Providence Cancer Survivor Clinic - East
4805 NE Glisan St Main Level Portland, OR 97213-2933
503-215-7901 Fax: 503-215-7904

41 Years Old Female

04/27/2011 - Internal Correspondence: Breast Cancer Survivorship Summary and Plan
Provider: Jennifer Weprin FNP
Location of Care: Providence Cancer Survivor Clinic - East

Summary of Cancer Treatment and Survivorship Care Plan

Care Team	
Medical Oncologist: Janet Ruzich DO	Phone: 503-513-1900
General/Breast Surgeon: Deanna Olson MD	Phone: 503-353-0888
Radiation Oncologist: Steven Seung MD	Phone: 503-513-3300
Primary Care Provider	
Nurse / Nurse practitioner: Jennifer Weprin FNP	Phone: 503-215-7901
Mental Health / Social Worker: Krista Nelson MSW	Phone: 503-215-0837
Other: Nancy Ledbetter CNS (Genetics)	Phone: 503-215-7901

Treatment Summary **Right Inflammatory Breast Cancer**

Background Information

Family History	MGM: deceased, cancer PGM: deceased, breast cancer Paternal aunt: deceased, breast cancer at 25 Paternal cousin: alive, breast cancer at 30
Genetic Testing	BRCA 2 positive
Major Comorbid Conditions/PMH	Laryngeal papillomas Bilateral oopherectomy 2/2007 for BRCA 2 positive Congenital esophageal atresia, surgically repaired
Echocardiogram or MUGA Result	7/2006: EF=53%
Onset of Menses	10 yo G0P0
Onset of Menopause	23 yo due to premature ovarian failure HRT x 8 years, stopped 2005
Smoking History	Non smoker
Height	57.5

	Pre-treatment	*Post-treatment*
Weight	149	157.2
BSA	1.65	1.69
BMI	30.1	31.1
Date Last Menstrual Period	approx 1992	

Surgery

X	**Right Breast**		**Left Breast**		**Bilateral**		**Reconstruction**

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Date(s)	7/25/2005; 7/26/2005; 2/15/2006
Additional Comments	Skin punch biopsy; Needle core biopsy; Modified radical mastectomy

X	**Right Breast**		**Left Breast**		**Bilateral**

Definitive Breast Surgery	Mastectomy following preoperative adjuvant chemotherapy *Previous core and skin biopsies demonstrated infiltrating ductal carcinoma*
Notable Surgery Findings	No residual carcinoma identified in breast tissue or skin
Lymph Nodes	7/13, extracapsular extension is present
Tumor Type, Stage, Size, Grade	*Previous core and skin biopsies demonstrated infiltrating ductal carcinoma, grade 2* T4N2a (based on prior skin involvement/history of clinical inflammatory carcinoma)
Margin Status	Negative
Pathologic Stage	Stage IIIC
ER Status	Positive
PR Status	Positive
HER2 Status	Positive
Oncotype DX Recurrence Score	N/A

Radiation

Local / Regional	Right chest wall: 5040 cGy 6/10X Elapsed days 37, 28 fractions Right supraclavicular:5040 cGy x06 Elapsed days 37, 28 fractions Scar boost: 1000 cGy e06 Elapsed days 6, 5 fractions
Planned	as above
Completed	as above
Number of Visits	Treatment dates: 3/27/2006-5/10/2006
Additional Comments	mild skin redness, slight desquamation at clavicular area; no treatment breaks or delays

Chemotherapy

Regimen	**NEOADJUVANT:** Adriamycin x Cyclophosphamide, followed by weekly Taxol with weekly Herceptin; continue Herceptin for a total of one year

	Number of Cycles: 4	*% Dose Reduction: see comment section below*
Filgrastim Support	No	
Anthracycline Administered	Yes	

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Treatment Period	8/11/2005 - 1/19/2006 Herceptin 11/2005-11/2006
Treatment on Clinical Trial	No
Additional Comments	Herceptin held x 1 dose due to decrease in ejection fraction 6/2006; restarted 7/2006

Side Effects

Lymphedema	No; though sometimes has "tightness" in right upper arm
Growth Factor Given	No
Grade 3 or Higher Toxicities	No
Hospitalization for Toxicities	No
Additional Comments	Grade 1 toxicities: fatigue, anorexia, mild paresthesias Received Aranesp for chemo-induced anemia

Biologic / Endocrine Treatment

Date Started:**3/2006**		
Medication Name	*Side Effects*	*Treatment Period*
Anastrozole	None	**finished 3/2011**
Additional Comments	Premature ovarian failure at age 23	

