and then you get as better, the pink elephant maybe goes to another room. And then as you get a little better, you pink elephant goes down the street, you always there and you always know it's there. And, I think that, as you approach appointments, the pink elephant [from] down the street, you know, comes in the living room again." -Nurses Experiences as Cancer Survivors: Part 1 Personal, De Marco M, Picard C & Agresti, Journal Oncology Nursing Forum, 31 (4) 2004.

The quote underscores the experience of cancer moving from background to foreground and certainly implies a high intensity if not frequency. In studies that did many years ago with Dr. Patricia Ganz, a medical oncologist here at UCLA and now the director of the UCLA LivESTRONG Center for Excellence in Cancer Survivorship, we found that there was a high frequency of worry about cancer progressing and worry whether treatments worked for survivors of breast, colon, prostate and lung cancer. The ranges were between 46-80% with patients in higher risk categories having higher intensity worries. Some might wonder how this can happen, but it is clear to me that cancer is such a traumatizing experience that it leaves a residue of anxiety, worry and fear. The treatments are often difficult and toxic and patients have the capacity to remember their experiences in great detail. Traumatic experiences leave vulnerabilities and, unfortunately, they are triggered by these memories. Aches and pains, visits to the doctor, Internet web sites, conferences and the concerns of friends and family, leave patients vulnerable to activation of anxiety and worry. The answer is not to wipe out the triggers, but rather to develop a relationship to "cancer in the mind" that allows one to make peace with its existence when it returns to the forefront and to develop skills to maneuver it gently to the background. My almost three decades of experience working with people who were diagnosed with cancer has convinced me that eliminating worry is not the answer. The goal is to teach people to live with the worry when it arises, to help them understand the normality of this experience, and to employ strategies that help them cope with it so that they can optimize their psychological wellness. Cancer can live in the mind long after it leaves the body and many patients can and do it temporally move into the foreground through the rest of their lives.

Management Strategies for Worry about Recurrence
Each person must evolve a management plan for themselves that is individualized to address the specific triggers and worries that are most significant for them. I recommend that these plans have some specific components which are outlined below.

Plan for Social Support
A well evolved plan includes emotional support. Know who you can talk to and negotiate their help in advance of this problem with people who are supportive listeners who can hear your concerns and who help you to feel more relaxed when fear of recurrence arises. Make sure that you do not select someone that makes you feel more anxious. Here is a sample plan;

- I will talk to my best friend David because he tends to be calming and reassuring. [Engage David in advance so that he will serve as this resource for you]
- If David not available, I will talk to Shannon, because she listens well.
- I will not call my brother, Mike, because he freaks out and makes me anxious.

Plan for Seeking Medical Information
Since worry of recurrence often comes up when there are new aches and pains, a plan for managing these is essential. Often times these pains are part of normal life, but after a cancer diagnosis, it becomes more difficult to discern what is "normal." Have a conversation with your doctor in advance regarding how these worries will be handled by you and by your physician to establish a comfortable "window of wailing." The window is a time frame that feels appropriate to you and your physician regarding when you will go to the doctor to report symptoms, obtain information and seek reassurance. For some patients the window will be very short, a day or two, while for others it may be considerably longer. Engage your physician in this discussion because there could be medical reasons to suggest both a longer and/or shorter window to which you will want to be attuned. However, remember that there is a difference between medical issues and psychological ones. It is important to differentiate these with your physician. Perhaps you can negotiate an agreement that your doctor will help manage your worries by checking out symptoms in a shorter time frame until you get more comfortable knowing that the cancer has not returned. It is also important to determine in advance what other resources you will use to obtain medical information. I have strong concerns about the Internet because it is not personalized and can create more anxiety and persistence of cancer in the forefront of the mind. Try turning the computer off or making a rule about the frequency with which you surf the Internet on your particular diagnosis. Information is powerful, but it is anxiety activating. Here is a sample plan:

- I have discussed with my doctor how to handle worrisome symptoms.
- If a symptom such as a cough or pain persists for two weeks I will seek my doctor.
- I will not turn on the Internet to do research on this topic.

Plan for Using Self-Talk to Quiet Worries
Talking to your mind tends to be a powerful tool that can both increase anxiety and decrease it. Often times, people are not aware of what they actually say to themselves and do not realize that they are feeding worries, rather than quelling them. The automatic talk often goes something like this, "Oh my goodness, I have this pain in my shoulder, it hurts, it must be metastases to the bone. Oh, my goodness, the cancer is back. I can’t cope with the cancer coming back. I will need chemotherapy and I swore I would never take chemotherapy again." This is just one version of self talk that has a catastrophic effect and can come in many different forms depending on the individual. Identify your own self talk whether it tends to settle you down or escalate anxiety. Keeping a chart is a good way to become knowledgeable about how you talk to yourself on this topic. Sometimes people have belief systems that are grounded in previous experiences which may or may not be helpful. A psychotherapist, knowledgeable about cancer and who understands this overwhelming experience of fear of recurrence can be especially helpful in this area, but there are things that you can try on your own. Below is an example of some self talk statements that could be written down and included as part of your plan.

- It is unlikely that this is cancer.
- I was screened months ago and things were fine.
- If I have this in two weeks I will go to my doctor.
- I will avoid going to my doctor sooner if need reassurance.
- There are 10.5 million cancer survivors, I am one of them.
- I have a lot of outer resources.
- I have people that I can rely on.
- I have a doctor that I can count on to help me with this.
- I can call my friend, who always helps me to feel better.
- I’m going to stop thinking about this, until two weeks have passed.
- I’m going to do something that I enjoy.
- I’m going to write this all down in my journal and leave it

Plan for Distraction
Sometimes one of the most effective tools to manage anxiety is utilization of distraction. Distraction helps people to move their thoughts away from the troubling ones that cannot be resolved immediately and into activities or situations that bring attention to other aspects of life. Every plan for coping with recurrence should also have a list of activities to do that can bring healthy distraction. Such a plan is listed below and begins with an opening statement.

"When I am worried, I try to distract myself with..."

- Exercise
- Meditation
- Use of relaxation
- Television or a movie
- Work
- Pleasurable reading
- Social activity with a friend such as a phone call, going to dinner, etc.
- Religious practice and prayer or assistance from my faith community

Development of Multiple and Flexible Coping Strategies
We know from over three decades of research by psychologists on the topic of coping and cancer that no one coping strategy works for all people. However, we do know that people who have multiple coping strategies, and are flexible in how they use them, tend to cope better with the stresses associated with cancer than those who have only one and have difficulty changing gears. Coping strategies govern how emotional information is processed and managed. The goal is to help the person maintain equilibrium in the face of stressful events. Coping strategies are both internal to the person and are contextual and involve the use of others. Without going into a lengthy discussion of coping, it is important to think about what coping strategies you use to maintain or restore equilibrium. Of course, developing a plan to manage worry of recurrence is in itself selecting and developing coping strategies.

Some other tools that may be helpful to support these strategies are included in the list below and many are services offered at the Simms/Mann - UCLA Center for Integrative Oncology. Some of these involve more in depth commitment and attention. They include:

- Individual Counseling with someone who understands the specific concerns that you are facing, The Simms/Mann Center offers this help for our patients receiving their treatment for cancer at UCLA.
EATING AND WALKING YOUR WAY TO WELLNESS AS A CANCER SURVIVOR

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This is summary of a lecture presented on May 13, 2008.

Recent research has indicated that what is good for cancer prevention is also good for cancer survivors. In 2007, the World Cancer Research Fund issued a report that summarized all of the research to date from around the world on how food, nutrition and physical activity protect against cancer, and provided both a global perspective and recommendations for cancer prevention and cancer survivors. This is generalized advice and readers should note that information provided by your medical practitioner who knows your personal medical situation, should always take precedence over these suggestions.

Special Recommendations for Cancer Survivors: Follow the recommendations for cancer prevention unless countermanded by your oncologist. All cancer survivors should receive nutritional counseling from an appropriately trained professional. If able to do so, and unless otherwise advised, aim to follow the recommendations for healthy food choices, healthy weight, and daily physical activity.

To date, the research conducted on cancer survivors has been conducted primarily using people who had breast cancer, prostate cancer or colon cancer, with the largest majority of studies being done with breast cancer survivors. The lifestyle choices tested in healthy adults generally reflect the 2005 Dietary Guidelines for Americans, the 2006 American Cancer Society lifestyle recommendations, and the 2007 recommendations of the World Cancer Research Fund. The research in breast cancer survivors suggests that there are quality of life benefits from engaging in regular physical activity following a diagnosis of cancer. Healthy physical activity is defined as at least 30 minutes of walking per day. Exercise reduces the negative consequences of breast cancer such as psychological distress, fatigue, weight gain, premature menopause and undesirable changes in body image. It also contributes to patient rehabilitation after treatment. In 2004, a review of exercise studies done during treatment for breast cancer found 12 intervention studies that showed statistically significant beneficial effects of exercise during treatment, including increased exercise capacity, body weight improvement, enhanced psychological well-being, decreased fatigue, less nausea, increased physical well-being and overall improvement of quality of life. Studies looking at exercise after treatment for breast cancer showed similar findings; including increased exercise capacity, enhanced immune function, decreased depression, improved physical well-being and improvements in overall quality of life.

There are also weight control benefits and prevention of disease recurrence benefits from eating more fruits and vegetables and less processed food, The Women’s Intervention Nutrition Study (WINS), published in 2006, had a dietary intervention that reduced the percentage of fat to 15% while maintaining nutritional adequacy. The average American diet contains about 30-35% of calories from fat. While the goal was 15%, early feasibility studies suggested that this goal would result in a sustained approximately 20% reduction of fat intake. After seven years of follow-up there was a significant increase in recurrence-free survival in women who ate this diet especially in the patients who had estrogen receptor negative breast cancer. It is believed that the diet helped reduce recurrence of breast cancer by reducing insulin levels, insulin resistance, insulin-like growth factor (IGF) and inflammation. Additional research is needed, but these studies support the importance of following cancer prevention recommendations after a cancer diagnosis.

A diagnosis of cancer in the family should be a warning to other family members who may have a diet and lifestyle similar to those of the person diagnosed. Having the whole family adopt these recommendations may be helpful for cancer prevention and cancer recurrence. It also increases the likelihood of individuals sustaining these changes when the whole family is involved in changing their eating and exercise practices.

Recommendation #1: Median adult body mass index (BMI) should be between 21 and 23 depending on the normal range for different populations.

It is important to avoid excess weight gain and increases in waist circumference throughout adulthood. The Body Mass Index (BMI) is an easy-to-calculate ratio of height to weight that can be used to gauge whether

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INSOMNIA AND CANCER: CAUSES AND TREATMENTS THROUGHOUT THE CONTINUUM

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This is a summary of a lecture presented on September 9, 2008.

