Survivorship: Late Effects After Radiation Treatment for Hodgkin Lymphoma

What is a late effect?

A late effect is a side effect that is caused by cancer treatment but happens months to years after cancer treatment has finished. Some side effects that you develop during treatment can last for months to years after treatment is completed (for example, fatigue or neuropathy). These are called long-term side effects.

Late effects can be health issues or psychological, emotional, and practical challenges.

Late Effects After Radiation for Hodgkin Lymphoma

Side effects from radiation treatment are directly related to the area of the body being treated. Any area in the treatment field has a risk of being damaged by radiation, causing side effects. The way radiation is given has changed over the years, leading to a lower risk of late effects.

Throat and Swallowing Problems

- Radiation to the throat area can cause scar tissue in the throat. This can happen months to years after treatment. This scarring can make the throat narrow, making it difficult to swallow, feel like food gets “stuck”, or cause heartburn. If you develop these problems, you should be seen by your provider. You should see a gastroenterologist (GI Doctor) or surgeon. They may be able to use a stent or balloon to stretch the scar tissue and widen your throat.
- This scar tissue can also make breathing and speaking hard. Talk with your provider if you are having issues such as a hoarse voice or a lasting cough. If you are having severe trouble breathing or are coughing up blood, contact your care team immediately or go to an emergency room.

Lung Problems

Radiation fields involving the lung can lead to scar tissue (called fibrosis), inflammation (pneumonitis), and restrictive or obstructive lung disease.

- The risk for these problems is higher with higher doses of radiation, if you also got certain chemotherapies (bleomycin, busulfan, BCNU, and CCNU), or if you had part of the lung removed (lobectomy).
- Radiation can cause scar tissue in the lungs that may affect blood vessels. Damage to the blood vessels can lead to coughing up blood. If you cough up blood, you should be checked out right away by a healthcare provider, either in the office or the emergency room.
- At your yearly physical your provider will examine your lungs and ask about possible symptoms (cough, shortness of breath, wheezing).
- You should get a flu vaccine every year and the pneumococcal vaccine.
- You should avoid smoking, secondhand smoke, vaping, and hookah products, as these can cause further lung damage.

Heart Problems

Radiation treatment to the chest can affect the heart. Heart problems caused by radiation can include heart failure, high blood pressure, valve problems, and scarring or inflammation of the heart tissue.

- The risk of heart failure depends on the amount of radiation you got, what other cancer treatments you had, and your heart health prior to treatment.
When radiation treatment is planned, it is designed to avoid the heart as much as possible, but in many cases, it cannot be completely avoided.

You should have a yearly physical by your primary care provider. They should listen to your heart, check your blood pressure, look for signs of heart trouble such as swelling in your legs/feet, and check your cholesterol and blood sugar levels with a blood test.

You should strive for a heart-healthy lifestyle, including regular exercise, not using tobacco, and eating a healthy diet.

If you are at a high risk of heart problems based on your treatments, your provider may order an echocardiogram (heart ultrasound) to look at your heart function before treatment.

**Damage to the Bones**

Radiation can cause small cracks (fractures) in the bones that are in the treatment field. Try to avoid trauma including falls or accidents. If you do get hurt, ask your provider if you need an x-ray to check for bone damage.

**Spinal Cord Damage**

The spinal cord can be in the field of radiation treatment for “mantle field” therapy. This can cause damage to the nerves in the spine.

- Signs of this can include loss of strength, feeling, or coordination of the arms or legs, paralysis, or problems with bowel or bladder control. Sometimes nerve damage can cause a feeling of electric shock spreading down the arms or legs.
- If you develop any of these issues, you may need imaging tests or to be seen by a neurologist for further testing.

Radiation can also cause damage to the bones of the spine. This can cause you to be shorter or have a change in the curve of your spine. Radiation to these bones can also put them at risk for fracture (breaks). If you have any new back pain, you should call your provider right away. You may need x-rays or other imaging tests.

