UPMC Cancer Centers and University of Pittsburgh Cancer Institute Winter 2015

NEWS ON ADVANCES IN THE PREVENTION, DETECTION, AND TREATMENT OF HEAD AND NECK CANCERS

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# Boosting the immune system to help fight head and neck cancer

Robert L. Ferris, MD, PhD UPMC Endowed Professor Chief, Division of Head and Neck Surgery Co-Principal Investigator, University of Pittsburgh SPORE grant

Head and Neck Cancer is a cancer of the mouth or throat that affects more than 50,000 people in the United States every year. Cancer of the head and neck can be attributed to environmental causes, such as tobacco use, or infections of the mouth caused by the proliferation of human papillomavirus (HPV). It can affect the form and function of your face, mouth and throat and is truly a terrible and life-altering disease. In the Department of Otolaryngology's Head and Neck SPORE grant, a number of new studies are getting underway and are seeking funding from the National Cancer Institute.

One new project is studying and harnessing the immune system to fight head and neck cancer, along with standard treatments. Because only one new treatment (called cetuximab) has been FDA approved for head and neck cancer in 40 years, we need new therapies and combinations that are effective at improving survival. Our team (led by Drs. Robert Ferris, Dario Vignali and Julie Bauman) believes that cetuximab may stimulate the immune system to target and kill cancer cells. Our new work and ongoing clinical trials are aimed at understanding *why* one's immune system failed to reject a patient's particular tumor. We strive to answer why the immune system was weakened, what weakened it, and how we can turn it back on to work more effectively. These answers, many times, lie in the unique genetic makeup of each person. Identifying ways that tumors escape one's immune system can lead to a 'personalized' approach to determining the optimal course of treatment. The more Dr. Ferris and his team know about one's immune system, the more options present themselves for a unique and specialized treatment.

Dr. Ferris and his team are employing a new type of cancer treatment, which has shown success over the past decade, using antibodies like cetuximab which are targeted against tumor cells. Unfortunately these antibodies are only modestly effective, so understanding how they work better will likely improve their success in cancer patients. We have identified that cetuximab may have limited success for patients because of suppressive signals in the immune system, which we plan to target and reverse in this project by blocking a signal that acts as a "brake" on the immune system, turning it off. Using ipilimumab, we are trying to "remove the brakes" so the immune system can get moving against the cancer and eliminate it. Using clinical trials of either cetuximab alone, or in combination with a second antibody, ipilimumab, our expectation is that reducing suppressive immune signals can improve the success of cetuximab in head and neck cancer patients. Ask your doctor whether any of these clinical trials or immunotherapy strategies may be appropriate for you!

## My silver lining...a survivor's story continues

By Lynn Durkin 10 year cancer survivor



It's hard to believe that ten years have passed since I received what I thought was a death sentence. The words, "you have cancer and it's bad" still ring in my ears. I remember hearing "metastatic basaloid squamous cell carcinoma" and the word "rare" then my head went numb. It was a life changing experience. I was only 41 years old at that time. I recall thinking that the people in my family just don't die young. All of my grandparents lived to a ripe old age. What was going on here? Was I really dying? I felt like I hadn't lived yet. There had to be more than this.

I wanted to remain stoic for my family. The first two mornings after my diagnosis I'd get my son off to high school and the minute he left I'd break down and cry for three solid hours. I thought not about myself but about the friends and family I'd leave behind. On the third day I took a look at myself in the mirror and didn't recognize that person. This sad person was not who I was. I made my mind up at that moment that I would not be a cancer VICTIM. I would be a VICTOR. Even if the end result was that it took my life, it was not going to take my spirit.

I believe in the power of prayer and positive thinking. I told everyone I saw of my upcoming surgery. When they asked if there was anything I needed I simply asked for a prayer. Within days through word of mouth I had well wishes coming in from one end of the country to the other. I heard from folks I hadn't seen in years. An amazing thing was happening. What I thought was going to be the scariest thing I ever went through now seemed like something I could handle. By the time the nurse called with last minute instructions I had come to terms with whatever the outcome. I knew what was meant to be was out of my control and in the experienced hands of the doctors at UPMC.

