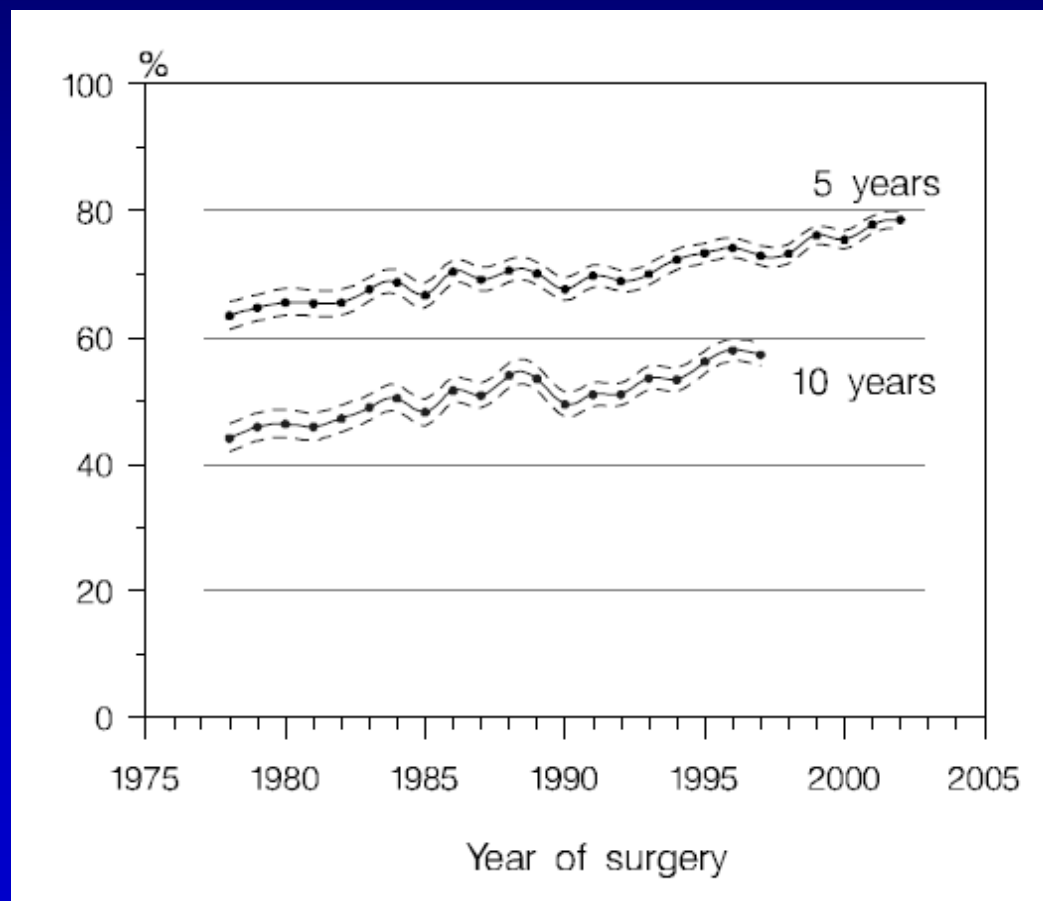


**Improvement of the prognosis
in Breast Cancer in Denmark
1977 - 2006**

***H.T. Mouridsen
DBCG Secretariate
Copenhagen University Hospital***

5 - and 10 years survival in primary breast cancer according to time of diagnosis



