I have a powerful urge to communicate with you, but I find the distance between us insurmountable*

FROM THE DIRECTOR
ANNE COSCARELLI, PhD

I heard this profound statement while sitting in the theater recently, and I realized that it metaphorically represents a struggle that I have observed in my work with patients and even in my personal life. I believe this statement speaks to our strong desire to share the depth of our feelings, beliefs, struggles, faith, values, wishes, emotions and the perceived or real communication barriers that may exist that impede our yearning to be seen and heard as our most authentic selves. This powerful phrase has been rattling around in my head since I heard it and it made me think about the value of sharing it and some of my thoughts that have emerged. It has the potential to change how we choose or do not choose to communicate. It has the potential to change how we communicate at one of the most important times in our lives—when dealing with illness and mortality.

I know that cancer is often a life-threatening, always life-altering and challenging event in the lives of people, families, and relationships. After 35 years of working as a psychologist in the field of cancer, I find myself bearing witness to people’s inability to communicate within loved and treasured relationships. I have also had the privilege of bearing witness to what is left unsaid in those beloved relationships. How well this phrase describes that we want to be seen and heard for who we are, to not be judged and that we hope for understanding even when world views may not be in sync. While our world views cannot always be aligned, it is my hope that we can respect, listen, see, feel compassion, give of ourselves, and be present for these deeply needed communications. This powerful urge to communicate across an insurmountable distance can exist in almost any relationship. The distance may be physical, but may more likely be emotional. In cancer treatment, I see this emotional distance frequently occur in two types of relationships—between the patient and his/her physician/medical team, and between the patient’s family (spouses, family, friends, and children).

I have witnessed this communication barrier in the patient/physician (and/or medical team) relationship. I have seen patients struggle to be known for who they are—a vulnerable individual with a cancer diagnosis, who is struggling with the new fragility of dependence, but who still wants to be perceived as the healthy and strong person that they were/are without cancer. We all want to resist being reduced to a disease, treatment, or a case study. This desire sits in juxtaposition to our desire to feel valued and cherished in the eyes of our physician or medical team; opposites and yet in coexistence. I have also seen physicians struggle to find the words to communicate sad and difficult news but still provide optimism and hope and honest answers to their patients’ questions. I have seen them struggle to tell patients and/or families what they want to hear yet still give them what they believe to be an honest prognosis, even if it is unwanted news. On one hand, the medical team wants to support their patient’s sense of purpose, mission, or hope for recovery in the face of advancing disease. When the physician and patient share common beliefs, understandings, or values, this process can be gentle and effortless. However, when there is a mismatch—such as when the patient’s hopes are too high for the situation, or the physician speaks too realistically for the patient’s wishes—then the distance between them may feel insurmountable to each side. Sometimes neither party is aware that their expectations are so mismatched, and they develop a distance between them that can lead to discrepancies in communication and a failure to develop a balanced and synchronized relationship. Being frightened can also lead to what feels like an insurmountable distance. I know this to be true; I observe it. Sometimes I sit with patients and families...

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who share with me their deepest needs, desires, and wishes and yet, when they communicate with their medical team, they lose the words they need to express their authentic selves. At the heart of their fear and pain is a very human fear of abandonment and a fear that their life is finite and may be ending. Whether acknowledged or not, physicians want to maintain meaningful relationships with their patients, but the lack of synchrony makes it all more difficult.

This phrase also deeply reflects the communication that does and does not take place within families during all phases of cancer and its treatment. It can be most profound at end-of-life, but it can happen in the early days of a cancer diagnosis and throughout the treatment. I witness patients wanting to communicate in a profoundly honest and deep manner with their partners and vice versa. Sometimes their relationship is already struggling with communication problems long before the cancer diagnosis, sometimes the distance between partners is already so impassable that the urge to communicate is already absent. Relationships that were initially founded on love, attraction, shared values and beliefs, may have eroded over time. Restorations, growth, communication opportunities were missed, or attempts to communicate were met with resistance, lack of encouragement or support. Feeling misunderstood, not feeling “seen” or “valued” can make people suspect the chasm between them can’t be bridged, a feeling of anger, frustration and a desire for an apology. They may not feel forgiveness, compassion, flexibility but rather a palpable presence of struggle.

In my experience as an outside observer, I can often see that there is still an ongoing wish for the intimacy of a shared experience and for feeling loved and cherished. Despite all that is missing, I can see the possibility for a more unifying relationship. When I speak individually with each person, I hear their wishes, and the solution seems so simple. If each of us could give just a little, perhaps we would find ourselves closer than we are now and this could be the beginning of profound change, back to what we used to be or better. I have felt empathy, anger, frustration and a desire for an apology. They may not feel forgiveness, compassion, flexibility but rather a palpable presence of struggle.

The questions upon which I reflect are: How do we get to the sanctity of communication without the impending threat of loss of life? Is there a way to powerfully hold the impermanence of our lives in the present moment and be able to reach out to those in our lives with the desire to overcome the distance? Can we use our powerful need to communicate to its fullest ability? How do we do that with those we love and with those who love us? How do we live in a place where we recognize the need to communicate and see a way around our feeling of insurmountable distance? Can one person do it without the other also seeing it?

As I pose these questions and raise the importance of really overcoming that distance, I find myself only hypothesizing about solutions. In that vein, here are some brief thoughts that might be effective, ones that I will be testing, and I hope you might test with me if this resonates with you as it has for me.

• Mindfulness is the practice of being in the present. Its foundation is based on compassion, loving-kindness, and forgiveness. It is by definition an open curiosity and seems like it could lend itself to bridging this chasm. The practice of mindful meditation-focused on the need for communication but also as a state of being—could be beneficial.

• Bringing awareness to the existence of a barrier and opening a discussion around the feeling of the need to communicate may be helpful. We know from decades of psychological practice that identifying problems, struggles, and challenges is the first step in resolution.

• Creating opportunities to share feelings with a commitment to be non-judgmental often facilitates communication. You can also reduce obstacles when you speak from your heart about your needs and avoid criticism in the process with the other person.

• Sometimes the Nike motto, “Just Do It,” will allow you to be brave so you can ask for what you need from people and for yourself. Distance can be overcome with a first step.

• State that you need to be close and that closeness comes from being a “somebody” to the other rather than just an “anybody.” Most of us thrive when we feel that we are important to someone. It is our most basic need for affiliation and belonging. We seek spiritual and religious community, friendship and relationship because we want to belong.

• Despite our desire to hold on tight, sometimes we have to let go. Not all relationships are meant to last throughout your life; sometimes acknowledging their end can be powerfully healing. Letting go is rarely done lightly. I know it may give way to loss and grief but can also create new paths.

• Listening is the most powerful communication skill that any of us can utilize. We need to be aware of how much listening we are doing and whether we are helping those in our lives to feel heard and seen. Real practice listening as if it is a gift to bestow on another. When you listen, you also ask that people listen to you, too.

• Be aware that today, this minute, this moment matters. We know that the future is uncertain. We only have this moment; every other one is imagined until it is lived and then it becomes a memory. If we cannot speak now, then when?

I do not know all the answers, but I hope that I have stimulated your hearts and minds to notice, to wonder and to question if what you feel sometimes is a powerful urge to communicate though you feel the distance is insurmountable. In that awareness does it motivate, stimulate and challenge you to reach out and bridge that distance?

I wish you success in your endeavors to be seen, heard, comforted, held in love as you and your loved ones traverse cancer and its treatments and all the ways it shifts life.

* Note: The quote came from the play “The Christians,” by Lucas Hnath. The play’s title may influence any of us in a positive or negative way depending on one’s religious orientation. That being said, in this context, it is a secular statement.
The immune system is very complex, and there is no simple explanation or understanding that can allow researchers to adapt therapies to facilitate the immune system in anti-cancer therapy. In the simplest explanation, the immune system functions to protect us from infection. The immune system is made up of many different types of cells, many of which have specific functions. These cells are deployed when a threat to the body is detected and they attack viruses, infections, and aid in healing. These cells also likely attack some cancer cells. However, the immune system is not able to detect all cancers. Scientists believe that it is hard for the immune system to detect cancers because it is a tightly controlled system geared toward defending the body from “outside” invaders but not necessarily “inside,” or rather internally generated invaders. Our immune system can keep itself from attacking the normal cells in our body using internal “checkpoints” that include specific molecules on our immune system cells that need to be turned on or off to tell our body to create an immune response. However, unlike viruses or bacteria, cancer cells develop from our own bodies — made up of mutations of our own normal cells; they are not “outside” invaders. Some cancers can use our internal checkpoints to avoid being detected by the immune system to avoid attack. One of the newest forms of immunotherapy being researched attempts to take the brakes off the immune system by releasing these checkpoints to allow a wider immune response than the body would typically make. Two new therapies that have been developed open or unlock the checkpoint allowing the immune system to function with greater liberty.

Two recent drugs that have received approval from the Food and Drug Administration (FDA) include pembrolizumab (Keytruda) and nivolumab (Opdivo). The efficacy of pembrolizumab was demonstrated in a study of 611 patients. They looked at patients with melanoma who had failed other treatments, and they had surprisingly positive results with this anti-PD1 therapy. There are patients who were very ill who are still alive many years later after being part of these clinical trials. The responses tend to be durable because the immune system tends to remember things, e.g., the childhood vaccines that we all get provide a lifetime of protection — our immune system “remembers” and continues to protect our body long after childhood.

In these trials, researchers also look at adverse events as well as side effects. Approximately 12% of patients in the trials had grade 3 or 4 adverse events which is comparable to other traditional treatments and is considered acceptable. The most common non-serious side effects include fatigue, itching, and rash. During the clinical trial, we need to attend to any inflammatory response.

One of the big questions puzzling scientists is why this therapy works for some patients yet not for others. The immune system has many checks and balances to make sure that it is not overactive. An overactive immune system can attack our normal body wherein people develop “autoimmune disorders.” In the clinical trial, we did discover that the immune systems of the patients for whom the treatments were not effective were able to put up a shield to repel the attacks. Our next step is to figure out how to impact the adaptive immune resistance that the tumors were creating, not allowing the attacks to reach the inner parts of the cells as well as the intricacies of the resistance. Through various research methods, scientists are learning more about this defensive response and we are discovering even greater complexities within the immune system. With each endeavor, we learn more.

