

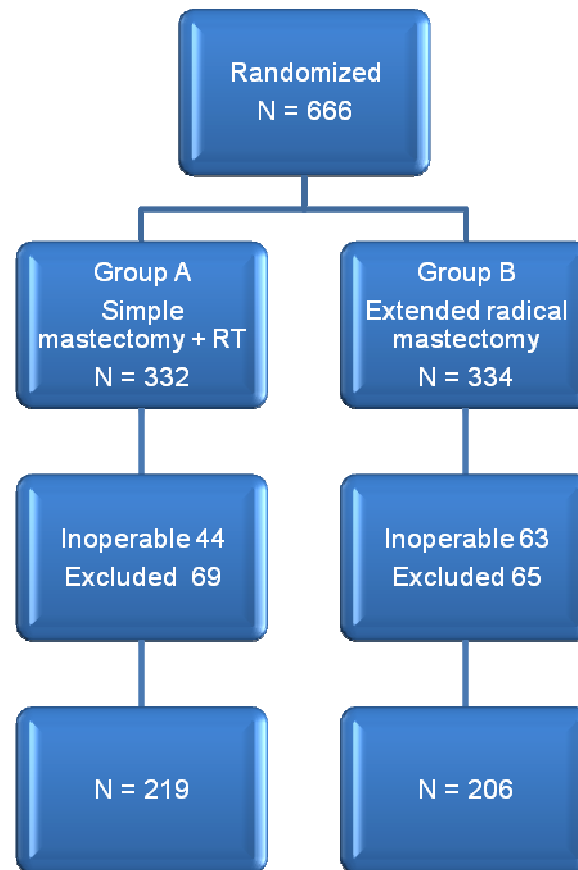
# **Breast cancer – Surgical treatment**

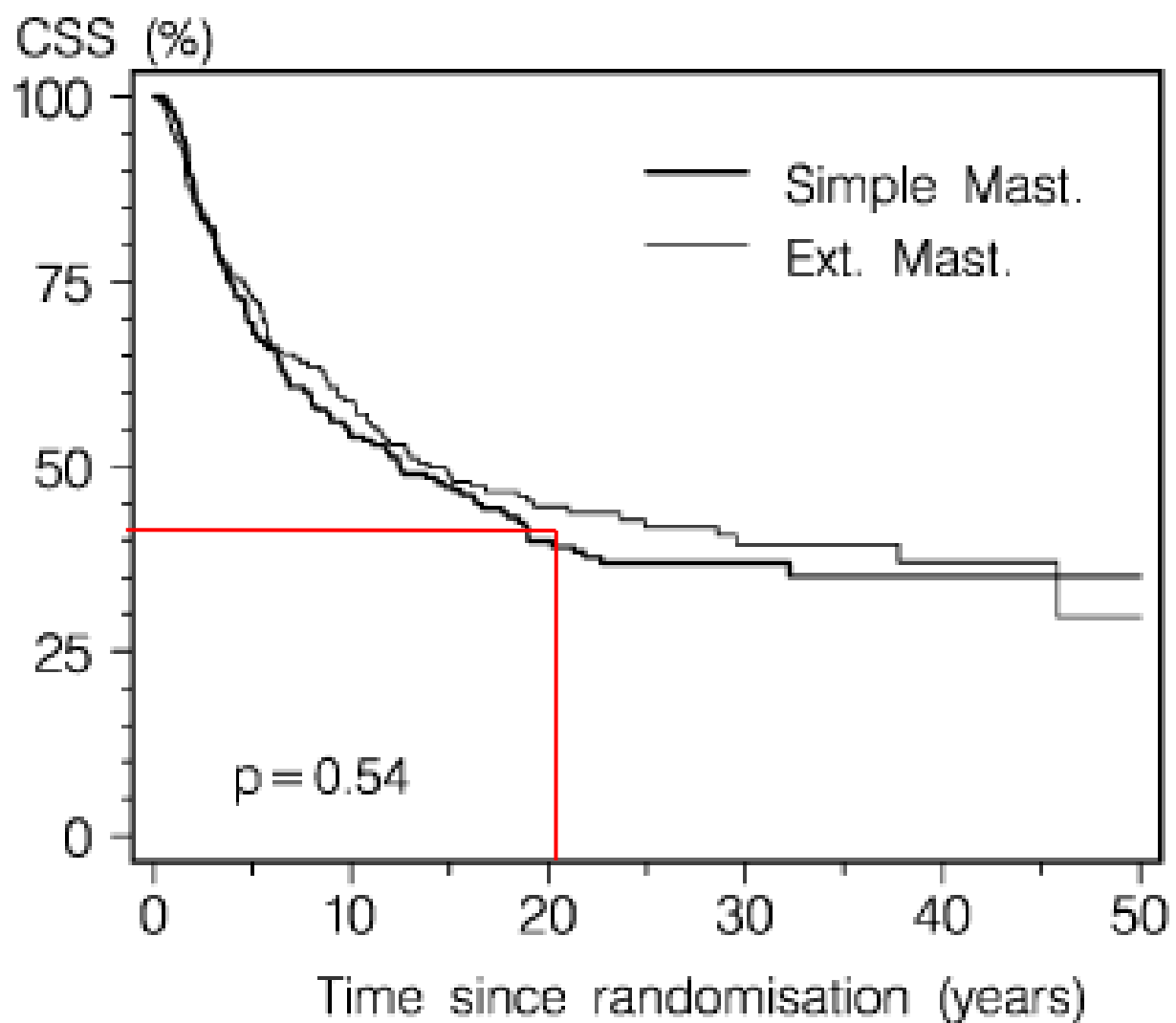
Peer Christiansen

# Treatment of breast cancer up to the 1970-ties

- Radical mastectomy according to Halsted:
  - Removal of the breast
  - Removal of pectoral muscles
  - Resection of axillary and infraclavicular LN
- Simple mastectomy and RT (McWhirter)

# First randomized trial of local approaches





SM	219	100	60	25	10	2
EM	206	100	61	31	11	3

# BREAST CANCER SURGERY IN THE EARLY DAYS OF DBCG

# DBCG 77

- Total mastectomy with partial axillary dissection modified after Cady\*
- “One cm of fatty tissue should be left underneath the axillary vein”
- “It is the aim to remove at least five lymph nodes”

