

Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson's specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient's care. This algorithm should not be used to treat pregnant women.

PRESENTATION

Cancer survivors
post treatment

- At initial survivorship visit:
- Assess access to primary health care¹
 - Blood pressure² check
 - Baseline lipid³ panel and as clinically indicated
 - Baseline electrocardiogram (ECG)⁴
 - Assess cardiovascular risk factors
 - Calculate patient's ASCVD risk⁵
 - Lifestyle risk assessment⁶

ASCVD = atherosclerotic cardiovascular disease
 CTA = computed tomography angiogram
 LBBB = left bundle branch block
 LVEF = left ventricular ejection fraction
 RBBB = right bundle branch block

¹ Recommend patient to follow-up with their primary care provider for management of abnormal findings. If patient does not have one established, consider referral to Cardiology or General Internal Medicine (GIM) for temporary management until patient establishes care with a local provider.

GIM criteria for referral:

- For blood pressure, SBP > 140 mmHg or DBP > 90-120 mmHg
- For heart rate between 100-120 bpm
- For lipid panel, LDL 100-189 mg/dL or triglyceride > 300 mg/dL

² Blood pressure goal < 130/80 mmHg

³ Low-density lipoprotein-cholesterol (LDL-C) goal < 100 mg/dL. If radiation to the heart, LDL-C goal < 70 mg/dL. Consider Cardiology referral for established coronary calcifications or plaque, or carotid atherosclerosis.

⁴ Referral to Cardiology if results show evidence of prior infarction, ischemia, LBBB, RBBB, atrial fibrillation/flutter, or abnormal ECG (depending on provider's comfort level)

⁵ For risk refer to [ASCVD Risk Estimator Plus](#)

⁶ See [Physical Activity](#), [Nutrition](#), and [Tobacco Cessation Treatment](#) algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

CARDIOVASCULAR RISK FACTORS

- High-dose anthracycline (doxorubicin ≥ 250 mg/m²)
- or**
- Lower dose anthracycline in combination with radiation to the heart or mediastinum and/or trastuzumab
- or**
- Patient history to include ≥ 2 risk factors⁷

Low-dose anthracycline treatment without radiation or trastuzumab and no other risk factors⁷

Radiation therapy

⁷ Risk factors during or after completion of treatment: smoking, hypertension, diabetes, dyslipidemia, or obesity

⁸ Referral to Cardiology if results show LVEF < 50%, \geq moderate valvular regurgitation, any degree of stenosis, or constriction. Consider referral to Cardiology if LVEF < 55%, particularly those whose LVEF has been declining or is < 53%.

⁹ Consider referral to Cardiology if results show plaque or stenosis

CARDIOVASCULAR SCREENING

(To start from the completion of treatment)

- ECG⁴
 - Annually for ages ≥ 60 years at the time of treatment
 - Every 5 years for ages < 60 years at the time of treatment
- ECHO⁸ at 6 months, 1 year, 3 years, 5 years, then every 5 years thereafter

- Age < 60 years old at the time of treatment
 - ECG⁴ every 5 years
 - ECHO⁸ at 6 months, 1 year, then every 5 years thereafter
- Age ≥ 60 years old at the time of treatment
 - ECG⁴ annually
 - ECHO⁸ at 6 months, 1 year, 3 years, 5 years, then every 5 years thereafter

Regardless of age at the time of treatment:

- Heart or mediastinum in the radiation field
 - ECHO⁸ every 5 years
 - Stress test or coronary CTA at 10 years then every 5 years thereafter
- Neck
 - Baseline carotid duplex⁹
 - For normal results, obtain every 5 years thereafter
 - For abnormal results⁹, obtain annually if < 50% stenosis and every 6 months if > 50% stenosis
- Pelvis
 - Ankle-brachial index with arterial waveforms at 10 years then every 5 years thereafter
 - Renal duplex if hypertension or worsening renal function

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DEVELOPMENT CREDITS

This survivorship algorithm is based on majority expert opinion of the Cardiovascular Survivorship workgroup at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

Core Development Team Leads

Ihab Hamzeh, MD (Cardiology)

Workgroup Members

Sairah Ahmed, MD (Lymphoma-Myeloma)
Jennifer Alpard, PA-C (Head & Neck Surgery)
Carlos H. Barcnas, MD, MSc (Breast Medical Oncology)
Wendy Garcia, BS♦
Katherine Gilmore, MPH (Cancer Survivorship)
Thoa Kazantsev, MSN, RN, OCN♦
Haleigh Mistry, MS, PA-C (Lymphoma-Myeloma)
Ellen Mullen, PhD, MSN, RN (Lymphoma-Myeloma)
William Osai, MSN, RN (Genitourinary Medical Oncology)
Chelsea Pinnix, MD, PhD (Radiation Oncology)
Justine Robinson, MPAS, PA-C (Head & Neck Surgery)
Alma Rodriguez, MD (Lymphoma-Myeloma)
Shawn Terry, MSPA (Head & Neck Surgery)
Whittney Thoman, MS, ACSM-CEP, ACSM-CET (Cancer Survivorship)
Angela Yarbrough, DNP, APRN, FNP-BC (Pediatrics)

♦Clinical Effectiveness Development Team