



# Second Malignancies after Treatment of Early-Stage Breast Cancer: Lumpectomy and Radiation Therapy Versus Mastectomy

Reviewers: Li Liu, M.D

Source: [Journal of Clinical Oncology, Volume 18 \(12\), 2406-2412 \(June\) 2000](#)

Précis: Radiation for breast cancer is not associated with greater risk of second malignancy.

## Introduction

Almost all types of cancer can be caused by exposure to ionizing radiation with exception of chronic lymphocytic leukemia. Recent studies have sought to refine the risk estimates associated with irradiation of these cancers and to evaluate interactions with other known risk factors. This study assessed the risk of second malignancies after lumpectomy and radiation therapy.

## Method

A total of 1,029 women with early-stage breast cancer who were treated with lumpectomy and radiation and 1,387 who were treated with mastectomy between 1970 and 1990 were included.

## Results

- The risk of developing contralateral breast cancer in 15 years of follow-up was 10% in both treatment groups.
- The risk for second malignancies in areas other than the breast was 11% in the lumpectomy-radiation group and 10% in the mastectomy group, a difference that was statistically insignificant.
- In both groups, smoking increased the risk of second malignancies, especially lung malignancies.
- Chemotherapy did not increase the risk of second malignancies.

## Discussion

In this study, women with breast cancer who underwent lumpectomy followed by radiation therapy did not have an increased risk of a second malignancy compared with women who underwent mastectomy without radiation. Preventive strategies, such as smoking cessation, may substantially reduce the risk of second malignancies, especially lung cancer.

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