

INFECTION PRECAUTIONS FOR PATIENTS WITH LOW NEUTROPHIL COUNT (NEUTROPENIC PRECAUTIONS)

NEUTROPENIC PRECAUTIONS

White blood cells (WBCs) are made by bone marrow. Neutrophils are good white blood cells that fight infection. Neutropenia means a decrease in the number of neutrophils or good white blood cells. Cancer treatments such as chemotherapy and sometimes radiation can lower the number of neutrophils. Low neutrophils may cause a patient to be at greater risk for infections. However, there are several precautions that can be observed to reduce the risk of catching an infection.

MEASURES TO MINIMIZE RISK FOR INFECTION AND ITS COMPLICATIONS

- Reduce exposure to infection
- Maintain intact skin
- Recognize early signs and symptoms that may mean infection
- Seek immediate medical help in the event of suspected infection

IT IS A MUCH BETTER IDEA TO AVOID ONFECTION RATHER THAN HAVING IT AND THEN TRYING TO DEAL WITH IT.

These are suggested precautions that you can follow to minimize your risk of infection. Some measures are common sense measures and may not have scientific proof of effectiveness. However, they are considered useful. TAKE A COMMON SENSE APPROACH! PROTECT YOURSELF!

HAND WASHING: This is the most important preventive measure!

- Keeping your hands clean is one of the most important steps any one can take to avoid getting sick and spreading germs to others.
- Frequent and good hand washing (both the patient and those coming in contact with them).
- Clean your hands often with soap and water or an alcohol-based hand cleaner.
- It is best to wash your hands with soap and clean running water for 20 seconds. However, if soap and clean water are not available, use an alcohol-based product to clean your hands. Alcohol-based hand rubs significantly reduce the number of germs on skin and are fast acting.
- When should you wash your hands?
 - Before preparing or eating food
 - After going to the bathroom
 - After changing diapers or cleaning up a child (not handling it at all is better)
 - Before and after tending to someone who is sick (not handling it at all is better)
 - After blowing your nose, coughing, or sneezing
 - After handling an animal or animal waste (not handling it at all is better)
 - After handling garbage (not handling it at all is better)
 - Before and after treating a cut or wound

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GENERAL HYGEINE

- Bathe daily and stay clean. Be sure to wash your feet, groin, armpits, and other moist, sweaty areas
- Avoid touching eyes, nose or mouth with dirty fingers. Serious respiratory illnesses are spread by coughing or sneezing and/or unclean hands
- Good care with urination or bowel movements (women need to wipe front to back)
- Keep your groin area and anal area clean, using soft moist cloths (such as disposable baby wipes)
- Use a water soluble lubricant during intercourse and do not engage in intercourse if severely neutropenic (there are no scientific parameters advising at what neutrophil count level one can or cannot do different kinds of sexual activities)
- Frequent gentle mouth care with a soft toothbrush
- Avoid anything grown in dirt – it has bacteria on it
- Avoid contact with live plants or flowers (soil and standing water may have germs)
- Don't clean kitty litters. Do not "scoop poop"
- Do not clean bird cages or fish tanks. Let someone else do this for you
- Do not use rectal suppositories, thermometers, and enemas
- Except in an emergency, do not have any dental work done. If you must, then inform your dentist that you are receiving chemotherapy and consult with your oncologist
- Do not receive any immunizations unless the oncologist has approved them
- Avoid any one who has received immunizations in the last 2-4 weeks
- Do not use hot tubs
- Do not play, or swim in ponds, lakes, or rivers
- Avoid garden work (do not dig soil- there are germs in the soil and leaves)

AVOID CLOSE CONTACT WITH PEOPLE WHO ARE SICK

- Certain illnesses spread easily in crowded places where people are in close contact.
- Ask family and friends who are sick to wait until they are well to visit you
- Avoid large crowds and crowded facilities like shopping malls, theaters, and restaurants
- Wash your hands frequently, and request visitors and members of the household to do the same
- Exercise caution with children in day care or school environments
- Avoid contact with anyone with an infection, recent vaccination, or recent exposure to communicable disease (such as chicken pox, shingles, flu, colds)
- Limit contact with pets (especially litter boxes or bird cages)
- Flu shots or live vaccines are not recommended during chemotherapy
- Be careful visiting any patient in a hospital or a nursing home (Do not visit if you have a choice- best protection from all the bugs floating around the medical world is to avoid it at all cost).
- Avoid construction area. There may be fungus or spores floating in the air that can be deadly to an immune-compromised patient
- MASKS: You may wear a mask to protect others. It may not protect you much. A mask does not always help—it can concentrate your germs in one spot on the mask! Do not rely solely on mask to protect you. Hand washing is still important and a must.

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MAINTAIN INTACT SKIN

- Take care of wounds, dressings, or IV sites
- Take care of your mouth and skin.
- Avoid activities that might result in breaks in the skin, such as:
 - Use of razor blades (Do not shave your head with a razor, cautiously use a trimmer instead)
 - Use of rectal or vaginal suppositories, enemas, or douches
 - Gardening or cleaning without gloves
 - Accidental skin cuts, Needle sticks etc.

