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A PROGRAM OF SUPPORT
FOR
PEOPLE WITH ORAL
AND
HEAD AND NECK CANCER

INTRAOPERATIVE RADIATION THERAPY FOR HEAD AND NECK CANCER

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Introduction

Head and neck squamous cell cancer comprise a diverse spectrum of diseases which affect an area of the body that is crucially important for everyday functions such as speech, swallowing, breathing, tasting and social interaction. Over 40,000 new cases are diagnosed each year and require individualized treatment. About one-third are diagnosed with early stage cancer and can be treated with either radiation therapy or surgery alone. The other two-thirds present with disease that is advanced stage (stage III or IV) where the tumor is large or has spread to the lymph glands/nodes in the neck. For such patients evaluation by a team of head and neck cancer specialists including surgeons, radiation oncologists and medical oncologists is important to determine the best treatment for a patient.

Patients with stage III and IV cancers require intensive treatment consisting of a combination of radiation, biologic therapies, chemotherapy or surgery which offers the best chance to control disease and one which is tolerable for the patient. Despite such aggressive therapy, head and neck cancers still have an inclination to recur at the site from which the cancer originated (local failure) or in the lymph nodes of the neck (regional failure). Certain characteristics of a head and neck tumor increase the chance for locoregional failure including tumor that has spread into and then outside of a lymph node(s), tumors which have invaded bone, nerves or blood vessels as well as cases of recurrent tumor which had previously received extensive treatment.

Significant effort has been made to find treatments, which can cure head and neck cancer by maximizing locoregional control, and prevent disease from spreading outside of the head and neck area such as to the lungs. Simultaneously the treatments must maximize preservation of organ function such as speech and swallowing and ideally maintain a patient's appearance. With respect to radiation therapy, tremendous progress has been made to improve radiation delivery techniques by incorporating new technologies to more precisely direct radiation treatment. Important advances have included the use of 3-dimensional planning, intensity modulated radiation therapy (IMRT), proton therapy, stereotactic radiation therapy, brachytherapy and intraoperative radiation. The purpose of this article will be to describe the role of intraoperative radiation (IORT) in the treatment of head and neck cancer.

External beam radiation therapy (EBRT) is the standard way of delivering radiation therapy and is used to cure head and neck cancers either directly without surgery or as a supplemental therapy after patients undergo surgery. EBRT is generated from a machine (usually a linear accelerator) and guided externally into the patient. EBRT must pass or exit through a significant amount of normal tissues in the head and neck area such as the skin, bone, muscles, salivary glands and nerves before it reaches the tumor. Exposure of normal tissue causes short and long-term side effects which can prolong or even prevent completion of their radiation treatment and/or diminish quality of life. Usually, the dose of external beam radiation delivered during a course of curative radiation approaches the maximally tolerated dose that a patient can withstand without causing severe side effects. Although the side effects that develop during treatment usually resolve over a period of several weeks once therapy is completed, long term side effects including dry mouth, problems with swallowing or tightness of the neck can last longer or even be permanent. The intensive nature of the first course of treatment, also severely limits the options for delivering additional radiation if the cancer should come back. Intraoperative radiation (IORT) does offer one important potential opportunity for a therapeutic second course of radiation therapy. Also, IORT may serve as a "boost," and allow a reduced dose of EBRT during the first course of treatment so that normal structures are exposed to less radiation.

Definition and Rationale for IORT

Intraoperative radiation therapy is defined as the delivery of a single, large dose of radiation after maximal surgical removal of cancer. It is different from other brachytherapy radiation procedures such as permanent seed implants or temporary radioactive implants in which radiation is delivered after the surgical bed is closed and the patient is conscious. With intraoperative radiation, all radiation is delivered at the time of the surgery when the patient is asleep and the tumor bed is openly exposed. No radioactive seeds or catheters are left in the patient once the surgery is completed. This is advantageous for several reasons. Radiation can be delivered precisely and directly to where the tumor was located without having to pass through normal structures. Simultaneously, nearby normal tissue can be protected with shields or moved away from radiation treatment field.

