Cancer Care Patient Guide

NORTH MISSISSIPPI
MEDICAL CENTER
CANCER CARE

Your Health Care Team

Your health care team works together to support you in your journey. Our goal is to make your experience with our services as easy and efficient as possible. We strive to give you excellent care.

This organizer is provided to help you have one source for tracking and organizing the information you
receive about your treatments and important contact information.

Use the space below to record the information that you will need while undergoing treatment. Please have this information available when you or a loved one calls the office. It will help us meet your needs more efficiently.

Your name: ______________________________

Your date of birth: ______________________________

Doctor's office phone number: ______________________________

Your pharmacy: ______________________________

Pharmacy phone number: ______________________________

Your health care team

Your doctor's name: ______________________________

Your doctor's nurse's name: ______________________________

Your nurse practitioner's name: ______________________________

Team members: ______________________________

Table of Contents

Welcome

NMMC Cancer Care

North Mississippi Medical Center Cancer Care encompasses many different resources to help you navigate through the cancer experience. Our Mission is to continuously improve the health of the people of our region, and our Vision is to provide the best patient-centered care and health services in America. While these may seem like difficult goals to achieve, we are striving to do just that. We focus on each individual patient and work together to provide personal care for every patient we serve.

We utilize our NMMC Values, which are:

Compassion: Show sincere care and kindness for those we serve
Accountability: Take responsibility for our actions
Respect: To treat everyone with dignity
Excellence: Achieve excellence through innovation, teamwork and doing our best
Smile: We strive to always be friendly

NMMC Cancer Care offers many resources to meet your needs, including:

- A medical clinic staffed by board-certified hematologists/oncologists
- Radiation Oncology staffed by board-certified radiation oncologists and skilled staff
- Breast Care Center staffed by dedicated fellowship-trained breast radiologists
- Outpatient Infusion Oncology
- Inpatient Oncology Services
- Oncology Rehabilitation

Our staff includes a licensed medical social workers, registered and licensed dietitians, oncology-certified registered nurses, cancer patient navigators, nurse practitioners, a research department and support personnel. All of these individuals work together to help make this experience as stress free as possible.

Our goal is to help you through this process with the information you need to understand your personal plan of care. This guide contains resources, along with information regarding common cancer treatments, procedures and symptom management. This guide is personalized for you. Please bring this guide with you and add any new information you may receive.

Important Contacts

After Hours

- Call Nurse Link at (662) 377-3007 or 1-800-882-6274.
- For Emergencies: Please go to the nearest emergency room or call 911

NMMC Hematology Oncology-Tupelo: (662) 377-4550

Cancer Registry: (662) 377-3053
Clinical Research: (662) 377-4621 or (662) 377-4624
Genetic Counseling: (662) 377-4637
Outpatient Infusion Oncology: (662) 377-4438
Patient Navigators:
Breast: (662) 377-4432
Neuro/GI: (662) 377-4622
Lung: (662) 377-4628
Social Work: (662) 377-4631

NMMC Radiation Oncology-Tupelo: (662) 377-4077

Social Work: (662) 377-2269

NMMC Cancer Care Starkville: (662) 320-8545

Hematology Oncology: (662) 320-8545
Radiation Oncology: (662) 323-2273
Social Work: (662) 377-2269

Physicians and Nurse Practitioners

North Mississippi Medical Center Cancer Care

NMMC Hematology Oncology

961 South Gloster
Tupelo, MS 38801

Hematology Oncology Physicians:

Julian B. Hill, MD, FACP
Rebecca D. Cody, MD
Amit Correa, MD
Amit Jain, MD
Usman A. Khan, MD
Neha Patil, MD
Jiahuai Tan, MD
Benton Wheeler, MD
Paschal Wilson, MD

Nurse Practitioners:

Melinda Clark, ACNP, AOCNP
Mary Angela “Angie” Eaton, FNP
Tiffany Gillespie, FNP-C, AOCNP
Lindsey Phyfer, MSN, FNP-BC
Angela Taylor, FNP-BC, AGN-BC
Brandie Wise, MSN, FNP-BC

Gynecologic Oncology:

UAB Medicine physicians

Palliative Care:

Lindsey Hinton, MD

NMMC Radiation Oncology

990 S Madison, Suite 1 |Tupelo
1205 Highway 182 West | Starkville

Radiation Oncologists:

Benjamin Hinton, MD
Russell Roberts, MD

Nurse Practitioner:

Morgan Turner, FNP-BC, AOCNP

Departments

The departments that comprise NMMC Cancer Care work together to help your visit proceed as smoothly as possible. We want you to feel comfortable with your care and we are here to answer any questions or concerns you may have.

Front Desk

At each of our facilities you will need to sign in at the reception desk. Please bring your picture ID and insurance cards to each visit. The receptionists can help you with any questions.

Patient Services

Physician office patient representatives are available to help you understand the insurance process. Please feel free to contact them with any questions regarding insurance, billing questions or payments.

Our other departments have staff available to help with insurance verification and questions but all billing inquiries need to go through the NMMC Billing Department: (662) 377-3219

Laboratory

Your blood may be drawn at any of our facilities by licensed staff if your physician orders. Many times the decision as to whether you will receive a treatment depends on the blood test results. You may be asked to wait on the results of your blood work before you receive your chemotherapy treatment or leave the facility. Depending on different factors, it can take up to an hour to receive your lab results. We strive to have the results ready in a timely manner.

The offices at 961 S. Gloster St. have an on-site laboratory. If your blood is drawn at any of our other facilities your blood work will be processed at NMMC-Tupelo.

There is a section in this guide for you to keep copies of your lab work if you desire.

Hematology Oncology Clinic

Tupelo office hours: Monday-Friday, 8 a.m.-4:30 p.m.
Starkville office hours: Monday-Friday 8 a.m.-4:30 p.m.

Our board-certified hematology-oncology providers will meet with you regularly to evaluate your cancer treatment and discuss the next steps in your journey.

To prepare for your visit, it is helpful to make a list of questions or concerns you would like to discuss during the visit. For each appointment, please bring all your current medications or an updated list. Please request refills during your appointment.

Follow up appointments will be mailed to you or you may be notified by phone.

Prescription refills are processed during office hours only. Please notify in advance of 24-48 hours for your prescription refill to be ready. Prescriptions cannot be refilled after hours or on weekends.

If you call during office hours, please note routine messages are usually returned at the end of the clinic schedule. If you are experiencing the following, please let the clinic staff know you have an urgent situation:

- Temperature 100.5 or greater
- Unrelieved nausea/vomiting
- New or unrelieved pain.

After hours or on weekends, please call Nurse Link at 1-800-882-6274 or (662) 377-3007. For evaluation of urgent conditions, please go to the ER or call 911.

Outpatient Infusion Oncology

If you require any kind of injectable chemotherapy or support treatment you will be referred to Outpatient Infusion Oncology. Our staff consists of RNs who have been specially trained and certified to provide chemotherapy, biotherapy and supportive care for you in an outpatient setting. Our staff also includes pharmacists and certified pharmacy technicians to prepare your medications in our in-house pharmacy. Our staff members work together to help make you comfortable and strive to give you excellent care.

When you come to Outpatient Infusion Oncology you will sign in at the infusion check-in desk. An ambassador will be available to help you if needed. If this is your first treatment, a nurse educator who will discuss with you what to expect while you are receiving your treatment including estimation of treatment time, medication side effects and tips to help you cope with treatment side effects. The educator will also discuss your health history and can notify the social worker or dietitian if you would like to meet with them. The educator is available for questions at any time.

Prior to each treatment, a nurse will talk with you about how you are feeling, if you are having any new concerns or problems and will draw appropriate lab work by accessing your vascular access device (port) or starting an IV in your arm. A nurse practitioner will review your lab work, chemotherapy orders and any significant concerns or issues you have reported. The nurse practitioner will then determine if it is appropriate for you to proceed with treatment.

Once your lab work and orders are being reviewed you will be called into the treatment area and escorted to a recliner. The infusion nurse will verify good blood return from your port or IV and then will then notify the pharmacist that you are ready for treatment. Prior to you receiving any medication, an oncology pharmacist will have reviewed your doctor's orders, verified the doses and checked your lab work. Certified pharmacy technicians will prepare your medication under sterile conditions. Special precautions and safety measures are taken to ensure that each patient receives the correct amount and type of medication. Some treatments and infusions may take several hours to complete.

What You Should Know Before Coming for Treatment:

- You may have one guest with you during treatment. Children are not allowed in the treatment area.
- You will be provided with a warm blanket and pillow. We ask that you do not bring blankets or pillows from home for infection control purposes.
- You may eat and drink before and during your infusion. Snacks and drinks are available, but you may also bring lunch or snacks as you wish.
- You should take your regular medications as scheduled. If you take pain medication regularly, please bring your pain medication with you.
- If you are on oxygen, please bring it with you and plan to use it during your treatment and travel. Oxygen is only available for emergency situations at Outpatient Infusion Oncology.
- A TV is available at each treatment chair and WiFi is available. You may bring cell phones and electronic devices with you, but they must be muted or earbuds/headphones should be used.
- Medication cannot be prepared before your visit because we need to check your lab results and make sure you are tolerating your treatments.
- Your infusion nurse will provide you with your next appointment for treatment. If for some reason you are unable to keep your appointment, it is your responsibility to make sure you call to reschedule your appointments.

Radiation Oncology

Tupelo office hours: Monday-Friday, 7 a.m.-4 p.m.
Starkville office hours: Monday-Thursday 7:30 a.m.-4 p.m.; Friday 7:30 a.m.-noon
Depending on your treatment plan, you may be referred for radiation therapy. Please see the Radiation Oncology section of this binder for more information.

Breast Care Center

The Breast Care Center, located at 4376 S. Eason Blvd., Tupelo, offers state-of-the-art digital imaging technology. Various screening and diagnostic procedures are available. Our staff includes board-certified, fellowship-trained breast radiologists, breast health specialists, a breast cancer patient navigator and certified mammography technologists.

What is Palliative Care?

Palliative care is care given to improve the quality of life for patients who have a serious or life threatening illness, such as cancer. The goal of palliative care is to prevent or treat, as early as possible, the symptoms and side effects of the disease and its treatment, in addition to the related psychological, social and spiritual problems. Palliative care is also called comfort care, supportive care and symptom management.

When is palliative care used in cancer care?

Palliative care is given throughout a patient's experience with cancer. It should begin at diagnosis and continue through treatment and follow-up care.

If a person accepts palliative care, does it mean he or she won't get cancer treatment?

No, palliative care is given in addition to cancer treatment. However, if a patient reaches a point at which treatment to destroy the cancer is no longer warranted, palliative care becomes the total focus of care. It will continue to alleviate the symptoms and emotional issues of cancer. Palliative care providers can help to ease the transition to end-of-life care.

What is the difference between palliative care and hospice care?

Although hospice care has the same principles of comfort and support, palliative care is offered earlier in the disease process. As noted above, a person's cancer treatment continues to be administered and assessed while he or she is receiving palliative care. Hospice care is a form of palliative care that is given to a person when cancer therapies are no longer controlling the disease; it focuses on caring, not curing.

Where do cancer patients receive palliative care?

Although any medical professional may provide palliative care by addressing the side effects and emotional issues of cancer, some have a particular focus on this type of care. At NMMC Cancer Care we have a palliative care team that monitors and attends to patient and caregiver needs. Our team includes a physician specializing in palliative care, nurses, social workers, dieticians and therapists. A referral from the attending physician or licensed care provider can begin the process of assisting patients as they go through their cancer treatments and cope with the side effects during and after treatment. Palliative care specialists may also make recommendations to attending physicians about the management of pain and other symptoms. Patients do not give up their attending physician to receive palliative care.

What issues are addressed in palliative care?

Palliative care can address a broad range of issues, integrating an individual's specific needs into care. The physical and emotional effects of cancer and its treatment may be very different from person to person. For example, differences in age, cultural background or support systems may result in very different palliative care needs. Palliative care provides an extra level of support in helping patients and caregivers identify and meet goals, empowering patients in regards to decisions and assisting patients and caregivers in understanding their illness.

Who pays for palliative care?

Palliative care services are usually covered by health insurance. Medicare and Medicaid also pay for palliative care, depending on the situation. If patients do not have health insurance or are unsure about their coverage, they should check with a social worker or a hospital financial counselor.

Is there any research that shows palliative care is beneficial?

Yes, research shows that palliative care and its many components are beneficial to patient and family health and well-being. Studies have shown that patients who have their symptoms controlled and are able to communicate their emotional needs have a better experience with their medical care. Quality of life and physical symptoms improve. At NMMC Cancer Care we strive to give each patient excellent care and by utilizing palliative care we can assist each patient individually through their health care experience.

Home Health

North Mississippi Medical Center Home Health offers the opportunity to receive health care in the place where you are most comfortable – right in your own home, in familiar surroundings, with family members participating in your care.

Technology has developed to the point where almost any service available in the hospital can be delivered in the home with some modification. The Home Health staff follows your physician's orders and communicates closely with your physician.

Why Should I Choose NMMC Home Health?

- NMMC Home Health is a part of North Mississippi Health Services, a diversified regional health care organization that serves north Mississippi. Because of this connection, our patients have access to more than 50 medical specialties.
- Advanced technology. Each Home Health nurse and therapist has a laptop that is enabled with an air card, which provides Internet access regardless of location. This means that records are updated in real time, so nurses and therapists have immediate access to anything that is updated from another point of care and other providers have access to their documentation from home visits. For patients, this means a better continuum of care and no waiting for a nurse or therapist to get back to the office to hear from a physician.
- A centralized call center, which reduces wait time on the phone when patients, family members and caregivers call to speak to staff about questions or concerns.
- A palliative care team to ease transition to hospice services, when

needed. If a patient wishes to use hospice care, our team is available to make sure the transition from NMMC Home Health to NMMC Hospice is smooth. Our teams work closely together to provide the best care possible for our patients.

While You're in Our Care

Our goals while you're our patient include:

- Improve or restore your functional abilities
- Avoid hospital readmissions or decrease length of stay
- Improve your quality of life
- Keep you at home with your family

Our services include:

- Assistance with personal care
- Diabetes management
- Congestive heart failure management
- Chronic obstructive pulmonary disorder management
- Disease and pain management
- IV therapy
- Medication teaching and management
- Oxygen testing
- Palliative care management
- Wound care by specially-trained nurses
- Physical, occupational and speech therapy, including:
  - Vital Stim technology for swallowing rehabilitation
  - Fall prevention and home safety assessment

Our Team

NMMC Home Health staff is a team of professionals working with your physician to provide the highest quality health care to you at home. Our team includes:

- Registered nurses and licensed practical nurses
- Physical, speech and occupational therapists
- Social workers
- Certified aides
- Dietitians
- Chaplains
- Pharmacists

To speak with a home health care professional 24 hours a day, call 1-888-231-9282 or visit www.nmhs.net/home-health.

Hospice

North Mississippi Medical Center Home Hospice offers the opportunity to receive end-of-life care in the place where you are most comfortable – right in your own home, in familiar surroundings, with family members participating in your care.

Hospice is a special concept of compassionate care designed to provide comfort and dignity to patients and their families who are facing any life-limiting illness. Hospice not only supports and cares for the patient, but the entire family. We know this is a sensitive and difficult time, and our goal is to bring hope and quality of life to our patients while supporting the family as they cope with the illness of their loved one.

Our nursing staff is available 24/7, so you'll never feel alone. Hospice care is about honoring our loved one's wishes and providing for their needs in the place they love most – home. Care can be provided at a personal residence, our inpatient facility, an assisted living facility or personal care home, or at a contracted nursing facility.

Why Should I Choose NMMC Hospice?

- NMMC Home Health is a part of North Mississippi Health Services, a diversified regional health care organization that serves north Mississippi. Because of this connection, our patients have access to more than 50 medical specialties.
- NMMC Hospice was the first licensed hospice agency in Mississippi, and has been caring for patients and their families in this community since 1984.
- Advanced technology. Each Hospice nurse has a laptop that is enabled with an air card, which provides Internet access regardless of location. This means that records are updated in real time, which provides a better continuum of care for our patients.
- A centralized call center, which reduces wait time on the phone when patients, family members and caregivers call to speak to staff about questions or concerns.
- A palliative care team to ease transition to hospice services, when needed. If a patient who is being cared for by our Home Health team wishes to use hospice care, our team is available to help make the transition smooth. Our teams work closely together to provide the best care possible for our patients.
- Respite care options for family members, including:
  - Volunteers who can support you by sitting with your family member while you take a break.

- An inpatient hospice unit at NMMC. This 10-bed unit is a quiet, home-like environment with 24/7 nursing care. This unit is for patients who are in the hospital and are not stable enough to transfer outside the hospital or for patients who need a place to stay for a short period of time.

Who is Eligible for Hospice Care?

- A patient whose physician and family choose comfort care.
- A patient with a life-limiting illness whose life expectancy is measured in weeks or months, not years.
- A patient with a primary caregiver who is willing to participate in home care.

While You’re in Our Care

- You’ll receive routinely scheduled visits from your nurse to ensure your pain and symptoms are managed.
- 24/7 on-call nursing support is available. Your caregivers and family will be involved in your plan of care.
- Non-denominational chaplains are available to provide spiritual support to you and your family.
- We will focus on pain and symptom management – including emotional, physiological, social and spiritual needs associated with a terminal illness.
- When appropriate, therapists are available to help with comfort measures.

Our Services Include:

- 24-hour on call nursing support
- Personal care assistance
- Family counseling as needed for emotional support
- Continuous care in crisis situations
- Prescription medication coverage related to terminal illness, with emphasis on pain and symptom management
- Medical equipment and supplies as needed for comfort
- Volunteer services to support the family
- Bereavement care and continued support for the family for 13 months

Our Team

NMMC Hospice staff is a team of professionals working to provide comfort care with dignity to our patients. Our team includes:

- Registered nurses and licensed practical nurses

- Physical, speech and occupational therapists (only when needed for comfort measures)
- Social workers
- Certified aides
- Dietitians
- Chaplains
- Pharmacists
- Volunteers

For more information, call 1-800-626-3557 or visit www.nmhs.net/hospice.

NMMC Oncology Home Health Referral Assessment Tool

My Name: ____

Date of Birth: _______________ My Doctor's name: _________________

- ☐ It is difficult for me to leave home for health care appointments
- ☐ I am just tired and weak, I have been falling and my balance is bad
- ☐ I live at home alone and have no one to help me
- ☐ I need blood work checked often, due to – (low white blood cells/red cells/platelets, not eating or drinking enough and to monitor vitamin levels)
- ☐ I take more than 7 medications
- ☐ I need a nurse to teach me more about my cancer and treatment
- ☐ I have been feeling scared, sad, angry, having difficulty with memory and just not "myself" lately
- ☐ I have been eating less than usual, I have a poor appetite, losing weight
- ☐ I have a wound or sore that is healing slowly or not at all
- ☐ I go to the Emergency Room or Hospital a lot
- ☐ I have oxygen and/or nebulizer (machine for breathing treatments) in my home
- ☐ I have a walker, cane or wheelchair
- ☐ I want to just be comfortable at home and pain free
- ☐ I am sick at my stomach and I do not drink enough (may need IV fluids at home)
- ☐ I am in pain and the medication I am taking is not helping
- ☐ I need someone to help me exercise to get stronger (physical therapy)
- ☐ I am having swallowing problems, forgetfulness, difficulty with concentration; I feel like my tongue is thick and I am too weak to talk (Speech Therapy)
- ☐ I need assistance with bathing, getting dressed and light housekeeping because I am too weak. (Occupational Therapy/Nurse Aide)
- ☐ I would like to know the options in the community, such as medicine assistance, sitters, assisted living facilities and nursing homes (Social Work)

Total # Checked = ____________________

- ☐ **Greater than or equal to 5** (This patient is HIGH RISK for rehospitalization, refer to Home Care services immediately)
- ☐ **2-4** (This patient is at MODERATE RISK for rehospitalization, refer to Home Care for evaluation and consult (RN will update MD after meeting with patient and CG in home if meets criteria or agreeable to services)
- ☐ **Less than 2** (This patient is LOW RISK for rehospitalization, no Home Health needed at this time, please re-evaluate at future appointments)

Inpatient Oncology Unit

North Mississippi Medical Center

In the event that you need hospitalization during your cancer journey, you will most likely be a guest on this specialized oncology nursing unit at NMMC. The multi-disciplinary team is specially trained to care for oncology patients and they work closely with your physician to always provide the care you need to improve your state of health.

Admission

When you arrive to your room, your nurse will greet you and help you get comfortable. Your height, weight, blood pressure, heart rate and other vital signs will be taken. Your nurse will examine you and talk with you about your symptoms. You will also be asked questions about your past medical history and details about the events that led to your hospitalization. Your physician will provide the nursing staff with orders that you need, such as medications, IV fluids, your diet, activity or tests. Your physician will visit within 24 hours of your arrival and at least once every 24 hours during your stay.

A Note about Your Medications

It is very important to know what medications you take, why you take them and how much to take. It is best to always keep a current list of your medications with you in case of emergency. If your hospital admission is planned ahead of time, please bring your medications with you. A pharmacist will talk with you about them and place a list on your chart for your physician to view. Your physician will decide if anything needs to be changed and will continue what you need while you are in the hospital. After the pharmacist reviews your medications, you may send them home with a family, member or they may be stored and locked on our nursing unit until you are discharged. For your safety, your medications will be given to you by your nurse.

Your Personal Care Team

During your stay, you will have a variety of different staff members participating in your care as directed by your physician. The registered nurse and the nursing assistant will spend the most time with you. The unit coordinator will answer your calls when you use the call light and send the appropriate person to assist you. If needed, you will be visited by the oncology clinician, who provides teaching about diagnosis, treatment and side effects. A social worker will be involved in your discharge plans and goals and assist with setting up discharge plans.

Also available are respiratory therapy, physical therapy, wound care specialists and dietitians that can assist in your care when needed. You may also be visited by our nurse manager or a member of our leadership team, to speak with you about how you are progressing and how your stay is going. A charge nurse will be checking on you and will participate in your care by assisting your nurse with health history questions, discharge instructions or anything else needed.

Your Personal Plan of Care

You will have a personalized plan of care designed by your physician, personal care team, yourself and your family. Your participation is critical to your healing and involves sharing what is important to you. At each shift change (around 7 a.m. and 7 p.m.) the off going nurse will report to the oncoming nurse at your bedside. This is called bedside shift report and is designed to include you in your care, keep you informed on your progress and be part of the decision-making process of your health care. Your nurse will set your goals for that shift to help you improve. You will have a white dry erase board in your room and it will be updated each shift with the date, your personal care team for the shift and the goals you set with your nurse at the beginning of each shift.

Keeping You Informed

We understand that hospitalization is very stressful for you and your loved ones. The complexity of health care can be very confusing and sometimes hard to understand, leading to anxiety and fear. Our goal is to keep you informed and knowledgeable about your diagnosis, treatment and every aspect of your care. We encourage you to give us the opportunity to answer your questions and address any concerns you have.

Visitors

We welcome and encourage family, caregivers and visitors to our nursing unit, as we realize family and social support is crucial to your healing. However, for your safety and the safety of all of our patients, we ask that anyone who has a cold, fever, cough or any illness refrain from visiting our unit until they are well. We also cannot allow children on our unit who are under age14. Your protection and safety is our first priority!

Discharge

Planning for your discharge begins the day you are admitted to the hospital, as our goal is for you to get better as soon as possible. A discharge planner will speak with you on admission and follow your care during your stay. Any discharge needs, such as home health care, being able to get your medication, equipment needed at home, as well as other needs, will be planned during your stay so you have everything set up that you may need the day you leave our unit.

When your physician feels that you may be discharged, your discharge instructions will be prepared for you. You will be given a new, updated medication list and any other instructions and information to help you care for yourself at home.

Oncology Rehabilitation

The Oncology Rehabilitation Team is available to assist with prehabilitation and rehabilitation with cancer-related diagnoses/issues. The comprehensive team consists of Occupational Therapy, Physical Therapy and Speech therapy.

Occupational therapy offers assessment in baseline function and provides functional retraining in basic and advanced activities of daily living (dressing, bathing, cooking, driving, yardwork, banking, etc.) and assists the patient with adaptive techniques to achieve individual goals. OT also addresses endurance/strength for functional activity performance, as well as cognitive retraining for daily skills.

Physical therapy provides thorough assessment of individual strengths and weakness. PT assists with increasing strength, decreasing fatigue levels, resolving vestibular/balance issues and improving movements necessary for everyday activity.

Speech therapy offers comprehensive evaluation and treatment for a variety of communication and swallowing disorders including but not limited to articulation, voice, fluency (stuttering), dysphagia (swallowing disorders) and cognitive communication disorders. Specialty areas include assessment of dysphagia using Fiberoptic Endoscopic Evaluation of Swallowing (FEES) and modified barium swallowing studies.

Lymphedema treatment is also a vital service that is available as a part of the Oncology Rehabilitation Team.

What is Lymphedema?

Lymphedema is a condition that is characterized by a type of swelling that can result from cancer surgery or cancer treatments. Symptoms that might indicate lymphedema include persistent swelling, feeling of heaviness, decreased flexibility, aching or general discomfort, skin tightness, hardening or thickening of skin.

When should a cancer survivor be referred for Oncology Rehabilitation?

- Difficulty returning to previous activities
- Weakness
- Fatigue
- Muscle or nerve pain
- Scar adhesions

- Swallowing issues
- Speech problems
- Movement issues or restrictions
- Headaches
- Limited ability to open jaw
- Significant postural changes
- Shoulder blade weakness or instability
- Cognitive problems
- Balance problems
- Difficulty walking
- History of falls
- Chemotherapy-induced polyneuropathy (CIPN), numbness of hands/feet
- Radiation fibrosis syndrome (RFS), thickening of tissue that impairs function
- Difficulty with activities of daily living (dressing/bathing, etc.)
- Difficulty with advanced activities of daily living (chores/shopping, etc.)
- Adaptive equipment needs
- Durable medical equipment (DME) needs
- General deconditioning
- Lymphedema that may present anywhere in the body

Prior Authorization

What is the Prior Authorization process?

Some companies use the term prior authorization (PA), pre-determination or pre-certification, but they all basically mean that the insurance company is requiring the provider (doctor) and/or the facility to notify them that the patient will be receiving treatment. Some policies/plans do not require any notification while others require it. This information can be as general as date of service to company forms filled out complete with doctor's orders, clinical information to document the need for the treatment or drugs requested. This information will go before a review team to verify before an approval is given.

The prior authorization process is as follows:

- The doctor writes the order
- The order gets to the person that follows PAs usually by the check-out staff or sometimes by nursing. They need to have a signed complete order with diagnosis, date of birth and patient name, any insurance information that may be updated or in the patient's chart.
- The PA coordinator then researches by making sure the diagnosis and the drugs ordered are FDA-approved (insurance will not pay if not approved), makes sure insurance is active with whatever company by calling company or going on secure website to validate. During this check of benefits and eligibility, they can also find out if the drugs ordered by the doctor will require prior authorization. If no PA is required, they ask for a reference number so this can be documented in the patient's chart that a PA is not needed. If a PA is required, they would start the process. Most companies will do this over the phone. You may also have to fax clinical information to the review team backing up the request. When a PA is required by the company, it can take several days, sometimes a week to get a response from the company and approval. Some PAs are granted quickly while other companies take days to grant authorization. It is best to check each patient's benefits and insurance company requirements on PAs each time. Insurance plans change often. Please notify us of changes in insurance so treatment will not be held until new PA is obtained.

Once the PA coordinator determines that there is no PA needed or that the PA has been received the patient can be scheduled for treatment.

Why is a PA important?

The prior authorization process is an important process. Failure to check benefits and if authorization is needed can result in denied payment claims and can result in a large bill for the patient.

After the PA process has been completed on each patient, the scheduling staff is then notified that the patient can be scheduled and that patient's PA has been documented.

The prior authorization person is responsible for following up and checking to see if an authorization needs to be renewed or extended. Each company's PA policy requires different procedures to be followed. The PA process requires all staff to communicate and to follow up with a patient so that the patient's treatment is not delayed or benefit payment denied.

What if I Don't Have Insurance?

If you do not have Medicaid, Medicare or any form of insurance you will need to completely fill out the Patient Financial Assistance Forms which can be obtained at the front desk. These forms will be sent to the business office for you, but they will also be used to contact drug companies that have programs for uninsured patients.

You will also need to provide:

- Proof of income for your household
- Most recent income tax returns
- Three months current bank statements
- Current electric bill
- Denial letters from Medicaid and/or disability if applicable
- Social Security benefits award letter if applicable

Our staff will help with these papers, but will need your cooperation in getting us your income information as soon as possible. Any of our admissions clerks at all buildings can assist you with the Financial Assistance paperwork.

Coordinator: (662) 377-5092

Clinical Trials

What is a clinical trial?

A clinical trial is a research study that is designed to answer one or more questions. It will investigate if a new device, medication or treatment is effective, safe and better than the current treatments used. It can also determine if this new approach works better for specific diseases or groups of people.

Currently, clinical trials are the only way that a new drug or treatment can get to market. The FDA (Food and Drug Administration) has developed standards that must be followed by the Sponsor (usually a drug or device company), the Principal Investigator (usually a physician) and the IRB (Institutional Review Board – the group of people who review the study and determine if the research is ethical and safe for the public).

