

INTRAVENOUS CANCER TREATMENT EDUCATION



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BLEOMYCIN, ETOPOSIDE, CISPLATIN (BEP)

Name of the regimen and cancer drugs

Your care team may refer to your treatment as BEP. BEP consists of 3 different anti-cancer therapies.

- **B:** Bleomycin (blee-oh-MY-sin): Blenoxane®
- **E:** Etoposide (ee-toh-POH-side): Toposar®
- **P:** Cisplatin (sis-PLA-tin): Platinol®

Common uses

BEP is most commonly used to treat testicular cancer, germ cell tumors, and ovarian cancer but may be used for other cancers.

Treatment schedule

Your treatment will be given into your vein through an intravenous (IV) line. This may be into a short, flexible temporary catheter in your arm, or through a central venous catheter. A central venous catheter, or central line is a long, flexible IV tube that empties into a very large vein next to the heart. Talk with your care team to see which will be best for you and your treatment.

Each BEP treatment is repeated every 21 days. This is known as one cycle. Your treatment may be given for a set number of cycles, or it will keep going until the drug, or drugs, stop working or you have side effects which stop you from continuing treatment.

- Bleomycin IV given on Days 1, 8, and 15
- Etoposide IV given on Day 1-5
- Cisplatin IV given on Day 1-5

Drug	Cycle 1	Day 1	2	3	4	5	...	8	...	15	...	21	Cycle 2 Day 1
Bleomycin		Red						Red		Red			Red
Etoposide		Blue	Blue	Blue	Blue	Blue							Blue
Cisplatin		Grey	Grey	Grey	Grey	Grey							Grey

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Other medications

Other medications may be ordered for you to prevent or treat certain side effects. These include:

	Instructions:
Growth Factors	Growth factors, like filgrastim, pegfilgrastim, and others, are medications used to treat neutropenia and prevent infections. Neutropenia is a condition where there are lower-than-normal white blood cells caused by some type of chemotherapy. Growth factors help the bone marrow to make more white blood cells.
Anti-nausea and other medications	You will receive medications to prevent nausea and other side effects just before your cancer treatment. You may also get prescriptions for other medications to take at home, as below: <hr/> <hr/> <hr/> <hr/>

Possible drug interactions

- BEP may interact with other drugs you are taking. Please inform your care providers of all prescription medicine, over-the-counter medications, vitamins, and herbal products that you take.
- Talk with your care provider or pharmacist before taking new medications, supplements, or receiving any vaccines.
- Grapefruit or grapefruit juice may interact with etoposide. Avoid eating or drinking these during your treatment

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Common Side Effects

Common side effects that have been known to happen in patients receiving BEP are listed in the left side of this table. In some instances, the side effects may be reported less often but are still important to discuss. This table does not list all the known side effects for this therapy, only the ones that are experienced most often. Not every patient experiences every known side effect of a drug; even if you are taking the same drug as another patient, you may experience different side effects. Options to help manage any side effects that do occur are included on the right side of this table. These should be discussed with your care provider. If you experience any side effect you cannot manage or that is not listed here, contact your care provider.

Possible Side Effect	Management
<p>Decreased white blood cells (WBCs) and increased risk for infection</p>	<p>Your WBCs should be monitored by a simple blood test. When your WBCs are low, you are at a greater risk of having an infection. Take the following precautions to protect yourself from infection.</p> <ul style="list-style-type: none"> • Wash your hands often, especially before eating and after using the bathroom. • Avoid crowds and people with fevers, flu, or other infection. • Bathe often for good personal hygiene. <p>Contact your care team if you experience any signs or symptoms of an infection such as:</p> <ul style="list-style-type: none"> • Fever (temperature more than 100.4°F or 38°C) • Chills • Sore throat • Burning when peeing • Tiredness that is worse than normal • A sore that becomes red, is draining, or does not heal. <p>Check with your care team before taking any medicine for a fever or chills.</p>
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Possible Side Effect	Management
<p>Decreased hemoglobin, part of the red blood cells that carry iron and oxygen</p>	<p>Your hemoglobin should be checked by a simple blood test. When your hemoglobin is low, you may notice that you get tired or fatigued more easily.</p> <ul style="list-style-type: none"> • Try to get 7 to 8 hours of sleep per night • Avoid operating heavy machinery if you feel too tired • Find a balance between “work” and “rest” • Stay as active as possible, but know that it is okay to rest as needed, too • You might notice that you are more pale than usual <p>Let your care team know right away if you have:</p> <ul style="list-style-type: none"> • Shortness of breath • Dizziness • Fast or abnormal heartbeat
<p>Decreased platelet count and increased risk of bleeding</p>	<p>Your platelets should be monitored by a simple blood test. When they are low, you may bruise or bleed more easily than usual.</p> <ul style="list-style-type: none"> • Use caution to avoid bruises, cuts, or burns. • Blow your nose gently and do not pick your nose • Brush your teeth gently with a soft toothbrush and maintain good oral hygiene • When shaving use an electric razor instead of razor blades • Use a nail file instead of a nail clippers <p>Call your care team if you have bleeding that won’t stop. Examples include:</p> <ul style="list-style-type: none"> • A bloody nose that bleeds for more than 5 minutes despite pressure • A cut that continues to ooze despite pressure • Gums that bleed a lot when you floss or brush <p>Seek medical help right away if you have any severe headaches, blood in your urine or stool, coughing up blood, or bleeding that you cannot stop or lasts a long time.</p> <p>You may need to take a break or “hold” your medication for medical or dental procedures. Talk to your care team or dentist before any scheduled procedures.</p>