Sleep difficulties can be very disruptive to well-being and many people talk about having insomnia. Insomnia is a misunderstood term with many misconceptions such as "people who rarely or never sleep.” This is not the case. A good working definition of insomnia is when "An individual person is unable to get the sleep that they need.” Sleep can be broken down into different components, falling asleep (referred to as initiating sleep) can be difficult for some people. It is usually considered problematic if this process takes longer than 30 minutes. Others suffer from difficulty maintaining their sleep. Some people think that maintaining sleep means never waking up at night, but this is also a misconception. Most people wake up several times each night but go back to sleep relatively easily. Insomnia is associated with people who wake up and are unable to go back to sleep within 30 minutes. Poor sleep efficiency means that someone spends a lower percentage of their time in bed actually sleeping. Good sleep efficiency means that someone is actually asleep for 85% of the time that they are in bed sleeping. Finally, sleep problems that cause significant impaired functioning or distress are important in defining insomnia. Some people sleep very little but have neither impairment nor distress—this does not constitute insomnia. Insomnia is a condition in which affected people are not able to get the sleep that they need.

Contributors and Perpetuators of Insomnia
Insomnia can be transient (less than one month), short-term (1-6 months) or chronic (greater than 6 months). The good news is that behavioral treatments work just as well for people who have had it for a short-term as for those who have had it for a long-term. Insomnia occurs in about 10-15% of the general population; these numbers are usually higher in women and older adults. About 30-50% of people actively undergoing cancer treatments have problems sleeping. About 20% of patients with cancer have full-blown insomnia; most studies have been conducted with breast and prostate cancer patients. Cancer survivors (23-44%) report having sleep problems five years after treatment and 20% meet the criteria for full-blown insomnia.

Individuals who are likely to develop insomnia include women, older adults and people with a personal or family history of insomnia. Psychiatric difficulties such as depression and anxiety are also associated with sleep problems. Women have higher rates of depression, higher pain symptoms and more menopausal night sweats that interrupt their sleep and may contribute to these difficulties. Insomnia can be triggered by a variety of things. Stress and anxiety are significant contributors; Loss and pain are also problematic. Being admitted to the hospital can disrupt sleep as well. In addition, for people with cancer sleep is often interrupted by treatment-related triggers, such as radiation therapy, which usually remits over time. Chemotherapy especially related to nausea, vomiting and some of the antiemetic (anti-nausea and vomiting) medications is also a trigger. Estrogen deficiency (tamoxifen can produce vasomotor symptoms) can disrupt sleep. These symptoms may wake you up, but the important variable is how long it takes to go back to sleep. Other medications can disturb sleep, such as steroids or opioids which are used for pain management. It is important to remember that insomnia is usually not caused by a single factor and, thus, interventions that target various aspects of the sleep problems are going to have stronger and longer lasting effects.

Insomnia is also perpetuated by specific activities that may be under your control. Poor sleep habits can all lead to more insomnia, including spending non-sleep time in bed, napping during the day and irregular sleep schedules. Now one copes with stress, tension and loss can negatively impact and worsen already difficult sleep. Nighttime worries are one of the most common psychological concerns. Many people describe having “racing thoughts” which make it difficult to become calm and relaxed. Nighttime is not the best time to create your list of things to be done the next day or to begin developing strategies to resolve problems. These are activating mental states which do not promote sleep. When you are already sleep deprived they can cause more fatigue; when you have no energy to do things it can lead to shutting down and isolating yourself from your social network. Isolation can add to depression and this can make insomnia worse. Of course, the experience of feeling helpless and paralyzed about changing sleep patterns can also perpetuate an already difficult scenario. It is easy to see how you can develop a cycle of perpetuating sleeplessness.

Insomnia is impacted by your sleep habits, stress, mood, medications and pain. There are many interventions you can do to target all of these different triggers. You can improve your mood, stress and sleep habits and that may make enough difference to change your insomnia from an intolerable to an acceptable level of sleep. What is an acceptable amount of sleep? On average people report that they get about 7-8 hours of sleep but there is no set amount that is needed for everyone, each of you is unique and each of you has different needs at different times of your life. As we get older (over the age of 50) we tend to need less sleep and the sleep amounts decrease to around 7-7.5 hours per night. Sometimes older adults hang on to the belief that they need eight hours but that may not be true. A healthy sleeper can wake up 2-3 times per night; people with insomnia do not easily go back to sleep while a healthy sleeper returns to sleep quickly after waking.

If you are having trouble sleeping chances are you have been offered medication as a treatment. The most common medications are drugs which fall into a category called hypnotics. The newer ones include Lunesta (eszopiclone), Ambien (zolpidem tartrate) and Sonata (zaleplon). The benzodiazepines have been around for a long time and include drugs such as Alivan (lorazepam), Klonopin (clonazepam), Valium (gabapentin), Xanax (alprazolam), Restoril (temazepam) and Halcion (zolpidem). Most of the sleep medications have looked at these medications have been very short term, only following people for 14 days. These treatments have not been studied for long term insomnia or in older adult populations. In studies that have compared how quickly someone falls asleep with medications vs. controls, the startling result is that participants feel asleep an average of 5-10 minutes quicker with medications. When comparing the records of drug trial analyzing the effects of benzodiazepines versus placebo treatments it was found that people got on average about one hour of extra sleep on benzodiazepines.

Drug-free Strategies that Improve Sleep
There is some evidence to suggest that 30 minutes per day of aerobic exercise can improve sleep. Although there are only a few studies that document this and it is unclear about when this exercise should occur. There is some data to suggest that Tai Chi, an ancient form of calisthenics and meditative movements may also improve sleep. It improves flexibility, balance and increases feelings of relaxation.

Qi Gong, another ancient Chinese activity that affects energy and balance, is offered through the Center on a weekly basis and may also help facilitate sleep.

There is considerable data to suggest that cognitive-behavior therapy (CBT) is the gold standard for improving insomnia. Two studies published in the Journal of the American Medical Association in 1999 and in 2006 found that CBT is helpful for chronic insomnia. One study compared it against one of the newer prescription sleep medications; six months after the CBT intervention sleep continued to improve. Of note, it is usually a relatively short therapy of 6-10 visits. CBT uses a combination of behavioral techniques to influence sleep and behaviors associated with sleep.

Tracking Sleep
The first step in altering sleep is to first determine what is wrong with your sleep by tracking your sleep daily, using a journal. It is not enough to think that you will remember the impact. You need to assess where you are now (before) and then compare it after interventions (later) so that you can see what percentage improvement there was in your sleep pattern. The diary helps you increase your knowledge about your sleep patterns and identifies where problems lie as well as allowing you to track improvements. A sleep diary should be kept for a week at a time by creating a grid such as the one shown on the next page:

From this grid you can then calculate on a weekly basis the following:

- How long it takes you to fall asleep?
- How many times you wake up during the night?
- How long you stay awake when you wake up during the night?
- How much sleep did you get?

Improving your Sleep Environment
The next step is to work on improving your sleep environment. The environment that you sleep in plays a significant role in how well you sleep. Notice the noise, the lighting, the room temperature, the position of the head and any bedtime issues. If your bedtime tends to snore, it may be important to have a discussion with him or her about what can be done, including sleeping in different bedrooms. Men have a tendency to snore

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more than women. One of the primary causes of snoring is being overweight, even being slightly overweight can cause snoring. Sleep apnea can also cause snoring and should be evaluated by a qualified expert. If you stare at the clock, then remove it or turn it around. It is not helpful to stare at it, watching time slip away.

**Good Sleep Habits**

The third step is to develop good sleep habits that condition our bodies to associate the bed with sleep. One of the first demonstrations of "classical conditioning" was done by Pavlov with dogs. He noticed that dogs would salivate automatically when presented them with food. Next, he rang a bell each time he presented food. Over time, the dogs associated the bell with food, and the dogs began to salivate when Pavlov rang the bell. This illustrated that we can condition a fundamental response to something unrelated (the bell). Pavlov noticed that when he stopped presenting the food, but kept ringing the bell, eventually the dogs stopped salivating to the bell. How does this relate to sleep? Our bodies need to be conditioned to sleep when presented with a bed. In poor sleepers, the connection between the bed and sleep is weakened. The goal of improving sleep habits is to strengthen this connection.

There are three parts to this reconditioning: (1) Linking being in bed with sleep, (2) Linking Nighttime hours to sleep and (3) Limiting Nighttime and the bedroom to non-stimulating activities.

- **To** Link the bed with sleep you should not use your bed for anything except sleep or sex. Do not read, watch television, surf the web or talk on the phone while in bed. Of course, if you have NO sleep problems and do these things it is fine to continue these activities BUT if you do have sleep difficulties you must avoid these activities in the bed.

- **The next strategy is to Link nighttime hours with sleep. Avoid napping during the day or early evening. If you cannot avoid taking a nap, do it in the early afternoon at the same time each day for about 30-45 minutes. Try to be consistent. Aim for a consistent bedtime, but lie down only when sleepy.**

- **If you are not sleepy do not get into bed; go to another room and do something that is not stimulating. Nighttime activities and the bedroom must be as non-stimulating as possible. Do not try to work, pay bills or make a "to do list" for tomorrow, don’t clean, don’t organize, don’t start projects. Essentially you want to do something that is as useless as possible. Finally, get out of bed at the same time each morning. The recurrent theme is consistency.**

Mental activity also prevents us from falling asleep. Other brain areas can override sleeping so don’t set up competition. One of the most common types of mental activation is worrying, which can feed like racing thoughts, and can lead to emotions such as anxiety, irritation, anger and hopelessness; this makes sleep difficult. Sometimes the worrying can take the form of worrying about not sleeping. Common things that we say to ourselves about not sleeping are “I really need my sleep," “I won’t be able to function tomorrow morning,” “I’m going to be really worn out tomorrow,” and “Will I ever sleep like I used to?” These thoughts will not help you to get to sleep but rather create the same set of emotions as other worries. It is important to develop a strategy for dealing with Nighttime worries. Fast, stop-gap techniques generally involve a form of distraction and relaxation. This may be able to teach yourself the technique of “thought stopping.” The first part of “thought stopping” is to have an awareness which often begins with a question, “What am I thinking about right now?” followed by the question, “Am I worrying?” Once this awareness is achieved you must remind yourself that this is not the time to worry and then remind yourself that you are not going to think about this at this time. This usually must be done repetitively until the thought is stopped. Another method that can be used to stop mental activity is a breathing technique, such as simple slow diaphragmatic breath. These types of breaths make your abdomen rise as you inhale rather than only being in your chest. Do this for just a couple of minutes. It helps create relaxation. Simple imagery of a relaxing happy scene or place can also change your mental activation from racing thoughts to a relaxed place. Before your bedtime, take a few minutes to create a few of these relaxing images and write them down on an index card to keep next to your bed. They can be of a vacation spot, a childhood home, a fantasy or a dream location. Refer to your cards at night as needed to help calm and retrain your mind to a calm place that is less upsetting and activating.