Survivorship Care Plan

Cancer Survivor Clinic Referrals

Type	*Yes (provider information)*	*Appointment Made (date)*	*No*	*Declined*
Acupuncture	Dr Loch Chandler: Help with stress reduction, chemo brain, fatigue, hot flashes, relaxation	appt today 4/27/2011		
Nutrition	NEXT class; Nutrition counseling			
Physical Therapy/Rehab Services	Referral to Cancer Rehab for lymphedema prevention, ROM exercises, exercise program, cancer-related fatigue			
Cancer Risk Assessment	Nancy Ledbetter as needed			
Cancer Support	Krista Nelson MSW, Support Groups,			

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Services/Social Work	Jill Lematta Learning Center			

Surveillance for Recurrence: Follow Up and Management Schedule

Follow Up Care Test	*Provider to Contact*	*Date*
History and Physical Exam	Dr Ruzich: annual visit	**due 3/2012**
Mammography	Annual Mammogram: Left Annual MRI: Left: done 11/2010	**Pt reports that Dr Ruzich stated MRI only is okay for screening** **due 11/2011**
Breast Self Exam	Self	Monthly
Pelvic Exam	Per PCP recommendations	
Coordination of Care	Dr Ruzich for oncology issues for other medical issues including cholesterol screening, diabetes screening, blood pressure monitoring, thyroid check, skin check, immunizations	**Complete physical exam done 3/2011; due 3/2012**
Cancer Risk Assessment	Nancy Ledbetter, CNS as needed	

American Society of Clinical Oncology (ASCO) Recommendations

- **Medical history and physical exam**: every 3-6 months for the first 3 years after first treatment, every 6-12 months for 4 and 5, and every year thereafter.
- **Post-treatment mammography**: schedule a mammogram 1 year after first mammogram that led to diagnosis. Obtain a mammogram every 6 to 12 months thereafter.
- **Breast self examination**: Perform a breast self-examination every month. This procedure is not a substitute for a mammogram.
- **Pelvic examination**: Continue to visit a gynecologist regularly. Post menopausal women should report any vaginal bleeding to their doctor.

Coordination of Care

- About a year after diagnosis, you may continue to visit your oncologist or transfer your care to a primary care doctor.
- Women receiving anti-estrogen therapy should talk with their oncologist about how often to schedule follow up visits for re-evaluation of their treatment.

Genetic Counseling Referral

Tell your doctor if there is a history of cancer in your family. The following risk factors may indicate that breast cancer can run in the family:

- Ashkenazi Jewish heritage
- Personal or family history of ovarian cancer
- Any first-degree relative (mother, sister, daughter) diagnosed with breast cancer before age 50
- Two or more first-degree or second-degree relatives (grandmother, aunt, uncle) diagnosed with breast cancer
- Personal or family history of breast cancer in both breasts
- History of breast cancer in a male relative

Not Recommended

The following tests are not recommended for **every** woman for routine breast cancer follow up. Your care is unique to you.

- Breast MRI (Magnetic Resonance Imaging)
- FDG-PET scans (Fludeoxyglucose-Positron Emission Tomography)
- BSGI (Breast-Specific Gamma Imaging)
- Complete blood cell counts
- Automated chemistry studies
- Chest x-rays
- Bone scans
- Liver ultrasound
- Tumor markers (CA 15-3, CA 27.29, CEA)

Talk with your doctor about reliable testing options.

PREVENTIVE HEALTH CARE/WELLNESS

Bone Health	**DEXA 3/2011 Normal bone mineral density** Ensure appropriate intake of Vitamin D and Calcium to ensure optimal bone health Continue with Alendronate (Fosamax) as directed
Colon Cancer Screening	**Colonoscopy due at age 50**
Cholesterol Monitoring/Management	**Recent lipid/cholesterol screening: done 3/2011, due 3/2012** As directed by PCP; should include cardiac exam; annual monitoring of cholesterol levels *You received a drug that can have serious effects on your heart (Herceptin): it is important to have periodic evaluation with*

	ECHO/MUGA to look for left ventricular dysfunction, cardiomyopathy, arrhythmias; many patients who have these heart problems are asymptomatic.
Mental Health	Cancer Support Services; Krista Nelson, MSW; Support Groups
Diet	Postmenopausal women who reduce their consumption of dietary fat and have been treated for early-stage breast cancer may reduce their chances for breast cancer recurrence or a second breast cancer, according to results from the Women's Intervention Nutrition Study (WINS). Studies show Mediterranean diet is beneficial in reducing risk of developing many diseases, reducing risk of developing some types of cancer. Use "Good Food, Great Medicine" as a resource for healthy eating
Exercise/Wt Management	Some studies have shown that exercise is associated with decreased risk of recurrence of breast cancer. Daily exercise (3 hours/week), including some wt bearing exercise as this is important for heart health, bone health, colon health and overall risk reduction. Important to maintain healthy weight
Additional Comments	Influenza vaccine:3/2011, obtain every year **Pneumovax every 5 years: check with office** **Tdap if haven't had recent booster for pertussis: check with** **Routine evaluation of thyroid function as this can mimic 'chemo brain':** Wear sunscreen and hat when outside: to reduce harmful sun exposure; **Recommend annual Dermatology head-to-toe skin exam** Limit alcohol intake: study showed increased risk of recurrence with >3 drinks/week Sleep hygiene: 1)) Develop a consistent and calming evening routine that includes going to bed at the same time every night — even on weekends. 2) Try taking a hot bath or shower, or sitting in a sauna or steam room — these have been shown to promote sleep. 3) Before bed, don't read the paper, watch TV, or have emotional