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Possible Side Effect	Management
<p>Nausea or vomiting</p>	<ul style="list-style-type: none"> • Take all medications as prescribed to help prevent and lessen symptoms of nausea and vomiting • Eat and drink slowly • Drink 8-10 (8-ounce) glasses of water and/or fluid (soup or broth) each day unless your care team has instructed you to limit your fluid intake • Eat small, frequent meals throughout the day rather than a few large meals • Eat bland foods; avoid spicy, fried, and greasy foods • Avoid intense exercise immediately after eating • Don't lay down right away after eating • Wear loose fitting clothing for comfort • Avoid strong odors. Consider getting fresh air and try deep breathing. <p>Let your care team know if you have nausea or vomiting.</p> <p>Your care team may prescribe medication to help with the symptoms.</p>
<p>Hair loss (alopecia)</p>	<ul style="list-style-type: none"> • Your hair will likely grow back after treatment is over. • Some people choose to wear scarves, caps, or wigs. A short haircut prior to treatment may help with stress of hair loss. • Partial or complete hair loss is likely, usually 1-2 weeks after start of therapy. This hair loss can be all body hair. • Hair will grow back after treatment is completed, although the color and/or texture may be different • It may take 3 to 6 months after therapy is completed to resume normal hair growth • Be sure to keep your head covered to protect it from the sun during the summer and cold during the winter. • If not covering your scalp during the summer months, be sure to use sunscreen when spending time outdoors.
<p>Numbness or tingling in hands and feet</p>	<p>Report changes in your sense of touch, such as a burning feeling, pain on the skin or weakness. Notify your care team as soon as these symptoms develop. Early intervention can limit and resolve these symptoms, but if not addressed these symptoms can become permanent.</p>
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Possible Side Effect	Management
Mouth irritation or sores (stomatitis)	<p>Practice good mouth care.</p> <ul style="list-style-type: none"> • Rinse your mouth often • Brush your teeth with a soft toothbrush or cotton swab after meals • Use a mild non-alcohol mouth rinse at least 4 times a day (after eating and at bedtime). One example is a mixture of 1/8 teaspoon of salt and 1/4 teaspoon of baking soda in 8 ounces of warm (not hot) water • If you have sores in your mouth, avoid using tobacco products, alcohol, and mouthwashes that contain alcohol <p>Call your care team if you experience pain or sores in your mouth or throat.</p>
Hearing changes	<p>This treatment may cause ringing in the ear, or hearing loss. Report changes in hearing to your care team.</p>
Kidney damage	<p>Your care team will routinely monitor your kidney function using a simple blood test. Talk with you care team to discuss ways to stay hydrated. You will receive additional fluids through your IV on the day of your treatment. Notify your care team if you notice any of the following:</p> <ul style="list-style-type: none"> • Decreased amount of urination • Unusual swelling in your legs and feet
Skin changes	<p>This treatment can cause redness, darkening of the skin, stretch marks on the skin, skin peeling, thickening of the skin, ulceration</p> <ul style="list-style-type: none"> • Avoid sun exposure. Wear SPF 30 (or higher) sunblock and protective clothing.
Nail changes	<p>This treatment can cause nail changes, such as vertical or horizontal bands, or general darkening of nails.</p> <ul style="list-style-type: none"> • Trim and keep nails clean. • Wear gloves for housecleaning and gardening to minimize damage and prevent infection. • Avoid nail polish and imitation fingernails until the nails have grown out and returned to normal.