Researchers have found long-lasting responses in patients with melanoma (30-35%), non-small cell lung cancer (20-25%), bladder cancer (25%), Hodgkin’s lymphoma (65-85%), Merkel Cell carcinoma (71%), head and neck cancers, gastric, renal, ovarian, colorectal and liver cancers. There are many different drugs being developed and at the time of this lecture two drugs have been approved by the FDA with more to come. There are additional strategies we are testing combining targeted treatments with immunotherapies. Vaccines are also part of the strategy, and we are trying to genetically engineer cells to destroy cancer cells without harming other cells. There are multiple strategies in the process with research here at UCLA and around the globe. There has been tremendous progress in the last decade, and there is promise for continuing progress.

(Note to Reader: This was such a complex and informative lecture that we encourage you to view it online to get more of the science presented. The video can be found at: http://www.simmsmanncenter.ucla.edu/index.php/center_events/treating-cancer-with-the-immune-system)
Standard Treatment for Primary Brain Tumors

There are an estimated 66,240 new cases of primary brain tumors diagnosed each year, of which approximately 66% are malignant. The most common primary brain tumor is meningiomas, which are mostly benign. The most common malignant primary brain tumors in children are medulloblastomas; the most common malignant primary brain tumors in adults are gliomas, with more than 50% of all gliomas being glioblastomas.

The World Health Organization has developed a grading system for gliomas based on the way they look under the microscope, but that does not take into account any of their molecular features. This grading system includes looking at cellular atypia, mitoses, endothelial proliferation, and necrosis. Grade I tumors are called pilocytic astrocytomas. Grade II includes oligodendroglioma, astrocytoma or mixed tumors with atypia, but no mitoses. Grade III tumors are anaplastic with mitoses. Grade IV tumors are glioblastomas (GBM) and include atypia, mitoses, and microvascular proliferation and/or necrosis.

The standard therapy for GBM is chemotherapy and radiation therapy. Based on a clinical trial in 2009 we learned that the percent of patients who received concomitant chemotherapy (temozolomide or TMZ) with radiation therapy who were still alive at 2 years nearly tripled compared to those receiving radiation therapy alone.

Other first line treatments for GBM include Gliadel wafers which are placed inside the brain cavity location where the tumor was removed. This treatment is not as common as it tends to exclude patients from clinical trials and had very little benefits in survival over those who did not receive the Gliadel wafers. Optune™ is an FDA approved device that creates alternating electrical fields to disrupt cell division. In a study of recurrence, it was found to be as good as chemotherapy. In 2011, it was approved as a single therapy for recurrent GBM and has since been approved as an adjunctive therapy to chemotherapy with TMZ for newly diagnosed GBM. In a phase II trial of 695 patients, overall survival was improved by about three months and progression-free survival by about four months compared to TMZ alone.

In addition to the above treatments, bevacizumab (Avastin) is approved for the treatment of GBM. However, it is often used as a 3rd or 4th line treatment after clinical trial therapies because it can be an exclusion criterion for some clinical trials. Bevacizumab was developed to block the VEGF protein that helps tumors grow new blood vessels to sustain themselves. It is an anti-angiogenic molecular treatment. It was approved for treatment based on a non-randomized phase II trial for recurrent GBM. It does not seem to help in initial treatment. The most important first-line therapies for GBM are ongoing phase III trials which have included vaccines with adjuvant TMZ and immunotherapy plus standard therapy.

Two recent trials for patients with newly diagnosed Grade III Anaplastic Gliomas found that there was a significant added benefit to adjuvant treatment with chemotherapy following radiation therapy. The chemotherapy that has been used to date is procarbazine, lomustine, and vincristine (PCV). Patients who had the molecular finding of 1p/19q co-deleted had double survival rates. This same regimen was also evaluated with low-grade gliomas, and overall survival nearly doubled with adjuvant chemotherapy over radiation alone. However, in low grade gliomas that were completely removed at the time of surgery, there does not seem to be an improvement in survival with early treatments with radiation therapy. One question that remains is whether TMZ could also be beneficial.

Brain Metastases from Other Primary Cancers

Metastatic cancer is the most common type of tumor found in the brain. There are approximately...
Researchers believe incidences of metastases to the brain are increasing because the brain is a “sanctuary” site. That means tumors can hide in the brain; they are not as easily targeted for treatment due to the barriers that exist that protect the brain from drugs and other toxins. We have seen more cases of metastasis to the brain despite the systemic disease being under control in patients who have HER2 positive breast cancer and with non-small cell lung cancer with EGFR mutation who were treated with gefitinib. Treatments for brain metastases include surgery, radiation therapy, chemotherapy, and some biologic agents.

Radiosurgery is a form of focused radiation that delivers a high dose of radiation to very specific areas of the brain. It can be given alone or it can be given following surgery to a small area of the surgical beds from which the tumor was removed, usually with a maximum size of 3-4 cm. This type of radiosurgery is called stereotactic radiosurgery and is usually given over 1-5 treatments. The high dose per fraction is 12-20 Gy compared with conventional radiotherapy which might be only 2 Gy per day. Radiation oncologists can treat up to 10 brain metastases without using whole brain radiation as long as the tumors are less than 3 cm in diameter, and the total volume is less than or equal to 15 mL.

At UCLA, our approach to brain metastases is as follows: if the person is asymptomatic and there are no more than 10 small metastatic lesions, then radiosurgery is recommended. If there is a need for a tissue diagnosis, then surgery is done followed by radiation with 1-5 doses. For larger or symptomatic lesions, surgery and radiation are administered up to 1-5 doses. If the tumor does not respond to radiosurgery, then we do surgery or laser ablation. Laser ablation requires a one-day hospital stay, and since there haven’t been any randomized control trials of this treatment so far, it is unclear how well it works. When there are innumerable metastatic lesions or the patient has leptomeningeval disease (disease on the membrane that covers the brain) then we administer whole-brain radiation. In whole-brain radiation we administer a lower dose of radiation to the entire brain over multiple days.

Chemotherapy is generally not efficacious for metastatic disease to the brain but is recommended for tumors that are highly sensitive to chemotherapy or have already failed radiation therapy. Chemotherapy is also used for leptomeningeval disease. In these situations, we administer a chemotherapy agent that can penetrate the brain that is also specific to the primary cancer. It is not clear if the blood-brain barrier is the most predictive factor. Researchers are currently investigating using antibodies and small molecules for metastatic brain tumors. Some antibodies with potential effectiveness in brain metastases include bevacizumab and platinums. While some antibodies may not penetrate the brain, they may have other effects on other cells that can kill the cancer. Finally, it should be noted that standard doses of small molecules may not achieve high enough concentrations in the brain, and there is some research to suggest that high-dose pulses of small molecular targeted therapies might be effective.

Experimental Approaches in Neuro-Oncology

There have been and continue to be a variety of experimental approaches in neuro-oncology. As with other tumors, we are trying to understand how to intervene at the molecular level to disrupt the process of cancer cell growth. There have been many new targeted treatments for other cancers, but at present there is only one approved treatment for primary brain tumors—bevacizumab.

Researchers have found three main pathways by which genetic alterations occur in primary brain tumors. The first is the RAS/RAF/MEK/ERK pathway—approximately 88% of GBMs have an alteration in this pathway. The second is the PI3K gene mutation pathway—approximately 87% of GBMs have an alteration. The third is the NF1 signaling pathway—about 78% of GBMs have this alteration. Although most tumors had abnormalities in all 3 main pathways, each tumor may have just 1 or 2 abnormal pathways, and they can occur in different parts of the pathways. In the past we have developed treatments in unselected populations and have not shown any of these treatments to be successful. Currently, our studies using molecular targeted therapies are given to patients with particular molecular abnormalities to individualize treatments.

Another area of scientific exploration has been immunotherapy, in which the goal is to stimulate the patient’s immune system to fight the cancer. Researchers have tried cancer vaccines, but they are still in clinical trials and no treatment has been proven to improve survival yet. Gene/retal therapies have also been tried; more than 40 gene therapy trials have been done in brain cancer. We have found them to be safe, but they have limited benefit due to ineffective gene transfer to cancer cells. New gene/viral therapies are using different methods to deliver genes to tumors to target tumor cells directly.

One new area for targeted therapy for grade 2-3 gliomas is targeting IDH mutations (isocitrate dehydrogenase gene type). Mutations in the IDH1 correlate with improved outcomes in all grades of gliomas. This mutation may indicate a separate genomic origin of gliomas from non-mutated forms. The low-grade gliomas have more of the IDH mutation compared to IDH wild-type—80-90% in low grade, 50% in anaplastic glioma and only 4% in GBM. There is currently one ongoing study with specific molecular targeted therapies for IDH1 mutations in recurrent gliomas. One obstacle to participating in some clinical trials is if patients use and need seizure medications. Some of the older seizure medications are not allowed for trials and patients must switch to be eligible. Drugs of concern include those classified as EIAEDs, e.g., carbamazepine, oxcarbazepine, phenytoin, fosphenytoin, phenobarbital and primidone. Non-EIAEDs do not interfere in these trials and include valproic acid, gabapentin, lamotrigine, topiramate, tiagabine, zonisamide, levetiracetam, clonazepam, chlordiazep, pregabalin and lacosamide.

Symptomatic Management

Seizures. An important part of managing brain cancer, including metastatic disease, is managing symptoms. Seizures occur in about 70% of patients with low-grade gliomas and 22-49% of GBM. About 40% of all patients have seizures as their presenting symptom. Seizures have an impact on the patient’s quality of life and ability to function. Treating brain tumors tends to decrease the frequency and number of seizures. Patients with seizures need to be treated with standard anti-epileptic drugs. Some types of tumors have more tendency to cause seizures such as metastases from melanoma, choricocarcinoma, and renal cell carcinoma which tend to cause bleeding; primary tumors in certain locations such as the temporal lobe or insula or large tumors can cause acute to subacute neurologic symptoms. The goal of seizure medication is to limit negative cognitive side effects. There is no data suggesting that one medication is better than another for brain tumors. Medications may also have multiple purposes such as seizure treatment, mood stabilization or pain control. Physicians need to watch out for drug interactions between seizure medication and chemotherapy, molecular targeted agents, and desmethylsone.