	discussions that might arouse anxiety or worry. 4) Be cool! Lower body temperatures can encourage sleep, so set 5) Get some exercise during the day to promote healthy sleep, but make sure you complete your exercises at least four hours before going to bed. 6) Reserve the bed for sleeping — no TV, reading or working and send children and pets to sleep in their own areas. 7) Finally, try not to be anxious about not sleeping. Either don't look at your clock or move it out of view.

Symptoms to Watch For

You should report these signs and symptoms if persistent:

- Abdominal pain
- Arm swelling
- Bone pain
- Chest pain
- Fractures
- Hot Flashes or other menopausal symptoms
- New lumps
- Palpitations
- Persistent headaches
- Shortness of breath or difficulty breathing
- Swelling in legs

* Vision changes: blurry vision, light sensitivity, poor night vision, double vision in one eye, seeing halos around objects, needing brighter light to read or fading or yellowing of colors.

* Urinary symptoms: frequency, urgency, blood in the urine, pain with urination

Potential Late Effects of Cancer Treatment

You may experience the following effects after cancer treatment:

Fatigue:

This is the most common side effect of cancer treatment. What many people do not know is that this feeling of overwhelming physical, mental and emotional exhaustion can last for months to years after therapy ends. Soon after treatment is complete, friends, family and co-workers often expect the survivor to be back to doing the things they did before treatment, with the same vigor. Many survivors report significant fatigue years after completing therapy, which can be extremely frustrating for the survivor and

those around them. There have been many studies examining fatigue and ways to combat it during treatment, but there is little to provide guidance for dealing with fatigue after therapy. It is important to remember that fatigue can be caused by many things and, particularly if fatigue is worsening or new, it should be discussed with your healthcare team to rule out treatable causes.

Research has shown that light exercise can aid in relieving fatigue during treatment, so it is possible that this could help post treatment. Talking with other survivors may help in finding ways to deal with fatigue. Most importantly, you should understand it is normal and you will need to give your body time to slowly return to your former energy levels. With a lack of available interventions proven to relieve fatigue, survivors may need to learn to work around it in a sense. A wise survivor once dubbed herself the "master of fatigue" because, she stated, "I had learned how to outsmart it". By thinking of her energy as a full bowl of candy each morning, and each task a certain number of candies. She only had so many candies each day, so tasks needed to be prioritized and balanced with the amount of candies left in her bowl. By learning to manage tasks, group errands, make lists, prioritize and delegate, you can, to an extent, outsmart your fatigue.

Surgery

Numbness, weakness, pain, loss of range of motion (ROM), or arm swelling (lymphedema).

Surgery for breast cancer can include mastectomy (removal of the entire breast) or lumpectomy (sometimes called breast conserving surgery, where only the breast mass (lump) and a surrounding area of normal tissue is removed). The surgeries can result in cosmetic deformities. In some cases, these can be corrected with breast reconstruction performed by a plastic surgeon. There is a risk of nerve damage during breast surgeries, which can lead to pain in the chest wall and/or pain and tingling in the arm/hand on the side of the surgery. Injuries like this can be aggravated by scar tissue formation after radiation therapy to the area, which can develop years after therapy. Neuropathic (nerve) pain is often described as burning or electric and can also include numbness, tingling and decreased strength or sensation. Survivors who develop chronic pain may benefit from a consult with a pain specialist.

Those who undergo a modified radical mastectomy, and sometimes those undergoing lumpectomy, may also have lymph nodes removed during surgery. The removal of lymph nodes increases the risk of developing lymphedema. In addition, patients, who have undergone lymph node dissection, may also develop nerve damage (as described previously), pain in the shoulder, or limitations in movement of the arm and shoulder. These complications may be temporary, but could become permanent. Exercises to

promote shoulder mobility may be of help, and can be described and taught by a physical therapist.

Be vigilant for signs/symptoms of lymphedema and ensure early and proper management.

