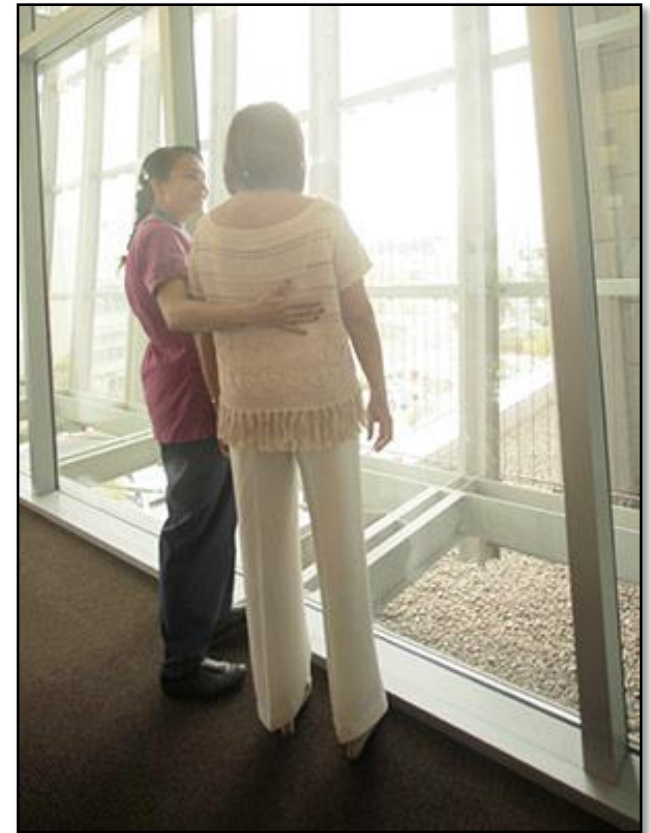


# Partnering in Your Care to Improve Your Treatment Experience



# What You Will Learn

- **Overview of Chemo/Biotherapy**
  - What is chemo/biotherapy
  - How it is given
  - Why it causes side effects
- **Common Side Effects**
  - Potential side effects
  - How to manage them
- **Additional Resources**
  - Handouts
  - Resources at City of Hope
  - Other resources

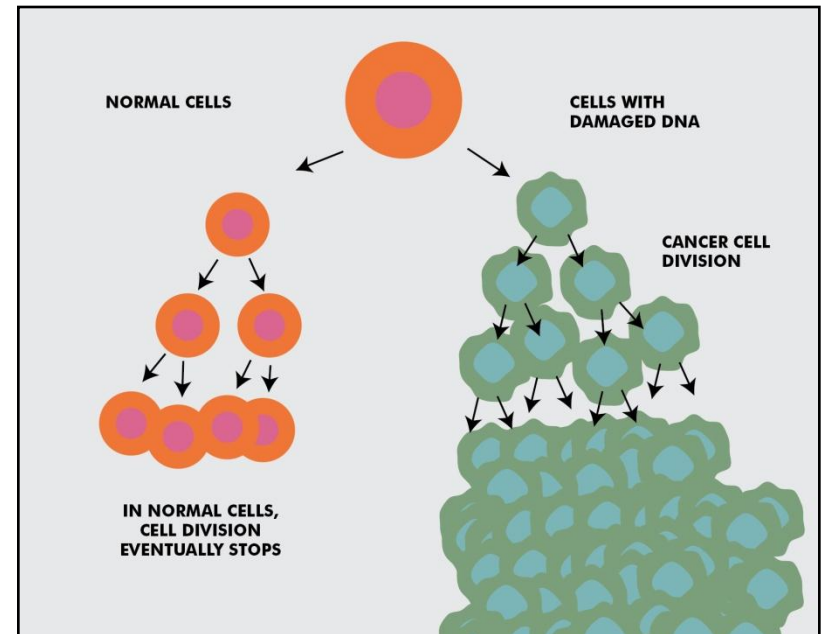


# What Is Chemotherapy?



- Chemotherapy is “systemic therapy” which means it travels throughout your body in your blood stream

- Chemotherapy refers to chemicals (medications) used to treat cancer
  - It works by fighting rapidly growing cancer cells



# How Is Chemotherapy Given?

- Chemotherapy drugs are usually given to you through:

- pills taken by mouth
- a vein (IV)
- by injection



- Chemotherapy is often given in cycles

1 cycle = treatment period + rest period



# Where Is Chemotherapy Given?

- Chemotherapy is sometimes taken at home
  - As pills taken by mouth
- Most of the time, IV or injection chemo is given at a medical center in different locations on campus
  - Outpatient infusion centers:
    - Clinics 1D, 3C, CRU
    - Day Hospital
  - Inpatient (City of Hope Helford Clinical Research Hospital)





# What Is a Central Line?

A central line, also called a central venous catheter, is a long, thin, flexible tube:

