

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.

ELIGIBILITY

CONCURRENT COMPONENTS OF VISIT

DISPOSITION

Esophageal cancer
 3 years
 post-treatment and
 NED

SURVEILLANCE

MONITORING FOR LATE EFFECTS

RISK REDUCTION/ EARLY DETECTION

PSYCHOSOCIAL FUNCTIONING

Years 3 and up:

- History and physical annually
- CT **or** PET/CT chest and abdomen as clinically indicated
 - For SCC of proximal esophagus, CT neck¹ (soft tissue) **or** PET/CT head and neck¹ as clinically indicated
- Consider comprehensive metabolic panel and CBC as clinically indicated²
- Consider collection of standardized patient reported outcomes annually
- EGD for Barrett's esophagus (BE):
 - For recurrent BE above anastomosis: Consider annually **or** every two years as clinically indicated
- EGD for esophageal adenocarcinoma (EAC):
 - 3-5 years post-treatment: As clinically indicated
 - 5-10 years post-treatment: Consider every two years until 80 years old as per patient's performance status
 - Past 10 years post-treatment: As clinically indicated
- EGD for squamous cell carcinoma (SCC):
 - 3-10 years post-treatment: Consider annually **or** every two years as clinically indicated until 80 years old as per patient's performance status
 - Past 10 years post-treatment: Consider every 2 years as clinically indicated until 80 years old as per patient's performance status

Abnormal findings³?

Yes

No

Return to primary
 treating physician

Continue survivorship
 monitoring

See [Page 2](#)

NED = no evidence of disease
 EGD = esophagogastroduodenoscopy

¹ Patients are at risk for secondary head and neck cancer. For abnormal scan, refer to or consult Head & Neck Surgery for examination and evaluation.

² Laboratory tests may be monitored by PCP

³ Abnormal findings may include but are not limited to:

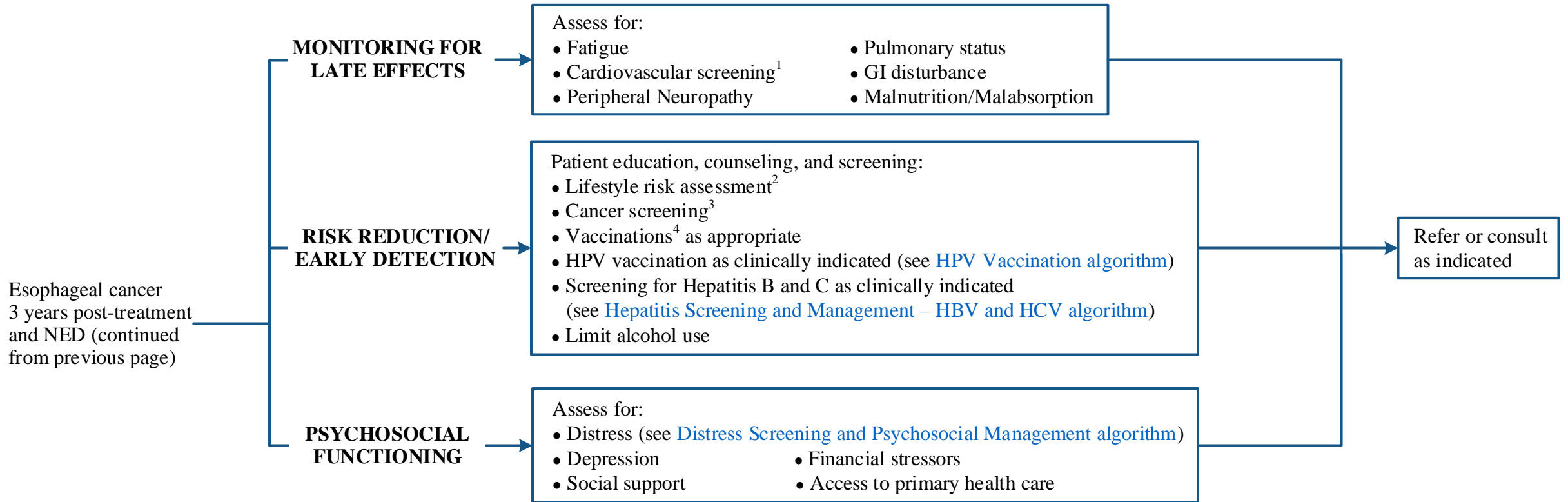
- Recurrent or metastatic disease
- Delayed gastric emptying
- Diaphragmatic hernia
- Severe reflux and aspiration