Clinical trials are usually the final stage of a long and involved research process. The process usually begins in a lab where research scientists test new ideas. If the idea seems promising, the next step is to test it in animals. This will help show whether it is safe or harmful and how it affects a living body. If it works well in animals, the next step is to test how it affects humans.

How are clinical trials conducted?

The Sponsor develops a guideline for the study and this is written as a protocol. The protocol is the plan for the study written in minute detail. If the research poses risk to the patient, the protocol must first be approved by the FDA and the IRB before being offered to the public. After the Sponsor receives approval to go forward from the FDA, it begins to select the physicians and sites to conduct the study.

Clinical trials are categorized by the phase of the research process.

What are the different phases of clinical research?

- **Phase I** - Trial participants are typically healthy individuals, although for oncology, the first trials in human participants are patients with the disease that the experimental medicine is intended to treat. Phase I studies are the core of drug development. Their purpose is to find a safe dose; decide how the new treatment should be given (by mouth, in a vein, etc.) and to see how the new treatment affects the human body.

- **Phase II** - If a new treatment is found to be reasonably safe in phase I clinical trials, the treatment can then move to phase II research to see if it works the way researchers think it will. The purpose of this phase is to determine if the new treatment has an effect on cancer. Along with watching for responses, the research team keeps looking for any side effects. Less common side effects may be seen. Still, about 70 percent of phase II cancer drugs don't advance to phase III, usually because they don't work well enough.
- **Phase III** - If enough patients benefit from the treatment and the side effects aren't too bad, the treatment is allowed to go on to a phase III clinical trial. The goal of this phase is to compare the new treatment with the current standard of care for that specific disease.
- **Phase IV** - post-marketing populations with the disease or condition (more variety in gender, age and race). Sometimes more information on the drug (e.g. side effects) is requested by the Sponsor or FDA and a phase IV trial is conducted.

Each phase involves a greater number of human subjects and the new treatment is thoroughly evaluated before it progresses to the next phase. FDA officials use this information when they consider approving the drug for general use.

Should I participate in a clinical trial?

This should be part of the discussion that you have with your doctor when you first meet and as you continue your follow-up care. Often, research studies will offer an additional alternative to help fight your disease. Many people have participated in clinical trials over the years and have benefitted. It cannot be guaranteed that you will benefit from participating, but science might learn more about how to better treat your disease.

Each clinical trial will have an Informed Consent Form that will go over the risks and benefits of participating. It will also explain the procedures and what to expect on each visit. If there is a trial that you and your doctor think you may qualify for, a clinical research coordinator will come and discuss the study with you. Your doctor will answer all of your questions about the research and you will sign an Informed Consent Form.

Participating in research is always voluntary. You can change your mind about participating at any time and your doctor will not be mad at you.

If you withdraw from a clinical research study, you will receive the same high standard of care as other patients who don't participate in a trial.

Is there a website that I can go to and find out if there is a trial for me?

Yes, a law has recently been passed that requires all Sponsors of clinical trials to post a summary of their study on www.clinicaltrials.gov. You can search all active trials for your disease by using this website. If your doctor does not have the trial open for participation, he/she can refer you to an institution that does, but this should be a discussion that you have with your doctor.

Will I be a guinea pig?

No, you will be a volunteer. You are not a human guinea pig. You will be taking an active role in your health care and helping to answer important questions about the research. If you personally don't benefit right now, you might help advance science and improve the quality of life for others with the same health condition in the future.

Will my insurance pay my health care bills if I participate in a clinical trial?

You or your insurance company will be billed for the cost of standard treatment. The Sponsor of the trial will pay for any procedures or tests that are not considered standard of care. The investigational product (usually the study drug or device) is provided without charge. The Principal Investigator and Hospital are paid a stipend for their efforts to conduct the study according to protocol.

Will I be given a placebo or sugar pill only to treat my cancer?

No, it is not ethical to treat cancer with only a placebo, sometimes called a sugar pill. This is not done in cancer trials.

Sometimes placebos are used, but not solely as the only cancer treatment. Placebos are sometimes used when the standard of care is to watch and wait or when a Sponsor is wanting to know if adding a drug to a standard therapy is better. You will always be told if a placebo is involved and it will be your decision to participate or not.

Accreditation for Cancer Centers

Because finding a cure for cancer and improving the current standard of care can only be done through clinical research, institutions are awarded certain standards of excellence when participating in clinical research and providing this opportunity to their cancer patients.

Be Your Own Health Care Advocate

Many important questions are answered by clinical trials. When discussing your treatment plan with your doctor, be sure to ask if clinical trials are an option. Be your own health care advocate! Review the list of available trials on www.clinicaltrials.gov.

Approved April 14, 2015 by NMHS IRB

Cancer Support Groups

Support groups can be helpful for cancer patients and their families. These groups allow cancer patients the opportunity to share common experiences, problems and solutions. They also provide an avenue for patient to talk confidentially with others who are coping with and surviving cancer.

CAMP BLUEBIRD is a three-day camp for cancer survivors that is held each April. For more information, call (662) 377-4631.

THE CANCER JOURNEY, a support group for anyone affected by cancer, meets the third Tuesday of each month at NMMC Hematology Oncology breakroom at 961 S. Gloster St. in Tupelo. For more information, call (662) 377-4631.

SISTER CIRCLE CANCER SUPPORT GROUP meets at 6 p.m. the last Thursday of the month at the Wear it Well office, 311 Government St. in Tupelo. For more information, call (662) 350-3475 or email info@wearitwell.org.

The Role of the Social Worker

Services to patients and caregivers include but are not limited to:

- Information to help with understanding diagnosis and treatments
- Coping with diagnosis of cancer and the many emotions experienced
- Help with decisions about treatment options to be considered in relationship to work, family and other things in life
- Understanding Social Security benefits, disability benefits and insurance coverage
- Assistance in applying for programs that offer financial assistance

The social worker offers:

- Counseling for the patient and family members
- Support groups and educational programs
- Referrals to community counseling
- Workplace and school education and consultation

The social worker teaches patients and family members:

- How to talk to the treatment team
- How to talk with their children, family, friends or co-workers
- How to cope with emotions, sadness, anger, worry and fears
- How to reduce stress and use relaxation skills
- How cancer affects sex, intimacy, fertility and feeling good about one's body
- Complementary medicine
- How to live with cancer
- Help with living with cancer, issues commonly experienced and resources to help long term
- Help with planning for care with the use of advance directives

The social worker helps the patient and family access:

- Affordable medical care and prescription drug coverage
- Transportation to and from medical care
- Home health and hospice care

Let's Make a Coping Skills Tool Box

What is it?

A coping skills toolbox is a place for you to keep things that calm you down in periods of distress. If you have everything gathered in one place, it's easier to remember to use your coping skills, rather than using negative behaviors.

Self-Soothing (Comforting yourself through your five senses)

1. Something to touch (ex: stuffed animal, stress ball)
2. Something to hear (ex: music, meditation guides)
3. Something to see (ex: snow globe, happy picture)
4. Something to taste (ex: mints, tea, sour candy)
5. Something to smell (ex: lotion, candles, perfume)

Distraction (Taking your mind off the problem for a while)

Examples: Puzzles, books, artwork, crafts, knitting, crocheting, sewing, crossword puzzles, sudoku, positive websites, music, movies, etc.

Opposite Action (doing something the opposite of your impulse that's consistent with a more positive emotion)

1. Affirmations and inspirations (ex; looking at or drawing motivational statements or images)
2. Something funny or cheering (ex: funny movies/TV/books)

Emotional Awareness (tools for identifying and expressing your feelings)

Mindfulness (tools for centering and grounding yourself in the present moment)

Examples: meditation or relaxation recordings, grounding objects (like a rock or paperweight), yoga mat, breathing exercises.

Crisis Plan (Contact information of supports and resources, for when coping skills aren't enough)

Family/Friends
Therapist
Psychiatrist
Hotline
Crisis Team/ER
911

Put it all together!

Once you've gathered all of your items, put them together in a box or other container, decorate it to your heart's delight and put it in a place where you will remember it, then **USE IT**!

Depression and Anxiety

It's normal to grieve over the changes that cancer brings to a person's life. As cancer patients adjust, many experience feelings of sadness, hopelessness and anxiety. This can be seen as no energy, irritability or lack of interest in daily activities. There is a need to differentiate fatigue from depression and/or anxiety since all have some of the same side effects.

Symptoms of depression are usually consistent and last for more than two weeks. Let your physician know if you experience any of these symptoms.

- Persistent sadness, crying or empty mood
- Loss of interest or pleasure in activities
- Fatigue
- Feelings of guilt, worthlessness or helplessness
- Difficulty concentrating or remembering
- Irritability or moodiness
- Sleep pattern disturbance
- Thoughts of death or suicide or attempts at suicide

It is especially important to tell your doctor, nurse practitioner or nurse if you are having any thoughts of suicide or of hurting yourself.

Generalized anxiety disorder is characterized by three major groups of symptoms. Let your physician know if you experience any of these symptoms:

- Trembling, twitching, or feeling shaky; muscle tension, ache or soreness; restlessness and tiring easily
- Shortness of breath or "smothering" sensations; rapid heartbeat, sweating or cold clammy hands; dry mouth, dizziness, nausea, diarrhea or other abdominal distress; hot flashes or chills; trouble swallowing or "lump" in throat
- Feeling keyed up or on edge; having an exaggerated startle response; having problems concentrating; having trouble falling or staying asleep; general irritability

What Can I Do About It?

Talk with your doctor first, some of these symptoms such as weight changes, fatigue or even forgetfulness can be caused by cancer and its treatment. Depression and/or anxiety are side effects that can be treated. Your doctor can prescribe medications and there are several medications available to use for depression and/or anxiety or a combination of both. Some patients feel reluctant to tell the doctor if they are ex-periencing symptoms of depression and/or anxiety, because they feel it is a reflection of weakness or an inability to handle the situation. This is simply not true. These medications are no different from other medications we take. Antidepressants and anti-anxiety medications treat depression and anxiety much like an antibiotic treats infection. Each person responds differently to medication, so there could be a trial of different medications before one is found that works. The medication may need to be taken for at least four weeks before a difference is noticed.

Along with medication, your doctor may refer you to see a counselor. Even if you elect not to take medication, you may consider talking to a counselor.

Stress reducers that may help with symptoms of depression:

- Exercise is a great way to lift your spirits and decrease stress. Walking at a comfortable pace can lighten your mood. Check with your doctor before beginning any exercise program.
- Talk to a friend or family member about how you are feeling. This may be difficult, but it is unhealthy to keep feelings bottled up. It is hard to deal with cancer diagnosis and treatment alone. Connect with loved ones as they can provide a source of strength and support to help reduce the feeling of loneliness and isolation that sometimes accompany a cancer diagnosis.
- Seek spiritual support as indicated.
- Become involved with support groups and take advantage of community resources.

Source: American Cancer Society
(www.cancer.org)

Nutrition for the Person With Cancer

During Treatment:

A Guide for Patients and Families

Nutrition is an important part of cancer treatment. Eating the right kinds of foods before, during and after treatment can help you feel better and stay stronger. Chances are, if you are reading this booklet either you or someone you care about is going through cancer treatment. The American Cancer Society has prepared this guide to help you and your loved ones cope with treatment side effects that might affect how well you can eat. Not everyone has nutrition-related side effects, but this guide will help you address them if and when they come up. You don't have to read straight through all of the information here. You can just read the sections you need and use the information that applies to you. The information in this guide is not meant to replace the advice of a medical professional. If you have any questions or concerns, you should talk to a doctor, nurse or dietitian about your nutritional needs.

For a more detailed discussion of nutrition before, during and after cancer treatment, please see our book called The American Cancer Society Complete Guide to Nutrition for Cancer Survivors: Eating Well, Staying Well During and After Cancer.

Benefits of good nutrition

Good nutrition is especially important if you have cancer because both the illness and its treatments can change the way you eat. Cancer and cancer treatments can also affect the way your body tolerates certain foods and uses nutrients.

The nutrient needs of people with cancer vary from person to person. Your doctor, nurses and a registered dietitian can help you identify your nutrition goals and plan ways to help you meet them. Eating well while you are being treated for cancer might help you:

- Feel better.
- Keep up your strength and energy.
- Maintain your weight and your body's store of nutrients.
- Better tolerate treatment-related side effects.
- Lower your risk of infection.
- Heal and recover faster.

Eating well means eating a variety of foods that will give your body the nutrients needed to help fight cancer. These nutrients include protein, carbohydrates, fat, water, vitamins and minerals.

Proteins

We need protein for growth, to repair body tissue and to keep our immune systems healthy. When your body doesn't get enough protein, it might break down muscle for the fuel it needs. This makes it take longer to recover from illness and can lower resistance to infection. People with cancer often need more protein than usual. After surgery, chemotherapy or radiation therapy, extra protein is usually needed to heal tissues and help fight infection. Good sources of protein include fish, poultry, lean red meat, eggs, low-fat dairy products, nuts and nut butters, dried beans, peas and lentils and soy foods.

Fats

Fats play an important role in nutrition. Fats and oils are made of fatty acids and serve as a rich source of energy for the body. The body breaks down fats and uses them to store energy, insulate body tissues and transport some types of vitamins through the blood.

You may have heard that some fats are better for you than others. When considering the effects of fats on your heart and cholesterol level, choose monounsaturated and polyunsaturated fats more often than saturated fats or trans fats.

Monounsaturated fats are found mainly in vegetable oils like olive, canola and peanut oils.

Polyunsaturated fats are found mainly in vegetable oils like safflower, sunflower, corn and flaxseed. They are also the main fats found in seafood.

Saturated fats are mainly found in animal sources like meat and poultry, whole or reduced-fat milk, cheese and butter. Some vegetable oils like coconut, palm kernel oil and palm oil are saturated. Saturated fats can raise cholesterol and increase your risk for heart disease. Less than 10% of your calories should come from saturated fat.

Trans-fatty acids are formed when vegetable oils are processed into margarine or shortening. Sources of trans fats include snack foods and baked goods made with partially hydrogenated vegetable oil or vegetable shortening. Trans fats also are found naturally in some animal products, like dairy products. Trans fats can raise bad cholesterol and lower good cholesterol; try to eliminate them from your diet.

Carbohydrates

Carbohydrates are the body's major source of energy. Carbohydrates give the body the fuel it needs for physical activity and proper organ function. The best sources of carbohydrates – fruits, vegetables and whole grains – also supply needed vitamins and minerals, fiber and phytonutrients to the body's cells.

Other sources of carbohydrates include bread, potatoes, rice, spaghetti, pasta, cereals, corn, peas and beans. Sweets (desserts, candy and drinks with sugar) can supply carbohydrates, but provide very little in the way of vitamins, minerals or phytonutrients.

Whole grains or foods made from them contain all the essential parts and naturally occurring nutrients of the entire grain seed. Whole grains are found in cereals, breads, flours and crackers. Some whole grains, such as quinoa, brown rice or barley, can be used as side dishes or part of an entree. When choosing a whole-grain product, look for the words "whole grain," "stone ground," "whole ground," "whole-wheat flour," "whole-oat flour," or "whole-rye flour."

Fiber is the part of plant foods that the body cannot digest. There are 2 types of fiber. Insoluble fiber helps to move food waste out of the body quickly and soluble fiber binds with water in the stool to help keep stool soft.

Water

Water and liquids or fluids are vital to health. All body cells need water to function. If you do not take in enough fluids or if you lose fluids through vomiting or diarrhea, you can become dehydrated (your body doesn't have as much fluid as it should). If this happens, the fluids and minerals that help keep your body working can become dangerously out of balance. You do get some water from the foods you eat, but a person should drink about eight 8-ounce glasses of liquid each day to be sure that all the body cells get the fluid they need. You may need extra fluids if you are vomiting or have diarrhea. Keep in mind that all liquids (soups, milk, even ice cream and gelatin) count toward your fluid goals.

Vitamins and minerals

The body needs small amounts of vitamins and minerals to help it function properly. Most are found naturally in foods. They are also sold as supplements in pill and liquid form. They help the body use the energy (calories) found in foods.

A person who eats a balanced diet with enough calories and protein usually gets plenty of vitamins and minerals. But it can be hard to eat a balanced diet when you are being treated for cancer, especially if you have treatment side effects that last for a long time. If you are thinking of taking a vitamin or supplement, be sure to discuss this with your doctor first. Some people with cancer take large amounts of vitamins, minerals and other dietary supplements to try to boost their immune system or even destroy cancer cells. But some of these substances can be harmful, especially when taken in large doses. In fact, large doses of some vitamins and minerals may make chemotherapy and radiation therapy less effective.

Antioxidants

Antioxidants include vitamins A, C and E; selenium and zinc; and some enzymes that absorb and attach to free radicals, preventing them from attacking normal cells.

If you want to take in more antioxidants, health experts recommend eating a variety of fruits and vegetables, which are good sources of antioxidants. Taking large doses of antioxidant supplements or vitamin-enhanced foods or liquids is usually not recommended while getting chemo or radiation therapy. Talk with your doctor to find out the best time to take antioxidant supplements.

Phytonutrients

Phytonutrients or phytochemicals are plant compounds like carotenoids, lycopene, resveratrol and phytosterols that are thought to have health-protecting qualities. They are found in plant products such as fruits, vegetables and teas. Pill or supplement forms of phytochemicals have not been shown to be as helpful as eating the foods that contain them.

Herbs

Herbs have been used to treat disease for hundreds of years, with mixed results. Today, herbs are found in many products, like pills, liquid extracts, teas and ointments. Many of these products are harmless and safe to use, but others can cause severe and harmful side effects. Some may even interfere with proven cancer treatments, including chemo, radiation therapy and recovery from surgery. If you are interested in using products containing herbs, talk about it with your oncologist or nurse first.

Safety considerations

Many people believe that if they find a pill or supplement in stores, it is safe and it works. The Food and Drug Administration (FDA) put out rules in 2007 to help ensure that supplements contain what their labels claim they do, but the supplement's safety and its effects on the body are not addressed by any FDA rules. The FDA does not make manufacturers of these products print possible side effects on their labels. And the FDA cannot pull a dietary supplement or herbal product from the market unless it can prove that the product is unsafe.

Tell your health care team about any over-the-counter products or supplements you are using or are thinking about using. Take the bottle(s) to your doctor to talk about the dose and be sure that the ingredients do not interfere with your health or cancer treatments. If you would like to learn more about a vitamin, mineral, herb or supplement, call us at 1-800-227-2345 or visit our Web site at www.cancer.org.

Cancer and cancer treatment affect nutrition

When you are healthy, eating enough food to get the nutrients and calories you need is not usually a problem. In fact, most nutrition guidelines stress eating lots of vegetables, fruits and whole-grain products; limiting the amount of red meat you eat, especially those that are processed or high in fat; cutting back on fat, sugar, alcohol and salt; and staying at a healthy weight. But when you are being treated for cancer, these things can be hard to do, especially if you have side effects or just don't feel well. So, you might need to change your diet to help build up your strength and withstand the effects of your cancer and its treatment. This may mean eating things that are not normally recommended when you are in good health. For instance, you may need high-fat, high calorie foods to keep up your weight, or thick, cool foods like ice cream or milk shakes because sores in your mouth and throat are making it hard to eat anything. The type of cancer, your treatment and any side effects you have must be considered when you are trying to figure out the best ways to get the nutrition your body needs.

When your cancer was first diagnosed, your doctor talked with you about a treatment plan. This may have meant surgery, radiation therapy, chemotherapy, hormone therapy, biologic therapy (immunotherapy) or some combination of treatments. All of these treatments kill cancer cells. But in the process some healthy cells are also damaged. This damage is what causes cancer treatment side effects. Some of the more common side effects that can affect your ability to eat are:

- Loss of appetite (anorexia)

- Sore mouth or throat
- Dry mouth
- Dental and gum problems
- Changes in taste or smell
- Nausea/Vomiting
- Diarrhea
- Constipation
- Feeling very tired all the time (fatigue)
- Depression

You might or might not have any of these side effects. Many factors determine whether you will have any side effects and how bad they will be. These factors include the type of cancer you have, the part of the body affected, the type and length of your treatment and the dose of treatment. Many side effects can be controlled and most go away over time after treatment ends. Talk with your doctor or nurse about your chances of having side effects and what can be done to help control them. After your treatment starts, tell your cancer care team about any side effects that are not being controlled. Let them know if the medicines they have given you to control side effects do not work, so that others can be used.

Before treatment begins

Until you begin treatment, you won't know exactly what, if any, side effects you may have or how you will feel. One way to prepare is to look at your treatment as a time to focus on yourself and on getting well. Here are some other ways to get ready.

Make plans now

You can reduce your anxiety about treatment and side effects by taking action now. Talk to your treatment team about the things that worry you. Learn as much as you can about the cancer and your treatment plan. Planning how you will cope with possible side effects can make you feel more in control and ready for the changes that may come. Many people have few or no side effects that keep them from eating. Even if you have side effects, they may be mild and you may be able to manage them with drugs or simple diet changes. Most side effects go away after cancer treatment ends.

Here are some tips to help you get ready for treatment:

- Stock your pantry and freezer with your favorite foods so you won't need to shop as often. Include foods you know you can eat even when you are sick.

- Cook in advance and freeze foods in meal-sized portions.
- Talk to your friends or family members about ways they can help with shopping and cooking or ask a friend or family member to take over those jobs for you.
- Talk to your doctor, nurse or a registered dietitian about any concerns you have about eating well. They can help you manage side effects like constipation or nausea.

Once treatment starts

Eat well

Your body needs a healthy diet to function at its best. This is even more important if you have cancer. With a healthy diet, you'll go into treatment with reserves to help keep up your strength, prevent body tissue from breaking down, rebuild tissue and maintain your defenses against infection. People who eat well are better able to cope with side effects of treatment. And you may even be able to handle higher doses of certain drugs. In fact, some cancer treatments work better in people who are well-nourished and are getting enough calories and protein.

- Don't be afraid to try new foods. Some things you may never have liked before may taste good during treatment.
- Choose different plant-based foods. Try eating dried beans and peas instead of meat at a few meals each week.
- Try to eat at least 2½ cups of fruits and vegetables a day, including citrus fruits and dark-green and deep-yellow vegetables. Colorful vegetables and fruits and plant-based foods contain natural health-promoting substances called phytochemicals.
- Limit high-fat foods, especially those from animal sources. Choose lower-fat milk and dairy products. Reduce the amount of fat in your meals by choosing a lower-fat cooking method like baking or broiling.
- Try to stay at a healthy weight and stay physically active. Small weight fluctuations during treatment are normal.
- Limit the amount of salt-cured, smoked and pickled foods you eat.

If you cannot do any of the above during this time, do not worry about it. Help is available if or when you need it. Sometimes diet changes are needed to get the extra fluids, protein and calories you need. Tell your doctor, nurse or dietitian about any problems you have.

Snack as needed

During cancer treatment your body often needs extra calories and protein to help you maintain your weight and heal as quickly as possible. If you are losing weight, snacks can help you meet those needs, keep up your strength and energy level and help you feel better. During treatment you may have to rely on snacks that are less healthy sources of calories to meet your needs. Keep in mind that this is just for a short while – once side effects go away you can return to a more healthy diet. To make it easier to add snacks to your daily routine, try the following:

- Eat small snacks throughout the day.
- Keep a variety of protein-rich snacks on hand that are easy to prepare and eat. These include yogurt, cereal and milk, half a sandwich, a bowl of hearty soup, and cheese and crackers.
- Avoid snacks that may make any treatment-related side effects worse. If you have diarrhea, for example, avoid popcorn and raw fruits and vegetables. If you have a sore throat, do not eat dry, coarse snacks or acidic foods.
- If you are able to eat normally and maintain your weight without snacks, then do not include them.

Tips to increase calories and protein

- Eat several small, frequent snacks throughout the day, rather than 3 large meals.
- Eat your favorite foods at any time of the day. For example, eat breakfast foods for dinner if they appeal to you.
- Eat every few hours. Don't wait until you feel hungry.
- Eat your biggest meal when you feel hungriest. For example, if you are most hungry in the morning, make breakfast your biggest meal.
- Try to eat high-calorie, high-protein foods at each meal and snack.
- Exercise lightly or take a walk before meals to increase your appetite.
- Drink high-calorie, high-protein beverages like milk shakes and canned liquid supplements.
- Drink most of your fluids between meals instead of with meals. Drinking fluid with meals can make you feel too full.
- Try homemade or commercially prepared nutrition bars and puddings.

High-protein foods

- Milk products
    - Eat cheese on toast or with crackers.
    - Add grated cheese to baked potatoes, vegetables, soups, noodles, meat and fruit.
    - Use milk in place of water for hot cereal and soups.
    - Include cream or cheese sauces on vegetables and pasta.
    - Add powdered milk to cream soups, mashed potatoes, puddings

  and casseroles.
  - Add yogurt or cottage cheese to favorite fruits or blended smoothies.
- Eggs
  - Keep hard-cooked eggs in the refrigerator. Chop and add to salads, casseroles, soups and vegetables. Make a quick egg salad.
  - All eggs should be well-cooked to avoid the risk of harmful bacteria.
  - Pasteurized egg substitute is a low-fat alternative to regular eggs.
- Meats, poultry and fish
  - Add leftover cooked meats to soups, casseroles, salads and omelets.
  - Mix diced and flaked cooked meat with sour cream and spices to make dip.
- Beans, legumes, nuts and seeds
  - Sprinkle seeds or nuts on desserts like fruit, ice cream, pudding and custard.
  - Also serve on vegetables, salads and pasta.
  - Spread peanut or almond butter on toast and fruit or blend in a milk shake.

High-calorie foods

- Butter
  - Melt over potatoes, rice, pasta and cooked vegetables.
  - Stir melted butter into soups and casseroles and spread on bread before adding other ingredients to your sandwich.
- Milk products
  - Add whipping or heavy cream to desserts, pancakes, waffles, fruit and hot chocolate; fold it into soups and casseroles.
  - Add sour cream to baked potatoes and vegetables.
- Salad dressings
  - Use regular (not low-fat or diet) mayonnaise and salad dressing on sandwiches and dips with vegetables and fruit.

Sweets

- Add jelly and honey to bread and crackers.
- Add jam to fruit.
- Use ice cream as a topping on cake.

*Adapted from Eldridge B and Hamilton KK, Editors, Management of Nutrition Impact Symptoms in Cancer and Educational Handouts. Chicago, IL: American Dietetic Association; 2004.

Don’t forget about physical activity

Physical activity has many benefits. It helps you maintain muscle mass, strength, stamina and bone strength. It can help reduce depression, stress, fatigue, nausea and constipation. It can also improve your appetite. So, if you don’t already exercise, talk to your doctor about aiming for at least 150 minutes of moderate activity, like walking, each week. If your doctor approves, start small (maybe 5 to 10 minutes each day) and as you are able work up to the goal of 150 minutes. Listen to your body and rest when you need to. Now is not the time to push yourself to exercise. Do what you can when you are up to it.

Managing eating problems caused by surgery, radiation and chemotherapy

Different cancer treatments can cause different kinds of problems that may make it hard for you to eat or drink. Here are some tips on how to manage nutrition problems depending on the type of treatment you receive.

Surgery

Surgery is done to remove cancer cells and nearby tissue. It is often used with radiation therapy and chemotherapy. After surgery, the body needs extra calories and protein for wound healing and recovery. This is when many people have pain and feel tired. They also may be unable to eat a normal diet because of surgery-related side effects. The body’s ability to use nutrients may also be changed by surgery that involves any part of the mouth, esophagus, stomach, small intestine, pancreas, colon or rectum.

Nutrition tips for people having cancer surgery

If you’ve had surgery, remember that many side effects will go away within a few days of the operation. Certain drugs, self-care practices and changes in diet can help lessen some side effects. If they last, be sure to tell your doctor, nurse, dietitian or other member of your health care team.

- Eat as well as you can on days when your appetite is good. Try to eat regular meals and snacks, but don’t be too hard on yourself if side effects make it hard to eat. It may be easier to eat small, frequent meals or snacks.
- Don’t hesitate to ask for help with shopping for groceries and

preparing meals.

- Keep in mind that foods and drinks that are low in fat are easier to digest and tolerate than high-fat items, like fried or greasy foods.
- As you recover, make sure to take in plenty of fluids (at least eight 8-ounce glasses each day unless directed otherwise by your doctor). Try to sip water, juices and other clear liquids throughout the day.

Talk with your health care team about how soon you can return to your normal, day-to-day activities. Ask your surgeon for guidelines to increase physical activity,

The day or night before surgery, you may not be allowed to eat or drink anything. After the operation, it may be several hours or even 1 or 2 days before you can eat normal foods and liquids. If you haven't eaten for more than a day or 2, your doctor may let you eat only easy-to-digest foods and drinks at first. After surgery, the type of side effects you might have and how long they last depend on the type of surgery and your overall health. There are many possible side effects after surgery for cancer of different parts of the body that can change your ability to eat. These side effects can be treated so you can take in the nutrients you need to heal. Be sure to talk to your health care team about any problems you are having so they can help you manage them.

Radiation therapy

In radiation therapy, radiation is directed at the tumor to kill the cancer cells. While all cells are affected by radiation, most normal cells can usually recover over time. The type of side effects radiation causes depends on the area of the body being treated, the size of the area being treated, the type and total dose of radiation and the number of treatments.