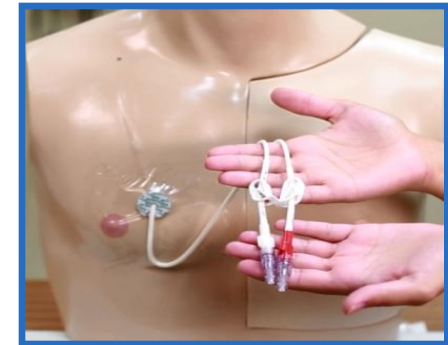
- Inserted into a large vein in the chest or arm
- Used to give medicines or take blood samples
- Can stay in place over several weeks or months
- Reduces the many “peripheral” or skin injections needed in the hands and arms during chemotherapy

## Three types:

### 1. PICC line



### 2. Hickman catheter



### 3. Implanted port



# Why Does Chemotherapy Cause Side Effects?

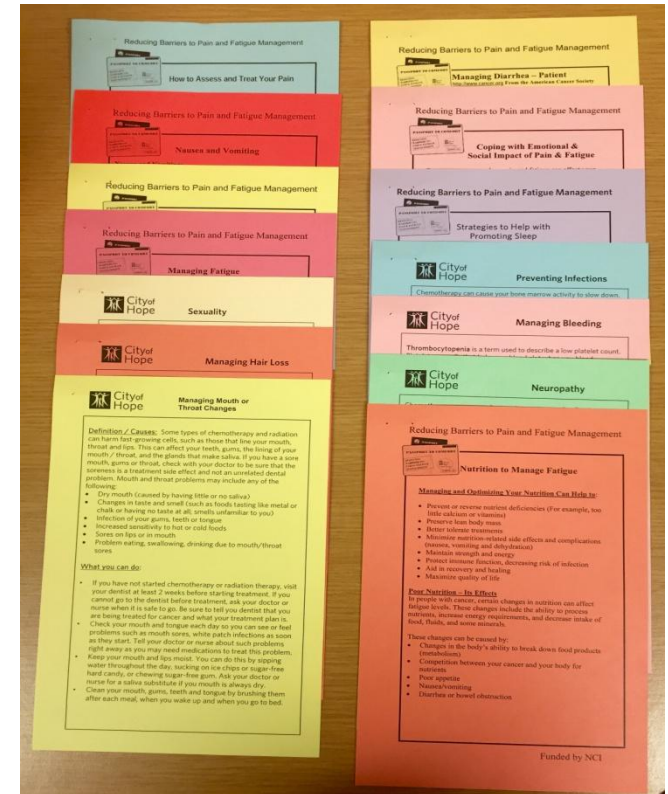
- Remember, chemotherapy kills rapidly dividing cells:
  - Chemotherapy cannot tell the difference between cancer cells and rapidly dividing normal cells.
- When chemotherapy is combined with other therapies, more side effects may occur
- Side effects vary from person to person
- Chemotherapy side effects can be managed!



# Chemotherapy Side Effects

## *How to manage symptoms before and after treatment*

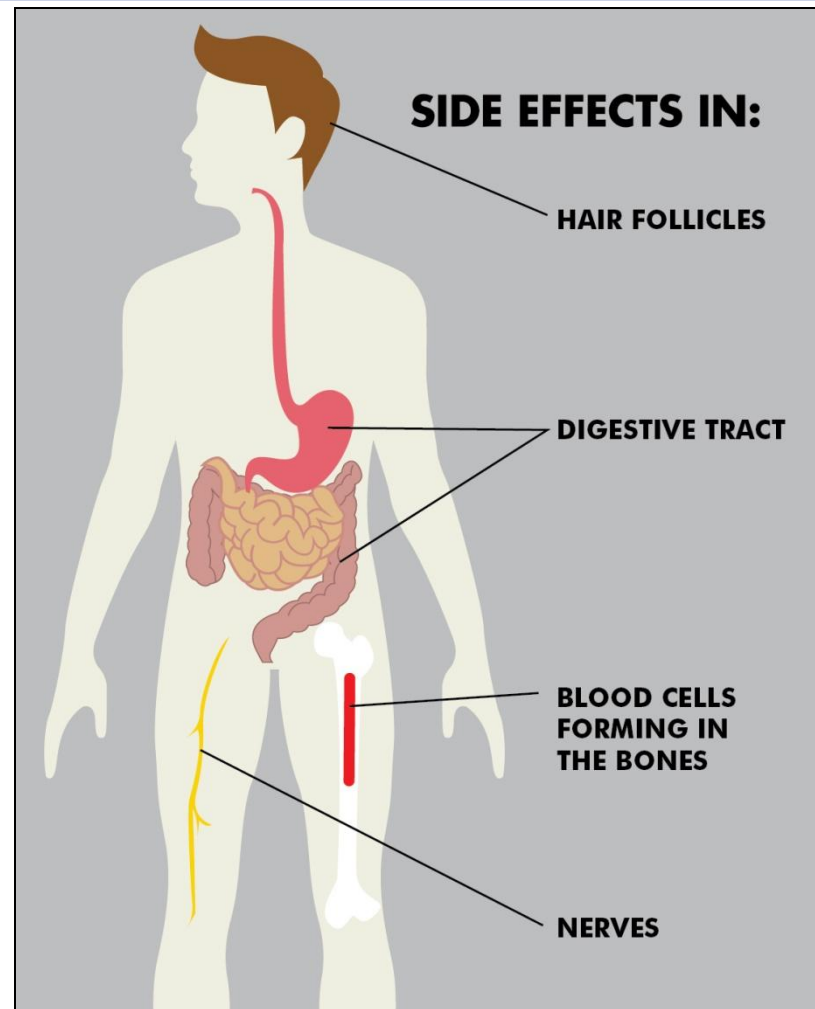
- Some side effects slowly disappear soon after treatment ends
- Talk to your health care team about specific side effects you can expect
- Read your Symptom Management cards
  - You will find information about various symptoms, how to manage them and when to call the nurse or doctor