**Resources for Sleep**

While these suggestions may be enough for some people to retard their sleep, some of you may need the help of a qualified therapist or other clinician. Some additional resources that may be helpful are:

- www.sleepfoundation.org
- UCLA Sleep Disorders Center 310 206-8005

**Summary**

Remember, sleep is not a will, we cannot make it occur. We can only clear our external and internal environment to encourage sleep to occur. I hope these behavioral techniques provide some tool to do this.

**Editor’s Note:** Depression can play a major role in sleep difficulties and treatments for depression can include both therapeutic interventions involving cognitive behavior therapy as well as anti-depressant medications.

The Simms/Mann — UCLA Center for Integrative Oncology offers a variety of programs that may be helpful to individuals who are trying to assess and treat their sleep difficulties such as:

- Evaluation of medications by a psychiatrist to determine if they are useful for sleep or if there are better ones, including evaluating depression.
- This is a new program that began June, 2008.
- After seeing a clinician such as our oncology social workers or health psychologists you may receive a referral to a psychiatrist housed in the Center. (This program is covered by many insurance companies).

- Qi Gong has similarities to Tai Chi and consists of exercises that help people counteract the effects of stress, anxiety and anger. The breathing exercises can help people calm down and restore their energy. This group is offered every Wednesday from 10am–12pm.

- Meditation: Inner healing uses a variety of techniques to learn the relaxation response and promote inner peace and wellbeing. Breathing techniques and guided imagery are taught during this group program.

- Mind/Body Approaches to Coping with Cancer is a workshop that teaches both relaxation techniques and some of the cognitive behavioral strategies discussed in this lecture to reframe how one talks to oneself, and thus, how one feels.

- Educational session with an Integrative Medicine physician to facilitate health and wellness and can assist in identifying strategies that may help to promote sleep and well-being (fee for service).

For information or appointments call 310-794-6644.
NEW DISCOVERIES IN NUTRITION AND PROSTATE CANCER

WILLIAM ARONSON, MD, PROFESSOR OF UROLOGY, DAVID GEFFEN SCHOOL OF MEDICINE AT UCLA

This is a summary of a lecture presented on November 18, 2008.

The international incidence of prostate cancer is highest in African American men living in the United States followed by Caucasian men living in the United States. In contrast, men in Japan, Hong Kong and China have lower rates of prostate cancer. Chinese and Japanese men living in Los Angeles who eat a more Western diet, however, have higher rates of prostate cancer than those living in their countries of origin. While it is not proven, based on epidemiologic data, we believe that diet contributes to the development of prostate cancer: the Eastern diet is characterized by fish, rice, beans, vegetables and fruits while the Western diet is characterized by red meat, dairy products, sodas, French fries and ketchup.

Physical activity has also been shown to be protective for prostate cancer in epidemiologic studies. Although it is a humorous stereotype, the Western lifestyle is more oriented toward farmers, bicycle riders, boat rowers and more blue-collar jobs while the Western lifestyle is more dominated by cubicle occupancy, motorized vehicle driving, channel surfing and more white-collar jobs. It appears that Americans may be consuming too much of everything while not getting necessary physical activity which leads to obesity. Obese men are more likely to develop a poorly differentiated tumor when diagnosed with prostate cancer; obese men also have an increased risk of death from prostate cancer. Furthermore, men with a high body mass index who have had a radical prostatectomy have increased risk of recurrence.

These data raise questions about whether diet and physical activity can have an impact on progression of prostate cancer. There have been several studies that support this hypothesis. One study looked at men before and after a rigorous diet and exercise program. They stayed in a residential hotel type environment and ate only 10% kcal from fat. Seventy percent of their calories came from complex carbohydrates such as vegetables, fruits, legumes and whole grains. Protein came primarily from non-animal sources, fish and poultry. Exercise included walking at a training heart rate (70-85% of maximal rate) for 30-60 minutes five days per week. Both before and after the program, participants had their blood drawn and the serum was extracted. They then introduced prostate cancer cells into the serum to see what impact there was on the growth of the cells. When the serum was extracted from the men while eating a normal American diet, the prostate cells grew at a faster rate than after the 11-day diet and exercise intervention. While this is early data, it does suggest that diet and exercise provides a less friendly environment to prostate cancer cell growth. Regardless of the technique used, weight loss appears to have significant anti-tumor effects. There is some evidence that weight loss may also be beneficial for men on ADT to prevent insulin resistance/cardiovacular effects as well.

Dietary fat is another nutritional variable that appears to be related to prostate cancer. Epidemiologic studies have shown a correlation between high dietary fat (beefsteak and red meat) and both incidence and mortality from prostate cancer. In animal studies, a reduction in dietary fat has been used to prevent the development and progress of prostate cancer as well as the emergence of androgen independence. Dietary fat, specifically corn oil, has been associated with higher PSA scores. There are different types of dietary fat called Omega-3 and Omega-6 fatty acids. Omega-3 (DHA, EPA) which is found in fish oil appears to have protective effects. The important issue may be the ratio of Omega-6 to Omega-3 fatty acids. In the US diet there is a ratio of 20 Omega-6 fatty acids to 1 Omega-3 fatty acid. The Asian diet has a ratio of 4 to 1 and we know that men who eat an Asian diet have a lower incidence of prostate cancer. Omega-6 fatty acids also affect inflammation which is believed to be associated with tumor growth. There is currently a trial going on in which 50 subjects have been enrolled to date; men on a Western Diet of 40 kcal of fat are being compared to those on a low fat diet with fish oil keeping the diet to 15% kcal of fat. These patients are randomized to these two conditions and then after these two 4-6 week dietary interventions they receive a radical prostatectomy. Serum, urine and tissue studies are done both before randomization and before radical prostatectomy but after the dietary intervention. They hope to see the impact of this type of diet on prostate tissue cancer in this controlled trial of men with early prostate cancer. Reducing Omega-6 fatty acids may be an important dietary strategy.

Approximately 50% of all cancers may result from environmental factors and pro-oxidant factors. There is a balance between DNA damage and repair that is constantly ongoing in the body. Pro-oxidants such as UV radiation, obesity, physiologic- cal chemical treatments, burnt meat, saturated fat and environmental pollutants all cause damage. An ongoing question has been whether increasing antioxidants can help to tip the scale back toward the protection and prevention of DNA damage, thus reducing the likelihood of developing cancer or even delaying the onset. A recent trial looking at two anti-oxidants, selenium and vitamin E, was recently discontinued. This trial, known as the SELECT Trial, had four arms and enrolled men without prostate cancer and randomized them to receive selenium, vitamin E, vitamin E + selenium, or a placebo. The rationale for this trial was based on other research, including a study in which selenium was found to prevent skin cancer and unexpectedly a decrease in risk of prostate, colon and lung cancer was also observed. After ten years of this study, it was discontinued because interim analysis suggested a possible increased risk of prostate cancer in the vitamin E group and a possible increased risk of death from the selenium group. The analysis also clearly showed that selenium and vitamin E do not prevent prostate cancer. The men in this trial will continue to be followed.

Another important research focus is on polycyclic-antioxidants that form the colors in fruits and vegetables. Polyphenols are chemical produced by plants to protect them from pathogens and environmental oxidants. Some of the polyphenols that have been studied in the lab have anti-proliferative, anti-apoptotic and anti-angiogenic effects which all help fight cancer cells.

Many of you have heard about (lcypene, a polycyclic that has been researched and reported widely in the news. High concentrations are found in cooked tomatoes, making tomato sauce a good source of lycopene. lycopene is the most potent anti-oxidant among the carotenoids, effectively scavenging reactive oxygen species that cause DNA damage. Two or more servings of tomato sauce per week can decrease the risk of prostate cancer and decrease the risk of advanced prostate cancer. Tomato sauce is more effective than fresh tomatoes. In a pre-operative study, men who ate 1/4 cup of tomato sauce per day for three weeks were found to have decreased oxidative DNA damage and increased apoptosis (cell death of damaged cells) in their prostate tissue.

Cruciferous vegetables such as broccoli, cauliflower, cabbage, Brussels sprouts, and bok choy are rich in antioxidants called isothiocyanates. Epidemiological studies, tissue culture and animal studies have shown that isothiocyanates have an important role in cancer prevention. In addition, in animal models studying the progression of prostate cancer we have found that tomato and broccoli together are more effective than either alone.
Pomegranates have received recent attention in prostate cancer based on a one-arm study conducted at UCLA looking at men with rising PSA levels following their primary therapy. Pomegranates are among the richest sources of a polyphenol called punicalagin. In this study researchers looked at the doubling time for men with PSA of less than 5 using an intervention of 6 ounces of POM Wonderful per day (POM Wonderful is a brand of pomegranate juice). The doubling time increased from 15 to 37 months for the men who drank pomegranate juice and there was decreased proliferation and increased apoptosis. Tissue culture in animal studies also supports the value of this fruit. There is now a multi-site randomized study underway that will give more information. However, drinking POM Wonderful every day also adds calories and sugar and this is of some concern.

Tea is high in polyphenols known as catechins. Tissue culture, animal studies and epidemiologist studies all support the preventive effects of catechins. A study looking at the impact of drinking 5 cups per day of Bigelow Darjeeling black tea or Uncle Lee’s green tea seven days before radical prostatectomy showed increased polyphenols in the prostate tissue. Green tea has been studied against a placebo in a randomized trial of 60 men with a pre-cancer of the prostate. In the placebo group 9 of the 36 men developed prostate cancer at one year while only 1 of the 30 men in the green tea group developed prostate cancer.

Researchers are also interested in studying the effect of soy (an important food source in Eastern diets) related to prostate cancer. Epidemiological and tissue culture studies indicate there is a protective effect; however, there is concern about using soy protein supplements as they increase BGF-1 (B-Cell Growth Factor) levels in blood serum. Nature-sy soy in whole foods, such as tofu and miso soup, does not do this and is a good source of non-animal protein.

