YOUR TREATMENT TOOLKIT
Lymphoma Radiotherapy

Supportive Care Guide

Anthony Ricco, MD
Radiation Oncology
Main Line Health — Lankenau Medical Center & Riddle Hospital

Version 1.1 | March 2026

Evidence-based protocols from NCCN, ILROG, BC Cancer, ASH, and clinical practice guidelines

Welcome to Your Treatment

You have been diagnosed with lymphoma (Hodgkin's or non-Hodgkin's). Your treatment is **involved-site radiation therapy (ISRT)** — modern, highly targeted RT that treats only the areas affected by disease, **not the old broad 'mantle field' approaches.**

Your treatment regimen: **Typically 20–30 Gy in 10–15 fractions over 2–4 weeks** (much lower doses than most other cancer RT). This is usually given **after chemotherapy** (chemotherapy regimens continue to evolve — for advanced Hodgkin's, recent data showed nivolumab + AVD outperformed older combinations; for NHL, R-CHOP and other regimens are used) to eliminate any residual disease.

What to expect: Hodgkin lymphoma is one of the most curable cancers. Overall, **up to about 90% of newly diagnosed patients can be cured**, although outcomes vary by stage and other risk factors. Many NHL subtypes also have excellent outcomes. This is transformative news: **you are very likely to be cured.** Side effects during RT are generally **much milder than what you experienced with chemotherapy**, and most acute effects resolve within 4–8 weeks post-RT.

> ***Core message:*** *This guide is as much about your* ***NEXT 40 YEARS*** *as it is about the next 4 weeks. You will almost certainly be cured. This guide tells you how to stay healthy for the rest of your life.*

Your Treatment Timeline

Most patients follow this symptom pattern. Your experience depends on your radiation field (chest/mediastinal, neck, abdominal). This gives you a roadmap:

Phase	What Happens
Pre-Treatment (Week before)	Planning CT, simulation, marks on skin. Minimal impact on daily life. This is when we establish your baseline.
During RT (Weeks 1–4)	Gradual fatigue (peaks mid-late treatment). Site-specific effects begin: chest RT → mild esophagitis/cough; neck RT → sore throat/dry mouth; abdominal RT → mild nausea. Most people continue working or school.
Early Recovery (Weeks 2–6 post-RT)	Acute effects resolve. Energy returns. Blood counts recover quickly (unlike chemo). Most fatigue lifts by week 4–6. Back to normal activities.
Long-Term (Years 1–40+)	**THE focus of this guide.** Late effects screening begins (thyroid checks, cardiac imaging, breast screening). Lifelong healthy habits protect your heart. Annual exams. Most patients have no complications whatsoever.

The Golden Rules

These four principles will guide you through treatment and the decades to come:

1. You Are Very Likely Cured — But the Work Isn't Over

Up to about 90% of newly diagnosed Hodgkin lymphoma patients can be cured, with excellent outcomes for most NHL subtypes too. But **late effects from treatment require lifelong monitoring.** Follow your screening schedule religiously. Think of it as maintenance on a car that will last 40+ years.

2. Protect Your Heart — Starting Now

Mediastinal RT combined with chemotherapy increases your cardiac risk 3–5x over the general population. **Your heart is your most important organ to protect.** Exercise 150 min/week, maintain healthy cholesterol and blood pressure, never smoke, manage stress. These habits start during treatment and continue forever.

3. Follow Your Screening Schedule Religiously

Annual: TSH (thyroid), lipid panel, blood pressure, cardiac exams. **Every 5 years:** Echocardiogram with strain imaging. **Women treated before age 30:** Annual breast MRI + mammogram starting age 25 (or 8 years post-RT). These catch problems early when they are most treatable.

4. Stay Active — Exercise Is Medicine

150 minutes/week of moderate exercise reduces cardiac risk, fatigue, depression, and may even reduce secondary cancer risk. Walking, cycling, swimming, anything. During RT, even 10 minutes counts. This is one of the most important things you can do.

1. Side Effects During Treatment

Most side effects are mild compared to chemo and resolve completely within 4–8 weeks. Here's what to expect by treatment field:

Mediastinal/Chest RT (Most Common Field)

30–42% develop mild esophagitis (sore throat/chest when swallowing):

- **Sore throat:** Soft foods (Boost VHC, yogurt, soup), avoid hot beverages, salt-water gargles, throat lozenges (Ricola). Usually mild.
- **Dry mouth:** Xylitol lozenges, Biotene mouthwash, humidifier. Resolves 3–6 months post-RT.
- **Mild cough:** Expected, usually non-productive. Resolves weeks after RT.
- **Skin redness at treatment site:** Gentle soap, moisturizer, SPF 50+ when skin is visible (rare at these doses).