# Most Common Side Effects

- Fatigue
- Hair Loss
- Skin Issues
- Low Blood Cell Counts
- Gastrointestinal issues
  - Nausea
  - Vomiting
  - Diarrhea
- Neuropathy
- Intimacy/Reproductive Issues



# Low Blood Counts - Myelosuppression

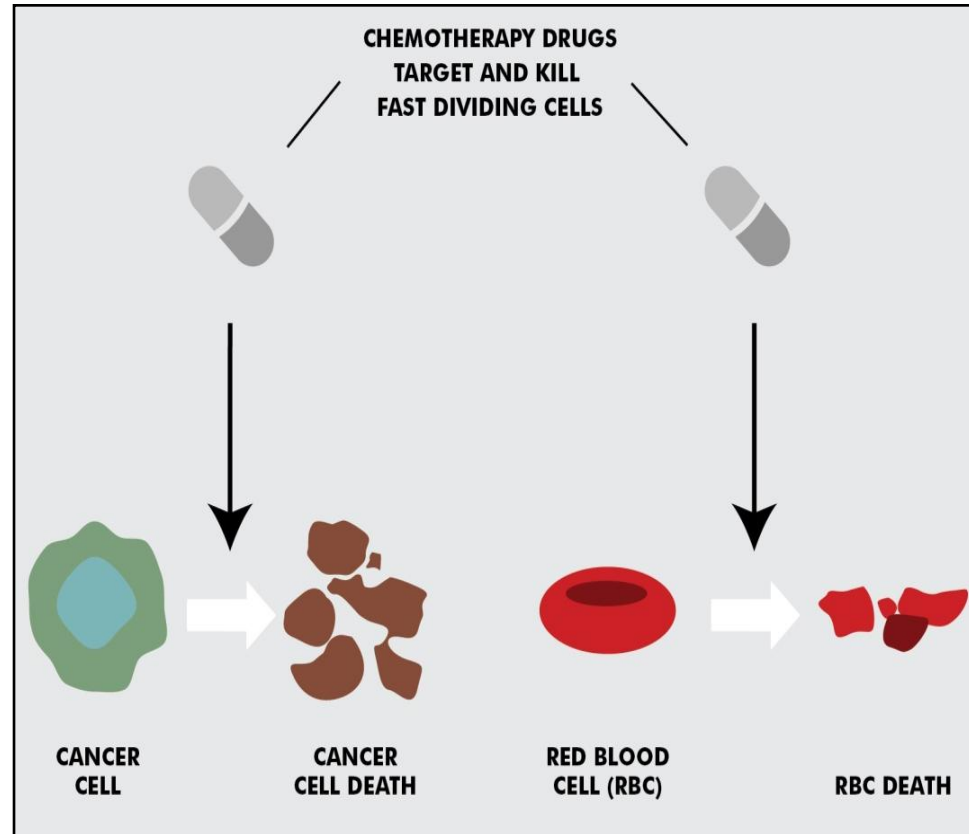
- Myelosuppression:

The most common reason to lower or hold chemotherapy or radiation until your blood cell levels return to normal

- Some types of chemotherapy slow down your bone marrow activity

- Results in a decrease in these blood cells:

- White blood cells (WBCs) (neutropenia)
- Red blood cells (RBCs) (anemia)
- Platelet cells (thrombocytopenia)



# Managing Anemia

*(Low red blood cells)*

- **Anemia: Low RBC count**
  - Can make you feel tired and weak
- **Managing anemia:**
  - Conserve your energy
  - Ask for help
  - Balance rest and activity
  - Eat a balanced and healthy diet
  - Tell your doctor about your symptoms



# Anemia

## *Symptoms you need to report right away*

- Call your doctor if you have:
  - Severe fatigue
  - Dizziness
  - Shortness of breath
  - Your heart is beating fast
  
- Call 911 or go to the nearest emergency room immediately if you have:
  - Chest pain
  - Sudden onset or increase in shortness of breath

