



S•P•O•H•N•C

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

NASOPHARYNGEAL CARCINOMA

NANCY LEE, M.D.
K. KIAN ANG, M.D.

ETIOLOGY AND RISK FACTORS

The nasopharynx is an open chamber located behind the nasal cavity and below the base of the skull. The etiology of nasopharyngeal carcinoma (NPC) is probably multifactorial consisting of combinations of viral, genetic, and/or environmental factors. Epstein-Barr virus (EBV) has long been associated with NPC. This is based on the observation that almost all patients with NPC, regardless of the ethnic background and geographic location, have been infected by EBV virus as they have elevated levels of antibody against this virus.

A genetically determined susceptibility most likely explains the high incidence of NPC among the Southern Chinese and Southeast Asian populations of Southern Chinese descent. The high incidence of NPC among the Southern Chinese could be related to the ingestion of salted fish during early childhood. A carcinogen found in the salted fish, dimethylnitrosamine, has been shown to induce carcinoma in laboratory studies. Poor ventilation, occupational exposures to smoke or dusts could also be contributing factors.

CLINICAL PRESENTATION

The most common presentation of NPC is an enlarged neck mass resulting from spread of cancer cells to the lymph nodes, followed by nosebleeds or nasal stuffiness, decreased hearing, pain, and cranial nerve deficits caused by tumor growth along the tissue planes. Symptoms and signs resulting from cancer spread to other parts of the body, through the bloodstream, such as bone, lung, and liver lead to diagnosis in 3% of patients.

ROUTES OF SPREAD

Nasopharyngeal carcinoma arises preferentially at the fossa of Rosenmüller or the roof of the nasopharynx. Fossa of Rosenmüller is a cleft-like space between the side and back walls of the nasopharynx. The tumor originates from the mucosa (cell layers lining the surface) of the nasopharynx. The cancer cells divide continuously and tend to grow inward and invade adjacent tissues. The nasopharynx has a very rich lymphatic network below the mucosa. Therefore, spread to lymph nodes (small bean-shaped collections of immune system cells that help the body fight infections and cancers) behind the throat (retropharyngeal nodes) and in the neck (cervical nodes) are common. Approximately 90% of all patients have lymph node involvement and 60-85% of these patients show lymph node involvement at the time of initial diagnosis. About 40 to 50% of the patients have bilateral lymph nodal involvement. The incidence of distant metastasis ranges from 25% to 75% depending on the tumor extent (stage).

PHYSICAL AND DIAGNOSTIC EVALUATION

Assessment of each patient consists of a complete history and physical examination including a thorough viewing of the nasopharynx with a flexible fiberoptic scope (endoscopy) inserted through the nose. The physical examination is complemented by complete blood counts, liver function tests, chest x-rays, computerized tomographic (CT) and/or magnetic resonance imaging (MRI) scans of the nasopharynx and neck, and a dental evaluation. Bone scans and CT scans of the abdomen and/or chest are obtained when there is suspicion for blood borne spread.

STAGING

Staging is the process of finding out how far a cancer has spread. The extent of spread of nasopharyngeal cancer is the most important factor in selecting treatment options and estimating a patient's outlook for recovery and survival.

The most common system used in the United States to describe the spread of nasopharyngeal cancer is the TNM system created by the American Joint Committee on Cancer (AJCC). **T** stands for tumor growth (how far it has spread within the nasopharynx and to nearby tissues) classified into stages T1 (confined to the nasopharynx) to T4 (e.g., spread through the skull base) with increasing contiguous local invasion. **N** stands for spread to lymph nodes categorized into stages N0 (absent) to N3 (greater than 6 cm or involvement of nodes just above the clavicle). **M** is for evidence of metastasis (spread to distant organs), divided into M0 (no evidence of metastasis) or M1 (presence of distant organ spread).