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ELIGIBILITY

CONCURRENT COMPONENTS OF VISIT

DISPOSITION



¹ Consider use of Vanderbilt's [ABCDE's approach to cardiovascular health](#)

² See [Physical Activity, Nutrition, and Tobacco Cessation algorithms](#); ongoing reassessment of lifestyle risks should be a part of routine clinical practice

³ Includes [breast, cervical](#) (if appropriate), [colorectal, liver, lung, pancreatic, prostate, and skin cancer screening](#)

⁴ Based on [Centers for Disease Control and Prevention \(CDC\) guidelines](#)

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SUGGESTED READINGS

- Abate, E., DeMeester, S. R., Zehetner, J., Oezcelik, A., Ayazi, S., Costales, J., . . . DeMeester, T. R. (2010). Recurrence after esophagectomy for adenocarcinoma: defining optimal follow-up intervals and testing. *Journal of the American College of Surgeons*, 210(4), 428-435. doi:10.1016/j.jamcollsurg.2010.01.006
- Ajani, J. A., D'Amico, T. A., Almhanna, K., Bentrem, D. J., Besh, S., Chao, J., . . . Sundar, H. (2015). Esophageal and esophagogastric junction cancers, version 1.2015. *Journal of the National Comprehensive Cancer Network*, 13(2), 194-227. doi:10.6004/jnccn.2015.0028
- Centers for Disease Control and Prevention. (2021). *Recommended immunization schedule for adults aged 19 years or older, United States, 2021*. Retrieved from <https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>
- Derogar, M., & Lagergren, P. (2012). Health-related quality of life among 5-year survivors of esophageal cancer surgery: A prospective population-based study. *Journal of Clinical Oncology*, 30(4), 413-418. doi:10.1200/JCO.2011.38.9791
- Djäv, T., Derogar, M., & Lagergren, P. (2014). Influence of co-morbidity on long-term quality of life after oesophagectomy for cancer. *British Journal of Surgery*, 101(5), 495-501. doi:10.1002/bjs.9417
- Ghaly, G., Kamel, M., Nasar, A., Paul, S., Lee, P. C., Port, J. L., . . . Altorki, N. K. (2016). Locally advanced esophageal cancer: What becomes of 5-year survivors? *The Journal of Thoracic and Cardiovascular Surgery*, 151(3), 726-732. doi:10.1016/j.jtcvs.2015.10.096
- Gockel, I., Gönner, U., Domeyer, M., Lang, H., & Junginger, T. (2010). Long-term survivors of esophageal cancer: Disease-specific quality of life, general health and complications. *Journal of Surgical Oncology*, 102(5), 516-522. doi:10.1002/jso.21434
- Graham, L., & Wikman, A. (2016). Toward improved survivorship: Supportive care needs of esophageal cancer patients, a literature review. *Diseases of the Esophagus*, 29(8), 1081-1089. doi:10.1111/dote.12424
- Jacobs, M., Macefield, R. C., Elbers, R. G., Sitnikova, K., Korfage, I. J., Smets, E. M. A., . . . Sprangers, M. A. G. (2014). Meta-analysis shows clinically relevant and long-lasting deterioration in health-related quality of life after esophageal cancer surgery. *Quality of Life Research*, 23(4), 1097-1115. doi:10.1007/s11136-013-0545-z
- Little, A. G., Lerut, A. E., Harpole, D. H., Hofstetter, W. L., Mitchell, J. D., Altorki, N. K., & Krasna, M. J. (2014). The Society of Thoracic Surgeons practice guidelines on the role of multimodality treatment for cancer of the esophagus and gastroesophageal junction. *The Annals of Thoracic Surgery*, 98(5), 1880-1885. doi:10.1016/j.athoracsur.2014.07.069
- Martin, L., & Lagergren, P. (2015). Risk factors for weight loss among patients surviving 5 years after esophageal cancer surgery. *Annals of Surgical Oncology*, 22(2), 610-616. <https://doi.org/10.1245/s10434-014-3973-2>
- Morimoto, H., Yano, T., Yoda, Y., Oono, Y., Ikematsu, H., Hayashi, R., . . . Kaneko, K. (2017). Clinical impact of surveillance for head and neck cancer in patients with esophageal squamous cell carcinoma. *World Journal of Gastroenterology*, 23(6), 1051-1058. doi:10.3748/wjg.v23.i6.1051