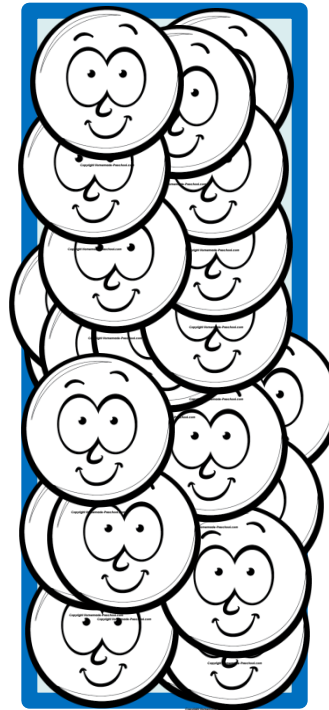


# Managing Neutropenia

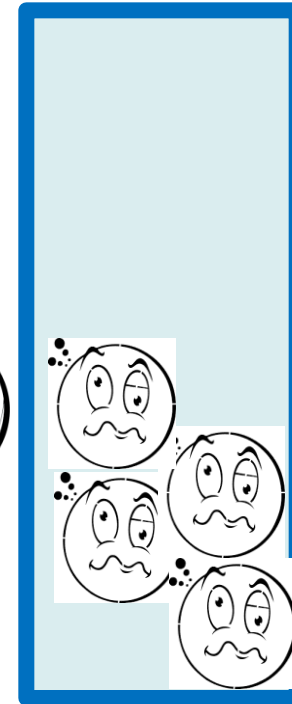
## *(Low white blood cells)*

- **Neutropenia: Low white blood cell (WBC) count**

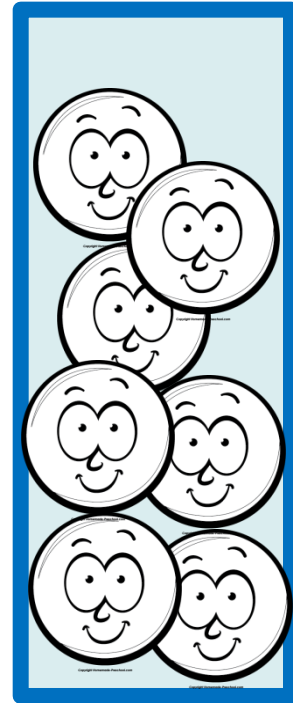
- White blood cell count will be it's lowest usually 7-10 days after chemotherapy
- You become at risk for getting sick or an infection easier
- Medications can be prescribed to help your body make more white blood cells
  - You may get (Neupogen/Neulasta) medicine during your treatment.



**Before  
Chemo**



**After  
Chemo**



**After  
Rest Period &  
Neulasta**



# How to Protect Yourself When Your White Counts Are Low - Neutropenia

- Wash or clean your hands often including family and caregivers
- Do not touch your face unless you have clean hands
- Check your temperature. Report temperature of **100.5 or more**
- Prevent injury to your skin
- Stay away from anyone who appears or feels sick
- Keep masks and hand sanitizer with you when you are out of your house



# Reporting Signs and Symptoms of Infection

Tell your doctor or nurse right away if you have any of the following signs/symptoms of infection:



- Temperature greater than 100.5 degrees Fahrenheit
- New cough (may or may not have mucous)
- Shortness of breath
- Burning or pain when you urinate
- Red, swollen or draining IV catheter site
- Sores or white patches in mouth
- Diarrhea lasting more than 24 hours
- **Shaking chills** or body aches
- Skin sores that are not healing

Reporting these symptoms is especially important if you received chemotherapy in the past two weeks

# Managing Thrombocytopenia

## *(Low platelet cell count)*

- **Thrombocytopenia: Low platelet cell count**
  - With fewer platelets, you are at risk for bleeding and may bruise more easily
- **How to protect yourself:**
  - Prevent injury and check your home for potential dangers
  - Use soft toothbrushes, gentle flossing, no toothpicks
  - DO NOT use a straight razor to shave. Use electric
  - DO NOT take any aspirin or other pain relievers unless your doctor says it is OK

# Thrombocytopenia

*Symptoms you need to report right away*

- Call your doctor if you have:

- Skin changes (bruises or red spots)
- Changes in vision/how well you see
- Bad headaches
- Confusion or are very sleepy
- Bleeding that does not stop after a few minutes
- Blood in your urine. The urine will have a red or pink color to it
- Black or bloody stools



# Gastrointestinal Side Effects Nausea/Vomiting

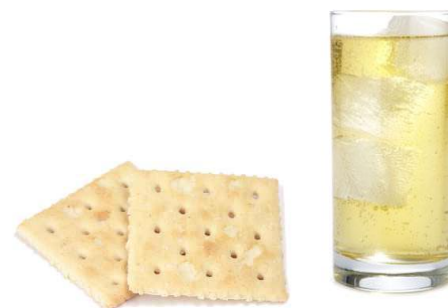


- Nausea and vomiting are very common side effects of chemotherapy
- Medications are usually given before and after treatment to control nausea and vomiting
- You may receive extra medications if you develop nausea and vomiting after chemotherapy



