

# Dose Adjusted R-EPOCH Information for Patients and Caregivers

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This is a chemotherapy regimen that your doctor prescribed for the treatment of your cancer. **R-EPOCH** includes:

- Rituximab (Rituxan®)
- Etoposide (VP-16, Toposar®)
- Prednisone
- Vincristine (Oncovin®)
- Cyclophosphamide (Cytosan®)
- Doxorubicin (Adriamycin®, H-Daunorubicin)

## How is this regimen given?

- **Cycle 1** is administered in the inpatient (hospital) setting. Subsequent cycles can be administered in the outpatient (infusion) setting.

### Day 1:

- Rituximab will be administered by intravenous (IV) infusion on Day 1.
  - The infusion rate depends upon whether this is your first infusion, second infusion or subsequent infusion(s), and how well you tolerated the infusion previously. Therefore, infusion durations may vary.
  - Occasionally, the Rituximab dose may be split over several days, moved to a different day or omitted completely.

### Days 1-4:

- Etoposide, Vincristine and Doxorubicin will be administered by IV as a continuous infusion over 24 hours on Days 1-4.

In the outpatient setting, there will be daily infusion bag hook-ups, changes or disconnects on Days 1, 2, 3, 4 and 5.

**Days 1-5:**

- Prednisone is taken by mouth every 12 hours on Days 1-5.

**Day 5:**

- Cyclophosphamide will be administered by IV infusion over 30 minutes on Day 5.

IV fluids may also be administered on treatment days. This chemotherapy regimen is typically repeated every 21 days.

**Are there other medications I will receive with this regimen?**

**Yes.** You will receive other medications to help prevent possible side effects of the chemotherapy or to help the chemotherapy work better.

Medications will be given to:

- **Prevent nausea** before you receive your chemotherapy.
  - Ondansetron (Zofran®)
- **Treat nausea** as needed during your treatment. These medications work best if taken as soon as you notice any nausea.
  - Prochlorperazine (Compazine®), Lorazepam (Ativan®)
- **Prevent allergic reactions** during your infusion(s) before your treatment.
  - Acetaminophen (Tylenol®) and Diphenhydramine (Benadryl®) will be given before administration of Rituximab.
- **Treat an allergic reaction** during your treatment.
  - Acetaminophen (Tylenol®), Diphenhydramine (Benadryl®), Meperidine (Demerol®)
- **Support your immune system** after your treatment.
  - Filgrastim (Neupogen® or similar) is given as a subcutaneous injection beginning the first day after treatment.
  - Pegfilgrastim (Neulasta® or similar) is given as a subcutaneous injection or applied as a patch on the skin once per cycle.

**Subcutaneous Injection:** A shot given into the fat layer between the skin and muscle.

- **Prevent viral infections** (prescribed)
- **Prevent bacterial infections** (prescribed)
- **Prevent and treat nausea** (prescribed for home use)

**What side effects can occur with this regimen?**

This information does not cover all possible side effects. The side effects experienced most frequently are included, especially when these medications are given in combination. You know what is normal for your body. If you are experiencing symptoms not listed here, please contact your clinic with questions.

**Fertility concerns**

Cancer treatment may affect your fertility. Discuss any concerns with your doctor **before** beginning treatment.

**Side Effects During Infusion**

<b>Side effects</b>	<b>What can I do?</b>	<b>When to call the clinic:</b>
<p><b>Infusion Reaction</b> — a reaction that can occur during or following infusion of the drug. The reactions may include:</p> <ul style="list-style-type: none"> <li>• Low blood pressure</li> <li>• Tightness in chest</li> <li>• Burning in stomach and/or back</li> <li>• Difficulty breathing</li> </ul>		<p>Alert your nurse immediately if you experience any of the following during your infusion:</p> <ul style="list-style-type: none"> <li>• Shortness of breath</li> <li>• Chills</li> <li>• Flushing of face/chest</li> <li>• Sweating</li> <li>• Rash</li> <li>• Face/throat swelling</li> <li>• Itching or dizziness</li> </ul>

<b>Hypotension</b> — low blood pressure.	<ul style="list-style-type: none"> <li>• Maintain proper hydration and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>• Dizziness</li> <li>• Lightheadedness</li> <li>• Fainting</li> <li>• Unable to eat or drink</li> </ul>
<b>Infusion site extravasation</b> — Leaking of the anti-cancer drug from a blood vessel into surrounding tissue causing pain and/or tissue damage.		Alert your nurse <b>immediately</b> if you experience any: <ul style="list-style-type: none"> <li>• Irritation around IV site including blistering</li> <li>• Pain</li> </ul>

**Side Effects at Home**

<b>Side effects</b>	<b>What can I do?</b>	<b>When to call the clinic:</b>
<p><b>Decreased blood cell counts</b> — low red blood cells and white blood cells can weaken the immune system. Low platelets can cause bruising and prevent blood from clotting.</p>	<ul style="list-style-type: none"> <li>• The clinic will monitor your labs so follow your instructions regarding your blood draw schedule.</li> <li>• Wash hands or use alcohol-based sanitizers regularly.</li> <li>• Avoid close contact with others who are sick.</li> <li>• Avoid activities with high risk for injury or bleeding such as contact sports.</li> <li>• Rest when tired; stand up slowly.</li> </ul>	<ul style="list-style-type: none"> <li>• Temperature of <b>100.5 ° F or higher</b> - contact the clinic <b>immediately</b>.</li> <li>• Any signs of infection (fever, cough, etc.)</li> <li>• Unusual tiredness or weakness.</li> <li>• Shortness of breath or difficulty breathing.</li> <li>• Unusual bleeding or bruising.</li> <li>• Dizziness.</li> <li>• Lightheadedness.</li> </ul>

Beginning the second week of each cycle, labs are required twice a week.