A Certified Lymphedema Therapist should be consulted at the first sign of swelling to achieve the best outcomes. Survivors should be aware of this potential complication, given information on self-care and instructed to notify the healthcare team with any signs of swelling or infection.

Signs of lymphedema may include the following changes in the area near surgery (arm, leg, abdomen, genitals): full or heavy feeling, skin changes (reddened, warm, cool, dry, hard, stiff), aching/discomfort, tightness, or less movement/flexibility in nearby joints. You may also experience difficulty fitting into clothes like the sleeve of a jacket or pant leg, or feel your socks are too tight. In addition, you may notice jewelry feels tight even though you have not gained any weight. Lymphedema can occur right after surgery, weeks, months, or even years later. The possibility of developing lymphedema continues throughout a person's lifetime. Survivors should be vigilant in monitoring for early signs of swelling and practice prevention. If swelling develops, prompt, proper management and therapy allows for the best outcomes.

To help prevent and control lymphedema, survivors should try to avoid infections, burns, cuts, excessive hot/cold or injury to the limb that is at risk. Avoid insect bites by using inset repellent. Use lotion to prevent dry, chapped skin. Use sunscreen with SPF 15 or higher and try to avoid the sun during the hottest time of day. Avoid pressure or constriction of the limb. Avoid tight fitting clothes and jewelry.

Those at risk for lymphedema can and should exercise. Start with low intensity exercise and gradually increase intensity while monitoring for changes in your limb including swelling or redness. If any swelling or redness occurs, stop the exercise and consult your physician. The person at risk for lymphedema should consider wearing a compression garment with vigorous or very strenuous exercise.

Whenever possible, have blood drawn, IVs placed, and shots/vaccinations given and blood pressure taken in the unaffected arm.

Radiation

Breast pain, fibrosis, telangectasia, atrophy, poor cosmetic outcome.

Patients who have had mastectomy are at risk for developing breast cancer

recurrence in either the chest wall, the reconstructed breast, or the axilla (armpit). Survivors who had single or double mastectomy should have a yearly breast and/or chest wall exam by a breast cancer specialist (medical oncologist, radiation oncologist, or breast surgeon).

Radiation to the chest wall or reconstructed breast may cause permanent changes in the skin, including a darkening or "tanning."

Other long term effects of chest wall irradiation include damage to the nerves, leading to pain or loss of strength or feeling in the arm on the side that was irradiated. Damage to the drainage (lymphatic) system in the area can lead to chronic swelling, called lymphedema. Risk of lymphedema is highest for women who also had surgical lymph node dissections and, to a lesser extent, sentinel node biopsy. A survivor with lymphedema who develops pain or redness in the arm, especially with fever, should be evaluated as these signs may indicate infection.

Avoidance of tobacco and illegal drug use.

Yearly history and physical exam with monitoring of cholesterol levels, blood pressure, and blood sugar by primary care physician to reduce risk of heart disease/ attack because of possible effects of radiation on left side (where the heart is located)

LUNG: **Lung**

Radiation fields involving the lung can lead to scarring (fibrosis), inflammation (pneumonitis), and restrictive or obstructive lung disease. Risk for these problems is increased with higher doses of radiation and radiation given in combination with certain chemotherapies (bleomycin, busulfan, BCNU and CCNU) and for those survivors who also had part of the lung surgically removed (lobectomy). Survivors who have had radiation to the lung are strongly encouraged not to smoke, as this can greatly increase the risk of problems. Annual history and physical by a healthcare provider should include a pulmonary exam and review of possible symptoms (cough, shortness of breath, wheezing). Survivors should receive annual flu vaccines and the pneumococcal vaccine. Physicians may consider chest x-rays or pulmonary function tests for those at highest risk or a change in pulmonary status.

Scarring within the lungs can result from radiation, and uncommonly this scarring may affect blood vessels. Any survivor coughing up blood should be evaluated immediately

by a physician, either in the office or the emergency room.

Of note, the Children's Oncology Group recommends survivors not scuba dive without medical clearance from a diving medicine specialist. The National Comprehensive Cancer Network recommends Hodgkins Disease survivors who received chest irradiation consider annual chest x-ray or CT scan to screen for lung cancer, beginning 5 years after treatment. We should note that studies have not yet been done to support this recommendation.

- Annual influenza vaccine
- Pnuemococcal vaccine every 5 years
- Tobacco avoidance/ smoking cessation
- Chest X-ray for new cough or shortness of breath
- Immediate evaluation of hemoptysis (coughing up blood)

SKIN: **Skin**

Radiation can lead to permanent changes in the skin. This can include changes in the color or texture of the skin, scars, and changes in the color, texture of hair or permanent loss of the hair in the treated area. The soft tissue and muscles under the skin can develop scarring and/or shrinkage, which can lead to a loss of flexibility and movement or chronic swelling. Some patients develop chronic or recurring ulcers of the skin in the area treated. Blood vessels of this skin may become dilated and more noticeable, although this is not harmful. If the skin feels tight or sore, regular use of vitamin E applied to the skin can be helpful.