My cancerous tonsils and 28 lymph nodes were removed from the right side of my neck. Chemo and radiation therapy followed. This necessary treatment is traumatic on your body. In addition to the burns and ulcerations, which took months to heal, it could cause infertility. I wasn't too concerned about that part. I had been told years earlier there was no way I could conceive another child. I had come to terms with this fact.

Every three months for the next two years I was to have another PET/CT scan. Having had a reaction to the radioactive contrast at the first scan I had to take a large dose of Prednisone and Benadryl. My results were coming back fine. No cancer. Then I discovered I was pregnant. I was ecstatic. Not only was I not dying, I was going to be giving life. This was my silver lining to the big black cloud called cancer. Then it hit me. What could the scan, radioactive contrast, Prednisone and Benadryl have done to my baby? I called my gynecologist immediately and went for testing that day. Everything seemed fine. I was asked to see a high risk specialist just to make sure. It was strongly suggested to me that the risk was too high of having a deformity and abortion was an option. Not for me. The fact that I was pregnant at all was a miracle. I was going through with this pregnancy. I gave birth to a perfectly healthy baby. Upon her arrival it was discovered that not only was the cord wrapped around her neck, it had a knot in it. She now is eight years old and a High Honor Roll student in the third grade.

I look back on these past ten years and I'm thankful for every day. I didn't give up. Victory is mine.

# Making strides toward personalized medicine

*By Jonas T. Johnson, MD* Chair, Department of Otolaryngology, Eye and Ear Institute

When we encounter the person with a serious health problem such as cancer, we like to have a treatment that is reliable.

Unfortunately, experience has taught us that treatments don't always work. This has been a source of great disappointment, frustration, and, of course, research.

The most commonly encountered tumor in the throat is squamous cell carcinoma. Modern technology has allowed us to begin to look at the entire genome. The genome describes the arrangement of the DNA. Cancer develops when normal DNA has a mutation resulting in abnormal growth. This, of course, reflects a change in the DNA or the genome.

Investigators at the University of Pittsburgh have collaborated with others in doing studies of the genome in many patients with squamous cancer of the throat. Remarkably, these tumors are very different from one another, even though they look similar to a pathologist through a microscope.

Scientists have understood for many years that the genome is different between individuals. We also understand that cancer is caused by different things in different people. For instance, tobacco causes cancer in some individuals. The sun causes a cancer on the skin where it looks very similar under the microscope. And more recently, we have recognized that the virus called human papillomavirus can cause cancer. For those of you who suspect that other carcinogens may be causing cancer such as chemicals in food or impurities in the air we breathe, all of this begins to make an increasing amount of sense.

Now that we recognize that these apparently similar cancers are actually different, it will allow researchers to identify new therapeutic approaches. This has already happened. There are varieties of new drugs available that inhibit the growth pathways in various places. These inhibitors have been effective in stopping the growth of cancer in certain individuals. The research has increasingly allowed us to understand how this works, offers the potential that in the future, we could do a biopsy, evaluate the genome, and then personalize therapy in a way that would avoid treating patients with ineffective therapies and hopefully improve outcomes.

We are just now in the beginning of an era of personalized medicine. I expect to see many exciting breakthroughs in the coming years.

## Cancer LiveWell Survivorship Program

*By G. van Londen, MD, MS* Director, UPMC Cancer LiveWell Survivorship Programs Assistant Professor of Medicine, University of Pittsburgh School of Medicine

It is common for post-treatment cancer survivors to have questions and medical concerns that require individualized attention. The goal of the Cancer LiveWell Survivorship Program is to help make the transition to survivorship as seamless and comfortable as possible.

The program offers tools, support services, and educational opportunities to help survivors live well-rounded, productive, and fulfilling lives after cancer diagnosis and treatment. Our oncologists and survivorship care-team work with each survivor to improve his or her quality of life, providing comprehensive, personalized care that's both time and cost efficient and allows you to regain control. We also maintain close contact with each survivor's current health care providers to assure continuity of care.

The Cancer LiveWell Survivorship program welcomes all cancer survivors at all stages of their journey. You will not need a referral in order to be seen at our clinic. We will not replace your current providers, but will provide care that goes above and beyond the care of your current providers.