Brain Swelling. Peritumoral edema (brain swelling) is another important side effect we need to manage.
One of the few things we have control over after a diagnosis of cancer is how and what we eat. Good nutrition helps improve well-being and may help reduce treatment side effects. Unfortunately, there is also a lot of misinformation widely available in the media and on the internet about nutrition and cancer including exaggerated claims for how certain diets may affect the outcome—either positively (raw food, juicing, etc.) or negatively (high sugar, caffeine, etc.). These claims often have the inadvertent effect of causing stress and anxiety in patients especially when well-meaning loved ones urge adherence to a magical-sounding regimen they may have read about on the internet.

According to the National Cancer Institute, cancer is not one disease but is “the name given to a collection of related diseases. In all types of cancer, some of the body’s cells begin to divide without stopping and spread into surrounding tissues.” Immunohistochemistry and other new techniques have identified more than 250 different mutations that are associated with malignant disease processes. As a result of this molecular complexity, there is no “one size fits all” for nutrition recommendations. Some genetic mutations may be present at birth and result in an increased vulnerability to environmental toxins or radiation; these are called germ line mutations. Other mutations occur and accumulate during our lifetime which is why one of the risk factors for cancer is age itself. Nutrients found in a healthy diet may help to protect DNA from damage from the environment and may also support immune surveillance systems. An integrative approach seeks to incorporate current and actionable knowledge for each patient. There is an increasing recognition of the importance of the micro biome—the microbes that live in and on us.

Cancer arises from mutations in regions of the genome or DNA that code for proteins involved in vital processes. DNA integrity is at the core of health and can be used as a theme to describe how and why nutrition plays a role in fighting cancer. The 3 A’s of health are Antioxidants, Anti-inflammatories, and Anticancerogens; foods rich in the 3 A’s help maintain health and wellness before and after a cancer diagnosis. Another important concept is that of Hormesis. First introduced in the sixteenth century by the father of toxicology, the Swiss scientist and physician Philippus von Hohenheim noted: “All substances are poisons; there is none which is not a poison. The right dose differentiates a poison from a remedy.”

Many natural compounds can be tolerated at very low levels but at higher levels exhibit toxicity. An example of this is mercury. Most plants consumed as food, however, have levels of bioactives that are inactive below a certain threshold, then show benefit, but at higher levels can result in toxicity. Herbal medicines and dietary supplements exhibit such hermetic effects often within a narrower dosage range. Combinations of such bioactives provide added complexity and may explain some unexpected beneficial and negative side effects.

On my first day as an undergraduate student at London University’s King’s College, our Nutrition department chair, Dr. Arnold Bender, asked the freshman class what would be a completely safe item to consume. When a few of us answered “water” he reminded us that if someone poured 5 liters of water down your throat, within 30 minutes, you would die! This is an excellent example of Hormesis. Without water we would die but too much too fast can kill.

Another of the answers provided to Dr. Bender was oxygen, another hermetic substance. Air is how we get oxygen, and we inhale about 2.3 grams a minute. Oxygen is generated by plants from carbon dioxide. In contrast, we use oxygen and generate CO2 which we then exhale. The lungs play a crucial role in this exchange and also regulate acid-base balance at the same time. One reason why exercise is so important is because we breathe more deeply when we exercise. Conversely, when we are sedentary or stressed, we breathe more shallowly.

Qi Gong is a wonderful integrative modality we offer at our Cancer Center. Qi Gong is a form of aerobic exercise and also helps to regulate acid-base balance and oxygen delivery. Qi Gong is an ancient Chinese exercise that aims to restore the body’s balance and vitality. It involves slow, gentle movements and deep breathing to improve circulation and promote relaxation. Qi Gong is often practiced at the beginning of the day to help clear the mind and focus the energy of the body. It is also used to help relieve stress and improve overall well-being.

Fruits and vegetables often contain low levels of toxic chemicals that provide health benefits when consumed in modest amounts but become increasingly noxious at high levels, a process called hormesis. The disparity in effects—traced on a biphasic response curve—contrasts with mercury and other nonhormetic toxic substances that are harmful at even low amounts.

**Nutrition and Cancer**

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This is a summary of a lecture presented on March 8, 2016.

Antioxidants are crucial for DNA integrity and form the first of the trio described above. Antioxidants protect DNA from damage such as from ultraviolet light (which is why sunscreens are important) as well as other environmental inputs including components of smog and tobacco smoke. The USDA approves two synthetic antioxidants permitted to be added to foods for added nutritional stability—usually, such foods contain polyunsaturated fatty acids such as corn or other oils. Meats including processed meats have been linked to an increased risk of colorectal cancer. I recommend reading the labels and avoiding processed meats, especially those with added BHA, which is listed as a carcinogen by the State of California.

Antioxidants include some vitamins (such as vitamins C and E), some trace elements (minerals), and flavonoids, which are found in plants. Zinc is an important bioactive nutrient. Zinc plays a crucial role in pretty much everything the body does. It is especially important in immune functioning in part because of its role as an antioxidant during respiratory bursts of active unstable reactive oxygen species formation. Zinc is also a cofactor in the repair enzymes that make sure DNA and RNA are accurately copied. Zinc is a very important trace element (meaning we only need it in amounts less than a gram a day). Vegetarians and vegans need more zinc than people who eat animal products. Also, alcohol destroys zinc, so requirements are higher if you drink frequently. Examples of zinc rich foods which are also high in protein and many other vital nutrients are oysters, beef, lamb, wheat germ, spinach, pumpkin and squash seeds and nuts. Loss of taste and smell are early signs of a dietary insufficiency of zinc.

Foods that are rich in antioxidants often derive from plants that have evolved a self-protection mechanism from reactive oxygen species or ROS. There are some 4,000 phenolic compounds with over 1,000 with an identifiable antioxidant benefit for humans when consumed as part of our diet. Examples of foods rich in such phenolics include red cabbage, blueberries, dark chocolate and culinary spices such as turmeric and ginger. As noted earlier, there are some times when you need to boost your antioxidant intake. Remember, however, the Hormesis principal during cancer therapy. We don’t want to interfere with the mechanism of...
rapidly have a higher chance of making DNA mistakes in the resting phase. We know that cells that turn over low for cells to be repaired by having sufficient time in inflammatories is to consider how their effect is to al-

thyme, and turmeric. One way of thinking about anti-

hancers. Culinary and medicinal herbs and spices have been treasured throughout history. Examples include many natural flavor and stability en-

hancers such as autoimmune conditions or chronic viral infections. Anything ending –it means it is inflamed. A blood test that may identify this is C-Reactive protein or hs-CRP. Some physicians monitor this marker of chronic inflammation.

In health, there is a dynamic mixture of pro- and anti-

flammatory mediators which affect a risk of devel-

oping cancer. Balance is achieved by modulating gene expression, providing food components and minimiz-

ing additional insults from environmental exposure, for example, preventing sunburn. Proinflammatory mediators include IL-6, TNF-alpha, and COX-2. Let’s look at COX-2 as an example. Cyclooxygenase-2 is an enzyme involved in the metabolism of arachidonic acid to inflammatory prostaglandins. Over expression of the gene coding for this protein is associated with gastroin-

testinal cancer. Natural COX-2 inhibitors from the diet may be helpful in reducing the risk of chemoth-erapy-induced peripheral neuropathy for example. Many herbs and spices used in traditional cooking and preserving have anti-inflammatory properties. Orega-

no, for example, is a natural COX-2 inhibitor contain-

ing bioactives such as Apigenin, Kaepherol, Ursolic acid and Oleanolic acid. The late John Milner, Ph.D., head of Nutrition and Cancer Prevention at the National Cancer Institute, was a leader in the field of identifying foods with protective properties. Holy Basil is another plant that may be helpful during treatment. One study determined that Holy Basil helps sensitize ionizing radiation-induced apoptosis or pro-

grammed cell death. Ginger has many beneficial properties including medi-

ating COX-2 expression and inhibiting another impor-
tant regulating signaling protein NF-kappa B. Essential oil of ginger is especially helpful and a safe therapy for combating nausea.

Anti-inflammatories prevent elevated rates of cell di-

vision which may increase “mistakes.” Cells in resting stage have more time to be “corrected” as DNA repair takes place preventing chronic illnesses. Examples are:

- Omega 3 fatty acids (EPA and DHA)
- Flaxseed, borage, and blackcurrant seed oil contain-

ing beneficial fatty acids (ALA and GLA)
- Natural salicylates, e.g. turmeric, rosemary, thyme, apio-

cots, broccoli
- Naturally occurring COX-Inhibitors green tea, cocoa, and red wine

The third of the 3 A’s is Anticarcinogens – The demand for these is elevated in those with a higher risk of DNA mutations perhaps because of a previous diagnosis, exposure to carcinogens, because of frequent scans or a family history of cancer

Anticarcinogens prevent damage to DNA and also al-

low time for DNA repair or apoptosis, also known as programmed cell death. Here are some foods rich in these bioactives. Again, we see turmeric as part of curry powder, a traditional preserver of meat in India. Also, citrus fruits especially the oil found in the zest of the rind contains limonene and naringin. Here are more examples of these important components of a cancer-fighting diet.

- Garlic and other members of Allium family (allicin)
- Broccoli and other members of the Brassica family (isothiocyanates)
- Curry powder (turmeric, cumin and other spices)
- Citrus fruits (naringenin and limonene)
- Green tea (EGCG and other catechins)
- Pomegranates (especially the oil from the seeds)
- Brazilian nuts (excellent source of selenium)
- Tomatoes (excellent source of lycopene)
- Saffron (crocins and safranal)

Two groups of vegetables have notable anticarcinogen-

ic properties: the Allium family (onions and garlic) and the Cruciferous or Brassica (cabbage) family. Let’s look at the Allium members first. These vegetables are rich in sulfur bioactives or organosulfur compounds such as allyl derivatives. These sulfur containing compounds modulate the activity of detoxification enzymes and inhibit the formation of DNA adducts. When crushed, garlic releases allicin as well as at least other 33 sulfur compounds it contains.