After radiation the skin is more sensitive to sunlight, and survivors should be especially cautious to use sunscreens when outdoors.

- Diligent use of sunscreen
- Evaluation by a wound care specialist or surgeon for non-healing ulcers

BONE: **Bone**

Damage to the bone from radiation can cause small cracks (fractures) in that bone. The ribs are more susceptible to fracture after radiation, although these fractures will almost always heal normally. If radiation is given in the area of a joint, permanent stiffness,

pain and arthritis can develop in that joint.

- Rapid evaluation for fractures after trauma (for example, after a motor vehicle accident)
- Physical/ Occupational therapy for arthritis
- Non-steroidal inflammatory medicines for arthritis
-

RADIATION CHEST WALL: **Radiation to Chest wall for breast cancer (after mastectomy)**

Any patient who has had breast cancer is at risk for developing a second breast cancer in the opposite breast. Patients who have had mastectomy are also at risk for developing breast cancer recurrence in either the chest wall, the reconstructed breast, or the axilla (armpit). It is recommended that women who had single mastectomy undergo annual mammograms after treatment for breast cancer. Survivors who had single or double mastectomy should have a yearly breast and/or chest wall exam by a breast cancer specialist (medical oncologist, radiation oncologist, or breast surgeon).

Radiation to the chest wall after mastectomy may be performed either before or after breast reconstruction surgery. Regardless of this, radiation to the chest wall or reconstructed breast may cause permanent changes in the skin, including a darkening or "tanning." Radiation may also cause difficulty with wound healing, so surgery to the chest wall or reconstructed breast after radiation should be undertaken with caution.

Other long term effects of chest wall irradiation include damage to the nerves, leading to pain or loss of strength or feeling in the arm on the side that was irradiated. Damage to the drainage (lymphatic) system in the area can lead to chronic swelling, called lymphedema. Risk of lymphedema is highest for women who also had surgical lymph node dissections and, to a lesser extent, sentinel node biopsy. A survivor with lymphedema who develops pain or redness in the arm, especially with fever, should be evaluated as these signs may indicate infection.

Survivors of breast cancers, particularly left-sided breast cancers, may be at increased risk of cardiac complications. Please see the description of heart/ cardiovascular late effects for more information.

- Yearly mammograms (for those who had single mastectomy).
- Annual examination of breast tissue and/or chest wall by breast cancer specialist.
- Caution when surgery is considered after radiation the chest wall or

reconstructed breast

- Consideration of physical/ occupational therapy for arm pain, weakness, or swelling.
- Rapid evaluation for new arm swelling, redness, or pain, especially with fever.

Chemo / Biotherapy

Fatigue:

This is the most common side effect of cancer treatment. What many people do not know is that this feeling of overwhelming physical, mental and emotional exhaustion can last for months to years after therapy ends. Soon after treatment is complete, friends, family and co-workers often expect the survivor to be back to doing the things they did before treatment, with the same vigor. Many survivors report significant fatigue years after completing therapy, which can be extremely frustrating for the survivor and those around them. There have been many studies examining fatigue and ways to combat it during treatment, but there is little to provide guidance for dealing with fatigue after therapy. It is important to remember that fatigue can be caused by many things and, particularly if fatigue is worsening or new, it should be discussed with your healthcare team to rule out treatable causes.

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Risk of Bladder or Urinary Tract Toxicities

The risk for bladder and urinary track toxicities is highest for survivors who received cyclophosphamide (doses > $3g/m^2$), ifosfamide and/or radiation to the abdomen. Late effects to the urinary tract can include hemorrhagic cystitis, a condition characterized by bleeding from the bladder lining and bladder scarring leading to a decrease in the bladder capacity. Symptoms of hemorrhagic cystitis include urinary frequency and urgency, blood in the urine and pain. Bladder scarring can present as difficulty urinating, frequency or urgency. Survivors at risk should report these symptoms to their healthcare provider right away. Survivors should be counseled that alcohol use and smoking can contribute to bladder dysfunction, so these should be avoided.

Summary

- Avoid alcohol
- Avoid smoking
- Report the following symptoms to your healthcare provider
    - Pain when urinating
    - Urinary hesitancy (difficulty starting the stream)
    - Urinating frequently
        - Urinating more than 5 times per day
        - Getting up in the middle of the night to urinate
    - Blood in your urine

Risk of Developing Bladder Cancer

Cyclophosphamide and streptozocin can contribute to the development of bladder cancer. This risk is increased for those who also received radiation therapy to the abdomen. Symptoms of bladder cancer include blood in the urine, urinary frequency and urgency, urinating at night and incontinence and should be reported to the healthcare provider. Survivors should be counseled that alcohol use and smoking can contribute to bladder cancer, so these should be avoided.