DIET AND EATING HABITS

- Foods to avoid:
 - Uncooked or unclean or raw fruits or vegetables
 - Fresh fruits or vegetables
 - Raw meats or raw fish or raw eggs
 - Raw milk or milk products, or any milk or milk product that has not been pasteurized, including cheese and yogurt made from unpasteurized milk, Natural cheeses
 - Hot dogs, deli meats, or processed meats (unless they have been cooked just before eating)
 - Any food that contains mold (for example, blue cheese, including that in salad dressings)
 - Raw honey (honey that has not been pasteurized)
 - Frozen or dried fruits
 - Anything grown in dirt or anything that may carry bacteria
- Cook foods thoroughly (hot or well done) when possible (heat may kill some bacteria)
- Wash all fruits and vegetables thoroughly
- Avoid eating uncooked food or food that cannot be washed
- Do not eat or drink any Do not eat raw or undercooked meat, fish, chicken, eggs, or tofu
- Do not eat cold, smoked fish
- Do not eat any uncooked vegetables and fruits
- Do not eat uncooked grain products
- Do not eat unwashed salad greens
- Do not eat vegetable sprouts (alfalfa, bean, and others)
- Do not drink fruit or vegetable juices that have not been pasteurized
- Do not eat raw nuts or nuts roasted in their shells
- Do not drink beer that has not been pasteurized (this is most often home brewed and some microbrewery beers)
- Do not eat brewer's yeast
- Do not eat any outdated food
- Do not eat any cooked food that has been left at room temperature for 2 hours or more
- Do not eat any food that has been handled or prepared with unwashed hands
- Talk with your doctor about any dietary concerns you may have, or ask to talk with a registered dietitian
- Wash your hands before eating every time you eat

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- Use properly cleaned utensils
- Do not share eating utensils, drinking glasses, towels or other personal items.
- Don't eat off a salad bar or any common food area where there is risk of contamination! (Imagine people hanging over a food bar while sneezing as they go or dirty fingers rubbing runny noses and then sticking their hands into the food...)

MOUTH CARE GUIDELINES

Chemotherapy treatments can cause your mouth to become dry or sore. Mouth carries large number of "bad bacteria" which can proliferate during periods of neutropenia. They can cause serious infection. A dry or sore mouth can also alter your eating and drinking. Proper oral hygiene can decrease your risk for potential infections and may reduce risk of nutritional compromise. Preventative measures:

- Brushing your teeth after every meal and at bedtime with a soft bristle toothbrush
- If possible see your dentist before starting on chemotherapy
- Avoid mouthwashes with large amounts of alcohol
- Avoid acidic or abrasive foods
- Keep your lips and oral cavity moist (drink of adequate amount of water)
- Avoid using tobacco products
- If you wear dentures make sure they are clean and well fitted
- If your mouth is sore, do not use commercial mouthwashes containing alcohol. It can dry out the mouth even more. Swish the mouth out with prescription mouthwashes, or salt water (a glass of water with pinch of salt) or baking soda and water (a glass of water with pinch of baking soda).

HOW TO RECOGNIZE AN INFECTION:

Take an oral temperature twice a day with digital thermometer. Do not take temperature right after having a hot drink like coffee.

Please keep in mind that fever may be the only sign of infection in someone with a low white blood cell count. Some of the signs and symptoms of infection:

- Oral temperature of 100.5 degrees or higher
- Not feeling well
- Cough or shortness of breath
- Soreness or swelling of the mouth and/or throat
- Pain or burning when during urination
- Redness, pain or swelling at the site of your chemotherapy catheter
- Redness, pain or swelling at the site of an injury
- General feeling of weakness, or flu like symptoms
- Chills
- Mental Confusion
- Chest pain or Abdominal pain
- Skin rash
- Low blood pressure

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PLEASE CLEARLY UNDERSTAND

- Infection occurring during neutropenia is considered serious and potentially life threatening
- Body cannot defend against infection in absence of neutrophils
- Infection can spread like fire when there are no defenses.
- Bacteria can rapidly spread to blood (Septic shock)
- Septic shock can be fatal very quickly (may result in rapid death)
- Do not delay seeking medical attention if you have fever or not feeling.
- Do not try to guess your WBC count.
- Do not take chances. Safest thing to do is to go to the nearest emergency room and get checked out by a doctor as soon as possible.
- If you get fever Friday night, do not wait till Monday morning to see your doctor. Go to the emergency room on Friday night.
- Time is of essence when a neutropenic patient gets infection. Timely intra-venous antibiotic administration is a life saving measure.

DO NOT DELAY SEEKING MEDICAL ATTENTION. INFECTION CAN BE LIFE THREATENING DURING PERIODS OF LOW NEUTROPHIL COUNT AND SERIOUS INFECTION MAY RESULT IN DEATH.

When your white count returns to normal, resume your normal activities and eating habits. However, continuation of infection precautions can help you stay healthy regardless of the WBC count.