Side effects usually start around the second or third week of treatment and peak about two-thirds of the way through treatment. After radiation therapy ends, most side effects last 3 or 4 weeks, but some may last much longer. If you have side effects, ask your doctor, nurse or other health care professional whether medicines, a change in diet or anything else can help you manage them.

Nutrition tips for people getting radiation therapy

Eating well while getting radiation may be hard to do, especially if you must travel to a treatment center far from your home. Remember these tips:

- Try to eat something at least an hour before treatment rather than going in with an empty stomach, unless otherwise instructed by your radiation center.

- Bring snacks or nutrition supplements with you to eat or drink on the ride to and from treatment if you are traveling a long distance. Easy-to-carry foods include single serving size bowls of fruit, gelatin or pudding; cheese or peanut butter and crackers; granola bars; or cereal.
- Be sure to drink plenty of water and other liquids.
- Ask friends and family to help by shopping for groceries and preparing meals.
- Do not expect to have the same side effects as someone else being treated for cancer in another area of the body. Even people with the exact same treatment may have different side effects.
- Try to eat small, frequent snacks rather than 3 large meals. If your appetite is better at certain times of the day, plan on having your largest meal then. Nutrition supplements, such as liquid meal replacements, may help. Your doctor, nurse or dietitian may have samples for you to try.

If you are having trouble eating and have been following a special eating plan for diabetes or some other chronic health condition, some of these general tips may not work for you. Talk to your doctor, nurse or dietitian about how best to change your eating habits while you are getting radiation treatments.

Tell your doctor or nurse about any side effects you have so they can prescribe any needed medicines. For example, there are medicines to control nausea and vomiting or to treat diarrhea.

Other patients can also be a great source of information and support. Get to know and talk with other patients about their experiences or join a support group. If you would like information on support programs, contact your local American Cancer Society office.

Chemotherapy

Chemotherapy (chemo) is the use of strong drugs to kill cancer cells. The drugs are most often taken by mouth or put into the bloodstream. Chemo drugs can damage both healthy cells and cancer cells. Cells most likely to be injured are bone marrow, hair and the lining of the digestive tract, including the mouth, esophagus, stomach and intestines. Side effects depend on what kind of chemo drugs you take and how you take them The common side effects of chemo that can cause eating problems are:

- Appetite changes
- Changes in bowel habits

- Changes in taste and smell
- Fatigue
- Mouth tenderness or sores
- Nausea/Vomiting

You may not have these side effects, but if you do, be sure to tell your doctor or nurse. They may suggest medicines, daily self-care practices and changes in diet to lessen eating-related side effects.

Nutrition tips for people getting chemo

- Most people get chemo at an outpatient center. It may take anywhere from a few minutes to many hours. Make sure you eat something before getting your treatment. Most people find that a light meal or snack an hour or so before chemo works best. If you will be there several hours, plan ahead and bring a small meal or snack in an insulated bag or cooler. Find out if there is a refrigerator or microwave you can use.
- Don't be too hard on yourself if side effects make it hard to eat. Try eating small, frequent meals or snacks. Go easy on fried or greasy foods, which can be hard to digest.
- On days when you are feeling well and your appetite is good, try to eat regular meals and snacks. Be sure to drink plenty of water or liquids (eight to ten 8-ounce glasses) each day.
- Ask for help with grocery shopping and fixing meals. If you have no one to help you, think about having meals delivered to your home or eating at a community or senior center. To learn more about meal delivery and other services, click on the "Contact Us" button at www.cancer.org or call us at 1-800-227-2345 for resources in your area.
- Some side effects of chemo go away within hours of getting treatment. If your side effects persist, tell your health care team. Prompt attention to nutrition-related side effects can help keep up your weight and energy level and help you feel better. Be sure that your doctor or nurse knows about your side effects so they can help you manage them.
- If you are having trouble eating and have been following a special eating plan for diabetes or some other chronic health condition, talk to your doctor, nurse or dietitian about how best to change your eating habits while you are getting chemo.

For people with weakened immune systems

Cancer and its treatment can weaken your body's immune system by affecting the blood cells that protect us against disease and germs. As a result, your body cannot fight infection, foreign substances and disease as well as a healthy person's body can. During your treatment for cancer, there will be times when your body will not be able to protect itself very well. While your immune system is recovering, you may be told to try to avoid being exposed to possible infection-causing germs.

Food-handling tips

- Wash your hands with warm, soapy water for 20 seconds before and after preparing food and before eating.
- Refrigerate foods at or below 40° F.
- Keep hot foods hot (warmer than 140° F) and cold food cold (cooler than 40° F).
- Thaw meat, fish or poultry in the microwave or refrigerator in a dish to catch drips. Do not thaw at room temperature.
- Use defrosted foods right away and do not refreeze them.
- Put perishable foods in the refrigerator within 2 hours of buying or preparing them. Egg dishes and cream- and mayonnaise-based foods should not be left un-refrigerated for more than an hour.
- Wash fruits and vegetables well under running water before peeling or cutting. Do not use soaps, detergents, chlorine bleach solutions or commercial produce rinses. Using a clean vegetable scrubber, scrub produce that has a thick, rough skin or rind (melons, potatoes, bananas, etc.) or any produce that has dirt on it.
- Rinse leaves of leafy vegetables one at a time under running water.
- Packaged salads, slaw mixes and other prepared produce, even when marked pre-washed, should be rinsed again under running water; using a colander can make this easier.
- Do not eat raw vegetable sprouts.
- Throw away fruits and vegetables that are slimy or moldy.
- Do not buy produce that has been cut at the grocery store (like melon or cabbage).
- Wash tops of canned foods with soap and water before opening.
- Use different utensils for stirring foods and tasting them while cooking. Do not taste the food (or allow others to taste it) with any utensil that will be put back into the food.
- Throw away eggs with cracked shells.
- Throw out foods that look or smell strange. Never taste them!
- Use a clean knife to cut different foods.
- In the refrigerator, store raw meat sealed and away from ready-to-eat food.
- Keep foods separated on the countertops. Use a different cutting

board for raw meats.

- Clean counters and cutting boards with hot, soapy water or you can use a fresh solution made of 1 part bleach and 10 parts water. Moist disinfecting wipes may be used if they are made for use around food.
- When grilling, always use a clean plate for the cooked meat.

Cook foods well

- Put a meat thermometer into the middle of the thickest part of the food to test for doneness. Test a thermometer's accuracy by putting it into boiling water. It should read 212° F.
- Cook meat until it is no longer pink and the juices run clear. The only way to know for sure that the meat has been cooked to the right temperature is to use a food thermometer. Meats should be cooked to 160° F and poultry to 180° F.

Microwave cooking

- Rotate the dish a quarter turn once or twice during cooking if there is no turntable in the microwave oven. This helps prevent cold spots in food where bacteria can survive.
- Use a lid or vented plastic wrap to thoroughly heat leftovers. Stir often during reheating.

Grocery shopping

- Check "sell-by" and "use-by" dates. Pick only the freshest products.
- Check the packaging date on fresh meats, poultry and seafood. Do not buy products that are out of date.
- Do not use damaged, swollen, rusted or deeply dented cans. Be sure that packaged and boxed foods are properly sealed.
- Choose unblemished fruits and vegetables.
- Do not eat deli foods. In the bakery, avoid unrefrigerated cream- and custard containing desserts and pastries.
- Do not eat foods from self-serve or bulk containers.
- Do not eat yogurt and ice cream products from soft-serve machines.
- Do not eat free food samples.
- Do not use cracked or unrefrigerated eggs.
- Get your frozen and refrigerated foods just before you check out at the grocery store, especially during the summer months.
- Refrigerate groceries right away. Never leave food in a hot car.

Dining out

- Eat early to avoid crowds.
- Ask that food be prepared fresh in fast-food restaurants.
- Ask for single-serving condiment packages and avoid self-serve bulk condiment containers.

- Do not eat from high-risk food sources, including salad bars, delicatessens, buffets and smorgasbords, potlucks and sidewalk vendors.
- Do not eat raw fruits and vegetables when eating out.
- Ask if fruit juices are pasteurized. Avoid "fresh-squeezed" juices in restaurants.
- Be sure that utensils are set on a napkin or clean tablecloth or placemat, rather than right on the table.
- Ask for a container and put the food in it yourself rather than having the server take your food to the kitchen to do this, if you want to keep your leftovers.

How to cope with common eating problems

Appetite changes

Cancer and its treatment can cause changes in your eating habits and your desire to eat. Not eating can lead to weight loss and this can cause weakness and fatigue. Eating as well as you can is an important part of taking care of yourself. Treatment-related side effects like pain, nausea and constipation can also cause loss of appetite. Managing these problems may help you eat better:

- Eat several frequent snacks throughout the day, rather than 3 large meals.
- Avoid liquids with meals or take only small sips of liquids to keep from feeling full early (unless you need liquids to help swallow or for dry mouth). Drink most of your liquids between meals.
- Make eating more enjoyable by setting the table with pretty dishes and playing your favorite music, watching television or eating with someone.
- Be as physically active as you can. Start off slowly and increase your activity over time as you feel stronger. Sometimes a short walk an hour or so before meals can help you feel hungry.
- Keep high-calorie, high-protein snacks on hand. Try hard-cooked eggs, peanut butter, cheese, ice cream, granola bars, liquid nutritional supplements, puddings, nuts, canned tuna or chicken or trail mix.
- Eat your favorite foods any time of the day; for example, if you like breakfast foods, eat them for dinner.
- Ask your doctor what can be done to help relieve constipation, nausea, pain or any other side effects you have.

Constipation

Pain medicines, changes in your eating habits and being less active can cause your bowels to move less often and stools to become harder to pass (constipation). If you are constipated, try eating high-fiber foods. Also drink plenty of fluids during the day, eat at regular times and try to increase your physical activity, if possible:

- Try to eat at the same times each day.
- Try to have a bowel movement at the same time each day.
- Drink 8 to 10 cups of liquid each day, if it's OK with your doctor. Try water, prune juice, warm juices, teas and hot lemonade. (A hot beverage may help to stimulate a bowel movement.)
- If you are prone to constipation, try to set up a regular bowel plan. This may include an over-the- counter stool softener or psyllium fiber. Talk to your doctor or nurse about what to use.
- Use laxatives only as directed by your doctor. Contact your doctor or nurse if you have not had a bowel movement for 3 days or longer.
- If it's OK with your doctor, eat high-fiber and bulky foods, like whole-grain breads and cereals, fruits and vegetables (raw and cooked with skins and peels on) and dried beans. Add these slowly to your diet to avoid bloating and gas.
- Eat a breakfast that includes a hot drink and high-fiber foods.
- Ask your dietitian to recommend a high-calorie, high-protein, fiber-containing liquid supplement if you need more calories, protein and fiber.
- Limit drinks and foods that cause gas if it becomes a problem.
- To lessen the amount of air you swallow while eating, try not to talk much at meals and do not use straws to drink. Avoid chewing gum and carbonated beverages.

Diarrhea

Cancer treatments and medicines can cause your bowels to move much more often and become very loose (diarrhea). Uncontrolled diarrhea can lead to fluid loss (dehydration), weight loss, poor appetite and weakness. Avoid high-fiber foods, which might make diarrhea worse. These include nuts, seeds, whole grains, legumes (beans and peas), dried fruits, and raw fruits and vegetables. You should avoid high-fat foods, like fried and greasy foods, too, because they can also make diarrhea worse. After stomach or bowel surgery, some people may be sensitive to very sweet or high-carbohydrate foods as well. Stay away from gassy foods and carbonated drinks, too. Be sure to sip fluids during the day to prevent dehydration. Once the diarrhea has stopped, slowly start eating foods with fiber:

- Drink plenty of mild, clear, non-carbonated liquids during the day. Drink liquids at room temperature. This may be easier to take than very hot or cold drinks.
- Eat small, frequent meals and snacks during the day.
- Avoid greasy, fried, spicy or very sweet foods.
- Limit milk or milk products to 2 cups a day. Yogurt and buttermilk are OK.
- Avoid drinks and foods that cause gas, like carbonated drinks, gas-forming vegetables and chewing gum. Allow carbonated drinks to become slightly “flat” before drinking by pouring them into a glass and letting them sit at least 10 minutes; pouring them over ice may also help.
- Drink and eat high-sodium (salt) foods like broths, soups, sports drinks, crackers and pretzels.
- Drink and eat high-potassium foods like fruit juices and nectars, sports drinks, potatoes with the skin and bananas.
- Increase soluble-fiber foods like applesauce, bananas, canned peaches and pears, oatmeal and white rice.
- Drink at least 1 cup of liquid after each loose bowel movement. Try water, sports drinks or bouillon.
- Do not chew sugar-free gum or eat candies and desserts made with sugar alcohol (i.e., sorbitol, mannitol or xylitol).
- Call your doctor if diarrhea continues or increases or if your stools have an unusual odor or color.

Fatigue

Fatigue is feeling very tired all of the time. It doesn’t get better when you rest. It can be a problem for some people during cancer treatment and is very common. If you are feeling tired or lack energy, talk to your doctor or nurse. Fatigue can have many causes, including cancer treatments, not eating enough food, lack of sleep, depression, low blood counts and some medicines. When the cause of the fatigue is medical, your doctor may be able to treat the cause to help you feel better. Along with treatment, there are many nutrition steps you can take and other things you can try to help you cope with fatigue:

- Talk to your doctor or nurse about your fatigue. If the fatigue has a medical cause, there may be treatment for it. Your doctor or nurse can help you figure out self-care measures that may help with the fatigue, too.
- Try to prioritize your activities. Do the most important ones when you have the most energy.
- Take short walks or get regular exercise, if you can. More and more

research tells us that being moderately active can help decrease cancer-related fatigue.

- Drink plenty of fluids. Dehydration can make fatigue worse. Be sure to get at least 8 cups of fluid each day. If you are losing weight, be sure to include some fluids that have calories, like juices or milk.
- Make sure you get enough rest. Take 3 or 4 short naps or rest breaks during the day instead of 1 long rest. Plan your day to include rest breaks and make rest time special with a good book in a comfortable chair or a favorite video with a friend. Try to balance rest and activity so that it does not interfere with nighttime sleep.
- Try easier or shorter versions of your usual activities. Don't push yourself to do more than you can manage.
- Ask for a referral to a dietitian who can work with you to choose the best diet for you.
- Do not eat sugary foods. These foods give you a quick energy boost, but it wears off and you will be even more tired afterward.
- Try eating some protein, fat and/or fiber with each meal and snack. Protein, fat and fiber can help keep blood sugar levels more stable. This will give you a more sustained feeling of energy from the food you eat. For example, instead of eating 2 pieces of fruit, try eating 1 piece plus a small handful of walnuts, almonds, peanuts or other nuts. Or try fruit with cottage cheese.
- Be sure to meet your basic calorie needs.
- Do not take large amounts of vitamins or minerals without first talking with your doctor or nurse. Some dietary supplements can interfere with your cancer treatment and large doses of some supplements can have harmful effects.
- Stress can make fatigue worse. Ask your health care team about stress management.

Mouth dryness or thick saliva

Radiation therapy to the head and neck areas, some types of chemo and certain other medicines can cause dry mouth or thick saliva. The glands that make saliva can become irritated and make less saliva or your saliva can become very thick and sticky. Dryness can be mild or severe. A dry mouth can increase your risk of cavities and mouth infection. If you smoke or chew tobacco or drink alcohol, the dryness can be worse. If you have either of these side effects, drink plenty of fluids throughout the day and eat moist foods as much as possible. Also brush your teeth and rinse your mouth often with the baking soda, salt and water solution to help keep it clean and prevent infection (recipe below):

- Drink 8 to 10 cups of liquid a day and take a water bottle with you when you leave home. (Drinking lots of fluids helps thin mucus.)

- Take small bites and chew your food well.
- Eat soft, moist foods that are cool or at room temperature. Try blenderized fruits and vegetables, soft-cooked chicken and fish, well-thinned cereals, popsicles, smoothies and slushies. Avoid foods that stick to the roof of the mouth like peanut butter or soft bread.
- Moisten foods with broth, soup, sauces, gravy, yogurt or creams.
- Suck on sugarless candy or chew sugarless gum to stimulate saliva. Lemon drops often work well.
- Keep your mouth clean. Rinse your mouth before and after meals with plain water or a mild mouth rinse (made with 1 quart water, 1 teaspoon salt and 1 teaspoon baking soda – shake well before using). Use a soft-bristle toothbrush. It is a good idea to gently brush your tongue, too. Ask your doctor if it's OK to floss.
- Avoid commercial mouthwashes, alcoholic and acidic drinks and tobacco.
- Limit drinks with caffeine, like coffee, tea, colas and chocolate.
- Use a cool mist humidifier to moisten room air, especially at night. (Be sure to keep the humidifier clean to avoid spreading bacteria or mold in the air.)
- Fresh pineapple may help to thin saliva, but only try this if your mouth is not sore.
- Saliva substitutes are helpful if your salivary glands have been removed by surgery or damaged by radiation therapy. These products add moisture to your mouth.
- Nutritional supplements, like liquid meal replacements, may be helpful. Talk to your health care team about this.

Mouth or throat pain or sores

Some people with cancer may have a sore mouth, mouth sores or a sore throat. These problems are usually caused by certain chemo drugs and radiation to the head and neck area. If you have these problems, eating soft, bland foods and lukewarm or cool foods can be soothing. On the other hand, foods that are coarse, dry or scratchy may make you feel worse. You may also find that tart, salty or acidic fruits and juices; alcohol; and spicy foods are irritating. Rinse your mouth regularly with a salt and baking soda solution (1 teaspoon of baking soda and 1 teaspoon salt mixed in 1 quart water). This helps prevent infections and helps your sore mouth feel better. Gargle with the mixture to relieve a sore throat.

Sore throat:

- Avoid tart, acidic or salty foods, as well as pickled and vinegary foods, tomato-based foods and some canned broths.
- Avoid rough-textured or hard foods, like dry toast, crackers, chips, nuts, granola and raw fruits and vegetables.
- Choose lukewarm or cold foods that are soothing. Very hot foods can cause discomfort. Try freezing fruits and suck on frozen fruit pops, fruit ices or ice chips.
- Stay away from alcohol, caffeine and tobacco.
- Avoid irritating spices like chili powder, cloves, curry, hot sauces, nutmeg and pepper. Season foods with herbs like basil, oregano and thyme.
- Eat soft, creamy foods like cream soups, cheeses, mashed potatoes, yogurt, eggs, custards, puddings, cooked cereals and canned liquid food supplements.
- Blend and moisten foods that are dry or solid. Mix them in with soups or sauces, gravies and casseroles.
- Avoid using mouthwashes that contain alcohol (which will cause burning).
- Your doctor can prescribe a “swish and swallow” numbing mouthwash. Ask about this.
- Puree or liquefy foods in a blender to make them easier to swallow.

Mouth sores:

- Eat soft, bland foods like creamed soup, cooked cereal, macaroni and cheese, yogurt and pudding.
- Puree or liquefy foods in a blender to make them easier to swallow.
- Serve foods cold or lukewarm, rather than hot, to reduce mouth irritation.
- Tilt your head back to help foods and liquids flow to the back of the throat for swallowing.
- Drink through a straw to bypass mouth sores.
- Avoid irritating spices, seasonings and condiments like pepper, chili powder, cloves, nutmeg, salsa, pepper sauces and horseradish.
- Avoid rough, dry or coarse foods.
- Eat high-protein, high-calorie foods to speed healing.
- Look for yogurt made without citric acid.
- Avoid alcohol, carbonated beverages and tobacco.
- Rinse your mouth often with a baking soda and salt mouthwash (made with 1 quart water, 1 teaspoon baking soda and 1 teaspoon salt – shake well before each use) to help keep your mouth clean and make you more comfortable.

- Your doctor can prescribe a “swish and swallow” mouthwash with a numbing agent if needed. Ask about this.

Nausea

A person can have nausea with or without vomiting. If it is caused by chemo, nausea can happen on the day you get your treatment and can last for a few days – depending on what drugs you get. If you are having radiation therapy to the belly, chest, brain or pelvis, nausea can start shortly after your treatment and last for several hours. Nausea and vomiting can have other causes, too. Be sure to tell your doctor or nurse if you feel nauseous or are vomiting because there are medicines that can help. These medicines should be taken on a regular schedule or around the clock, as prescribed by your doctor. And if a certain medicine does not work, your doctor or nurse may be able to recommend another one. It may take a few tries to find the medicines that work best for you:

- Eat 6 to 8 snacks or small meals a day, instead of 3 large meals.
- Eat dry foods, like crackers, toast, dry cereals or bread sticks, when you wake up and every few hours during the day.
- Eat foods that do not have a strong odor.
- Eat cool foods instead of hot or spicy foods.
- Avoid foods that are overly sweet, greasy, fried or spicy, like rich desserts and French fries.
- If you need to rest, sit up or recline with your head raised for at least an hour after eating.
- Sip clear liquids frequently to prevent dehydration. Clear liquids include broth, sport drinks, water, juice, gelatin and popsicles.
- Ask your doctor about medicines to prevent or stop nausea.
- Try bland, soft, easy-to-digest foods on scheduled treatment days. Foods like Cream of Wheat and chicken noodle soup with saltine crackers may settle the stomach better than heavy meals.
- Avoid eating in a room that is warm or that has cooking odors or other smells. Cook outside on the grill or use boiling bags to reduce cooking odors.
- Suck on hard candy, like peppermint or lemon, if there is a bad taste in your mouth.
- If you are vomiting, dehydration can become a problem. You will need to drink clear liquids as often as possible during this time. After you have vomited, rinse your mouth, wait for about 30 minutes, then try to drink sips of a clear liquid like apple juice, cranberry juice, flat soda or broth, or take bites of frozen flavored ice.

Swallowing problems

Cancer and its treatments can sometimes cause trouble with swallowing. If you are having problems swallowing, try eating soft or liquid foods. You may be able to swallow thick fluids more easily than thin liquids. If you are unable to eat enough regular foods to meet your nutritional needs, drink high-calorie and high-protein liquids. Your doctor may refer you to a speech therapist. This is an expert health professional who can teach you how to swallow easier and how to decrease coughing and choking when you eat and drink:

- Follow your speech therapist's instructions for any special eating techniques.
- Call your doctor right away if you cough or choke while eating, especially if you have a fever.
- Eat small, frequent meals.
- Use canned liquid nutritional supplements if you are unable to eat enough food to meet your needs.
- Chop or puree your food in a blender or food processor.
- Drink 6 to 8 cups of fluid each day and thicken the fluid to the consistency that is easiest for you to swallow (see below).
- If thin liquids are recommended for you, try these: coffee, tea, soft drinks, liquid nutritional supplements, Italian ice, sherbet, broth and thin cream-based soups.
- If thick liquids are recommended for you, try these: buttermilk, eggnog, milk shakes, yogurt shakes, and ice cream.

+ Adapted from Grant BL, Bloch AS, Hamilton KK, Thomson CA. American Cancer Society Complete Guide to Nutrition for Cancer Survivors, 2nd Edition. Atlanta, GA: American Cancer Society; 2010.

Taste and smell changes

Cancer and its treatments can change your senses of taste and smell. These changes can affect your appetite and are often described as a bitter or metallic taste. If you are having these problems, try foods, marinades, spices, drinks and ways of preparing foods that are different from ones you usually use. Also, keep your mouth clean by rinsing and brushing, which may help foods taste better:

- Try using plastic flatware and glass cups and plates.
- Try sugar-free lemon drops, gum or mints.
- Try fresh or frozen fruits and vegetables instead of canned.
- Season foods with tart flavors like lemon wedges, lemonade, citrus fruits, vinegar and pickled foods. (If you have a sore mouth or throat, do not do this.)
- Try flavoring foods with new tastes or spices – with onion, garlic, chili powder, basil, oregano, rosemary, tarragon, BBQ sauce, mustard,

ketchup or mint.

- Counter a salty taste with added sweeteners, sweet taste with added lemon juice and salt and bitter taste with added sweeteners.
- Rinse your mouth with baking soda and salt mouthwash before eating to help foods taste better. (Mix 1 teaspoon salt and 1 teaspoon baking soda in 1 quart water. Shake well before swishing and spitting.)
- Keep your mouth clean and brush your teeth to help ease bad tastes.
- Serve foods cold or at room temperature. This can decrease the foods' tastes and smells, making them easier to tolerate.
- Freeze fruits like cantaloupe, grapes, oranges and watermelon and eat them as frozen treats.
- Eat fresh vegetables. They may be more tempting than canned or frozen ones.
- Try marinating meats to make them tender.
- If red meats taste strange, try other protein-rich foods like chicken, fish, eggs or cheese.
- Blend fresh fruits into shakes, ice cream or yogurt.
- To reduce smells, cover beverages and drink through a straw; choose foods that do not need to be cooked; and avoid eating in rooms that are stuffy or too warm.

Weight gain

Some people find they do not lose weight during treatment. They may even gain weight. This is particularly true for those with breast, prostate and ovarian cancer who are taking certain medicines or are getting hormone therapy or chemotherapy.

If you notice you are gaining weight, tell your doctor so you can find out what may be causing this change. Sometimes, you gain weight because certain cancer-fighting drugs cause your body to hold on to extra fluid. If this is the case, your doctor may ask you to talk with a registered dietitian for help with limiting the amount of salt you eat. This is important because salt might cause your body to hold extra water.

More than half of the women with breast cancer may gain rather than lose weight during treatment. Because of this, many of the recommendations for breast cancer patients include a lower-fat, reduced-calorie diet much like those suggested for patients after cancer treatment has been completed. If you have any questions, talk to your health care team about the best diet for you. Weight gain may also be the result of increased appetite and food intake and decreased physical activity. If this is the case and you want to stop gaining weight, here are some tips that can help:

- Try to walk daily if you can and if it's OK with your doctor.
- Limit food portion sizes.
- Include plant-based foods like vegetables, whole grains, fruits, beans and peas in your diet.
- Eat poultry or fish and eat less red meat and choose only lean red meats (lean beef, pork or lamb trimmed of fat).
- Choose low-fat dairy products (skim or 1% milk, light yogurt, reduced fat cheese).
- Cut back on added butter, mayonnaise, sweets and other extras.
- Choose low-fat and low-calorie cooking methods (such as broiling and steaming).
- Limit high-calorie snacks between meals.
- Include activities that will help relieve your stress.
- Talk to a registered dietitian for more guidance.

Nutrition after treatment ends

Most eating-related side effects of cancer treatments go away after treatment ends. Sometimes side effects like poor appetite, dry mouth, change in taste or smell, trouble swallowing or weight changes may last for some time. If this happens to you, talk to your health care team and work out a plan to deal with the problem.

As you begin to feel better, you may have questions about eating a healthy diet. Just as you wanted to go into treatment with the best nutrient stores that your diet could give you, you'll want to do the best for yourself at this important time, too. Eating well will help you regain your strength, rebuild tissue and feel better overall.

Tips for healthy eating after cancer

- Check with your doctor for any food or diet restrictions.
- Ask your dietitian to help you create a nutritious, balanced eating plan.
- Choose a variety of foods from all the food groups. Try to eat at least 2½ cups a day of fruits and vegetables, including citrus fruits and dark-green and deep-yellow vegetables.
- Eat plenty of high-fiber foods, like whole-grain breads and cereals.
- Buy a new fruit, vegetable, low-fat food or whole-grain product each time you shop for groceries.
- Decrease the amount of fat in your meals by baking or broiling foods.
- Limit your intake of red meat to no more than 3 to 4 servings a week.
- Avoid salt-cured, smoked and pickled foods (including bacon, sausage and deli meats).

- Choose low-fat milk and dairy products.
- If you choose to drink alcohol, limit the amount.

If you are overweight, consider losing weight by cutting calories and increasing your activity. Choose activities that you enjoy. Check with your doctor before starting any exercise program.

Use the American Cancer Society's Nutrition and Physical Activity During and After Cancer Treatment: Answers to Common Questions to help choose foods for a well-balanced meal plan. It is available at www.cancer.org or by calling our toll-free number.

High-calorie, high-protein shake and drink recipes

If you need more calories or have trouble swallowing, you might try the following recipes – but keep in mind that they might not be right for everyone. If you want to increase calories but not fat, use reduced-fat dairy products. If you are eating well and maintaining your weight, there is no reason to increase your calorie intake.

Follow these basic instructions for the drink recipes:

- Place all ingredients in a blender container or mix in a large container with a hand held blender.
- Cover and blend on high speed until smooth.
- Chill drinks before serving.
- Store unused drinks in the refrigerator or freezer.
- Add 1 to 2 tablespoons of powdered milk to each recipe to increase protein.

Note: If you cannot tolerate milk or milk products or if you have diabetes, ask your nurse or dietitian for other recipe ideas.

Fortified milk

Drink or use in cooking to add protein

1 quart whole or low-fat milk and 1 cup powdered non-fat dry milk

Blend and chill at least 6 hours. Can also be made with buttermilk or dry buttermilk.