# Preventing and Managing Nausea and Vomiting

- Try to avoid nausea and vomiting by:
  - Taking your nausea medications on time for the first 2-3 days after chemo
  - Eat foods and drink beverages that are easy on the stomach (nothing spicy or acidic)
  - Ginger ale and Saltines can settle your stomach
  - Do NOT force yourself to eat when you feel nauseated. Take your medication first
  - Remember you may feel full faster than before
    - Start with smaller portions or foods that are easy to chew
  - Eat food cold or at room temperature
  - Tell your doctor if your nausea is not relieved



# Diarrhea May Occur

- Diarrhea is the passage of loose or watery stools three or more times a day, with or without discomfort
- Uncontrolled diarrhea can lead to loss of fluids and electrolytes
- Diarrhea caused by chemotherapy or radiation therapy may last for up to three weeks after treatment ends
- It is a very common side effect with a few chemos/biotherapies. If diarrhea or abdominal cramping begins during treatment, and you will be given medications and will be instructed on the use of over the counter medication

# What You Can Do to Manage Diarrhea

- When you have diarrhea, take action by changing what you eat and drink, including:
  - Drink clear liquids
  - Eat low-fiber foods
  - Eat frequent, small meals
  - Eat foods high in potassium
  - Avoid foods that can irritate your digestive tract (nothing spicy)
  - Over the counter Imodium can be used in combination with changes in your diet
- If these changes do not reduce your discomfort, your doctor may give you medications to offer relief

# Diarrhea

## *Symptoms you need to report right away*

- Call your doctor or nurse if you have any of the following:
  - Four or more loose stools per day, for more than 2 days
  - Blood in your stool
  - Unable to urinate for 12 or more hours (dehydration)
  - If you can't drink liquids for more than 2 days
  - Weight loss of 5 lbs or more after diarrhea starts
  - Fever - temperature greater than 100.5
  - New abdominal cramps/pain lasting 2 or more days
  - Suddenly puffy or bloated abdomen



# Sore Mouth and Throat Changes

- The key is prevention. Avoid complications by:
  - Visiting your dentist at least 2 weeks before starting treatment. Most dentists will not perform a routine cleaning while you are receiving chemotherapy
  - Cleaning your entire mouth after meals, when you wake up and before you go to bed
  - Using alcohol-free mouthwashes or use a solution of 1/4 teaspoon baking soda and 1/8 teaspoon of salt in 1 cup of warm water. Do this 3-4 times a day
- Tell your doctor or nurse right away if you notice mouth, gum or throat sores, especially after your chemotherapy



# Feeling Fatigue

- Fatigue is being tired – physically, mentally and emotionally
- You feel less energy to do the things you need or want to do
- Factors that may add to cancer fatigue include:
  - Anemia
  - Combination therapy
  - Pain
  - Stress
  - Depression



# Managing Fatigue

- Remember that “normal” activities will make you tired
  - For example, showering may take more energy than you realize and you will need to rest for a few minutes afterward
- Eat a healthy, balanced diet
- Plan your activities and organize your work
- Pace yourself and schedule rest periods
- Exercise!
  - Anything that gets your body moving will do



# Hair Loss and Chemotherapy

- Hair loss (alopecia) is not always a side effect of chemotherapy - ask your doctor or nurse what to expect
- Usually begins 2-3 weeks after chemotherapy treatment starts
- Hair starts to grow back 1-2 months after chemotherapy ends and may take 6 months or more for your hair to fully grow back
- You may also have thinning or loss of hair in your eyebrows, eyelashes, face, chest, pubic area, underarm and arms/legs

# Managing Hair Loss

- Tips for dealing with hair loss:
  - Get a short haircut before you begin treatment
  - Shop for a wig before your hair is gone
  - Shave your head before your hair starts to fall
  - Try head coverings, such as hats, scarves and turbans
  - Ladies - accessorize with makeup or jewelry
  - Visit the Positive Image Center<sup>SM</sup>

The best way to deal with hair loss is to choose what is most comfortable for you. There are no right or wrong ways - remember we are here to help!

# Skin Changes

- Your skin is one area of your body that is most commonly affected by cancer treatment
- Some patients can develop dry, sensitive and irritated skin
- Changes in your nails is a side effect of some chemotherapy treatments
- Some of these changes can occur over time and may not appear until your 3<sup>rd</sup>, 4<sup>th</sup> or even 5<sup>th</sup> cycle of treatment

If you have a history of ongoing skin problems such as eczema or psoriasis, let your doctor know so they can have you checked by a dermatologist



# Protecting Your Skin



- Tips for protecting your skin:
  - Apply a broad spectrum SPF 50+ sunscreen to all exposed skin daily
  - Cover exposed skin during daytime, especially your head
  - Avoid perfumes fragrances, dyes and preservatives in soaps, shampoos, detergents and lotions. These products can cause itching and rash in cancer patients.
  - Avoid “gel nail” manicures and artificial nails
  - Use a moisturizing product daily or more often if your skin is dry. Moisturize right after your shower/bath while your skin is still moist; it is important to apply around your nails of your hands and feet

