

# ORAL CHEMOTHERAPY EDUCATION



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## CYCLOPHOSPHAMIDE

### Name of your medication

Generic name — cyclophosphamide (SY-kloh-FOS-fuh-mide)

Brand name — Cytoxan® (sy-TOK-sun)

### Approved uses

Cyclophosphamide is used to treat patients with the following:

- Certain types of leukemias and lymphomas
- Breast cancer
- Multiple myeloma
- Neuroblastoma
- Ovarian cancer
- Retinoblastoma

### Dose and schedule

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Taking cyclophosphamide as instructed is important to allow your treatment to be as effective as possible, so here are some key points to remember.

- Your dose is based on many factors, including your height and weight, overall health, and diagnosis.
- Cyclophosphamide can be taken with or without food, but at the same time each day, preferably in the morning followed by drinking plenty of fluid throughout the day.
- Cyclophosphamide should be taken whole and not crushed, cut, or dissolved. If you are unable to swallow cyclophosphamide, talk to your care provider or pharmacist for possible options.
- If you miss a dose of cyclophosphamide, **do not** take an extra dose or two doses at one time. Simply take your next dose at the regularly scheduled time. Be sure to write down if you miss a dose and let your care provider know about any missed doses.

### Drug and food interactions

- Cyclophosphamide has many drug interactions. Inform your care providers of all prescription medications, over-the-counter medications, vitamins, and herbal products.
- Talk with your care provider or pharmacist before taking new medications or supplements, or receiving any vaccines.

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## CYCLOPHOSPHAMIDE

### Storage and handling

Handle cyclophosphamide with care. Just like when chemotherapy is given into the vein, this drug can be toxic, and exposure of the drug to others should be limited.

- Store cyclophosphamide at room temperature (68°F–77°F) in a dry location away from light.
- Keep cyclophosphamide out of reach of children and pets.
- Leave cyclophosphamide in the provided packaging until it is ready to be taken.
- Whenever possible, you should give cyclophosphamide to yourself and follow the steps below. If a family member, friend, or caregiver needs to give the cyclophosphamide to you, they also need to follow these steps.
  1. Wash hands with soap and water.
  2. Put on gloves to avoid touching the medication. (Gloves are not necessary if you give the drug to yourself.)
  3. Gently transfer the cyclophosphamide from its package to a small medicine or other disposable cup.
  4. Administer the medicine immediately by mouth with water.
  5. Remove gloves and do not use them for anything else.
  6. Throw gloves and medicine cup in household trash.
  7. Wash hands with soap and water.
- If a daily pill box or pill reminder will be used, contact your care team before using:
  - The person filling the box or reminder should wear gloves (gloves are not necessary if you are filling the box or reminder).
  - When empty, the box or reminder should be washed with soap and water before refilling. Be sure to wash hands with soap and water after the task is complete, whether or not gloves are worn
- If you have any unused cyclophosphamide, **do not** throw it in the trash and **do not** flush it down the sink or toilet. Talk to your care provider or pharmacist about proper disposal of cyclophosphamide.
- If you are traveling, put your cyclophosphamide's packaging in a sealed plastic bag. Ask your pharmacist if any additional travel precautions are needed.

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## CYCLOPHOSPHAMIDE

### Side Effects of Cyclophosphamide

Below are common side effects that have been known to happen in about one third or more of patients taking cyclophosphamide are listed on the left side of this table. You **MAY NOT** experience these 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><b>Decreased white blood cells (WBCs) and increased risk for infection</b></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"> <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 regularly to keep good personal hygiene.</li> </ul> <p>Contact your care provider if you experience any signs or symptoms of an infection:</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 with urination</li> <li>• Unusual tiredness</li> <li>• A sore that becomes red, is draining, or does not heal</li> </ul> <p>Check with your care provider before taking any medicine for a fever or chills.</p>
<p><b>Decreased platelet count and increased risk of bleeding</b></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"> <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 electronic razor instead of razor blades.</li> <li>• Use a nail file instead of nail clippers.</li> </ul> <p>Call your care provider if you have bleeding that won't stop. Examples include the following:</p> <ul style="list-style-type: none"> <li>• A bloody nose that bleeds for more than five minutes despite pressure</li> <li>• A cut that continues to ooze despite pressure</li> <li>• Gums that bleed excessively when you floss or brush</li> </ul> <p>Seek medical help immediately if you experience any severe headaches, observe blood in your urine or stool, cough up blood, or experience prolonged and uncontrollable bleeding.</p> <p><b>You may need to take a break or “hold” your medication for medical or dental procedures. Talk to your care provider or dentist before any scheduled procedures.</b></p>