<b>Side effects</b>	<b>What can I do?</b>	<b>When to call the clinic:</b>
<b>Fatigue/Tiredness</b>	<ul style="list-style-type: none"> <li>• Do not over-exert yourself.</li> <li>• Rest when you are tired.</li> <li>• Ask for help.</li> <li>• Eat and drink well.</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to perform normal daily activities.</li> </ul>
<b>Increased risk of infection</b>	<ul style="list-style-type: none"> <li>• Wash hands or use alcohol-based sanitizers regularly.</li> <li>• Avoid close contact with others who are sick.</li> <li>• Follow your doctor's instructions regarding your blood draw schedule.</li> </ul>	<ul style="list-style-type: none"> <li>• Temperature of <b>100.5 ° F or higher</b> – contact the clinic <b>immediately</b>.</li> <li>• Chills</li> <li>• Cough</li> <li>• Sore throat</li> <li>• Ear pain</li> <li>• Sinus pain</li> <li>• Sore neck</li> <li>• Skin rash</li> <li>• Sores or white coating in mouth</li> <li>• Pain when urinating</li> <li>• Swelling or redness anywhere</li> <li>• Shortness of breath</li> <li>• Difficulty breathing</li> </ul>
<b>Nausea/Vomiting</b>	<ul style="list-style-type: none"> <li>• Stay well-hydrated.</li> <li>• Use the anti-nausea medication prescribed by the clinic.</li> <li>• Eat smaller, more frequent meals/snacks.</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to stay hydrated or unable to keep fluids down (not able to drink 8-10 cups of liquid per day) – contact the clinic <b>immediately</b>.</li> </ul>

Side effects	What can I do?	When to call the clinic:
<p><b>Tumor lysis syndrome</b> — a condition that can occur after treatment. As tumor cells die, they break apart and release their contents into the blood. This may cause damage to organs including the kidneys, heart and liver. The greatest risk of developing this syndrome is following Cycle 1.</p>	<ul style="list-style-type: none"> <li>• Avoid an empty stomach.</li> <li>• Eat bland foods.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Drink lots of fluids.</li> <li>• Urinate often.</li> <li>• Take preventive medications as prescribed by your doctor. (Ex. Allopurinol)</li> </ul>	<ul style="list-style-type: none"> <li>• The anti-nausea medication is not working.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Decrease in amount or number of times you urinate.</li> </ul>
<p><b>Alopecia</b> — hair loss.</p>	<p>Use head coverings to protect against sun and cold temperatures.</p>	<p>Ask the clinic for a prescription if you plan to purchase a wig. (Check with your insurance company to see if this is a covered expense.)</p>
<p><b>Mucositis</b> — irritation of the lining of the digestive system most often seen as sores in the mouth, throat or lips.</p>	<ul style="list-style-type: none"> <li>• Brush gently using a soft toothbrush.</li> <li>• Rinse 3–4 times daily with a solution of ¼ tsp baking soda + 1/8 tsp salt in 1 cup warm water.</li> <li>• Use pain medications as prescribed.</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to stay hydrated (not able to drink 8–10 cups of liquid per day) — <b>Contact the clinic immediately.</b></li> <li>• Pain not controlled by medications.</li> <li>• Unable to eat.</li> </ul>

<b>Side effects</b>	<b>What can I do?</b>	<b>When to call the clinic:</b>
<b>Hemorrhagic cystitis</b> — when the lining of the bladder becomes inflamed and starts to bleed. Blood is seen in the urine.	<ul style="list-style-type: none"> <li>• Stay hydrated. Drink up to 2 liters per day of fluid.</li> <li>• Urinate frequently.</li> </ul>	<ul style="list-style-type: none"> <li>• You notice blood in your urine (orange or pink/red tinged).</li> </ul>
<b>Cardiac dysfunction</b> — inability of the heart muscle to adequately pump blood to supply oxygen to the body.	<ul style="list-style-type: none"> <li>• You may have tests to assess your heart function during treatment.</li> </ul>	<ul style="list-style-type: none"> <li>• Shortness of breath or difficulty breathing, especially when laying down.</li> <li>• Rapid swelling of your legs.</li> <li>• Chest pain.</li> <li>• Feeling like you have an irregular heartbeat.</li> </ul>
<b>Change in urine color to Red/Orange</b>	<ul style="list-style-type: none"> <li>• Do not be alarmed if your urine, sweat, saliva or tears are red/orange colored.</li> <li>• This color change may occur for a few days.</li> </ul>	
<b>Constipation</b>	<ul style="list-style-type: none"> <li>• Stay well-hydrated.</li> <li>• Eat at regular times each day.</li> <li>• Include high fiber and “bulky” foods.</li> <li>• Be as active as possible.</li> <li>• Review constipation handouts.</li> </ul>	<ul style="list-style-type: none"> <li>• No bowel movement in 2-3 or more days.</li> <li>• Abdominal pain, nausea, vomiting.</li> </ul>