Our clinic delivers specialized expertise, including:

# • Prevention and management of the short- and long-term effects of cancer treatment.

Cancer survivors may experience a multitude of symptoms that can interfere with quality of life (e.g. hot flashes, sleep, sexual, pain, emotional). There are many options available to help patients manage symptoms, which should be discussed with his/her cancer care team.

# • Follow-through with the health regimen prescribed by his/her physician(s).

Sometimes it might be challenging to take the cancer therapies, particularly the ones that are self-administered, for reasons such as side effects, cost, or the uncertainty if benefits are outweighing risks.

### • Lifestyle, including nutrition, physical activity, and nicotine and alcohol cessation.

Health behaviors play an important role in overall survival, but also in some cancer related outcomes. This might allow you to take control, while it might also be overwhelming to find this healthy balance in your life.

### • Adjustment to life after cancer.

Cancer survivors may experience many different emotions in the aftermath of the cancer therapies and be confused about what they should be doing in the posttreatment phase. As the cancer treatment has been completed, family members and/or work colleagues may expect you to return to your 'normal' state, while you may still suffer ongoing symptoms and/or are trying to find the "new you."

### • Coordination of care.

We will create a personalized cancer care plan for you. During your first visit at the clinic, a provider will spend an hour with you to explore your individual situation and identify in an interactive manner potential solutions for your needs. Depending on your circumstances, you may be advised to see an additional specialist (e.g. behavioral health, nutrition, physical therapy) and/or be referred to providers outside of our clinic.

For more information, assistance, or to schedule an appointment, please call:

- Hillman Cancer Center, 412-692-4724 UPMCCancerCenter.com/LiveWell
- Magee-Womens Hospital of UPMC 412-641-4530 ext. 1
- UPMC.com/MageeLiveWell
- UPMC Passavant, 412-635-5762

For more information or to sign up for the Cancer LiveWell Survivorship Newsletter, visit UPMCCancerCenter.com/Livewell.

## Dentist inspired to inform cancer patients about dental care

By Susan E. Calderbank, DMD

In 1987, my husband and I took our three children to visit their grandmother in Florida for Christmas. At the time I had no idea that my husband would be bringing three children, all of them less than 6 years of age, back to Pittsburgh by himself. My mother had been diagnosed For additional topics on the prevention, detection and treatment of cancer, including head and neck cancer, visit http:// www.upmccancercenters. com/portal\_headneck/ publications.cfm for archived issues of Headway.



with colon cancer that had metastasized to her liver. She was given 6 to 18 months to live.

Surgery was quickly scheduled. Following the healing phase, she began an arduous journey through chemotherapy. During the last 16 months of her life she received chemotherapy once a week. Dentally, she had a pristine mouth and had few problems in her oral cavity. So, the problems that she began to experience after her treatment began came as quite a surprise! Fungal infections, oral ulcerations, dry mouth, altered food taste, and pain became an unwelcome part of her daily life.

I am a dentist and was 10 years out of dental school when this occurred. I had limited experience working with cancer patients. There was no internet at that time and there was very little literature published that dealt with managing these patients. As I was soon to learn, I was untrained and largely unable to adequately take care of the many oral concerns and needs my mom had in her mouth during her cancer treatment. I can still summon up a mental picture of her trying to eat at her kitchen counter with tears streaming down her face. Talk about flying by the seat of your pants! Most of her issues I dealt with by common sense alone.

Following her death in 1989, there was a consensus development course at the National Institutes of Health entitled "Oral Complications of Cancer Treatment: Diagnosis, Treatment and Prevention". I knew that this was a course that I had to attend! At the conference I found that there were things that I could have done to help my mom. It was then and there that I decided to go out and to educate other dental care providers on the oral management of the cancer patient.

The main dictate from the conference was that *all* patients receiving systemic chemotherapy and/or head and neck radiation should have a pre-treatment dental examination. It continues to amaze me that after almost 25 years, this is still not being done. The goal of this dental visit would be to eliminate any potential source of infection that may cause a lifethreatening situation when the cancer patient becomes immuno-compromised. The patient is also re-educated on proper oral hygiene and maintenance, which oral products to use, and oral problems to look for during cancer treatment. Family members are welcome at these appointments as a tremendous amount of information is discussed. We want the mouth to be as clean and as problem free as possible before treatment begins. Very few people realize that problems in the mouth are the #1 reason patients cannot complete their treatment protocols.