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- Morota, M., Gomi, K., Kozuka, T., Chin, K., Matsuura, M., Oguchi, M., . . . Yamashita, T. (2009). Late toxicity after definitive concurrent chemoradiotherapy for thoracic esophageal carcinoma. *International Journal of Radiation Oncology, Biology, Physics*, 75(1), 122-128. doi:10.1016/j.ijrobp.2008.10.075
- Nandy, N., & Dasanu, C. A. (2013). Incidence of second primary malignancies in patients with esophageal cancer: A comprehensive review. *Current Medical Research and Opinion*, 29(9), 1055-1065. doi:10.1185/03007995.2013.816276
- National Comprehensive Cancer Network. (2020). *Esophageal and Esophagogastric Junction Cancers* (NCCN Guideline Version 1.2021). Retrieved from https://www.nccn.org/professionals/physician_gls/pdf/esophageal.pdf
- Shien, K., Yamashita, M., Okazaki, M., Suehisa, H., Sawada, S., & Miyoshi, S. (2011). Primary lung cancer surgery after curative chemoradiotherapy for esophageal cancer patients. *Interactive Cardiovascular and Thoracic Surgery*, 12(6), 1002-1006. doi:10.1510/icvts.2010.263509
- Vanderbilt Cardio-Oncology Program. (2017). *Know Your ABCDE's*. Retrieved from <http://www.cardioonc.org/2017/08/29/know-your-abcs/>
- Varghese, T. K., Hofstetter, W. L., Rizk, N. P., Low, D. E., Darling, G. E., Watson, T. J., . . . Krasna, M. J. (2013). The society of thoracic surgeons guidelines on the diagnosis and staging of patients with esophageal cancer. *The Annals of Thoracic Surgery*, 96(1), 346-356. doi:10.1016/j.athoracsur.2013.02.069
- Wikman, A., Smedfors, G., & Lagergren, P. (2013). Emotional distress - a neglected topic among surgically treated oesophageal cancer patients. *Acta Oncologica*, 52(8), 1783-1785. doi:10.3109/0284186X.2013.771820
- Yamasaki, M., Miyata, H., Yasuda, T., Shiraishi, O., Takahashi, T., Motoori, M., . . . Doki, Y. (2015). Impact of the route of reconstruction on post-operative morbidity and malnutrition after esophagectomy: a multicenter cohort study. *World Journal of Surgery*, 39(2), 433-440. doi:10.1007/s00268-014-2819-1

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DEVELOPMENT CREDITS

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

Mariela Blum Murphy, MD (GI Medical Oncology)
Vikki DeVito, PA-C (Thoracic & Cardiovascular Surgery)
Katherine Gilmore, MPH (Cancer Survivorship)
Wayne Hofstetter, MD (Thoracic & Cardiovascular Surgery)
Harjeet Kaur, MSN, RN, CNL, CMQ*
Thoa Kazantsev, BSN, RN, OCN*
Susan Knippel, FNP-C, RN (Thoracic & Cardiovascular Surgery)
Jeannette Mares, PA-C (GI Medical Oncology)
Ara Vaporciyan, MD (Thoracic & Cardiovascular Surgery)[†]

[†] Core Development Team

* Clinical Effectiveness Development Team