Take Home Messages
There is still a lot of research to be done and nothing yet has been completely proven. Preliminary data are suggestive, but when tested in larger controlled studies can prove to be misdirected. Here are some important general take home messages:

- It is important to choose wisely and to seek guidance from someone who really knows the literature and can help guide you in making appropriate choices while considering all of your individual health concerns.
- Moderation may be an important principal in the face of too little research.
- Dietary changes and weight loss appear to be important and are thought provoking, but still unproven.
- Reducing dietary fat to 20% kcal appears to be a good target.
- Limit your corn oil intake and consider taking fish oils capsules under guidance of a knowledgeable physician.
- Protein should come from fish, lean unburnt meats, and plant-derived soy. Avoid soy protein supplements.
- Eat at least 4 servings of colorful fruits/vegetables daily.
- Eat cruciferous vegetables.
- Include 2 servings per week of tomato sauce in your diet.
- Consume 20-50gm of fiber per day from complex carbohydrates.
- Pomegranate juice may be beneficial, but it is unclear how much should be consumed to get the benefits. Also carefully consider how many calories and sugar pomegranate juice adds to your diet.
- For caffeine drinkers, replace coffee with green/black tea.
- Do not take more than 400 IU of vitamin D per day.
- Make lifestyle changes to increase daily activity. Walk whenever possible and take the stairs as your fitness and other bodily concerns permit. Walk or exercise at a training heart rate (70-85% of maximal rate) for 30-60 minutes five days a week.
- If you are overweight, lose the extra pounds!

Editor’s Note: The Simms/Mann Center integrative medicine physicians are available to provide one-on-one educational counseling sessions to discuss your nutrition and dietary supplementation concerns related to prostate cancer and wellness. In addition, a group of four men can gather together for a special class from the integrative medicine physician to refine these take home messages and facilitate overall health and wellness.

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INSIGHTS INTO CANCER

UNDERSTANDING NEW CANCER TREATMENTS AND CLINICAL TRIALS IN CANCER CARE

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This is a summary of a lecture presented on February 5, 2008.

In order to track developments in cancer therapies, it is important to understand the key past developments that set scientific directions in medical oncology. In 1970 there was a key study published by Dr. Vincent DeVita et al which showed that combination chemotherapy could cure advanced forms of Hodgkin’s disease. Prior to this study, very few patients were being cured; this trial illustrated how combining different treatments could increase cure rates into the 75% range. In 1980, Dr. Lawrence Eisenhaut and others demonstrated that combination chemotherapy could cure a solid tumor. This trial was done in patients with testicular cancer and, again, the cure rates rose into the 75% range. As a result of these two trials, an onslaught of clinical trials in cancer treatment began which looked at different combinations of chemotherapy. In 1990 one study had six different arms of treatment for advanced non-small cell lung cancer. As this and other trials show, it is possible that we are reaching a plateau as to what combination chemotherapy can offer patients with widespread cancer.

The New Era of Cancer

By the mid 1990s a new era in cancer research was already underway. This new era is called the molecular era of cancer. The goal in this new stage were to use evolving molecular biology techniques to understand what was going wrong with cells at the DNA level that was leading to cancer.

This new era led to a better understanding of the hallmarks of cancer. Researchers found that cancer cells develop an ability to evade normal programmed cell death, as well as to be able to create new blood supplies, as well as to be able to control the molecular aberrations. This approach can really improve on the efficacy and side effect profiles of our current chemotherapy regimens.

One of the new targeted approaches has been to investigate angiogenesis, the process by which cancer cells are able to create new blood supplies, thus allowing small tumors to grow into larger tumors and to spread to other parts of the body. Research has documented that tumors actually require growth factors into the body which tells the blood vessels to grow toward the tumor. The vasculature not only helps to feed the tumor but also creates pathways for cells to travel to other parts of the body forming metastases. When tumors create these new blood supplies, they are often abnormal compared to the vasculature of other tissues. Tumor vasculature is dilated, highly interwoven and chaotic in the way that they wrap around and through the tumor and there is no hierarchical vessel arrangement. As a result, it makes it more difficult to deliver chemotherapy to the tumor. There are many scientists who are trying to figure out how to target this aspect of tumor growth. They have identified VEGF (vascular endothelial growth factor) which is an important signaling protein in the development of blood ves- sels from pre-existing vasculature. VEGF stimulates the proliferation of new blood vessels, neo- volution, migration and capillary tube formation. VEGF is a central mediator of angiogenesis.

Research efforts to stop the growth of blood supplies by way of blocking VEGF have been creative. Researchers have been developing antibodies that bind to the growth factor essentially acting as a sponge. Other efforts have created antibodies that sit on the receptor like a hat, thus blocking their ability to connect and communicate. Other antibody research has focused on creating antibodies that look like a receptor, thus fouling the growth factor to attach to the false receptor. Antibodies have been developed that penetrate and disrupt the signals. These are all examples of the new targeted approach in the area of antiangiogenesis drugs and are adjuncts to chemotherapy and/or in situations a replacement.

Each cancer cell is different and relies upon multiple mechanisms for growth, thus making the regulation of cancer cells a complicated process. The key is to try to shut off multiple aspects of a cancer cell’s ability to survive. This new approach has led to the development of about 10 new targeted agents per year.

Translational Research and History of Clinical Trials

Translational research is a two way process in which information from the laboratory is brought into the clinic environment while information gained in clinical trials through the care of patients is brought back into the lab. Clinical trials sit in the middle of this process and are the method by which treatments are evaluated for their efficacy and safety. It is important for research endeavors to be closely tied to patient care and for researchers to be able to get their ideas out to patients. There is an important history of how clinical trials have evolved with giving birth to design of experiments and the ethics which guide their practice. This history is reviewed below:

In the 1740s one of the first controlled clinical trials was conducted by James Lind in response to a large number of people developing scurvy. He assigned 12 people each to get different things, e.g., vinegar, rest, limes and lemons. He found that those who got the limes and lemons got better. This was the foundation for offering different treatment arms.

In the 19th Century, the idea of testing drugs against a substance that has no biological effect was introduced to research. The placebo emerged as a “substance having no pharmacological or psychological effect but administered as a control in testing experimentally or clinically the efficacy of a biologically active preparation.”

In the 20th Century, many important research paradigms evolved and were described individually below:

- Randomization — Participants are randomly assigned to receive one treatment or another. One of the first was a tuberculosis treatment in which Sancryn was compared to a placebo. This type of trial could not be done today.

- Manufacturers need to demonstrate safety (1934) — US Food, Drug and Cosmetic Act. This occurred after 107 patients died after taking sulfanilamide, an antibiotic that contained anti-freeze.

- Potency and Purity of Drugs — (1941) The FDA required potency and purity of insulin to be tested and began to set standards.

- Multi-center trials (1944) — The same drug protocol are tested in different locations to acquire more per participant.

- Nuremberg Code (1947) — Development of protection of human subjects as participants in experimental clinical trials. People must have comprehensive information about their participation in a trial and must consent. There must be anticipated beneficial results from the new experimental trial and the risk that the person was being subject to as a result of the trial had to be proportionate to the significance of the problem being addressed by the trial.

- Proof of efficacy as well as safety (1962) — Kefauver-Harris Drug amendment required that drug companies had to demonstrate proof of efficacy as well as safety. In 1970 this was interpreted to mean that efficacy was not based on commercial success but rather on how well the patient does.

- Declaration of Helsinki (1964) — Ethical code to direct physicians and other participants in medical research involving human subjects. According to this code research with humans should be based on the results from laboratory and animal experimentation. Research protocols should be reviewed by an independent committee prior to initiation. Informed consent from research participants to other cells; research should be conducted by medically scientifically qualified individuals. Risks should not exceed the benefits.
This history led to what we now understand and expect from clinical trials in the medical environment.

**Clinical Trials**

Clinical trials are research studies conducted with patients or healthy volunteers. Each type of trial is designed to answer specific scientific questions. Clinical trials are important because they help deliver new drugs and treatments or refine others. New approaches must be proven to be safe and effective in a clinical setting before they become widely available. Most of our current approaches were first shown to be effective in clinical trials. There are many different kinds of clinical trials: e.g., prevention, screening, diagnostic, supportive care, and treatment. The time line for new drug development can vary, but on average it is about 10 years from a promising drug to be identified in pre-clinical testing until it receives approval by the FDA for use in humans. Certain drugs may be moved through the approval process more rapidly, however; this is sometimes done by risking safety issues. There are four clinical trial phases with very specific goals associated with each. The main trial will be discussed here.

**Phase I Clinical Trials**

A phase I clinical trial is the first test of a new anti-cancer drug in patients. It should answer the following questions: 1) what is the safe/efficacious dose of the drug? 2) What are the side effects? 3) How is the drug processed by the body? Patients with several different types of advanced cancer are usually side to participate in these trials and there are usually a small number of patients.

Limited patients are usually offered the drug to ensure there are no unforeseen side effects at the offered dose. For example, one to three patients receive the drug, usually starting at 1000 mg and go up to 3000 mg or more. This is determined by a certain percentage and another group of patients receive the drug at the next higher dose. This process of escalating the dosage continues until one patient develops an unacceptable side effect, such as an abnor-

mality in a blood test or a symptom that cannot be controlled by usual methods. Additional patients are enrolled in the trial and treated at that dose level usually up to six patients. If a second patient develops an unacceptable side effect, then the dose escalation is stopped.

The typical phase I trial takes about 12 to 18 months to complete and enrols about 30 patients. At the end of the study, scientists may not know if the drug works because the patients had different kinds of cancer were included in the trial. In addition, patients received different doses of the drug. The endpoints for this type of study are "dose limiting toxicity" and "maximum tolerated dose." Dose-limiting toxicity is based on the side effect that causes the study to be stopped. The maximum tolerated dose is usually the dose below the dose that caused the "dose limiting toxicity." This is how dosages are decided for drugs. The maximum tolerated dose in phase I study is what is used for further clinical trials. Phase I trials are an excellent way to learn what a drug does to the human body and what the human body does with a drug.

**Phase II Clinical Trials**

Phase II clinical trials test a new treatment in a defined patient population that should potentially benefit from the agent. A phase II clinical trial addresses the following issues: 1) gathering of further safety data, 2) preliminary evidence of the drugs efficacy and, 3) determination of the best way to study the drug. There are often concurrent phase II trials which may use more than one defined patient population, for example, a drug might be tested in 3 groups of patients with breast cancer and a group of patients with lung cancer. A typical phase II trial takes about 12 to 18 months to complete and enrols about 30-50 patients. Phase II trials often involves a control as a basis for comparison. It can be a placebo versus another active treatment and it can be blinded or double-blind. Blinded means that the patients do not know whether they are getting the test drug and double-blinded means neither the patients nor the physicians/scientists know who is getting what treatment. In a double-blind trial, someone on the research team is keeping track of who is getting what treatment and is watching the patient data so that if problems develop, the physician caring for the patient is given the information needed to respond to the patients’ needs. If a phase II trial indicates that the treatment has efficacy with an acceptable risk, the drug will move to a phase III trial.