(211 calories and 14 grams of protein per cup)

Sherbet shake

A refreshing shake

1 cup sherbet
¾ cup low-fat milk
½ teaspoon vanilla extract
(320 calories and 8 grams of protein)

Tangy protein smoothie

A thick, protein-packed drink

_ cup cottage cheese or plain yogurt
½ cup vanilla ice cream
¼ cup prepared fruit-flavored gelatin (can use individual ready-to-eat snack pack)
¼ cup low-fat milk
(275 calories and 13 grams of protein)

Classic instant breakfast milk shake

A protein- and calorie-packed favorite

½ cup low-fat milk or fortified milk (see first recipe)
1 envelope instant breakfast mix
1 cup vanilla ice cream (add flavorings or different flavor ice creams for variety)
(450 calories and 14 grams of protein)

Increase flavor and calories by adding fresh or frozen fruit or chocolate or strawberry syrup. Add peanut butter or dry milk for extra protein.

Peach yogurt frost

A frosty, mild drink

1 envelope vanilla instant breakfast mix
1 cup low-fat milk or fortified milk (see first recipe)
1 (6-ounce) container low-fat peach yogurt
1 cup frozen peaches or 6 to 10 crushed ice cubes
(Makes 3 servings; 155 calories and 7 grams of protein per serving)

Try substituting other fruit combinations that appeal to you.

Potato soup

3 medium potatoes, peeled and cubed
2 celery stalks, coarsely chopped
½ onion, coarsely chopped
2 cups reduced-sodium chicken broth or vegetable broth
1 tablespoon butter
1 tablespoon flour
2 cups low-fat milk
Pepper and salt to taste

In a large saucepan over high heat, bring the potatoes, celery, onion and broth to a boil. Reduce heat, cover and simmer for 15 to 20 minutes, or until the potatoes are tender, stirring occasionally. Cool slightly. Transfer to a blender or food processor and purée. Set aside.

In the same saucepan over low heat, melt the butter. Add the flour and cook until fully incorporated, stirring constantly. Gradually add the milk and cook until thickened, stirring constantly. Add the reserved potato mixture to the saucepan and stir well to combine. Season with salt and pepper. (This soup thickens when chilled and may need to be thinned with more chicken broth or milk.) Makes 6 servings.Approximate nutrients per serving: 125 calories, 3 grams of fat, 5 grams of protein

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What is Cancer?

Cancer is the general name for a group of more than 100 diseases. Although there are many kinds of cancer, all cancers start because abnormal cells grow out of control. Untreated cancers can cause serious illness and death.

Normal cells in the body

The body is made up of trillions of living cells. Normal body cells grow, divide to make new cells and die in an orderly way. During the early years of a person's life, normal cells divide faster to allow the person to grow. After the person becomes an adult, most cells divide only to replace worn-out or dying cells or to repair injuries.

How cancer starts

Cancer starts when cells in a part of the body start to grow out of control. Cancer cell growth is different from normal cell growth. Instead of dying, cancer cells continue to grow and form new, abnormal cells. Cancer cells can also invade (grow into) other tissues, something that normal cells can't do. Growing out of control and invading other tissues are what makes a cell a cancer cell.

Cells become cancer cells because of DNA (deoxyribonucleic acid) damage. DNA is in every cell and it directs all its actions. In a normal cell, when DNA is damaged the cell either repairs the damage or dies. In cancer cells, the damaged DNA is not repaired, but the cell doesn't die like it should. Instead, the cell goes on making new cells that the body doesn't need. These new cells all have the same damaged DNA as the first abnormal cell does.

People can inherit abnormal DNA (it's passed on from their parents), but most often DNA damage is caused by mistakes that happen while the normal cell is reproducing or by something in the environment. Sometimes the cause of the DNA damage may be something obvious like cigarette smoking or sun exposure. But it's rare to know exactly what caused any one person's cancer.

In most cases, the cancer cells form a tumor. Over time, the tumors can replace normal tissue, crowd it or push it aside. Some cancers, like leukemia, rarely form tumors. Instead, these cancer cells involve the blood and blood-forming organs and circulate through other tissues where they grow.

How cancer spreads

Cancer cells often travel to other parts of the body where they can grow and form new tumors. This happens when the cancer cells get into the body's bloodstream or lymph vessels. The process of cancer spreading is called metastasis.

No matter where a cancer may spread, it's always named based on the place where it started. For example, colon cancer that has spread to the liver is called metastatic colon cancer, not liver cancer. In this case, cancer cells taken from the liver would be the same as those in the colon. They would be treated in the same ways too.

How cancers differ

Different types of cancer can behave very differently. For instance, lung cancer and skin cancer are very different diseases. They grow at different rates and respond to different treatments. This is why people with cancer need treatment that's aimed at their kind of cancer.

Tumors that are not cancer

A tumor is an abnormal lump or collection of cells, but not all tumors are cancer. Tumors that aren't cancer are called benign. Benign tumors can cause problems – they can grow very large and press on healthy organs and tissues. But they can't grow into (invade) other tissues. Because they can't invade, they also can't spread to other parts of the body (metastasize). These tumors are seldom life threatening.

Source: American Cancer Society website (www.cancer.org)

Types of Cancer

There are more than 100 types of cancer. Types of cancer are usually named for the organs or tissues where the cancer forms. For example, lung cancer starts in cells of the lung and brain cancer starts in cells of the brain. Cancers also may be described by the type of cell that formed them, such as an epithelial cell or a squamous cell.

Some categories of cancer that begin in specific types of cells:

Carcinoma

Carcinomas are the most common types of cancer. They are formed by epithelial cells which cover the inside and outside surfaces of the body such as skin, stomach or throat.

Sarcoma

Sarcomas are cancers that form in bone and soft tissues, including muscle, fat, blood vessel and tendons or ligaments.

Leukemia

Cancers that begin in the blood forming tissue of the bone marrow are called leukemia. These cancers do not form solid tumors; instead, large numbers of abnormal white blood cells build up in the blood and bone marrow, crowding out normal cells. The low level of normal blood cells can make it harder for the body to get oxygen to its tissues, control bleeding and fight infection.

Lymphoma

Lymphoma is a cancer that begins in lymphocytes (T cells or B cells). These are disease fighting white blood cells that are part of the immune system. In lymphoma, abnormal lymphocytes build up in lymph nodes and lymph vessels, as well as in other organs of the body.

Multiple Myeloma

Multiple myeloma is a cancer that begins in plasma cells, another type of immune cell. The abnormal plasma cells, called myeloma cells, can build up in the bone marrow and form tumors in bones all through the body.

Melanoma

Melanoma is a cancer that begins in the cells that make melanin (the pigment that gives skin its color). Most melanomas form on the skin, but melanomas can also form in other pigmented tissues, such as the eye.

Brain and Spinal Cord Tumors

There are different types of brain and spinal cord tumors. These tumors are named based on the type of cell in which they formed and where the tumor first formed in the central nervous system. Brain tumors can be benign (not cancer) or malignant (cancer).

Neuroendocrine Tumors

Neuroendocrine tumors form from cells that release hormones into the blood in response to a signal from the nervous system. These tumors, which make higher than normal amounts of hormones, can cause many different symptoms. Neuroendocrine tumors can be benign or malignant.

Carcinoid Tumors

Carcinoid tumors are a type of neuroendocrine tumor. They are slow growing tumors that are usually found in the gastrointestinal system. Carcinoid tumors may spread to the liver or other sites in the body and they may secrete substances such as serotonin and prostaglandin, causing carcinoid syndrome.

Source: National Cancer Institute (www.cancer.gov)

Cancer Registry

Have you ever wondered, “How do we know what causes cancer?” or “Who is most likely to get cancer and why?” Cancer registries help answer these important questions.

What is a Cancer Registry?

A registry is a data management system designed to collect, manage and analyze data on persons diagnosed with cancer and certain benign (non-cancer) conditions. Health care institution registries maintain data on all patients diagnosed and/or treated for cancer at their facility.

Health care facilities report cancer cases to the central or state cancer registry as required by law.

Why maintain a Cancer Registry?

Local, state and national cancer agencies use registry data in defined areas to make important public health decisions that maximize the effectiveness of limited public health funds, such as the placement of screening programs.

Cancer registries are valuable research tools for those interested in the cause, diagnosis and treatment of cancer. Fundamental research on the epidemiology of cancer is initiated using the accumulated data.

Lifetime follow-up is an important aspect of the Cancer Registry. Current patient follow-up serves as a reminder to physicians and patients to schedule regular clinical examinations and provides accurate survival information.

What information is maintained in the Cancer Registry?

- Demographic Information: Age, gender, race/ethnicity, birthplace and residence.
- Medical History: Physical findings, screening information, occupation

and any history of previous cancer.

- Diagnostic Findings: Types, dates and results of procedures used to diagnose cancer.
- Cancer Information: Primary site, cell type and extent of disease.
- Cancer Therapy: Surgery, radiation therapy, chemotherapy, hormone or immunotherapy.
- Follow-up: Annual information concerning treatment, recurrence and patient status is updated to maintain accurate surveillance information.

How is the data used?

- Evaluate patient outcome, quality of life and satisfaction issues and implement procedures for improvement.
- Provide follow-up information for cancer surveillance.
- Provide information for cancer program activities.
- Analyze referral patterns.
- Allocate resources at the health care facility, the community, region or state level.
- Develop educational programs for health care providers, patients and the general public.
- Report cancer incidence as required by state law.
- Evaluate efficacy of treatment modalities.

Is the information kept confidential?

Confidentiality of patient identifying information and related medical data is strictly maintained. Aggregate data are analyzed and published without patient identifiers.

What is a Cancer Registrar?

Cancer registrars are data management experts who report cancer statistics for various health care agencies. Registrars work closely with physicians, administrators, researchers and health care planners to provide support for cancer program development, ensure compliance of reporting standards and serve as a valuable resource for cancer information with the ultimate goal of preventing and controlling cancer.

The cancer registrar is involved in managing and analyzing clinical cancer information for the purpose of education, research and outcome measurement.

The primary responsibility of the cancer registrar is to ensure that timely, accurate and complete data is incorporated and maintained on all types of cancer diagnosed and/or treated within an institution or other defined population. Information is entered into the database manually and through database linkage and computer interfaces.

Cancer registrars bridge the information gap by capturing a complete summary of each patient’s disease from diagnosis through his/her lifetime. The information is not limited to the episodic information contained in the health care facility record. The summary or abstract is an ongoing account of the cancer patient’s history, diagnosis, treatment and current status.

Cancer Screening

Checking for cancer (or for conditions that may become cancer) in people who have no symptoms is called screening.

Screening can help doctors find and treat several types of cancer early. Early detection is important because when abnormal tissue or cancer is found early, it may be easier to treat. By the time symptoms appear, cancer may have begun to spread and is harder to treat.

Several screening tests have been shown to detect cancer early and to reduce the chance of dying from that cancer.

Screening Tests

Many cancer screening tests are in use. Some tests have been shown both to find cancer early and to lower the chance of dying from the disease. Others have been shown to find cancer early but have not been shown to reduce the risk of dying from cancer; however, they may still be offered to people, especially those who are known to be at increased risk of cancer.

Screening Tests That Have Been Shown to Reduce Cancer Deaths

- Colonoscopy, sigmoidoscopy and high-sensitivity fecal occult blood tests (FOBTs)

  These tests have all been shown to reduce deaths from colorectal cancer. Colonoscopy and sigmoidoscopy also help prevent colorectal cancer because they can detect abnormal colon growths (polyps) that can be removed before they develop into cancer. Expert groups generally recommend that people who are at average risk for colorectal cancer have screening at ages 45 through 75.
- Low-dose helical computed tomography (low dose CT)

  This test to screen for lung cancer has been shown to reduce lung cancer deaths among heavy smokers ages 50 to 80.
- Mammography

  This method to screen for breast cancer has been shown to reduce mortality from the disease among women ages 40 to 74, especially those age 50 or older.
- Pap test and human papillomavirus (HPV) testing

  These tests reduce the incidence of cervical cancer because they allow abnormal cells to be identified and treated before they become cancer. They also reduce deaths from cervical cancer. Testing is generally recommended to begin at age 21 and to end at age 65, as long as recent results have been normal.

It is important to keep in mind that screening tests can have potential harms as well as benefits.

- Some screening tests may cause bleeding or other health problems.
- Screening tests can have false-positive results – the test indicates that cancer may be present even though it is not. False-positive test results can cause anxiety and are usually followed by additional tests and procedures that also have potential harms.
- Screening tests can have false-negative results – the test indicates that cancer is not present even though it is. False-negative test results may provide false reassurance, leading to delays in diagnosis and possibly causing an individual to put off seeking medical care even if symptoms develop.
- Overdiagnosis is possible. This happens when a screening test correctly shows that a person has cancer, but the cancer is slow growing and would not have harmed that person in his or her lifetime. Treatment of such cancers is called overtreatment.

It can be helpful for people to discuss the potential harms as well as benefits of different cancer screening tests with their doctors.

Source National Cancer Institute (www.cancer.gov)

Tumor Grade

What is tumor grade?

Tumor grade is the description of a tumor based on how abnormal the tumor cells and the tumor tissue look under a microscope. It is an indicator of how quickly a tumor is likely to grow and spread. If the cells of the tumor and the organization of the tumor's tissue are close to those of normal cells and tissue, the tumor is called "well-differentiated." These tumors tend to grow and spread at a slower rate than tumors that are "undifferentiated" or "poorly differentiated," which have abnormal-looking cells and may lack normal tissue structures. Based on these and other differences in microscopic appearance, doctors assign a numerical "grade" to most cancers. The factors used to determine tumor grade can vary between different types of cancer.

How is tumor grade determined?

If a tumor is suspected to be malignant, a doctor removes all or part of it during a procedure called a biopsy. A pathologist (a doctor who identifies diseases by studying cells and tissues under a microscope) then examines the biopsied tissue to determine whether the tumor is benign or malignant. The pathologist also determines the tumor's grade and identifies other characteristics of the tumor.

How are tumor grades classified?

Grading systems differ depending on the type of cancer. In general, tumors are graded as 1, 2, 3 or 4, depending on the amount of abnormality. In Grade 1 tumors, the tumor cells and the organization of the tumor tissue appear close to normal. These tumors tend to grow and spread slowly. In contrast, the cells and tissue of Grade 3 and Grade 4 tumors do not look like normal cells and tissue. Grade 3 and Grade 4 tumors tend to grow rapidly and spread faster than tumors with a lower grade.

If a grading system for a tumor type is not specified, the following system is generally used:

- GX: Grade cannot be assessed (undetermined grade)
- G1: Well differentiated (low grade)
- G2: Moderately differentiated (intermediate grade)
- G3: Poorly differentiated (high grade)
- G4: Undifferentiated (high grade)

Talk with your doctor for more information about tumor grade and how it relates to treatment and
prognosis.

The National Cancer Institute website: www.cancer.gov

Staging

Stage refers to the extent of your cancer, such as how large the tumor is and if it has spread. Knowing the stage of your cancer helps your doctor plan the best treatment for you. He or she may order X-rays, lab tests and other tests or procedures to learn the stage of your disease. There are many staging systems. Some cover many types of cancer. Others are specific to a particular type of cancer. Most staging systems include information about:

- Where the tumor is located in the body
- The cell type (such as, adenocarcinoma or squamous cell carcinoma)
- Tumor size
- Whether the cancer has spread to nearby lymph nodes
- Whether the cancer has spread to a different part of the body
- Tumor grade, which refers to how abnormal the cancer cells look and how likely the tumor is to grow and spread

The TNM Staging System

The TNM (tumor, nodes, metastasized) system is the most widely used cancer staging system. Most hospitals and medical centers use the TNM system as their main method for cancer reporting. You are likely to see your cancer described by this staging system in your pathology report, unless you have a cancer for which a different staging system is used. Examples of cancers with different staging systems include brain and spinal cord tumors and blood cancers.

In the TNM system:

- The T refers to the size and extent of the main tumor. The main tumor is usually called the primary tumor.
- The N refers to the amount of cancer that has spread to nearby lymph nodes
- The M refers to whether the cancer has metastasized. This means that the cancer has spread from the primary tumor to other parts of the body.

The TNM system helps describe your cancer in great detail. But, when talking about your cancer, your doctor or nurse is likely to describe it using one of the following:

Stage	What it means
Stage 0	Carcinoma in situ, also called CIS. Means that abnormal cells are present but have not spread to nearby tissue. CIS is not cancer, but it may become cancer.
Stage I, Stage II, & Stage III	The higher the number, the larger the cancer tumor and the more it has spread into nearby tissues.
Stage IV	The cancer has spread to other parts of the body.

Source: The National Cancer Institute (www.cancer.gov)

Genetic Counseling Services

Who Needs Genetic Counseling?

- Patients who have a strong family history of the same type of cancer or a linked cancer (breast and ovarian or colon and endometrial for example) that occurs in several generations on the same side of the family (mother's side or father's side).
- Patients diagnosed with cancer before age 50
- Patients who have a type of cancer that is sometimes associated with inherited mutations, mostly breast, ovarian and colon cancers.
- Patients diagnosed with more than one type of cancer.
- Patients with a specific type of cancer that may have treatment options associated with inherited risk, such as pancreatic, ovarian, metastatic breast and aggressive prostate.
- Patients who have a path report or biopsy indicating genetic changes in the cancer cells that could have an inherited component.

What do I Need to do to Prepare for a Genetic Counseling Session?

Collect as much information as you can about the following:

- Who has had cancer in your family (grandparents, great-grandparents, aunts, uncles, first cousins, brothers, sisters, parents, children, grandchildren, great-aunts and great-uncles).
- What type of cancer those family members had.
- How old they were when they were diagnosed with cancer.
- How old they were when they died, if they are deceased.

Often patients may not be able to obtain a lot of this information due to adoption, loss of contact with one side of the family, etc., but gathering as much information as possible will be helpful.

Writing this information down prior to your appointment may be beneficial with recall.

If another family member is available, consider inviting them to come to your session as they may have tidbits of information about some of the family members' diagnoses that are unknown to you.

Please make sure that your current insurance card is on file or bring it with you. If you do not have insurance, please bring last year's tax records showing your income or be prepared to write a letter explaining why you did not have to pay taxes in case you want to be tested and need to apply for the financial assistance program.

Genetic counseling sessions take place in a conference room at NMMC Cancer Care-Hematology and Oncology at 961 S. Gloster. (This is the same building where you will see your oncologist). When checking in with the receptionists, please let them know that you are here for a genetic counseling session.

What is Involved in a Genetic Counseling Session?

- A family history will be obtained and a pedigree drawn. From that, your risk for having been born with something that increases your chances for developing cancer will be assessed.
- A computer presentation will be viewed which discusses genetics and cancer development, insurance issues, testing recommendations, testing procedures, benefits and limitations of testing, ethical issues, legal protection, possible results and recommendations from the NCCN research guidelines for prevention of cancer moving forward for those with a positive result.
- Consent forms will be reviewed and signed for those wishing to proceed with testing.
- A blood sample will be drawn and sent to outside lab.
- A follow-up appt. will be made for 3-4 weeks to review test results and answer questions.
- The initial appointment may take 45 minutes-1 hour. The follow-up appointment typically takes only a few minutes if your results are negative. If positive, a plan will be developed to help you and your family members with cancer prevention in the future. You will be given a copy of your test results for your personal records at your follow-up visit.

Where Can I Find More Information on Genetic Testing?

A great resource is the American Cancer Society at www.cancer.org. Search for “Genetic Testing for Cancer: What You Need to Know” and you will find more in-depth and specific information. Genetic testing is covered by most insurances if you are considered high-risk. Worst case scenario is a cash price offering of $250. Most patients pay $100 or less if they have insurance, with the majority getting it covered entirely. The genetic counseling visit to complete the paperwork and determine need is billed as a specialty visit and is covered by most insurance companies under the specialty co-pay rate. If your insurance doesn’t cover genetic counseling, the visit cost will likely be less than $200.

How do I Get a Referral to Genetic Counseling Services?

Please discuss with your oncologist, nurse practitioner or surgeon and they will be glad to refer you for further evaluation. Once you have been seen, if you have questions about your visit, please leave a message for Angie Taylor, AGN-BC, in Genetic Services at (662) 377-4550.

Cancer Treatment Options

There are many different ways to treat cancer. Some possible options are:

- Surgery
- Radiation
- Chemotherapy
- Biologic therapies
- Hormonal therapies
- Stem cell and bone marrow transplants

Cancer can be treated with one or more of these methods. Your treatment will depend on the type of cancer you have and its stage. Your doctor will consider these along with your preferences and your health condition. All these factors will determine what type of treatment plan your doctor presents to you. Discuss your options with your doctor and together make the decision of what is best for you.

Learning about Cancer Surgery

You've been told you have cancer. You've looked at your treatment options and you and your doctor agree that surgery is needed. Now you may have questions about cancer surgery.

Surgery has been used to treat cancer for many, many years. Surgery also plays a key role in diagnosing cancer and finding out how far it may have spread (a process called staging).

When a surgeon has to cut into the body to operate, it's called invasive surgery. Today, operations that involveless cutting (less invasive surgery) often can be done to remove tumors while saving as much normal tissue and function as possible.

Surgery offers the greatest chance for a cure for many types of cancer, especially those that have not spread to other parts of the body. Most people with cancer will have some type of surgery.

How is surgery used for cancer?

Surgery is done for many reasons. Some types of surgery are minor and may be called procedures, while others are much bigger operations. The more common types of cancer surgeries are reviewed here.

Preventive (prophylactic) Surgery

Preventive or prophylactic surgery is done to remove body tissue that's likely to become cancer – even though there are no signs of cancer at the time of the surgery. For example, pre-cancerous polyps may be removed from the colon during a colonoscopy.

Diagnostic Surgery

Surgery is often used to help diagnose cancer. In most cases, the only way to know if a person has cancer and what kind of cancer it is, is by taking out a piece of tissue (called a sample) and testing it. This is often called a biopsy. The diagnosis is made by looking at the cells of the sample under a microscope or by doing other lab tests on it. There are many ways to get a sample of cells from an area that looks like it might be cancer.

Staging Surgery

Staging surgery is done to find out how much cancer there is and how far it has spread. The physical exam and the results of lab and imaging tests are used to figure out the clinical stage of the cancer. But the surgical stage (also called the pathologic stage) is usually a more exact measure of how far the cancer has spread.

Curative Surgery

Curative surgery is usually done when cancer is found in only one part of the body and it's likely that all of the cancer can be removed. In this case, curative surgery can be the main treatment. It may be used alone or along with other treatments like chemotherapy or radiation therapy, which can be given before or after the operation.

Debulking Surgery

Debulking surgery is used to remove some, but not all, of the cancer. It's sometimes done when taking out all of the tumor would cause too much damage to nearby organs or tissues. In these cases, the doctor may take out as much of the tumor as possible and then treat what's left with radiation, chemotherapy or other treatments.

Palliative Surgery

This type of surgery is used to treat problems caused by advanced cancer. Palliative surgery can be used to correct a problem that's causing discomfort or disability. Palliative surgery helps ease problems caused by cancer and helps people feel better, but it's not done to treat or cure the cancer itself.

Restorative (reconstructive) Surgery

This type of surgery is used to improve the way a person looks after major cancer surgery. It's also used to restore the function of an organ or body part after surgery. An example of this surgery is breast reconstruction after mastectomy.

Source: American Cancer Society (www.cancer.org)

Learning about Chemotherapy Treatment

Chemotherapy is the use of medicines or drugs to treat a disease, such as cancer. Many times this treatment is just called chemo.

How does chemotherapy work?

Chemotherapy is the use of strong drugs to treat cancer. The chemotherapy drugs your doctor prescribes have been used many times. Research show they work to help kill cancer cells.

Surgery and radiation therapy remove, kill or damage cancer cells in a certain area, but chemo can work throughout the whole body. Chemo can kill cancer cells that have metastasized (meh-TAS-tuh-sized) or spread to parts of the body far away from the primary (original) tumor.

The body is made up of trillions of normal healthy cells. Cancer starts when something causes changes in a normal cell. This cancer cell then grows out of control and makes more cancer cells. Cancer cells are rapidly dividing cells and so as the cancer cells divide the cell walls become weak, which allows the chemotherapy to help destroy the cancer cells. These drugs can affect normal cells too but most of the cells of our body divide slowly. Most normal cells can also repair themselves. Some of the side effects you may experience are a result of the chemo affecting normal cells. Each type of cancer affects the body in different ways. If the cancer is not treated it can spread and affect other parts of your body.

How does my doctor decide what treatment I need?

There are different types of treatment to treat different types of cancer. Your treatment regimen may be different from others with the same type of cancer. Your doctor will plan your chemo regimen according to the specifics of your cancer type and its stage or how much cancer is in your body. Your ability to tolerate chemotherapy is also considered. Your treatment may be given daily, weekly or monthly depending on your treatment plan. Each set of treatments is referred to as a cycle. For example: if you receive your chemo every two weeks the first time you get your treatment is cycle 1. If your treatments are Monday through Friday every three weeks, Monday is cycle 1 day 1, Tuesday would be cycle 1 day 2, etc. Your doctor and nurses will keep track of your treatments and help you with appointments.

Different types of medications act on cancer cells in different ways. You may receive one or more of these types of drugs depending on your doctor's plan of care for you. Multiple drugs with different actions can work together to kill more cancer cells. This can also reduce the chance that the cancer may become resistant to any one chemo drug.

Your dose of chemotherapy will usually be based on your height and weight. Some medications have a standard dose. Every person is different and each will respond to chemo differently. The key is to keep your doctor informed if you should have side effects that are difficult to manage.

Before you take each chemotherapy dose you will have your blood checked to make sure your blood counts are at a safe level for you to receive your medication.

How will I receive my medications?

You may receive your chemotherapy by IV, by injection, by mouth, by infusion pump or by a combination of these. If you are to receive your medications by IV your doctor may suggest an implanted venous access device or VAD sometimes referred to as a port. The port is surgically implanted, usually in your chest. It is a round metal or plastic reservoir about the diameter of a nickel up to quarter size. There is a catheter attached to the port, it is threaded into a vein and the tip is placed in the large vein above your heart. This large vein has a lot of blood flow that can dilute the chemo as it is infused. The port can stay in place for a long period of time. A nice feature of the port is that there are no parts outside your skin so you may shower, bathe and swim without problem. By using a port or VAD for your infusions the smaller veins in your arms that can be easily irritated by chemotherapy don't have to be used. When you come to receive your treatment a special needle is used to access your port using sterile procedure. When your treatment for that cycle is complete the needle is removed. Your doctor or nurse can explain benefits and possible side effects of VAD placement with you.

What is the goal of chemo?

Depending on the type of cancer, its stage (how far it has spread) and where you are in the treatment process, chemo can be used to:

- Cure the cancer
- Keep the cancer from spreading
- Slow the cancer's growth
- Kill cancer cells that may have spread to other parts of the body
- Relieve symptoms caused by cancer

Your doctor will talk to you about the goal of your chemo before you start treatment.

Will chemo be my only treatment for cancer?

Sometimes chemo is the only treatment you need. More often, chemo is used along with surgery or
radiation therapy or both. Here's why:

- Chemo may be used to shrink a tumor before surgery or radiation therapy.
- It may be used after surgery or radiation therapy to help kill any remaining cancer cells.
- It may be used with other treatments if your cancer comes back.
- When chemo is given after surgery to kill any cancer cells that may still be present, it's called adjuvant therapy.
- When chemo is used to shrink a tumor before surgery or radiation therapy, it's called neoadjuvant therapy.

Source: American Cancer Society (www.cancer.org)

Oral Chemotherapy

Oral Chemotherapy: What You Need to Know

Oral chemo is any drug you take by mouth to treat cancer. Chemo taken by mouth is as strong as other forms of chemo and works just as well. One of the best ways you can help fight the cancer is by taking your chemo exactly as your doctor or nurse tells you to. This information will help you be ready for oral chemo.

What is oral chemotherapy?

There are many types of chemotherapy (chemo). Oral chemo is any drug you are taking by mouth to treat cancer. Oral chemo is not put into the body with a needle. It's a liquid, tablet or capsule that you swallow.

Some chemo drugs are never taken by mouth because the stomach can't absorb them. Others may cause harm when swallowed. In fact, most chemo drugs are put right into the blood through an IV (intravenous) line in a person's vein. The chemo you take by mouth is more convenient because it can be taken at home. You don't need to go into a hospital or clinic for every treatment.

Still, oral chemo drugs cost a lot. Many times you have to pay more out of pocket for them than IV drugs. If you have insurance, this might mean a higher co-pay. Make sure you know how much you'll have to pay for each treatment.

Sometimes chemo is given in cycles. This cuts down on the harm to healthy cells and allows the drugs to kill more cancer cells. Your doctor will decide if you need to get your treatment every day, every week, every few weeks or every month.

How do I take my oral chemo?

You should have clear instructions on how much and when to take your chemo. Take it just the way your doctor or nurse has told you to.

Make sure you know how to store and handle your chemo drugs. Sometimes caregivers who handle the drugs should use gloves. Some drugs have to be kept in the container or wrapper they came in. Also be sure you know how to get rid of unused doses. Some might have to be taken back to the pharmacy for safe disposal.

Be sure to tell your doctor or nurse about any problems you have taking your chemo. For instance, if you are throwing up or feel sick to your stomach, you may feel too sick to take your chemo. Or, you may not be able to keep your chemo down and may throw up your treatment dose.

Your doctor needs to know about any problems so they can change your treatment plan, if needed.

Oral chemo doses are set up so that you'll have constant levels of the drugs in your body to kill the cancer cells. Not taking your chemo as it needs to be taken can affect how well the treatment works and it can even allow the cancer to grow.