Another important aspect of care in this patient group is the encouragement they are given as they progress through treatment. Issues such as dry mouth, food choices, management of pain and reinforcement of oral hygiene are discussed. It is always heartening to see how well most patients do. It is important for these patients to also know that radiation is the "gift that keeps on giving." They need to know that proper dental care is now something that they must adhere to forever. This would include daily use of fluoride trays (for patients that still have their own teeth), dry mouth management, and dental checkups every three months as opposed to six month visits. These patients must also be advised to never suck on candy! I tell them if they have hard candy, to give it to someone they do not like!

This is an exceptional group of patients and they require exceptional care.

Dr. Susan Calderbank has worked with cancer patients for over 25 years. She has lectured both nationally and internationally on this topic. She can be reached at the UPMC Montefiore Dental Center in Oakland.

# Constellations of Hope at Our Clubhouse

By Michael Bowersox, MA, LPC Program Manager, Our Clubhouse mbowersox@ourclubhouse.org

The stories of those who have been touched by cancer are continually written

and rewritten as they proceed from diagnosis, through treatment, to whatever lies waiting after the treatments are completed. It would be comforting if living through cancer were only as tidy as that sentence makes it sound. Yet cancer is often a journey of the unknown, both for the diagnosed as well as for the family and loved ones. If you have been there or are in the process of treatments, you're probably familiar with the gamut of emotions that are part and parcel of a cancer experience, from fear to sadness to hope to even relief. Some also describe a feeling of loneliness as they go through their

cancer experience.

Our Clubhouse believes in one very simple thing: We are all in this together.

As a complement to

Our Providing comfort, care & hope to those touched by cancer Clubhouse

and the family. Led by a Certified Child Life Specialist, the Family & Youth Program takes place at both the clubhouse and in area hospitals, and includes family and youth consultations, child and teen workshops and activities, short-term support sessions, as well as educational sessions for professionals. An integral part of family-based support is also the Family Connections group, where families in similar circumstances come together to learn more about what cancer is, how it impacts the whole family, and ways everyone can cope.

> As for support tailored more towards adults, this takes place in diagnosisspecific and open support groups, such as breast cancer, multiple myeloma, pancreatic cancer, prostate cancer,

living life post-treatment, living with cancer (for those actively in treatment), young adults, bereavement, and a group for caregivers. Along with these groups, yoga classes, short-term individual support, health and wellness workshops, art classes, and educational lectures are places where members often connect and find a community of support. While each of these classes, groups, and workshops take place at the clubhouse, there is also the Moving Forward after Cancer workshop that takes place both at the clubhouse and in the community.

Moving Forward after Cancer is a fun and interactive nine-week workshop for adults who are post treatment. Each session is comprised of important information and tools for action, where individuals can learn how best to live and move forward with life after treatment for cancer. From the physical to the emotional to the nutritional, the program encompasses an entire mind-body approach to assist people as they transition to living their lives. Which, ultimately, is the very aim of the clubhouse: to promote wellness and wholeness in support of those touched by cancer.

For more information, or if you're just looking for someone to talk with, please call 412-338-1919. Information can also be found on our website at www.our clubhouse.org. Our address is 2816 Smallman St., Pittsburgh, PA 15222.

medical treatment, Our Clubhouse welcomes those touched by cancer – from a mother who has been diagnosed, to a devoted friend, from a father in remission, to families touched by childhood cancers. The clubhouse was built on the idea that the best care is not solely medical, but social, emotional and informational as well. Both within the walls of the clubhouse and in the community, the staff, volunteers, and members are intimately aware of what living with cancer means, and how strengthening it can be to connect with others who have been on a similar journey.

The support Our Clubhouse provides today is much the same as it has been providing for the past eight years at its Strip District location, just under a new name. Formerly known as Gilda's Club Western Pennsylvania, on April 8, 2014 it changed its name to Our Clubhouse. This was not a decision taken lightly, and the result of two and a half years of consideration by the board. The name change came after choosing to become independent from the Gilda's Club national organization, Cancer Support Community (CSC), and has allowed the local nonprofit to remain true to its mission of providing social and emotional support to those whose lives have been affected by cancer.