Summary

- Avoid alcohol

- Avoid smoking
- Report the following symptoms to your healthcare provider
    - Pain when urinating
    - Urinary hesitancy – starting and stopping while urinating
    - Urinating frequently
        - Urinating more than 5 times per day
        - Getting up in the middle of the night to urinate
    - Blood in your urine

Risk for Cardiac (Heart) Problems Related to Anthracycline Chemotherapies

The group of chemotherapy agents called anthracycline antibiotics are known to cause specific cardiac toxicities, including cardiomyopathy (weakening of the heart muscle), arrhythmias (rhythm abnormalities) and left ventricle dysfunction (causing heart failure). The risk of developing one of these problems is tied to the cumulative (lifetime) dose a person has received, but even low doses can lead to abnormalities. Toxicity can develop anywhere from shortly after completing chemotherapy (called chronic) to decades later (called delayed). For example, it is known that cumulative doses of doxorubicin greater than 550mg/m^2 can lead to cardiac toxicity, but doses as low as 250mg/m^2 can result in subclinical cardiac changes. Subclinical changes can be detected on tests such as ECG, echocardiogram and/or MUGA scan, but they do not cause symptoms for the survivor. The doses of the various anthracycline agents are not equivalent, so you should discuss the dose you received and your risk with your physician.

Risk is further increased for those survivors who also received radiation to the chest or those who received high dose cyclophosphamide (dose levels used in bone marrow and stem cell transplant preparation). Survivors should maintain healthy lifestyles as smoking, drug use, obesity, sedentary lifestyle and poor dietary choices can increase the risk of cardiac disease.

Cardiac toxicities can cause symptoms such as shortness of breath (with or without exertion), orthopnea (difficulty breathing when lying down), chest pain, palpitations, exercise intolerance, dizziness/lightheadedness or edema (swelling of the extremities). In younger survivors (under age 25), cardiac symptoms may present as abdominal symptoms such as nausea and vomiting. Annual history and physical by a healthcare

provider should include a cardiac exam and review of possible symptoms. Survivors who received anthracyclines (any dose) should have their left ventricular function evaluated at baseline with an echocardiogram or MUGA (nuclear imaging radiology exam of heart function) scan, as studies have found many people with abnormalities did not exhibit symptoms. Repeat evaluation should be performed periodically (more frequently for higher risk individuals) or if symptoms develop or worsen.

Summary

- Maintain healthy lifestyle
    - Avoid smoking
    - Avoid drug use
    - Maintain a healthy weight
    - Exercise regularly Eat a well-balanced diet
- Have an annual physical exam that includes a cardiac exam
    - Periodic repeated cardiac studies (echocardiogram or MUGA)
- Report the following symptoms to your healthcare provider
    - Shortness of breath (with or without exertion)
    - Difficulty breathing when lying down
    - Chest pain / heartburn
    - Palpitations
    - Dizziness/lightheadedness
    - Swelling of the arms or legs
- If your received chemotherapy under age 25
    - Report symptoms of nausea and vomiting

Peripheral Neuropathy:
This is caused by irritation or damage to nerves, resulting in feelings of numbness, "pins and needles", tingling, burning, or a generalized weakness/heaviness of the limbs.

This toxicity can cause difficulties with fine motor skills such as buttoning a shirt, sensation of hot or cold (causing a safety hazard) or difficulty walking. In many patients, this toxicity resolves within weeks to months after completing therapy or stopping the drug that caused the problem.
Unfortunately, for others, the problem becomes a chronic one, requiring physical, occupational and medical therapy as well as adaptive changes to ensure safety. This is a side effect that develops during or shortly after treatment which can become chronic. It does not develop as a late effect and if a survivor does develop symptoms suggestive of neuropathy after therapy, other causes should be investigated.
Report any of the following symptoms to your healthcare provider: Numbness, tingling, burning, "pins and needles" of hands and feet, weakness in the hands (trouble buttoning shirts, tying shoes, etc), weakness of the feet (trouble walking)

Cardiac Risk with Herceptin:

Herceptin (traztuzumab) can cause heart failure and a decrease in left ventricular function in patients receiving the drug. This risk is higher for those receiving anthracycline chemotherapies in conjunction with Herceptin. While we know that this can happen while receiving therapy, we do not have a good understanding of the long term risk of having received Herceptin at this point. Survivors should report any symptoms of cardiac problems to their healthcare provider, including chest pain, shortness of breath, swelling (fluid retention), and exercise intolerance. Survivors and their healthcare providers should be aware of this risk and include cardiac screening in their annual physical exam. Due to the increased risk of heart disease with smoking, sedentary lifestyle and obesity, survivors should be counseled on a healthy lifestyle.