For more than four decades, the role of IORT has been explored

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for various thoracic, abdominal and pelvic cancers required surgery and radiation. It was pioneered in the 1960s by the Japanese as sole treatment for solid cancers and has been used in the United States and Europe as a boost treatment in conjunction with EBRT for digestive tract, chest and pelvic tumors. Particular attention has been directed toward cancers with a high chance for regrowing after surgery in areas where nearby critical normal structures limit the dose of EBRT that can be delivered. Patients with head and neck tumors may benefit from IORT in situations where the chance of a locoregional failure is felt to be a major problem after standard treatment. By supplementing ("boosting") EBRT, a higher dose may be delivered than possible with EBRT alone. This can improve locoregional control without significantly increasing dose to critical normal structures near the tumor such as the spinal cord, muscles involved in swallowing, the jaw bone and the mucosa (the lining of the aerodigestive tract). The experience exploring IORT for head and neck cancers spans over 25 years and has been pioneered at only a few centers around the world.

Technical Aspects

IORT can be delivered with a variety of approaches; however, the most common involve either two types of radiation, electrons (IOERT) generated from a linear accelerator or photons from a radioactive isotope, usually Iridium-192 (HDR-IORT). IOERT is the most common type of IORT delivered and is usually generated by a linear accelerator or a mobile, self shielded unit called a Mobetron. The electrons generated differ from the x-rays generated typically by a linear accelerator in that they do not penetrate through as much tissue. This fact creates an advantage for IOERT that can further be exploited by choosing from a wide range of energies that allow treatment of various thicknesses of tumor that may be left behind after surgery. The major disadvantage is that some tumor beds may not be eligible for IOERT because of the inability to physically position the machine in the surgical tumor bed, which prohibits proper delivery of the IOERT.

HDR-IORT is an alternative approach that delivers photon (x-ray) radiation typically using a radioactive source attached to a cable and propelled with a remotely controlled machine. HDR-IORT has the primary advantage of having a very flexible applicator, which allows easy treatment of nearly all complex surfaces. However, it does not have the range of energies that IOERT offers and in practice. IOERT and HDR-IORT offer similar results if all observable tumor can be encompassed within the field or irradiation.

Clinical Results

There has been limited experience exploring radiation therapy for head and neck cancer that has focused on the retreatment for recurrent head and neck cancer. Most of the studies involve patients treated to either the primary site from which the cancer originated or to the neck. Less frequently, IORT has been investigated as upfront treatment for newly diagnosed cancer. Usually it has been used in conjunction with EBRT. Removal of all visible tumor appears to be a critical factor for the success of IORT to obtain cancer control. Typically, an IORT dose of 7.5 to 15Gy is given in conjunction with EBRT or dose of 12 to 20Gy if no EBRT is planned. It is thought but not proven that this dose combination is equivalent to a dose of 60-70Gy with ERBT alone

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which is usually required to eradicate a tumor. This allows IORT to serve as a boost treatment in conjunction with a reduced dose of EBRT or as dose escalation after maximal EBRT has been given.

We reported our initial experience at Beth Israel Hospital using IORT for head and neck. Fifteen patients with recurrent disease (11 patients) or newly diagnosed (4 patients) were treated with HDR-IORT after maximal resection. Prior EBRT was delivered in 8 patients. Patients ranged in age from 33 to 88yrs old. Treatment sites included the neck in 10 or primary site in 5 (parotid, maxillary sinus, oral cavity or oropharynx). Treatment was typically given as 12Gy usually over 1 to 1 1/2 hour for setup and treatment delivery. Complete removal of visible tumor was possible in 14 of the 15 patients with 8 having negative margins and 6 with microscopic cells left behind. Flaps or skin grafts were performed in 8 patients. EBRT was given in 8 patients. At early follow-up, tumor control was possible in 73% and survival without tumor in 73%. Patients receiving EBRT responded better than those who did not.

