

# Bleomycin Alert

The lungs are very important organs that are responsible for supplying oxygen to the body and ridding it of carbon dioxide. Sometimes, treatments given for cancer can cause lung damage. Because you received bleomycin during treatment for cancer, it is important for you to learn about certain lung problems that can sometimes happen after treatment with bleomycin.

## What are the problems that can happen after treatment with bleomycin?

People who received bleomycin during treatment for cancer can sometimes develop lung problems many years after their treatment has been completed. These problems may include:

- Lung inflammation (interstitial pneumonitis)
- Lung scarring (pulmonary fibrosis)
- Breathing problems associated with high levels of oxygen and/or intravenous fluids (acute respiratory distress syndrome)

## What is interstitial pneumonitis?

Interstitial pneumonitis is inflammation of the thin layer of tissue between the air sacs (alveoli) in the lungs. This inflammation can worsen if a person develops lung infections, such as pneumonia. Interstitial pneumonitis that occurs as a result of therapy with bleomycin sometimes develops after exposure to toxic fumes, tobacco, or high levels of oxygen given over several hours.

## What is pulmonary fibrosis?

Pulmonary fibrosis is the formation of scar tissue in the small air sacs (alveoli) of the lungs. This scarring makes the lungs stiffer and affects the exchange of oxygen and carbon dioxide in the alveoli. Pulmonary fibrosis may worsen over time and can sometimes lead to early heart failure.

## What is acute respiratory distress syndrome (ARDS)?

ARDS is a serious condition that occurs when alveoli in the lungs are damaged and can no longer provide oxygen to the body. People who received bleomycin in the past may be at risk for developing ARDS, usually as a result of a combination of high levels of oxygen and large amounts of intravenous fluid given during surgery. However, the risk of developing ARDS is very low. If you need a medical procedure requiring oxygen or general anesthesia, be sure to tell your surgeon, anesthesiologist, and other healthcare providers that you have received bleomycin in the past for treatment of cancer.

## What are factors that increase the risk of developing lung problems after treatment with bleomycin?

- High total doses of bleomycin (400 units/m<sup>2</sup> or more in all doses combined)
- Radiation to the chest or lungs, or total body irradiation (TBI)
- Treatment with other chemotherapy drugs that can also damage the lungs
- Exposure to high oxygen levels (such as during general anesthesia or SCUBA diving)
- Smoking

## What monitoring is recommended for people who have received bleomycin for treatment of cancer?

- A **yearly medical check-up** is recommended.
- A **chest x-ray and pulmonary function tests** may show lung problems that are not apparent during a check-up. For this reason, it is helpful to have these tests done **at least once** (at least 2 years after completing cancer treatment) to find out if there are any problems. Your healthcare provider can decide if further testing is needed based on these results.
- In some cases, **your healthcare provider may recommend repeating the chest x-ray and pulmonary function tests if you are scheduled for surgery that requires general anesthesia** to check for changes in the lungs that could increase the risk of breathing problems during or after anesthesia.

## Are there any special precautions I should take?

If you received therapy with bleomycin, you should:

- Avoid SCUBA diving. During SCUBA diving, increased underwater pressures and high oxygen levels can damage the lungs.
- Tell your surgeon, anesthesiologist, and other healthcare providers about your medical history before any scheduled procedures that may require oxygen.
- Avoid breathing high concentrations of oxygen whenever possible, especially for long periods of time (such as over several hours). If you require oxygen, monitoring of your oxygen levels can usually be done so that you can receive the lowest oxygen concentration that is necessary.
- Get the pneumococcal (pneumonia) vaccine.
- Get yearly influenza (flu) vaccines.
- Don't smoke. If you currently smoke, talk to your healthcare provider about a program to help you quit.

### Works Cited

Adapted from Children's Oncology Group Long-Term Follow-Up Guidelines for Survivors of Childhood, Adolescent, and Young Adult Cancers

<http://www.survivorshipguidelines.org/>