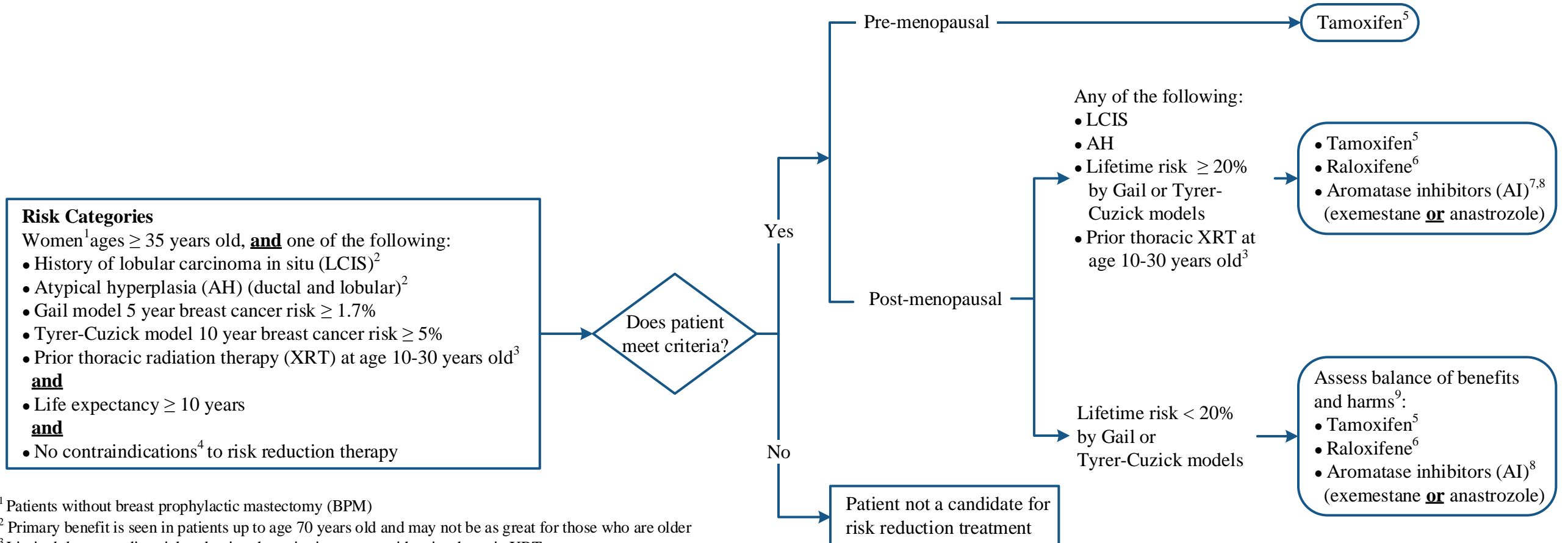


Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson's specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional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

RISK ASSESSMENT

TREATMENT



¹ Patients without breast prophylactic mastectomy (BPM)

² Primary benefit is seen in patients up to age 70 years old and may not be as great for those who are older

³ Limited data regarding risk reduction therapies in women with prior thoracic XRT

⁴ Prior history of a thromboembolic event is an absolute contraindication. Adequately treated endometrial hyperplasia or early-stage endometrial cancer is not a contraindication to the use of tamoxifen.

⁵ Starting dose of tamoxifen is 20 mg by mouth once daily; may reduce to 5 mg once daily (or 10 mg every other day) if needed for patient tolerance

⁶ Lower risk of uterine cancer but less long-term benefit

⁷ Limited data regarding AIs in women with proliferative breast lesions

⁸ Off-label (Not FDA approved)

⁹ Tables that can be used to determine women for whom the benefits outweigh the risks can be found at Freedman, A. N., Yu, B., Gail, M. H., Costantino, J. P., Graubard, B. I., Vogel, V. G., ... McCaskill-Stevens, W. (2011). Benefit/risk assessment for breast cancer chemoprevention with raloxifene or tamoxifen for women age 50 years or older. *Journal of Clinical Oncology*, 29(17), 2327.

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.