**Phase III Clinical Trials**

A phase III clinical trial is much larger and usually involving between 1000 and 5000 people. They have very well thought-out, detailed protocols. It often takes years to complete although there may be interim analyses. These studies are often multi-institutional and can be national or international. Sometimes they are run within a cooperative group of institutions. In phase III studies people are randomly assigned to the treatment arm of the study and they have a control group (either the current standard of care or if there is no standard of care they are assigned to a placebo) for comparison. Sometimes they have more than one control group. These studies address issues such as: 1) further tests of efficacy, 2) monitoring of side effects and, 3) comparison to the standard of care. The data obtained in both phase II and phase III clinical trials are analyzed using statistical techniques to determine whether the effects are due to true treatment effects or whether they represent chance findings. In addition, they have the following endpoints or outcomes which are monitored:

- Overall Survival
- Disease Free Survival
- Time to Progression
- Quality of Life
- Tolerability – which include both laboratory and clinical side effects which are graded on a scale from 1-4 with 4 representing very severe.

Deciding to participate in a clinical trial is an individual decision and one that should be thoroughly discussed with your physician and the physician who is conducting the trial. A person who participates in a clinical trial could get access to promising new treatments that are not yet available off study, although there is no guarantee that the medication will work. Another possible benefit is the regular and careful medical attention from the research team. In addition to the regular care provided by a patient’s physician. There is also the opportunity to advance science and to help future patients. Without clinical trials and people’s willingness to participate, there would be no advances in treatments for cancer. In some cases, a clinical trial may offer an approach that is even more effective than a standard approach and the patients in the trial will be the first ones to benefit.

In addition to possible benefits, there are also potential risks. The approach may not be better than the standard approach and it may have side effects that are unpredictable or worse than the standard approach. Participants in randomized trials cannot choose the approach they will receive so participating does not guarantee that you will get the new approach. Health insurance may not cover all costs. For many patients, insurance companies will pay for the standard of care and the research study will pay for additional testing required, but some insurance companies refuse to pay for the standard of care if any research is being conducted. It is important to understand what your insurance company will cover.

Anyone who participates in a clinical trial must give their informed consent. This is an FDA requirement. Informed consent includes information about the type of agent being studied, the purpose of the research, how long the participant will be in the study, what will happen in the study and what parts are experimental. Informed consent also discloses possible risks, discomfort and possible benefits as well as alternative treatments and procedures. Informed consent explains how your confidentiality will be protected and should notify you that your participation is voluntary and that you can withdraw from the study at any time without any consequences to you. These are important protections and you should feel free to ask questions about any of these areas before you decide to participate in a trial.

Below is a list of questions that people should ask before participating in a trial:

- Why consider a clinical trial?
- Is a clinical trial right for you?
- Does the clinical trial make sense?
- What are the investigator’s goals with the trial?
- What other alternatives are there?
- What will the trial entail?
- Who is counselling me?

Finding clinical trials can sometimes be a challenge. One of the best web sites for you to visit is www.clinicaltrial.gov. This site is a registry of federally and privately supported clinical trial conducted in the United States and around the world. If you have further questions, talk to your doctor or seek an opinion at an academic medical institution that engages in a lot of research. NCI designated comprehensive cancer centers conduct research and are often affiliated with community practices as well. The physicians/scientists at academic medical centers can often advise you about studies going on at their institution and may have relationships with other scientists doing research in a specific disease category. Just like standard treatments, patients and caregivers can and should have access to the information they need to select the best care for their individual situation. Clinical trials help to advance the field and the more quickly they are completed, the more quickly answers are found and new directions are taken.
MELANOMA OF THE SKIN AND EYE: TREATMENT STRATEGIES FOR LOCAL AND WIDESPREAD DISEASE

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This is a summary of a lecture presented on October 7, 2008.

Melanoma of the Skin
The risk of developing melanoma has been increasing over the past 50 years. In 1935 there was a 1 in 1500 chance of developing it while in 2000 there was a 1 in 75 chance of developing melanoma of the skin. In the period from 1950 to 2000 there has been a 615% increase in incidence with a 165% increase in mortality. There are currently about 60,000 new cases each year. Because of early detection and surgical Interventions, 52,000 patients are cured. With approximately 8,000 deaths per year it ranks as the 5th cause of death in men and 7th cause of death in women. It is the second leading cause of death of productive years to cancer because it tends to strike individuals who are 45-40 years of age.

Exposure to the sun and ultraviolet radia

ion are both risk factors and protective factors. Severe blistering sunburns, which are most likely received early in life, are more problematic as a cause of melanoma compared to skin cancers which are caused by chronic exposure to the sun over time. There are higher incidence rates for melanoma of the skin in Australia and California, places with higher exposure as evidenced by Australia has mounted a very significant public awareness campaign and has targeted young children; there are places where parents can be cited for having unprotected children sunbathing in the sun during peak hours because of the known risk of high intensity sunburns at a young age. The US has not taken such action. Tanning bed use is not safe despite what you may hear from the industry. The high intensity ultraviolet rays from tanning beds are dangerous and should be avoided. Having fair skin, freckles, red hair and/or the inability to tan are all common risk factors. Having more moles is also a risk factor. People who have already had one melanoma are likely to develop others because exposure to the sun affects many areas of the body. In addition, having a family history of melanoma may also be a risk factor with 10% of patients having twice the risk which is related to mutations of specific genes. If you have these risk factors, your skin should be regularly screened. Some of the attributes of moles that should be considered as suggested by the National Cancer Institute web site are:

- Large Size: Most melanomas are at least 6 millimeters (0.24 inches) across when they are found and many are much larger. An unusually large mole may be melanoma.
- Asymmetry: A mole, pink, red, gray, blue and especially black in a mole suggests melanoma.
- Irregular Border: If a mole has an edge that is irregular or notched, it may be melanoma.
- Abnormal Surface: If a mole is scaly, flaky, oozy, or bleeding, it has an open sore that does not heal, or has a hard lump in it, it may be melanoma.
- Unusual sensation: If a mole itches or is painful or tender it could also be melanoma.
- Abnormal Skin around the Mole: If color from the mole spreads into the skin around it or if the skin becomes red or loses its color (becomes white or gray), this may also be a sign of melanoma.

If you develop a new mole or an existing mole changes in size, shape or sensation, then you should definitely consult a dermatologist.

Melanomas are staged with a 4 stage system and are measured in millimeters rather than centimeters. Stage I is localized, is less than 2 mm in size and there is a ten year survival of 90-90%. There are also five levels within stage one called the Clark Level. Stage II is also localized but deeper than 2 mm or 1 mm with ulceration. These melanomas go deeper. There is a 30-65% 10 year survival rate. Stage III melanomas have spread to regional lymph nodes or to the surrounding skin. They are considered regional metastatic and there is a 15-40% chance of a 10 year survival. Stage IV melanomas have already spread to distant sites and the median survival is approximately 9 months although there is variation as 2.5%-10% have a 10 year survival. Stages III and IV tumors are considered surgical diseases and should be removed by a surgical oncologist and lymph nodes may be sampled. A discussion with a medical oncologist may also be important. The goal is to prevent it from coming back and, thus, adjuvant treatment (in addition to surgery) is sometimes offered. The risk of melanoma returning ranges from 3-70%. There have been many adjuvant treatments tried for melanoma with over 100 clinical trials comparing a placebo control with a treatment group with chemotheraphy, radiotherapy, BCIG (an immune therapy) several melanoma vaccines or checkpoint inhibitors. Some of these clinical trials have shown no benefit, and some clinical trials even suggested that some of the vaccines actually made things worse. There is one treatment that is approved by the FDA for adjuvant treatment of Stage II and III melanoma. It is a high dose IFN-2b which is an interferon drug. There is a small benefit for some patients. Stage IV metastatic melanoma has already shown its ability to circulate through the body. It usually cannot be controlled by surgery and it must be treated by a medical oncologist with specialty in this disease. There are two drugs approved by the FDA for the treatment of stage IV melanoma: 1) a chemotherapy drug called dacarbazine (DTIC) which has been around for a long time; there are responses in the 10% range with no proven impact on survival and 2) an immunotherapy treatment called high dose IL-2 (Interleuken), which has had durable response in the 7% range with no proven impact on survival. Stage IV patients have lived for as long as 20 years after being treated with IL-2.

Ocular Melanoma
Ocular melanoma (also called choroid or uveal melanoma) is a rare cancer which affects approximately 6 in 1 million people. It is not related to diet or any known exposures that have been identified to date. It is not the same disease as melanoma of the skin; however, it tends to develop in individuals with fair skin. Ocular melanoma may cause blindness from tumors that grow into the visual structures such as the macular or the optic nerve. Blindness can also result from treatments that require the eye to be removed (enucleation); Blinding in the affected eye can also be a side effect of radiation treatment.

Ocular melanoma is usually diagnosed by eye care practitioners who refer patients to a retina specialist because it usually presents in the back of the eye. A retina specialist who suspects a ma

melanoma will make a referral to a center like UCLA’s Ophthalmic Oncology Center where there is a specialist team to treat this type of eye cancer. Symptoms such as blurred vision, a shadow or flashes in the eye are caused by an active tumor irritating the retina. Sometimes a routine eye examination with dilation results in discovery of ocular melanoma.

When ocular melanoma is suspected and the patient is referred to the UCLA Ophthalmic Oncology Center at the Jules Stein Eye Institute, the patient is evaluated by an ophtalmologist or technician, has an ultrasonic evaluation of the eye, is examined by the ocular oncology team (which includes the retina specialist/uro

geon), and undergoes a series of imaging studies including photographs and fluorescein angiography. Once the studies are completed the patient then shows the treatment options and present a diagnosis and treatment plan to the patient. There are several different treatment ap

proaches that involve surgery and radia

on. It is important to note that there is no difference in mortality if the eye is enucleated (removed) or treated with ra

lation. plaque radiation therapy utilizes a small disk that has seeds of radiation placed in it (braine-125 plaque), similar to brachytherapy used with prostate cancer. The plaque is individually made after measurements of the tumor are taken and it is created to exactly fit the tumor di

mensio

The plaque remains in place for about a week and is then removed under sedation. Instead of a plaque sometimes the physician will recommend proton beam radiation therapy, which delivers radiation through the pupil.

Plaque surgery preserves the eye; however, visual side effects are common. The tumor itself may have already compromised the visual field or there may be pre-existing visual loss in the treated eye as a side ef

ect of the radiation. The radiation used for the ocular tumor does not cause loss of hair, nausea, or fatigue. There is no ef

ect to the other eye.