Other IORT experiences in head and neck cancer have included HDR-IORT at Ohio State University (OSU) and Spain, as well as IOERT experiences in Europe and North America. A study exploring the use of HDR-IORT for skull base tumors was reported from OSU. All patients were able to undergo gross total resection and treated to doses of 7.5 to 15Gy IORT and just over half received EBRT or the rest HDR-IORT alone primarily because of previous EBRT. Tumor control and survival were best in patients receiving combination HDR-IORT and EBRT compared to those receiving HDR-IORT alone. The major problems were leakage of cerebrospinal fluid, bone exposure, infection, ear inflammation and bleeding. The length of hospital stay was not increased in patients who received IORT compared to patients not having received IORT.

Regarding reports of IOERT in head and neck cancer, similar principles apply as those undergoing HDR-IORT. Gross total resection of the tumor appears to be a prerequisite if IORT is to be effective. Patients with close margins, microscopic or gross residual disease have local failure rates of 18-27%, 25-45% and 79-100%, respectively after 15-20Gy IOERT. IOERT is also most successful when combined with EBRT. Although technically, IOERT energies can be adjusted to adequately cover gross tumor, it is unclear whether IOERT alone without EBRT can control the majority of such cases. For patients with recurrent disease treated with IOERT alone after maximal tumor surgery the failure rate ranges anywhere from 13% to 79% of patients. IOERT alone in patients undergoing maximal resection for recurrent tumors has been able to alleviate pain caused by tumor despite the high risk for failure.

Side Effects of IORT

Determining IORT-related side effects is often difficult because many patients have received aggressive therapies often including multiple rounds of surgery, radiation and chemotherapy and also have advanced or recurrent cancers which directly damage normal tissues. IORT at doses of 10-20Gy appears to be safe in the majority of patients. The main side effects have been bleeding from the carotid artery in 2 to 12% and damage to the bone in 2% to 16%. Since many patients receiving IORT for cancer recurrence succumb to their disease before these side effects have a chance to develop, their true incidence may be higher than what is stated in the published literature. These risks are particularly significant after IORT doses of 20Gy or greater. Other side effects occurring in conjunction with surgery can include fistula, wound infection/ breakdown. Usually these risks are less than 10% and are multifactorial in origin either due to IORT, surgery, tumor extent, previous EBRT and chemotherapy. An important issue is wound healing and prevention of breakdown of the surgical bed. To prevent wound complications, an important surgical consideration is to bring in new, unirradiated tissue such as a muscle flap or skin graft which can enhance wound healing by bringing in fresh blood flow. Such a procedure would need to be considered prior to any surgery is undertaken after detailed discussion between the surgeon and radiation oncologist.

Future Directions

The current IORT data are limited but encouraging. IORT has primarily been used in patients with recurrent cancer as a form of reirradiation as many have received maximal external beam radiation often with chemotherapy and/or previous surgery. It has been most successful when combined with EBRT and maximal surgery. As initial treatment for previously untreated head and neck cancer, IORT offers the possibility for dose escalation after EBRT to try to increase tumor control or it may serve as a boost treatment to a reduced dose of EBRT so that side effects to normal structures are decreased. These considerations are especially important since patients may have difficulty with dry mouth, neck fibrosis or swallowing after intensive chemoradiation with EBRT,

Based on the current data, it is clear that optimizing the ability for the surgeon to obtain a complete removal of the tumor is necessary for IORT to be most effective. A potential area for future research would be delivering radiosensitizing agents during IORT, such as cisplatin chemotherapy or the biologically targeted drug, Erbitux to increase the efficacy of treatment just as these agents have improved the effectiveness for EBRT. Prospective clinical trials represent the best avenue for investigating an area such as this.

Conclusion

In conclusion, IORT can be integrated in a combined modality setting with acceptable toxicity and apparent benefit in appropriately selected patients with locally advanced or recurrent cancers. General principles guiding its use include the need for complete tumor removal, the importance of the addition of EBRT and close coordination of care amongst cancer specialists. In general, doses of 10 to 20Gy are well tolerated with the primary toxicities including carotid artery bleed, osteoradionecrosis and fistula formation. Both HDR-IORT and IOERT appear equally effective when applied in the appropriate circumstance and offer complementary advantages. Significant more investigation is needed to fully determine the benefits of IORT in head and neck cancer.