Sometimes dose changes are needed, but don't make any changes unless your doctor tells you to do so. Even after you start feeling better you may still have cancer cells in your body that must be kept under control with chemo.

Will I still need to see my doctor?

Even though you take oral chemo at home, you will still need to see your health care team. They will watch for changes in the cancer and see how you are doing with your chemo plan. Blood tests and scans will be done to see how your body and the cancer are responding to the chemo. If you miss a dose or are late taking one, tell your doctor or nurse about it. Your doctor needs to know about this when looking at your response to the treatment. It may also help the doctor decide whether to change the dose or timing of the medicine.

What can I expect from oral chemo?

The side effects of any form of chemo vary from drug to drug and from person to person. Your doctor or nurse may not be able to predict what side effects you'll have, but they can give you an idea of what to watch for.

Some oral chemo drugs can cause:

- Stomach upset (nausea)
- Loose or watery bowel movements (diarrhea)
- Mouth sores
- Low blood counts
- Throwing up (vomiting)
- Hair loss
- Skin changes
- Other side effects

Oral chemo is a systemic treatment, just like the IV form of chemo. This means it goes through your whole body to kill cancer cells wherever they might be. When chemo does this, it also harms healthy, normal cells and causes side effects.

Make sure you know what side effects to look for before you start chemo. Also ask if there are any side effects that you should call the doctor or nurse about right away.

Telling your doctor or nurse about side effects as soon as they happen can help make sure that the problem does not become dangerous. Your doctor may have to change the dose you're taking or give you other drugs to help you feel better. If you are in doubt about a side effect and can't get in touch with your doctor, don't take your chemo until you get further advice.

Taking chemo at home gives you more freedom to carry on with your daily life without the trouble of frequent treatment visits. You may not be seeing your doctor and nurses very often, but be sure to call them with any questions or concerns you might have.

Are you ready to start your oral chemo?

Here are some things you may want to talk about with your doctor or nurse:

- What's the name of the chemo? Is there more than one name for the same drug?
- How do I take it?
- What if I have trouble swallowing and keeping down the pills? Can they be opened, broken or crushed?
- When should I take it?
- Is it safe to take it with other drugs, food, vitamins, herbs, supplements or other treatments I use?
- What should I do if I miss a dose?
- How should I store it?
- What do you expect it to do?
- What are the likely side effects? Who should I talk to if I have side effects?
- How can I get in touch with you if I have trouble late at night or over the weekend?
- How long will I need to take the oral chemo?
- Will my insurance pay for oral chemo? If not, how much will it cost? How will I pay for it?
- Will my other health problems stop me from being able to follow your instructions? Is there a chance my other health problems could make me forget to take my oral chemo?
- Will you be calling me to find out how I'm doing with the chemo?
- How often will you need to see me in the office?

Before starting oral chemo, discuss any concerns or questions you have with your doctor or nurse. Get answers to all of your questions about oral chemo before you start taking it.

The success of oral chemo depends a lot on you – it's important to take the right dose of the drug, on schedule, exactly as you've been told. Your team is there to help you do this – we want you to succeed.

Source: American Cancer Society (www.cancer.org)

Chemo Safety

Can I be around my family and friends while I'm getting chemo?

Very few treatments do require you to avoid close contact with loved ones for a short amount of time. If this is something you'll have to do, your doctor will tell you about it when going over treatment options.

How can I protect myself and those I live with while I'm getting chemo?

There are many things you can do during and after chemo to keep yourself and your loved ones from being affected by the chemo drugs while your body is getting rid of them. It takes about 48 hours for your body to break down and/or get rid of most chemo drugs. Most of the waste comes out in your body fluids – urine, stool, tears and vomit. The drugs are also in your blood. When chemo drugs get outside your body, they can harm or irritate skin – yours or even other people's. Keep in mind that this means toilets can be a hazard for children and pets, and it's important to be careful. Talk to your doctor about these and any other precautions you should follow.

During – and for 48 hours after – chemo:

- Flush the toilet twice after you use it. Put the lid down before flushing to avoid splashing. If possible, you may want to use a separate toilet during this time. If this is not possible, wear gloves to clean the toilet seat after each use.
- Both men and women should sit on the toilet to use it. This cuts down on splashing.
- Always wash your hands with warm water and soap after using the toilet. Dry your hands with paper towels and throw them away.
- If you vomit into the toilet, clean off all splashes and flush twice. If you vomit into a bucket or basin, carefully empty it into the toilet without splashing the contents and flush twice. Wash out the bucket with hot, soapy water and rinse it, emptying the wash and rinse water into the toilet, then flushing it. Dry the bucket with paper towels and throw them away.
- • Caregivers should wear two pairs of throw-away gloves if they need

to touch any of your body fluids. These can be bought in most drug stores. They should always wash their hands with warm water and soap afterward – even if they had gloves on.

- If a caregiver does come in contact with any of your body fluids, they should wash the area very well with warm water and soap. It's not likely to cause any harm, but try to take extra care to avoid this. At your next visit, let your doctor know this happened. Being exposed often may lead to problems and extra care should be taken to avoid this.
- Any clothes or sheets that have body fluids on them should be washed in your washing machine – not by hand. Wash them in warm water with regular laundry detergent. Do not wash them with other clothes. If they cannot be washed right away, seal them in a plastic bag.
- If using throw-away adult diapers, underwear, or sanitary pads, seal them in two plastic bags and throw them away with your regular trash.
- A few chemo drugs can be present in small amounts in semen. You may want to use condoms while you are getting chemo and for about two weeks afterward. Some types of radiation treatment require special precautions for a certain amount of time, too. For instance, a man who is having "seed implants" (brachytherapy) for prostate cancer should check with his doctor about safety precautions, like using condoms, because sometimes the seeds can move.
- Men who are getting chemo also should avoid causing pregnancy during and for some time after treatment because chemo may damage the DNA in sperm cells. This could lead to birth defects. Ask your doctor about birth control if your partner might get pregnant. You will also want to know when you can stop using birth control for this reason.

Targeted Therapy to Treat Cancer

What Is Targeted Therapy?

Targeted therapy is the foundation of precision medicine. It is a type of cancer treatment that targets the changes in cancer cells that help them grow, divide and spread. As researchers learn more about the cell changes that drive cancer, they are better able to design promising therapies that target these changes or block their effects.

Types of Targeted Therapy

Most targeted therapies are either small-molecule drugs or monoclonal antibodies.

- Small-molecule drugs are small enough to enter cells easily, so they are used for targets that are inside cells.
- Monoclonal antibodies are drugs that are not able to enter cells easily. Instead, they attach to specific targets on the outer surface of cancer cells.

Who Receives Targeted Therapy

For some types of cancer, most patients with that cancer will have a target for a certain drug, so they can be treated with that drug. But, most of the time, your tumor will need to be tested to see if it contains targets for which we have drugs. To have your tumor tested for targets, you may need to have a biopsy. Your doctor will explain the risks of having a biopsy for your type of tumor.

How Targeted Therapy Works Against Cancer

Most targeted therapies help treat cancer by interfering with specific proteins that help tumors grow and spread throughout the body. They treat cancer in many different ways. They can:

- Help the immune system destroy cancer cells. One reason that cancer cells thrive is because they are able to hide from your immune system. Certain targeted therapies can mark cancer cells so it is easier for the immune system to find and destroy them. Other targeted therapies help boost your immune system to work better against cancer.
- Stop cancer cells from growing. Healthy cells in your body usually divide to make new cells only when they receive strong signals to do so. These signals bind to proteins on the cell surface, telling the cells to divide. This process helps new cells form only as your body needs them. But, some cancer cells have changes in the proteins on their surface that tell them to divide whether or not signals are present.

Sme targeted therapies interfere with these proteins, preventing them from telling the cells to divide. This process helps slow cancer's uncontrolled growth.

- Stop signals that help form blood vessels. Tumors need to form new blood vessels to grow beyond a certain size. In a process called angiogenesis, these new blood vessels form in response to signals from the tumor. Some targeted therapies called angiogenesis inhibitors are designed to interfere with these signals to prevent a blood supply from forming. Without a blood supply, tumors stay small. Or, if a tumor already has a blood supply, these treatments can cause blood vessels to die, which causes the tumor to shrink.
- Deliver cell-killing substances to cancer cells. Some monoclonal antibodies are combined with toxins, chemotherapy drugs and radiation. Once these monoclonal antibodies attach to targets on the surface of cancer cells, the cells take up the cell-killing substances, causing them to die. Cells that don't have the target will not be harmed.
- Cause cancer cell death. Healthy cells die in an orderly manner when they become damaged or are no longer needed. But, cancer cells have ways of avoiding this dying process. Some targeted therapies can cause cancer cells to go through this process of cell death.
- Starve cancer of the hormones it needs to grow. Some breast and prostate cancers require certain hormones to grow. Hormone therapies are a type of targeted therapy that can work in two ways. Some hormone therapies prevent your body from making specific hormones. Others prevent the hormones from acting on your cells, including cancer cells.

Targeted Therapy Can Cause Side Effects

Targeted therapy can cause side effects. The side effects you may have depend on the type of targeted therapy you receive and how your body reacts to the therapy.

What to Expect When Having Targeted Therapy

How Often You Will Receive Targeted Therapy

How often and how long you receive targeted therapy depends on:

- Your type of cancer and how advanced it is
- The type of targeted therapy
- How your body reacts to treatment

How Targeted Therapy May Affect You

Targeted therapy affects people in different ways. How you feel depends on how healthy you are before treatment, your type of cancer, how advanced it is, the kind of targeted therapy you are getting and the dose. Doctors and nurses cannot know for certain how you will feel during treatment. You will receive specific medication information for the targeted therapy your doctor orders. It is important to be aware of any possible side effects and notify your doctor of serious or worsening symptoms.

The National Cancer Institute website www.cancer.gov

Other Therapies

Immunotherapy to Treat Cancer

Immunotherapy is a type of cancer treatment that helps your immune system fight cancer. The immune system helps your body fight infections and other diseases. It is made up of white blood cells and organs and tissues of the lymph system.

How immunotherapy works against cancer

One reason that cancer cells thrive is because they are able to hide from your immune system. Certain immunotherapies can mark cancer cells so it is easier for the immune system to find and destroy them. Other immunotherapies boost your immune system to work better against cancer.

Types of immunotherapy that help the immune system act directly against the cancer include:

- Checkpoint inhibitors, which are drugs that help the immune system respond more strongly to a tumor. These drugs work by releasing "brakes" that keep T cells (a type of white blood cell and part of the immune system) from killing cancer cells. These drugs do not target the tumor directly. Instead, they interfere with the ability of cancer cells to avoid immune system attack.
- Adoptive cell transfer, which is a treatment that attempts to boost the natural ability of your T cells to fight cancer. In this treatment, T cells are taken from your tumor, then those that are most active against your cancer are grown in large batches in the lab. The process of growing your T cells in the lab can take two to eight weeks. During this time, you may have treatments such as chemotherapy and radiation therapy to reduce your immune cells. After these treatments, the T cells that were grown in the lab will be given back to you via a needle in your vein.
- Monoclonal antibodies, also known as therapeutic antibodies, which are immune system proteins created in the lab. These antibodies are designed to attach to specific targets found on cancer cells. Some monoclonal antibodies mark cancer cells so that they will be better seen and destroyed by the immune system. Other monoclonal antibodies directly stop cancer cells from growing or cause them to self-destruct. Still others carry toxins to cancer cells. Because therapeutic monoclonal antibodies recognize specific proteins on cancer cells, they are also considered targeted therapies.

- Treatment vaccines, which work against cancer by boosting your immune system's response to cancer cells. Treatment vaccines are different from the ones that help prevent disease.

Types of immunotherapy that enhance the body's immune response to fight the cancer include:

- Cytokines, which are proteins made by your body's cells. They play important roles in the body's normal immune responses and also in the immune system's ability to respond to cancer. The two main types of cytokines used to treat cancer are called interferons and interleukins.
- BCG, which stands for Bacillus Calmette-Guérin, is an imunotherapy that is used to treat bladder cancer. It is a weakened form of the bacteria that causes tuberculosis. When inserted directly into the bladder with a catheter, BCG causes an immune response against cancer cells. It is also being studied in other types of cancer.

How Immunotherapy Is Given

Different forms of immunotherapy may be given in different ways. These include:

- Intravenous (IV): The immunotherapy goes directly into a vein.
- Oral: The immunotherapy comes in pills or capsules that you swallow.
- Topical: The immunotherapy comes in a cream that you rub onto your skin. This type of immunotherapy can be used for very early skin cancer.
- Intravesical: The immunotherapy goes directly into the bladder.

You may have treatment every day, week or month. Some immunotherapies are given in cycles. A cycleis a period of treatment followed by a period of rest. The rest period gives your body a chance to recover, respond to the immunotherapy and build new healthy cells.

Immunotherapy Can Cause Side Effects

Immunotherapy can cause side effects, which affect people in different ways. The side effects you may have and how they make you feel will depend on how healthy you are before treatment, your type of cancer, how advanced it is, the type of therapy you are getting and the dose. Doctors and nurses cannot know for certain how you will feel during treatment. You will receive specific medication information for the immunotherapy your doctor orders. It is important to be aware of any possible side effects and notify your health care professional of serious or worsening symptoms. Because many of these side effects can occur from other causes that would be treated differently, make sure health care professionals that treat you are aware that you are or were on immunotherapy.

The National Cancer Institute website: www.cancer.gov

Hormone Therapy to Treat Cancer

Hormone therapy is a cancer treatment that slows or stops the growth of cancers that use hormones to grow. Hormone therapy is also called hormonal therapy, hormone treatment or endocrine therapy.

Hormone therapy is used to:

- Treat cancer. Hormone therapy can lessen the chance that cancer will return or stop or slow its growth.
- Ease cancer symptoms. Hormone therapy may be used to reduce or prevent symptoms in men with prostate cancer who are not able to have surgery or radiation therapy.

Who Receives Hormone Therapy

Hormone therapy falls into two broad groups, those that block the body's ability to produce hormones and those that interfere with how hormones behave in the body. Hormone therapy is used to treat prostate and breast cancers that use hormones to grow. Hormone therapy is most often used along with other cancer treatments. The types of treatment that you need depend on the type of cancer, if it has spread and how far, if it uses hormones to grow and if you have other health problems.

Hormone Therapy Can Cause Side Effects

Because hormone therapy blocks your body's ability to produce hormones or interferes with how hormones behave, it can cause unwanted side effects. The side effects you may have will depend on the type of hormone therapy you receive and how your body responds to it. People respond differently to the same treatment, so not everyone gets the same side effects. Some side effects also differ if you are a man or a woman.

How Hormone Therapy Is Given

Hormone therapy may be given in many ways. Some common ways include:

- Oral. Hormone therapy comes in pills that you swallow.
- Injection. The hormone therapy is given by a shot in a muscle in your arm, thigh or hip, or right under the skin in the fatty part of your arm, leg or belly.
- Surgery. You may have surgery to remove organs that produce hormones. In women, the ovaries are removed. In men, the testicles are removed.

The National Cancer Institute website: www.cancer.gov

Radiation Therapy

Radiation therapy is a very common treatment for cancer. It uses high energy X-rays or particles to destroy or damage cancer cells. It can be given alone or used with other treatments, such as surgery or chemotherapy.

Radiation therapy uses special equipment to send high doses of radiation to the cancer cells. Radiation Therapy is a very localized treatment. It is aimed at and affects only the part of the body being treated. The goal of radiation therapy is to damage cancer cells, with as little harm as possible to nearby healthy tissue.

Consultation

The first step in your treatment is a consultation with the radiation oncologist. The doctor will review your medical records and radiology scans, do a physical exam and discuss treatment options, as well as goals and side effects.

Your NMMC Radiation Oncology team of Medical Professionals:

- Radiation Oncologist: The physician, the leader of your cancer team, is specifically trained to treat patients with radiation therapy. Our radiation oncologist will meet with you during your consultation visit to discuss your treatment options and care. All physicians are board certified and are here to serve you.
- Nurse Practitioner: The nurse practitioner works with your physician for all your ongoing medical care and is available to manage side effects and answer questions about your treatment.
- Radiation Therapy Nurse: The nurse has experience in the care of cancer patients treated with radiation therapy. We have a team of nurses who may take care of you during your course of radiation therapy. On your first visit to NMMC Radiation Oncology, a nurse will see you to complete an assessment and review and update your records. After seeing the doctor, the nurse will provide instructions on the management of expected side effects, as well as printed instructions for you to review at home. You will be seen weekly by a nurse throughout your treatment; however, your nurse is available if you ever have a problem, question or concern.
- Radiation Therapist: The radiation therapist is the professional who has been trained and certified in administering radiation therapy. The daily radiation therapy treatment will be administered by the

radiation therapist. This person will deliver your treatment using the linear accelerator (radiation treatment machine). They will deliver your prescribed treatment as ordered by your physician.

- Medical Dosimetrist: This person works closely with your physician to plan the very best way to deliver your radiation treatment. They calculate the direction of the beam to give the tumor the highest possible dose, while minimizing the dose to the normal, healthy tissue.
- Medical Physicist: This person applies physics and technical skills to validate the treatment plan and dose verification prior to any radiation treatment. The physicist also performs precise measurements of radiation beam characteristics for radiation safety of patients and staff.
- Social Worker: The social worker is here if you need assistance with transportation, financial or emotional issues. She can also address issues related to your diagnosis with you and your family.
- Dietitian: The dietician is available to address weight loss, manage peg tubes and any other dietary needs.

Planning CT (CAT) Scan and Treatment Planning

After your initial consultation visit with your radiation oncologist, the next step of radiation therapy is to develop a course of radiation treatment specifically designed for you and your disease. To do this, you will undergo a treatment planning CT. This is unlike a diagnostic CT you might have received elsewhere. This CT will be obtained at NMMC Radiation Oncology and used for our specific planning purposes. It is often necessary to create a device used to position your body. These devices could include body molds, masks and/or special pads. After the scan, ink marks may be placed on your body or mask. These are the preliminary marks that will be used at your next appointment. Please do not scrub these marks off. If they fade, your therapist can remark you at your next appointment but do not try to mark them on your own.

Generally, your next appointment will be approximately one week from your treatment planning CT. During this time, your radiation oncologist, physicists and dosimetrists will use data from your CT image to design your personalized treatments.

Verification Simulation

After your plan has been designed, you will come in for a verification simulation. On this day, you will meet your therapists, work out a permanent appointment time and be instructed on several safety guidelines. You will lie on the treatment table in your treatment device that was created at your CT. The therapists will place you in the correct position according to your plan and obtain X-rays to verify your position. The marks on your skin or mask may be slightly adjusted depending on these images. You will return to start your actual treatments usually within one to three days.

Treatment Schedule

Radiation treatments are usually given Monday thru Friday, not on the weekends. In general, treatments can last anywhere from two to eight weeks depending on the doctor's orders. Unless you request to miss a day or are otherwise notified, you will need to come at the same time every day.

We will work around other doctor's appointments or unforeseen events that may happen during your course of treatment. We can be flexible with radiation times to ensure you can come every day. If you cannot come for any reason, please call the Radiation Oncology department. You will be in the department approximately 30 minutes every day.

Radiation Treatment

You will be positioned on the treatment table by your therapist every day for treatment. It is very important that you do not move after you have been positioned correctly.

Images will be taken and verified that your position has not changed. You will not feel, see or taste anything during your treatment. You will hear a slight buzzing sound and see the machine rotate around you. The machine will not touch you.

You will not be radioactive after your treatment; therefore, you can be around anybody, including children and pregnant women. You will not feel any different after your first treatment. If symptoms occur during the course of your treatments, please inform your nurse or therapist.

If you have any questions at any time, please do not hesitate to ask your therapist, nurse or radiation oncologist.

Last Day of Treatment

On your last day of radiation treatments, you will see a nurse. She will give you discharge papers that will tell you your next follow up appointment at Radiation Oncology and answer any questions.

Diagnostic Tests and Procedures

Approved by the Cancer.Net Editorial Board, 07/2012

The most common diagnostic tests are described below. When choosing a diagnostic test(s), your doctor will consider the person's age and medical condition, the type of cancer suspected, the severity of the symptoms and previous test results. Learn more about diagnostic tests for a specific type of cancer. And, not everyone will need all available tests.

Barium Enema

An enema is a procedure that delivers liquid into the rectum and colon through the anus. Barium, which is a special dye called a contrast medium, is the liquid used in a barium enema. When an X-ray is taken, the barium shows up bright white, clearly outlining the colon and rectum. Abnormalities, such as inflammation, polyps (precancerous growths) and cancer, are then visible.

Biopsy

A biopsy is a medical procedure that, for most types of cancer, is the only way to make a definitive cancer diagnosis, as it provides the most accurate analysis of tissue. Often, doctors will recommend a biopsy after a physical examination or imaging study, such as an x-ray, has identified a possible tumor.

Bone Marrow Aspiration and Biopsy

A bone marrow biopsy and aspiration is a diagnostic examination of the bone marrow that can provide information about the development and function of blood cells.

Bone Scan

A bone scan is a diagnostic imaging test used to determine if your bone is damaged, either from cancer or from some other cause. The scan will detect cancer that has started in your bones, as well as cancer that has metastasized (spread) to the bone from other areas of your body. It can also track how cancer in the bone is responding to treatment.

Breast MRI for the Early Detection of Breast Cancer

Breast magnetic resonance imaging (MRI) is a procedure being studied more frequently for its role in detecting breast cancer. Although the early results of breast MRI studies are encouraging, breast MRI should not be substituted for mammography for women at average risk for breast cancer. However, it may be an additional tool to screen for breast cancer in women at high risk for developing the disease.

Breast MRI

A breast MRI (magnetic resonance imaging) exam is a diagnostic examination that uses magnetic fields to capture multiple images of the breast tissue, which are combined to create detailed, computer-generated pictures of your breasts. A breast MRI sometimes is used to diagnose and evaluate breast tumors. Under some circumstances, this test may better identify a small mass within a woman's breast than a mammogram or ultrasound, particularly for women with very dense (non-fatty) breast tissue.

Colonoscopy

A colonoscopy is a diagnostic examination used to look inside the entire large intestine, which plays an important role in the body's ability to process waste. The colon makes up the first five to six feet of the large intestine and the rectum makes up the last six inches, ending at the anus.

Computed Tomography (CT) Scan

A computed tomography (CT) scan, also called a CAT scan, is a diagnostic exam used to detect tumors, determine the stage of the disease and whether cancerous cells have spread and find out about the effectiveness of cancer treatment.

Digital Rectal Exam (DRE)

A digital rectal exam (DRE) is a screening test that allows a doctor to check the prostate gland in men or the lower colon/rectum in men and women for cancer or other abnormalities. In addition, in association with a vaginal examination, a DRE can check for cancer of the uterus and ovaries in women. A DRE can also be used to check the other organs and structures in the pelvis.

Donating Blood and Platelets

More than 44,000 blood donations are needed every day, according to the American Red Cross. Many of these donations are given as blood transfusions to people with cancer. A blood transfusion is a procedure in which blood or a blood component is transferred from one individual (donor) to another (recipient). Cancer treatments, such as surgery, chemotherapy and bone marrow transplantation, or the cancer itself may cause the need for a transfusion. A person may choose to donate whole blood or specific parts of the blood, such as platelets or red blood cells.

Donating Bone Marrow

Each year, thousands of people with life-threatening diseases affecting bone marrow function, such as leukemia, lymphoma, myeloma, aplastic anemia, and genetic and immune system disorders, are in need of a bone marrow (or stem cell) transplantation. In many cases, the bone marrow transplant represents a patient's only chance at survival and may even offer a cure. Learn how to register as a bone marrow donor.

Donating Umbilical Cord Blood

Donated umbilical cord blood can be used to treat people with life-threatening diseases including leukemia, other types of cancer, and immune and genetic disorders. Learn about the importance of umbilical cord blood, public versus private use and how to become an umbilical cord blood donor.

EKG and Echocardiogram

An electrocardiogram (EKG or ECG) and an echocardiogram (also known as an echo) are tests that check your heart function and identify any issues that might be present. Some people with cancer who receive chemotherapy may need one of these tests, or a multigated acquisition (MUGA) scan, before cancer treatment to identify pre-existing heart conditions or during and after cancer treatment to identify chemotherapy-related heart damage.

Types of Endoscopy

Endoscopy is a procedure that allows a doctor to view the inside of a person's body by inserting a tool called an endoscope. Most endoscopes are thin tubes with a powerful light source and a tiny camera at the end that sends images to a screen. The images help doctors see parts of the body that they would not otherwise be able to view.

Fecal Occult Blood Tests

The fecal occult blood test (FOBT) is a diagnostic examination used to detect blood in the feces (stool). Blood in the stool may be a sign of colorectal cancer or other problems such as polyps (growths that develop on the inner wall of the colon and rectum) or ulcers.

Integrated PET-CT Scan

An integrated PET-CT scan combines images from a positron emission tomography (PET) scan and a computed tomography (CT) scan that have been performed at the same time using the same machine. Because a CT scan provides detailed pictures of tissues and organs inside the body, while a PET scan reveals any abnormal activity that might be going on there, combining these scans creates a more complete image than either test can offer alone.

Magnetic Resonance Imaging (MRI)

Magnetic resonance imaging (MRI) is a diagnostic examination that uses magnetic fields to create detailed, computer-generated pictures of internal organs and tissue, including the brain and spinal column. An MRI scan is often used to diagnose and evaluate tumors in the chest and abdomen.

Mammography

Mammography is a type of x-ray specifically designed to view the breast. The x-ray films produced by mammography, called mammograms, can find small tumors or irregularities in the breast.

MUGA Scan

A multigated acquisition (MUGA) scan checks to see if your heart is pumping blood properly. Some people with cancer receiving chemotherapy may need to have this test during their cancer treatment.

Pap Test

A Pap test, also called a Pap smear, detects cervical cancer and can also find early changes in the cells of a woman's cervix that, if left untreated, could turn into cancer. If a doctor treats these irregular cells, the patient has an almost 100% chance of being cured.

Positron Emission Tomography (PET) Scan

A positron emission tomography (PET) scan is a diagnostic examination used to detect cancer, determine the stage of cancer and evaluate the effectiveness of cancer treatments, such as chemotherapy or radiation therapy.

Sigmoidoscopy

A sigmoidoscopy is a screening or diagnostic test that allows a doctor to see inside the lower 20 inches of the sigmoid colon and rectum (also called the large intestine). It is frequently used as a screening test to find polyps, which are small growths that may become cancer. Usually polyps do not cause any symptoms and can only be detected by doing a screening test like a sigmoidoscopy. Removing these polyps may prevent colorectal cancer. It can also be used as a diagnostic test for patients having rectal bleeding, a change in bowel habits or other symptoms.

Tumor Marker Tests

Tumor markers (also known as biomarkers) are substances found at higher than normal levels in the blood, urine or body tissue of some people with cancer. Although cancer cells often produce tumor markers, other healthy cells in the body produce them as well.

Ultrasound

Ultrasound, also called sonography or ultrasonography, uses high-frequency sound waves to create a picture of internal organs. A tumor generates different echoes of the sound waves than normal tissue does, so when the waves are bounced back to a computer and changed into images, the doctor can locate a tumor inside the body.

Upper Endoscopy

An upper endoscopy is a procedure that allows a doctor to examine the upper part of the gastrointestinal (GI) tract, including the esophagus (the muscular tube that connects the throat to the stomach), stomach and duodenum (the top of the small intestine). It is also called upper GI endoscopy or esophagogastroduodenoscopy (EGD).

Chemotherapy Side Effects

Introduction to Chemotherapy Side Effects

What Causes Side Effects?

Cancer cells tend to grow fast and chemotherapy drugs kill fast-growing cells. But because these drugs travel throughout the body, they can affect normal, healthy cells that are fast-growing, too. Damage to healthy cells causes side effects. Side effects are not always as bad as you might expect, but many people worry about this part of cancer treatment.

The normal cells most likely to be damaged by chemo are blood-forming cells in the bone marrow; hair follicles; and cells in the mouth, digestive tract and reproductive system. Some chemo drugs can damage cells in the heart, kidneys, bladder, lungs and nervous system. In some cases, medicines can be given with the chemo to help protect the body's normal cells.

What Should I Know About Side Effects?

- Every person doesn't get every side effect and some people get few, if any.
- The severity of side effects (how "bad" they are) varies greatly from person to person. Be sure to talk to your doctor and nurse about which side effects are most common with your chemo, how long they might last, how bad they might be and when you should call the doctor's office about them. Your doctor may give you medicines to help prevent some side effects before they happen.
- When to call your doctor:
  - Any change in your present condition
  - Temperature 100.5 or higher
  - Shortness of breath
  - Irregular or rapid heartbeat
  - Nausea or vomiting lasting longer than 24 hours
  - Mouth sores or soreness
  - Any unusual pain or pain that is not controlled
  - Uncontrollable diarrhea
  - Any unusual bleeding or bruising
  - Inability to eat and continued weight loss
  - Painful or frequent urination
  - Unusual weakness, change in ability to do daily activities
  - Blood in your urine or stool, bleeding gums or frequent nosebleeds

If your fever is 100.5 or greater or if you are having rigors, cold chills and sweats with or without a fever, it is very important that you notify the doctor immediately. During office hours call the office at (662) 377-4550. If you need after hours assistance, call Nurse Link at 1-800-882-6274 or (662) 377-3007.