The other group of vegetables with anticarcinogenic benefits are the Cabbage, also known as Cruciferous or Brassica family. Cruciferous is from the Latin word cruc-
Simms/Mann – UCLA Center for Integrative Oncology News, Winter 2017

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INSIGHTS INTO CANCER

fer or cross and refers to the four-petaled white flower. Similar to the Allium family, the bioactive compounds in this group of vegetables have organosulfur properties, and the active principles are released when crushed or chewed. Examples are cauliflower, cabbage, garden cress, bok choy, broccoli, brussels sprouts, kale, Brussels sprouts, kohlrabi, radishes, daikon, among others.

Another dietary component with anticarcinogenic properties is Vitamin D. This molecule is both a vitamin and a hormone as it is not only found in foods and essential for health (a vitamin), but is also made in one part of the body for action in another part or is a hormone by definition. Vitamin D has been identified as being associated with a reduced risk of several cancers. It is now being studied as a possible anticarcinogen in two phase I trials funded by the NCI to determine what dose of Vitamin D may be useful for chemoprevention of prostate, colorectal and lung cancers. The trials are due to be completed at the end of 2017. In animal studies, Vitamin D promotes cellular differentiation, decreases cancer cell growth and stimulates cell death or apoptosis as well as reducing tumor blood vessel formation also called angiogenesis. Genetic polymorphisms may explain why some individuals require higher intakes of vitamin D for health.

Vitamin D is not found in many foods unless they are fortified. For example, dairy products are fortified with Vitamin D. Salmon, sardines, and other oily fishes, as well as liver, are fairly rich natural sources. The Recommended Daily Allowance or RDA is 600 IU per day assuming a Tolerable Upper Limit of 4,000 IU per day assuming minimal sun exposure. We recommend people get a blood test to determine their Vitamin D level and their individual requirements.

Another diet-sensitive metabolic pathway involved in cancer progression includes NF-kappa B. Spices such as curcumin, fennel-derived anethole, capsaicin from chili peppers, cardamon and others may all regulate NF-kappa B pathway activity and thus act as Anticarcinogens.

Each of us is different, and each of us has different tastes and nutritional needs. We all need to monitor our personal health indicators such as weight, blood sugar control, and cardiovascular health for optimal wellness at every stage of our life and cancer journey.

Now let’s look more closely at sugar and sweet foods in general. Our first exposure to the world is with breast milk which is sweetest of all natural foods. Of course, we each of us have different taste preferences and taste acuity capacity. As we age, we adapt to bitter or sour perception and may prefer less sweet foods. Since the widespread introduction of artificial and manufactured sweeteners over the past 40 years, there has been a global increase in obesity and associated diseases such as diabetes. In response to this global health challenge the World Health Organization recently expanded its recommendation to reduce free sugar intake to 10% and preferably as few as 5% of total calories. The WHO has directed their strong recommendation at policy makers with a goal of reducing both childhood obesity and dental caries.

All cells, especially brain cells, use glucose, and it is not feasible or recommended to avoid all dietary sugars. In nature many of the structural components of vegetables, grains and fruits are composed of various sugars bound together in complex chains. Grains such as wheat or rice can be milled to remove some of these as dietary fiber found in the outer layers of the grain; however, the resulting flour readily breaks down into simple sugars – this may be rated using a glycemic index, or we speak of a glycemic load with combinations of foods. Dietary fiber or the intrinsic sugars slow this down; hence, a low glycemic load diet is preferred. Since the early 1980s, food manufacturers have added high fructose corn syrup (HFCS) to the food supply. HFCS is far sweeter than sugar and is a large contributor to the 25% increase in “added sugars” in the US from its GRAS recognition date in 1976 to 2000. HFCS consumption has not only coincided with an epidemic of childhood and adult obesity but also added to the overall sweetness of the diet. Manufacturers like added sugars and sodium salts because they extend shelf stability and makes it easier to transport food without spoilage.

Added or free sugars are found mainly in beverages, particularly in carbonated beverages and sodas — sometimes called “liquid candy.” Fruit juices also contain added sugars. Recently the American Heart Association agreed with the World Health Organization to reduce consumption of added sugars to fewer than 9 teaspoons for men and 6 for women. Each teaspoon is approximately 4 grams and 16 calories. Recent new FDA labeling rules will include “added sugars” and will be in effect by July 2018. Dietary fiber is comprised of complex carbohydrates or the indigestible residue of plant-based foods such as grains, beans, leafy and root vegetables and fruits. Dietary fiber reduces the rate of glucose uptake from a mixed meal and also supports a healthy colon environment that supports “friendly

Recently the American Heart Association agreed with the World Health Organization to reduce consumption of added sugars to fewer than 9 teaspoons for men and 6 for women.

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Most people love sweet tasting foods, so the food industry has looked at how to provide sweetness to people, such as diabetics, who have to limit their simple carbohydrate intake. Saccharin was the first sweetener to be synthesized — by accident at the end of the 19th century. Each non nutritive sweetener listed here has an Acceptable Daily Intake level set by the FDA and is used since antiquity as a health food, pickles, tempeh and yeast extracts such as Marmite®.

Several probiotics have been shown to reduce side effects during chemotherapy. For example, Culturelle® is thought to be effective in reducing IL-6 inflammatory cytokine activity for example. A new understanding of the role of the gut-brain axis includes supporting probiotics for mental health. Listed below is a small chart of some probiotics I recommend, basing the recommendation on the patient's individual condition and issues:

**PROBIOTICS**

<table>
<thead>
<tr>
<th>Probiotics</th>
<th>Bifidobacterium B. infantis 35624</th>
<th>Lactobacillus L. rhamnosus GG</th>
<th>Saccharomyces boulardii</th>
<th>L. acidophilus Lp-115 and HOWARU® B. lactis HN019</th>
<th>B. lactis La-14, B. longum BI-05, L. plantarum Lp-115</th>
<th>B. lactis Bi-07 and L. acidophilus NCFM®</th>
<th>L. boulardii with the strains B. lactis HN019 and L. rhamnosus HN001</th>
<th>B. lactis BI-07 and L. acidophilus NCFM®</th>
<th>S. boulardii with the strains B. lactis HN019 and L. rhamnosus HN001</th>
<th>B. lactis BI-07 and L. acidophilus NCFM®</th>
<th>B. longum, B. infantis, B. breve, L. acidophilus, L. casei, L. delbrueckii spp. bulgaricus, L. plantarum and Streptococcus salivarius subsp. thermophilus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Align®</td>
<td>B. infantis</td>
<td>GI health, diarrhea prevention</td>
<td>Saccharomyces boulardii</td>
<td>Lactobacillus L. rhamnosus GG</td>
<td>L. acidophilus Lp-115 and HOWARU® B. lactis HN019</td>
<td>L. acidophilus Lp-115 and HOWARU® B. lactis HN019</td>
<td>B. lactis BI-07 and L. acidophilus NCFM®</td>
<td>B. lactis BI-07 and L. acidophilus NCFM®</td>
<td>S. boulardii with the strains B. lactis HN019 and L. rhamnosus HN001</td>
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</tbody>
</table>

**Important cautions:**

There may be some foods or supplements that should be avoided completely. For example, Velcade and EGCG do not go well together — one is inactivated by the other. Anticoagulants may interact with many supplements in an additive effect. This is an example of why it is important to list everything you are taking to avoid interactions. Also, do not get your advice from the grocery/ nutrition store clerk or the Internet. Instead, consult a highly trained nutritional scientist who understands the interaction of supplements on a molecular level.

Single source dietary supplements of antioxidants are also not recommended. We do not recommend beta carotene, synthetic vitamin E or vitamin C in large doses while undergoing chemotherapy or radiation treatment, even though it would appear to be a logical suggestion for hermetic reasons, such as we discussed earlier; these supplements appear to be used by cancer cells as protection.

So what do we recommend as healthy food choices to thrive not just survive?

- Choose fish at least 3 times a week for omega-3 and protein.
- Choose fruit, especially berries, for breakfast, snacks, and dessert.
- Choose 2 or more vegetables at lunch and dinner especially from the garlic and cabbage families.
- Cook often with culinary herbs and spices; and, Most important of all, remember that food is for pleasure as well as sustenance!
<table>
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<tr>
<th>ONE TO ONE CLUB</th>
<th>DONORS</th>
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<tr>
<td>$5,000 – $9,999</td>
<td>Minerva &amp; Robert Bootter</td>
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<td>$1,000 – $4,999</td>
<td>Lauren &amp; Richard King</td>
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<tr>
<td>$500 – $999</td>
<td>William Schrag</td>
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<td>$100 – $499</td>
<td>Adam &amp; Allan Crichton</td>
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<td><strong>FOUNDER'S CIRCLE</strong></td>
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<td><strong>$500,000+</strong></td>
<td>Gary &amp; Robert Chang</td>
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<td><strong>DIE uNIVERSITY</strong></td>
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<td><strong>$10,000 – $24,999</strong></td>
<td>Laurence Spiegel</td>
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<td><strong>DIRECTOR'S CIRCLE</strong></td>
<td><strong>DONORS</strong></td>
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<td><strong>$100,000 – $499,999</strong></td>
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<td><strong>$1,000 – $4,999</strong></td>
<td>Aaron Atkins</td>
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<td><strong>THANK YOU</strong></td>
<td><strong>DONORS</strong></td>
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<tr>
<td><strong>$1,000 – $4,999</strong></td>
<td>Michelle &amp; Ted Kaplan</td>
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<tr>
<td><strong>$500,000+</strong></td>
<td>Michael B. &amp; Mary Ann Ludwig</td>
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<td><strong>THANK YOU</strong></td>
<td><strong>DONORS</strong></td>
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<tr>
<td><strong>$10,000 – $49,999</strong></td>
<td>Loretta H. &amp; Philip J. Keogh</td>
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<td><strong>$100 – $499</strong></td>
<td>Memorials to Ronald J. Kohn</td>
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Cancer of the Brain: Primary Tumors and Other Metastatic Disease

Compensation builds on the patient's strengths and to bring back old skills. (2) Reorganization teaches
Cognitive rehabilitation is highly individual and ad-
to be safe to use.