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A TIME FOR SHARING...Beyond Face Value

It was a beautiful Saturday in September 1985, and my fraternity was preparing for a big party we'd be hosting that evening. Late that afternoon, a group of us wandered out to the courtyard from the inside bar to get some fresh air. Pretty soon, we were all heckling one other and started giving each other short jabs to the shoulders and chest – all in fun. I went for the takedown and knocked my buddy Chip down onto the concrete, where we began wrestling and rolling around.

All of a sudden, blood started trickling out of my nose. I wasn't overly surprised because I'd always gotten frequent nosebleeds.

"Oh, dude, I'm sorry," Chip said, helping me up. "I didn't mean to hit your nose."

"Don't worry. It's no big deal," I said.

But suddenly I wasn't interested in horsing around anymore. The bleeding was getting heavier, and what scared me was that I didn't remember him hitting me in the nose at all.

I covered my nose and mouth with my hands and ran up to my room. I dashed to the sink, turned on the cold water, and splashed it over my face.

The bleeding stopped almost immediately, but when I looked in the mirror, I felt my stomach cramp in panic. I could see an ivory-colored lump sticking up from the lower section of my right nostril. It seemed as if the bleeding was coming from that area. This didn't seem like my run-of-the-mill nosebleed.

A year earlier, the doctors had told me that they had gotten rid of all of the cancer. But now, I started wondering. Had it come back?

It had all begun a year earlier, in Berkeley, California, on a sunny but chilly Saturday morning in October 1984. I was twenty and a junior majoring in political science at the University of California at Berkeley, commonly known as "Cal". I was president of the Zeta Psi fraternity, also known as the Zete House, a fraternity more famous for its parties than for its members' academic achievements.

My mother, father, and three brothers were all on hand for the big game between the California Golden Bears and the University of Southern California Trojans at Memorial Stadium. My mother was treasurer of the Zete mothers' club, which was putting on a fundraising luncheon as the mothers did every year. It would be a joyful day with plenty of food and drink.

It would also be the day that an offhand remark by my oldest brother Steve would change my life forever.

I got up at about ten, in plenty of time for the start of the festivities at eleven, when we would start serving beer, wine, and gin fizzes to Zete alumni, friends, parents - and ourselves. As president, I was obligated to be on the scene to greet everyone.

My brother Steve, who had also been a Zete at Cal several years earlier, knocked on my door just before eleven. While I was getting dressed, we brought each other up to date on what we had been up to. I had the Cal marching band album cranking on my stereo, trying to energize myself and everyone who could hear it into believing that Cal's football team could actually win this game.

I gave myself a final look in the mirror, then turned to face him. "I'm ready to go."

Steve squinted at me. "Hey, Terry, what's going on with your nose?"

"What?"

"Take a look. Your right nostril looks like it's flared out."

"What are you talking about?" I went back to the mirror and took a look. He was right. I had never noticed it, but my right nostril did look bigger than the left one. "Well, it's probably nothing," I shrugged. "Let's go grab a gin fizz."

Two weeks later I stood in line at Sproul Hall, the Cal administration building, to pick up my new picture student identification card. When I reached the front of the line, a cute and cheerful girl asked for my last name.

"Healey," I said.

She searched through her box of alphabetized, plastic coated cards, and without even asking for the actual spelling, pulled out my card quickly.

"Here you go," she said, not taking even a second to look at the picture beside my name. She was the perfect candidate for a job like this – a smile that wouldn't quit despite the monotony of her task.

"Thank you," I said. Before stepping away, I looked at the card to examine it and make sure all the information was correct. But my picture caught my eye. There was no doubt it was me, but I had to take another closer look at the photo. The distortion on the right side of my nose was so obvious, I couldn't believe I hadn't noticed it shaving or brushing my teeth every morning.

I finally made an appointment with a doctor, who performed a biopsy.

