

Should Radiation Be Recommended for Older Patients with Early-Stage Breast Cancer ?

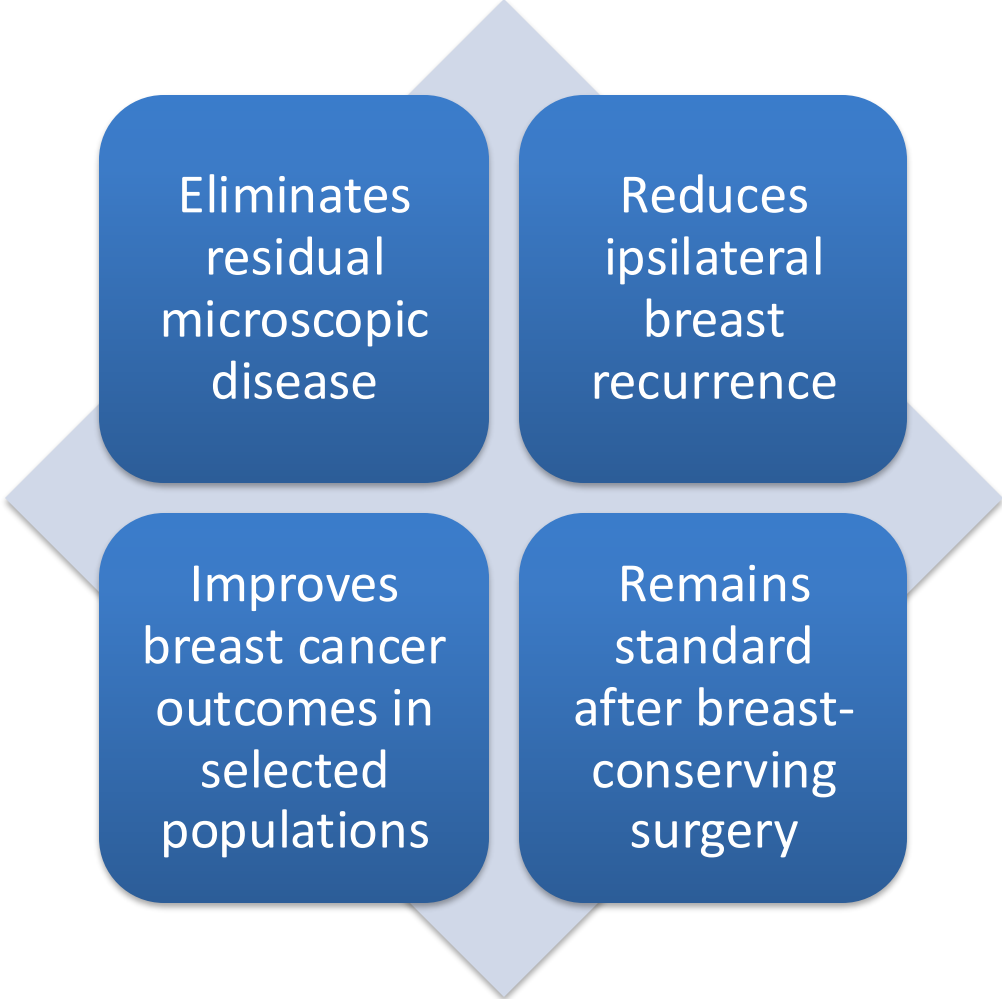
NO

Precision Oncology = Precision Local Therapy

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Why Radiation Therapy Matters



Eliminates
residual
microscopic
disease

Reduces
ipsilateral
breast
recurrence

Improves
breast cancer
outcomes in
selected
populations

Remains
standard
after breast-
conserving
surgery

EBCTCG Meta-analysis:

Foundation of Breast Radiation

17 randomized trials; >10,000 women

WBRT after lumpectomy

- 10-year IBTR: 19% WBRT vs 35% BCS alone
RR 0.52 (95%CI 0.48-0.56)
- 15-year BCSM: 21% WBRT vs. 25% BCS alone
RR 0.82 (95% CI, 0.75–0.90)

Breast-Conserving Surgery Without Radiation

Historical recurrence risk was substantial: RT reduces LR

Modern omission strategies focus on:

- Older age
- Favorable biology
- Small tumors
- Endocrine therapy adherence

Trial	Population	Outcome
CALGB 9343	≥70 yrs, ER+	No OS difference
PRIME II	≥65 yrs, ER+	No OS difference
LUMINA	Luminal A	Very low recurrence
IDEA	Genomically low risk	Excellent early outcomes

BCS +/- Radiation and Local Control

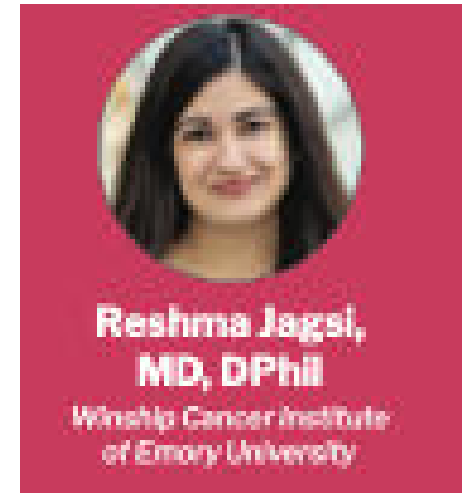


Debate is not about efficacy
it is about clinical significance
and the magnitude of the benefit
that justifies treatment

Trial	Population	10-Year LR	Overall Survival	NNT to prevent 1 LR
CALGB 9343	≥70 yrs, ER+	~2% RT vs ~10% no RT	No difference	13
PRIME II	≥65 yrs, ER+	~1% RT vs ~9–10% no RT	No difference	12

Dr Jagsi's Perspective

- Treatment should be individualized
- The key tradeoff is local control versus treatment burden
- Avoid overtreatment while maintaining excellent outcomes
- Patients should understand absolute recurrence differences
- Integrate patient preferences and competing health risks
- Use biologic and genomic risk factors to guide treatment intensity



Omission of Radiotherapy After Breast-Conserving Surgery for Women With Breast Cancer With Low Clinical and Genomic Risk: 5-Year Outcomes of IDEA

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J Clin Oncol 42, 390-398(2024) • Volume 42, Number 4 • DOI: 10.1200/JCO.23.02270

Biologically Driven Omission of RT

Jagsi et al. J Clin Oncol 42, 390-398(2024)

Whelan et al. N Engl J Med 2023;389:612-619

	IDEA	LUMINA
Selection strategy	Oncotype DX ≤ 18	Luminal A + Ki-67 $\leq 13.25\%$
Age	50–69 years	≥ 55 years
Radiation	Omitted	Omitted
Endocrine therapy	Required	Required
5yr risk LR	$\sim 1.1\%$	2.3%
NNT prevent 1 LR	$>91^*$	$\sim 40-77^{**}$

Modeled NNT – IDEA assumes radiation reduces risk to 0; LUMINA assumes reduces risk to 0.5-1.0%

Choosing Wisely

**Treating 40–100 women to prevent one recurrence
in biologically favorable disease raises
important questions about value-based care**

Biologically Driven Omission of Surgery

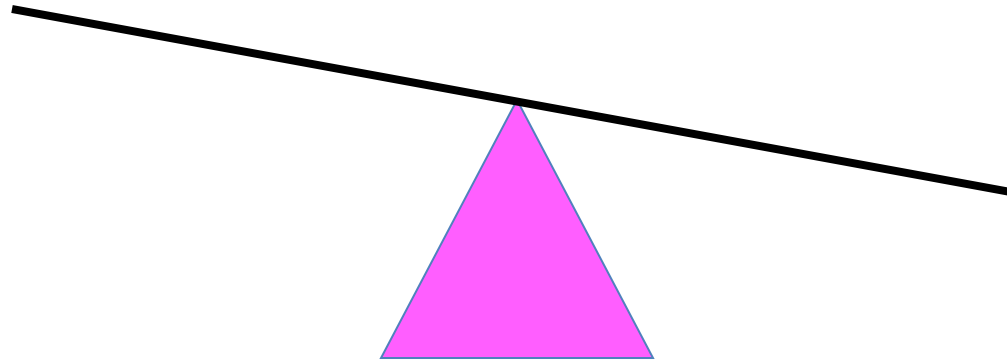
Omission of SLNB

Trial	Dates/ Accrual	Schema	Primary Endpoint
SOUND (Europe)	2012-2017 Goal n=1560	T1, cN0/iN0 → RCT: SLNB vs no axillary surgery	5-yr DDFS No Difference
INSEMA - cN0 (Germany)	2015- Goal n=5505	T1-2, cN0/iN0 → RCT: SLNB vs no axillary surgery	5-yr iDFS No Difference
BOOG 2013-08 (Dutch)	2014- Goal n=1644	T1-2, cN0/iN0 → RCT: SLNB vs no axillary surgery	5-yr RR No Difference

