

# R-CHOP: Rituximab, Cyclophosphamide, Doxorubicin, Vincristine, Prednisone

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## What is R-CHOP?

R-CHOP is the short name for this cancer treatment. The 5 drugs you will receive during this treatment are Rituximab (or “R”), Cyclophosphamide (or “C”), Doxorubicin (hydroxydaunorubicin, or “H”), Vincristine (Oncovin, or “O”), and Prednisone (or “P”).

## What is rituximab (ri-TUK-si-mab) and how does it work?

Rituximab is a type of targeted cancer therapy called a “monoclonal antibody”. Rituximab seeks out B-cells and attaches to “CD20” on the outside of the cell. Then the body’s natural immune system attacks and kills the B-cells “marked” by rituximab. Rituximab affects both normal B-cells and the B-cells with cancer.

## What is cyclophosphamide (sy-e-kloe-FOS-fa-mide) and how does it work?

Cyclophosphamide is a chemotherapy drug known as an “alkylating agent.” This drug is made in a laboratory. Cyclophosphamide works to stop fast growing cancer cells from dividing and making new cells.

## What is doxorubicin (doks-oh-ROO-bi-sin) and how does it work?

Doxorubicin is a chemotherapy drug known as an “anti-tumor antibiotic.” It is a bright red color. It is a natural medicine that comes from a type of soil fungus. This drug fights cancer by stopping the fast growing cancer cells from making new cells. It also keeps the damaged cancer cells from continuing to grow.

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**This handout is for informational purposes only. Talk with your doctor or health care team if you have any questions about your care.**

## **What is vincristine (vin-KRIS-teen) and how does it work?**

Vincristine is a chemotherapy medicine known as a “plant alkaloid.” This medicine is made from plants and works to stop fast growing cancer cells from dividing and making new cells.

## **What is prednisone (PRED-ni-sone) and how does it work?**

Prednisone is a medicine (also called a steroid) that helps kill the cancer cells. It is used to reduce swelling in the body, but may make it harder for your body to fight infection.

## **Why am I getting five chemotherapy drugs for my cancer?**

All these drugs work to stop fast growing cancer cells from dividing and making new cells, but they attack the cancer cells differently. Giving the five drugs together makes the treatment more effective.

## **What should I tell my doctor before getting chemotherapy?**

Talk to your doctor about the following:

- If you have ever had chemotherapy and the names of the chemotherapy drugs you were given.
- If you have ever had heart, liver, or kidney problems.
- If you are pregnant or think you may be pregnant. Your doctor will talk with you about birth control while getting chemotherapy.
- If you are breastfeeding.
- If you have been told that you need to start a new medicine.
- The medicines/pills you are taking, including:
  - ▶ Medicines prescribed by any of your doctors
  - ▶ Herbs
  - ▶ Vitamins
  - ▶ Over-the-counter medicines

## How does my doctor decide my chemotherapy dose?

To determine your treatment dose, your doctor will review the following: your height, your weight, your medicines, how well your liver and kidneys are working, and any other health problems you have. Six doses of this chemotherapy are normally given. You will receive a treatment every three weeks. The doctor or nurse practitioner will meet with you before each dose of your “R-CHOP” chemotherapy.

## Should I eat or drink before my treatment?

It is best to eat a small meal before getting your chemotherapy. Drinking plenty of non-caffeinated fluids may also be helpful. However, if you have been told to limit fluids, check with your doctor about how much you can drink.

## How will my treatment be given?

You will be given several medicines, 30 to 60 minutes before your treatment, to prevent you from having an allergic reaction, and to prevent nausea and vomiting. **These medicines may affect your abilities, so for your safety you should have someone drive you home.**

**Rituximab** is given directly into your blood stream through a tube (IV) placed in your arm or chest. This treatment will take about 6 hours for your first dose. If you do not have any problems with your first dose, your future doses will be 4 hours. In some cases, rituximab can be given over 1 hour, ask your healthcare provider or pharmacist if this is an option for you.

**Doxorubicin** is given directly into your blood stream through a tube (IV) placed in your arm or chest. Your nurse will stay with you while the Doxorubicin is given. This treatment will take about 20 to 30 minutes. **Tell your nurse right away if you feel any pain, stinging or burning while getting this chemotherapy drug.**

**Cyclophosphamide** is given directly into your blood stream through a tube (IV) placed in your arm or chest. Cyclophosphamide comes in a bag with tubing attached. The nurse will connect the tubing to a pump. This treatment takes between 30 and 60 minutes.

**Vincristine** is given directly into your blood stream through a tube (IV) placed in your arm or chest. Vincristine comes in a bag with tubing attached. The nurse will let this medicine go through the tube on its own (by gravity). This treatment takes about 10 minutes.