Risk of Leukemia:

Certain chemotherapy medications can cause damage to the blood cells in the bone marrow. This damage can cause leukemia or myelodysplasia (MDS) to develop years after therapy has been completed. Both diseases cause an abnormal production of poorly functioning blood cells, making it difficult for the body to fight infection, carry oxygen to the tissues and prevent bleeding. Because these condition develop as a result of chemotherapy or radiation exposure, they are often more difficult to treat than typical leukemia or MDS.

Leukemia and MDS caused by chemotherapy or radiation therapy typically occurs between 4-10 years after treatment, but can occur even later. One exception is those caused by etoposide (VP-16) or teniposide (two types of chemotherapy), which

generally occur within 1-3 years after therapy. Secondary lymphomas have also been seen in Hodgkin's disease survivors who received the MOPP (nitrogen mustard [mustargen], vincristine [oncovin], procarbazine, and prednisone) chemotherapy regimen.

Risk of Developing Osteoporosis

Osteoporosis and osteopenia (the precursor to osteoporosis) are decreases in bone density, which increases the risk of fracture of the affected bones. Long term use of corticosteroids (dexamethasone or prednisone, > 5mg per day for more than 2 months), receiving chemotherapy medications (including methotrexate, ifosfamide, cytoxan, fluorouracil and interferon alpha) or radiation to weight bearing bones (spine, hips, legs) all increase the risk of developing osteoporosis.

Women who develop premature menopause, have their ovaries removed before menopause or those who take aromatase inhibitors (anastrozole, letrozole and exemestane) are at increased risk for osteoporosis. Men who receive hormone therapy for prostate cancer or undergo orchiectomy are at greater risk. In addition, patients who have undergone gastrectomy (removal of the stomach) are at increased risk to develop osteoporosis.

As for lifestyle risks, smokers, people who consume excessive alcohol and those who do not participate in weight bearing exercise have an increased risk of developing osteoporosis. Therefore, it is very important that survivors not drink alcohol or smoke. In addition, survivors should engage in weight-bearing exercise such as walking, weight lifting, riding a stationary bicycle, jogging, dancing, and any exercise where the legs are supporting the body's weight. These efforts, combined with increasing calcium and vitamin D in your diet and taking calcium and vitamin D supplements, will greatly help to reduce your risk of developing osteoporosis.

Survivors at risk should have adequate intake of calcium (1200-1500mg total per day, taken in divided doses) and vitamin D (400-800 international units per day if under age 50, and 800-1000 international units per day if over age 50). Calcium supplements are an easy way to get the recommended daily amount and come in 2 forms: calcium carbonate and calcium citrate. The body does have some trouble absorbing large amounts of calcium, so supplements should be split into 2 or more doses per day. Calcium carbonate requires stomach acid to be absorbed by the body, therefore people that take acid reducers (such as Zantac, Tagamet) and/or proton pump inhibitors (such as Prilosec, Prevacid, etc) should use calcium citrate. If you have trouble tolerating your calcium supplement, talk to your doctor or nurse; there may be another formulation you can tolerate more easily. It is important to take Vitamin D with the calcium supplements because it helps your body to absorb calcium better. Survivors should talk to their healthcare provider about screening with DEXA scan (a test used to assess bone

density) and options for treatment, if necessary.

Summary:

- Avoid smoking and excessive alcohol intake
- Perform weight bearing exercise 2-3 times per week
- Calcium intake of 1200-1500mg per day plus Vitamin D 400-800iu or 800-1000iu per day (either in dietary intake or supplements)
- Consider screening with DEXA scan

Cognitive Dysfunction "chemo brain":
Puzzles using numbers, like Sudoku, crossword puzzles may help "exercise" your brain. Fatigue can enhance cognitive problems, so avoiding fatigue by getting enough sleep, incorporating exercise into your life and eating a healthy diet may be helpful.
It is important to remember that some very treatable problems can result in cognitive difficulties, such as thyroid dysfunction, depression and anxiety, so it is important to exclude or treat these diagnoses. Hypothyroidism (low thyroid hormone levels) is a common issue for survivors and can make you feel "fuzzy" or "out of it." This is easily treatable with supplemental thyroid hormone. Survivors who may be depressed or experiencing anxiety would benefit from consulting with a psychiatrist or psychologist experienced in working with cancer patients or survivors.