Call 911 if you are having bleeding that you can't stop, sudden onset of shortness of breath or chest pain.

- Some types of chemo cause long-term side effects, like heart or nerve damage or fertility problems. Still, many people have no long-term problems from chemo. Ask your doctor about the long-term risks of the chemo drugs you're getting.
- While side effects can be unpleasant, they must be weighed against the need to kill the cancer cells.

How Long Do Side Effects Last?

Most side effects slowly go away after treatment ends because the healthy cells recover over time. The time it takes to get over some side effects and regain energy varies from person to person. It depends on many factors, including your overall health and the drugs you were given.

Many side effects go away fairly quickly, but some may take months or even years to completely go away. Sometimes the side effects can last a lifetime, such as when chemo causes long-term damage to the heart, lungs, kidneys or reproductive organs. Certain types of chemo sometimes cause delayed effects, such as a second cancer that may show up many years later.

People often become discouraged about how long their treatment lasts or the side effects they have. If you feel this way, talk to your doctor. You may be able to change your medicine or treatment schedule. Your doctor or nurse also may be able to suggest ways to reduce any pain and discomfort you have.

What are Common Side Effects?

Most people worry about whether they will have side effects from chemo and, if so, what they'll be like. A review of some of the more common side effects caused by chemotherapy follows in this guide. We also share some tips on how you can manage them.

Some information taken from The American Cancer Society website (www.cancer.org)

Tips to Help You with Chemotherapy Treatments

When you undergo treatment with chemotherapy or other medications there can sometimes be side effects. These suggestions may help you to avoid or minimize some of them and help your treatments go a little easier.

- Drink plenty of water, juice or milk. Drink at least six to eight glasses of liquids a day (8 oz. each) especially around your chemo days. Drinking fluids can help you feel better and with some treatments can help protect your kidneys or bladder.
- It is important to get plenty of calories and protein while you are going through chemotherapy but unfortunately sometimes your appetite can be affected. Eating small frequent meals can help you get the calories you need. Getting enough calories and protein can help you with fatigue and help you tolerate your treatments better.
- Avoid greasy or spicy food if you have nausea.
- Let your doctor know right away if you experience sores or sore spots in your mouth.
- Make sure that your doctor and nurse know about every medication you take and do not take any new medications including over-the-counter medications, vitamins and herbal supplements without notifying them. Tell them about any medication changes made by other doctors.
- Do not take aspirin or NSAID products unless your oncologist approves.
- Let your doctor know about any dental work or surgery prior to the procedure.
- Activity can help you decrease fatigue, so continue with your regular activities as tolerated. If your doctor approves, try a light to moderate exercise like walking.
- Talk with your doctor about birth control and family planning before you begin chemotherapy. Some medications can affect your ability to have children or cause birth defects.

Immunotherapy Side Effects

Immunotherapy can cause side effects, many of which happen when the immune system that has been revved-up to act against the cancer also acts against healthy cells and tissues in the body. Different people have different side effects. The ones you have and how they make you feel will depend on how healthy you are before treatment, your type of cancer, how advanced it is, the type of immunotherapy you are getting and the dose.

You might be on immunotherapy for a long time and side effects can occur at any point during and after treatment. Doctors and nurses cannot know for certain when or if side effects will occur or how serious they will be. So, it is important to know what signs to look for and what to do if you start to have problems.

Some side effects are common with all types of immunotherapy. For instance, you might have skin reactions at the needle site, which include:

- pain
- swelling
- soreness
- redness
- itchiness
- rash

You may have flu-like symptoms, which include:

- fever
- chills
- weakness
- dizziness
- nausea or vomiting
- muscle or joint aches
- fatigue
- headache
- trouble breathing
- low or high blood pressure

Other side effects might include:

- swelling and weight gain from retaining fluid
- heart palpitations
- sinus congestion
- diarrhea
- infection
- organ inflammation

Some types of immunotherapy may cause severe or even fatal allergic and inflammation-related reactions. However, these reactions are rare.

Certain side effects might happen depending on the type of immunotherapy you receive.

Discuss any new or worsening symptoms you are having with your doctor or nurse practitioner.

Any sudden onset of symptoms such as shortness of breath, chest pain or confusion would need to be evaluated immediately at your local emergency department.

Source: National Cancer Institute (www.cancer.gov)

Infection and Neutropenia during Cancer Treatment

An infection is the invasion and growth of germs in the body, such as bacteria, viruses, yeast or other fungi. An infection can begin anywhere in the body, may spread throughout the body and can cause one or more of these signs:

- fever of 100.5 °F (38 °C) or higher
- chills
- cough or sore throat
- diarrhea
- ear pain, headache or sinus pain, or a stiff or sore neck
- skin rash
- sores or white coating in your mouth or on your tongue
- swelling or redness, especially where a catheter enters your body
- urine that is bloody or cloudy, or pain when you urinate

Call your health care team if you have signs of an infection. Infections during cancer treatment can be life threatening and require urgent medical attention. Be sure to talk with your doctor or nurse before taking medicine – even aspirin, acetaminophen (such as Tylenol®), or ibuprofen (such as Advil®) for a fever. These medicines can lower a fever but may also mask or hide signs of a more serious problem.

Some types of cancer and treatments such as chemotherapy may increase your risk of infection. This is because they lower the number of white blood cells, the cells that help your body to fight infection. During chemotherapy, there will be times in your treatment cycle when the number of white blood cells (called neutrophils) is particularly low and you are at increased risk of infection. Stress, poor nutrition and not enough sleep can also weaken the immune system, making infection more likely.

You will have blood tests to check for neutropenia (a condition in which there is a low number of neutrophils). Medicine may sometimes be given to help prevent infection or to increase the number of white blood cells.

Ways to prevent infection

Your doctor or nurse will check your white blood cell count throughout your treatment. If chemotherapy is likely to make your white blood cell count very low, you may get medicine to raise your white blood cell count and lower your risk of infection.

- Wash your hands often with soap and water. Be sure to wash your hands before cooking and eating, and after you use the bathroom, blow your nose, cough, sneeze or touch animals. Carry hand sanitizer for times when you are not near soap and water.
- Use sanitizing wipes to clean surfaces and items that you touch. This includes public telephones, ATM machines, doorknobs and other common items.
- Be gentle and thorough when you wipe yourself after a bowel movement. Instead of toilet paper, use a baby wipe or squirt of water from a spray bottle to clean yourself. Let your doctor or nurse know if your rectal area is sore or bleeds or if you have hemorrhoids.
- Stay away from people who are sick. This includes people with colds, flu, measles or chicken pox. You also need to stay away from children who just had a “live virus” vaccine for chicken pox or polio.
- Stay away from crowds. Try not to be around a lot of people. For instance, plan to go shopping or to the movies when the stores and theaters are less crowded.
- Be careful not to cut or nick yourself. Do not cut or tear your nail cuticles. Use an electric shaver instead of a razor. And be extra careful when using scissors, needles or knives.
- Maintain good mouth care. Brush your teeth after meals and before you go to bed. Use a very soft toothbrush. You can make the bristles even softer by running hot water over them just before you brush. Use a mouth rinse that does not contain alcohol. Check with your doctor or nurse before going to the dentist.
- Take good care of your skin. Do not squeeze or scratch pimples. Use lotion to soften and heal dry, cracked skin. Dry yourself after a bath or shower by gently patting your skin. Be careful not to rub your skin. Clean cuts right away. Use warm water, soap and an antiseptic to clean your cuts. Clean your cut like this every day until your cut has a scab over it.
- Be careful around animals. Do not clean your cat’s litter box, pick up dog waste, or clean bird cages or fish tanks. Be sure to wash your

hands after touching pets and other animals.

- Do not get a flu shot or other type of vaccine without first asking your doctor or nurse. Some vaccines contain a live virus, which you should not be exposed to.
- Keep hot foods hot and cold foods cold. Do not leave leftovers sitting out. Put them in the refrigerator as soon as you are done eating.
- Wash raw vegetables and fruits well before eating them. Avoid those that cannot be washed well, such as raspberries.
- Do not eat raw or undercooked fish, seafood, meat, chicken or eggs. These foods may have bacteria that can cause infection.
- Do not eat or drink items that are past the freshness date. Do not eat foods that have moldy spots, even if you cut them out.

Source: National Cancer Institute (www.cancer.gov)

Bleeding and Bruising (Thrombocytopenia)

Some cancer treatments, such as chemotherapy and targeted therapy, can increase your risk of bleeding and bruising. These treatments can lower the number of platelets in the blood. Platelets are the cells that help your blood to clot and stop bleeding. When your platelet count is low, you may bruise or bleed a lot or very easily and have tiny purple or red spots on your skin. This condition is called thrombocytopenia. It is important to tell your doctor or nurse if you notice any of these changes.

Call your doctor or nurse if you have more serious problems, such as:

- Bleeding that doesn't stop after a few minutes; bleeding from your mouth, nose or when you vomit; bleeding from your vagina when you are not having your period (menstruation); urine that is red or pink; stools that are black or bloody; or bleeding during your period that is heavier or lasts longer than normal.
- Head or vision changes such as bad headaches or changes in how well you see or if you feel confused or very sleepy.

Ways to manage bleeding and bruising

- Avoid certain medicines. Many over-the-counter medicines contain aspirin or ibuprofen, which can increase your risk of bleeding. When in doubt, be sure to check the label. Get a list of medicines and products from your health care team that you should avoid taking. You may also be advised to limit or avoid alcohol if your platelet count is low.
- Take extra care to prevent bleeding. Brush your teeth gently, with a very soft toothbrush. Wear shoes, even when you are inside. Be extra careful when using sharp objects. Use an electric shaver, not a razor. Use lotion and a lip balm to prevent dry, chapped skin and lips. Tell your doctor or nurse if you are constipated or notice bleeding from your rectum.
- Care for bleeding or bruising. If you start to bleed, press down firmly on the area with a clean cloth. Keep pressing until the bleeding stops. If you bruise, put ice on the area.

Source: National Cancer Institute (www.cancer.gov)

Common Medications that Contain Aspirin and Other Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

Chemotherapy can decrease your platelet count, which can increase your risk of bleeding. Whether you're just starting chemotherapy or you've been receiving it, talk with your doctor or nurse before taking aspirin or NSAIDs which can increase your risk of having bleeding problems.

The following common medications contain aspirin and can affect your risk of bleeding:

- Alka-Seltzer
- Anacin
- Arthritis Pain Formula
- Arthritis Foundation Pain Reliever
- ASA Enseals
- ASA Suppositories
- Ascription & Ascription A/D
- Aspergum
- Asprimox
- Axotal
- Azdone
- Bayer (most formulations)
- BC Powder & Cold Formulations
- Bufferin (most formulations)
- Buffets II
- Buffex
- Cama Arthritis Pain Reliver
- COPE
- Dasin
- Easprin
- Ecotrin (most formulations)
- Empirin Aspirin (most formulations)
- Epromate
- Equagesic Tablets
- Equazine
- Excedrin Migraine
- Excedrin Extra-strength Analgesic Tablets & Caplets
- Fiorgen
- Fiorinal (most formulations)
- Fiortal
- Gelpirin
- Gelpirin
- Genprin
- Gensan
- Headrin
- Heartline
- Isollyl
- Lanorinal
- Lortab ASA Tablets
- Magnaprin
- Marnal
- Micrainin
- Momentum
- Norgesic Forte (most formulations)
- Norwich Aspirin
- Orphengesic
- Pac Analgesic Tablets
- Painaid
- Panasal
- Percodan Tablets
- Persistin
- Robaxisal Tablets
- Roxiprin
- Saleto
- Salocol
- Sodol
- Soma Compound Tablets
- Soma Compound with Codeine Tablets
- St. Joseph Adult Chewable Aspirin
- Supac
- Synalgos DC Capsules
- Tenol-Plus
- Trigesic
- Talwin Compound
- Vanquish Analgesic Caplets
- Wesprin Buffered
- Zee-Seltzer
- ZORprin

These medications are NSAIDS and do NOT contain aspirin but can also affect your risk of bleeding:

- Advil
- Advil Migraine
- Aleve
- Anaprox DS
- Ansaid
- Arthrotec
- Bayer Select Pain Relief Formula Caplets
- Celebrex
- Children's Motrin
- Clinoril
- Daypro
- Diclofenac
- Etodolac
- Feldene
- Fenoprofen
- Flurbiprofen
- Genpril
- Ibuprofen
- Indomethacin
- Indocin
- Ketoprofen
- Ketorolac
- Lodine
- Meclofenamate
- Mefenamic Acid
- Meloxicam
- Menadol
- Midol
- Mobic
- Motrin
- Nabumetone
- Nalfon
- Naproxen
- Naprosyn
- Nuprin
- Orudis
- Oxaprozin
- PediaCare Fever
- Piroxicam
- Ponstel
- Relafen
- Saleto 200
- Sulindac
- Toradol
- Volatren

Acetaminophen (Tylenol) is generally safe to take during your cancer treatment. It doesn't affect platelets, so it will not increase your chance of bleeding. Acetaminophen (Tylenol) is a very common ingredient found in over-the-counter and prescription medications. It's often an ingredient in pain relievers, fever reducers, sleep aids, and cough, cold and allergy medications. The full name acetaminophen is not always written out, so look for these common abbreviations, especially on prescription pain relievers: APAP, AC, Acetaminoph, Acetaminop, Acetamin and Acetam.

The following common medications contain acetaminophen:

Acephen
Aceta with Codeine
Acetaminophen with Codeine
Aspirin-Free Anacin
Arthritis Pain Formula
Aspirin-Free Datril
Di-Gesic
Esgic
Excedrin PM
Fiorecet
Lorcet
Lortab
Naldegesic
Norco
Panadol
Percocet
Repan
Roxicet
Talacen
Tempra
Tylenol
Tylenol with Codeine #3
Vanquish
Vicodin
Wygesic
Zydone

Acetaminophen is safe when used as directed, but there is a limit to how much you can take in 24 hours. It's possible to take too much acetaminophen without knowing because it's in many different medications, so always read and follow the label on the medications you are taking. Do not take more than one medication at a time that contains acetaminophen without talking with a member of your healthcare team.

Read the labels on all of your medications!

Anemia: Cancer Treatment Side Effect

Anemia is a condition in which the number of red blood cells is below normal.

What are signs of anemia?

Anemia can make you feel very tired, short of breath and lightheaded. Signs of anemia may also include feeling dizzy or faint, headaches, a fast heartbeat and/or pale skin.

What causes anemia in people with cancer?

Cancer treatments, such as chemotherapy and radiation therapy, as well as cancers that affect the bone marrow, can cause anemia. When you are anemic, your body does not have enough red blood cells. Red blood cells are the cells that carry oxygen from the lungs throughout your body to help it work properly.

You will have blood tests to check for anemia. Treatment for anemia is also based on your symptoms and on what is causing the anemia.

Ways to manage anemia

Here are some steps you can take if you have fatigue caused by anemia:

- Save your energy and ask for help. Choose the most important things to do each day. When people offer to help, let them do so. They can take you to the doctor, make meals or do other things you are too tired to do.
- Balance rest with activity. Take short naps during the day, but keep in mind that too much bed rest can make you feel weak. You may feel better if you take short walks or exercise a little every day.
- Eat and drink well. Talk with your doctor, nurse or a registered dietitian to learn what foods and drinks are best for you. You may need to eat foods that are high in protein or iron.

Source: National Cancer Institute (www.cancer.gov)

Fatigue and Cancer Treatment

People often describe fatigue as feeling extremely tired, weak, heavy, run down and having no energy. Resting does not always help with cancer-related fatigue. Cancer-related fatigue is one of the most difficult side effects for many people with cancer to cope with.

There are many causes of fatigue. Fatigue is a common side-effect of many cancer treatments, including chemotherapy, immunotherapy, radiation therapy, bone marrow transplant and surgery. Conditions such as anemia, as well as pain, medications and emotions, can also cause or worsen fatigue.

Ways to manage fatigue

Tell your health care team if you feel extremely tired and are not able to do your normal activities or are very tired even after resting or sleeping. Keeping track of your levels of energy throughout the day will help your doctor to assess your fatigue. Write down how fatigue affects your daily activities and what makes the fatigue better or worse.

You may be advised to take these and other steps to feel better:

- Make a plan that balances rest and activity. Choose activities that are relaxing for you. Many people choose to listen to music, read, meditate, practice guided imagery or spend time with people they enjoy. Relaxing can help you save your energy and lower stress. Light exercise may also be advised by your doctor to give you more energy and help you feel better.
- Plan time to rest. If you are tired, take short naps of less than 1 hour during the day. However, too much sleep during the day can make it difficult to sleep at night. Choose the activities that are most important to you and do them when you have the most energy. Ask for help with important tasks such as making meals or driving.
- Eat and drink well. Meet with a registered dietitian to learn about foods and drinks that can increase your level of energy. Foods high in protein and calories will help you keep up your strength. Some people find it easier to eat many small meals throughout the day instead of three big meals. Stay well hydrated. Limit your intake of caffeine and alcohol.
- Meet with a specialist. It may help to meet with a counselor, psychologist or psychiatrist. These experts help people to cope with difficult thoughts and feelings. Lowering stress may give you more energy. Since pain that is not controlled can also be major source of

fatigue, it may help to meet with a pain or palliative care specialist.

Source: National Cancer Institute (www.cancer.gov)

Skin and Nail Changes during Cancer Treatment

Cancer treatments may cause skin and nail changes. Talk with your health care team to learn what side effects your treatment may cause. While skin problems caused by radiation therapy and chemotherapy are often mild, they may be more severe if you are receiving a stem cell transplant, targeted therapy or immunotherapy. Let your health care team know if you notice any skin changes so they can be treated promptly.

- Sometimes radiation therapy can cause the skin on the part of your body receiving radiation to become dry and peel, itch (called pruritus) and turn red or darker. Your skin may look sunburned or become swollen or puffy. You may develop sores that become painful, wet and infected. This is called a moist reaction.
- Some types of chemotherapy can cause your skin to become dry, itchy, red or darker or peel. You may develop a minor rash or sunburn easily; this is called photosensitivity. Some people also have skin pigmentation changes. Your nails may be dark and cracked and your cuticles may hurt. If you received radiation therapy in the past, the area of skin where you received radiation may become red, blister, peel or hurt. This is called radiation recall. Signs of an allergic response to chemotherapy may include a sudden or severe rash or hives or a burning sensation.
- Some types of immunotherapy can cause a severe and sometimes extensive rash. Your skin may be dry or blister.
- Some types of targeted therapy may cause dry skin, a rash and nail problems. If you develop a rash, it is important to talk with your doctor before stopping targeted therapy.

If you have a severe, extensive, blistering or painful rash and are receiving immunotherapy, call your doctor to get their advice. It's especially important to call about rashes that involve the eyes or a mucous membrane, such as your mouth, caused by immunotherapy.

Ways to prevent or manage mild skin and nail changes during cancer treatment

Talk with your health care team to learn if you should manage these problems at home. Depending upon the treatment you are receiving, your health care team may advise you to take these steps:

- Use only recommended skin products. Use mild soaps that are gentle on your skin. Ask your nurse to recommend specific skin products. If you are receiving radiation therapy, ask about skin products, such as powder or antiperspirant, that you should avoid using before treatment.

- Prevent infection. Radiation therapy can cause skin in the treatment area to peel, become painful, and wet. Most often this happens in areas where the skin folds, such as around your ears, breast or bottom. Try to keep the area clean and dry so it does not become infected. Your nurse will talk with you about how to clean the area and may prescribe special dressings that you can apply to the area and/or antibiotics.
- Moisturize your skin. Use recommended creams or lotions to prevent your skin from becoming dry and itchy. Irritated skin can become infected. Ask about special creams or ointments for severely dry, itchy or painful skin.
- Protect your skin. Use sunscreen and sun-protective lip balm. Wear a loose-fitting long-sleeved shirt, pants and a hat with a wide brim when outdoors to prevent sunburn. If you are receiving radiation therapy, don't use heating pads, ice packs or bandages on the treatment area. You may want to shave less often and use an electric razor or stop shaving if your skin is tender and sore.
- Prevent or treat dry, itchy skin. Avoid products that list alcohol or fragrance as an ingredient, since they can dry or irritate your skin. Your nurse may suggest you add colloidal oatmeal to your baths, as it can reduce itching. Take short showers or baths in lukewarm, not hot, water. Put on skin cream or ointment that is recommended by your nurse after drying off from a shower but while your skin is still a little damp. Apply a cool washcloth or ice to dry, itchy skin.
- Prevent or treat minor nail problems. Keep your nails clean and cut short to avoid accidentally tearing them. Protect your hands and nails by wearing gloves when you wash the dishes or clean the house, for example. Avoid getting manicures and pedicures. Don't wear tight-fitting shoes. Ask your nurse to recommend products that can be used to treat nail problems.

Learn about treatments for irritating or painful skin rashes. Sometimes skin problems need medical treatment. Your rash may be treated with a medicated cream (topical corticosteroids) or with medicine that you take as a pill (oral corticosteroids or antibiotics).

Source: The National Cancer Institute website: www.cancer.gov

Hair Loss (Alopecia) and Cancer Treatment

Some types of chemotherapy cause the hair on your head and other parts of your body to fall out. Radiation therapy can also cause hair loss on the part of the body that is being treated. Hair loss is called alopecia. Talk with your health care team to learn if the cancer treatment you will be receiving causes hair loss. Not everyone treated with chemotherapy or radiation will lose their hair. Hair loss is usually temporary, after you complete chemotherapy and/or radiation, your hair will almost always grow back.

Ask your healthcare provider or social worker about resources available to help you cope with hair loss and appearance changes. The cost of a hairpiece or wig may be covered at least partly by certain insurance plans and is a tax-deductible expense. Check your insurance policy and have your healthcare provider write you a prescription for a “hair prosthesis.” Do not use the word “wig” on the prescription.

Ways to manage hair loss

- Treat your hair gently. You may want to use a hairbrush with soft bristles or a wide-tooth comb. Do not use hair dryers, irons or products such as gels or clips that may hurt your scalp. Wash your hair with a mild shampoo. Wash it less often and be very gentle. Pat it dry with a soft towel.
- You have choices. Some people choose to cut their hair short to make it easier to deal with when it starts to fall out. Others choose to shave their head. If you choose to shave your head, use an electric shaver so you won’t cut yourself. If you plan to buy a wig, get one while you still have hair, so you can match it to the color of your hair. If you find wigs to be itchy and hot, try wearing a comfortable scarf or turban.
- Protect and care for your scalp. Use sunscreen or wear a hat when you are outside. Choose a comfortable scarf or hat that you enjoy and that keeps your head warm. If your scalp itches or feels tender, using lotions and conditioners can help it feel better.
- Talk about your feelings. Many people feel angry, depressed or embarrassed about hair loss. It can help to share these feelings with someone who understands. Some people find it helpful to talk with other people who have lost their hair during cancer treatment. Talking openly and honestly with your children and close family

members can also help you all. Tell them that you expect to lose your hair during treatment.

Ways to care for your hair when it grows back

- Be gentle. When your hair starts to grow back, you will want to be gentle with it. Avoid too much brushing, curling and blow-drying. You may not want to wash your hair as frequently.
- After chemotherapy. Hair often grows back in 2 to 3 months after treatment has ended. Your hair will be very fine when it starts to grow back. Sometimes your new hair can be curlier or straighter – or even a different color. In time, it may go back to how it was before treatment.
- After radiation therapy. Hair often grows back in 3 to 6 months after treatment has ended. If you received a very high dose of radiation your hair may grow back thinner or not at all on the part of your body that received radiation.

Source: National Cancer Institute (www.cancer.gov)

Mouth and Throat Problems: Cancer Treatment Side Effects

What causes mouth and throat problems?

Cancer treatments may cause mouth, throat and dental problems. Radiation therapy to the head and neck may harm the salivary glands and tissues in your mouth and/or make it hard to chew and swallow safely. Some types of chemotherapy and immunotherapy can also harm cells in your mouth, throat and lips. Drugs used to treat cancer and certain bone problems may also cause oral problems.

What mouth and throat problems may occur?

Mouth and throat problems may include:

- changes in taste or smell
- dry mouth
- infections and mouth sores
- pain or swelling in your mouth (oral mucositis)
- sensitivity to hot or cold foods
- swallowing problems
- tooth decay (cavities)

When are oral problems serious?

Mouth problems (also called oral problems) are more serious if they interfere with eating and drinking because they can lead to dehydration and/or malnutrition. It's important to call your doctor or nurse if you have pain in your mouth, lips or throat that makes it difficult to eat, drink or sleep or if you have a fever of 100.5 °F (38 °C) or higher.

Ways to prevent mouth and dental problems

Your doctor or nurse may advise you to take these and other steps:

- Get a dental check-up before starting treatment. Before you start treatment, visit your dentist for a cleaning and check-up. Tell the dentist about your cancer treatment and try to get any dental work completed before starting treatment.
- Check and clean your mouth daily. Check your mouth every day for sores or white spots. Tell your doctor or nurse as soon as you notice any changes, such as pain or sensitivity. Gently brush your teeth, gums and tongue after each meal and before going to bed at night. Use a very soft toothbrush or cotton swabs. If you are at risk of bleeding, ask if you should floss.
- Rinse your mouth frequently. Rinse with water every two hours while

awake and when awake at night. A solution of a ½ tsp salt and a ½ tsp baking soda, mixed in an 8oz glass of warm water can be used to help keep your mouth healthy. Avoid using commercial mouth washes that are high in alcohol, as they can irritate your mouth.

Ways to manage mouth problems and changes in taste

Your health care team may suggest that you take these and other steps to manage these problems:

- For a sore mouth or throat: Choose foods that are soft, wet and easy to swallow. Soften dry foods with gravy, sauce or other liquids. Use a blender to make milkshakes or blend your food to make it easier to swallow. Ask about pain medicine, such as lozenges or sprays that numb your mouth and make eating less painful. Avoid foods and drinks that can irritate your mouth; foods that are crunchy, salty, spicy or sugary; and alcoholic drinks. Don't smoke or use tobacco products.
- For a dry mouth: Drink plenty of liquids because a dry mouth can increase the risk of tooth decay and mouth infections. Keep water handy and sip it often to keep your mouth wet. Suck on ice chips or sugar-free hard candy, have frozen desserts or chew sugar-free gum. Use a lip balm. Ask about medicines such as saliva substitutes that can coat, protect and moisten your mouth and throat.
- For changes to your sense of taste: Foods may seem to have no taste or may not taste the way they used to or food may not have much taste at all. Radiation therapy may cause a change in sweet, sour, bitter and salty tastes. Chemotherapy drugs may cause an unpleasant chemical or metallic taste in your mouth. If you have taste changes it may help to try different foods to find ones that taste best to you. Trying cold foods may also help. Here are some more tips to consider:
  - If food tastes bland, marinate foods to improve their flavor or add spices to foods.
  - If red meat tastes strange, switch to other high-protein foods such as chicken, eggs, fish, peanut butter, turkey, beans or dairy products.
  - If foods taste salty, bitter or acidic, try sweetening them.
  - If foods taste metallic, switch to plastic utensils and non-metal cooking dishes.
  - If you have a bad taste in your mouth, try sugar-free lemon drops, gum or mints.

Source: National Cancer Institute (www.cancer.gov)

Nausea and Vomiting

Nausea occurs when you feel queasy or sick to your stomach. It may be followed by vomiting (throwing up), but not always. Nausea can keep you from getting the food and nutrients you need. Not everyone gets nausea and those who do may get it right after a treatment or a few days later. Talk with your doctor if nausea doesn't go away once treatment ends.

What serious problems can nausea and vomiting cause?

Nausea and vomiting can cause serious health problems such as malnutrition and dehydration. Controlling nausea and vomiting can help to prevent these problems. It can also help you to feel better.

Ways to manage nausea and vomiting

Your doctor or nurse will work to figure out what is causing your symptoms. Medicines called anti-nausea drugs or antiemetics work well and are effective in preventing or reducing many types of nausea and vomiting. The medicine is taken at specific times to prevent and/or control symptoms of nausea and vomiting.

Here are some practical tips and steps you can take to feel better when you have nausea and vomiting:

- Take an anti-nausea medicine. Talk with your doctor or nurse to learn when to take your medicine. Most people need to take an anti-nausea medicine even on days when they feel well. If you feel nauseated after eating a meal, consider taking your nausea medication about 30 minutes prior to your meal/snack time. Tell your doctor or nurse if the medicine doesn't help. There are different kinds of medicine and one may work better than another for you.
- Drink plenty of water and fluids. Drinking will help to prevent dehydration, a serious problem that happens when your body loses too much fluid and you are not drinking enough. Try to sip on water, fruit juices, ginger ale, tea and/or sports drinks throughout the day. Sip only small amounts of liquids during meals. Eating and drinking at the same time can make you feel bloated. Drink slowly. Keep a water bottle or cup with a lid and straw handy.
- Avoid certain foods. Don't eat greasy, fried, sweet or spicy foods if you feel sick after eating them. If the smell of food bothers you, ask others to make your food. Try cold foods that do not have strong smells or let food cool down before you eat it.