SLNB can be safely omitted in postmenopausal women with early stage favorable (low grade, HR+HER2-) breast cancer

Surgical De-escalation requires More Radiation Therapy

Surgery



Radiation



But Does It ?

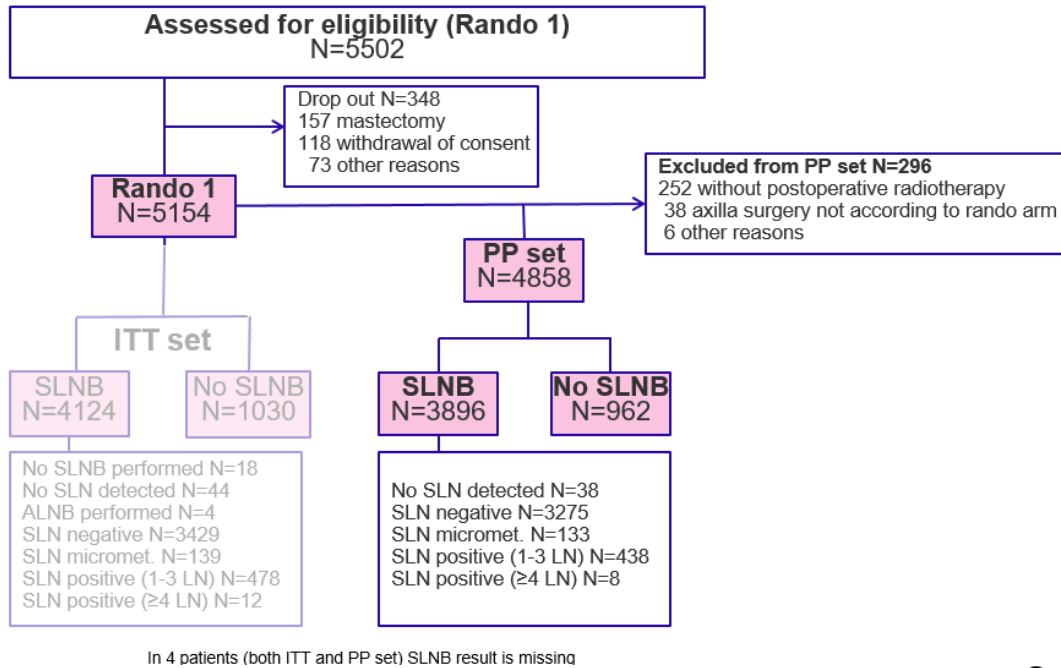
Overlap in Omission of SLNB and RT populations