TREATMENT AND RESULTS

The standard treatment for nasopharyngeal carcinoma has been
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NEWSLETTER EDITOR

Nancy E. Leupold

WEBMASTER

Barry Sebastian

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COMING IN NOVEMBER

Brachytherapy For Head and Neck Cancer
Bhadrassain Vikram, MD

NASOPHARYNGEAL continued from previous page.
external beam radiotherapy, typically using high energy x-rays generated by a linear accelerator aimed at the nasopharynx and neck nodes. Treatment outcome, as in other cancers, is generally measured using various endpoints. Local control rate refers to the likelihood (expressed in percentages) of eradicating the cancer at the site of origin and survival rate indicates the percentage of patients who are alive at the specified time after therapy. The reported local control rate for T1 and T2 tumors of the nasopharynx ranges from 64 to 95% and for T3-T4 tumors varies from 44% to 68%. The 5-year survival rate varies from 36% to 58%. The dose delivered and the technique of radiotherapy are important in determining the success rate in controlling nasopharyngeal carcinoma. A study of 107 patients, for example, showed that administration of more than 67 Gy (unit of radiation) yielded better local control than that achieved with lower radiation doses. Another study of 118 patients showed that in addition to the radiation dose refinement in technique led to better tumor control.

Then in 1998, the results of a prospective study (Intergroup trial 0099) were reported. This study, completed through the collaborative efforts of many US head and neck oncologists, tested the role of chemotherapy in the management of NPC. Intergroup trial 0099, consisting of one hundred forty seven patients, showed that chemoradiotherapy was superior to radiotherapy alone for patients who presented with advanced nasopharyngeal carcinoma with respect to survival without tumor progression (69% vs. 24%) and overall survival (78% vs. 47%).

The results of this trial changed the standard of care for the management of patients with NPC. The current standard treatment for nasopharyngeal carcinoma is external beam radiotherapy alone for early (T1-2 N0-1) NPC and a combination of radiotherapy and chemotherapy (cisplatin during radiation; cisplatin and 5-fluorouracil after radiation) for more advanced NPC. Current efforts focus on reduction of treatment side effects and further improvement of tumor control.

Many critical normal tissues, such as the optic apparatus, the brain stem, and the brain, surround the nasopharynx. Consequently, accuracy and sophistication in dose delivery is essential in limiting normal tissue injury and minimizing serious complications. Such accuracy and sophistication will allow administration of higher radiation dose and perhaps further increase in tumor control. There are many approaches to selectively administer supplemental dose to the nasopharyngeal carcinoma in addition to external beam radiotherapy. Many investigators have tested the role of intracavitary brachytherapy (placing radioactive sources into the nasopharynx through special devices) or stereotactic radiosurgery (highly focused radiotherapy) in further improvement of outcome. Encouraging results, up to 83% to 93% tumor control rate, have been reported for selected groups of patients. However, because of the dose distribution characteristics, brachytherapy or stereotactic radiosurgery cannot effectively deliver additional dose to relatively large or deeply invasive tumors without increasing the risk for damaging the critical normal tissue.

Advances in computerized radiation planning and delivery technology have improved the flexibility of "conforming" external beam radiation to the three-dimensional shape of the tumor (3-D conformal radiotherapy). Intensity-modulated radiation therapy (IMRT), a

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form of 3-D conformal radiotherapy, has recently gained popularity in the treatment of head and neck cancers. With this technique, radiation beams can be modulated so that a high dose can be delivered to the tumor while significantly reducing the dose to the surrounding normal tissue. Xia and colleagues compared IMRT treatment plans with conventional treatment plans in a patient with locally advanced nasopharyngeal carcinoma and showed that IMRT provided improved tumor target coverage with significantly better sparing of sensitive normal tissue structures. The ability to spare the salivary glands is of particular interest as it may reduce a rather common, annoying side effect, namely dry mouth (xerostomia). Sultanem et al. reported on the experiences of patients treated with IMRT between April, 1995 and March, 1998 at the University of California-San Francisco Medical Center. With a median follow-up of 21 months, the local-regional progression-free rate was 100%. In a subsequent update, which included an additional 32 patients treated between April 1998 and June 2001, we continue to observe no local failure. Thus, the excellent local control reported in the initial study is substantiated with additional patients and longer follow-up. To date only one patient failed in the upper neck.

Although excellent local control had been achieved with IMRT, patients still experienced distant metastases. There is thus room for improvement of systemic therapy to better eliminate blood born metastasis. The results of a pilot study at UCSF and the preliminary results of a study by the Radiation Therapy Oncology Group (RTOG 9505) suggest a significant correlation between microvessel density (blood vessel count within the tumor) and the risk of distant metastasis and survival in patients who receive radiotherapy. This finding generates enthusiasm to test the role of anti-angiogenic agents, a new class of drugs that block blood vessel formation, in the treatment of this disease.