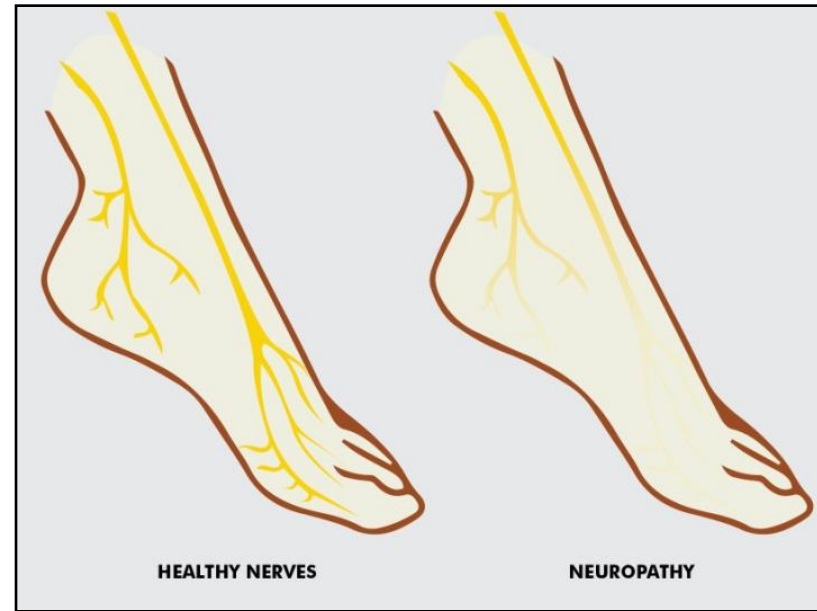
# Skin Changes to Report Right Away

- Unexplained or worsening skin rash
- Itching, pain or other troubling symptoms with a rash
- Rash affecting the inside of your mouth or nose
- Any blistering, peeling or open areas on the skin
- If you think you have an infection in the skin or nails



# Chemotherapy Neuropathy

- **Neuropathy is a common side effect of chemotherapy**
  - Certain nerves can be injured- often times in the hands/fingers and feet/toes
- **May begin any time after your first treatment**
  - It can get worse as treatments continue
- **Common symptoms of neuropathy:**
  - Pain, tingling “pins and needles” feeling
  - Numbness and/or weakness
  - Losing your balance, feeling clumsy
  - Tripping or stumbling while walking
  - Feeling cold more than you used to
  - Trouble picking up objects or buttoning your clothes



# Managing Chemotherapy Neuropathy

- If you develop peripheral neuropathy, let your doctor know right away and be sure to ask about any precautions you should take to keep you safe
- There are ways to treat and minimize peripheral neuropathy
- Be sure to talk with your doctor or nurse about your symptoms
- Let your doctor know if you also have any of the following conditions:
  - Diabetes
  - Previous chemotherapy
  - History of alcoholism
  - Severe malnutrition

# Physical Intimacy

- Intimacy and sexuality are very important aspects of life that fulfill the emotional and physical needs of all human beings
- Chemotherapy may affect the way you feel about intimacy and physical closeness, due to possible:
  - Anxiety about your disease, treatment or financial concerns
  - Body image changes
  - Physical effects of treatment such as nausea, diarrhea or skin problems
  - Depression and fatigue
- **What you can do:**
  - Be open to your partner about your feelings; maintain open communication
  - Talk with your doctor or nurse - many of the chemo effects can be controlled by medication
  - There are other ways to satisfy the need for intimacy like holding and being close



# Sexuality and Fertility

- Chemotherapy can affect your ability to have children, also called infertility
  - This can be temporary or permanent
- Chemo *can* cause infertility but it *does not always* affect sexual organs and how they work
- What you can do:
  - Discuss your plans of having children with your partner
  - Talk with your doctor or nurse about the possibility of infertility
  - Resources can also be found at the Sheri & Les Biller Patient and Family Resource Center