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## CYCLOPHOSPHAMIDE

Possible Side Effect	Management
<p><b>Decreased hemoglobin, part of the red blood cells that carry iron and oxygen</b></p>	<p>Your hemoglobin should be monitored using a 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 7–8 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.</li> <li>• You might notice that you are more pale than usual.</li> </ul> <p>Let your care provider know right away if you experience any of the following:</p> <ul style="list-style-type: none"> <li>• Shortness of breath</li> <li>• Dizziness</li> <li>• Palpitations</li> </ul>
<p><b>Nausea or vomiting</b></p>	<ul style="list-style-type: none"> <li>• Eat and drink slowly.</li> <li>• Drink 8–10 glasses of water or fluid each day unless your care provider has instructed you to limit your fluid intake.</li> <li>• Eat small, frequent meals throughout the day rather than a few large meals.</li> <li>• Eat bland foods; avoid spicy, fried, and greasy foods.</li> <li>• Avoid vigorous exercise immediately after eating.</li> <li>• Don't lie down immediately after eating.</li> <li>• Avoid strong odors.</li> </ul> <p>Let your provider know if you experience nausea or vomiting. Your provider may prescribe medication to help with the nausea or vomiting.</p>
<p><b>Decreased appetite or weight loss</b></p>	<p>Talk to your care provider if you notice a decrease in weight while taking this medication.</p> <p>When you do not feel like eating, try the following:</p> <ul style="list-style-type: none"> <li>• Eat small frequent meals instead of three large meals each day.</li> <li>• Keep snacks nearby so you can eat when you feel hungry.</li> <li>• Drink liquid nutritional supplements.</li> <li>• Drink 8–10 glasses of water or fluid each day, especially if you are not eating, unless your care provider has instructed you to limit your fluid intake.</li> </ul>
<p><b>Hair loss (alopecia)</b></p>	<p>Your hair will grow back after treatment is over.</p> <p>Some people choose to wear scarves, caps, or wigs. A short haircut prior to treatment may help with the stress of hair loss.</p>

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### Serious side effects of cyclophosphamide

- Bone marrow suppression is a decrease in the number of white blood cells, red blood cells and platelets that can be severe with cyclophosphamide. Speak to your care provider to know when you need to have laboratory tests done to monitor your blood cell counts. You also may need to take a break or “hold” your medication for medical or dental procedures. Talk to your care provider or dentist before any scheduled procedures. Tell your doctor if you develop a fever or abnormal bleeding.
- Cyclophosphamide may be harmful to your kidneys or bladder. Speak to your care provider to know when you need to have laboratory tests done to monitor your kidneys and bladder. Tell your doctor if you have change to your urine.
- Seek medical attention right away if you have any chest pain or tightness.
- Cyclophosphamide can be harmful to your lungs. Tell your provider if you develop difficulty breathing.
- Secondary malignancy is the growth of a cancer months or years after treatment. This is a rare but possible side effect of treatment with Cyclophosphamide.
- Cyclophosphamide can be harmful to your liver. Tell your doctor if you have severe abdominal pain, yellowish skin or fluid in your abdomen.

If you experience ANY uncontrolled side effect, call your physician or healthcare center immediately:

### (INSTITUTIONAL CONTACT INFO)

### Handling body fluids and waste

Since cyclophosphamide remains in your body for several days after it is taken, some of the drug may be present in urine, stool, sweat, or vomit. Once you have started to take cyclophosphamide, it is important to know the following instructions every day for as long as your treatment lasts. This is to keep yourself, 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 surfaces before other people use the toilet.
  - Wash hands with soap and water after using the toilet.
- 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 or cyclophosphamide 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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### Pregnancy, sexual activity, and contraception

- Women should not become pregnant and men should not get a partner pregnant while taking cyclophosphamide. Men and women of childbearing age and potential should use effective contraception during therapy and for a minimum of 4 months (men) to 12 months (women) after the last dose of cyclophosphamide.
- Effective contraception could include 1 or more of the following: oral contraceptive, barrier methods, etc.
- Do not breastfeed while taking cyclophosphamide and for 1 month after the last dose of cyclophosphamide.
- Please inform your care provider if you become pregnant.
- It is safe to hug and kiss. Special precautions may be needed for sexual activity while on oral chemotherapy, and you are encouraged to ask your care provider.
- Cyclophosphamide may inhibit your ability to have children. Speak with your care team for more information.

### Obtaining medication

- Talk with your care provider about the process for obtaining your cyclophosphamide.

\_\_\_\_\_ (PHARMACY OR SPECIALTY PHARMACY CONTACT INFO)

### Additional resources

#### Product prescribing information:

[https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2013/012141s090,012142s112lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2013/012141s090,012142s112lbl.pdf)

*Updated – June 20, 2022*

### Additional instructions

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**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 medication 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 medication 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 medication 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 consuming the medication. All decisions related to taking this medication should be made with the guidance and under the direction of a qualified healthcare professional.

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