- Try these tips on treatment days. Some people find that it helps to eat a small snack before treatment. Others avoid eating or drinking right before or after treatment because it makes them feel sick. After treatment, wait at least 1 hour before you eat or drink. Anticipatory nausea is a condition in which one begins feeling nauseated before treatment begins or on the way to treatment. If this occurs, try taking anti-nausea medication and using relaxation techniques prior to leaving home and as you are traveling.
- Rest after meals, but do so sitting up, not lying down.
- Wear clothes that are comfortable and loose.
- Relax before each cancer treatment. You may feel better if you try deep breathing, meditation or prayer. Many people relax with quiet activities such as reading or listening to music.
- Keep a record of when you feel nausea and why. Show this to your nurse, doctor or dietitian. He or she might suggest ways to change your diet.
- Be sure not to eat in rooms that are too warm or stuffy. Open a window or turn on a fan if your living area feels stuffy. Fresh air can help relieve nausea.

Ways to Manage with Food

- Eat foods that are easy on your stomach. These include white toast, plain or vanilla yogurt and clear broth.
- Try lemon, lime or other tart-flavored foods.
- Eat 5 or 6 small meals each day instead of 3 large meals. Many people find it easier to eat smaller amounts, more often.
- Do not skip meals and snacks. Even if you do not feel hungry, you should still eat. For many people, having an empty stomach makes nausea worse.
- Choose foods that appeal to you. Do not force yourself to eat any food that makes you feel sick. At the same time, do not eat your favorite foods, so you don't link them to feeling sick.
- Eat and drink foods and drinks that are at room temperature.
- Eat dry toast or crackers before getting out of bed, if you have nausea in the morning.
- Plan when it is best for you to eat and drink. Some people feel better when they eat a light meal or snack before treatment. Others feel better when they don't eat for a few hours before treatment.

Source: National Cancer Institute (www.cancer.gov)

Diarrhea: Cancer Treatment Side Effect

Diarrhea means having bowel movements that are soft, loose or watery more often than normal. If diarrhea is severe or lasts a long time, the body does not absorb enough water and nutrients. This can cause you to become dehydrated or malnourished.

Cancer treatments, or the cancer itself, may cause diarrhea or make it worse. Some medicines, infections and stress can also cause diarrhea.

What are the dangers of diarrhea?

Diarrhea that leads to dehydration (the loss of too much fluid from the body) and low levels of salt and potassium (important minerals needed by the body) can be life threatening.

Call your health care team if you:

- Have symptoms of dehydration such as feeling dizzy or lightheaded, have dark yellow urine or are not urinating
- have a fever of 100.5 °F (38 °C) or higher
- diarrhea for more than 24 hours or four to six watery stools in a 12 hour period.
- If you have pain and cramping along with diarrhea
- Blood in your stool or stool that is black and tarry or appears to have mucous
- Significant weight loss

Ways to manage diarrhea

You may be advised to take steps to prevent complications from diarrhea:

- Drink plenty of fluid each day. Most people need to drink 8 to 12 cups of fluid each day. Ask your doctor or nurse how much fluid you should drink each day. For severe diarrhea, only clear liquids or IV (intravenous) fluids may be advised for a short period.
- Eat small meals that are easy on your stomach. Eat six to eight small meals throughout the day, instead of three large meals. Foods high in potassium and sodium (minerals you lose when you have diarrhea) are good food choices, for most people.
- Limit or avoid foods and drinks that can make your diarrhea worse.
- Foods high in fiber, such as whole wheat breads and pasta
- Drinks that have a lot of sugar, such as regular soda and fruit punch
- Very hot or very cold drinks

- Greasy, fatty or fried foods, such as French fries and hamburgers
- Foods and drinks that can cause gas. These include cooked dried beans and raw fruits and vegetables.
- Milk products, unless they are low-lactose or lactose-free
- Beer, wine and other types of alcohol
- Spicy foods, such as pepper, hot sauce, salsa and chili
- Foods or drinks with caffeine. These include regular coffee, tea, some sodas and chocolate.
- Sugar-free products that are sweetened with xylitol or sorbitol. These are found mostly in sugar-free gums and candy. Read product labels to find out if they have these sweeteners in them.
- Apple juice, since it is high in sorbitol
- Drink only clear liquids for 12 to 14 hours after a bout of diarrhea. Doing so allows your bowels to rest and helps replace lost fluids.
- Taking medicine. In most cases, your doctor will recommend taking Imodium AD® according to package directions. However, if you have diarrhea lasting more than eight hours after taking Imodium, you should call your doctor. Your doctor may need to prescribe a medicine for you.
- Keep your anal area clean and dry. Try using warm water and wipes to stay clean. It may help to take warm, shallow baths. These are called sitz baths.
- Tell your doctor or nurse if your rectal area is sore or bleeds or if you have hemorrhoids.

Source: National Cancer Institute (www.cancer.gov)

Constipation: Cancer Treatment Side Effect

Constipation is when you have infrequent bowel movements and stool that may be hard, dry and difficult to pass. You may also have stomach cramps, bloating and nausea when you are constipated.

Cancer treatments such as chemotherapy can cause constipation. Certain medicines (such as pain medicines), changes in diet, not drinking enough fluids and being less active may also cause constipation.

Ways to prevent or treat constipation

There are steps you can take to prevent constipation. It is easier to prevent constipation than to treat its complications which may include fecal impaction or bowel obstruction.

Take these steps to prevent or treat constipation:

- Eat high-fiber foods. Adding bran to foods such as cereals or smoothies is an easy way to get more fiber in your diet. Ask your health care team how many grams of fiber you should have each day. If you have had an intestinal obstruction or intestinal surgery, you should not eat a high-fiber diet.
- Drink plenty of liquids. Most people need to drink at least 8 cups of liquid each day. You may need more based on your treatment, medications you are taking or other health factors. Drinking warm or hot liquids may also help.
- Try to be active every day. Ask your health care team about exercises that you can do. Most people can do light exercise, even in a bed or chair. Other people choose to walk or ride an exercise bike for 15 to 30 minutes each day.
- Learn about medicine. Use only medicines and treatments for constipation that are prescribed by your doctor, since some may lead to bleeding, infection or other harmful side effects in people being treated for cancer. Keep a record of your bowel movements to share with your doctor or nurse. Notify your healthcare provider if you have not had a bowel movement in two or more days.

Source: National Cancer Institute (www.cancer.gov)

Self-Image and Sexuality

Each of us has a mental picture of how we look, our "self-image." Although we may not always like how we look, we're used to our self-image and accept it. But cancer and its treatment can change how you look and feel about yourself. Know you aren't alone in how you feel. Many others have similar feelings.

Body Changes during and after Treatment

Some body changes are short-term while others will last forever. Either way, your looks may be a big concern during or after treatment. For example, people with ostomies after colon or rectal surgery are sometimes afraid to go out. They worry about carrying equipment around or fear that it may leak. Some may feel ashamed or afraid that others will reject them.

Even if others can't see them, your body changes may trouble you. Feelings of anger and grief about changes in your body are natural. Feeling bad about your body can also lower your sex drive. This loss may make you feel even worse about yourself.

Changes in the way you look can also be hard for your loved ones, which in turn, can be hard on you. For example, parents and grandparents often worry about how they look to a child or grandchild. They fear that changes in their appearance may scare the child or get in the way of their staying close.

Coping with Body Changes

How do you cope with body changes?

- Mourn your losses and know it's okay to feel sad, angry and frustrated. Your feelings are real and you have a right to grieve.
- Try to focus on the ways that coping with cancer has made you stronger, wiser and more realistic.
- If your skin has changed from radiation, ask your doctor about ways you can care for it.
- Look for new ways to enhance your appearance. A new haircut, hair color, makeup or clothing may give you a lift. If you're wearing a wig, you can take it to a hairdresser to shape and style.
- Talk to other patients for advice.
- If you choose to wear a breast form (prosthesis), make sure it fits you well. Don't be afraid to ask the clerk or someone close to you for help. And check your health insurance plan to see if it will pay for it.

Coping with these changes can be hard. But, over time, most people learn to adjust to them and move forward. If you need to, ask your doctor to suggest a counselor who you can talk with about your feelings.

Staying Active

You may find that being active helps you cope with changes. It can reduce your stress and help you relax. It may also help you to feel stronger and more in control of your body. Start slowly if you need to and take your time. If needed, ask a trainer at your local gym or a physical therapist for tips. Talk with your doctor about ways you can stay active.

Hobbies and volunteer work can also help improve your self-image and self-esteem. You may like to read, listen to music, do crossword or other kinds of puzzles, garden or landscape, or write a blog, just to name a few. Or you could volunteer at a church or a local agency, or become a mentor or tutor, for example. You may find that you feel better about yourself when you get involved in helping others and doing things you enjoy.

Changes in Your Sex Life

It's common for people to have problems with sex because of cancer and its treatment. When your treatment is over, you may feel like having sex again, but it may take some time. Sexual problems can last longer than other side effects of cancer treatment. It's important to seek help in learning how to adapt to these changes.

Until then, you and your spouse or partner may need to find new ways to show that you care about each other. This can include touching, holding, hugging and cuddling.

Treatment-Related Problems

Sexual problems are often caused by changes to your body. Depending on the cancer you had, you may have short-term or long-term problems with sex after treatment. These changes result from chemotherapy, radiation, surgery or certain medicines. Sometimes emotional issues such as anxiety, depression, worry and stress may cause problems with sex.

Common concerns are:

- Worries about intimacy after treatment. Some may struggle with their body image after treatment. Even thinking about being seen without clothes may be stressful. People may worry that having sex will hurt or that they won't be able to perform or will feel less attractive. Pain, loss of interest, depression or cancer medicines can also affect sex drive.

- Not being able to have sex as you did before. Some cancer treatments cause changes in sex organs that also change your sex life.
- Some men can no longer get or keep an erection after treatment for prostate cancer, cancer of the penis or cancer of the testes. Some treatments can also weaken a man's orgasm or make it dry. Less common problems include being unable to ejaculate or ejaculation going backward into the bladder.
- After cancer treatment, some women find it harder, or even painful, to have sex. While some cancer treatments can cause these problems, there may be no clear cause. Some women also have pain or numbness in their genital area.
- Having menopause symptoms. When women stop getting their periods, they can get hot flashes, dryness or tightness in the vagina and/or other problems that can affect their desire to have sex.
- Losing the ability to have children. Some cancer treatments can cause infertility, making it impossible or cancer survivors to have children. But keep in mind that:
  - Depending on your age, the type of treatment you received and the length of time since treatment, you may still be able to have children.
  - Families can come together in many ways. Some people choose adoption or surrogacy. Some people get involved in the lives of nieces or nephews, or in child mentoring programs.
  - You may choose to focus on other interests and passions in life.
  - You can reach out to your health care team with questions or concerns, as well as to professionally led support groups. Or you can contact Livestrong Fertility for more information and for referrals to fertility programs in the United States.

Ask for Help

Even though you may feel awkward, let your doctor or nurse know if you're having problems with intimacy or sex. There may be treatments or other ways you and your loved one can give each other pleasure. If your doctor can't talk with you about sexual problems, ask for the name of a doctor who can. Some people also find it helpful to talk with other couples.

Sexual problems may not always get better on their own. Sometimes there can be an underlying medical problem that causes changes. Common changes and some solutions are:

- Erection problems. Medicine, assistive devices, counseling, surgery or other approaches may help.
- Vaginal dryness. Dryness or tightness in the vagina can be caused by menopause. Ask whether using a water-based lubricant during sex, using vaginal dilators before sex and/or taking hormones or using a hormone cream are options for you.
- Muscle weakness. You can help strengthen muscles in your genital area by doing Kegel exercises. This is when you practice controlling your muscles to stop the flow of urine. You can do these exercises even when you are not urinating. Just tighten and relax the muscles as you sit, stand or go about your day.

Tell Your Partner How You Feel

Talking to your loved one and sharing your feelings and concerns is very important. Even for a couple that has been together a long time, it can be hard to stay connected. Let your partner know if you want to have sex or would rather just hug, kiss and cuddle. He or she may be afraid to have sex with you. Or your partner may be worried about hurting you or think that you're not feeling well.

Talk to your partner about any concerns you have about your sex life. Be open about your feelings and stay positive to avoid blame.

Source: National Cancer Institute (www.cancer.gov)

Pain in People with Cancer

Cancer itself and the side effects of cancer treatment can sometimes cause pain. Pain is not something that you have to "put up with." Controlling pain is an important part of your cancer treatment plan. Pain can suppress the immune system, increase the time it takes your body to heal, interfere with sleep and affect your mood.

Talk with your health care team about pain, especially if:

- the pain isn't getting better or going away with pain medicine
- the pain comes on quickly
- the pain makes it hard to eat, sleep or perform your normal activities
- you feel new pain
- you have side effects from the pain medicine such as sleepiness, nausea or constipation

Your doctor will work with you to develop a pain control plan that is based on your description of the pain. Taking pain medicine is an important part of the plan. Your doctor will talk with you about using drugs to control pain and prescribe medicine (including opioids and nonopioid medicines) to treat the pain.

Ways to treat or lessen pain

Here are some steps you can take, as you work with your health care team to prevent, treat or lessen pain:

- Keep track of your pain levels. Each day write about any pain you feel. Writing down answers to the questions below will help you describe the pain to your doctor or nurse.
  - What part of your body feels painful?
  - What does the pain feel like (is it sharp, burning, shooting or throbbing) and where do you feel the pain?
  - When does the pain start? How long does the pain last?
  - What activities (such as eating, sleeping or other activities) does pain interfere with?
  - What makes the pain feel better or worse? For example, do ice packs, heating pads or exercises help? Does pain medicine help? How much do you take? How often do you take it?
  - How bad is the pain, on a scale of 1 to 10, where "10" is the most pain and "1" is the least pain?

Take the prescribed pain medicine. Take the right amount of medicine at the right time. Do not wait until your pain gets too bad before taking pain medicine. Waiting to take your medicine could make it take longer for the pain to go away or increase the amount of medicine needed to lower pain. Do not stop taking the pain medicine unless your doctor advises you to. Tell your doctor or nurse if the medicine no longer lowers the pain, or if you are in pain, but it's not yet time to take the pain medicine.

Meet with a pain specialist. Specialists who treat pain often work together as part of a pain or palliative care team. These specialists may include a neurologist, surgeon, physiatrist, psychiatrist, psychologist or pharmacist. Talk with your health care team to find a pain specialist.

Source: National Cancer Institute (www.cancer.gov)

Nerve Problems (Peripheral Neuropathy) and Cancer Treatment

Some cancer treatments cause peripheral neuropathy, a result of damage to the peripheral nerves. These nerves carry information from the brain to other parts of the body.

Damage to sensory nerves (nerves that help you feel pain, heat, cold and pressure) can cause:

- tingling, numbness or a pins-and-needles feeling in your feet and hands that may spread to your legs and arms
- inability to feel a hot or cold sensation, such as a hot stove
- inability to feel pain, such as from a cut or sore on your foot

If you start to notice any of the problems listed above, talk with your doctor or nurse. Getting these problems diagnosed and treated early is the best way to control them, prevent further damage and to reduce pain and other complications.

Ways to prevent or manage problems related to nerve changes

You may be advised to take these steps:

- Prevent falls. Have someone help you prevent falls around the house. Move rugs out of your path so you will not trip on them. Put rails on the walls and in the bathroom, so you can hold on to them and balance yourself. Put bathmats in the shower or tub. Wear sturdy shoes with soft soles. Get up slowly after sitting or lying down, especially if you feel dizzy.
- Take extra care in the kitchen and shower. Use potholders in the kitchen to protect your hands from burns. Be careful when handling knives or sharp objects. Ask someone to check the water temperature, to make sure it's not too hot.
- Protect your hands and feet. Wear shoes, both inside and outside. Check your arms, legs and feet for cuts or scratches every day. When it's cold, wear warm clothes to protect your hands and feet.
- Ask for help and slow down. Let people help you with difficult tasks. Slow down and give yourself more time to do things.
- Ask about pain medicine and integrative medicine practices. You may be prescribed pain medicine. Sometimes practices such as acupuncture, massage, physical therapy, yoga and others may also be advised to lower pain. Talk with your health care team to learn what is advised for you.

Source: National Cancer Institute (www.cancer.gov)

Memory or Concentration Problems and Cancer Treatment

Whether you have memory or concentration problems (sometimes described as a mental fog or chemo brain) depends on the type of treatment you receive, your age and other health-related factors. Cancer treatments such as chemotherapy may cause difficulty with thinking, concentrating or remembering things. So can some types of radiation therapy to the brain and immunotherapy.

These cognitive problems may start during or after cancer treatment. Some people notice very small changes, such as a bit more difficulty remembering things, whereas others have much greater memory or concentration problems.

Your doctor will assess your symptoms and advise you about ways to manage or treat these problems. Treating conditions such as poor nutrition, anxiety, depression, fatigue and insomnia may also help.

Ways to manage memory or concentration problems

It's important for you or a family member to tell your health care team if you have difficulty remembering things, thinking or concentrating. Here are some steps you can take to manage minor memory or concentration problems:

- Plan your day. Do things that need the most concentration at the time of day when you feel best. Get extra rest and plenty of sleep at night. If you need to rest during the day, short naps of less than 1 hour are best. Long naps can make it more difficult to sleep at night. Keep a daily routine.
- Exercise your body and mind. Exercise can help to decrease stress and help you to feel more alert. Exercise releases endorphins, also known as "feel-good chemicals," which give people a feeling of well-being. Ask what light physical exercises may be helpful for you. Mind–body practices such as meditation or mental exercises such as puzzles or games also help some people.
- Get help to remember things. Write down and keep a list handy of important information. Use a daily planner, recorder or other electronic device to help you remember important activities. Make a list of important names and phone numbers. Keep it in one place so it's easy to find.

Source: National Cancer Institute (www.cancer.gov)

Medication Log

Keeping track of all your medications is very important. This includes the drugs you take for other conditions besides cancer and any over the counter medications. This log is to help you keep up the medications you take, what the medications are for, prescribing doctor and any issues with side effects. Make sure you tell your doctor if you are experiencing any side effects and also if there are any changes to your medication list. Inform your oncologist if another doctor has prescribed a new medication for you.

Medication	Dose	How often	Reason	Prescribing doctor

Local Cancer Resources

Health Care Foundation of North Mississippi

The Health Care Foundation of North Mississippi is the philanthropic arm of North Mississippi Health Services and manages specific funds to assist patients. The Cancer Care Fund assists with needs such as pain and anti-nausea medications, nutritional supplements, transportation for treatment and other necessities.

Patients in need can request assistance through NMMC Cancer Care social workers.

To support the Cancer Care Fund, contact the foundation:

By Email: foundation@nmhs.net

By Phone: (662) 377-3613

By Mail: Health Care Foundation
830 South Gloster St.
Tupelo, Mississippi 38801

NMMC Cancer Care Food Pantries

Hematology Oncology
961 South Gloster St. | Tupelo
Tupelo, Mississippi 38801

Radiation Oncology
990 South Madison St. Suite 1 | Tupelo
Tupelo, Mississippi 38801

NMMC Cancer Care Starkville
1205 Highway 182 West | Starkville
Starkville, Mississippi 39759

General Cancer Resources

There are hundreds of sites on cancer and cancer care on the internet. Because there is so much available, sometimes it can be overwhelming. Here is a list of websites that may help you in your search for information. This list is provided only to assist you in your search for information and is not an endorsement of these sites. Sometimes the information found on the internet may not be accurate so always talk with your doctor if you have any questions.

American Cancer Society (ACS)
(800) ACS-2345
www.cancer.org
Provides resources including printed materials, counseling and resources to help patient and families. Website has numerous articles on a variety of cancer-related topics.

American Institute for Cancer Research
www.aicr.org
(800) 843-8114
Organization that funds and analyzes the link between lifestyle and cancer.

CancerCare Inc.
(800) 813-HOPE (4673)
www.cancercare.org
Nonprofit organization provides telephone, online and face-to-face counseling, support groups education, publications and financial and co-payment assistance.

Cancer Hope Network
(877) HOPENET
www.cancerhopenetwork.org
Cancer Hope Network is a national non-profit organization that provides free and confidential one-on-one emotional support to cancer patients, their caregivers and their family members.

Cancer Survival Toolbox
(301) 650-9127
www.cancersurvivaltoolbox.org
The Cancer Survival Toolbox® is a free audio program. It was created by leading cancer organizations to help people develop skills to better meet and understand the challenges of their illness.

Centers for Disease Control and Prevention (CDC)
(800) 311-3435
www.cdc.gov
The CDC is an agency of the US government. Large section of cancer topics including infection prevention.

Livestrong Foundation
(877) 236-8820
www.livestrong.org
Provides cancer resources and tools for cancer patients, survivors, caregivers and loved ones.

National Alliance for Hispanic Health
(415) 773-2838
www.hispanichealth.org
Network of health and human services provides information in Spanish and English and helps Hispanic consumers navigate the health care system throughout the US.

National Cancer Institute (NCI)
(800) 4-CANCER
www.cancer.gov
A federally funded cancer education network that provides the latest and most accurate information on cancer. Trained information specialists provide personalized responses to a range of cancer questions. Information is provided in English and Spanish.

National Coalition for Cancer Survivorship
(877) NCCS-YES
www.canceradvocacy.org
NCCS's mission is to advocate for quality cancer care for all people touched by cancer. Founded by and for cancer survivors, it is a network of groups and individuals promoting national awareness of issues affecting cancer survivors.

Our goal is to give you accurate and timely information and all efforts have been made to ensure the accuracy of the provided resource information. NMMC is not responsible for any errors, changes made by entities or omissions. If you need further information or assistance, please contact the social worker at (662) 377-4550.

Diagnosis-Specific Resources

Bone Marrow Transplants and Stem Cell Transplants

Blood and Marrow Information Network

www.bmtinfonet.org
1-888-597-7674
Not for profit organization provides quarterly newsletter, books, attorney referral service, patient to survivor link, resource directory, on line database.

National Bone Marrow Transplant Link

www.nbmtlink.org
1-800-546-5268
Provides peer support and other information to bone marrow transplant patients and families. Also provides information to prospective patients and families.

Breast Cancer

Breast Cancer.org

www.breastcancer.org
Provides generalized easy to understand information about breast cancer diagnosis and treatment.

Susan G. Komen Foundation

www.komen.org
1-972-855-1600
Striving to eradicate breast cancer by advancing research, education, screening and treatment.

National Lymphedema Network

www.lymphnet.org
1-800-541-3259
Provides education and guidance to lymphedema patients, health care professionals and the general public.

Sisters Network

www.sistersnetworkinc.org
1-713-781-0255
Committed to increasing local and national attention to the devastating impact that breast cancer has in the African-American community.

Colon Cancer

Colon Cancer Alliance

www.ccalliance.org

1-877-422-2030

Provides information and support through a network of colon and rectal cancer survivors, their families, caregivers, people genetically predisposed to the disease and the medical community.

Head and Neck Cancer

Support for People with Oral and Head and Neck Cancer (SPOHNC)

www.spohnc.org

1-800-377-0928

A patient directed self-help organization dedicated to meeting the needs of oral and head and neck cancer patients.

Hospice

National Hospice Organization (NHO)

www.nhpco.org

1-703-837-1500

Nonprofit membership organization representing hospice and palliative care programs and professionals in the U.S. It is committed to improving end of life care and expanding access to hospice care.

Lung Cancer

The Lung Cancer Alliance

www.lungcanceralliance.org

1-800-298-2436

An organization dedicated to people living with lung cancer or those at risk for the disease.

American Lung Association

www.lung.org

1-800-586-4872

Provides information on smoking-cessation groups and literature on lung disease and promotes lung health.

Lymphoma and Leukemia

The Leukemia and Lymphoma Society

www.lls.org

1-800-955-4572

Provides information, guidance and support to patients for leukemia, Hodgkin disease, myeloma, lymphoma and other blood related cancers

Lymphoma Research Foundation

www.lymphoma.org
1-800-500-9976
Provides educational information, physician referrals and information on clinical trials.

Multiple Myeloma

International Myeloma Foundation

www.myeloma.org
1-800-452-2873
Offers information and services for the treatment and management of multiple myeloma.

Multiple Myeloma Research Foundation

www.multiplemyeloma.org
1-203-972-1250
Raises funds for research and provides educational materials to patients and family members. Information on multiple myeloma in easy to understand language.

Ovarian Cancer

National Ovarian Cancer Coalition

www.ovarian.org
1-888-682-7426
An organization of ovarian cancer survivors that seeks increased recognition of the disease by government, media, health officials and the medical community.

Prostate Cancer

The Prostate Cancer Foundation

www.pcf.org
1-800-757-2873
Firmly committed to curing prostate cancer, the Prostate Cancer Foundation is the leading philanthropic organization funding and accelerating research globally.

Skin Cancer

The Skin Cancer foundation

www.skincancer.org
1-212-725-5176
Offers information on the latest news about skin cancer, its treatment and detection.

This list is provided only to assist you in your search for information and is not an endorsement of sites. The websites have been checked but there is no guarantee on the accuracy of the information

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Smoking Cessation

Quitting is hard

Many ex-smokers say quitting was the hardest thing they ever did.

Do you feel hooked? You're probably addicted to nicotine. Nicotine is in all tobacco products. It makes you feel calm and satisfied, yet also alert and focused. But the more you smoke, the more nicotine you need to feel good. Soon, you don't feel "normal" without nicotine. This is nicotine addiction.

It takes time to break free from nicotine addiction. It may take more than one try to quit for good. So, don't give up too soon. You will feel good again.

Quitting is also hard because smoking is a big part of your life. You may enjoy holding a cigarette and puffing on it. You may smoke when you are stressed, bored or angry. You may light up when you drink coffee or alcohol, talk on the phone, drive or are with other smokers. After months and years, smoking has become part of your daily routine. You may light up without even thinking about it.

Quitting isn't easy. Just reading this booklet won't do it. You may try to quit several times before you're finally done with cigarettes. But you will learn something each time you try. It takes willpower and strength to beat your addiction to nicotine. Remember that millions of people have quit smoking for good. You can be one of them.

Just thinking about quitting may make you anxious. But your chances will be better if you get ready first. Quitting works best when you're prepared.

Preparing to quit

Think about why you want to quit

Decide for sure that you want to quit and then promise yourself you'll do it. It's okay to have mixed feelings. Don't let that stop you. There will be times every day that you don't feel like quitting. You will have to stick with it anyway. Find reasons that are important to you.

Think of health reasons, such as:
- My body will start healing right away.
- I will have more energy and focus and feel more physically fit.
- I will no longer expose my family and friends to secondhand smoke.
- I will have whiter teeth and healthier gums.
- I will cough less and breathe easier.

- I will lower my risk of cancer, heart attack, stroke, emphysema, chronic bronchitis and cataracts.

Think of some other reasons to quit, such as:
- I will be proud of myself.
- I will make my family, friends and coworkers proud of me.
- I will be a better role model for others, especially my kids.
- I will feel more in control of my life.
- I will have more money to spend.
- I will save time by not taking cigarette breaks, buying cigarettes or searching for a light.

Write down why you want to quit

Write down all the reasons you want to quit. Keep your list where you'll see it often. Good places for your list are:
- Where you keep your cigarettes
- In your wallet or purse.
- In your kitchen.
- In your car

When you reach for a cigarette, find your list of reasons for quitting. It will remind you why you want to stop.

Understand what makes you want to smoke

Wanting to smoke is not just an unhealthy habit. You want to smoke because your body now relies on nicotine. When the amount of nicotine in your body runs low, it triggers a craving – a strong, almost uncontrollable urge – for another cigarette. You may feel jittery, short-tempered or anxious when you haven't smoked. Your body wants nicotine.

Know your triggers

Triggers – people, places, activities and feelings you associate with smoking – also make you want to smoke. Some triggers might be:
- drinking coffee, tea or alcohol
- the smell of cigarettes
- being around others who are smoking
- watching TV
- hearing the sounds of a party
- driving the car
- after eating
- feeling bored, angry, irritated or impatient

Whatever your triggers, they can make you crave a cigarette.

If you know your triggers, you have a head start on avoiding situations that tempt you to smoke.

Meet your triggers head on

You can get prepared to quit smoking by thinking of ways to avoid some triggers and creating alternatives for others. You'll find that the urge to smoke only lasts a few minutes. Even if it lasts longer, it will go away, whether you smoke or not. Fighting the urge to smoke is easier if you:

- keep your hands busy – write, doodle, hold a pencil, crochet, knit, squeeze silly putty
- put something else in your mouth such as a toothpick or sucker
- go places where smoking is not allowed
- avoid alcoholic drinks
- hang out with people who do not smoke
- deep breathe
- get active: walking, running, yoga
- distract your mind by reading, working puzzles or playing cards
- journaling

Know your options for quitting smoking

Quitting is hard. Success partly depends on how much you depend on nicotine. With many quit methods to choose from, be aware that no single approach works best for everyone. And you may need to try more than one method before you quit for good.

Some quit methods require a doctor's prescription. While others do not, it's always a good idea to discuss your plan to quit smoking with your doctor.