Once the eye is treated, the patient is fol

lowed regularly with an examination of the eye every 6 months. This evaluation is to determine the tumor’s response to radiation treatment and to carefully evaluate both eyes. An ultrasound is done to make sure that there is no further growth of the tumor and that the tumor has decreased. It is important to assess for radiation side effects and, of course, to check the good eye to maintain its health.

Like melanoma of the skin, ocular mel

anoma can spread to other organs. Metas
tasis of the cancer can occur even after the eye has been treated. The most likely organ to be affected is the liver, and thus, there is evaluation and monitoring that must be done. Typically, this monitoring is done by the melanoma specialist in medical oncology and may include liver function tests, abdominal CT scans, MRI, abdominal ultrasound or a combined PET/ CT. There have been no proven treatments that alter survival once metastasis from the ocular melanoma has occurred.

Research in Ocular and Skin Melanoma: Novel Approaches Treat Metastatic Spread

Because the metastatic spread is serious and life threatening UCLA and other re

search institutions are committed to find

ing novel approaches to treatment. This requires more understanding about the specifics of the disease and developing intervention approaches that target the abnormal melanoma. Melanoma of the skin has a bit of a head start with regard to understanding aspects of the biol

ogy of the tumor, but researchers at UCLA are committed to advancing this research for ocular melanoma as well.

Ocular Melanoma: Much of the research being done in ocular melanoma is predi

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cated on understanding the molecular and cytogenetic characteristics of the tumors. We must develop a better understanding of how this cancer spreads before good therapies can be developed. A biopsy of the ocular melanoma at the time of surgery is where the molecular research begins. Parts of the sample can be used for different investigations. Research has already led to better diagnostic tests that indicate whether an ocular melanoma is more or less likely to spread to the liver. Clinical research studies are oriented to understanding how vision is lost so that better treatments can be created that can preserve vision. Studies with combined PET/CT scans for long term follow-up of patients are also being done to help determine the best test to detect metastasis early. Here at UCLA we are also studying the psychology of an ocular melanoma diagnosis and new tests are being developed related to predictions of prognosis as well as identifying which psychological variables play an important role in psychological adjustment. There is still a long way to go in ocular melanoma, but UCLA has created a team of researchers and collaborators to continuously work to improve our understanding of ocular melanoma. Melanoma of the Skin: With regards to metastatic melanoma of the skin, there are a variety of approaches that involve both the stimulation of the immune system of the host, and target treatments that are trying to turn off the production of the metastatic cells.

As an example of immunotherapy approaches, research has been done with an anti-CTLA4 antibody. Antibodies can block the many different types of interactions that occur on the surface of the cell. Researchers have learned that there are interactions that both promote the immune system functioning but also block it. Scientists are learning more about this and looking at various means to “rev up” the immune system by stimulating it and/or by trying to remove some of the brakes on the immune system without creating other problems. CTLA4 is a protein that resides on the T cells in the immune system; it serves as a “natural brake on the system.” The theory behind anti-CTLA4 antibodies is that when given, they will block the braking action and release a strengthened assault on the melanoma cancer cells. After doing this with 150 patients with metastatic melanoma of the skin, 100% of patients (1 in 10) had a positive response that lasted years. The majority of patients are no better than receiving current chemotherapy regimens, but for those who responded, the impact was significant. About 20% have side effects (diarrhea, skin eruptions and thyroid problems) that required treatments. Approximately 1% had serious toxicity which included bowel perforation and bleeding. While this was a good treatment idea, and certainly beneficial for those patients who had a positive response, it is not the magic bullet that some thought it might be. Other research has looked at re-engineering T cell receptor lymphocytes. In this process the indi-

With approximately 8,000 deaths per year it ranks as the 5th cause of death in men and 7th cause of death in women. It is the second leading cause of loss of productive years to cancer because it tends to strike individuals who are 45-60 years of age.
Insights Into Cancer

Eating and Walking Your Way to Wellness as a Cancer Survivor, continued from page 3

one has too much body fat. A more accurate measurement is though bioelectrical impedance (Note: This is included in the Wellness Assessments and Nutrition Classes at the American Cancer Society’setta Cancer Prevention Center by our Integrative Medicine Physician). Your BMI can be calculated by multiplying your weight in pounds by 704 and dividing it by (height in inches) x (height in inches). This will give you a calculation of whether you are underweight, normal, overweight, or obese. For this purpose, we will not use this figure as a recommendation for health, but rather to help you determine if you are at a healthy weight for your body size.

Recommendation 2: Be physically active as part of your lifestyle. Moderate physical activity, equivalent to brisk walking, is recommended at least 30 minutes every day. As your fitness improves, your goal should be to increase to 60 minutes or more of moderate physical activity or 30 minutes of more vigorous physical activity per day. In addition to these activities, it is important to do some resistance training, e.g., lifting light weights or using tension bands. These activities help preserve healthy bone density. Studies show that people who lose excess weight and keep excess weight off regularly use resistance training exercise, like other physical activities, resistance training helps to increase the body’s core temperature. It is also important to limit sedentary activities such as watching television. A research study conducted in 2012 showed that those who watch more than 6 hours a day were more likely to gain weight over time. However, the one provision was that the television could only be operated by people who were not engaged in physical activity.

Recommendation 3: Limit foods and drinks that promote weight gain. It is important to limit your intake of foods that are energy dense, essentially highly processed foods and those that are high in sugar. Avoid sugary drinks and consume “fast food” only occasionally. Sugar has an energy density of 4 calories per gram, the lower the number of calories per gram that a food has, the better it is for your weight loss. One ounce of potato has .6 calories per gram. A slice of pizza has about 3 calories per gram. Did you know that Teddy Grahams snacks, which are offered to school children, have a 4.3 energy density per gram? These foods are low in protein and have very little fiber. Because they are so highly processed, they also have a shelf-life of about two years. I know many people like to have some foods on hand for emergencies, but you really should question whether food that can sit on a shelf for 2 or more years is really good for your body!

Recommendation 4: Eat mostly foods of plant origin. It is essential to eat about 10 serving of fruits and vegetables per day. Californians eat less of these types of foods than most Americans, only eat on average 4 fruits and vegetables per day, well below the recommended healthy standard. A common explanation for this is the relatively unprocessed cereals (corn and beans), legumes and nuts with every meal. Everyone should limit refined starchy foods. I have to warn you, however, that if you are not already eating foods of plant origin, it may take time for your gut to get used to consuming more fruits, vegetables and grains daily. In some cases it can cause adverse reactions to the digestive system. With persistence, time for your body to adjust and daily exercise, your body will adjust and you will enjoy eating more daily servings of fruits and vegetables.

Recommendation 5: Limit the intake of red meat and avoid processed meat. Red meat refers to beef, pork, lamb and goat from domesticated animals including meats contained in processed foods. Processed meat refers to meat preserved by smoking, curing, salting or addition of chemical preservatives. The average consumption of red meat should not be more than 1 1/2 per week and very little, if any, of this should be processed. The evidence that eating red meat to provide vitamin B12; however, your body can store enough B12 to last several years if necessary; thus, red meat does not need to be consumed daily or even weekly to maintain good vitamin B12 health.

Recommendation 6: Limit alcoholic drinks. Alcohol drinks should be limited to no more than one per day for women and 1-2 per day for men. There is growing evidence linking alcoholic beverage consumption with cancer. Only three non-alcoholic beverages are approved for optimal health in adults and they include water, tea and limited coffee without sugar or cream.

Recommendation 7: Limit sodium (salt) intake. Sodium is used as a preservative in foods. While many people may watch how much salt they put on their foods from the shaker, the reality is that most people’s intake of sodium comes from the processed foods that they eat. Processed foods are very high in sodium and should be avoided.

Recommendation 8: Aim to meet nutritional need through diet. Eating your dietary requirements for vitamins is an important goal. The more balanced your diet and the wider the range of foods you eat (including an array of fruits and vegetables), the greater the likelihood that you will obtain most of the recommended vitamins, minerals and nutrients from your diet. While supplementation is not globally recommended for cancer prevention, some supplementation may be appropriate under the care of a knowledgeable clinician.

Special Recommendation: Breastfeeding Breastfeeding reduces a woman’s likelihood of breast cancer. More recently it has been shown that breastfeeding (and benefit to babies, too. Breast-feeding daughters have a reduced incidence of breast cancer as well. The recommendation is to breastfeed infants exclusively up to six months and then to continue with complementary feeding thereafter.

Nutrition and Exercise Eating a healthy diet is very important. The US dietary gold standard is the DASH (Dietary Approaches to Stop Hypertension) eating plan. It is recommended that most adults (18-79 servants per day), has low fat or nondiet fat, and also includes grains, especially whole grains; lean meats, fish and poultry; and nuts and beans. It has less than 25% of your daily calories from fat, and less than 1500 mg of sodium per day. The DASH eating plan lowers cholesterol and makes it easy to lose weight. One strategy when trying to make your meals more in line with this method of eating is to think of dividing your plate into 4 quadrants; half the plate should be filled with fruits and vegetables. 1/4 with grains and 1/4 protein-rich foods such as lean meat (fish, white skinned chicken), beans or nuts. In addition, there is an inverse relationship between the amount of physical activity and the amount of weight loss. The heavier the food consumed the more excess weight that was lost. A greater weight of food was consumed on the DASH control group. However, the weight loss came from the fruits and vegetables, which are 75-90% water. The DASH diet has similarities to the Ancestral (paleo) diet in which leaves (e.g., lettuce, cabbage, Swiss chard) fresh fruit, root veggies (e.g., carrots, potatoes, yams), broccoli like vegetables, seeds, nuts, fish and wild game were eaten in that order of frequency and quantity. It also has similarities to the traditional healthy Mediterranean diet and the traditional healthy Asian diet.

It is important to combine dietary strategies with exercise. If exercise is fun, people are more likely to do it. Walking can be good exercise and some people benefit from wearing a step counter to measure overall physical activity. A minimum of 10,000 steps per day are needed to meet minimum federal exercise recommendations. After exercise, the body typically craves foods that are rich in water, such as fresh fruits. This is because the body uses water during exercise to keep the core body temperature to a healthy level, but then needs to re-hydrate. An interesting study was conducted in support of this in which students were allowed to eat whatever they wanted from a buffet after participating in a study that had three 2-hour events as the experimental conditions. The three events included boarding, hanging out on board and sitting in the sauna. After the 2-hour event the group that consumed the fewest calories turned out, ironically, to be the ones who cycled for two hours while the individuals who rested or sat in the sauna for two hours consumed considerably more. The reason for this was that the cyclists were more interested in consuming foods rich in water than in consuming foods rich in fat, so they filled up on foods such as fruits and vegetables that have a lot of water and few calories.