**Thyroid Problems**

The thyroid gland is in the neck, just below the larynx (voice box). Radiation fields that include the thyroid gland can cause hypothyroidism (low/underactive thyroid), hyperthyroidism (high/overactive thyroid, and thyroid nodules or tumors. Under and overactive thyroid caused by radiation tends to happen 2 to 5 years after treatment. Thyroid nodules tend to happen 10 years or more after treatment. The risk increases with the amount of radiation given to the area.

- You should have a thyroid exam and a physical each year by your provider to check for thyroid issues.
- If the thyroid was directly in the radiation field, your TSH (thyroid-stimulating hormone) level should be checked every 6-12 months. This is done with a blood test.
- If you develop thyroid problems, you should be seen by an endocrinologist.
- Signs of hypothyroidism (underactive thyroid, the most common complication) include fatigue, weight gain, constipation, dry skin, brittle hair or always feeling cold.
- Signs of hyperthyroidism (overactive thyroid) include weight loss, irregular or fast heartbeat, sweating, and being irritable.
- You may also be at risk for hypoparathyroidism, a condition caused by damage to the parathyroid glands (located in the same area as the thyroid). Signs of hypoparathyroidism are tingling in your fingers, toes, and lips, muscle aches, muscle spasms, and fatigue.

If you notice any of these signs, you should contact your care provider.

**Skin Changes**

Radiation can lead to permanent changes in the skin.

- You may develop new scars or notice changes in the color or texture of your skin. Radiation can also change the color and texture of your hair or cause permanent hair loss in the treated area.
- The soft tissue and muscles under the skin can develop scarring and/or shrinkage, which can lead to a loss of flexibility and movement or chronic swelling in this area.
- You may develop chronic or recurring ulcers of the skin in the area treated. Blood vessels of the skin may become dilated.
and more visible, although this is not harmful.

- If the skin feels tight or sore, you can apply vitamin E to the skin.
- Use fragrance and dye-free soaps and moisturizers in the area if your skin is sensitive after radiation.

After radiation, the skin in the treated area is more sensitive to sunlight. This sensitivity will last for your lifetime. Practice sun safety, use plenty of sunscreen, wear a wide-brimmed hat, and keep skin in the treated area covered with clothing. Try to avoid being out in the sun between the hours of 10 am-4 pm when it is the strongest.

If you notice any new or worsening skin issues anywhere on your body, you should contact your provider for an assessment.

**Risk of Breast Cancer**

Radiation therapy fields that include breast tissue can lead to breast cancer later in life. Because of this, the recommendations for breast cancer screening for you are different than people who have not had chest radiation.

- Women who received radiation to the chest should have annual mammograms starting 8-10 years after radiation, or at age 40, whichever comes first.
- If you received radiation to the chest wall between the ages of 10 and 30, your mammograms may start earlier, and you may also need a breast MRI.
- Each case is unique, and you should talk to your provider about what tests you need and how often you should have them.
- Make sure that you are familiar with the normal feeling of your breasts. Report any changes to your provider. Changes can include a new lump or mass, a change in the look and feel of the skin on your breast, or any discharge coming out of your nipple.
- If you are a man who has had radiation to the chest, you should be aware of your increased risk of getting breast cancer. There are no screening tests done for men who have had chest radiation. However, you should report any unusual findings, such as lumps, skin changes, or nipple discharge, to a healthcare provider right away.

**Managing Late Effects**

If you experience any concerning or lasting symptoms, contact your care team. Some side effects require specialized care from healthcare providers experienced in working with cancer survivors. Interdisciplinary survivorships clinics are available at many cancer centers. If a clinic is not available near you, talk with your oncology care team about resources for managing your late effects.

After treatment, talk with your oncology team about receiving a survivorship care plan, which can help you manage the transition to survivorship and learn about life after cancer. You can create your own survivorship care plan using the OncoLife Survivorship Care Plan.