It turned out that I had a tumor — a rare fibrosarcoma. My doctor said I'd need follow-up surgery to excise any tumor cells left behind after the biopsy. I wasn't alarmed, and the surgery proved to be minor. With only a few sutures alongside my nose and a few more inside my pallet, I returned to classes looking like I had been in a fight with *someone*, not *something*. I fell back into my old patterns - procrastinating about my upcoming midterms and term papers, and even hanging out in those same Berkeley bars.

But, six months later, I had the nose bleed and discovered a new lump rising from the lower portion of my right nostril. Then, a tingling in my cheek. Visits to numerous specialists confirmed that my previously unthreatening tumor had become a potentially disfiguring, life-threatening malignancy. My doctor informed me that I could lose half my nose, half my upper lip, and possibly my right eye, but that saving my life was his main concern. Too young to contemplate dying, the realization that I could be disfigured was devastating.

I awoke from the first surgery with a skin graft attached to my face that used skin and fat from my shoulder and chest. Half of my nose and my upper lip were gone. The muscle and bone from my right cheek had been excised. The shelf of my eye, six teeth, and part of my hard palate had been removed. My doctor promised to make me "streetable" before I left the hospital. I assumed that must have meant "acceptable". I imagined that "streetable" might mean looking like Tom Berenger did in *Platoon*, a 1985 Vietnam War film, where he had a big, thick keloid scar across his cheek as a result of a knife wound he had received in battle. I could live with that. It might even improve my chances with girls. I could don a "tough guy" look, and maybe even broaden my appeal. I later realized that "streetable" was my doctor's term for preparing me for a life of disfigurement.

I had two more procedures to remove the remaining malignancy, and then I was released from the hospital. That's when I began to

realize the severity of my situation. Inside the hospital, I had been protected and insulated. Outside of it, I was vulnerable and exposed. Upon leaving the hospital, I noticed adults staring at me. Children pointed and sometimes laughed. One woman's jaw dropped in shock and horror.

How was I going to face the world? I cared what other people thought of me. I relished the admiring looks I had received as the "old Terry" and was petrified of the reaction I'd get to the "new Terry." Over the next few months, the inadvertently negative reactions and comments I sometimes received left an indelible mark on me. Meanwhile, radiation treatments had begun to shrink the tissue on my face, magnifying my deformity. My self-esteem sank lower than I thought possible. I found myself constantly seeking reassurance from people. Did my looks bother them? What did they see? Did they like me? How *could* they like me? I was still coping with the insecurity after five years and twenty attempts to reconstruct my face.

When I had my last reconstructive procedure, I met a woman who was also being treated at the hospital. We began dating. One day, after I had asked her, for the umpteenth time, how she felt about my looks, she ripped into me. The bulk of my problem, she said, was not my physical appearance, but my emotional insecurity. Her honesty helped me realize that surgery would not fix the mental and emotional scars that had become far more disfiguring than the appearance of my face.

I began to examine myself from the inside out. The support of family and friends, prayer, and the realization that my scars were deeper on the inside than the outside collectively strengthened my spirit and my belief in myself. I ended my quest to find the next wizard surgeon who would miraculously repair my eye, rebuild my nose, or rebuild my upper lip so that I could regain my smile of yesteryear. Instead, I began volunteering at The Wellness Community, a cancer support organization that offers hope and support for cancer patients and their families. Helping others proved to be the best therapy. I began to feel better about myself as I realized that I could bring tremendous inspiration and hope to others coping with cancer. Each week after attending meetings at The Wellness Community, I began to rebuild my confidence and belief in self. For the first time, I felt like I was taking two steps forward and one step back, instead of the other way around. Over time, the pain I felt from being an outcast subsided.

Shortly thereafter, I met Sue, who is today my wife. We had two dates before she even asked me what had happened to me. That told me a lot about Sue. She really wasn't concerned about what happened to me. She cared about who I was as a person. Finding Sue and opening up to her proved to be my most significant turning point. She accepted me for who I was, and to this day has not asked me to change.