Neck RT

Throat discomfort, dry mouth (same management as above). Usually very mild at ISRT doses.

Abdominal RT

Mild nausea, occasional diarrhea. Low-residue diet (white rice, chicken, banana), ondansetron if needed, loperamide for diarrhea. Resolves within 2 weeks post-RT.

Fatigue

50–80% experience cumulative fatigue, peaking mid-to-late treatment. This is real and unavoidable; it is your body repairing radiation damage. Rest as needed. Light walking or yoga can help. Resolves within 4–6 weeks.

2. Your Heart: The Most Important Late Effect

This is the #1 reason for lifelong follow-up in lymphoma survivors. Mediastinal RT combined with chemotherapy (especially anthracyclines like doxorubicin in ABVD) substantially increases cardiac risk. The good news: these risks are preventable with screening and lifestyle changes.

Why Your Heart Is at Risk

Mediastinal RT exposes the heart, coronary arteries, and valves to radiation. Combined with cardiotoxic chemotherapy (doxorubicin), the risk is amplified.

- **Coronary artery disease (CAD):** In older studies using larger radiation fields, risk was 3.6x higher than the general population. Modern ISRT substantially reduces heart dose, lowering but not eliminating this risk. CAD can occur silently (no symptoms) and may present suddenly as MI.
- **Heart failure:** Historical cohort data showed risk 4.9x higher with older techniques. Modern treatment lowers this risk, but long-term monitoring still matters.
- **Valvular disease:** 8–17% of survivors; aortic stenosis most common. Typically presents **10–20 years post-RT** with a clear dose-response relationship.
- **Pericarditis:** Inflammation of heart lining (rare with modern ISRT doses).

Critical: CAD Can Occur WITHOUT Traditional Risk Factors

You might never smoke, have normal cholesterol, normal blood pressure, normal weight — and still develop coronary disease from radiation. This is why screening is non-negotiable.

Higher Risk If You:

- Were <25 years old at treatment (younger heart has more years to develop damage)
- Received mediastinal RT >30 Gy (higher dose = higher risk)
- Received anthracycline chemotherapy (doxorubicin in ABVD)
- Currently smoke (amplifies risk 2–3x)

Cardiac Screening Protocol

This is a general framework — your specific screening schedule will be tailored by your survivorship team based on your radiation dose, chemotherapy, and other risk factors:

When	Test	Why
Baseline (pre-RT)	Echocardiogram + ECG	Establish your baseline heart function and ejection fraction
Years 1–5	Annual clinical visit + ECG	Watch for early changes; detect symptoms early
Year 5	Echocardiogram with strain imaging	First comprehensive cardiac assessment post-RT
Every 5 years after	Echocardiogram + stress test or coronary CTA	Ongoing surveillance for silent disease
Year 10+	Consider coronary CTA	Detect subclinical atherosclerosis before symptoms
Every 1–2 years	Lipid panel, blood pressure, diabetes screening	Manage modifiable risk factors (2025 ESMO: lipid screening q3yr minimum)

What YOU Can Do to Protect Your Heart

1. **Exercise:** 150 minutes/week moderate aerobic activity (walking, cycling, swimming, dancing). This is the single most powerful intervention.
2. **Never smoke.** Period. This is the #1 modifiable risk factor.
3. **Know your numbers:** Cholesterol, blood pressure, fasting glucose. Get baseline tested now. Keep LDL <70 mg/dL (use statins if needed).
4. **Maintain healthy BMI:** Overweight amplifies cardiac risk. Even 5–10% weight loss helps.
5. **Mediterranean or DASH diet:** Proven to reduce cardiac events. Fruits, vegetables, whole grains, lean proteins, healthy fats (olive oil).
6. **Manage stress:** Meditation, yoga, therapy. Chronic stress increases cardiac risk.
7. **Limit alcohol:** Moderation only (1 drink/day women, 2 men). Excess damages the heart.
8. **Sleep 7–9 hours nightly.** Poor sleep increases cardiac risk and metabolic syndrome.

3. Secondary Cancer Screening

Another critical late effect. Radiation can cause new cancers in the treated field, but screening and prevention catch these early when most treatable.

Breast Cancer (Women Treated with Chest RT Before Age 30)

This is the most important secondary malignancy risk. Women who received mediastinal RT before age 30 have a substantially elevated lifetime breast cancer risk. Historical cohorts suggest cumulative incidence around **30% by age 50** — far higher than the general population (13%). Excess risk begins about 8 years after treatment and persists lifelong.