Sexual Dysfunction: Vaginal Health handout

Chemotherapy agents are associated with vaginal dryness, painful intercourse, reduced sexual desire and ability to achieve orgasm. Many of these issues are caused by the sudden onset of menopause, which can occur with cancer therapy. This sudden change in hormone levels leads to physical changes such as vaginal atrophy (thinning and inflammation of the vaginal walls), loss of tissue elasticity and decreased vaginal lubrication. In addition, women may experience hot flashes, mood swings, fatigue and irritability.Women of any age may have sexuality concerns after cancer treatment. Do not hesitate to talk with your oncology team about these common concerns.

Decreased lubrication leading to painful intercourse is a common concern for survivors. Use of vaginal lubricants and vaginal moisturizers may help alleviate the discomfort.

Surgery and/or radiation therapy can result in scarring that may cause discomfort during intercourse. Open communication about position changes and alternative methods of expressing affection with your partner can help when resuming sexual activity after treatment.
Concerns about changes in your body, cancer recurrence, the stress and anxiety caused by cancer therapy or changes in your relationship with your partner can all

effect how you feel about your sexuality. It is important to understand that sexual activity cannot cause cancer to recur, nor can you spread cancer to another person through sexual activity. If you find that your feelings are significantly impacting your sexuality, you should talk with your healthcare team about finding a therapist experienced in helping cancer survivors.
Of utmost importance in addressing sexuality issues is communication, both between partners and between survivors and their healthcare teams.

Hormone Therapy

Aromatase Inhibitors

Aromatase Inhibitors (AIs) commonly cause hot flashes and other symptoms of menopause. Avoiding triggers such as warm rooms, spicy, caffeinated or alcohol containing foods or beverages can help reduce hot flashes. Drink plenty of fluids, wear breathable clothing and exercise regularly. For some women, certain antidepressant medications can provide relief of hot flashes.

Many women taking AIs experience aching in their muscles, joints or bones, also known as arthralgias. In some cases, this side effect is troubling enough for the patient to stop therapy. The cause of this pain is not clear, but it may be related to the low estrogen levels while on these medications. Arthralgias may occur in as many as 60% of women taking AIs. Some patients experience pain that comes and goes, in others it is constant and some report noting worse stiffness and pain in the morning.

Treatments commonly used are acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDS, ibuprofen, naproxen), narcotic pain relievers, glucosamine and topical pain relieving ointments. Research studies have used vitamin D therapy or acupuncture with some success. Further research is needed to determine the best therapies to manage this common side effect.

Risk of Developing Cataracts

The risk of developing cataracts is linked anastrozole. Survivors should report any symptoms of cataracts and have an eye exam performed by an ophthalmologist every few years. Symptoms of cataracts include: blurry vision, light sensitivity, poor night vision, double vision in one eye, seeing halos around objects, needing brighter light to read or fading or yellowing of colors.

Risk of Developing Osteoporosis

Osteoporosis and osteopenia (the precursor to osteoporosis) are decreases in bone density, which increases the risk of fracture of the affected bones. Women who develop

premature menopause, have their ovaries removed before menopause or those who take aromatase inhibitors (anastrozole, letrozole and exemestane) are at increased risk for osteoporosis.

As for lifestyle risks, smokers, people who consume excessive alcohol and those who do not participate in weight bearing exercise have an increased risk of developing osteoporosis. Therefore, it is very important that survivors not drink alcohol or smoke. In addition, survivors should engage in weight-bearing exercise such as walking, weight lifting, riding a stationary bicycle, jogging, dancing, and any exercise where the legs are supporting the body's weight. These efforts, combined with increasing calcium and vitamin D in your diet and taking calcium and vitamin D supplements, will greatly help to reduce your risk of developing osteoporosis.

Survivors at risk should have adequate intake of calcium (1200-1500mg total per day, taken in divided doses) and vitamin D (400-800 international units per day if under age 50, and 800-1000 international units per day if over age 50). Calcium supplements are an easy way to get the recommended daily amount and come in 2 forms: calcium carbonate and calcium citrate. The body does have some trouble absorbing large amounts of calcium, so supplements should be split into 2 or more doses per day. Calcium carbonate requires stomach acid to be absorbed by the body, therefore people that take acid reducers (such as Zantac, Tagamet) and/or proton pump inhibitors (such as Prilosec, Prevacid, etc) should use calcium citrate. If you have trouble tolerating your calcium supplement, talk to your doctor or nurse; there may be another formulation you can tolerate more easily. It is important to take Vitamin D with the calcium supplements because it helps your body to absorb calcium better. Survivors should talk to their healthcare provider about screening with DEXA scan (a test used to assess bone density) and options for treatment, if necessary.

41 Years Old Female [redacted]

Signed by Jennifer Weprin FNP on 04/27/2011 at 4:30 PM