Because Our Clubhouse recognizes that cancer is something that impacts the entire family, its support programming addresses the needs of both the individual

## Short session training

By Fred S. Como, BS CPT, CWLS

Many first time exercisers, persons with disabilities, disease or in recovery tend to avoid exercise and activity because they experience difficulty with training sessions of 30 minutes or more. The question then, is: Can I get any benefit from shorter sessions of training? The answer is, Yes!

How short is a short session? Would you believe 10 minute sessions? What about general conditioning? Is there any benefit to short session training?

In three recent studies, researchers found the following:

• People who moved for 10 minutes daily (be it exercise or housework at a quick pace) lost more weight, lowered their body mass index and lowered their cholesterol more than those who remained sedentary.

• In individuals who exercised for 30 minutes compared to those who exercised for 10 minutes three times daily, those who broke up their sessions had a better blood pressure response.

• In shorter periods of exercise, more than 20 metabolites that change during exercise naturally produced compounds involved in burning calories and fat and improved blood sugar control.

• Short session training shows small improvements in muscle tone and lowers body fat.

• Exercising can boost body metabolism for 1 to 36 hours post exercise (depending upon training session length and intensity).

Starting with 10 minutes, three times daily, the goal is to increase activity until one may be able to do a 20 then 45 minute session. It takes time, but in gradually progressing, you allow yourself to condition to the greater demands placed on the body.

So what would be the most ideal short session workout? It depends. For those inactive and sedentary, short bursts of walking will be a good place to begin changing your activity levels. As you improve, consider something along the lines of a hybrid training session. For example, using resistance bands, you can break up your day as follows:

## **Morning Session:**

- 1A wall squats with exercise ball X 15-20 repetitions
- 1B jumping jacks X 25
- 1C lateral shoulder raises X 15-20 1D - plank X 20 count

Repeat 3 times

### Afternoon Session:

- 2A biceps curls X 15-20
- 2B step up step down X 30
- 2C behind head triceps extensions X 15-20

2D – floor bridges X 10 Repeat 3 times

### **Evening Session:**

3A - chest press X 15-20
3B - full body extensions X 25
3C - standing 1 arm lat rows X 15-20
3D - trunk rotations X 10 each side
Repeat 3 times

The resistance training aides in developing lean muscle mass while the metabolic and abdominal/core exercises develop the cardiovascular system. Using the resistance bands also helps in developing better balance and forces the body to recruit more muscles as compared to using weight machines. Dumbbells may also be substituted in place of resistance bands. This combination has proven in research to be a route to quicker fat loss as compared to separate resistance and cardio training programs. This type of training is known as high intensity interval training or HIIT. Your level of intensity increases between the resistance training sets. It's also similar to walking a short distance very quickly (maybe 30 seconds at 70% of your maximum heart rate) and cooling down for a period at a recovery level (maybe 1 minute at 40% of your maximum heart rate).

So as you consider wanting to feel stronger, more energized, having more strength or just wanting to feel better again, consider short bouts of exercise. Even though you may have to start out slowly, you will experience positive results with your training! Hang in there and keep at it. You will eventually be able to start training a little longer and harder. You may even surprise yourself with faster results than you thought were possible. The human body, as well as the spirit, have the ability to mend and recover. All it takes is moving in the right direction.



Fred Como, B.S, owner of OneSource Wellness Coaching, is a certified Personal Trainer and Weight Loss Specialist through the National Academy of Sports Medicine. He can be reached at CoachFred@

OneSource WellnessCoaching.com, www.OneSourceWellnessCoaching.com or 724-713-1581.

# The University of Pittsburgh Specialized Program in Research Excellence (SPORE) Grant

Principal Investigators: Robert L. Ferris, MD, PhD and Jennifer Grandis, MD

The National Cancer Institute has funded the University of Pittsburgh for the past 10 years to study and identify new ways to treat head and neck cancer. In October 2014, we submitted our renewal application for an additional five years, to renew this NCI funding which is so critical to our ability to develop new and exciting treatments for this challenging disease. At the peak there were five funded SPORE grants nationally - today there are only 2-3 at any time, and the University of Pittsburgh is attempting to renew our SPORE to maintain our efforts on behalf of our patients in Pittsburgh, and those across the U.S. We are studying new targets to block that stimulate cancer cells, attempting to prevent head and neck cancer using substances in broccoli sprout extract substances to block pre-cancerous lesions, and to personalize surgical treatment and improve diagnosis of aggressive thyroid cancers. The fourth project is focused on stimulation immunity against tumor cells by "taking off the brakes" which prevents the immune system from eliminating cancer cells. This new immune-therapy approach to cancer treatment is exciting and has been an area of national leadership by our team and is described in the article on page 1.

