

# INTRAVENOUS CANCER TREATMENT EDUCATION



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## GEMCITABINE

### Name of the regimen and cancer drugs

Gemcitabine (jem-SY-ta-been): Gemzar® (JEM-zar)

### Common uses

Gemcitabine is most commonly used to treat pancreatic cancer but may be used for other treatments.

### 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 gemcitabine treatment is repeated every 28 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 stops working or you have side effects which stop you from continuing treatment.

Gemcitabine is given on Day 1, 8, 15 and then 1 week off

Drug	Cycle 1	Day 1	2	3	4	5	6	7	8	9	10	11	...	15	...	Cycle 2 Day 1
Gemcitabine																

### Other medications

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

	Instructions:
<b>Growth Factors</b>	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.
<b>Anti-nausea medications</b>	You will receive medications to prevent nausea and other side effects just before your chemotherapy. You may get prescriptions for other medications to take at home, as below:  _____ _____ _____

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### Possible drug interactions

- Gemcitabine 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.

### Common Side Effects

Common side effects that have been known to happen in patients receiving gemcitabine 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
<b>Decreased white blood cells (WBCs) and increased risk for infection</b>	<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"><li>• Wash your hands often, especially before eating and after using the bathroom.</li><li>• Avoid crowds and people with fevers, flu, or other infection.</li><li>• Bathe often for good personal hygiene.</li></ul> <p>Contact your care team if you experience any signs or symptoms of an infection such as:</p> <ul style="list-style-type: none"><li>• Fever (temperature more than 100.4°F or 38°C)</li><li>• Chills</li><li>• Sore throat</li><li>• Burning when peeing</li><li>• Tiredness that is worse than normal</li><li>• A sore that becomes red, is draining, or does not heal.</li></ul> <p>Check with your care team before taking any medicine for a fever or chills.</p>

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Possible Side Effect	Management
<b>Decreased hemoglobin, part of the red blood cells that carry iron and oxygen</b>	<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"><li>• Try to get 7 to 8 hours of sleep per night</li><li>• Avoid operating heavy machinery if you feel too tired</li><li>• Find a balance between “work” and “rest”</li><li>• Stay as active as possible, but know that it is okay to rest as needed, too</li><li>• You might notice that you are more pale than usual</li></ul> <p>Let your care team know right away if you have:</p> <ul style="list-style-type: none"><li>• Shortness of breath</li><li>• Dizziness</li><li>• Fast or abnormal heartbeat</li></ul>
<b>Decreased platelet count and increased risk of bleeding</b>	<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"><li>• Use caution to avoid bruises, cuts, or burns.</li><li>• Blow your nose gently and do not pick your nose</li><li>• Brush your teeth gently with a soft toothbrush and maintain good oral hygiene</li><li>• When shaving use an electric razor instead of razor blades</li><li>• Use a nail file instead of nail clippers</li></ul> <p>Call your care team if you have bleeding that won’t stop. Examples include:</p> <ul style="list-style-type: none"><li>• A bloody nose that bleeds for more than 5 minutes despite pressure</li><li>• A cut that continues to ooze despite pressure</li><li>• Gums that bleed a lot when you floss or brush</li></ul> <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><b>You may need to take a break or “hold” your medication for medical or dental procedures.</b></p> <p><b>Talk to your care team or dentist before any scheduled procedures.</b></p>

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Possible Side Effect	Management
<b>Fever</b>	<p>You may feel hot, cold and shivery, achy or dizzy. This usually starts during the first month of therapy but could happen at any time.</p> <ul style="list-style-type: none"><li>Call your doctor immediately if you have a fever 100.4° F</li></ul> <p>Ask your doctor if you can take medicine to help with the fever.</p>
<b>Rash or itchy skin</b>	<ul style="list-style-type: none"><li>Keep your skin moisturized with creams and moisturizing lotions to decrease the risk of rash or itchiness and wear loose fitting clothing.</li><li>Avoid using perfumes and cologne as these products may increase rash symptoms.</li><li>Avoid being in the heat for long periods of time.</li><li>Your provider may recommend an over-the-counter antihistamine or a topical cream.</li><li>Sunlight can make symptoms worse</li><li>Avoid sun exposure as much as possible to decrease the risk of sunburn. The highest exposure to UV (ultra-violet) radiation occurs between the hours of 10am and 4pm.</li><li>Wear long-sleeved clothing, with UV protection if possible.</li><li>Wear broad-brimmed hats.</li><li>Apply broad-spectrum sunscreen (UVA/UVB) with at least SPF 30 as often as directed on the bottle.</li><li>Use lip balm with at least SPF 30</li></ul> <p>If your rash or itching continues to worsen, contact your care team.</p>
<b>Changes in liver function</b>	<p>Your liver function will be checked every so often by a simple blood test. Contact your care team if you notice any of the following.</p> <ul style="list-style-type: none"><li>Yellowing of the skin or whites of your eyes</li><li>Dark or brown urine</li><li>Bleeding or bruising</li></ul>
<b>Fluid retention or swelling (edema)</b>	<ul style="list-style-type: none"><li>Do not stand for long periods of time</li><li>Keep your legs elevated when sitting or lying down</li><li>Try to not eat salty foods, which can increase swelling</li><li>Avoid tight-fitting clothing and shoes</li><li>Weigh yourself daily</li><li>Take any medications as prescribed to decrease fluid retention</li></ul> <p>Contact your care team if you notice:</p> <ul style="list-style-type: none"><li>Swelling in the hands, feet, or legs</li><li>You are short of breath</li><li>You have gained 5 pounds or more in one week</li></ul>

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### Rare but serious side effects

Tell your care provider if you experience any symptoms of these problems:

- This product may result in serious and potentially fatal lung toxicity. When taking gemcitabine, 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.
- Gemcitabine may be harmful to your liver. Speak to your care team to know when you need to have blood tests done to monitor your liver function. If you get this side effect, your doctor may change your dose or stop treatment for some time.
- A condition called reversible posterior leukoencephalopathy syndrome can occur while taking gemcitabine. Call your care team right away if you have headaches, seizures, confusion or changes in vision.
- Gemcitabine may increase your sensitivity to radiation therapy or cause skin rash in places previously treated with radiation. Tell your doctor about your medication and radiation history and let your doctor know if you develop a skin rash.
- Hemolytic uremic syndrome can occur in rare cases, when small clots form in the blood vessels from damage or inflammation and block the blood flow to the kidneys, preventing them from working correctly. Call your healthcare team if you have bleeding, feel dizzy or short of breath or have swelling and you are not urinating your normal amount.
- A condition called capillary leak syndrome can occur when fluid moves from the blood vessels out to surrounding tissues. Notify your healthcare provider if you experience excessive thirst and weight gain.

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

**(INSTITUTIONAL CONTACT INFO)**

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### 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 gemcitabine, 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. If you have a low-flow toilet, close the lid and flush twice to ensure that all waste has been discarded.
- 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.

### 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 gemcitabine. 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.

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### Additional resources

### Additional instructions

Updated – July 23, 2021

**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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