Perhaps I will always be a kind of outcast, but it's not pain that I feel any more. I'm thankful for who I am today — much stronger and wiser than I was before cancer and the disfigurement associated with it. We all struggle with insecurities in one form or another. For me, it took something devastating — something that would take me to the depths of self-evaluation — to realize that battle scars are what make people interesting. Battle scars are what make people wise. Battle scars are what make people realize how precious and valuable life really is. Battle scars are what prepare people for the inevitable adversity that lies ahead.

Twenty years after my last radiation treatment, I remain cancer-free. I've accomplished a lot personally and professionally. In February, 2006, I published a book about my experience, called *At Face Value: My Triumph Over A Disfiguring Cancer.* One of the most therapeutic outcomes of the book's release has been the opportunity I've had to speak to groups of cancer patients, medical professionals, and the community at large. I learned a lot at a very young age and am grateful for those gifts and lessons, which I hope to share with people facing challenges and adversity in their own lives. One of my goals today is to help others to become more tolerant. Regardless of the color of our skin, our sexual orientation, the shape of our bodies, or the imperfections of our faces, we all need to remember that it is the internal, and not the external fabric that makes up our human spirit.

Terry Healey
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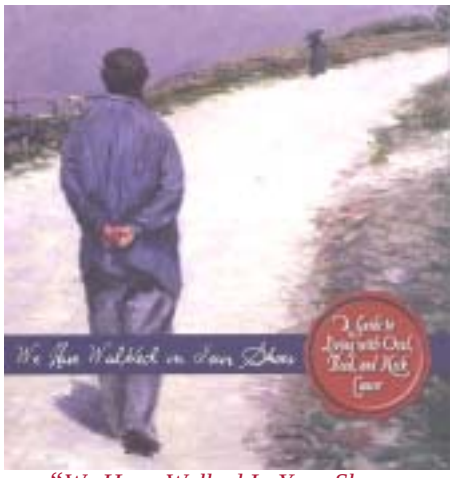
Editor's Note: Terry Healey is a partner at Iron Horse Ventures, a technology marketing consulting firm. He is also an author and a motivational speaker. For more information about his speaking and his book please visit his website at http://www.terryhealey.com.



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"WHAT WORKS FOR YOU"

SPOHNC needs your help to develop and publish a new booklet for oral and head and neck cancer patients. This spiral booklet will include suggestions and resources on how to cope wtiht short and long term effects of treatment; nutrition; oral supplements; tube feeding; medical, dental and disability insurance issues; financial support; clinical trials; and resources on the Internet.

Just as you helped us to develop a recipe and resource guide, SPOHNC needs your help to develop this booklet. We are again asking that you send us an email or give us a call or write us a letter concerning problems that you encountered during your cancer journey and how you or your caregiver were able to cope. Give us the names of prescriptions and over the counter drugs that helped, oral supplements that you preferred, home remedies that you tried in different situations, exercises that were helpful, etc. We plan to include the names of products and also ways in which to get them, including distributor names and phone numbers and Internet addresses.

Sharing what works for you, will bring new ideas and encouragement to many other survivors. So please take a few minutes and send an email to: info@spohnc.org or call us at 1-800-377-0928 or send a letter to SPOHNC, P.O. Box 53, Locust Valley, NY 11560. Sharing with others can be a great reward for all.

Nutrition for the "Spunky" ~ A Reality Check

By Jennifer Thompson, RD, LD, CNSD

Watch out!! Here comes the latest and greatest news to hit the newsstands to date! If you follow these simple 110 steps you will be living cancer-free forever! Guaranteed!!

Do I have your attention? Good. Filtering through all of the nutrition news today can be overwhelming as well as confusing. At a SPOHNC-DALLAS meeting in March, the members had a chance to discuss their nutrition concerns with a dietitian. The questions were submitted in advance and covered the following topics: fiber, protein, sugar, vegetarian diets, and cholesterol. This article will focus on the protein and calorie needs of cancer patients.

There is no shortage of dietary guidelines, goals, and recommendations for cancer prevention from such organizations as the American Cancer Society (ACS), National Cancer Institute (NCI), and the American Institute for Cancer Research (AICR). However, none of the guidelines specify the daily calorie and protein requirements of cancer patients. Generally this is because each individual has unique needs.