Corticosteroids can cause a variety of complications; the most common include myopathy, behavioral changes, visual blurring, tremor, insomnia, reduced taste and olfaction, cerebral atrophy, decreased immune system, increased glucose, and adrenal insufficiency. The less common include psychosis, hallucinations, hiccups, dementia, seizures, epidual lipidosis, steroid psychosis, and gastrointestinal bleed.

Anticoagulation. Reducing coagulation to avoid blood clots may be important for some patients. For those that need it, there is a low risk of hemorrhage. Anticoagulation is safer for a patient with brain me-
tastases than the IVC filter.

Radiation Necrosis. Sometimes dead tissue forms at the site of the tumor. Bevacizumab has been shown to be helpful for some patients who have developed radiation necrosis. Other options include hyperbaric oxygen therapy treatment, but this may not work well for patients with metastatic disease to the brain. There are no randomized control trials, but a retrospective study of 65 patients showed 68% im-
proved with this treatment.

Fatigue and Neurocognitive Issues. Brain tu-
mors and their treatments can affect a patient's neurocognitive function. Several drugs have been prescribed for inattention and cognitive fatigue, including methylphenidate, modafinil, and ar-
moxifin. Methylphenidate may help with inatten-
tion, but in randomized trials for cognitive fatigue the other drugs have not demonstrated improve-
ment. Depression can also cause neurocognitive function, and is often undiagnosed. Patients should be screened and treated for depression.

Cognitive Difficulties. If a brain tumor patient is experiencing cognitive difficulties, we recommend having an assessment using neuropsychologi-
cal tests by a trained neuropsychologist. A neuro-
psychologist can identify the patient's cognitive strengths and weaknesses and the extent of impair-
ment. These often lead to a recommendation for cognitive rehabilitation. Cognitive difficulties can be made worse by fatigue, lack of sleep, cancer treatments and mood changes including depres-
sion. Pharmacologic treatments such as donepezil and memantine have not shown improvements in memory. There was a small subset of patients with severe cognitive problems before radiation therapy who did better with donepezil. In addition, in pa-
tients with brain metastases undergoing whole brain radiation therapy, there was a slower decline in memory and executive function for those who re-
ceived memantine. These prescriptions are believed to be safe to use.

Cognitive rehabilitation is highly individual and ad-
dresses three areas. (1) Restoration is the attempt to bring back old skills. (2) Reorganization teaches new ways to substitute for what has been lost. (3) Compensation builds on the patient’s strengths and environmental support to find new approaches.
INSIGHTS INTO CANCER

PHYSICAL THERAPY FOR RECOVERY AFTER UNDERGOING CANCER TREATMENTS: RESTORING MOBILITY, STRENGTH, AND WELLNESS

FRANCES ENTE, DPT, CLT, AND TERMEO TOUFANIAN, DPT, CLT PHYSICAL THERAPISTS AND CERTIFIED LYMPHEDEMA THERAPISTS WHO ARE PART OF THE UCLA REHABILITATION DEPARTMENT

This is a summary of a lecture presented on May 10, 2016.

There are many side effects of cancer treatment that can be successfully addressed by physical therapy: fatigue, generalized weakness, balance impairments related to neuropathy, scar tissue adhesions, joint restrictions, muscle tightness, lymphedema, osteoporosis, cardiovascular endurance and urinary or fecal incontinence. The types of physical therapy treatments that can be beneficial include stretching/range of motion exercises, massage and scar tissue mobilization, joint mobilization, gait and balance training, cardiovascular rehabilitation, strengthening, lymphedema education and treatment, skin care and patient education on infection control, and pelvic floor training.

Stretching: Stretching is an important part of physical therapy. Stretching exercises are broken down into subgroups based on the body region that is affected. The most common regions include the neck, chest, and shoulders, back, hips, and lower extremities. Research suggests that holds of 30-60 seconds with three to five repetitions is ideal. Many of these exercises can be learned in a physical therapy environment, but are most beneficial when regularly practiced at home or work. Regaining muscle length helps to improve the functioning of the muscles and joints to increase mobility and reduce pain. All exercises should be tailored to the individual.

Scar Tissue and Massage: Scar tissue can be a problem for patients who have had surgery. Scar tissue is not permanent. Scar tissue is made up of connective tissue that lays over a wound or cut that becomes dense, vigorous and/or contracted. After scar tissue forms and healing has taken place, the scar needs to be remodeled so it can tolerate the stress and forces that the body may encounter throughout each day. There are four types of scar tissue massage that can be performed and taught as part of your physical therapy treatment. Cross friction massage encourages realignment and lengthening of muscle and tendon fibers. The massage is deep and must be applied transversely to the specific tissues involved. Skin rolling massage involves lifting, stretching and squeezing tissue in a rolling technique. It restores normal movement of separate layers of skin, muscle or other connective tissue. Soft tissue superficial massage is done in the longitudinal direction parallel to the muscle fibers which enhances circulation and fluid return. Lymphatic massage is a type of gentle massage which is intended to encourage the natural drainage of lymph fluid which carries waste products away from the tissues back toward the heart.

Gentle massage around an incision can begin about a week after surgery and is usually done 2-3 inches away from the incision. Once the skin of an incision is fully closed, cross friction massage over the incision can begin.

Additional scar healing aids include silicone sheets, moisturizing creams, tape, and compression garments.

Here is a link to Dr. Jo, a licensed physical therapist, with a PhD in Physical Therapy, on reducing scar tissue: http://www.youtube.com/watch?v=_7LSCKMkE8s&sns=em

Joint Mobilization: Pain and stiffness can occur in joints during and after cancer treatment. A physical therapist can use manual manipulation techniques to help increase the mobility of joints. There are varying degrees of intensities depending on the goal of treatment. The stronger the mobilization, the more mobility will be obtained, but it may need to occur in slow stages. The physical therapist uses passive movement to stretch the joint capsule. Traction can also be used as part of the mobilization process. Here is a link to an example of what it looks like. https://m.youtube.com/watch?v=Uxi43RoEDE

Neuropathy: Chemotherapy-induced peripheral neuropathy (CIPN) is a condition caused by some cancer medications. These medications can damage the peripheral nerves causing neuropathy symptoms. Neuropathy can also be caused by surgery, radiation, multiple myeloma, tumors pressing on nerves, infections that affect the nerves, spinal cord injuries, diabetes, shingles, low vitamin B levels; some autoimmune disorders; HIV infection, poor circulation from peripheral vascular disease, and alcohol abuse.

The symptoms of neuropathy depend on which nerves are involved but the kinds of symptoms that patients may experience include:

- Pain (which may be there all the time or come and go, like shooting or stabbing pain)
- Burning
- Tingling ("pins and needles" feeling) or electric/shock-like pain
- Loss of feeling (which can be numbness or just less ability to sense pressure, touch, heat, or cold)
- Trouble using your fingers to pick up or hold things; dropping things
- Balance problems
- Trouble with tripping or stumbling while walking
- Being more sensitive to cold or heat
- Being more sensitive to touch or pressure
- Shrinking muscles
- Muscle weakness
- Trouble swallowing
- Constipation
- Trouble passing urine
- Blood pressure changes
- Decreased or no reflexes

Neuropathy symptoms can be difficult for patients to manage. There are a variety of therapies that can be helpful such as medications (oral, patches, creams), acupuncture, electrical stimulation, occupational therapy for fine motor difficulties such as gripping, buttoning, and writing, and physical therapy to help with balance when the nerves in the legs and feet are affected. Many times multiple treatments are employed.

Gait/Balance Training: Gait and balance training are extremely important for overall well-being. Gait and balance training can reduce fall risk in patients with neuropathy and muscle weakness. It can reduce the risk of osteoporotic fractures. It also helps improve strength, stability, body awareness and overall endurance.

Here is a link to information by Dr. Carol Lewis on how to improve gait and balance training based on a study that showed improvement. http://www.youtube.com/watch?v=shEmykZp2U8&list=PLB5i6gXhGQOZUO7lfySeyQACAN_SiomiZ&sns=em

Here is a link to improve balance and strengthen the muscles (you can skip the ad at the beginning):

http://www.youtube.com/watch?v=Ne62Ju2kUx&sns=em

Cardiovascular and Pulmonary Rehabilitation: Cardiovascular rehabilitation is usually performed in a specialty clinic designed to improve cardiovascular endurance and function with proper monitoring in a safe and controlled environment. It is a medically supervised program that helps improve the health and well-being of people who have heart problems. Rehabilitation programs for the heart include exercise training, education on heart healthy living, and counseling to reduce stress and help people return to an active lifestyle. There are times when this may be appropriate for patients or survivors of cancer treatments.

Pulmonary rehabilitation is a program that combines education and exercise to help people manage breathing problems, increase stamina and decrease breathlessness. It involves exercise training, nutritional counseling, education on any lung disease or condition and how to manage it, energy-conserving techniques, breathing strategies, psychological counseling and/or group support. Pulmonary rehabilitation may be appropriate for some patients with particular types of cancer or survivors whose lungs have been damaged by their treatments.

The American Heart Association recommends at least 30 minutes of moderate-intensity aerobic activity at least five days per week for a total of 150 minutes per week. This can be exchanged for at least 25 minutes of vigorous aerobic activity at least three days per week for a total of 75 minutes or a combination of moderate- and vigorous-intensity aerobic activity. They also recommend moderate- to high-intensity muscle-strengthening activity at least two days per week in addition to the aerobic activity for additional health benefits. Finally, lowering blood pressure and cholesterol requires an average of 40 minutes of moderate- to vigorous-intensity aerobic activity 3 or 4 times per week.

Patients in treatment or with multiple health issues may need to work up to these activity levels in small increments. Discussing your goals with your physician and physical therapist before beginning a new routine would be a smart first step.