Can the following factors contribute to the prognostic improvement

factor

yes/no

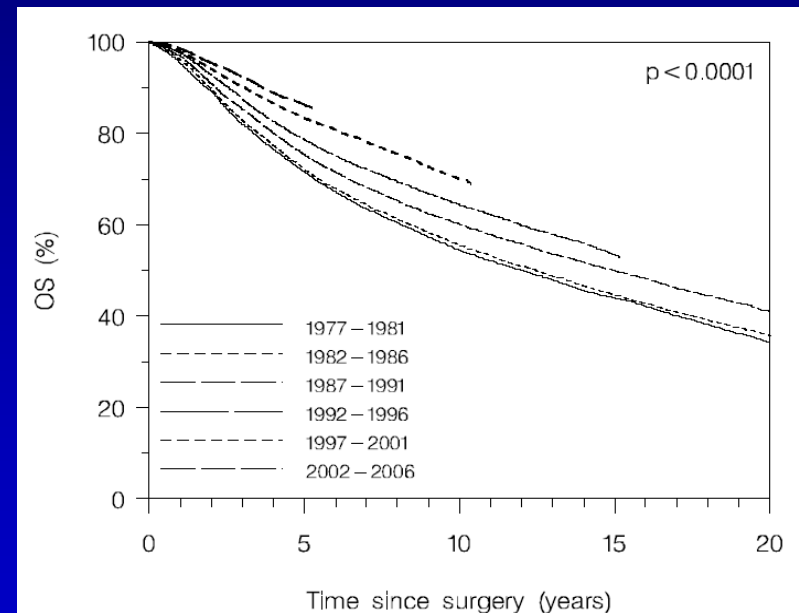
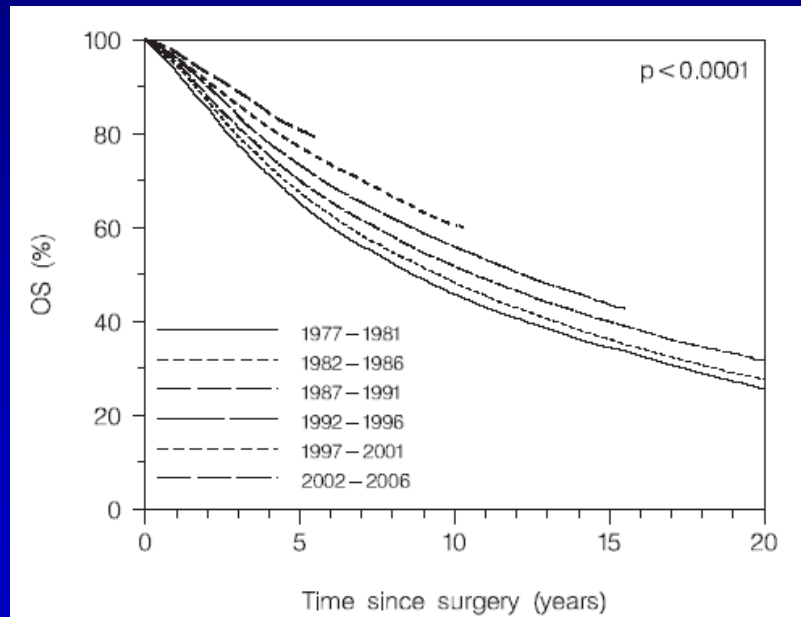
- *Patient selection*
- Improved general health condition
- Alterations in the biology of the disease
- Diagnosis at an earlier stage
- Treatment

Patient selection

- **Comparison of cases reported to DBCG and Danish Cancer Registry 1979 – 1994**
- **Missing reporting to DBCG 20% → 10%, hereoff 80 % not DBCG - eligible (not operated, high age)**

Survival according to diagnosis period

Enrolled (n = 53.869) and non-enrolled (n = 23.415) patients,
all (left, n = 77.284) and <70 years of age (right, n = 56.384)



Can the following factors contribute to the prognostic improvement

factor

yes/no

- Patient selection
- *Improved general health condition*
- Alterations in the biology of the disease
- Diagnosis at an earlier stage
- Treatment

Survival of the Danish female population (www.statbank.dk)

Cohort	5 - years		10 - years	
	All	< 70 years	All	< 70 years
1977 - 81	88%	95%	75%	88%
1997 - 01	89%	96%		
1992 - 96			77%	89%

I.E., Improved general health condition can explain only a negligible part of the observed prognostic improvement in breast cancer patients

Can the following factors contribute to the prognostic improvement

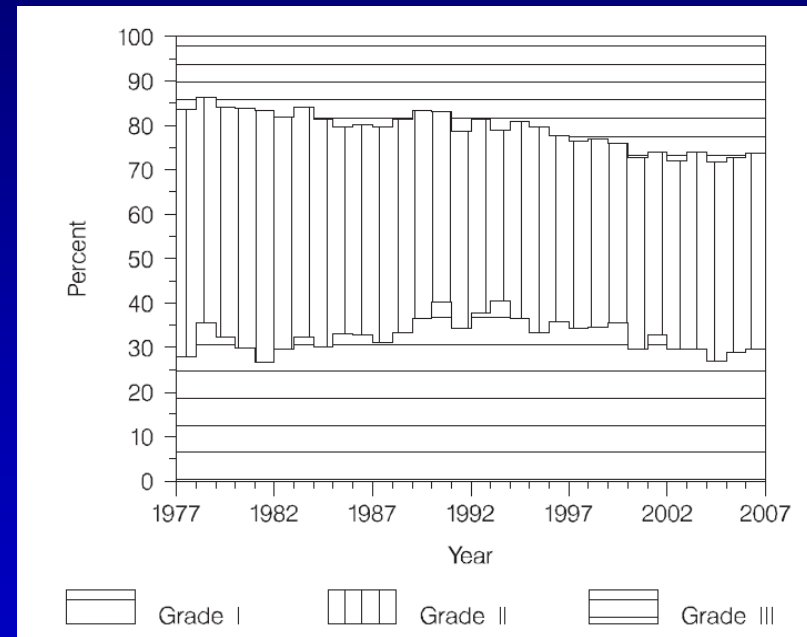
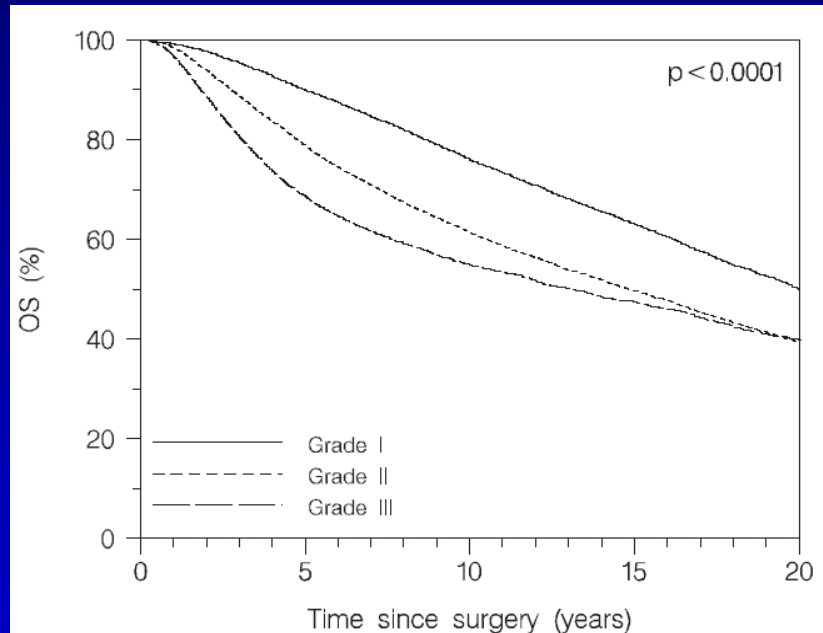
factor	yes/no
• Patient selection	no
• Improved general health condition	no
• <i>Alterations in the biology of the disease</i>	
• Diagnosis at an earlier stage	
• Treatment	