During treatment for cancer, for example, a person's needs for calories and protein may be elevated. For many people during treatment it is hard enough to consume even a small amount of nutrition much less more, especially if the location of the cancer is in the head and neck area. Even if a person is overweight it is still important for him/her to consume appropriate amounts of nutrition. Many people think "Oh I have extra weight to lose. I'll be okay." The body's metabolism is altered with the presence of cancer as well as during stressful situations, i.e. chemotherapy and/or radiation. Thus, muscle wasting occurs along with fat loss leaving a person weak at a time when he/she needs strength.

Determining Calorie Needs

Various formulas exist that estimate exactly how much a person needs in terms of calories. One way to estimate a person's energy needs is multiplying his weight in kilograms by a number, which can range from 25 to 35 depending on activity level and the stressful situations mentioned above. The end result is the amount of calories you need on a daily basis. Here is an example:

To convert pounds (#) into kilograms (kg) take the person's weight (in pounds) and divide by 2.2. For a person weighing 150 pounds, that is 68.2 kg.

If this person is not walking much and inactive then it is suggested to use 25-30 calories per kg. This translates into approximately 1700 – 2050 calories.

If this person is in need of weight gain, then it is suggested to use 30-35 calories per kg, which would mean 2050 – 2400 calories.

Disclaimer #1

These are estimates so a person may need more or fewer calories in order to maintain his/her present weight or to have any weight gain. Identifying your daily caloric need is a good starting point. Seeing a dietitian for one-on-one nutrition counseling is always a smart idea. "Emerging research now demonstrates that individualized nutrition counseling improves dietary intake, patient outcomes, quality of life, and decreases disease-related morbidity in certain patients with cancer (2)."

Why should you care? Frankly, there is evidence that maintaining a well-nourished body helps a person handle a treatment regimen better. "Research shows that poor nutritional status and inadequate dietary intake have a negative impact on outcomes of cancer therapy, including increased risk for complications, poor tolerance, and response to treatment and a lower quality of life."

Determining Protein Needs

Protein needs for an individual are based on weight in kilograms multiplied by a factor that is dependent on the stress level of the patient (See Table 1). To continue the example from above, a person weighing 150 pounds, (68.2 kg) would require 68-82 grams per day during non-stressful times and up to 110 grams or more per day during more stressful periods.

Stress Level	Protein Needs (grams/kilogram)
Normal	.8-1.0
Non-stressed Cancer Patient	1.0-1.2
Moderate Stress	1.2-1.6
Severe Stress	1.5-2.

Applying the Numbers

How does one convert grams into what is eaten during a day? Let's continue with our example above using 110 grams of protein per day as the goal. A person's diet would look something like this:

Breakfast	Amt. of Protein
2 eggs, scrambled	13 grams
8 oz (1 cup) 2% milk	8 grams
2 pcs. wheat toast (with 2 t. butter)	5 grams
2 pieces bacon	4 grams
Lunch	
PB & Jelly Sandwich	
2 T. PB	8 grams
Bread	4 grams
8 oz (1 cup) 2% milk	8 grams
1 c. baby carrots	Not significant
Snack	
1 cup yogurt (8 oz)	11 grams
1/2 cup pretzels	3 grams
Dinner	
4 oz. roasted chicken (no skin)*	33 grams
Steamed vegetables	NS
8 oz. 2% milk	8 grams
1/2 c. brown rice	2 grams
1 c. ice cream	4 grams
TOTAL	111 grams

*For meats, the general rule of thumb is that for every ounce of meat, there is 7 grams of protein. Per the reference material used, the amount of chicken used was less than grams of protein per ounce.

Making Adjustments

If the above dietary intake looks impossible for you because of the volume or consistency of the food listed, don't worry. Protein powders can maximize what you are able to consume. The cheapest form of protein powder on the market is Non-Fat Dry Milk (NFDM) powder that is available at the local grocery store (in the baking aisle). This powder may slightly change the taste of whatever it is added to whereas many other commercial protein powders claim to have no affect on taste.