COMPLICATIONS

The most common side effects occurring during and shortly after treatment are breakdown of the mucosa (mucositis) of the pharynx, dry mouth (xerostomia), and reddening (erythema) of the skin. The most common long-term side effect is xerostomia, though its incidence decreases tremendously with IMRT.(8) Mild hardening of the tissues un-

der the skin (subcutaneous fibrosis) of the neck also occurs in most patients. Patients receiving chemotherapy and radiotherapy may experience long-term hearing impairment. Trismus (difficulty opening the mouth) may occur as a result of the fibrosis and contraction of the pterygoid muscles or fibrosis of the temporomandibular joint. Other rare complications consist of edema of the voice box and breakdown of the jaw bone (osteoradionecrosis of the mandible).

TREATMENT RECOMMENDATION

Patients who present with early T1-2 N0-1 staged disease are good candidates for external beam radiotherapy alone. Combined modality treatment consisting of chemotherapy and radiation therapy is recommended for all other lesions. Intensity-modulated radiotherapy should be considered strongly in all cases to decrease the risk of complications, especially xerostomia. Expertise in anatomy and pattern of disease spread is, however, essential for proper planning. ■

Editor's Note: Nancy Lee, M.D., is a clinical instructor in the Department of Radiation Oncology at UCSF Medical Center, San Francisco, CA. Dr. Lee is also a Consultant for a Biomedical Engineering Research Grant for the application of computer optimization to treatment planning and delivery of Intensity Modulated Radiation Therapy (IMRT). In addition to her interest in IMRT, Dr. Lee's special areas of research include intraoperative radiation therapy and angiogenesis inhibitors for head and neck cancer.

K. Kian Ang, M.D., Ph.D., is a Professor and holder of the Gilbert H. Fletcher Chair in the Department of Radiation Oncology at the University of Texas M.D. Anderson Cancer Center, Houston, TX. Dr. Ang focuses on investigations on targeted combined modality therapy and prognostic biomarkers for head and neck cancers. He chairs the Head and Neck Committee of the Radiation Therapy Oncology Group

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A TIME FOR SHARING

Hi! My name is John, I'm 59 and was diagnosed with Squamous Cell Carcinoma (SCC). It all started with a sip from a straw that was not meant to be. I was unable to create enough suction because I had a small hole in the roof of my mouth (my hard pallet). To make a long story short, I was diagnosed with SCC, stage 4, in February 1997, and had an eighteen-hour surgery at Memorial Sloan Cancer Center, followed by 37 radiation treatments (5X every week). My family consisted of a 17 year old, a six year old and 3-year-old twin daughters at the time. The news that it was cancer hit me like nothing else in my life. It was as if someone pulled a plug from my toe and all the life drained out of me. I suddenly had to confront the reality of my mortality!

During those early days, there was little time for humor since most of my time was devoted to research and second opinions! And after all, I had five people dependent on me, and a life that was only partially lived! Those were very dark days taken with a long hospital stay (four weeks), reassuring my children that all would be well, being an invalid when I had always been independent and a decision maker, having to come face to face with that dreaded word...mortality. I had always taken pride in my appearance, kept a trim beard, and looked to my man-hood in terms of power and strength. Thus, the diagnosis of cancer destroyed the very foundation of my man-hood, as I understood it. After all, I was always supposed to be there for my family and my employer. This could not be happening to me! Yet it did and I had to deal with it.

As any Daddy, my concern was focused

on preparing my children and being sure that they were not traumatized by what was happening. I had to prepare them for a Daddy that had no nose, that had problems eating and speaking and who would not have the energy to play with them the way he had. Now fast forward to after surgery and after radiation...all of which could consume another whole essay! I am now at home, no energy, a man made nose, a prosthetic upper pallet that allows me to eat and speak...no resemblance to the man I used to be! How can I handle all of this? When I first saw myself in the mirror after surgery, I was horrified! And then I laughed because the thought entered that I would never have to buy a Halloween mask again! When I was recuperating, my twins would play "Hide the Nose on Daddy!" since I would remove it at night. Even to this day, I am known throughout the neighborhood as "Daddy No Nose!"