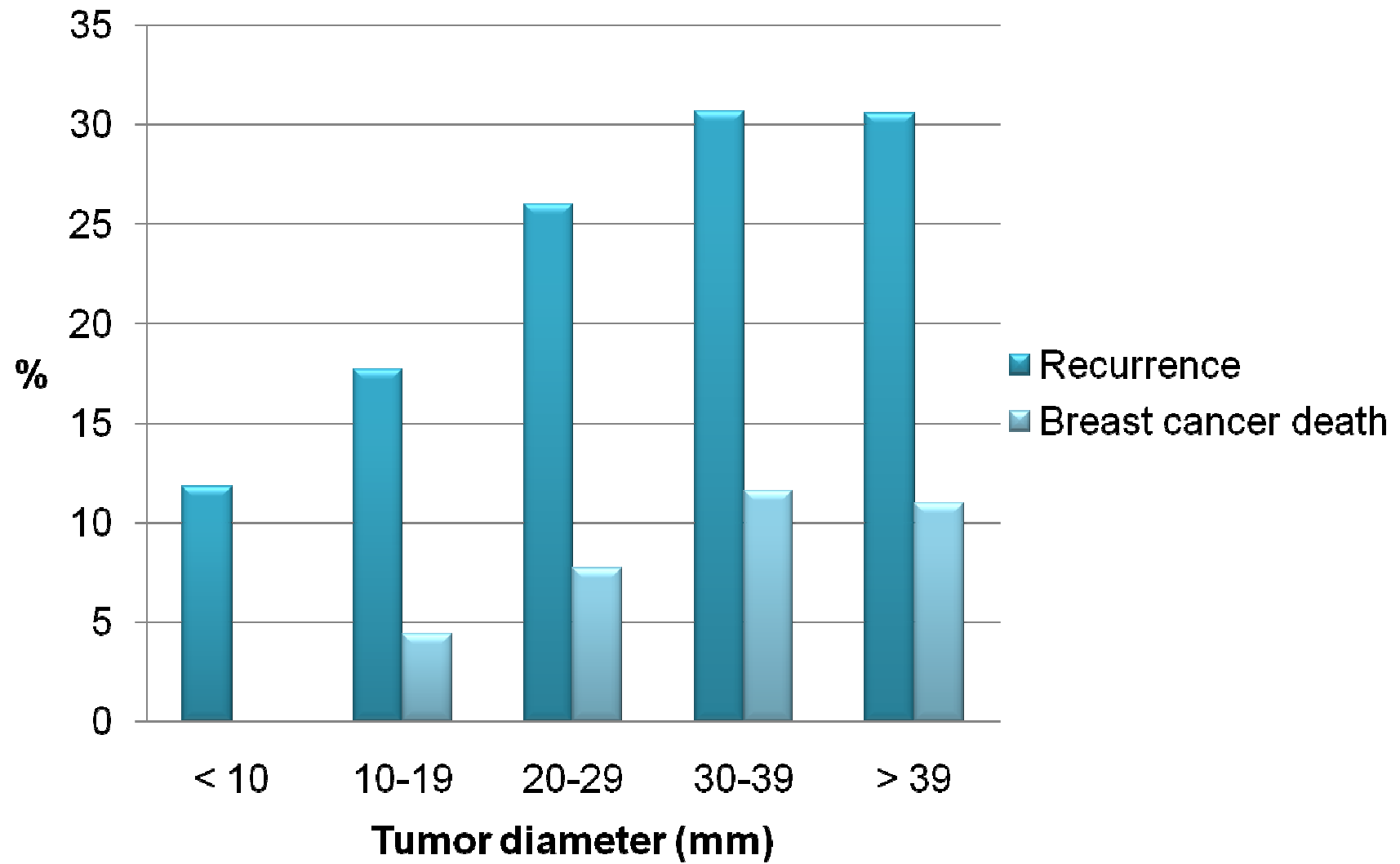
# DBCG 77-A

- Low-risk group:
  - Tumor diameter  $\leq 5$  cm
  - No invasion to skin or muscle
  - No LN metastases
- N = 3,128
  - LN = 0: 193
  - 1-30 LN (median 5)
- 84 surgical departments!

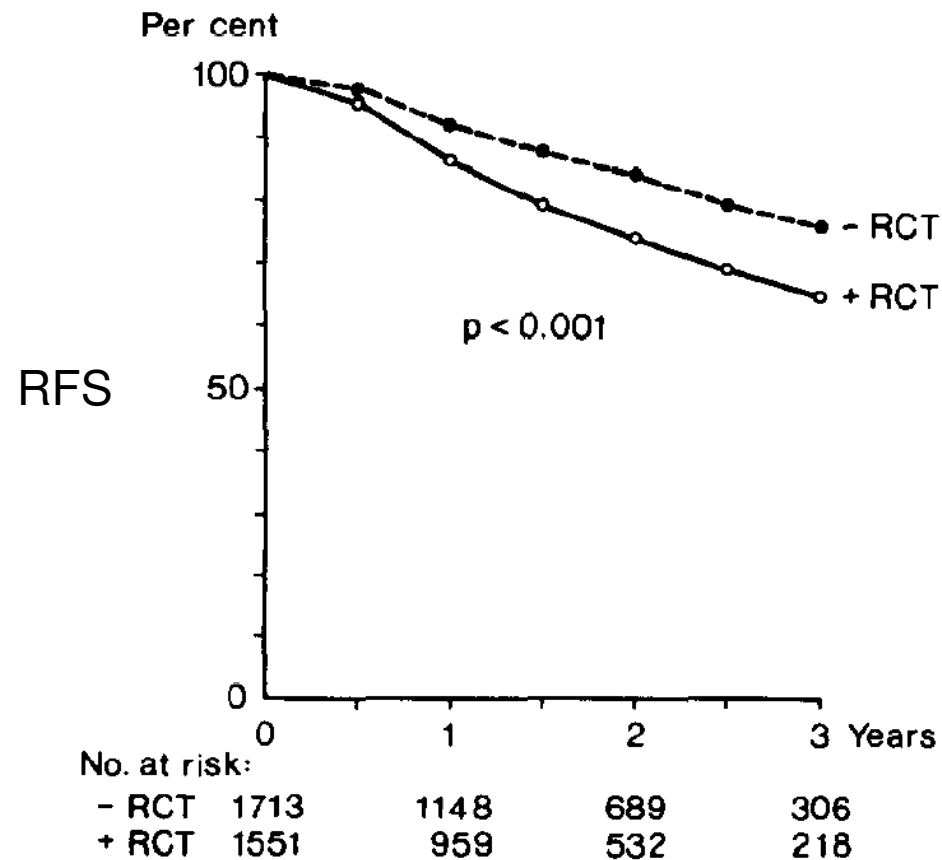
# Results

- Median follow-up seven years
- Loco-regional recurrence 13.9%
  - Chest wall 9.3%
  - Axilla 3.7%
- Distant metastases 13.5%
- RFS 61.7%
- OS 75.4%





# Prognostic significance of residual cancer tissue after biopsy



# Chest wall recurrences

- Part of metastatic disease
- Implantation of tumor cells
- Not radical resection
- New breast cancer developed in residual breast tissue

# Chest wall recurrences

- Background DBCG 77-A
- N = 246 patients
  - Excluded 58:
    - Diagnosed by FNA 17
    - Localized in dermis only 4
    - Insufficient material 6
    - Unknown 31