Screening Protocol:

- **Start:** Age 25 OR 8 years post-RT, whichever is LATER (specifically for those who received chest/axillary RT between ages 10 and 30)
- **Imaging:** Annual BOTH mammogram + breast MRI. A 2025 Dutch study found dual-modality screening has **95% sensitivity** (vs 79% MRI alone, 63% mammogram alone). You need BOTH.
- **Cumulative risk:** 30% by age 50 in HL survivors (vs 13% general population)
- **Clinical exam:** Every 6 months by your oncologist
- **Technology:** 3D mammography (tomosynthesis) preferred
- **Duration:** Ages 25–60+, lifelong (per International Late Effects Guideline Harmonization Group)

Thyroid Cancer

Neck RT increases risk 10–25%. Fortunately, thyroid cancer in RT survivors is usually very treatable.

- **Screening:** Annual TSH + neck palpation. Ultrasound if nodule felt or TSH abnormal.
- **Duration:** Lifelong

Lung Cancer

Mediastinal RT itself increases lung cancer risk, and smoking **dramatically** amplifies it — historical studies suggest the combined risk can exceed 20-fold compared with nonsmoking survivors.

- **Prevention: QUIT SMOKING.** This eliminates the additive risk.
- **Screening:** If significant smoking history, consider low-dose CT chest screening per USPSTF guidelines.

Soft Tissue Sarcoma

Rare (1–2% lifetime) but serious. Develops within the radiation field, usually years later.

- **Red flag:** Any **enlarging mass in your radiation field** (chest wall, mediastinum, neck, etc.) needs urgent imaging. Do NOT wait.

4. Thyroid Health

Radiation to the neck or lower neck can affect the thyroid years later. Hypothyroidism is common in lymphoma survivors who received neck radiation, with long-term studies reporting rates around 30–40% depending on field and dose. It develops gradually, often over years 1–15.

What Happens

Radiation damages the thyroid gland, reducing its ability to produce thyroid hormone. **Hypothyroidism worsens cardiac risk**, so treatment is doubly important.

Symptoms

Often subtle and easily missed or misattributed to 'cancer fatigue':

- Persistent fatigue (not improving with rest)
- Weight gain (despite eating normally)
- Cold intolerance
- Constipation
- Brain fog, concentration problems
- Depression or mood changes
- Dry skin, hair loss

Screening & Treatment

- **Test:** Annual TSH + free T4 (free T4 more specific than total T4)
- **Duration:** LIFELONG (hypothyroidism can develop years later)
- **Treatment:** Levothyroxine (generic, $10–20/month) is very effective. Goal: TSH 0.5–2.0 mIU/L
- **Recheck:** TSH 6 weeks after starting/changing dose, then annually

> ***Important:*** *If you have fatigue, weight gain, or mood changes post-treatment, get your thyroid checked. Hypothyroidism is easily treated and dramatically improves quality of life.*

5. Lung Health

Pneumonitis (lung inflammation) is rare at lymphoma RT doses (20–30 Gy), but certain chemotherapy agents increases risk significantly. Baseline PFTs are important.

Screening

- **Baseline:** Pulmonary function tests (PFTs) before treatment
- **Follow-up:** Annual PFTs for 5 years, then every 2–3 years
- **Symptoms:** Report persistent dry cough (>2 weeks) or shortness of breath

Prevention

- **Never smoke** (this is non-negotiable; smoking amplifies lung AND cardiac risk)
- Avoid air pollution when possible
- Maintain good cardiopulmonary fitness with exercise

6. Fertility & Family Planning

If you are of reproductive age, discuss fertility preservation BEFORE treatment. ABVD (or other chemo) can affect fertility; RT can too depending on field.

For Men

- **Sperm banking:** STRONGLY recommended before treatment if fertility is important. Cost: ~$500–1000 upfront + $200–400/year storage. ABVD causes temporary azoospermia (80–90%), with recovery in months to years.
- **Post-treatment assessment:** Semen analysis 12 months post-treatment to check recovery of sperm production.
- **Genetic safety:** Fertility after treatment is safe; radiation does not increase genetic abnormalities in offspring.