To tell the truth, it really took a great deal of self-appraisal and analysis to be able to put my ego on the back burner and see the world through the eyes of two three year-olds! Once I was able to realize that they required humor to get through the emotional trauma of what they had been through, it made sense that I had a choice: either wallow in my self pity over what had happened to me or, move on with a sense of humor and get my life back in gear! What I discovered was amazing.

As I approached life with a smile, it smiled back at me. As I added humor to my friendships, especially in cancer support groups, people responded with a positive outlook and really had fun! As I took walks down

"memory lane" with other cancer survivors, they reconnected with their history that had made them who they were and, for that moment, forgot they had cancer and simply had fun!

Yes, people complained that the real purpose of the group was to help those just diagnosed and we all agreed, that indeed was true. We could all remember those early days that felt so very cold and alone. Yet there was an experience that we all shared that said NO! Humor IS essential to survivorship...why else did we struggle so hard to be survivors! If we can't enjoy life, celebrate life and laugh at life why then have we gone to such extraordinary lengths to be here? Humor helps to break the stress and the day-to-day worry and concern. It is indeed food for the soul.

I have laughed and I have cried with many of my dear friends. Through it all, it was and is those moments of shared humor and joy that brought a smile to my face and that mattered the most. It was the beautiful description of a sun rise that will forever be etched in my memory, the subtitle joke that we shared that will always bring a smile to my face, the sharing of times long past and just being kids again, and all of which help me remember my dear friends...whether they are here or not!

Yes, we are all cancer patients. The real question is: are we cancer victims or cancer survivors? Make me laugh or help me recall a time long past that puts a smile on my face and I'll let you know.

God Bless and keep on keeping on!

John

TIPS FROM THE PROS

Dear Fellow survivor:

Some of the following "tips" may seem like little things, but can make a difference in what is sometimes a constant battle to maintain and improve our quality of life. Here are my "Tips from the Pros."

1. Having intense dry mouth and being "chained" to a water bottle can be cumbersome. In searching sporting goods stores/departments, you'll find that most bottle

holders now offer a shoulder strap rather than a more sensible adjustable belt for around the waist wear. I am seldom without my water bottle waist pack and am frequently asked where I got it. I have had this InGEAR "Active Pak" for over a year and it has not worn out at all. I found it in the sporting goods area in a K-Mart store. It was \$10 and worth every cent. The company that makes it is called InGEAR and is located at 175 Old Half Day

Road, Lincolnshire, IL 60069. If you E-mail me, I'll send you the K-Mart Label numbers.

2. For nine months following surgery (and chemo & radiation) I had a feeding tube. After much messy spillage and rolls of surgical adhesive, I found "Cath-Secure." This is a device made to neatly and securely keep the tube "holstered" to your body. You can buy it directly from M.C. Johnson Company, Inc., 2037 J & C Blvd., Naples, FL

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GE MEDICAL SYSTEMS UNVEILS BREAKTHROUGH TECHNOLOGY TO AID DOCTORS IN EARLY DETECTION AND DIAGNOSIS OF CANCER

Discovery™ LS Unveiled to Global Healthcare Community in New York

On June 21, 2001, GE Medical Systems, a unit of General Electric Company, introduced a major advance in imaging technology that will help physicians effectively see and treat cancer faster than ever before. More than 6 million people around the world will die from cancer this year according to the World Health Organization. In the United States one in three people will be diagnosed with cancer in their lifetime.

The GE Discovery™ LS combines the fastest and most sophisticated computed tomography (CT) scanner, the GE LightSpeed™ Plus, with the most advanced positron emission tomography (PET) system, the GE Advance NXi™.

In light of recent news about cancer blocking drugs, this technological advancement is especially relevant. "The opportunity to aid doctors in diagnosing cancer more accurately and monitoring response to treatment earlier means that these new anti-cancer drugs may be utilized properly to have a greater chance of working," said Homer A. Macapinlac, M.D., director and section chief of Positron Emission Tomography at The University of Texas M. D. Anderson Cancer Center.

"The Discovery LS may be the most significant development in cancer detection and diagnosis in the last 20 years," according to Gustav von Schulthess, MD, PhD, professor and director of the division of Nuclear Medicine at University Hospital of Zurich, Switzerland, and one of the first physicians to use the system. "Of the approximately 100 cancer patients scanned on the Discovery LS system at University Hospital, we have seen a 60% improvement in our ability to pinpoint the location of a tumor in the body. At the same time, our confidence in diagnosing the type of lesion has increased by 40% and the overall course of treatment has improved in nearly one out of three cases because of images generated on the Discovery LS system."