**Table 2**

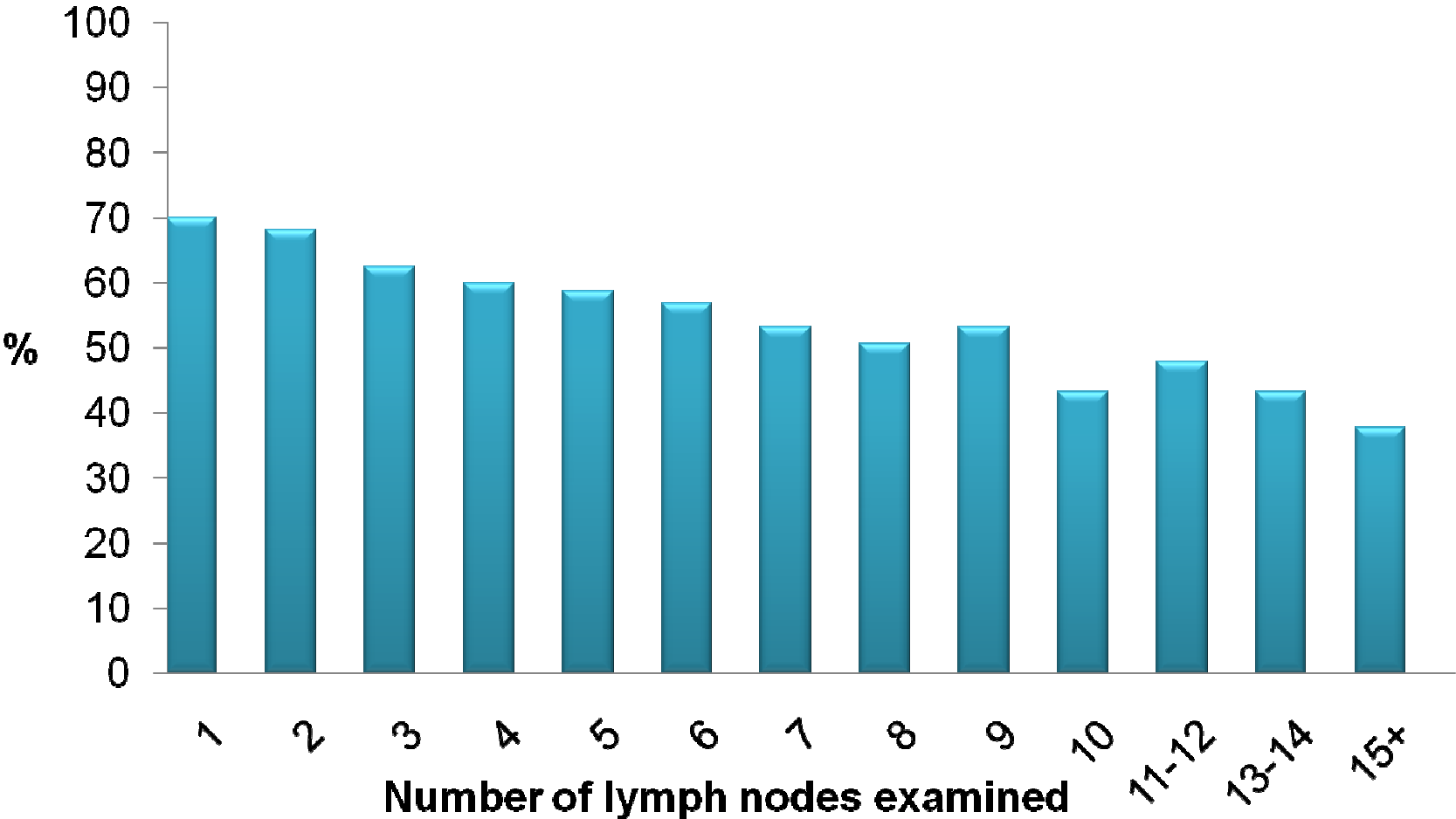
*The occurrence of breast glandular tissue among different types of chest wall recurrences*

	Breast glands		Percentage
	+	-	
A new primary cancer			
Evident	31	0	100
Questionable	8	1	88
Recurrence	37	111	25
		p<0.0005	

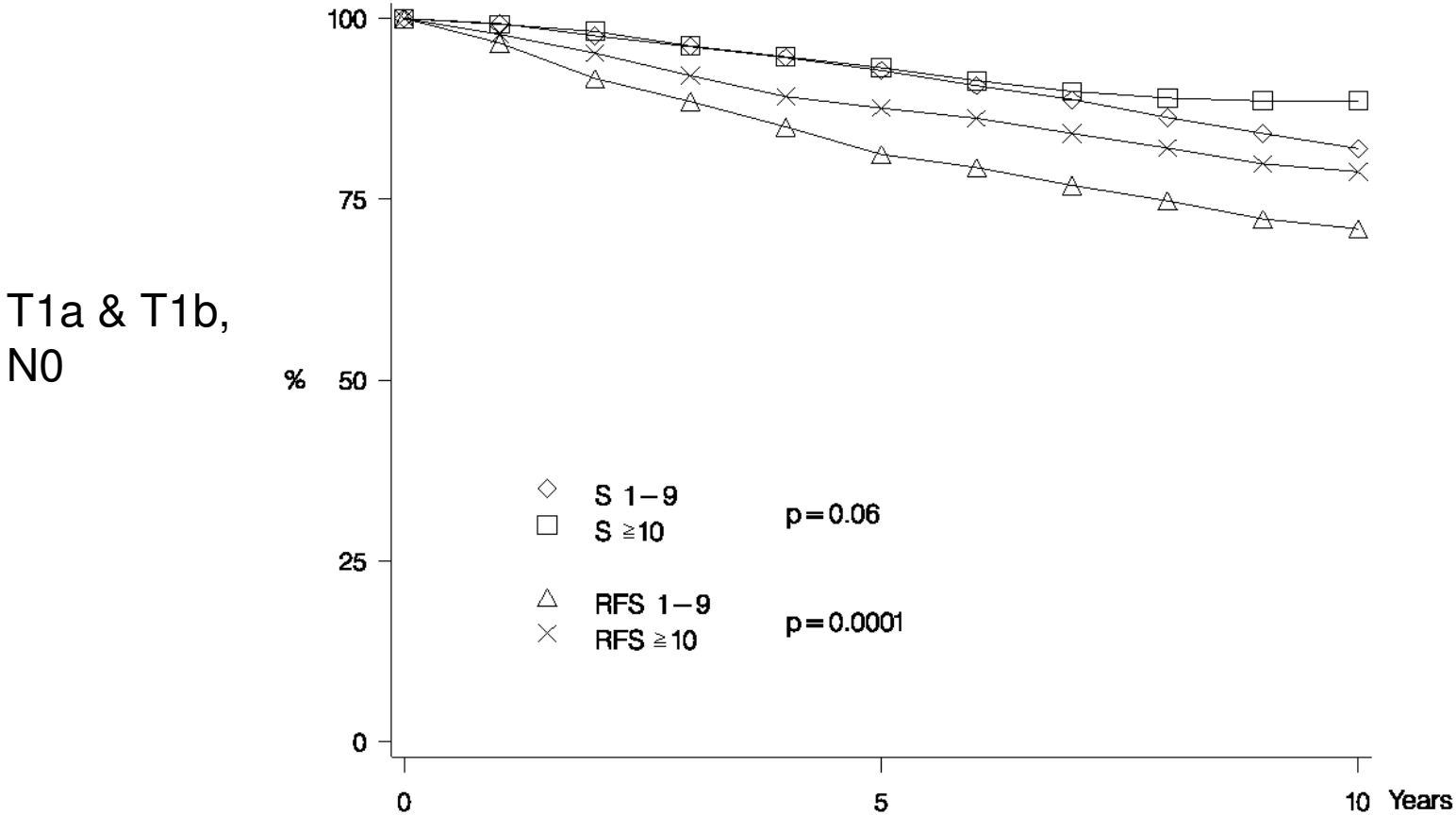
**Residual breast glandular tissue: 40%**