Strength Training: Progressive resistance training is designed to decrease muscle atrophy and improve strength, muscle endurance, and overall function. A physical therapist can help design a program for you and educate you on safe exercise progression to achieve your goals. Exercises may include the use of Therabands (stretch bands), free weights, exercise machines for a gym program and body weight resisted training. The American College of Sports Medicine recommends that adults train each major muscle group two or three days each week using a variety of exercises and equipment. They note that very light or light intensity is best for older persons or previously sedentary adults just starting to exercise. Two to four sets of each exercise will help adults improve strength and power. For each exercise, 8-12 repetitions improve strength and power, 10-15 repetitions improve strength in middle-age and older persons starting exercise, and 15-20 repetitions improve muscular endurance.
Safety: It is important to remember that the goal of treatment is to improve overall function and well-being. Treatment is individualized to each patient’s needs and goals. While undergoing various cancer treatment, some interventions may not be appropriate or may need to be modified. Ask your physician for a referral for an assessment early in your treatment to learn what is appropriate so that you can develop an individual plan for yourself.

Lymphedema: Lymphedema is the abnormal accumulation of protein-rich fluid (lymph) which causes chronic inflammation. It is caused by the abnormal development of or injury to the lymphatic system; the number one cause of lymphedema in the US is cancer and cancer treatment. There are different stages of lymphedema.

- Stage 0 (latency stage)
- Decreased transportation of lymph fluid
- Still has sufficient lymph drainage, no visible swelling
- May experience stiffness, heaviness, aching
- Stage I (reversible lymphedema)
- Have accumulation of protein-rich fluid
- Observed swelling, pitting edema
- Edema reduces with elevation
- Stage II (spontaneously irreversible)
- Pitting edema becomes progressively more difficult
- Fibrosis: connective tissue proliferation
- Stage III (elephantiasis)
- Non-pitting edema
- Fibrosis and sclerosis
- Skin changes (papillomas, hyperkeratosis, etc.)

Lymphedema is often slow in onset and can be progressive. It usually starts distally—in the toes or fingers—and is often asymmetric. Cellulitis is common associated with lymphedema. Usually, the skin is warm and tender or painful. Cellulitis appears as a red map-like rash and can come with flu-like symptoms (fever, malaise, aching). It is essential that a person immediately seek medical treatment from their physician or emergency room. Cellulitis must be treated with antibiotics and, in some cases, a patient may need intravenous antibiotics. You should stop all physical therapy treatment and other lymphedema treatments until symptoms subside and the patient’s physician has given medical clearance to resume.

The National Lymphedema Network makes the following recommendations for the prevention of lymphedema:

- Receive injections and have your blood pressure taken on an unaffected limb.
- Avoid extreme heat/cold (rebound swelling/chapping of skin).
- Protect skin from exposure to sun/sunburn.
- Avoid infections caused by insect bites, hangnails, cuts, punctures, pet scratches, or garden wounds—wear gloves and shoes.
- Wear compression garments when flying.
- Avoid limb constriction from tight clothing or jewelry.
- Maintain optimal weight.

Pelvic Floor: Many people develop pelvic, abdominal, anal, rectal, or vaginal pain after certain kinds of cancer treatments, and they can develop urinary or fecal incontinence. Fecal incontinence is the unintentional loss of stool or gas. Urinary incontinence can present in multiple ways. Stress incontinence can cause a person to leak urine during activities such as coughing, laughing, sneezing, or exercising. Overflow incontinence means it takes a long time to complete urination, and there is a dribbling stream of urine. Urgent incontinence is a sudden, urgent need to urinate. Continuous incontinence is not being able to control the bladder at all. These are upsetting conditions and patients are sometimes uncomfortable talking about their difficulties. It is important for patients to understand that there are treatments that address and may reduce these difficulties.

Cancers in or near the pelvic region such as prostate, colorectal, urethral, bladder, cervical, and uterine cancer are the most common cancers to affect incontinence. Brain or spinal cord cancers, which can affect the nerves that help control the bladder or pelvic muscles, can also cause problems. Surprisingly, lung or esophageal cancer, which can cause chronic coughing that places stress on the bladder, may lead to incontinence. Breast cancer can also be a cause due to hormonal changes that can weaken the muscles of the pelvic floor.

In addition to cancer itself, cancer treatments may increase the risk of incontinence in a variety of ways. Radiation therapy to the pelvic area can irritate the bladder. Chemotherapy can cause nerve damage and vomiting that strains the muscles controlling urination. Surgery to the pelvic area may damage muscles or nerves that help control urination. Bone marrow stem cell transplant with high dose chemotherapy can cause vomiting and bladder inflammation. Hormone therapies can weaken the muscles of the pelvic floor just like the absence of hormones.

There are a variety of treatments for urinary incontinence. Physical therapy can teach techniques such as Kegel exercises (an exercise to strengthen the muscles used to hold in urine) electrical stimulation, and bladder training. In bladder training, patients learn to delay urination after experiencing the urge to go, to schedule toilet trips, to manage fluids and diet, or to use biofeedback to help patients gain control over the muscles that hold the urine. Medications can also sometimes be helpful. There are medical devices such as a pessary, which is a stiff ring placed in a woman’s vagina to help support the bladder. Other treatments can include injections of collagen into the neck of the bladder to reduce leaking, the hormone estrogen applied to the urethra or vaginal tissue for women, or surgery to insert an artificial urinary sphincter or to create a “sling” around the neck of the bladder and urethra to keep it closed.

Fecal incontinence can also be treated using a variety of strategies. For management of the bowel, we often suggest dietary changes. The use of dietary fiber, fluids, a regulated diet, and scheduled meals help make bowel movements predictable. Local care using pads, barrier agents, frequent baths, and clothing changes help to protect the perianal skin and lessen the impact of incontinence episodes. Sometimes patients are advised to use antidiarrheal agents such as Imodium and Lomotil. Biofeedback therapy can help improve rectal sensation, sphincter strength, and muscle coordination.

Links to these techniques are provided below:

www.TomOcklerPT.com
http://www.youtube.com/watch?v=cWwGvFDGQbg&sns=em

References:

- American Cancer Society http://www.cancer.org/
- National Lymphedema Network http://www.lymphedema.org/
- American Heart Association http://www.heart.org/
- National Institute of Health https://www.nih.gov/
- American College of Sports Medicine http://www.acsm.org/
- Cancer.net http://www.cancer.net/
- AboutIncontinence.org http://www.aboutincontinence.org/
The pancreas is a critical organ for both the digestive and endocrine systems of the body. It is approximately 6 inches long and sits across the back of the abdomen, behind the stomach. The head of the pancreas is on the right side of the abdomen and is connected to the duodenum (the first section of the small intestine) through a small tube called the pancreatic duct. The narrow end of the pancreas, called the tail, extends to the left side of the body. The pancreas is also nestled up against several major arteries and veins. The pancreas has both endocrine and exocrine glandular qualities. The exocrine portion secretes enzymes into the digestive tract that aid in the absorption of nutrients and digestion. The neuroendocrine secretions affect several different hormones including insulin levels. Pancreatic cancer is divided into two types: exocrine and endocrine. Pancreatic ductal adenocarcinoma, the most common pancreatic cancer, occurs 60-70% of the time in the head of the pancreas, approximately 10-15% occur in the tail and about 5-10% in the neck/body. About 20% of the time there is a more diffuse presentation of the tumor that goes through the entire gland.

Pancreatic cancer causes approximately 39,590 deaths in the United States accounting for approximately 7% of all cancer deaths. The incidence and mortality are on the rise. There has been considerably less improvement in the outcomes or pancreatic cancer therapy than in other common diseases including breast and lung cancer where survival rates have been on the rise. Pancreatic cancer has been hard to treat because it is usually quite advanced by the time it is diagnosed. The biology of the tumor is often quite aggressive and, overall, there has been a poorer response to available therapies if the disease is not surgically resectable. The survival rates go up substantially when it is diagnosed early and is resectable.

Diagnosis
There are no special screening tests that can identify early stage pancreatic cancer. The symptoms of pancreatic cancer often depend on the location of the tumor. If the tumor is in the head of the pancreas, the common symptoms include weight loss, jaundice, itchiness, clay-colored stools, diarrhea and fatty stools. If the tumor is in the body/tail of the pancreas, weight loss and pain are common symptoms; the pain is often due to the tumor putting pressure on the many nerves that run through the pancreas and behind it.

When pancreatic cancer is suspected, one of the best tools for diagnosing pancreatic cancer is a helical (spiral) CT scan. When someone presents with symptoms, they may receive a CT scan, but that will only show a mass. A helical or spiral CT scan, however, displays more detail of the pancreas, other organs and the relationship of the tumor to the local arteries and veins, all of which is crucial in determining if it is resectable.

Risk Factors
There are several known risk factors for pancreatic cancer and some debated issues. Hereditary factors account for a small number of patients with pancreatic cancer. However, patients with a family history of breast and ovarian cancer who have the BRCA1 and BRCA2 genetic mutation are at an increased risk for pancreatic cancer. Patients with family histories of breast cancer, ovarian cancer, and pancreatic cancer may need to see a genetic counselor and receive appropriate counseling and testing if indicated. Patients who have one of the genetic mutations that cause colon cancer such as APC (adenomatous polyposis coli) and HNPCC (hereditary nonpolyposis colorectal cancer) are also at an increased risk for pancreatic cancer. Finally, patients who have hereditary pancreatitis have 40 times the risk of developing pancreatic cancer than someone without this known hereditary risk. Most pancreatic cancer, however, is idiopathic—meaning there are no hereditary factors.

Chronic pancreatitis increases the likelihood of developing pancreatic cancer because it can cause chronic damage to the organ over time. Environmental factors include both cigarette smoking, alcohol, obesity and a high-fat diet.

Pancreatic cancer appears to take a long time to develop into advanced cancer; it has been estimated that a pancreatic tumor has been developing for over 10 years by the time it is often diagnosed. Research has identified how different pancreas cancers can be, thus making single treatment approaches for all patients less likely to be successful. Rather, more individualized...
and personal care based on the genetic makeup of an individual’s tumor is the focus of research. Several mutations have been identified (which have also been identified in other tumors) including KRAS, BRCA, and P53 gene mutations.

Pre-operative Staging and Treatment

The American Joint Committee on Cancer has evolved an elaborate staging system for cancers that take into consideration the tumor size, the number of lymph nodes and whether the disease has spread to other organs. While it is important to do a proper staging, full staging may not occur until after surgery and in some cases, surgery now comes after significant treatment with chemotherapy.