At a press conference in New York GE President & Chairman-Elect Jeffrey R. Immelt said, "The development of the Discovery LS is another example of GE's com-

mitment to early disease detection, which in turn leads to patient success stories. Discovery LS will help pave a new frontier in patient care as advanced medical imaging becomes the "eyes" to help new drugs and other innovative treatments precisely target disease."

Images from Discovery LS can be compared to radar images shown during a television weather report. A PET scanner shows concentrations of cancer cells in a color spectrum just as weather radar shows varying concentrations of precipitation. The anatomical image generated by the simultaneous CT scan acts as the "map" showing doctors precisely where the cancer is located. The Discovery LS, like television radar, combines information from two systems, CT and PET, to pinpoint activity and location fused into one image.

For patients who are suspected of having cancer, the GE Discovery LS allows doctors to potentially learn more information about the extent and location of their disease. In cases where cancer is detected, the Discovery LS is an unprecedented tool that helps doctors target treatments and evaluate their effectiveness.

The GE Discovery LS can significantly reduce the time, expense and anxiety of multiple procedures. For example, physicians can obtain in a single, 30-minute Discovery LS exam, the functional and anatomical information that they need for a patient, as compared to multiple procedures that may take place over the course of several days.

"In some way, cancer touches all of our lives," said Joseph M. Hogan, President and CEO of GE Medical Systems. "By listening to doctors and their patients, and by harnessing the speed and power of Six Sigma, GE is able to deliver a constant stream of life-saving medical innovations to people around the world."

Because the Discovery LS is a digital system, patients also benefit because their doctors will be able to electronically transfer images to specialists for review and expert opinions if needed.

Today the GE Discovery LS is installed for clinical use at University Hospital in Zurich, Switzerland, Johns Hopkins Medical Institutions in Baltimore, Md. and Rambam Medical Center in Haifa, Israel. GE Medical Systems expects more than 500 Discovery units installed in the next three years.

"The Discovery LS and other fused imaging systems, which make up the Discovery product line, are the wave of the future for medical imaging," said R. Edward Coleman, M.D., director, Division of Nuclear Medicine and vice chair of the Department of Radiology at Duke University Medical Center. "In the years to come, fused imaging systems could become as popular as MR and CT scanners because of their ability to detect disease earlier and optimize treatment," said Coleman.

"The Discovery LS is also an example of how advanced technology can help doctors positively impact lives and help reduce healthcare costs. With the potential of earlier detection, new technology can help physicians prescribe better treatments, shorten hospital stays and reduce the number of exams for patients," added Coleman.

Since 1997, GE has invested more than \$50 million in the development of the Discovery LS, plus another \$80 million for the research and development of the LightSpeed CT and Advance NXi systems, upon which Discovery LS is based.

GE Medical Systems is an \$8 billion global leader in medical information and technology. Its offerings include networking and productivity tools, healthcare information systems, patient monitoring systems, conventional and digital X-ray, computed tomography (CT), magnetic resonance (MR), ultrasound, positron emission tomography (PET), and nuclear medicine. For more than 100 years, health care providers worldwide have relied on GE Medical Systems for high quality medical technology, services and productivity solutions. ■

For more information, visit the GE Medical Systems Web site at gemedicalsystems.com.

KEITH WEBB RUN/WALK FOR SPOHNC SUNDAY, NOVEMBER 18, 2001



Keith Webb
1928-2001



Sometimes, something about the nature of our birth is a foreshadowing prelude of the life that is to follow. Keith Webb was the son of New Zealanders, born in Calcutta, India, while his father was engineering for an empire on which the sun was about to set. Keith was born far from home, far from his roots; symbolically, a die was cast.

After India, Keith lived in the United Kingdom and when World War II erupted, he returned with his family to spend his adolescence in New Zealand. After the War, education drew him back to Europe. Like his father before him, he, too, studied, to become an Engineer; at Cambridge, in London as well as in Switzerland.

After returning to England from Graduate work in Switzerland, He met Ann Evans. They fell in love; they married and they began a lifelong romance and friendship. Ann and Keith had four sons and throughout their lives, they crossed the globe. Keith became a colleague and great friend to people from all over the world of differing and divergent backgrounds while spending his professional life constructing dams and power stations. These were experiences he treasured and honoured.