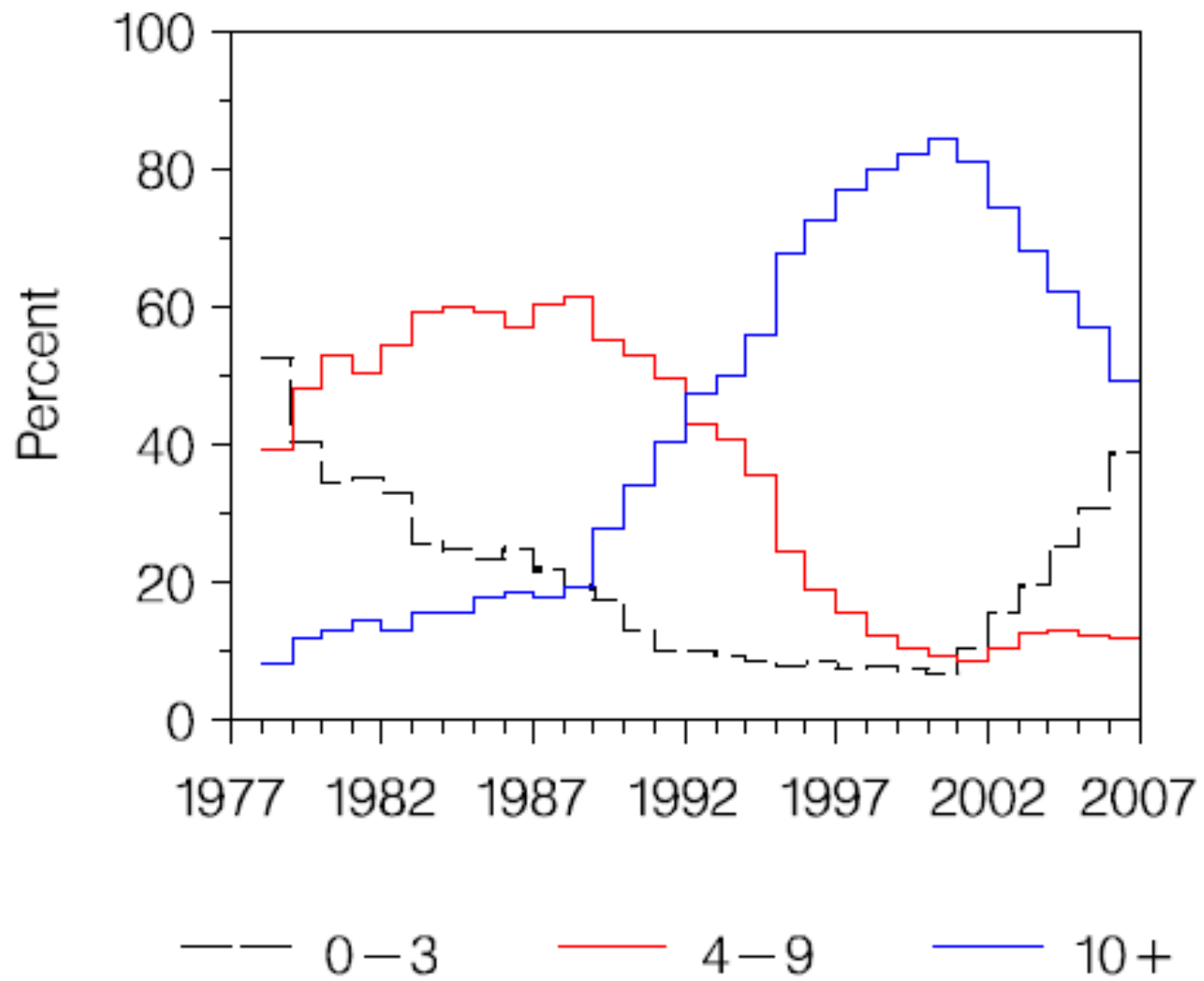
# AXILLARY LYMPH NODE DISSECTION

# The frequency of negative lymph nodes – DBCG 77-A & 82-A



# The impact of axillary surgery on recurrence and death (DBCG 82 & 89)

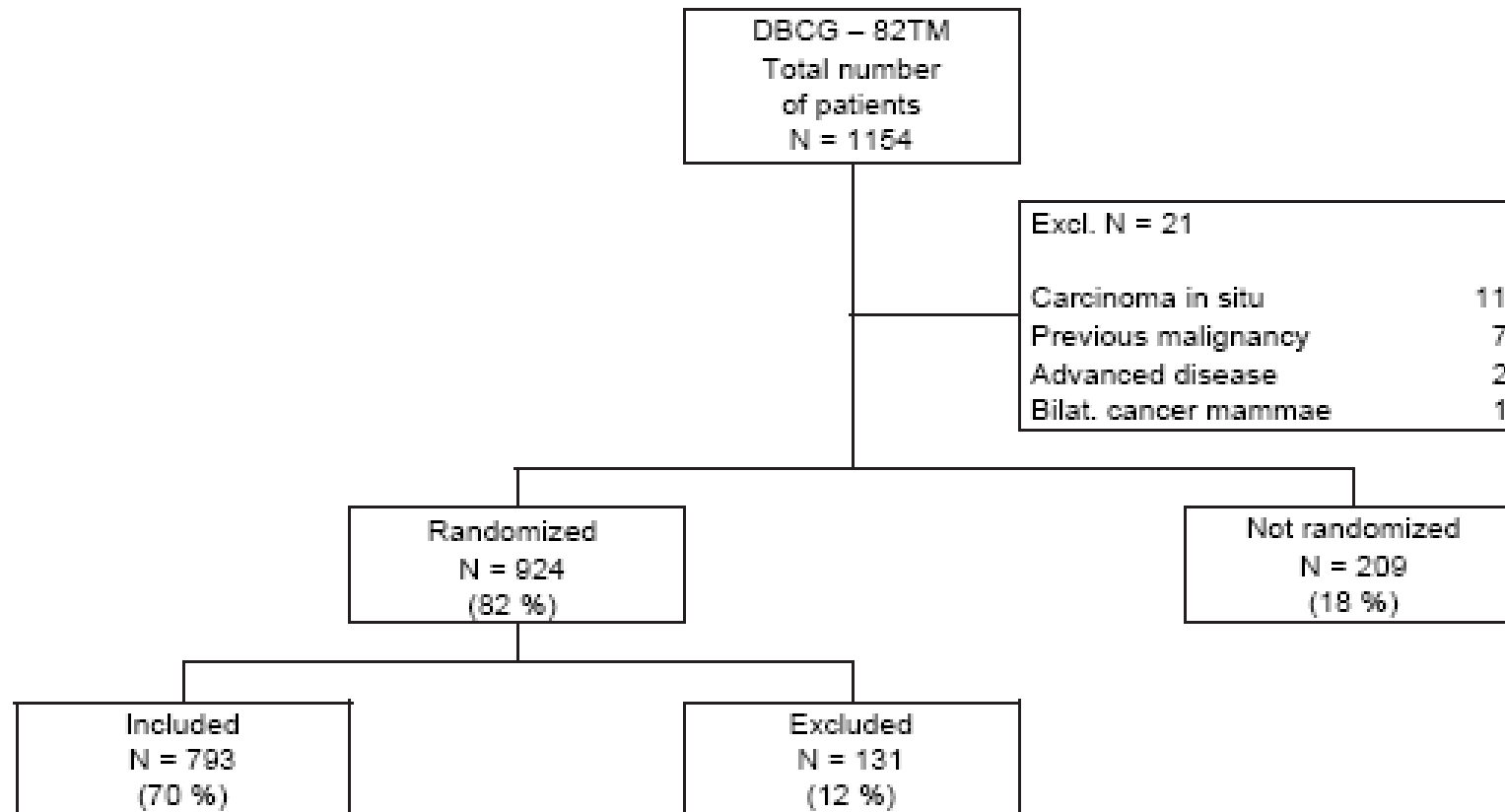






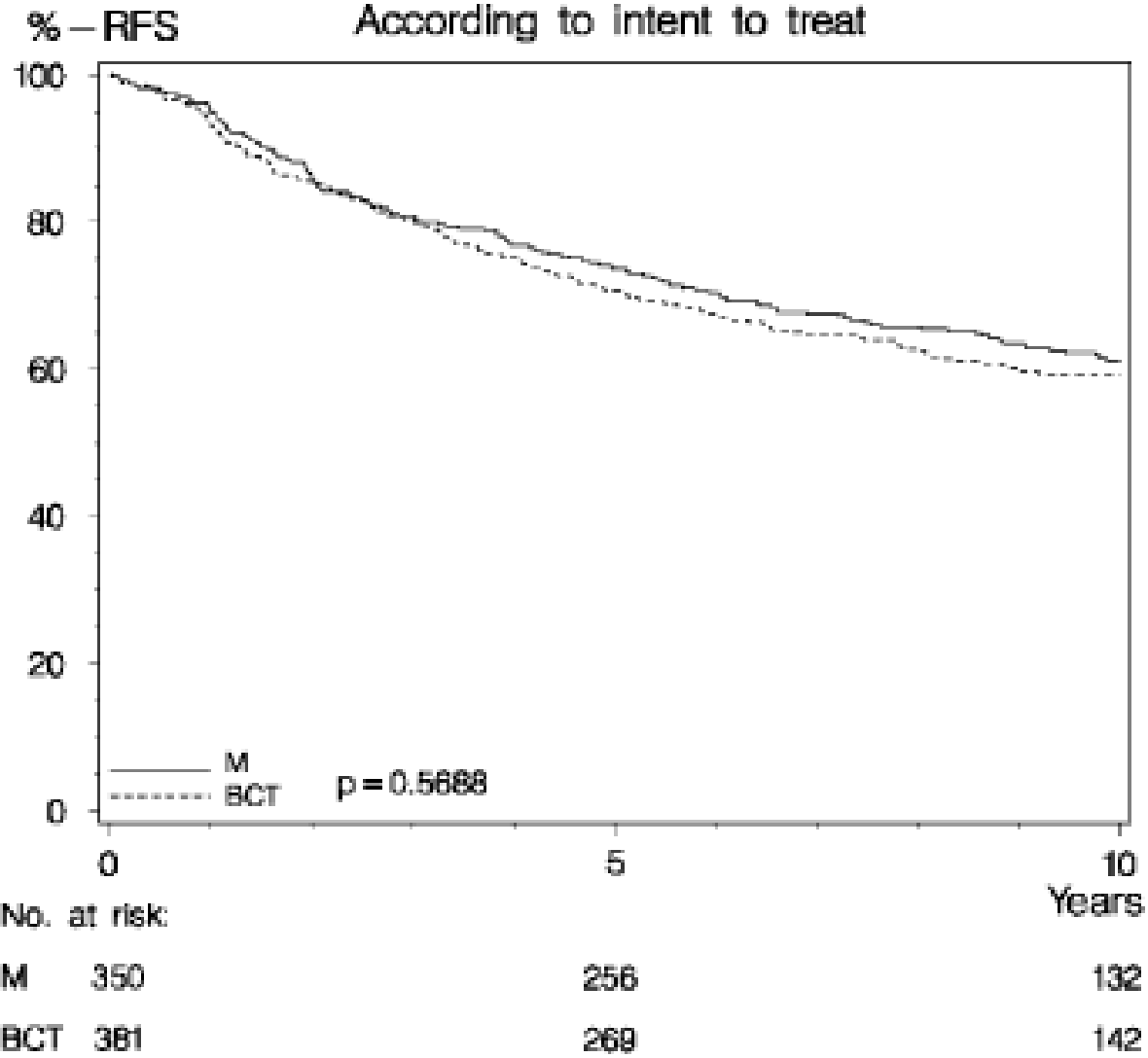
# BREAST CONSERVING SURGERY

# DBCG-82TM



# RFS (N = 731)

According to intent to treat

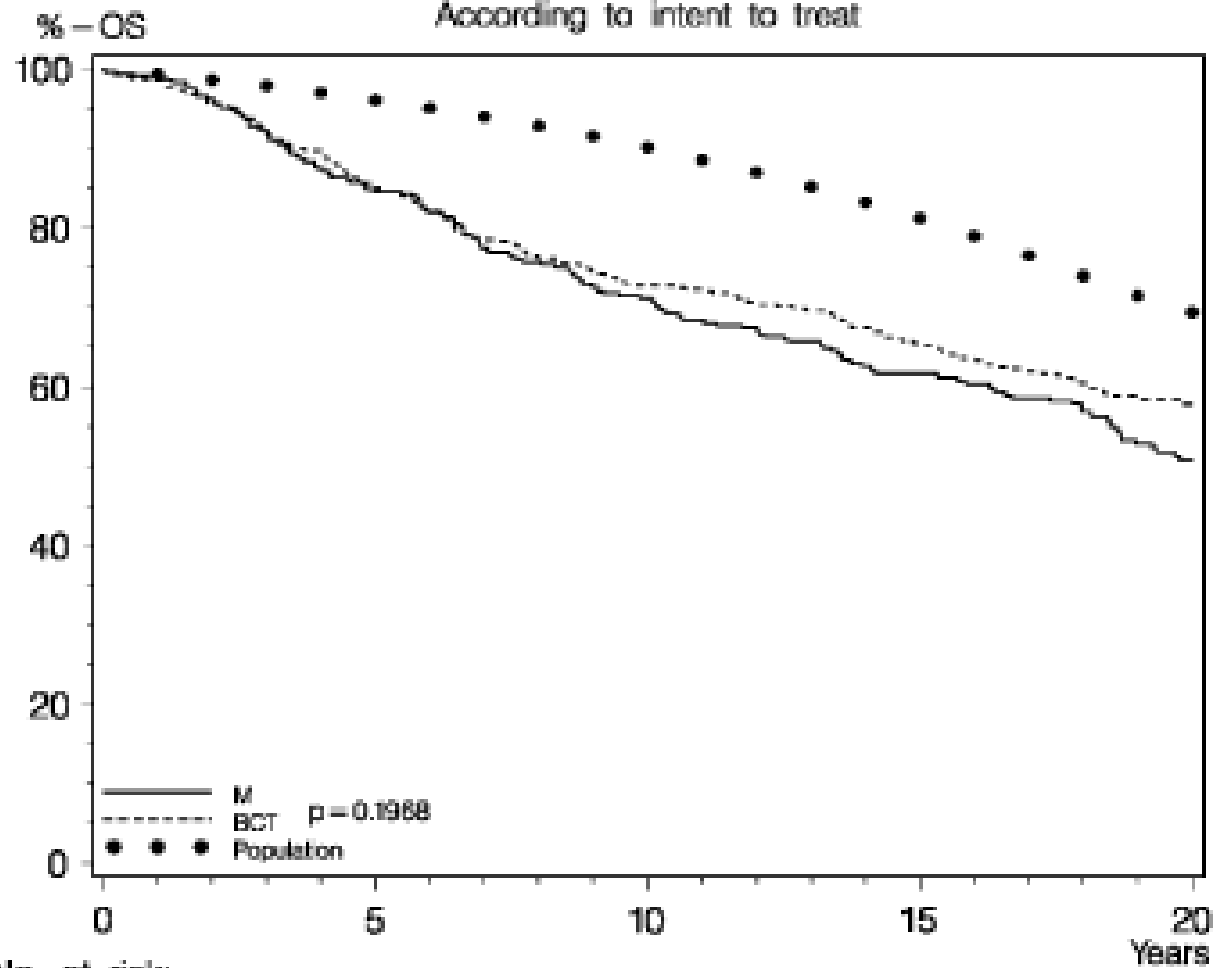