As an example, strawberries are an excellent fruit rich in water, they are 92% water. One cup has 3.4 grams of fiber and only 45 calories. The calorie density is 0.3 calories per gram. For the record, fruit rollups do not count as fruits. Fruit rollups are, metabolically speaking, no better than sugar. They are only 9% water; 0 of their 9% calories come from vitamins and minerals. The starch in the fruit rollups will provide energy to fill the stomach, but the fruit rollups do not provide the necessary energy to fill the stomach. The fiber and polyphenols from the fruit rollups will not provide the necessary energy to fill the stomach. While eating strawberries may provide some calories, it does not provide the necessary energy to fill the stomach.

The digestive tract works harder and better when eating fruits in fiber rather than highly processed foods. Refined carbohydrates are quickly and entirely absorbed in the small intestine while high-fiber diets such as fiber-rich foods are partly digested in the colon via fermentation. Colon fermentation is the breakdown of dietary fiber, resistant starch and some other undigested foods by bacteria in the large intestine. The end products of fermentation include volatile fatty acids that help fuel a healthy colonic epithelium. One volatile fatty acid, propionic acid, is thought to lower blood cholesterol levels. Another volatile fatty acid, butyric acid, may have an anti-cancer effect by stimulating the growth of normal cells in the bowel wall rather than cancer cells.

One of the most difficult issues for many people is figuring out what constitutes a serving of fruits and vegetables. Here are some guidelines that represent 1/2 cup servings, which would count as one of the 8-10 servings of fruits and vegetables per day.

- 1 snack container of applesauce (4 oz)
- 16 grapes
- 1 medium cantaloupe wedge
- 1/2 medium grapefruit
- 6 large strawberries
- 5 broccoli florets
- 6 baby carrots
- 1 large plum
- 1 small box (1/4 cup) raisins
- 1 large apple
- 1 large banana
- 1 medium grapefruit
- 1 large orange
- 1 medium peach
- 1 cup watermelon
- 2 large or 3 medium plums
- 8 large strawberries
- 1 large bell pepper
- 1 medium yellow squash
- 2 small stalks of celery
- 1 cup cooked greens or 2 cups raw (spinach, collard, mustard greens, turnip greens)

Foods that count as a cup which is the equivalent of 2 servings include:

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BREAST IMAGING IN 2008

LAWRENCE W. BASSETT, MD, FACR, RIS CANTOR PROFESSOR OF BREAST IMAGING, DAVID GEFEN SCHOOL OF MEDICINE AT UCLA, DIRECTOR OF THE RIS CANTOR BREAST IMAGING CENTER, RADIOLOGIST AND RESEARCHER

This is a summary of a lecture presented on April 18, 2008.

Breast imaging techniques continue to evolve and are now more active than ever at detecting cancers of the breast. In addition to improvements of existing technology, there are new techniques with proven benefits that are being used at leading institutions around the world. The three technologies that are considered to be "proven technologies" are mammography, breast ultrasound and breast MRI.

Mammography

One of the first mammograms was done in New York in 1940 by Stafford Warren, who later became the founding Dean of the UCLA School of Medicine. Since that time radiologists have used different types of mammography with increasing levels of clarity and detail. Between 1976 and 2000, screening mammography with film was most commonly used technique until being replaced by a new standard, digital mammography.

There has been significant debate about whether increased use of mammography has led to a decrease in mortality from breast cancer. In 2002, Duffy and colleagues published a seminal study conducted in Sweden in which breast cancer mortality rates in seven Swedish counties were compared in pre-screening and post-screening areas, and then compared with counties with no screening. Each county utilized the same treatments so decreases in mortality could not be attributed to how patients were treated. The study found that overall about 35% of the population was screened. There was a 30% reduction in breast cancer mortality in those counties where screening had been offered. However, not every woman in these counties actually was screened. When this variable was taken into consideration and they examined the population of women who actually screened, they found that a substantial 45% drop in breast cancer deaths when compared to women not screened. These data underscore the value of mammography for decreasing mortality from breast cancer.

Because mammography is successful in identifying tumors at an early stage, another issue has arisen regarding how to classify tumors. For many years physicians have used what is called the TNM staging system for breast cancer. In this system the T (tumor), N (lymph node) and M (distant spread of tumor) are classified. Tumors were classified according to size. T1 represents tumors less than or equal to 2 cm in size, T2 represents tumors 2 cm to 5 cm in size, and T3 represents tumors greater than 5 cm in size. Fortunately, almost all women are now falling within the T1 category which provides very little information about which women at various stages might be doing better or worse. In 2002, Dr. Bassett, along with lead author Dr. Singletary, published a new staging system, which has been adopted by the American Joint Committee on Cancer (AJCC), that articulates the staging standards to be used. Dr. Singletary wrote, "The need for significant changes in the staging system for breast cancer stemmed from continuing developments in breast cancer diagnosis and management. First, with the widespread use of screening mammography most breast tumors are first detected when they are very small..."

The new TNM staging system for breast cancer includes five new levels less than T2 in size. The first is DCIS, which represents in situ or invasive carcinoma in situ. Before mammography screening only about 5% of all breast cancers were found in situ. However, today after the introduction of screening mammography 30% of cancers detected are in situ. T1 continues to represent all invasive tumors that are less than 2 cm in their greatest dimension; however, there are now four sub-levels of T1. T1mic represents all tumors that have only microinvasion and are 0.1 cm or less. T1a represents tumors from 0.1 cm to 0.5 cm. T1b represents tumors greater than 0.5 cm up to 1.0 cm. T1c represents tumors greater than 1 cm up to 2 cm.

 Breast tissue that is fatty is less opaque; it is easier to see breast cancer lesions in less opaque tissue. Tissues that are denser are considered less fatty. Sometimes as women age and have less estrogen their breasts become less dense, but this is not always the case. There are four levels of breast density. Type 1 is almost entirely fatty tissue, type 2 is primarily fatty with scattered fibroglandular densities, type 3 is heterogeneously dense, and type 4 is extremely dense. The sensitivity of mammography goes down with increased density. Thus, it is most difficult to find a cancer in Type 4 breast tissue.

Many have wondered if there is a way to increase the sensivity of mammography for dense breasts. The Digital Mammography Imaging Screening Trial (DMIST) published in 2005 was an NICI-mandated multi-institutional trial with 50,000 screening exams in which film-screen was compared to digital mammography. Digital mammography was more accurate in women with dense breasts (which included women under 50, premenopausal women and women on hormones). Today about 30% of all mammography units are digital. All mammography at UCLA is digital. There are other advantages to digital mammography. Because it creates computerized images, specific areas of concern can be blown up and looked at more closely. There is no need for film libraries, thus reducing lost films. This can reduce the cost of maintaining space-intensive libraries, especially in facilities with limited space. While some might be concerned about digital images being lost it is not a concern because of regular back-ups. For example, UCLA stores back-ups both here in Los Angeles and in a GE storage unit in Chicago. Digital mammography can create greater access for patients in rural areas where there may not be a radiology breast specialist to read them; digital films taken in remote areas can be quickly sent to centers where there are experts to read them. In addition, Centers can get "outside" films in minutes rather than weeks.

There is a new digital technology technique going into trial called "Breast Mammography Tomosynthesis." This new digital technology offers the advantage of acquiring a three dimensional data set of the entire breast which can be used to reconstruct and look at slices of it. This cross-sectional analysis will help dissect the breast in imaging. Preliminary uses of this technology suggests that it may help eliminate some false positives, in which women are called back for more mammography. UCLA is installing one of these machines and will be using it in its trials to evaluate whether women who get called back for additional mammography might not have needed to return had the Tomosynthesis process been used.

There is a significant crisis developing regarding mammography. In the near future there may be insufficient numbers of well trained radiologists with expertise in reading mammograms to read all of the mammograms. In a national survey conducted in 2002, 30% of the medical practices surveyed reported having unfilled positions for radiologists who read mammograms. Facilities with job openings had long appointment waiting times for screening exams. Thirty-five percent reported financial losses in breast imaging due to poor insurance reimbursements. As physician shortages and financial constraints increase so, too, does the population of women 40 years and older who are in need of mammography and even those seeking to participate in the 100,000 radiology training programs, most of which are attached to medical schools, there were more than 570 job vacancies, 70% of them in breast imaging. In addition, young trainees
are not pursuing careers in breast imaging. A survey of residency training program in the US found that 65% would not consider a fellowship in breast imaging if it was offered. Some of the reasons for not wanting to interpret mammograms included believing that the technology was not particularly interesting, fear of lawsuits, and the desire to minimize the time spent in the breast clinic. The stresses associated with missing a cancer, and low pay (breast imaging specialists are usually paid less than others). Breast imaging specialties that were offered at 53 programs were only able to recruit 43 individuals. These issues were finally recognized by the Institute of Medicine Pathways of the National Academies in 2004; they acknowledged that increased access to quality mammography is needed to reduce cancer deaths and the shortage of screening specialists should be addressed to deal with the capacity crisis. Stay tuned on this topic. Dr. Bassett established a program at UCLA for training those interested in breast imaging, and the program has trained 62 specialists.

Breast Ultrasound: The Promises and Limits

In 1980 when ultrasound began being used for the breast, there was very limited differentiation that was visible. Ultrasound is now able to distinguish the skin, subcutaneous fat, breast parenchyma, muscle, and blood vessels. It makes ultrasound a very helpful tool in detecting the presence of breast cancer. The primary accepted use of breast ultrasound is for identifying and further characterizing palpable and non-palpable abnormalities, e.g., solid tumors respond differently to the sound waves than do cysts. Ultrasound of the breast is also good for guiding a needle biopsy procedure. It is recommended as an initial method to evaluate masses in women under 30, but also in older women when ultrasound does not identify localizations which can be an indication of pre-cancer. There are no data on whether ultrasound as a screening technique will be helpful in reducing the mortality due to breast cancer.

The National Cancer Institute and the Avon Foundation sponsored a study (ACCRN 66666) which evaluated the role of breast ultrasound screening in high risk women. It was run as a multicenter study in 20 different sites with over 2,500 women enrolled in the study. The results indicate that ultrasound seems to have no beneficial effect on the lives of patients. Several of the women in the study complained of being uncomfortable and subjected to a large number of false positives. A false positive means that the ultrasound found a questionable mass, a biopsy was done, but it turned out to be a benign mass. One of the questions that this study raises is whether the benefits are worth the risks. Is this an acceptable rate of false positives or unacceptable in biopsies, costs and anxiety?

Breast Magnetic Resonance Imaging (MRI)

There has been increasing interest in the use of Magnetic Resonance Imaging (MRI) for breast cancer detection. MRI is used to detail images of the body in any plane. It does not use radiation, but instead uses a powerful magnetic field to align the magnetization of hydrogen atoms in the body. Radio waves are used to systematically alter the alignment of this magnetization, causing the hydrogen atoms to produce a rotating magnetic field detectable by the scanner.