The currents of life's ocean also took him to Turkey, to Spain, to Korea and Japan, to the Middle East, to China, to South America and Iran. In Many cases he became immersed in the local cultures and was invited

to stay on even after his work was completed; the greatest compliment any traveler can have paid to them.

However, perhaps the most significant journey was the one to Canada. After 1975, it became home, or while he and Ann worked overseas, always home base. They lived in Montreal, Toronto, Regina, Calgary and finally Saltspring Island, a small paradise off the coast of British Columbia. Saltspring is a magical place, where people of all beliefs and opinions rub shoulders and coexist in harmony, often over espresso or over a glass of wine. It is a place that reminded Keith of his youth in New Zealand.

On Saltspring, Keith tended his five acres of land, hiked, made wine, and as his epiphany of activity, he built and sailed wooden boats. To be on his last boat "Annabelle IV" in a good breeze in the Fulford Channel was a sonnet of sailing that left you tingling with the joy of life.

Keith Webb died unexpectedly in January 2001 from oral head and neck squamous cell carcinoma; a plain fact and only one that reflects the outer shell of the man. The core and essence of a person is experienced in how they resonate with us through their words, thoughts, actions and after death, their memory.

Keith was a hard working, disciplined and well organized man. He was loving and enthusiastic. He was proud of his family. He was understanding. He was a good lis-

tener and able to empathize and sympathize with other points of view. He led his life as he loved to sail; catch the breeze, fill the sail, and navigate into the always changing and always mysterious waters. Sailing was his metaphor for living: with the wind, without fear and always the heart, head and spirit moving forward in balance.

Like a ship's bow cutting waves before it, so the resonance of Keith's Life ripples through many lives made all the richer for the experience of having known him.

In memory of this gentle mannered man, we hope to involve family members from the U.S.A., Canada and the United Kingdom as well as friends and local businesses to support a Keith Webb team. This team, consisting of our family members in the United States as well as cancer survivors and their families and friends and other interested runners/walkers, will participate in a 10K cross-country run/walk to raise money for SPOHNC through sponsorship. Our family would like all proceeds from this event to go to SPOHNC, a non-profit organization dedicated to meeting the needs of oral and head and neck cancer patients while helping to raise awareness of this disease. Won't you join us in supporting this endeavor?

Sincerely,
The Family of Keith Webb
from The United States
Canada, and The United Kingdom

TIPS continued from page 4

34109. Their toll-free phone is (800) 553-8483 The item is reorder No 5445-2. A dozen will cost you about \$27 plus shipping.

3. With xerostomia (dry mouth) comes an intense campaign of oral cleaning & fluoride use. My teeth are very closely spaced and most dental floss will not do the job. I have found the "Plackers" brand of dental flossers (with "Tuffloss") superior to all others (and have tried them all). These flossers don't break or bend and they do the job. They cost less than most other name brands and are available at most CVS drug stores.

4 Following head and neck radiation, most liquids (and foods) are difficult to get down. If you are having difficulty try some of the GOYA brand canned nectars. Room temperature was best for me and the pear peach, mango & papaya flavors went down easiest.

Anyway, that's it for now. Hope you will continue to improve & hope some of this will help. I can be reached via E-Mail: ROCKAUTHORITY@HOME.COM.

All the best
(and special thanks to Nancy Leupold),

Ron Farber



from PAT'S PANTRY
PROVENÇAL



Spinach and Cheese Omelet

6 eggs slightly beaten
3 tablespoons olive oil
1 lb. frozen spinach,
defrosted and drained

3 slices whole wheat or
cereal bread, cut up
1/2 cup grated cheese, Cheeze
Whiz or cheese spread

Salt to taste
Milk

Scramble the eggs in a frying pan with the olive oil. Cook till moist, do not overcook. Blend with spinach, bread, grated cheese, salt and enough milk to liquify. Return mixture to frying pan and heat through.

October's Tip: The ideal day is one in which you eat a total of 10 fruits and vegetables combined. A green leafy vegetable such as spinach should be one of them.

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COORDINATOR/FACILITATOR
 Harmon Grotzky
 Darci Lipson-McNally, LCSW
 Valerie Goldstein
 Bernadette Maszczak
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 William A. Phelan
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