# Recurrence pattern

- No difference in loco-regional control:
  - LR alone: 6.6% after mastectomy - 4.6% after BCS
  - LRR+/- DR: 8.8% after mastectomy - 8.4% after BCS
- After mastectomy: "true" recurrences (80%)
- After BCS: "new primaries" (59%)

# Overall Survival (N = 731)

According to intent to treat



No. at risk:		0	5	10	15	20
M	350		296	249	216	75
BCT	381		325	277	249	89

# Breast conserving surgery 1989-1998 (DBCG 89)

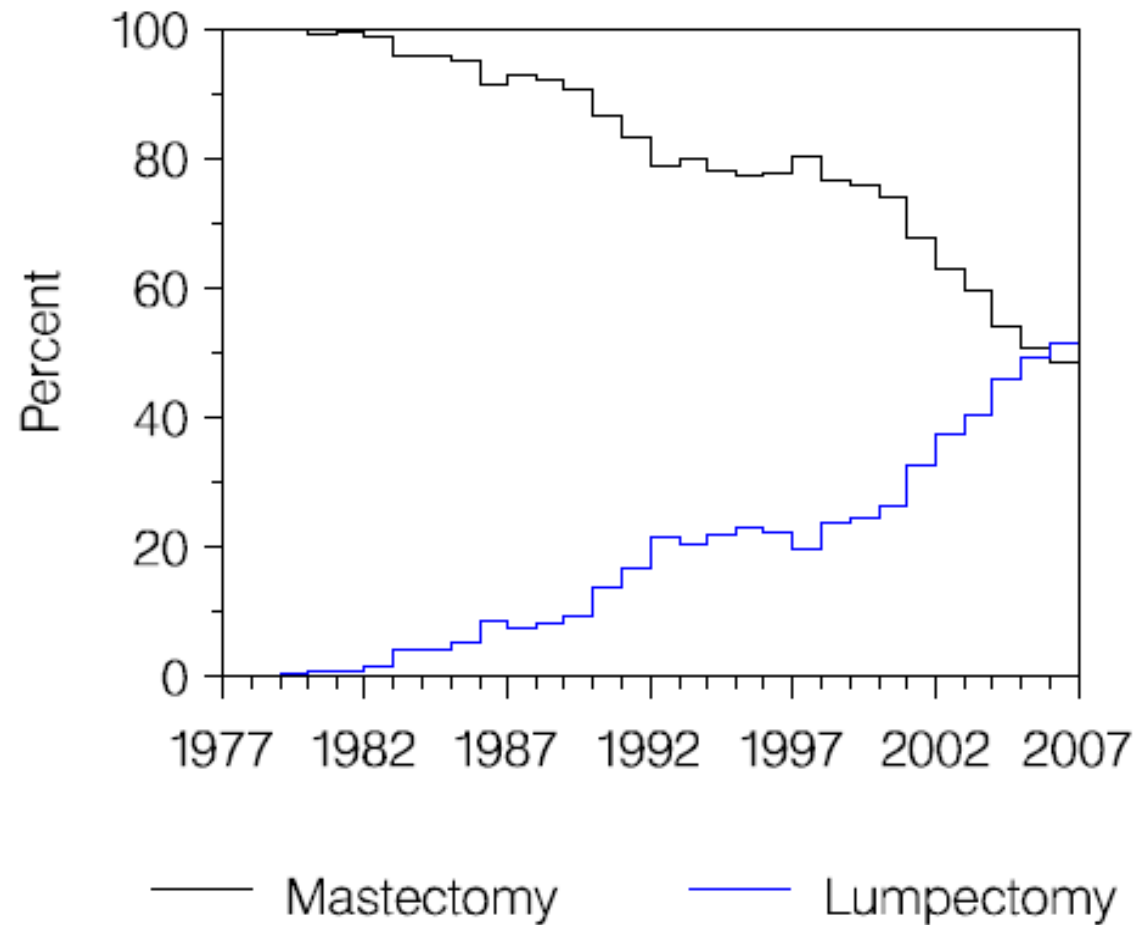
- BCS 19%
- Up to 75 yr 4921

	+RT	- RT
89A	2115 (56.3%)	83
89B	367 (9.8%)	7
89C	548 (14.5%)	30
89D	728 (19.4%)	21
Total	3758	141 (3.8%)

# Follow-up

- 15-year overall survival 69%
- 0-10 yr competing risk analysis:
  - Loco-regional recurrence 9.0%
    - - 49 yr 9.8%
    - 50-59 yr 5.7%
    - 60-74 yr 5.0%
  - Distant recurrence or other malignancy 19.9%
  - Death 6.0%