For Women

- **Egg (oocyte) cryopreservation:** STRONGLY recommended if ovarian preservation is desired. Cost: $10,000–15,000 upfront + annual storage. Pelvic RT: discuss ovarian transposition.
- **Oocyte in vitro maturation (IVM):** Emerging option now recommended by **2025 ASCO guideline update** — allows egg collection without full hormonal stimulation cycle, useful when treatment cannot be delayed.
- **Ovarian function:** ABVD causes temporary/permanent amenorrhea depending on age. Younger women have higher recovery rates. ABVD is the lowest gonadotoxicity regimen; salvage chemo + stem cell transplant carries the highest risk.
- **If fertility desired:** Refer to reproductive endocrinology if amenorrhea persists >2 years. ASCO now emphasizes fertility counseling during **survivorship care** too — even if you didn't pursue options before treatment.
- **Pregnancy safety:** When pregnancy is safe depends on your treatment, recovery, and your cancer team's advice. Many people are advised to wait several months to a couple of years, but there is no single rule for everyone. No increased risk of miscarriage or birth defects in offspring.

7. Mental Health & Young Adult Survivorship

You are cured. But psychological side effects are real and deserve attention. Studies show **38% of AYA lymphoma survivors experience anxiety** and **27% experience depression** — rates significantly higher than the general population. A 2025 study found AYA survivors diagnosed in their 20s–30s carry the **highest prevalence of mental health concerns** of any cancer age group, even decades later. Formal mental health screening is now recommended in survivorship guidelines (International Late Effects Guideline Harmonization Group).

Fear of Recurrence

40–50% of lymphoma survivors experience persistent anxiety about recurrence ('scanxiety'). This is **normal and manageable.** Cognitive-behavioral therapy, support groups, and reassurance from clear imaging all help.

Chronic Fatigue

30–40% report persistent fatigue at 1 year; ~15% develop chronic fatigue syndrome. This is real and treatable: exercise, sleep optimization, treating depression, thyroid replacement.

Fertility Grief

For those who couldn't preserve fertility or lost ovarian/testicular function, grief is profound. Psychologic counseling, support groups, and medical options (donor gametes, surrogacy, adoption) exist.

Return to Work/School

Expect gradual return over 2–3 months. Fatigue improves but may persist. Ask for accommodations (flexible hours, work-from-home) as needed.

Identity & Relationship Changes

Cancer changes people. Body image shifts, relationships are tested, priorities shift. This is normal. Support resources:

- **Leukemia & Lymphoma Society (LLS):** Free support groups, peer mentoring, financial assistance, educational resources. Website: lls.org
- **CancerCare:** Free counseling (individual and couples therapy)
- **Stupid Cancer:** Young adult-specific support network (stupidcancer.org)
- **Local cancer support groups:** Ask your oncology team

8. Exercise & Lifestyle

This is one of the most powerful tools you have to reduce late effects risk.

Target: 150 Minutes/Week Moderate Aerobic Activity

Proven benefits: reduced cardiac risk, reduced fatigue, improved mood, reduced depression, may reduce secondary cancer risk. The 2025 LIFE trial (Lifestyle Intervention of Food and Exercise) showed that structured exercise **during active treatment** — not just afterward — showed promising signals for improving anxiety, depression, fatigue, and pain, though definitive results are still emerging.

- **Examples:** Brisk walking, cycling, swimming, dancing, elliptical, rowing

- **During RT:** Even 10–20 min daily helps. **Don't wait until treatment is over to start.** Progress as energy allows.
- **Post-RT:** Ramp up to 150 min/week over months. Add resistance training ≥2 days/week. This is your medicine.

Resistance Training

2 days/week of strength training (weights, resistance bands, bodyweight). Builds muscle, strengthens bones, improves metabolism.

Diet

Mediterranean or DASH diet proven to reduce cardiac events:

- Abundant vegetables, fruits, whole grains
- Healthy fats (olive oil, nuts, avocado)
- Lean proteins (fish, chicken, beans)
- Limited red meat, processed foods, added sugar

Other Healthy Habits

- **Never smoke** (or quit if you do)
- **Maintain healthy weight:** BMI 18.5–24.9
- **Alcohol:** Moderation (1 drink/day women, 2 men)
- **Sleep:** 7–9 hours nightly
- **Stress management:** Yoga, meditation, therapy

When to Call Your Care Team

Contact us immediately if you experience:

Warning Sign	What It Means
Fever >100.4°F during RT	Possible infection (low blood counts from chemo)
New chest pain or shortness of breath	Cardiac evaluation needed urgently
Persistent cough >2 weeks post-RT	Possible pneumonitis or other lung issue
Enlarging mass in radiation field	Possible secondary malignancy; urgent imaging needed
New lump in breast (women)	Needs imaging; could be benign or early cancer
Neck swelling or difficulty swallowing	Thyroid or lymph node evaluation
Severe fatigue + weight gain + cold	Check thyroid (TSH); hypothyroidism is treatable
New lymph node enlargement	May indicate recurrence; call immediately
Syncope or severe palpitations	Cardiac emergency; go to ER
Heavy hemoptysis (coughing blood)	Urgent evaluation