## **Swallowing Disorders Center**

The UPMC Swallowing Disorders Center is dedicated in helping patients with swallowing problems as they undergo treatment for head and neck cancer. Early intervention with swallowing exercises has been linked to better quality of life outcomes. It is highly recommended that patients be seen by the swallowing team to begin a therapy program as soon as the plan for treatment has been identified.

The process begins with a swallowing evaluation to assess baseline swallowing function and to identify if posture changes, swallowing strategies, and/or diet modification will help the patient swallow better. While some patients require a feeding tube during the course of treatment, the ultimate goal is to return to eating and drinking as soon as possible. We provide assistance during the transition from a modified diet or tube feedings back to a regular diet. When returning to a regular diet is not possible, we help to develop an individualized plan to take certain foods or liquids safely.

We recently completed a study in which weekly questionnaires were given to eleven patients as they underwent chemo-radiation therapy to help us better understand what patients experience during the phases of treatment. This type of information is helping us tailor our therapy approaches to achieve better outcomes. For most, increased difficulty with swallowing occurs toward the end of treatment and may even last a few weeks after the completion of treatment. Once patients are feeling better, the goal is to re-establish the exercise program and begin aggressive intervention so patients can return to an oral diet safely. The team is also participating in a multi-center study involving a special device to exercise the tongue. The device measures baseline tongue pressures so patients can improve strength with practice and meet specific target goals. Grip strength assessments are also being used in the center to determine if there is a relationship between weakness and dysphagia (difficulty swallowing).

The UPMC Swallowing Disorders Center has two locations:

- UPMC Eye & Ear Institute (Oakland) 412-647-6461
- UPMC Shadyside 412-621-0123

## **Clinical trials**

For more information about head and neck clinical trials, contact Amy at 412-864-1728 or Denise at 412-864-3759.

## **Contact information**

American Cancer Society1-800-227-2345
Assistance with Coping
Cancer Caring Center
Cancer Information and Referral Services
Clinical Trials
Eye & Ear Foundation
Family Care Giver Education and Support
Gumberg Family Library
Head and Neck Cancer Support Groups
North Pittsburgh (Wexford/Franklin Park)412-864-2532
South Pittsburgh (Bethel Park/Upper St. Clair)412-622-1212
Hopwood Library at UPMC Shadyside412-623-2620
Hyperbaric Oxygen Treatment
Our Clubhouse
Pain and Supportive Care412-692-4724
Project of Love (comfort pillows)
Prostate Cancer Support Group
Satchels of Caring Foundation
Swallowing Disorders Center
UPMC Eye & Ear Institute (Oakland)412-647-6461
UPMC Shadyside
UPMC Division of Sleep Surgery
Mercy
Monroeville
Womocvine
American Cancer Society websitewww.cancer.org
Head and Neck Cancer Program
websitewww.upmccancercenters.com/headneck
Hillman Cancer Institute websitewww.upci.upmc.edu
rimman Sancer institute website

## Head and Neck Cancer Program website

Looking for more information about patient services, current research, clinical trials, news and events and other valuable information pertaining to head and neck cancers? Check out the website for the Head and Neck Cancer Program of UPMC Cancer Centers at www.upmccancercenters.com/headneck.

## University of Pittsburgh Department of Otolaryngology

Head and Neck Oncology Eye & Ear Institute 203 Lothrop Street, Ste. 300 Pittsburgh, PA 15213 P: 412-647-2100 Robert L. Ferris, MD, PhD UPMC Endowed Professor Chief, Division of Head and Neck Surgery Co-Principal Investigator, University of Pittsburgh SPORE grant **Rosie Christ** Head and Neck SPORE Grant Administrator

## UPMC Cancer Centers *and* <u>University of Pittsburgh Cancer Institute</u>