# Breast conserving surgery (BCS) in Denmark





# DBCG 89-A

# Low-risk group 1989-2001

- No adjuvant systemic treatment
- 29% BCS and RT
- 8,850 patients:
  - Median age 59 years (26-74)
  - 81% post menopausal
  - 41% in *Retrospective low-risk group*: tumor diameter up to 2 cm, hormone receptor positive, ductal grade I
  - 59% in *Retrospective low→high-risk group*
- Median follow-up 12 years

# Follow-up

3,811 events (43%):

- Loco-regional recurrence 8%
  - LR after mastectomy 5%
  - LR after BCS 6%
  - RR 2%
- Distant recurrence 11%
- Contra lateral breast cancer 6%
- Other malignancy 8%
- Death 11%

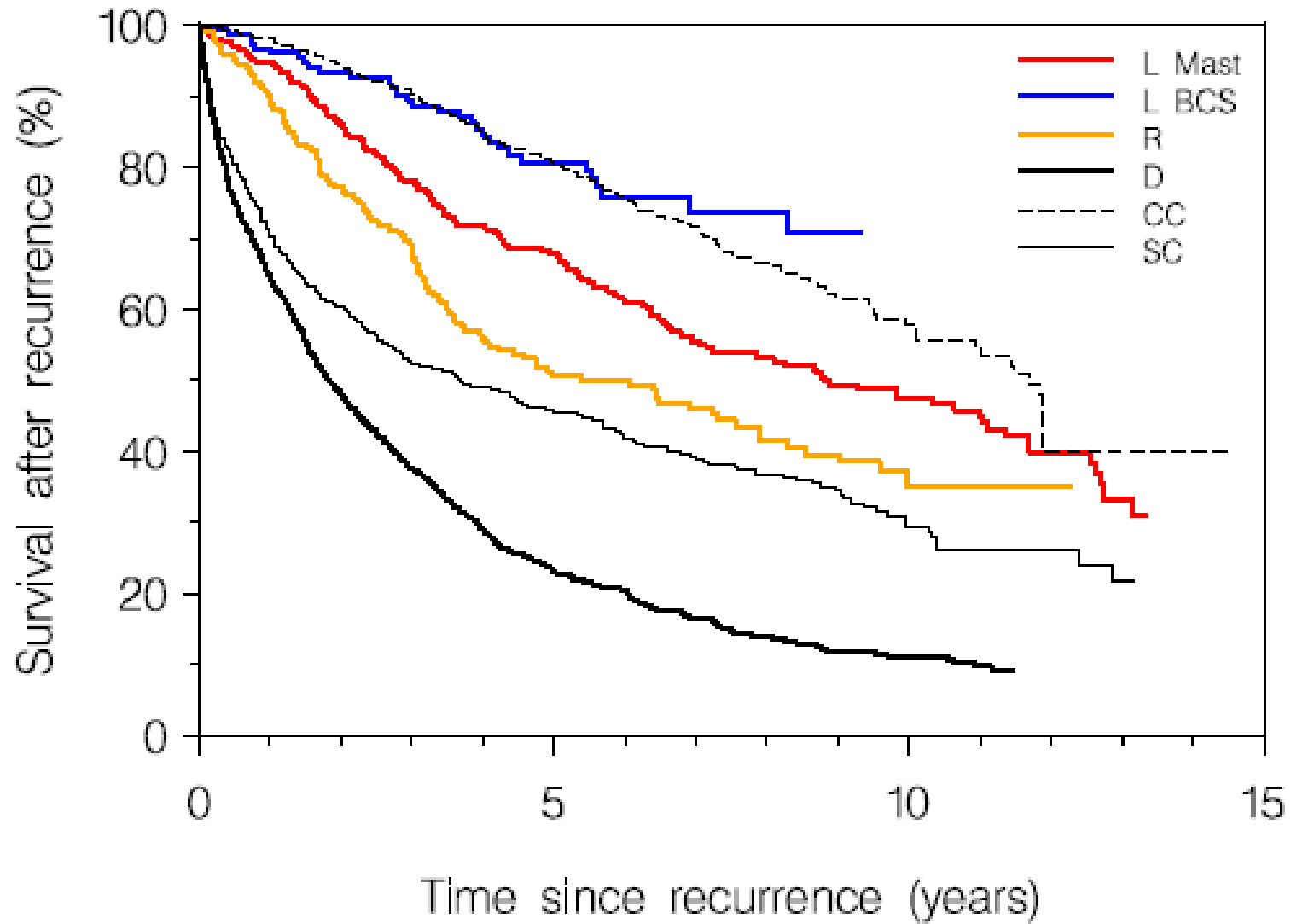
# Follow-up

3,811 events (43%):

- Loco-regional recurrence 8% (14%)
  - LR after mastectomy 5% (9%)
  - LR after BCS 6%
  - RR 2% (4%)
- Distant recurrence 11% (14%)
- Contra lateral breast cancer 6%
- Other malignancy 8%
- Death 11%