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**Prednisone** is a pill you will take by mouth. This medicine should be taken in the morning with food. Your first dose of prednisone will be given to you with your chemotherapy treatment. You will then take 1 dose each day as directed on prescription bottle, on days 2 through 5 to finish the treatment.

|   |  |  |  |  |               |               |
|---|--|--|--|--|---------------|---------------|
| <b>Day 1</b> <ul style="list-style-type: none"> <li>• Receive R-CHOP chemotherapy treatment</li> <li>• Receive 1<sup>st</sup> dose of Prednisone</li> </ul> | <b>Day 2</b> <ul style="list-style-type: none"> <li>• Take Prednisone</li> </ul> | <b>Day 3</b> <ul style="list-style-type: none"> <li>• Take Prednisone</li> </ul> | <b>Day 4</b> <ul style="list-style-type: none"> <li>• Take Prednisone</li> </ul> | <b>Day 5</b> <ul style="list-style-type: none"> <li>• Take Prednisone</li> </ul> | <b>Day 6</b>  | <b>Day 7</b>  |
| <b>Day 8</b>  | <b>Day 9</b>   | <b>Day 10</b>  | <b>Day 11</b>  | <b>Day 12</b>  | <b>Day 13</b> | <b>Day 14</b> |
| <b>Day 15</b>   | <b>Day 16</b>  | <b>Day 17</b>  | <b>Day 18</b>  | <b>Day 19</b>  | <b>Day 20</b> | <b>Day 21</b> |

### What are the side effects of this treatment?

Every person responds differently to treatment. Some of the more common side effects of this chemotherapy are:

- Red urine for 1 or 2 days after getting Doxorubicin
- Nausea and/or vomiting lasting for several days
- Fatigue
- Hair loss, including the hair on the head and body (this normally begins 10 to 14 days after chemotherapy)
- Mouth pain or open sores in the mouth
- Low white blood cell count (may increase your risk for infection)
- Low hemoglobin (may cause you to have less energy and tire more easily)

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- Low platelet count (may cause you to bleed more easily or longer than normal and have more bruising)
- Numbness, tingling or burning sensation in your hands or feet
- Constipation
- “Jittery” feeling, insomnia
- High blood sugar
- **Signs of an allergic reaction with rituximab, including:**
  - ▶ Difficulty breathing, wheezing, chest pain or tightness
  - ▶ Swelling in your face, lips, tongue, or throat
  - ▶ Rash
  - ▶ Shaking or chills

## When should I call my doctor?

You should call your doctor **right away** if you have any of the following signs or symptoms:

- Fever of 100.4 degrees Fahrenheit (38 degrees Celsius) or higher

**A fever can be life-threatening if not treated. Your doctor may ask you to go to the hospital.**

- Chills, sore throat, cough or a wound that does not get better
- Open sores in your mouth
- Nausea that prevents you from eating or drinking
- Vomiting even after you have taken your anti-nausea medicine
- Skin redness or blisters where the Doxorubicin was given
- Bleeding or bruising, including bloody or black stools or blood in your urine
- Diarrhea (4 or more loose stools in 24 hours)
- Changes in your heartbeat
- Shortness of breath or difficulty breathing
- Swelling in feet or ankles
- Fast weight gain

## Is there anything else I should know about this treatment?

- **Doxorubicin** may cause problems with the pumping of your heart. Your doctor will order a test to check your heart before you start taking this chemotherapy drug.
- Chemotherapy may make it harder for your body to fight infections. Wash your hands often and stay away from people who are sick.
- This treatment requires special precautions to prevent the chemotherapy drugs from coming into contact (through blood, urine, bowel movements, vomit and vaginal or seminal fluids) with others. Your chemotherapy nurse will give you guidelines to follow for 48 hours after receiving chemotherapy.
- Chemotherapy can change how your body reacts to vaccines. Talk to your doctor before getting any vaccines.
- Patients who get treatment with these drugs have a slightly higher risk of getting a rare form of blood cancer, called “leukemia”. Your doctor can tell you more about this risk.
- You should drink 8 to 10 eight-ounce glasses of non-caffeinated fluid each day throughout your treatment. This is important to keep you hydrated while you are receiving chemotherapy.
- This treatment may cause women to stop having menstrual cycles. Depending on your age, your menstrual cycles may or may not return.
- It may be difficult to get pregnant even after the chemotherapy is finished.
- This treatment may affect your ability to have children. Talk to your doctor before getting chemotherapy if you are planning to have children in the future.

For more information about cancer, chemotherapy, side effects or how to care for yourself during treatment, refer to your **Chemotherapy and You** book, or ask your doctor, nurse or pharmacist.

You may also find it helpful to watch The James Patient Education videos at <http://cancer.osu.edu/patientedvideos> to help you learn tips for managing treatment side effects.