- SOUND, INSEMA and BOOG 13-08 pts
 - Age ~60 yrs, T1, ER+ Her2-
 - 86% pN0

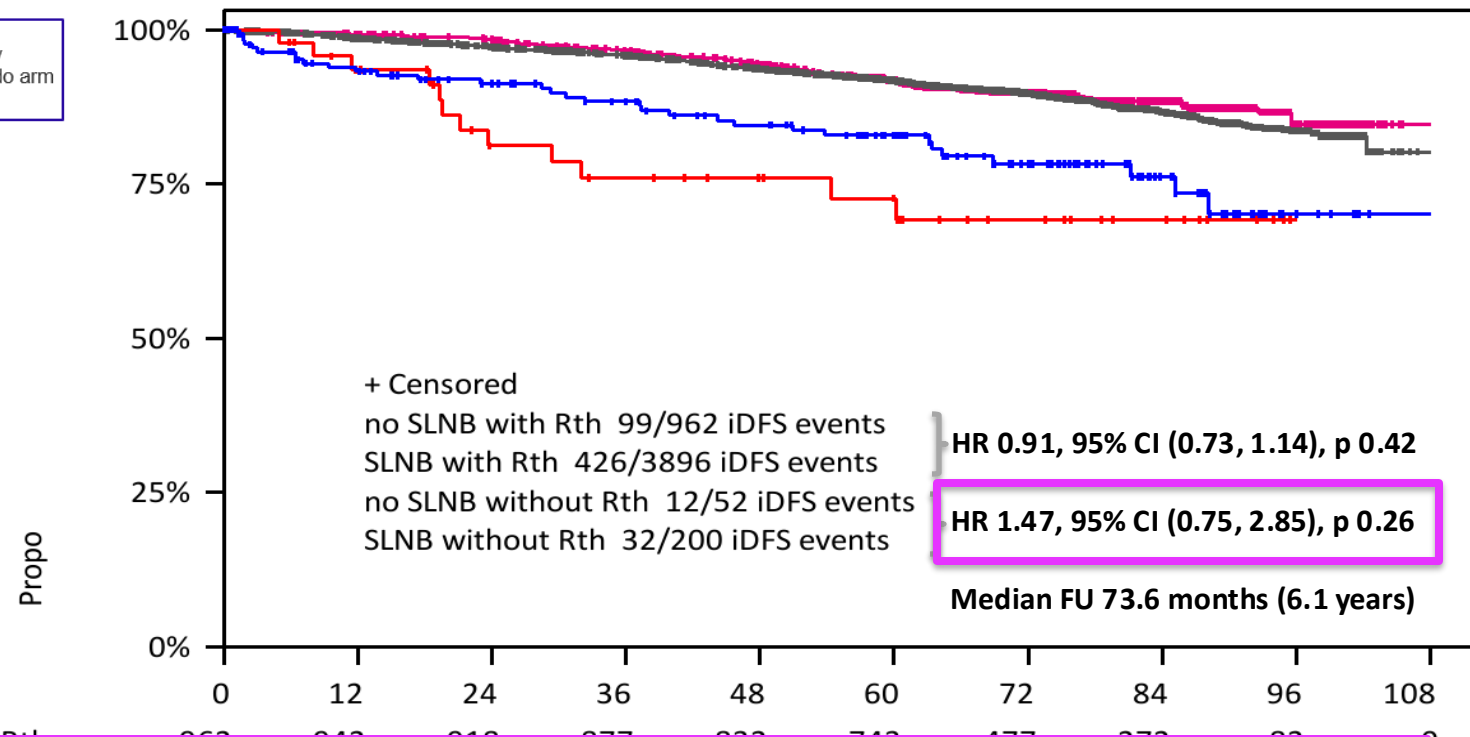
Considerable
Overlap

Trials of NO RT	Inclusion Criteria
CALGB 9343	Age ≥ 70 , ≤ 2 cm, ER+, cN0
PRIME II	Age ≥ 65 , ≤ 3 cm, ER+, pN0
LUMINA	Age ≥ 55 , ≤ 2 cm, luminal A, pN0
IDEA	Age 50-70, ≤ 2 cm, ER+, low Oncotype, pN0

Insights of Applied RT: INSEMA Trial



iDFS: 252 no RT vs 4858 w/ RT



Clinical implication:

Omission of SLNB during BCS does not need to be compensated for by RT

Radiation Has Costs and Patient Values Matter

Treatment Burden

daily visits

fatigue

dermatitis

breast fibrosis

cosmetic changes

Long-term risks

cardiac exposure

pulmonary fibrosis

rib fracture

secondary malignancy

Patient Values

fewer interventions

quality of life

returning to work

caregiver

responsibilities

Modern radiation techniques = shorter treatment times
Reduced many of these risks, but they have not eliminated them

Radiation in Older Patients

Early-Stage Breast Cancer

Routine postoperative radiotherapy should be replaced by individualized, biology-driven decision-making

RT Not Necessary	Features Favoring RT
Age ≥ 55 -70 years	Node-positive disease
ER-pos or biologically low risk	Triple-negative disease
Node-negative	High-grade tumors
Negative margins	Lymphovascular invasion
Endocrine therapy planned	No endocrine therapy



Should Radiation Be Recommended for ALL Older Patients with Early-Stage Breast Cancer ?

NO

Precision Oncology = Precision Local Therapy

The Right Treatment for the Right Patient

Q&A