The signal is used to reconstruct an image of the body. Since 1993 there have been at least 5 significant studies evaluating the sensitivity and specificity of the MRI technique for breast cancer detection. Sensitivity is the percent of cancers in the breast that were detected by MRI and specificity is the percent of suspicious findings leading to biopsy that were cancer. The range in sensitivity is 91-99% however, the specificity range has been from 28-82%.

The current thinking regarding the use of breast MRI is that it is very important in certain situations; however, it should never be a substitute for a conventional imaging workup. Breast MRI is important as a pre-surgical evaluation to determine the extent of disease in the breast and/or in the other breast. It can also be used as a post-surgical evaluation to determine if there is any residual cancer. It can be used to evaluate axillary (arm pit) lymph nodes. It can be helpful in patients with ductal carcinoma in situ (DCIS) who is provided information about DCIS and the charges created by its diagnosis and treatment.

Looking Ahead

These groups, for women who have finished treatment and have no evidence of disease, provide an opportunity to explore ongoing needs and concerns such as fear of recurrence, job discrimination, intimacy and self-esteem.

FOR MEN & WOMEN PATIENTS

Healing Through Art

This weekly group utilizes art making (drawing, painting, box making, collage, etc.) to explore, reveal and express the issues faced by men and women with cancer. A registered art therapist facilitates the group. No art experience or skill is required.

Living Beyond Limits

These weekly groups are for patients with recurrent, widespread or metastatic disease. The groups focus on living with cancer and promote mutual support, active coping, and improved quality of life.

FOR PATIENTS (WOMEN & MEN) AND THEIR FAMILY MEMBERS

Mind/Body Approaches to Coping with Cancer

This workshop offers patients and their partners or adult family members an opportunity to learn and practice techniques that will help them manage the stresses associated with cancer and its treatments. Each participant receives a detailed manual and a relaxation tape.

Meditation: Inner Healing

Using techniques such as guided imagery, music, color, and movement, this group is designed to optimize emotional, physical and spiritual well being through meditation.

Many people find great value in being part of a group led by an experienced professional. Each person has somewhat different needs; we offer a variety of groups. Some groups are like a class while others provide greater opportunity for self-expression, feedback and providing and receiving support.

The groups listed below are available without cost to patients and family members. Priority is given to UCLA patients; however, requires an interview with the facilitator, for more information about our groups or to enroll, please call (310) 794-6664.

FOR WOMEN PATIENTS

Look Good, Feel Better

This program, co-sponsored with the American Cancer Society, helps women manage the physical appearance changes brought about by cancer and its treatments. Participants receive a complimentary bag of cosmetic and are taught skin care techniques and make-up application. Wigs and head-coverings are also demonstrated. Reservations are required.

Women Together

We offer weekly, ongoing support groups for women being treated for any stage breast cancer. These groups focus on living with breast cancer and the changes created by the disease and its treatments. Day and evening groups are available.

DCIS Support Group

This monthly support group for women with ductal carcinoma in situ (DCIS) provides information about DCIS and the charges created by its diagnosis and treatment.

Acupuncture

Acupuncture effectively treats many of the side effects of cancer. It can help manage digestive discomfort, relieve pain, improve appetite and strengthen the immune system. Most importantly, it can help calm your spirit.

This self-help workshop teaches acupuncture treatments to the patient and caregivers.

FOR FAMILY MEMBERS & FRIENDS

Family and Friends

This weekly group is for friends and family members of individuals with cancer. Participants discuss their concerns and issues related to coping with cancer and their roles as caregivers and members of the support team.

Grief Work

This bereavement support group is for men and women who have experienced a recent loss of an adult family member to cancer. Emphasis is placed on working through grief and loss.

Husbands (Partners) of Women with Cancer

This twice-a-month meeting focuses on husbands and partners and how to live with someone diagnosed with any kind of cancer. This group helps men find the best ways to support their partners as well as themselves through the cancer experience.

BE WELL WITH CANCER: Mind/Body & Integrative Therapies

An educational, experiential workshop to learn Mind/Body Medicine

Saturday, May 16, 2009
9:30 a.m. – 12:30 p.m.
$65 per person, $100 for 2

Contact: marcio@ucla.edu or call 310.206.7303

GROUPS FOR EDUCATION AND SUPPORT

Lung Cancer Support Program

This group provides an opportunity for patients and their families to share stories, provide practical suggestions, and support each other. An Oncology Social Worker provides information and skills for navigating the healthcare system, finding needed resources, coping with day-to-day challenges, issues related to the stigma of lung cancer, fear and anxiety, and keeping a positive outlook.

Qi Gong

Qi Gong is an ancient Chinese art for restoring health and prolonging life. Our Qi Gong classes, led by a Chinese master, are held weekly and promote tranquil, health and fitness.

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Breast Imaging in 2008, continued from page 14

the temperature at different areas of the breast, ostensibly to detect the presence of tumors. Increased blood flow to tumors would theoretically result in higher temperatures. There is no scientific evidence that this works and it has not been evaluated in comparison to the standard techniques. Its advantage is that it has no side effects. Because it has no harmful effects, the FDA approved this device. Once a device is approved by the FDA others can also be approved by demonstrating that they are as good as the existing approved device. If a device has no side effects or harmful effects, it will not be pulled from use. Therefore, many of these thermography devices have FDA approval; however, they do not detect cancers and certainly not small cancers.

Screen mammography is another tool that has received some attention. Initial studies in the late 1990’s with over 2000 patients showed that screen mammography detected tumors with an average size of 2.4 cm but two thirds of the tumors were already palpable. There was only 40%–40% accuracy for lesions less than 1 cm. The limiting factor to this technique is that there is not enough resolution to detect small cancers plus newer devices show more resolution.

There are several other techniques that are under investigation including position emission tomography/mammography, breast CT scanning and electromagnetic imaging techniques such as electrical impedance (EE) scanning, microwave Imaging (MB) spectroscopy, and near infrared (NIR) spectroscopy. None of these are ready for use on patients. While some show the promise of being effective we need to conduct clinical trials to show their efficacy and value.

Summary

Remember there is a lot of hype about breast cancer treatment and detection. Hype is defined as “exaggerated or Intensive publicity or promotion” or “a deception carried out for the sake of publicity”. It is also defined “to promote or publicize (a product or idea) intensively, often exaggerating its importance or benefits.” Alternative imaging techniques are and will continue to be developed. Some will succeed while others will fail, but it is important to trust scientific studies and turn to reliable resources for medical care to avoid the hype and make the right choices. The future is likely to involve a multi-modality approach to breast cancer detection.

August 11, 2009

COLON AND OTHER GASTROINTESTINAL TRACT CANCERS: TREATMENT ADVANCES - J. Randolph Hecht, MD, UCLA Professor Assistant Professor and Medical oncologist, discusses breast cancer, the most common malignancy diagnosed in women which is, in reality, a complicated spectrum of many disorders ranging from mild hormone sensitive disease to more aggressive hormone resistant cancers. The diverse biology and pathophysiology of breast cancer as well as the multiple modalities currently available for the many different kinds of breast cancer are presented. Upcoming new treatments are also reviewed.

July 14, 2009

BREAST CANCER TREATMENT IN THE 21ST CENTURY - Olga Olecky, MD, UCLA Clinical Assistant Professor and medical oncologist, discusses breast cancer, the most common malignancy diagnosed in women which is, in reality, a complicated spectrum of many disorders ranging from mild hormone sensitive disease to more aggressive hormone resistant cancers. The diverse biology and pathophysiology of breast cancer as well as the multiple modalities currently available for the many different kinds of breast cancer are presented. Upcoming new treatments are also reviewed.

June 9, 2009

CAN NATURAL NUTRIENTS PREVENT CANCER AND ITS RECURRANCE? TAKE THE VOLCANO OF INFLAMMATION WITH PHYTOTHERAPEUTICS - Zheng-Li Li, MD, PhD, UCLA Professor of Clinical Medicine and researcher, discusses cancer as a chronic disease that may be influenced at many stages in its progression. Factors that could impact both the prevention and treatment of cancer, the evidence that cancer is the result of a genetic- environmental interaction is discussed using studies of human populations and from animal experiments. Practical advice is given on the role of phytochemicals that are currently having a cancer diagnosis, treatment, recovery or for those interested in learning more about the prevention and protection. Also addressed are lifestyle issues related to exercise and its interactive benefits with nutrition.

September 15, 2009

PROSTATE CANCER: NEW TREATMENTS IN THE OPERATING ROOM AND ON THE HORIZON FOR LOCALIZED PROSTATE CANCER - Christopher S. Small, MD MPH, UCLA Associate Professor urologist and researcher discusses the Prostate Specific Antigen (PSA) test and how it has led to a substantial increase in men diagnosed with early stage, curable disease. Developments in the latest minimally invasive treatment for localized prostate cancer, and some experimental treatments, are also discussed, including the facts and fiction behind these and traditional treatment options for prostate cancer.

October 13, 2009

INTRODUCTION TO MINDFULNESS FOR PATIENTS WITH CANCER AND THEIR CAREGIVERS - Susan Smalley, PhD, UCLA Professor in Psychiatry and Biobehavioral Sciences and founder of the Mindful Awareness Research Center (MARC), and Diana Winston, Director of Mindfulness Education at MARC introduce us to mindfulness: the art of openly and actively paying attention to the present moment. This approach has been scientifically proven to reduce stress, improve attention, boost the immune system, reduce emotional reactivity, and promote a general sense of health and well-being. They present the science behind mindfulness and discuss how it can be useful specifically by cancer patients and their caregivers.

November 23, 2009

PROSTATE CANCER: NEW TREATMENTS IN THE OPERATING ROOM AND ON THE HORIZON FOR LOCALIZED PROSTATE CANCER - Christopher S. Small, MD MPH, UCLA Associate Professor urologist and researcher discusses the Prostate Specific Antigen (PSA) test and how it has led to a substantial increase in men diagnosed with early stage, curable disease. Developments in the latest minimally invasive treatment for localized prostate cancer, and some experimental treatments, are also discussed, including the facts and fiction behind these and traditional treatment options for prostate cancer.

December 8, 2009

NEW TREATMENT STRATEGIES FOR OVARIAN CANCER OFFER HOPE FOR A BETTER PROGNOSIS - Oliver Dierks, MD, PhD, UCLA Assistant Professor, gynecologic oncologist, and researcher summarizes the current treatments for ovarian cancer, including surgery and standard chemotherapy. The emphasis of this talk is an overview of new treatments including molecular, hormonal and immunologic therapies that have shown promising effects in patients with ovarian cancer.
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