Side effects	What can I do?	When to call the clinic:
<p><b>Peripheral Neuropathy</b> numbness, tingling, burning or weakness in the hands/fingers, feet/toes, legs.</p>	<ul style="list-style-type: none"> <li>• Notify the clinic at your next visit, as this can worsen with additional treatments.</li> </ul>	<p>Discomfort that affects your ability to work or perform normal activities such as:</p> <ul style="list-style-type: none"> <li>• Unable to grasp a pen/pencil.</li> <li>• Unable to button your shirt.</li> <li>• Unable to feel the bottoms of your feet, making walking difficult.</li> </ul>
<p><b>Anorexia</b> loss of appetite.</p>	<ul style="list-style-type: none"> <li>• Stay well-hydrated.</li> <li>• Eat smaller, more frequent meals/snacks that are high in calories.</li> <li>• Be active if able.</li> <li>• Ask your clinic about meeting with a dietician.</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to stay hydrated — contact the clinic immediately.</li> <li>• Unable to eat.</li> </ul>
<p><b>Glucose Intolerance</b> abnormal control of blood sugar levels.</p>	<ul style="list-style-type: none"> <li>• The clinic will monitor your labs to assess.</li> <li>• <b>IF</b> you have diabetes, talk with your cancer clinic about monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>IF</b> you have diabetes and measure your blood sugar, ask the clinic what blood sugar level is too high for you.</li> <li>• <b>IF</b> you feel confused, have increased urination, blurry vision, or are very tired and unable to perform normal activities.</li> </ul>

<b>Side effects</b>	<b>What can I do?</b>	<b>When to call the clinic:</b>
<b>Insomnia</b> difficulty sleeping	<ul style="list-style-type: none"> <li>• Take oral steroid medication (dexamethasone) in the morning.</li> <li>• Avoid napping during the day.</li> <li>• Avoid caffeine, nicotine and alcohol before bedtime.</li> <li>• Establish a relaxing bedtime routine.</li> <li>• Exercise as able.</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to perform normal daily activities.</li> </ul>
<b>Mood swings including agitation</b> (restlessness) <b>and anxiety</b> (feelings of worry).	<ul style="list-style-type: none"> <li>• Rest when you are tired.</li> <li>• Do not hesitate to discuss emotional effects with your provider.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacting your relationships with others.</li> <li>• Unable to perform normal daily activities.</li> </ul>
<b>Upset stomach.</b>	<ul style="list-style-type: none"> <li>• Take oral steroid medication (dexamethasone) with food.</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to take steroid doses without vomiting.</li> </ul>
<b>Progressive Multifocal Leukoencephalopathy (PML)</b> a very rare brain infection caused by a virus while on rituximab.		<ul style="list-style-type: none"> <li>• If you feel confused or have problems thinking.</li> <li>• Have loss of balance.</li> <li>• Change in the way you walk or talk.</li> <li>• Decreased strength or weakness on one side of your body.</li> <li>• Blurred vision or loss of vision.</li> </ul>

Side effects	What can I do?	When to call the clinic:
<b>Hepatitis B virus (HBV)</b> reactivation while on rituximab.	<ul style="list-style-type: none"> <li>• Tell your health care provider if you have a history of the Hepatitis B virus infection.</li> <li>• The clinic will check your blood to see if you have had prior exposure to Hepatitis B.</li> </ul>	

### Late effects

Some side effects of chemotherapy medications can be seen months to years after you finish your therapy. Ask your doctor to review these effects with you.

### Where can I find more information?

For more information, visit the Rogel Cancer Center Patient Education Program at <http://michmed.org/6dRpK> or call the Rogel Cancer Center Patient Education Information Specialist at (734) 647-8626.

### When should I call the doctor?

- A fever of 100.5° Fahrenheit or greater.
- Bleeding or unusual bruising.
- Burning and/or pain when urinating.
- Constipation (no bowel movement in 2-3 days).
- Diarrhea (loose, watery stools) 4 or more watery stools in 24 hours.
- Nausea, vomiting or if you cannot keep down any liquids.
- Pain not controlled by your current medications.
- Redness, pain, sores or a white coating in your mouth.
- Shaking and chills.



Disclaimer: This document contains information and/or instructional materials developed by Michigan Medicine for the typical patient with your condition. It may include links to online content that was not created by Michigan Medicine and for which Michigan Medicine does not assume responsibility. It does not replace medical advice from your health care provider because your experience may differ from that of the typical patient. Talk to your health care provider if you have any questions about this document, your condition or your treatment plan.

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