For the purpose of determining treatment and the order of treatment, the categories are divided into potentially resectable, borderline resectable, locally advanced and metastatic.

The involvement of the tumor around or into the veins arteries is a crucial issue because removing and reconstruc- ting the veins requires a more complex procedure and some of the arteries cannot be removed. Surgery has shown to be effective only if the tumor is removed to negative margins. If the veins and arteries are not involved, and the patient is deemed “potentially resect- able” they go to surgery usually followed by adjuvant chemotherapy treatment. The patients in the “border- line resectable” and “locally advanced” stages receive chemotherapy and sometimes radiation treatment to attempt to reduce their disease to make it operable or to ensure that it is just a local process, without distant spread, and surgery will be helpful. Patients with meta- static disease receive chemotherapy only.

Having a team experienced in making pancreatic can- cer diagnoses is essential. It increases your probability of having a successful surgery, whether as the first surgery or after chemotherapy and reduces the pos- sibility of putting someone through an invasive surgery when the disease is too extensive to be resolved with surgery. It is also critical not to delay treating someone with chemotherapy because of lengthy healing times after surgery.

Surgical Treatment of Local Disease

The best candidates for surgery first are patients whose disease is confined to the pancreas with no metastasis to other organs and no vascular involve- ment. Your surgeon will also need to consider other medical conditions to make sure it is safe to perform the surgery.

If the disease is in the body/tail of the pancreas, a dis- tal pancreatectomy is performed. In this procedure, the body and tail of the pancreas are removed, and the cut line of the pancreas is sewn together to prevent pan- creatic fluids from leaking. Sometimes, but not always, this involves removing the spleen as well. If the disease is in multiple areas of the pancreas, the whole pancreas can be removed, called a total pancreatectomy.

If the tumor is in the head/neck of the pancreas, your surgeon will perform a pancreatoduodenectomy—a procedure in which the pancreatic head is removed, leaving clear tissue (margins) around the edges. This procedure is called a Whipple procedure, named after the surgeon who first performed this procedure in 1935 in the United States. In the standard Whipple procedure, the distal stomach, intestine, gallbladder, bile duct and head of the pancreas are removed. Once they are removed, the surgeon reconnects the remaining pancreas with the liver and the intestine. More recently this procedure has been revised to ensure the pylorus, the juncture at the duodenum which permits normal emptying of the stom- ach, is preserved. This procedure has better recovery and prevents weight loss and is often referred to as a pylorus-preserving Whipple. Today the mortality rate for the Whipple is less than 1% for experienced physi- cians who perform a high volume of cases per year (e.g., at UCLA our surgeons perform 150 cases per year). Complications can be well managed with inter- ventional radiology. The quality of life after surgery is good, and there is a 25-30% five-year survival rate. A cure is not possible without it.

The best survival outcomes are for patients who have resectable disease, no lymph nodes involvement, a small tumor size (<3 cm), clear margins (meaning a margin of healthy tissue around the removed diseased tissue), and well-differentiated cells (which indicates a low-grade tumor).

Medical Treatment – Chemotherapy and Other Systemic Approaches

Over 90% of pancreatic cancers are resectable. Only 25-30% of node-negative resected patients are alive at five years. Chemotherapy is the only treatment to reduce the risk of recurrence in patients with resectable disease. Before 2016, patients received gemcitabine or 5-FU as the adjuvant treatment. As of 2016, the new standard of care is gemcitabine and capecitabine.

We use the same drug regimen for patients with Stage II locally advanced disease as well as patients with metastatic disease. The three most common protocols are (1) gemcitabine with or without erlotinib, (2) a regimen called FOLFIRINOX comprised of four drugs - fluorouracil also known as 5-FU, leucovorin, irinotecan, and oxaliplatin, and (3) the dual combination of nab-paclitaxel and gemcitabine. Two others are gem- citabine with capecitabine or gemcitabine, docetaxel, and fluorouracil (SFU). Of course, there are clinical tri- als as well. Your oncologist will decide which protocol is best based on individual patients, including their ability to tolerate the side effects as some regimes have more side effects than others.

There are many challenges in clinical research. One of the most difficult is the subjectivity that affects decisions on what constitutes locally advanced or resectable disease. There is no consensus about the response criteria for chemotherapy to proceed with surgery. Researchers are doing a lot in the realms of chemotherapy, molecular therapy, radiation therapy and immunotherapy. Recently, researchers have come to understand that pancreatic cancer is desmoplastic, which means the tumor itself has a pervasive growth of dense fibrous tissue or stroma surrounding and poss- sibly protecting it. The tumor stroma may play a role in preventing the anti-cancer drugs from penetrating the tumor, thereby making the drugs less effective. Some of our new approaches are looking at the tumor micro- environment to evaluate ways to better alter the im- pact of drugs. For pancreatic cancers that are familial and immunotherapy. Recently, researchers have come to understand that pancreatic cancer is desmoplasic, which means the tumor itself has a pervasive growth of dense fibrous tissue or stroma surrounding and possibly protecting it. The tumor stroma may play a role in preventing the anti-cancer drugs from penetrating the tumor, thereby making the drugs less effective. Some of our new approaches are looking at the tumor microenvironment to evaluate ways to better alter the impact of drugs. For pancreatic cancers that are familial and have the BRCA mutations that also occur in breast and ovarian cancers, we are conducting trials using PARP inhibitors. We are investigating the EGF-KRAS pathway as it may be an important link of attack; we now know that 90% of the patients with pancreatic cancer have the KRAS mutation. Drug development is oriented to blocking these genes, but KRAS has not been shown to be a drug target. Additionally, vaccine and immunotherapies are also being tried; however, for now completely experimental at this moment in time for pancreatic cancer.

Neuroendocrine Pancreatic Tumors

Endocrine or pancreatic neuroendocrine tumors are a very different disease and are less common than exo- crine pancreatic cancers. They form in the islet cells of the pancreas. There are many different kinds of these tumors. They can affect different hormones and, as a result, the symptoms that patients experience can be very different. Sometimes these tumors create hor- mones that cause disruption in systems; sometimes they do not, and the tumor grows undetected until it causes pain or discomfort. These kinds of tumors tend to be more indolent (slow growing). They are “better acting” tumors than the exocrine pancreatic tumors, and tend to have a better prognosis. We use some of the same diagnostic techniques, but there is often oth- er blood work and imaging that is needed. The types of treatments vary; too, we use different drugs for neu- roendocrine tumors. Also, some patients may be able to have a liver transplant.

Advantages of a Team

It is very important to have an experienced team in treating pancreatic cancer. There is significantly lower mortality in pancreatic resection when it is done by ex- perienced surgeons who have performed many sur- geries. The UCLA Center for Pancreatic Diseases pro- vides a strong multi-disciplinary team approach to this disease. We call this the UCLA Comprehensive Pancreatic Practice Unit to describe the dedicated team of clinical and non-clinical personnel who work together to pro- vide efficient and comprehensive care. Team members frequently meet to review their performance, see them- selves as a cohesive unit and are located in the same multi-disciplinary clinic. At UCLA our team is composed of pancreatic surgeons, medical oncologists, radiation oncologists, gastroenterologists, radiologists, patholo- gists, all integrated into a single, comprehensive team that are coordinated by the Simms/Mann – UCLA Center for Integrative Oncology.

Our team works cohesively to provide efficient value- based care and performs a rigorous evaluation of outcomes. One of our goals is to expand patient en- rollment in clinical trials and increase the number of patients referred to UCLA. This approach leads to a continuous dialogue between specialists and aids decision-making around treatment before surgery and when to go to surgery. This approach allows for more tailored individual planning. UCLA has been very ef- fective in “downstaging” pancreatic cancer patients by making them able to receive surgery through this inte- grated approach and following their outcomes. Preliminary data in patients that are “borderline resectable” after six months of pre-surgical chemotherapy shows a higher median survival compared to other locations. Patients who are locally advanced show median surviv- als similar to patients who have early stage disease.

Conclusion

Pancreatic cancer is a large disease burden in the United States. Despite the fact that we know patients have better outcomes when they are treated by high-volume surgeons, 50% of pancreatic surgeries are performed at hospitals that tend to do less than five per year compared to UCLA which does 150 per year at this moment in time. There are new therapies on the horizon. The UCLA Integrated Practice Unit in the UCLA Agi Hirsingberg Center for Pancreatic Disease of- fers an efficient and state-of-the-art complement of patient care services and continuous evaluation of outcomes. Our patients leave with a comprehensive plan after one visit and in one place.
Support the Simms/Mann-UCLA Center for Integrative Oncology

"My experience at the Simms/Mann Center continues to be invaluable for me and my partner. Everything we have experienced here has helped us to cope, manage, survive, live, laugh, become more resourceful and vocal."

"I deeply appreciate the vast array of resources that were offered to me gratis at the lowest point in my life. The help I received enabled me to continue functioning in my daily life. Without it I wouldn't have been able to work or take care of my family. Many thanks!"

Ways to Give

We hope that every patient and family member who has contact with the Center will make at least one donation each year to the extent of their ability!

Birthday Fundraising Club
Consider taking part in our Birthday Fundraising program, which asks our Center advocates to reach out to their network of family and friends, asking them to donate to the Center during the month of your birthday. You can set any fundraising goal that you like, and our staff is here to help with all of the resources that you need to meet that goal. No donation is too small – every dollar you raise will help a patient, caregiver, or family member receive counseling, help fund a support group, or make it possible for the center to provide education programs such as the Insights Into Cancer lecture series.

For those who may not be able to make gifts at this time, an estate gift is another way to continue our free services into the future. The Simms/Mann Center is not endowed and is not funded by the University or the State—we depend on your generosity.

One-to-One Club
It costs approximately $1,000 to provide the range of services that we offer to each patient or family member who receives our services without charges. You can become a member of the “One-to-One Club” by making an annual donation of $1,000 (just $84 per month) or more depending on how many individuals you wish to sponsor for the next year. One-to-One members are included in some of our special events and may reserve seating at our Insights Into Cancer lectures. We hope you will consider joining this important group of donors!

