

Clinical studies

Excluded studies - 8.4 What are the indications for radiotherapy to internal mammary nodes?	
Study	Reason for exclusion
Boelke, E., Matuschek, C., Kammers, K., Budach, W., Adjuvant radiotherapy of regional lymph nodes in breast cancer-a meta-analysis of randomized trials, International Journal of Gynecological Cancer, 24, 8-9, 2014	Abstract
Brower, V., Nodal radiation in breast cancer does not improve survival, Lancet OncologyLancet Oncol, 16, e430, 2015	Brief narrative review
Budach, W., Bolke, E., Kammers, K., Gerber, P. A., Nestle-Kramling, C., Matuschek, C., Adjuvant radiation therapy of regional lymph nodes in breast cancer - a meta-analysis of randomized trials- an update, Radiation OncologyRadiat, 10, 258, 2015	Insufficient information to judge study quality
Chen, R. C., Lin, N. U., Golshan, M., Harris, J. R., Bellon, J. R., Internal mammary nodes in breast cancer: diagnosis and implications for patient management -- a systematic review, Journal of clinical oncology, 26, 4981-9, 2008	Contains interventions outside scope
Haffty, B. G., Regional Nodal Irradiation in Breast Cancer, Breast Diseases, 27, 16-19, 2016	Expert review
Matuschek, C., Kammers, K., Boelke, E., Budach, W., Adjuvant radiotherapy of regional lymph nodes in breast cancer-a meta-analysis of randomized trials, Radiotherapy and Oncology, 111, S57, 2014	Conference abstract
Mei, X., Guo, X. M., Zhang, Z., Chen, J. Y., Postmastectomy radiation in supraclavicular and internal mammary regions of patients with breast cancer of stage II/III, Chinese Medical JournalChin Med J, 122, 103-5, 2009	Non RCT N<2000
Moreno, A. C., Lin, H., Bedrosian, I., Smith, B. D., Babiera, G., Stauder, M. C., Buchholz, T. A., Woodward, W. A., Shen, Y., Shaitelman, S. F., Effect of Regional Nodal Irradiation on Overall Survival in Patients With High-risk Invasive Breast Cancer: A National Cancer Data Base Analysis, International journal of radiation oncology, biology, physics, 96, E50-E51, 2016	Conference abstract
Nilsson, G., Holmberg, L., Garmo, H., Terent, A., Blomqvist, C., Radiation to supraclavicular and internal mammary lymph nodes in breast cancer increases the risk of stroke, British Journal of Cancer, 100, 811-816, 2009	Non-RCT N<2000
Olson, R. A., Maas, B., Gondara, L., Woods, R., Speers, C., Truong, P., Lo, A. C., Olivotto, I., Tyldesley, S., Nichol, A., Weir, L., Impact of Internal Mammary Node Radiation on Survival of Patients With Breast Cancer: Extended Follow-Up of a Population-Based Analysis, International journal of radiation oncology, biology, physics, 96, E54-E55, 2016	Conference abstract