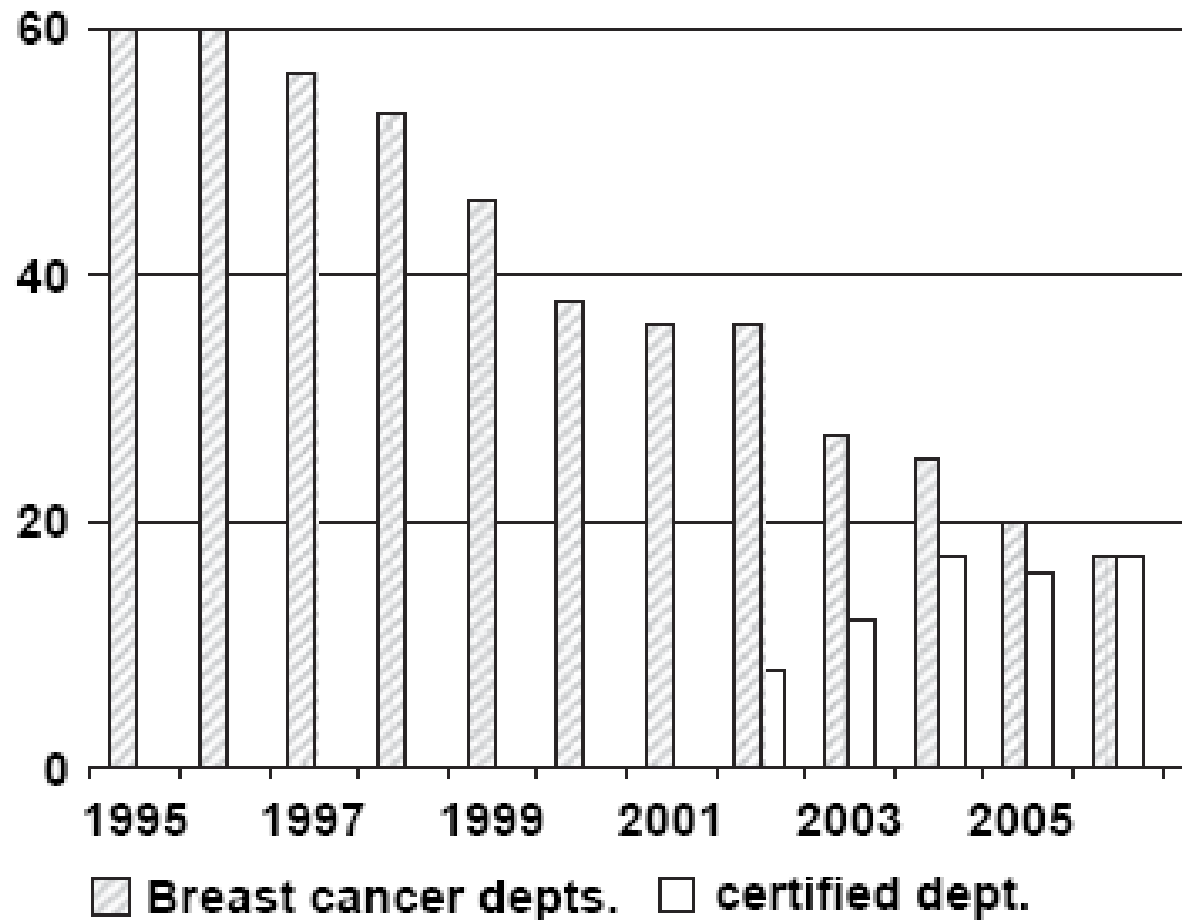
# Survival

- Ten-year overall survival 76%
  - 71% in *retrospective low→high-risk group*
  - 83% in *retrospective low risk group*
- Standardized mortality rate
  - 26-39 yr: 10.4
  - 40-49 yr: 3.1
  - 50-59 yr: 2.2
  - 60-69 yr: 1.5
  - 70-74 yr: 1.2

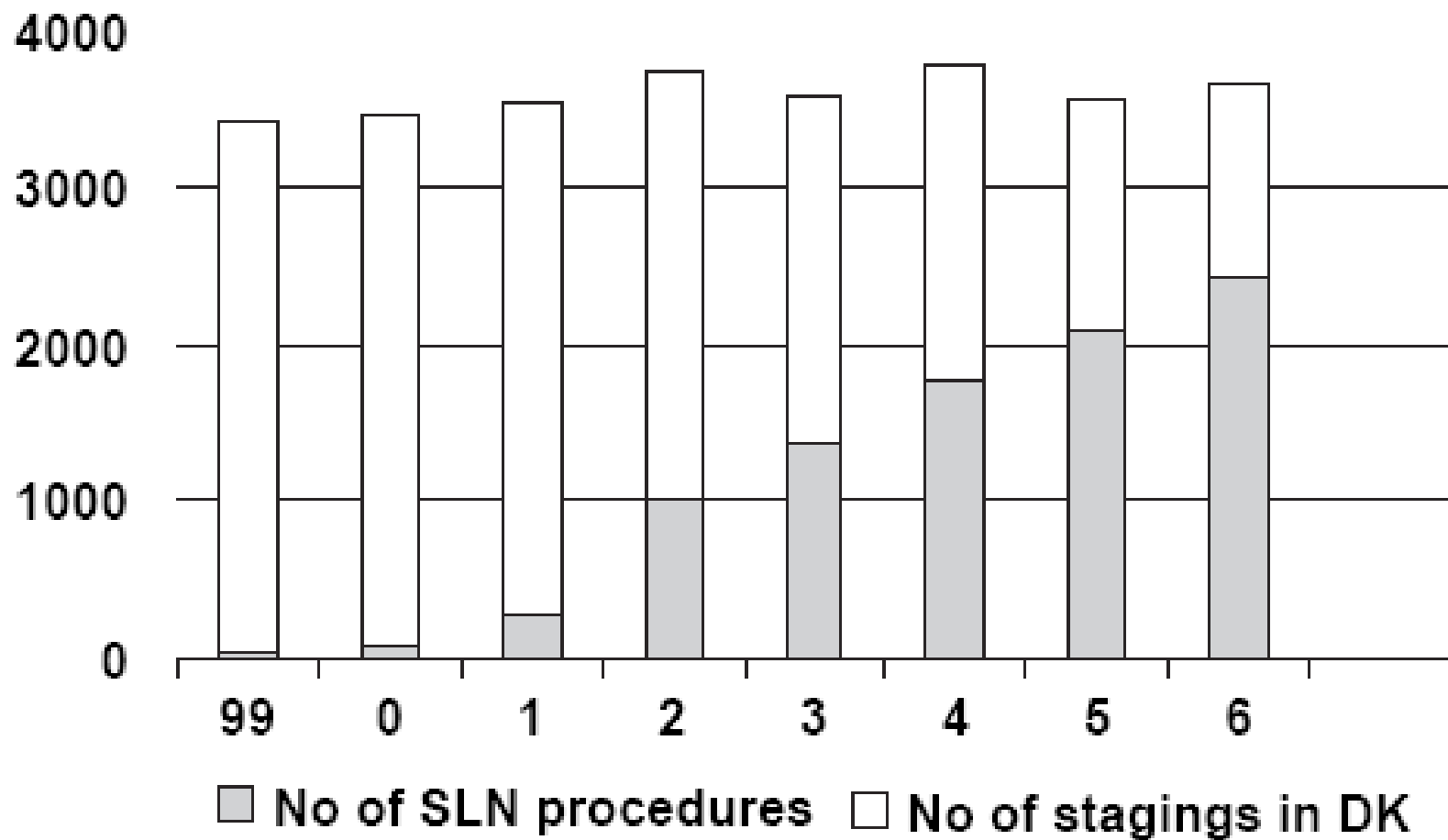


# SENTINEL LYMPH NODE BIOPSY

# Organized nation-wide implementation of sentinel node biopsy







# Sentinel node biopsy 2002-2006

- Lymfoscintigraphy 61%
- Blue dye and radioactive tracer in combination 82%
- Peritumoral injection → subareolar injection

	Total	Final nodal status			
		Macrometastases	Micrometastases only	ITC only	Negative
Macro metastasis	1 713 (24.9%)	1 713	0	0	0
Micro metastasis only	1 167 (17.0%)	141	1 026	0	0
ITC only	183 (2.7%)	12*	5	166	0
Negative	3 816 (55.5%)	34	8	0	3 774
Total	6 879	1 900	1 039	166	3 774

# Final nodal status after ALND in SN positive patients

	N	Non-SN metastases (%)
Macrometastases	1563	45.3%
Micrometastases	942	22.6% (13.3% macromet.)
ITC	110	14.5% (10.0% macromet.)

# Regional recurrence after SLNB

	N	Regional recurrence (%)
SN (< 10 LN)	4061	21 (0.5%)
ALND (10+ LN)	1469	16 (0.2%)
LN ekstirpation (< 10 LN)	96	1 (1%)
Total	5626	40 (0.4%)

# Improvement of prognosis