SUGGESTED READINGS

- Coopey, S. B., Mazzola, E., Buckley, J. M., Sharko, J., Belli, A. K., Kim, E. M., ... Gadd, M. A. (2012). The role of chemoprevention in modifying the risk of breast cancer in women with atypical breast lesions. *Breast Cancer Research and Treatment, 136*(3), 627-633.
- Cuzick, J., Sestak, I., Forbes, J. F., Dowsett, M., Knox, J., Cawthorn, S., ... Bonanni, B. (2014). Anastrozole for prevention of breast cancer in high-risk postmenopausal women (IBIS-II): An international, double-blind, randomised placebo-controlled trial. *The Lancet, 383*(9922), 1041-1048.
- DeCensi A., Puntoni M., Guerrieri-Gonzaga A., Caviglia S., Avino F., Cortesi L., ... Bonanni B. (2019) Randomized Placebo Controlled Trial of Low-Dose Tamoxifen to Prevent Local and Contralateral Recurrence in Breast Intraepithelial Neoplasia. doi: 10.1200/JCO.18.01779. [Epub ahead of print]
- Fisher, B., Costantino, J. P., Wickerham, D. L., Redmond, C. K., Kavanah, M., Cronin, W. M., ... Daly, M. (1998). Tamoxifen for prevention of breast cancer: Report of the National Surgical Adjuvant Breast and Bowel Project P-1 Study. *Journal of the National Cancer Institute, 90*(18), 1371-1388.
- Fisher, B., Costantino, J. P., Wickerham, D. L., Cecchini, R. S., Cronin, W. M., Robidoux, A., ... Runowicz, C. D. (2005). Tamoxifen for the prevention of breast cancer: Current status of the National Surgical Adjuvant Breast and Bowel Project P-1 study. *Journal of the National Cancer Institute, 97*(22), 1652-1662.
- Freedman, A. N., Yu, B., Gail, M. H., Costantino, J. P., Graubard, B. I., Vogel, V. G., ... McCaskill-Stevens, W. (2011). Benefit/risk assessment for breast cancer chemoprevention with raloxifene or tamoxifen for women age 50 years or older. *Journal of Clinical Oncology, 29*(17), 2327-2333.
- Gail, M. H., Brinton, L. A., Byar, D. P., Corle, D. K., Green, S. B., Schairer, C., & Mulvihill, J. J. (1989). Projecting individualized probabilities of developing breast cancer for white females who are being examined annually. *Journal of the National Cancer Institute, 81*(24), 1879-1886.
- Goss, P. E., Ingle, J. N., Alés-Martínez, J. E., Cheung, A. M., Chlebowski, R. T., Wactawski-Wende, J., ... Winqvist, E. (2011). Exemestane for breast-cancer prevention in postmenopausal women. *New England Journal of Medicine, 364*(25), 2381-2391.
- Hartmann, L. C., Radisky, D. C., Frost, M. H., Santen, R. J., Vierkant, R. A., Benetti, L. L., ... Degnim, A. C. (2014). Understanding the premalignant potential of atypical hyperplasia through its natural history: A longitudinal cohort study. *Cancer Prevention Research, 7*(2), 211-217.
- Moyer, V. A. (2013). Medications to decrease the risk for breast cancer in women: Recommendations from the US Preventive Services Task Force recommendation statement. *Annals of Internal Medicine, 159*(10), 698-708.
- National Comprehensive Cancer Network. (2019). *Breast Cancer Risk Reduction*. (NCCN Guideline V1.2019). Retrieved from http://www.nccn.org/professionals/physician_gls/pdf/breast_risk.pdf
- Tyrer, J., Duffy, S. W., & Cuzick, J. (2004). A breast cancer prediction model incorporating familial and personal risk factors. *Statistics in Medicine, 23*(7), 1111-1130.
- Visvanathan, K., Hurley, P., Bantug, E., Brown, P., Col, N. F., Cuzick, J., ... Garber, J. (2013). Use of pharmacologic interventions for breast cancer risk reduction: American Society of Clinical Oncology clinical practice guideline. *Journal of Clinical Oncology, 31*(23), 2942-2962.
- Vogel, V. G., Costantino, J. P., Wickerham, D. L., Cronin, W. M., Cecchini, R. S., Atkins, J. N., ... Robidoux, A. (2006). Effects of tamoxifen vs raloxifene on the risk of developing invasive breast cancer and other disease outcomes: The NSABP Study of Tamoxifen and Raloxifene (STAR) P-2 trial. *Jama, 295*(23), 2727-2741.
- Vogel, V. G., Costantino, J. P., Wickerham, D. L., Cronin, W. M., Cecchini, R. S., Atkins, J. N., ... Robidoux, A. (2010). Update of the national surgical adjuvant breast and bowel project study of tamoxifen and raloxifene (STAR) P-2 trial: Preventing breast cancer. *Cancer Prevention Research, 3*(6), 696-706.

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.*

DEVELOPMENT CREDITS

This risk reduction algorithm is based on majority expert opinion of the Breast Cancer Risk Reduction Therapy workgroup at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

Banu Arun, MD (Breast Medical Oncology)
Therese Bevers, MD (Clinical Cancer Prevention)[‡]
Abenaa Brewster, MD (Clinical Cancer Prevention)[‡]
Powel Brown, MD, PhD (Clinical Cancer Prevention)
Elise Cook, MD (Clinical Cancer Prevention)
Robin Coyne, APRN, FNP-BC (Clinical Cancer Prevention)
Joyce Dains, DrPH, APRN, FNP-BC (Nursing)
Olga N. Fleckenstein[♦]
Ernest Hawk, MD (Clinical Cancer Prevention)
Tiffany McGowan, APRN, FNP-BC (Clinical Cancer Prevention)
Jennifer Litton, MD (Breast Medical Oncology)
Ana Nelson, APRN, FNP-BC (Clinical Cancer Prevention)
Lonzetta Newman, MD (Clinical Cancer Prevention)
Tilu Ninan, APRN, ANP-BC (Clinical Cancer Prevention)
Priya Thomas, MD (Clinical Cancer Prevention)

[‡] Development Lead

[♦] Clinical Effectiveness Development Team