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Olson, R. A., Woods, R., Lau, J., Speers, C., Lo, A., Tyldesley, S., Weir, L., Impact of internal mammary node inclusion in the radiation treatment volume on the outcomes of patients with breast cancer treated with locoregional radiation after six years of follow-up, <i>Journal of clinical oncology</i> , 29, 81, 2011	Conference abstract
Olson, R. A., Woods, R., Speers, C., Lau, J., Lo, A., Truong, P. T., Tyldesley, S., Olivotto, I. A., Weir, L., Does the intent to irradiate the internal mammary nodes impact survival in women with breast cancer? A population-based analysis in British Columbia, <i>International journal of radiation oncology, biology, physics</i> , 83, e35-41, 2012	Retrospective cohort study
Osman, M. A. M., Elkady, M. S., Nasr, K. E., For stage II node-positive breast cancer, is it worthwhile to consider adjuvant radiotherapy following mastectomy?, <i>Frontiers in Oncology</i> , 4 (NOV) (no pagination), 2014	No RT to IMN
Poortmans, P., Fourquet, A., Collette, L., Struikmans, H., Bartelink, H., Kirkove, C., Budach, V., Maingon, P., Valli, M. C., Van Den Bogaert, W., Irradiation of the internal mammary and medial supraclavicular lymph node chain in stage I to III breast cancer: State of the day of EORTC phase III trial 22922/10925 with 4004 patients, <i>European Journal of Cancer, Supplement</i> , 8, 54, 2010	Conference abstract
Poortmans, P., Struikmans, H., Collette, S., Kirkove, C., Budach, V., Maingon, P., Valli, M. C., Fourquet, A., Van Den Bogaert, W., Bartelink, H., Lymph node RT improves survival in breast cancer: 10 years results of the EORTC ROG and BCG phase III trial 22922/10925, <i>Radiotherapy and Oncology</i> , 111, S206, 2014	Conference abstract
Poortmans, P., Struikmans, H., Kirkove, C., Budach, V., Maingon, P., Valli, M. C., Collette, S., Fourquet, A., Bartelink, H., Van Den Bogaert, W., Irradiation of the internal mammary and medial supraclavicular lymph nodes in stage I to III breast cancer: 10 years results of the EORTC Radiation Oncology and Breast Cancer Groups phase III trial 22922/10925, <i>European Journal of Cancer</i> , 49, S1-S2, 2013	Conference abstract
Shah, C., Vicini, F. A., Regional Nodal Irradiation: Moving Beyond Overall Survival, <i>International journal of radiation oncology, biology, physics</i> , 94, 208-9, 2016	Opinion paper
Stokes, E. L., Tyldesley, S., Woods, R., Wai, E., Olivotto, I. A., Effect of nodal irradiation and fraction size on cardiac and cerebrovascular mortality in women with breast cancer treated with local and locoregional radiotherapy, <i>International journal of radiation oncology, biology, physics</i> , 80, 403-9, 2011	Retrospective cohort study
Struikmans, H., Collette, S., Van Den Bogaert, W., Kirkove, C., Budach, V., Maingon, P., Valli, M. C., Fourquet, A., Bartelink, H., Poortmans, P., The benefit of regional irradiation in stage I-III breast cancer: 10 years results of the EORTC ROG and BCG phase III trial 22922/10925, <i>European Journal of Cancer</i> , 50, S3, 2014	Abstract
Thorsen, L. B. J., Berg, M., Brodersen, H. J., Dano, H., Jensen, I., Overgaard, J., Overgaard, M., Pedersen, A. N., Zimmermann, S. J., Offersen, B. V., Improved survival with internal mammary node irradiation: A prospective study on 3,072 breast cancer patients, <i>Radiotherapy and Oncology</i> , 111, S57, 2014	Conference abstract

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Verma, V., Vicini, F., Tendulkar, R. D., Khan, A. J., Wobb, J., Edwards-Bennett, S., Desai, A., Shah, C., Role of Internal Mammary Node Radiation as a Part of Modern Breast Cancer Radiation Therapy: A Systematic Review, International journal of radiation oncology, biology, physics, 95, 617-31, 2016	Contains comparisons outside scope
Vu, C. C., Sura, K., Chen, P. Y., Dilworth, J. T., Regional Nodal Irradiation in Breast Cancer Patients With Clinical N1 and Pathologic N0 Disease After Neoadjuvant Chemotherapy: An Analysis of the National Cancer Data Base, International journal of radiation oncology, biology, physics, 96, E4-E5, 2016	Conference abstract
Wendling, P., Regional nodal irradiation combats disease recurrence, Oncology Report, 7, 2011	Narrative review
Wolstenholme, V., Ross, G., Current indications for post-mastectomy radiotherapy, Advances in Breast Cancer, 4, 4-7, 2007	Narrative review

IMN, internal mammary node; RCT, randomised controlled trial; RT, radiotherapy