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Rare but serious side effects

- Bleomycin may result in serious and fatal lung toxicity. If you start to experience shortness of breath, fatigue, breathlessness, or discomfort/worsening of symptoms while lying on your back, please immediately contact your prescriber.
- BEP can rarely cause a severe allergic reaction. Seek medical attention right away if you notice difficulty breathing, swelling of the mouth or tongue, or a serious rash.
- BEP may rarely cause a secondary cancer called Myelodysplastic Syndrome (MDS) or Acute Myeloid Leukemia (AML). Symptoms of low blood cell counts are common during treatment but can be a sign of MDS or AML if it persists beyond active treatment.
- BEP may be harmful to your kidneys. Speak to your care team to know when you need to have laboratory tests done to monitor your kidneys.

If you experience ANY new, worsening, or uncontrolled side effects, call your care team immediately.

(INSTITUTIONAL CONTACT INFO)

Handling body fluids and waste

Some of the drugs you receive may be present in urine, stool, sweat, or vomit for many days after treatment. Many cancer drugs are toxic, your bodily waste may also be toxic and can be dangerous to come into contact with. Once you have started BEP, follow the instructions below for at least two days after your treatment. This is to keep you, your loved ones, and the environment as safe as possible.

- Pregnant women should avoid touching anything that may be soiled with body fluids from the patient.
- Toilet and septic systems
 - You may use the same toilet, septic tank, and/or sewer that you usually use. Close the lid and flush to ensure all waste has been discarded. If you have a low-flow toilet, close the lid and flush twice. If the toilet or toilet seat is soiled with urine, stool, or vomit, clean the surface after every use before other people use the toilet.
- If the toilet or toilet seat becomes soiled with urine, stool, or vomit, clean the surface after every use before other people use the toilet.
- Wash hands with soap and water after using the toilet for at least 20 seconds.
- If you need a bedpan, be sure your caregiver knows to wear gloves to assist with cleanup and to wash the bedpan with soap and water every day.
- If you do not have good control of bladder or bowels, use a disposable pad with a plastic back, a diaper, or a sheet to absorb body waste.
- Wash any skin that has been exposed to body waste with soap and water.
- Linens or clothing that are soiled with body fluids or body waste should be washed separately from other linens and clothing. If you do not have a washer, place the soiled linens in a plastic bag until they can be washed.
- Wash hands with soap and water after touching linens or clothing that may be soiled with body fluids.

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Intimacy, sexual activity, contraception, and fertility

This treatment may cause changes that can affect intimacy and sexuality, including desire and body image. Maintaining physical closeness and/or intimacy with loved ones can be continued during treatment. Holding hands, hugging, and kissing can be done safely. It is recommended that you talk to your care team about any restrictions or questions you may have.

Some treatments can influence the ability to have children, also known as fertility. If you're interested in preserving fertility, talk to your care team before treatment. Ask your healthcare provider to determine when it is safe to become pregnant after your treatment. Patients of reproductive ability should not become pregnant or get their partners pregnant while receiving BEP. Some of the drugs you receive may be present in semen and vaginal secretion for many days after treatment. You should use barrier devices, such as condoms, during sexual activity to limit exposure to body fluids.

- Talk to your care team about birth control. Not all options may be right for your treatment or cancer. Effective contraception could include one or more of the following: barrier methods (e.g. condoms), hormone methods (e.g. birth control pills), or surgery.
- Tell your care team if you become pregnant or plan to breastfeed.

Additional resources

Prescribing information:

Bleomycin (Blenoxane): https://www.accessdata.fda.gov/drugsatfda_docs/label/2010/050443s0361bl.pdf

Etoposide (Toposar): https://www.accessdata.fda.gov/drugsatfda_docs/label/2017/020457s0161bl.pdf

Cisplatin (Platinol): https://www.accessdata.fda.gov/drugsatfda_docs/label/2019/018057s0891bl.pdf

Additional instructions

Updated – July 22, 2022

Important notice: The Association of Community Cancer Centers (ACCC), Hematology/Oncology Pharmacy Association (HOPA), National Community Oncology Dispensing Association, Inc. (NCODA), and Oncology Nursing Society (ONS) have collaborated in gathering information for and developing this patient education guide. This guide represents a brief summary of the therapy derived from information provided by the drug manufacturer and other resources. This guide does not cover all existing information related to the possible uses, directions, doses, precautions, warnings, interactions, adverse effects, or risks associated with this therapy and should not substitute for the advice of a qualified healthcare professional. Provision of this guide is for informational purposes only and does not constitute or imply endorsement, recommendation, or favoring of this therapy by ACCC, HOPA, NCODA, or ONS, who assume no liability for and cannot ensure the accuracy of the information presented. The collaborators are not making any representations with respect to the medications whatsoever, and any and all decisions, with respect to such medications, are at the sole risk of the individual receiving therapy. All decisions related to receiving this therapy should be made with the guidance and under the direction of a qualified healthcare professional.

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