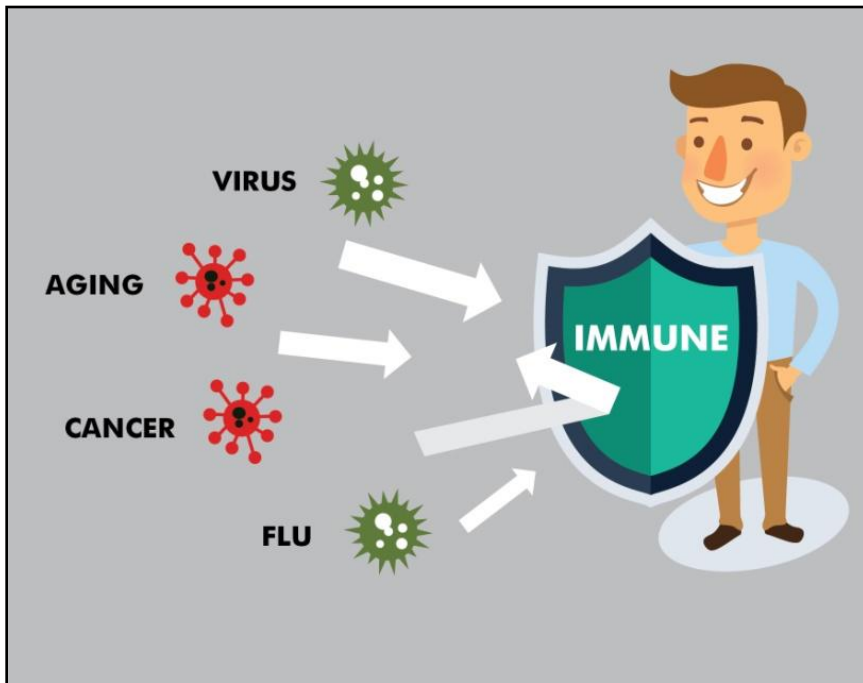


It is important to discuss your concerns and questions about intimacy and sexual activity with your medical team

# Biotherapy

## Immunotherapy

## Targeted Therapy





# Biotherapy and the Immune System

- **The immune system:**
  - Defends against unknown cells
    - Bacteria, viruses or cancer cells
  - Maintains health by destroying aging or damaged cells
  - Identifies foreign substances
- **Biological therapy:**
  - Uses materials made by our own body or made in a laboratory
  - Boosts, directs or restores our body's natural defenses against diseases such as cancer

# Biotherapy Actions

Makes the immune system stronger or smarter against cancer



Directly attacks cancer



Has other biological effects on the tumor:

- Keeps it from spreading
- Changes the tumor cells

# How Is Biotherapy Given?

- It is given in the same way that chemotherapy is given:
  - pills taken by mouth
  - a vein (IV)
  - by injection
- Biotherapy is often given in combination with chemotherapy
- Although biotherapy does not attack healthy cells, it still may have side effects



# Biotherapy Side Effects

- Skin redness at injection site
- Phlebitis (vein irritation)
- Flu-like symptoms
  - Fever, chills, body aches
- Fatigue (very common)
- Nausea, vomiting, diarrhea
- Low blood pressure
- Allergic reactions
  - Cough, wheezing, skin rash



# Where Do I Call for Help When I'm at Home, at Night or on Weekends?

- Call the Nursing Triage Call Center at: **626-471-7133**  
24 hours a day, 7 days a week
- A nurse will answer your questions and help you manage symptoms. If you need medical treatment, you will be asked to come to our Evaluation & Treatment Center (ETC)
- ETC is Located in the Brawerman Center, 1<sup>st</sup> floor
  - Open 24 hours a day, 7 days a week



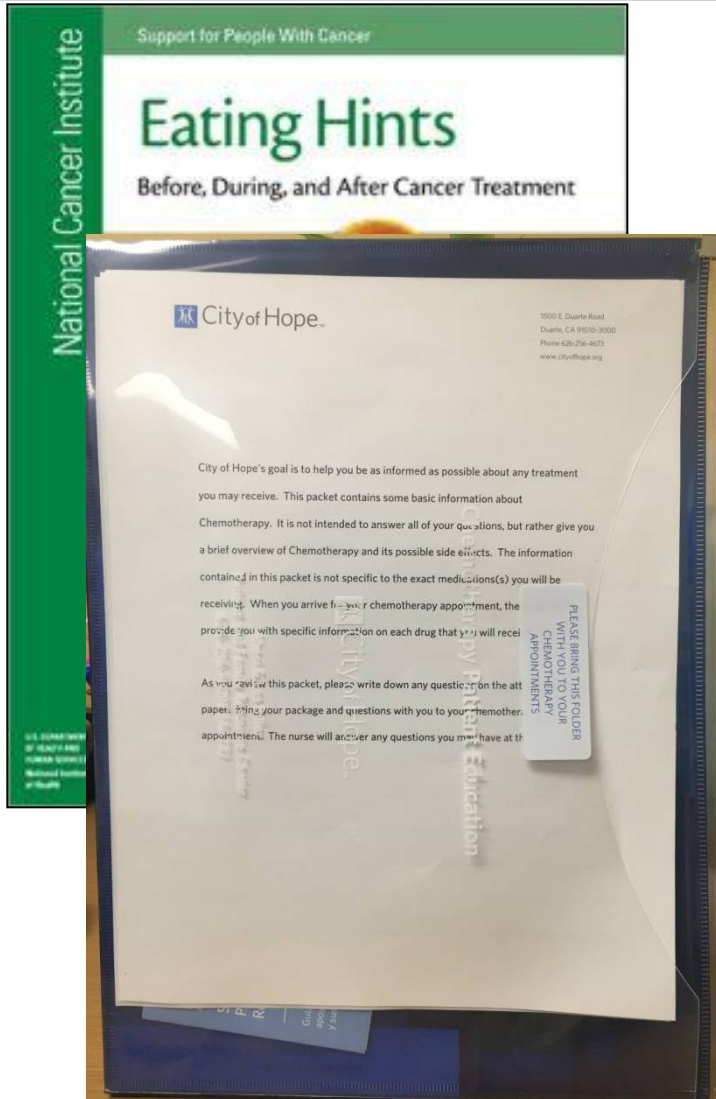
Call the Nursing Triage Call Center before coming to the ETC  
to receive specific instructions about symptom  
management