Your Lifelong Screening Schedule

This is your roadmap for staying healthy for the next 40+ years:

What	Frequency	Timing	Why
TSH + free T4	Annual	Year 1 onward	Catch hypothyroidism early
Echocardiogram	Every 5 years	Year 5 onward	Detect cardiac dysfunction before symptoms

What	Frequency	Timing	Why
Mammogram + breast MRI (women, pre-30 RT)	Annual	Age 25 or 8 yrs post-RT	Secondary breast cancer screening
Lipid panel	Every 1–2 years	Year 1 onward	Manage cardiac risk factors
Blood pressure	Every visit	Year 1 onward	Monitor for hypertension
PFTs	Annual → every 2–3 yrs	Year 1 onward	Monitor lung function
Clinical breast exam (women)	Every 6 months	Year 1 onward (or per oncology)	Detect breast changes
Skin exam (in RT field)	Annual	Year 1 onward	Monitor for secondary skin cancer

Recommended Products & Resources

Below are commonly recommended products with estimated costs. These are suggestions, not endorsements.

Category	Product/Service	Est. Cost
Symptom Support	Throat lozenges (Ricola, xylitol)	~$6
Symptom Support	Biotene mouthwash	~$10
Symptom Support	Boost VHC nutritional shake (27pk)	~$55
Symptom Support	Humidifier (bedroom)	~$30
Cardiac	Blood pressure monitor (home)	~$30–50
Cardiac	Gym/fitness membership or home equipment	~$50–150/mo
Cardiac	Cardiac rehab (insurance usually covers)	Usually covered
Thyroid	Levothyroxine (generic, 90-ct)	~$10–20/mo

Category	Product/Service	Est. Cost
Mental Health	LLS support groups/peer mentoring	Free
Mental Health	CancerCare counseling	Free
Mental Health	Therapy/counseling (check insurance)	Variable
Fertility	Sperm banking (men)	~$500–1000 + storage
Fertility	Egg freezing (women)	~$10,000–15,000 + storage
General	Follow-up appointments (oncology, cardiology, etc.)	Insurance covered

Most follow-up care (echocardiograms, PFTs, labs) is covered by insurance. Reach out to financial counseling if cost is a barrier.

Important Contact Information

Main Line Health — Radiation Oncology

100 East Lancaster Ave · Rosengarten Bldg, Basement · Wynnewood, PA 19096

1078 West Baltimore Pike · Health Center 1, Ground Floor · Media, PA 19063

Phone

Appointment Line: 1.866.CALL.MLH (1.866.225.5654)

If you are experiencing a life-threatening emergency, call 911.

Anthony Ricco, MD
Radiation Oncology
Main Line Health — Lankenau Medical Center & Riddle Hospital
Document Version 1.1 | March 2026

My Treatment Journal

A place to notice patterns, remember questions, and track what helps.

> *You do not need to fill this out perfectly. Even a few notes can help you see patterns, remember what worked, and tell your care team what is actually happening at home.*

This Week

Week of / goals / anything I especially want help with

Daily Check-In

Day / Date	Energy (0-10)	Pain (0-10)	Eating / Drinking	Sleep	Main note
Mon					
Tue					
Wed					
Thu					
Fri					
Sat					
Sun					

Symptoms I Want to Watch

☐ Fatigue	☐ Skin or site soreness	☐ Swallowing / cough
☐ Fever / infection concern	☐ Fertility / hormones	☐ Mood / anxiety
☐ Other: ____________________		

What I Tried / What Helped

Use this page to test small changes and keep track of what helps, what does not, and what you want to ask about next.

Problem or symptom	What I tried	Did it help?	Next step / question

Examples: taking pain medicine before meals, changing skin care timing, drinking earlier in the day, using a humidifier, adjusting fiber, walking after treatment, or asking for a refill.

Questions for My Care Team

Bring this page to visits. Small questions are worth writing down, especially when treatment days start to run together.

Symptoms or side effects I want to mention

Medication, refill, or product questions

Eating, drinking, bowel, bladder, skin, sleep, or activity questions

Logistics: appointments, transportation, work, family, forms

One thing I keep forgetting to ask

Free Notes

Use this space for anything else: patterns, reminders, caregiver notes, or visit takeaways.

Visit takeaways / things to remember

More notes