Enriched Milk recipe: Add 1 cup of NFDM powder to 1 quart of milk. Mix well. Use in

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recipes that call for milk or drink in place of regular milk. For every cup (8 oz) of Enriched Milk, there is 12 grams of protein.

There are also nutritional supplements that can help you meet both your caloric and protein needs. For those who have been through treatment, names like Ensure and Boost probably sound familiar. More options exist so keep an open mind to the others that are in the market (See Table below).

Supplement	Manufacturer
Carnation Instant Breakfast (CIB)* (regular, plus & VHC (very high calorie)	Nestle
Scandishake (regular & lactose-free)	Scandipharm
Resource Support	Novartis
Prosure	Ross
Benecalorie	Novartis

**The traditional CIB is sold in individual packets and is available in stores; however the new canned versions listed above may not be. Check with your local dietitian for more information about the products listed above. She/He may even have samples for you to try.*

Calorie Content

Is anyone curious as to the calorie content of such a day of meals? It rounds up to 2100 calories which fits into the ranges calculated above. For many people, meeting the protein needs results in meeting the caloric needs. In the example given, the foods that are higher in protein are also the foods higher in calories. These foods are also likely to be more universal and capable of being consumed in a variety of diets. The big exception would be the chicken (or any meat). A food processor or blender might be needed to chop it to the correct consistency along with some gravy to make it moist enough. Another option to consider would be canned meats or even baby food meats. The latter come in handy when in a hurry or away from home.

Disclaimer #2

Not everyone needs to count calories or grams of protein. In reality, the ones who would benefit the most from doing so are the ones who are losing weight even though they report to be eating well. Keeping a food diary for a short time helps make clear what a person is really eating. Again, seeing a dietitian for one-on-one nutrition counseling is always a smart idea.

Nutrition Foundation

By understanding some basic facts of nutrition, one can filter through all the new, exciting, and sometimes conflicting dietary information which is provided to you on a daily basis. Remember, registered dietitians (RD), who are the leading experts in nutrition, are always available to help you understand and incorporate nutritional guidelines as part of your lifestyle.

This article has focused on the facts about calories and protein as they relate to cancer patients. Please look for more information about nutrition in a future newsletter.

Editor's Note: Jennifer Thompson, RD, LD, CNSD is a clinical dietitian in the Blood & Marrow Transplant Unit at Baylor University Medical Center in Dallas, TX. Ms. Thompson was previously a clinical dietitian covering lung transplant & thoracic surgery patients as well as head & neck cancer patients at Brigham & Women's Hospital in Boston, MA.

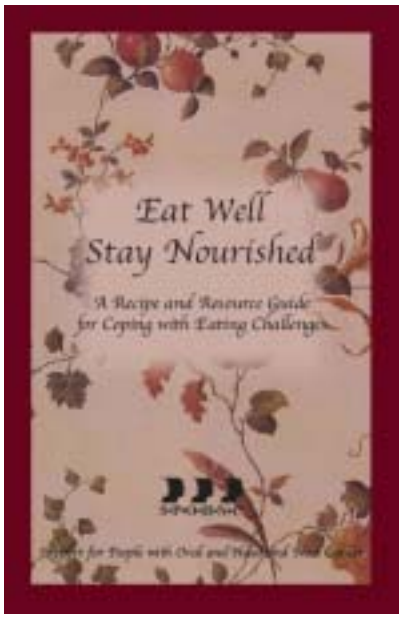
References

1. Elliott, L. MPH, RD et al. The Clinical Guide to Oncology Nutrition (2nd ed.). American Dietetic Association, Oncology Nutrition Dietetic Practice Group. 2006

2. Jacobsen, M. MS, RD. Getting the Word Out: Nutrition Counseling Improves utcomes. Oncology Nutrition Connection. Spring 2006, Vol 14 (2)

3. Pennington, J. PhD, RD. (1994). Bowes & Church's Food Values of Portions Commonly Used (16th ed.). Philadelphia: J.B. Lippincott.

"Eat Well – Stay Nourished: a Recipe and Resource Guide for Coping with Eating Challenges"



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