# Your City of Hope Resources

- Your most important resource is your health care team! Remember they are always available to answer your questions.
- Visit or call the Sheri & Les Biller Patient & Family Resource Center/Department of Supportive Care Medicine
- Read all the materials in your blue chemotherapy packet



# Chemotherapy Educational Resources



## CHEMOTHERAPY SIDE EFFECTS

City of Hope offers many resources to help you understand chemotherapy treatment, its side effects and how to manage the symptoms of side effects.

The “Chemotherapy Education for Patients and Caregivers” class at the Duarte main campus will answer your questions on what to expect, how to manage side effects, resources for information and support.

### Helpful Resources

Many of these booklets are also available in print format at the [Sheri & Les Biller Patient and Family Resource Center](#) located on the Duarte main campus.

- [Understanding Chemotherapy \(NCI\) / Información sobre la quimioterapia \(NCI\)](#)
- [Chemotherapy and You: Support For People With Cancer \(NCI\) / La quimioterapia y usted \(NCI\)](#)
- [Managing Hair Loss](#)
- [Neuropathy](#)
- [Managing Bleeding](#)
- [Managing Mouth and Throat Changes](#)
- [Preventing Infections](#)
- [Drugs, supplements and herbal information including chemotherapy drugs on Medline Plus / Medicinas, hierbas y suplementos Medline Plus](#)

<http://www.cityofhope.org/patients/living-with-cancer/living-with-cancer-managing-symptoms-side-effects/living-with-cancer-chemotherapy-side-effects>



# The Sheri & Les Biller Patient and Family Resource Center





- Educational materials
- Computers and wireless internet
- Support groups, educational classes, wellness programs
- Resources, information, support
- Place for rest and relaxation

**Monday – Friday, 8 a.m. – 5 p.m.**  
**ext. 3CARE (82273)**

**[BillerResourceCenter@coh.org](mailto:BillerResourceCenter@coh.org)**



# Classes for Patients and Caregivers

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## BILLER CENTER SUPPORT SERVICES EVENTS


The [Biller Patient and Family Resource Center](#) and [Department of Supportive Care Medicine](#) hosts educational classes on a variety of topics to help answer many of the questions you may have after being diagnosed with cancer.

### SEARCH EVENTS


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- Yoga
- Breathing and Meditation
- Music Therapy
- Art Therapy
- Nutrition and Physical Activity
- Support Groups
- Spiritual Programs
- And more ...
- **English and Spanish**

# Positive Image Center <sup>SM</sup>

- Licensed cosmetologists are here to help minimize the appearance-related side effects of treatment
- Services include:
  - Head shaves (inpatient and outpatient)
  - Wig fittings and styling
  - Cosmetic and skin care techniques
  - Pre- and post mastectomy counseling
  - Head-wraps, hats and scarf-tying techniques
  - Radiation relief cream
  - Products for vaginal dryness relief
  - Nail polish
  - American Cancer Society's Look Good...Feel Better program



**Walk-ins welcome**

**Monday – Friday, 8 a.m. – 4:30 p.m., 626-301-8874**

**Machris (around the corner from the Biller Patient and Family Resource Center)**

# Community Resources for More Information

- National Cancer Institute
  - (800) 422-6237
  - [www.cancer.gov](http://www.cancer.gov)
- American Cancer Society
  - (800) 227-2345
  - [www.cancer.org](http://www.cancer.org)
- Cancer Care
  - (800) 813-4673
  - [www.cancercare.org](http://www.cancercare.org)
- Cancer Support Community
  - (888) 793-9355
  - [www.thewellnesscommunity.org](http://www.thewellnesscommunity.org)



# Key Points to Remember

- You can take an active role in managing symptoms
- Most side effects do have effective ways to relieve them
- Notify your doctor or the Nursing Triage Call Center if you are experiencing any side effects that cause you distress
- Review your symptom management cards and chemotherapy packet before starting your treatment
- Being a partner in your care is one of the best ways to get through your chemotherapy!
- **We are here to help you ... always!**



# Tips

## *What to bring to your chemotherapy appointment*

- **Your home medicines**
  - We will review these with you
- **Comfort Items**
  - Hat, blanket, small pillow
- **Comfortable clothes, dress in layers**
- **Your favorite snacks and drinks**
  - Some patients chew gum or hard candy during chemo
  - Salty snacks, sack lunch, your favorite healthy beverage
- **Activities to pass the time**
  - Music and headphones, books, puzzles, mobile device, laptop
- **Limited visitors**
  - You need your rest, and we need the space to care for you safely



Of course we can provide certain comfort items, snacks and activities - but only YOU know what you like!



Thank you for taking an  
active role in your care!