Options for quitting:

- Cold Turkey
- Over the counter medications
- Prescription medications
- Counseling and group support
    - Research shows that success rates for all quit methods are higher when they are combined with a support program that provides encouragement through regularly scheduled one-on-one or group meetings or quitlines.
- Quitlines:
    - 1-877-44U-Quit (1-877-448-7848)
    - 1-800-QUITNOW (1-800-784-8669)
- Online support available at SmokeFree.gov and BeTobaccoFree.gov

START: Five Important Steps to Quitting for Good

- Set a quit date
- Tell family, friends and coworkers that you plan to quit.
  - Ask them to be patient an understanding with your change in mood
  - Encourage others who smoke to join you in quiting
  - Remind everyone that your worst withdrawal symptoms such as irritability and difficulty sleeping may be over in about 2 weeks
- Anticipate and plan for the challenges you will face while quitting
- Remove cigarettes and other tobacco products from your home, car and workplace
- Talk to your doctor about getting help to quit

Plan to reward yourself

Don’t think of it as stopping smoking. Think of it as starting a new, healthier life style. Staying smoke-free is challenging. It takes some time. Be patient. You will begin to feel better. Set up rewards to remind yourself how hard you’re working.

Don’t get discouraged if you slip

Don’t be discouraged if you slip and smoke one or two cigarettes. It’s not a lost cause. One cigarette is better than an empty pack. But that doesn’t mean you can safely smoke every now and then, no matter how long ago you quit. One cigarette may seem harmless, but it can quickly lead back to your old smoking habits.

Many ex-smokers tried stopping many times before finally succeeding. When people slip, it’s usually within the first few months after quitting, when resisting the urge to smoke can be especially challenging. If you do slip, here are some strategies that can help you get back on track.

Realize you slipped

Acknowledge that you slipped. You’ve had a small setback. This doesn’t make you a smoker again. Feel good about all the time you went without smoking. Focus on strengthening your coping skills.

Don’t be too hard on yourself

One slip doesn’t make you a failure. It doesn’t mean you can’t quit for good. But don’t be too easy on yourself, either. If you slip, don’t say, “Well, I’ve blown it I might as well smoke the rest of this pack.” It’s important to get back on the nonsmoking track right away. Remember, your goal is no cigarettes – not even one puff.

Understand why you slipped

Find the trigger. Exactly what was it that made you smoke? Be aware of that trigger. If you are using medication to help you quit, don't assume that it isn't working if you slip and have a cigarette or two. Stay with it. It will help you get back on track.

Learn from your experience

What has helped you the most to keep from smoking? Make sure to do that on your next try. If you need to visit your doctor or other health professional again, do so. He or she can help motivate you to continue your effort to quit. Talk to your family and friends. It's okay to ask for support.

People with even one coping skill are more likely to stay ex-smokers than those who don't know any. START to stop again! It's never too late to try.

Stay upbeat

As you go through the first days and weeks without smoking, stay positive. Don't blame yourself if you slip and smoke a cigarette. Don't think of smoking as "all or nothing." Take it one day at a time.

Remember – you didn't learn to smoke overnight. You may have taken months or even longer to adjust your routines to smoking. Quitting is a learning process, too. Staying positive will help you choose new activities and patterns to replace old habits.

Remember the Long-Term Rewards

- 20 minutes after quitting
  Your heart rate drops.
- 12 hours after quitting
  The carbon monoxide level in your blood drops to normal.
- 2 weeks to 3 months after quitting
  Your heart attack risk begins to drop. Your lung function begins to improve.
- 1 to 9 months after quitting
  Your coughing and shortness of breath decrease.
- 1 year after quitting
  Your added risk of coronary heart disease is half that of a smoker's.
- 5 years after quitting
  Your stroke risk is reduced to that of a nonsmoker's 5–15 years after quitting.

- 10 years after quitting
  Your lung cancer death rate is about half that of a smoker's.
- 15 years after quitting
  Your risk of coronary heart disease is back to that of a nonsmoker's.

Source: National Cancer Institute (www.cancer.gov)

Cancer Survivorship

An individual is considered a cancer survivor from the time of diagnosis through the rest of life. As a result, what being a survivor means to you may change over time.

For those who completed treatment, many say that although they were relieved when it ended, it was hard to transition to a new way of life. It was like entering another world where they had to adjust to new feelings, new problems, changes in support, and different ways of looking at the world.

For some people, dealing with cancer becomes a way of life. Careful monitoring will still need to occur. For some, physical problems or emotional issues persist for years.

Ringing the bell

The tradition of ringing a bell to mark milestones in cancer treatment is traced to a U.S. Navy rear admiral who brought the naval tradition to celebrate the end of his radiation therapy at M.D. Anderson Cancer Center in Houston, Texas.

Now oncology patients ring the bell not only to mark the end of treatment, but to celebrate all kinds of milestones such as good test results, no disease progression and having a good day.

In Tupelo, the cancer bell is located in the entrance lobby of NMMC Hematology Oncology at 961 S. Gloster St. Family and friends are welcome to join patients in ringing the bell.

Please keep groups to no more than 20 people in the entrance lobby. Please have your friends and family wait on the right side of the lobby so that other patients can reach the waiting area for Hematology Oncology and Outpatient Infusion.

In Starkville, the bell is located in the Outpatient Infusion area. Please talk to your nurse to make arrangements for a group of family and friends to join you when you ring the bell. Because the bell is located in a clinical area, no children under the age of 14 are allowed.

A New Normal

The end of cancer treatment is often a time to rejoice. Most likely you're relieved to be finished with the demands of treatment. You may be ready to put the experience behind you and have life return to the way it used to be. Or you may be ready to have a fresh start at something new.

Yet at the same time, it's okay to feel sad and worried. It can take time to recover. Many are uncertain about how to move forward, feeling anxious about the future. It's very common to be thinking about whether the cancer will come back and what happens now. Often this time is called adjusting to a "new normal." You will have many different emotions during this time.

One of the hardest things after treatment is not knowing what happens next. Those who have gone through cancer treatment describe the first few months as a time of change. It's not so much "getting back to normal" as it is finding out what's normal for you now. People often say that life has new meaning or that they look at things differently.

Your new normal may include:

- making changes in the way you eat and what you do
- new or different sources of support
- permanent scars on your body
- not be able to do some things you used to do more easily
- new routines than you had before
- emotional scars from going through so much

You may see yourself in a different way or find that others think of you differently now. Whatever your new normal may be, give yourself time to adapt to the changes. Take it one day at a time.

Coping with Fear of Cancer Recurrence

When cancer treatment is over, patients are often faced with mixed emotions. While there is happiness and relief that come with the end of treatment, survivors may also feel fear and anxiety. Probably the most common fear is that the cancer will come back (a cancer recurrence).

Fear of recurrence is normal and often lessens over time. However, even years after treatment, some events may cause you to become worried. Follow-up visits, certain symptoms, the illness of a loved one, or the anniversary date of the date you were diagnosed can all trigger concern.

One step you can take is to be informed. Understand what you can do for your health now and find out about the services available to you. Doing so can give you a greater sense of control. There are steps you can take to help cope with your fears.

Talk to your health care team

Let your health care team know your concerns. Be honest about the fears of your cancer coming back so they can address your worries. The risk of recurrence differs in each patient. Your health care team can give you the facts about your type of cancer and the chances of recurrence.

They can assure you that they're looking out for you.

Know that it's common for cancer survivors to have fears about every ache and pain. Talk to your health care team if you're having a symptom that worries you. You can get advice about whether to schedule an appointment. Just having a conversation with them about your symptoms may help calm your fears. And, over time, you may start to recognize certain feelings in your body as normal.

Keep notes about any symptoms you have. Also take notes about any anxiety you feel. Write down questions for your health care team before follow-up visits so you can be prepared to tell them what you've been going through since your last check-up or conversation.

Talk to a counselor. If you find that your fears are more than you can handle, ask for a referral for someone to talk to. If thoughts about cancer recurrence interfere with your daily life, you might feel better seeing a counselor or therapist. A professional may help you put your concerns in perspective.

Ask for a follow-up care plan. A follow-up care plan is a summary of your cancer treatment, along with next steps for your care. Having a plan may give you a sense of control with your health after treatment. See Follow-up Medical Care to learn about your plan and ways to be proactive with your cancer care and health.

Take care of your mind and body

- Even though you can't control whether your cancer recurs, you can use your energy to focus on wellness and manage stress. Here are some things you can do to take care of your mind and body:
- Find ways to help yourself relax. Relaxation exercises have been proven to help people with stress and may help you relax when you feel worried. Meditation and yoga also help reduce stress.
  - The NMMC Wellness Center offers a Cancer Wellness Program for people receiving treatment for all types and stages of cancer. The program combines specifically prescribed exercise with education and support to guide a person through recovery. For more information, call (662) 377-4141.
- Talk to others. Sharing your feelings with friends and family may help you feel better and realize that you're not alone. You can also join a support group to talk to others who are having the same fears.
  - Counseling is available from the NMMC Behavioral Health Center. For an appointment, call (662) 377-3161 or 1-800-THE DESK (1-800-843-3375).

- Exercise. Moderate exercise (examples: walking, biking, swimming) can help reduce anxiety and depression. It also may improve your mood and boost your self-esteem.
- Eat a healthy diet. Talk to a dietician or nutritionist about the foods you should eat to stay healthy and maintain your strength.
- Write your feelings down. It may help you to express your feelings by writing in a journal or a notebook. Many people find that getting their thoughts on paper helps them to let go of worries and fears.
- Seek comfort from spirituality. Many survivors have found their faith, religion, or sense of spirituality to be a source of strength.
- Give back. Some people like to channel their energy by volunteering and helping others. Being productive in this way gives them a sense of meaning and lets them turn their attention on others.
- Take part in clubs, classes, or social gatherings. Getting out of the house may help you focus on other things besides cancer and the worries it brings.

Source: National Cancer Institute (www.cancer.gov)

Follow-Up Medical Care

All cancer survivors should have follow-up care. Follow-up care for cancer means seeing a health care provider for regular medical check-ups once you're done with treatment.

These check-ups may include bloodwork, as well as other tests and procedures that look for changes in your health or any problems that may occur due to your cancer treatment. These visits are also a time to check for physical and emotional problems that may occur months or years after treatment ends.

Your follow-up care plan, along with a summary of your cancer treatment, is part of what is called a survivorship care plan. This plan will have all the details that you and your doctor should discuss to ensure that you get regular care after your treatment ends.

Note that the information in this section focuses on follow-up care for your cancer treatment. But it's important that you keep getting your routine care from your primary care provider in addition to follow-up cancer care.

Getting a Follow-Up Care Plan

Once your cancer treatment ends, you should receive a follow-up cancer care plan from your oncologist or someone on your treatment team. A follow-up care plan is a summary of your treatment, along with recommendations for your cancer care after treatment ends. Your plan may also include suggestions to help meet other needs, such as emotional, social or financial issues.

Choose your doctor. For follow-up cancer care, you may see the same doctor who treated you for cancer or you may see another health care provider, such as one who specializes in follow-up care for cancer survivors. Or you may decide to go to your primary care doctor. You can discuss which doctor(s) to see with your health care team.

Ask each doctor you see to share notes with your other doctors. Keep in mind that once you choose which doctor to see, it may be up to you or a loved one to make sure each doctor communicates with the other about your care. Some research has shown that sometimes treatments or tests with one doctor aren't shared with the other doctor. Ask both your doctors to send clinic visit notes to each other so everyone can be on the same page.

Common Questions after Treatment Ends

When you receive your follow-up care plan from your doctor or other health care provider, answers to the questions below should be provided. Make sure to ask any other questions you may have:

- How long will it take for me to get better and feel more like myself?
- Which doctor(s) should I see for my follow-up care? How often?
- What symptoms should I watch out for?
- What tests do I need after treatment is over? How often will I have them?
- What are long-term health issues I might expect as a result of my cancer treatment?
- What is the chance that my cancer will return?
- What records do I need to keep about my treatment?
- What can I do to take care of myself and be as healthy as possible?
- Can you suggest a support group that might help me?

You might find it helpful to write these questions down. When you meet with the doctor or follow-up care specialist, you can take notes or record your talks to refer to later. Talk about any concerns you have related to your follow-up care plan.

Your Follow-Up Care Schedule

Each patient has a different follow-up care schedule. How often you return for follow-up visits is based on:

- the type of cancer you had
- the treatment you received
- your overall health, including possible treatment-related problems

In general, people return to the doctor for follow-up appointments every 3 to 4 months during the first 2 to 3 years after treatment and once or twice a year after that.

At these visits, you may have a physical exam along with blood tests and other necessary tests and procedures. Which tests you receive and how often you receive them will be based on what your doctor thinks is best for you when creating your follow-up care plan.

Source: National Cancer Institute (www.cancer.gov)

What Are Late Effects of Cancer Treatment?

Late effects are problems caused by cancer treatment that may not show up for months or years after treatment. These problems are specific to certain types of treatments and the dose received. Like side effects that you may have during treatment, late effects differ greatly from person to person. You may have problems that are very different from someone else's, even if they had the same type of cancer and treatment. When you discuss follow-up care with your doctor, you may want to ask about which late effects to watch for. Early medical attention can prevent or help better manage late effects. Living a healthy lifestyle can help you feel better overall and manage certain late effects, such as heart and lung problems.

Finding a Follow-Up Program for Survivors

Some cancer centers and hospitals have programs that focus on long-term follow-up care for cancer survivors, including managing late effects.

Bone Loss

Chemotherapy, steroid medicines, hormonal therapy or radiation therapy may cause thinning of the bones. With radiation therapy, bone loss will occur only in the part of the body that was treated.

Ways to Manage

Once you've had cancer, you should have regular check-ups. During these visits, your doctor or nurse will do a physical exam and may order tests to check your bone health. You can help lower your risk of bone loss by:

- not smoking or using other tobacco products
- eating foods that are rich in calcium and vitamin D
- walking, jogging or other weight-bearing exercises
- limiting how much alcohol you drink

Brain Changes

Some chemotherapy drugs and radiation therapy to the brain can cause problems with thinking and behavior months or years after treatment. Late effects that may occur depend on the part of the brain that was treated and may include:

- memory loss
- problems doing math
- problems concentrating

- slow processing of information
- personality changes
- movement problems

In rare cases, radiation to the brain can cause radiation necrosis. This problem may happen when an area of dead tissue forms at the site of the brain tumor. Radiation necrosis can cause movement problems, problems concentrating, slow processing of information and headaches.

Ways to Manage

If you have symptoms of brain changes, you may have tests to see whether they are caused by cancer in the brain or are late effects of treatment. If you have late effects, your doctor or nurse:

- will talk with you about ways to manage these effects
- may refer you to a physical, occupational or speech therapist who can help with brain problems
- may prescribe medicine or suggest surgery to help with the symptoms

Endocrine System Changes

Some cancer drugs and radiation can damage parts of the endocrine system. The endocrine system is a collection of organs and glands that control body functions such as growth, sexual development, reproduction, sleep, hunger and the way the body uses food.

Parts of the endocrine system that may be damaged by cancer treatment include the thyroid, ovaries and testes. Radiation to the head and neck may damage the thyroid. Radiation to the pelvis may damage the ovaries in women or the testes in men. Problems caused by these changes can develop many years after treatment and may include early menopause, infertility, underactive thyroid, overactive thyroid and weight gain.

Ways to Manage

Thyroid problems: If you develop underactive thyroid, your doctor may prescribe thyroid hormone replacement therapy and closely watch your response to the medication. If you develop overactive thyroid, treatment may include:

- drugs that prevent the thyroid from making hormones
- radioactive iodine to destroy the thyroid
- surgery to remove the thyroid
- beta-blockers to help with symptoms such as a fast heartbeat, anxiety or shaking

Eye Problems

Chemotherapy, hormone therapy, immunotherapy and steroid medicines may increase the risk of cataracts. Cataracts are a problem in which the lens of your eye becomes cloudy. Cataracts can cause:

- blurred, cloudy or double vision
- sensitivity to light
- trouble seeing at night

Some chemotherapy drugs can cause dry eye syndrome. This is a problem in which your eyes do not produce enough tears. Symptoms include feeling as if your eyes are dry or have something in them.

Ways to Manage

If you are at risk for cataracts, you should have regular visits with an ophthalmologist (a medical doctor who treats eye problems).

If cataracts become serious, they can be treated with surgery. In this type of surgery, an eye surgeon will remove the clouded lens and replace it with a plastic lens. You will usually have local anesthesia and be able to go home the same day.

If you develop dry eye syndrome, your doctor may prescribe regular treatment with eye drops or ointments. Or they may suggest that you have a procedure to block tear ducts. Blocking the tear ducts prevents tears from draining away which helps keep the eyes moist.

Hearing Problems

Treatment with certain chemotherapy drugs (in particular, cisplatin and high doses of carboplatin) and high doses of radiation to the brain can cause ringing in the ears (called tinnitus) or hearing loss that begins months or years after treatment.

Ways to Manage

See an audiologist. An audiologist is a health care professional trained to find, assess and manage problems with hearing, balance and other issues having to do with the ear. They can also fit you for hearing aids or other devices to help with hearing loss.

If you had cancer treatment that can cause hearing problems, you should have at least one visit with an audiologist after you have finished the treatment. Depending on the type and dose of cancer treatment that you received, you may need to see an audiologist often.

Protect your hearing. Avoid loud noises. Wear earplugs when using loud equipment, such as lawn mowers, leaf blowers and power washers. Also, wear earplugs during concerts and other loud indoor events. When listening to headphones, be careful not to turn the volume up too high.

Watch for signs of hearing loss. Let your doctor know right away if you have ringing in the ears or notice other changes in your hearing.

Heart Problems

Certain cancer drugs and radiation therapy to the chest may cause heart problems that don't show up until years after treatment. Drugs that tend to cause heart problems include: trastuzumab, doxorubicin, daunorubicin, epirubicin, cyclophosphamide

Heart problems caused by cancer treatment may include:

- A weakening of the heart muscle, known as congestive heart failure. People with this condition may have shortness of breath, dizziness and swollen hands or feet.
- Coronary artery disease, which occurs when the small blood vessels that supply blood and oxygen to the heart narrow. People with coronary artery disease may have chest pain or shortness of breath. This problem is more common in those who had high doses of radiation therapy to the chest.

Ways to Manage

- If you have heart problems caused by cancer treatment, your doctor or nurse might suggest that you:
- Eat a heart-healthy diet. A heart-healthy diet includes a variety of fruits, vegetables and whole grains. It also includes lean meats, poultry, fish, beans and fat-free or low-fat milk or milk products. Your doctor will probably suggest that you follow a diet low in salt because salt can cause extra fluid to build up in your body, making heart problems worse. The American Heart Association (www.cancer.org) has many tips for heart-healthy eating.
- Lose weight if you're overweight or obese. Carrying extra weight can put added strain on your heart. Work with your health care team to lose extra weight safely.
- Exercise. The right type and amount of exercise can help keep you and your heart healthy. Talk with your doctor about which activities you can safely do.
- Quit smoking and avoid using drugs not prescribed by a doctor. Smoking tobacco and marijuana exposes users and those nearby to many harmful substances. Both smoking and taking drugs can make heart failure worse and harm your health. Talk with your doctor about programs and products that can help you quit smoking. Also, try to avoid secondhand smoke. For help to quit smoking,

visit Smokefree.gov or call toll-free, 1-800-QUIT-NOW (1-800-784-8669).
- Get enough rest.
- Take medicines prescribed by your doctor. Your doctor may prescribe medicines based on the type of heart problem you have, how severe it is, and your response to certain medicines. Taking these medicines is important.

Joint Changes

Radiation therapy, some chemotherapy drugs and steroids can cause scar tissue to form in the joints. These problems can lead to loss of motion in joints, such as your jaw, shoulders, hips or knees. If you receive radiation therapy, these problems will occur only in the part of the body that was treated.

Ways to Manage

It is important to be aware of early signs of joint problems so these can be addressed before they get worse. These signs include:

- trouble opening your mouth wide
- pain when you make certain movements, such as reaching over your head or putting your hand in a back pocket

Talk with your doctor or nurse. They may refer you to a physical therapist who will assess your joint problems and give you exercises to do. Physical therapy exercises can decrease pain, increase strength and improve movement. In some cases, your doctor may recommend a knee or hip replacement.

Lung Problems

Chemotherapy and radiation therapy to the chest may damage the lungs, but you might not notice problems until years after treatment. Cancer survivors who received both chemotherapy and radiation therapy to the chest may have a higher risk of lung damage. Lung damage can cause shortness of breath, wheezing, fever, dry cough, congestion and feeling tired. Tell your doctor if you have any of these symptoms.

If you have symptoms of lung damage, you will have tests to see whether they are due to cancer in the lungs or are late effects of treatment.

Ways to Manage

- Oxygen therapy. If you have serious trouble breathing, your doctor may prescribe oxygen therapy. Oxygen is most often given through nasal prongs or a mask that fits over your mouth and nose. In some cases, you might receive oxygen through a ventilator.

- Lose weight if you're overweight or obese. Excess weight can make it hard to breathe. Work with your doctor and health care team to lose excess weight safely.
- Exercise. Talk with your doctor about which activities you can safely do.
- Quit smoking, don't vape and avoid using drugs not prescribed by a doctor. Smoking tobacco or marijuana exposes smokers and those nearby to many harmful substances. Smoking, vaping and taking drugs can make lung problems worse and harm your health. Talk with your doctor about programs and products that can help you quit smoking. Also, try to avoid secondhand smoke. For help to quit smoking, visit Smokefree.gov or call toll-free, 1-800-QUIT-NOW (1-800-784-8669).
- Take medicines prescribed by your doctor. Your doctor can prescribe medicines to help you relax when it is hard to breathe, relieve discomfort and treat pain.

Some people with lung problems take steroid drugs. Steroids can interfere with the way the body uses specific nutrients, including calcium, potassium, sodium, protein, and vitamins C and D.

If you take steroid pills for lung problems, it is very important to maintain a healthy weight by eating a balanced diet. A healthy diet that includes foods from each food group can make up for some of the effects of steroid therapy.

Lymphedema

Lymphedema is a problem in which the lymph fluid does not drain as it should, builds up in the tissues and causes swelling. You may be at risk for lymphedema if part of your lymph system is damaged during surgery to remove lymph nodes or by radiation therapy to areas with large numbers of lymph nodes. Lymphedema can develop many years after treatment.

Mouth Changes

Radiation therapy to your head or neck and some chemotherapy drugs can cause late side effects in your mouth. Problems may include dry mouth, cavities or bone loss in the jaw.

Ways to Manage

- Visit your dentist. You may need to have your teeth checked every 1 to 2 months for at least 6 months after radiation treatment. During this time, your dentist will look for changes in your mouth, teeth and jaw.

- Exercise your jaw. Your doctor or nurse may suggest that you open and close your mouth 20 times as far as you can without causing pain, three times a day, even if your jaw isn't stiff.
- Stimulate saliva. Your doctor or nurse may suggest that you drink 8 to 10 cups of liquid per day. Keep a water bottle handy so you can sip throughout the day. You may also find sucking on sugarless candy or chewing gum helpful.
- Take good care of your teeth and gums. Floss and use a mouthwash with fluoride every day. Brush your teeth after meals and before you go to bed. Also, avoid mouthwashes that contain alcohol.
- Explore your treatment options. Ask your dentist to contact your radiation oncologist before you have dental or gum surgery. There may be other treatment options besides surgery. Also, most dentists advise that you do not have teeth pulled from the part of your mouth that received radiation.

Post-traumatic Stress

Finding out you have cancer, having treatment for cancer, and living with cancer can cause extreme feelings that persist and many stressful events that repeat over time. These feelings and events can pile up and cause post-traumatic stress. Symptoms of post-traumatic stress can occur at any time, even years after your first treatment for cancer.

Symptoms of post-traumatic stress may include:

- frightening thoughts
- trouble sleeping
- being distracted
- feeling hyper
- feeling alone
- losing interest in daily activities
- feelings of shock, fear, helplessness or horror

If these symptoms cause distress and interfere with daily life, be sure to tell your doctor. Your doctor can refer you to a social worker, therapist, palliative care specialist or pastoral counselor. These experts can assess your symptoms and suggest treatment, such as relaxation training, counseling, support groups and certain medicines.

Second Primary Cancers

Cancer treatment can sometimes cause a new cancer many years after you have finished treatment. When a new primary cancer occurs in a person with a history of cancer, it is known as a second primary cancer.

Second primary cancer is not the same thing as metastatic cancer, which is when cancer spreads from where it started.

Second primary cancers do not occur very often. When they do occur, they are not always caused by cancer treatment.

Ways to Manage

- Talk with your doctor about the types of second cancers you may be at risk for.
- Have regular check-ups for the rest of your life to check for cancer – the one you were treated for and any new cancer that may occur. Your doctor can suggest tests you may need to look for cancer and how often you should have them.
- Tell your doctor if you notice any changes in your body that last longer than a few weeks.

Source: National Cancer Institute (www.cancer.gov)

Moving on After Treatment

The end of treatment can be both stressful and exciting. You'll be relieved to finish treatment, yet it's hard not to worry about cancer coming back. This is very common among people who have had cancer.

For years after treatment ends, you'll need to see your doctor for follow-up. These visits may include physical exams and blood tests, which can help to tell if the cancer has come back. Other tests, like chest X-rays, CT scans or MRIs may also be needed.

Your doctor will talk to you about side effects at these visits, too. Almost any cancer treatment can have side effects. Some last for a few weeks to months, but others can last longer. Be sure to tell your doctor about any problems you're having so you can get the help you need.

Seeing a New Doctor

At some point after cancer, you may need to see a new doctor. You will want to give your new doctor all the details of your cancer and treatment. Make sure you have this information handy and keep copies of all your medical records for yourself:

- A copy of your pathology report from any biopsy or surgery
- If you had surgery, a copy of your operative (surgical) report
- If you were in the hospital, a copy of the discharge summary that doctors prepare when patients are sent home
- If you had radiation, a copy of your treatment summary
- If you had chemo, a list of your drugs, drug doses and when you took them
- Copies of your X-rays and other imaging studies (these can often be put on a DVD)

Gathering these details during or soon after treatment may be easier than trying to get them at some point in the future.

Lifestyle Changes During and After Treatment

Having cancer and dealing with treatment can take a lot of your time. But now you may have time to look at your life in new ways. Maybe you are thinking about how to improve your health. Some people even work on this during cancer treatment.

Make Healthy Choices

Think about your life before cancer. Were there things you did that might have made you less healthy? Maybe you drank too much, ate more than you needed, smoked or didn't exercise very often. Maybe you kept your feelings bottled up or let stressful things go on too long. Now is not the time to feel guilty or to blame yourself. You can start making changes today that can have good effects for the rest of your life. You'll feel better and be healthier, too.

Start by working on those things that bother you most. Get help with the changes that are harder for you. For instance, if you are thinking about quitting tobacco and need help, call us at (662) 377-7252.

Eating Healthy

Eating right can be hard to do during and after cancer treatment. Treatment may change your sense of taste. You may have a sick stomach. You may not feel like eating. You may even lose weight when you don't want to. On the other hand, some people gain weight even without eating more. This can be upsetting, too.

If you have lost weight or have taste problems, eat as well as you can and know that these problems will get better. You might want to ask your doctor or nurse to see a dietitian who can help you deal with some of these side effects. You may also find it helps to eat small meals every two to three hours until you feel better.

One of the best things you can do after treatment is put healthy eating habits into place. Try to eat at least 2½ cups of vegetables and fruits each day. Choose whole-grain foods instead of refined white flour and sugars. Try to limit meats that are high in fat. Cut back on processed meats like hot dogs, deli meats and bacon. If you drink alcohol, limit yourself to one drink a day for women or two drinks a day for men – at the most. And don't forget exercise. A good diet and regular exercise will help you stay at a healthy weight and give you more energy.

Rest, Fatigue and Exercise

Fatigue is feeling very tired. It's very common in people with cancer. This "bone-weary" feeling doesn't get better with rest. For some, fatigue lasts a long time after treatment.

It can be hard to be active when you feel tired all the time. But being active can help reduce your fatigue. Studies have shown that patients who follow an exercise program feel better and cope better, too.

If you were sick or on bed rest during treatment, it's normal to have lost some of your physical fitness, endurance and muscle strength. Exercise can help make your muscles stronger and can help fight fatigue.
It can also help the depressed feeling that sometimes comes with being so tired.

Your exercise program should fit your needs. An older person who has never been very active may not be able to do the same amount of exercise as a 40-year-old. If you haven't been active in a few years but can still get around, you may want to try starting with short walks.

Talk with your doctor or nurse before starting. Let them know about your plans. And try to find an exercise buddy so you're not doing it alone. Having family or friends join you in a new exercise program can give you that extra boost of support to keep going. If you're very tired, though, you'll need to be sure you get some rest. Sometimes it's hard for people to allow themselves to rest when they're used to working all day or taking care of a home and family. But it's OK to rest when you need to.

What About Your Emotional Health?

Once your treatment ends, you may find yourself filled with emotions. This happens to a lot of people. You may have been going through so much since diagnosis that you could only focus on getting through your treatment. Now you may find that you think about your own death or the effect cancer has had on your family. You may also think more about your relationship with your spouse or partner.

This is a time when you need people you can turn to for strength and comfort. This support can come from family, friends, cancer support groups, church groups, online support groups or counselors.

Almost everyone who has been through cancer feels better if they get some type of support. Some people feel safe in groups and others would rather talk in an informal setting, such as church. Others may feel more at ease talking with a close friend or counselor. Whatever your source of strength or comfort, make sure you have a place to go with your worries and concerns.

The cancer journey can feel very lonely. You don't need to go it alone. Your friends and family may feel shut out if you decide not to include them. Let them in – and let in others who you feel may help. You can't change the fact that you have had cancer. What you can change is how you live the rest of your life.

Source: American Cancer Society website (www.cancer.org)

Notes