Advisory Board
Members of our Advisory Board make annual donations of a minimum of $10,000 for at least three years. This is an excellent opportunity to be involved with a wonderful group of individuals who are highly motivated to help the Center maintain its leadership in the field of integrative oncology. You or someone you know may be able to make such a commitment. Please email the Center Director for more information at ACoscarelli@mednet.ucla.edu.

I give because I want to make certain that the next patient or family who hears, “It’s cancer,” will have the Simms/Mann Center as their partner in this journey.

HOW WILL WE USE YOUR GIFT?
You may designate your gift for general operational support which funds the oncology social workers, chaplain and psychologists that are available to you and your family. You can also help underwrite the costs of any of our programs: support groups, Insights Into Cancer lectures, newsletter production and mailing, and/or Reflections.

WHAT FORMS MAY MY GIFT TAKE?
Gifts and pledges may come in the form of cash, checks, and securities. We also accept Visa, MasterCard and American Express as forms of payment. We gladly accept matching gifts from your place of employment. Gifts can be given in honor and in memory. Estate planning is also essential to our existence, now and in the future. Please talk to us about incorporating us into your long term estate plans and become part of UCLA’s Second Century Society.

PROCEDURE FOR MAKING A GIFT TO THE SIMMS/MANN UCLA CENTER
To make a gift to the Center, go to our website: http://www.simmsmanncenter.ucla.edu/index.php/support-the-center/donate-now/ or send a check payable to the JCCF/Simms/Mann – Center and a brief note stating the purpose of your gift, your name and address. If your gift is in memory or in honor of another person, please include the name and address of the person who should be notified. We will send a letter to that person stating that a gift has been received. The amount of the gift will not be disclosed. Our website and newsletter includes lists of the names of those who have made a donation to our Center during the past fiscal year. The exact amount of the gift is not publicized although we publish ranges. You will receive a letter of acknowledgement from the Center and tax acknowledgement from the Foundation.

Please send your donation envelopes or letters to: SIMMS/MANN - UCLA CENTER FOR INTEGRATIVE ONCOLOGY
200 UCLA Medical Plaza, Suite 502
Los Angeles, CA 90095-6934

If you have any questions or would like more information, call us at 310-794-6644. Thank you for your support!
INSIGHTS INTO CANCER

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Encourage your friends and family to get educated each month and see our lectures. Of course, we hope you will join us in-person, because then you get to ask your questions and we love seeing you there!

January 10, 2017
GETTING THE BEST ONCOLOGY CARE IN YOUR NEIGHBORHOOD 2017 - John A. Glazzy, MD, MPH, UCLA Professor of Medicine, oncologist and researcher discusses important shifts in how UCLA's academic evidence-based care is being delivered throughout Southern California to better meet the needs of people with cancer. Having access to the latest clinical trials can mean the difference between medicine of the future versus treatments based on old theories. This presentation discusses the UCLA map of oncology, identifies the types of care and services available from Laguna to Oxnard as well as touches on ground-breaking clinical trials in various disease groups based on leading research at UCLA. Learn what can be found in your neighborhood and know when you should travel beyond.

February 7, 2017
NUTRITION AND CANCER: A STRATEGIC APPROACH - Cameron Kim, MS, CNS, integrative specialist, discusses the value and importance of nutrition as an integral component of the multi-disciplinary approach to cancer treatment and recovery. She discusses the different nutritional strategies recommended for prevention and during treatment and recovery. She presents practical and specific information on nutrition and supplements for individuals with cancer and their families.

March 14, 2017
CALIFORNIA END OF LIFE OPTION ACT: HOPING FOR THE BEST, PLANNING FOR THE WORST AND KNOWING YOUR OPTIONS - Neil Wenger, MD, Professor of Medicine, researcher, and internist and Anne Coscarelli, PhD, Adjunct Professor of Medicine, researcher, psychologist discuss the California End of Life Option Act as it relates to patients with a cancer diagnosis. Both view the new law as an opportunity to help patients and families understand the wide range of needs that lead up to the end of life and ensure patients and their families receive the best care at the end of life. This presentation is expected to be of interest to anyone facing a cancer diagnosis who has ever wondered about what might happen if anti-cancer treatment is not effective and who wants to plan for all potential scenarios.

April 4, 2017
JUST A MOMENT: PIVOTAL POINTS IN THE CANCER MAZE - Jeff Trengel, PsyD, MPH, Professor Emeritus, California School of Professional Psychology at Alliant International University, finds that while individuals living with cancer have unique paths through the medical maze, they often have particular experiences in common: when they first learn they have cancer; when they first tell others; the moments of waiting for results of cancer tests, and the moments of learning the findings; the moments of looking into a mirror and seeing a cancer patient version of themselves; and the moments of connection — and disconnection — with self and others. This talk explores these and other moments for individuals living with cancer and those who seek greater insight into their experiences. The presentation features findings from in-depth interviews with patients themselves and caregivers who support them personally and professionally. The presenter also highlights his experience of these moments as a psychologist who works with medical patients, as a family caregiver, and as a cancer patient himself.

May 9, 2017
LUNG CANCER: 2017 NEW DIRECTIONS - Jonathan Goldman, MD, UCLA Assistant Professor, Director of Clinical Trials in Thoracic Oncology and Associate Director of Drug Development at UCLA, discusses recent developments in lung cancer care, including exciting recent advances in targeted therapy and immune therapy. He reviews the current chemotherapies and explains how the newer drugs may be incorporated into treatment plans. He also discusses how clinical trials are developed, and explains how and why they may be helpful in a patient's care.

June 13, 2017
THE HEALING POWER OF HOPE AND FORGIVENESS FOR CANCER PATIENTS AND THE PEOPLE WHO LOVE THEM - Lorelle Bonet, LCSW, OSC-W – Simms/Mann Center Oncology Social Worker Lorelle Bonet discusses the feelings that may originate when patients and families hear the word, “cancer.” Despite a cancer diagnosis, patients have much to hope for—life, health, and recovery—but sometimes patients retreat or friends and loved ones don’t know what to say or how to express their feelings. This lecture explores the ways in which compassion and empathy lead to forgiveness, and how forgiveness helps heal the spirit and heart of those living with cancer and the people who love them.

July 11, 2017
COLORECTAL CANCER: RECENT ADVANCES IN DETECTION AND TREATMENT - Zev Weinberg, MD, UCLA Associate Professor, medical oncologist, Co-Director of the GI Oncology Program and Medical Director of the UCLA Colorectal Cancer Center, discusses the care of patients with colorectal cancers from initial diagnosis through treatment of early disease, and management of metastatic cancer. He presents information about traditional treatments such as chemotherapy and biological therapy along with promising targeted biological agents currently being tested in clinical trials and emerging in the clinic.

August 8, 2017
SARCOMAS: TREATING RARE Cancers WITH TARGETED THERAPY - Arun Singh, MD, UCLA Assistant Professor and Co-Director of the Medical Oncology Sarcoma Program, reviews the diagnosis, treatment and follow-up care of patients diagnosed with sarcomas – a spectrum of rare diseases. He discusses the importance of a multidisciplinary approach to caring for patients with these malignancies. He presents the evolving biologic understanding of sarcomas and how these new insights are leading to the development of the next generation of therapies for these patients.

September 12, 2017
PROSTATE CANCER 2017: THE COMING SEA-CHANGE OF PROSTATE CANCER - Jeff Tirengel, PsyD, MPH, UCLA Professor of Medicine, oncologist and researcher discusses prostate cancer and the state of the art of treatment and surveillance at all phases of the disease. The use of MRI imaging (to visualize localized prostate cancer), and ultrasound guided biopsy (via the device Artemis) at UCLA is changing the way we manage prostate cancer. Focal therapy research is very active at UCLA, involving multiple disciplines (radiology, pathology, and bioengineering, as well as urology). He discusses "active surveillance," an organized follow-up for men believed to have a "low-risk" prostate cancer, an important approach to prostate cancer that is designed to improve the quality-of-life. He also presents current more aggressive treatment methods for higher risk prostate cancer and new treatments for advanced cancer.

October 10, 2017
DIAGNOSIS AND TREATMENT OF NEUROENDOCRINE TUMORS - Joseph Piscaglia, MD, Professor of Clinical Medicine researcher, oncologist and gastroenterologist, J. Randolph Hecht, MD, Professor of Clinical Medicine researcher, oncologist and gastroenterologist, Ken Herrmann, MD, Associate Professor, researcher and nuclear medicine physician, and Timothy R. Donahue, MD, PhD, Associate Professor of Surgery and Molecular & Medical Pharmacology researcher and surgeon, discuss neuroendocrine tumors (NETS) which include both carcinoid and pancreatic islet cell tumors. They present the latest research and clinical interventions including imaging and diagnosis, staging and the role of hormonal, chemotherapy and targeted treatment approaches. This interdisciplinary discussion illustrates the importance of an evidence-based integrated interdisciplinary team approach for best outcomes for patients with NETS.

November 7, 2017
BREAST CANCER 2017: NOT YOUR MOTHER’S TREATMENT OPTIONS - Rena Callahan, MD, UCLA Assistant Clinical Professor of Medicine, oncologist, and researcher presents the newest information on breast cancer treatment, and how it has evolved to include refined molecular testing to better guide treatment. Breast cancer is not one disease; each patient deserves and should have a personalized treatment plan. She presents different treatments such as endocrine therapy, chemotherapy, immunotherapy, and the latest targeted therapies to provide patients and families with the most current knowledge and understanding of how new treatment paradigms have evolved, thus ensuring they have the most current and effective treatment plans.

December 5, 2017
THYROID CANCER AND TREATMENT - Michael Yeh, MD, Professor and surgeon, and Stephanie Smoove Praw, MD, Assistant Professor and endocrinologist, present the most recent information on the diagnosis, treatment, and management of thyroid cancer, one of the most curable cancers. They review different types of thyroid cancer including diagnosis, surgical, radiological and medical treatments as well as treatment of recurrent or widespread disease including the newest targeted treatments. Management of thyroid hormones during and after treatment to establish healthy regulation of metabolism is discussed as it relates to helping patients maintain optimal well-being.
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