Expression of the biology of Breast Cancer

- Malignancy grade
 - Hormone receptor status
-
- Are they prognostic
 - Have they changed according to time

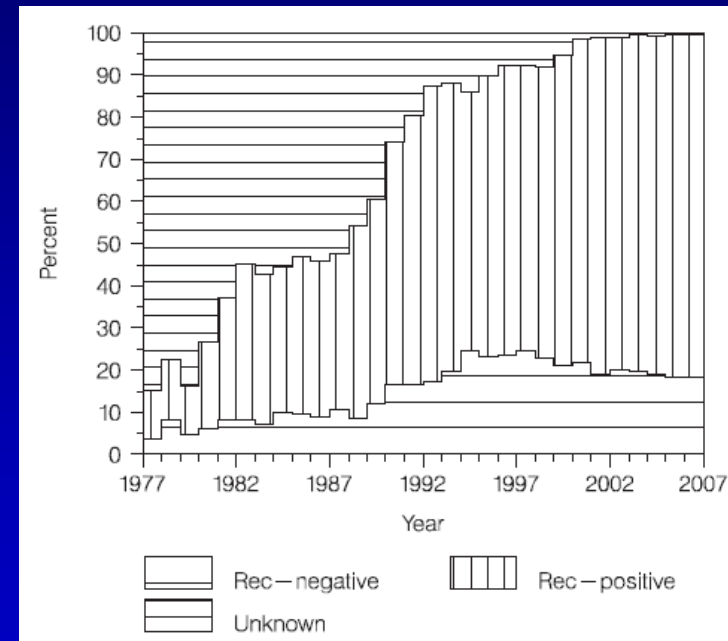
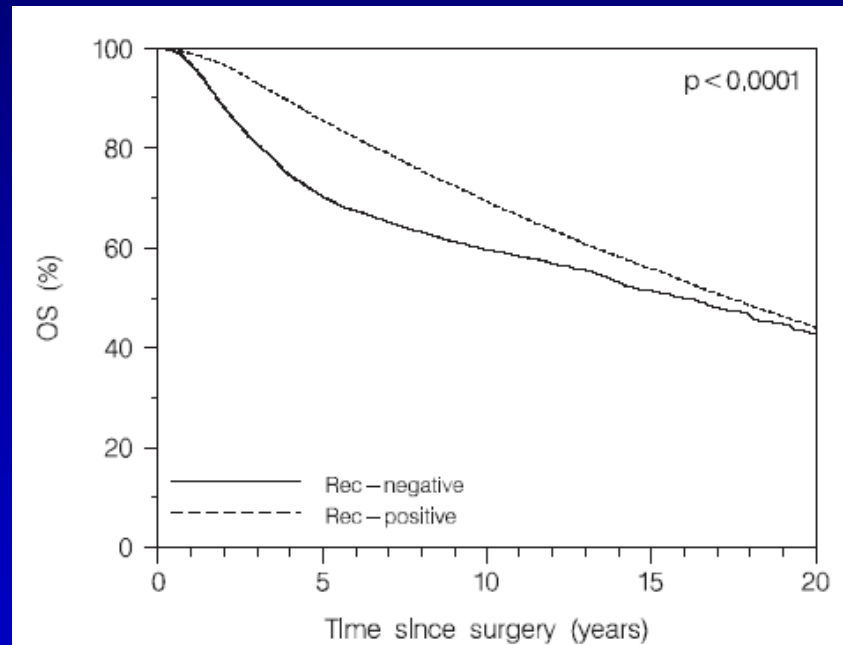
Malignancy grade

Enrolled patients < 70 years



Hormone receptor status

Enrolled patients < 70 years



Can the following factors contribute to the prognostic improvement

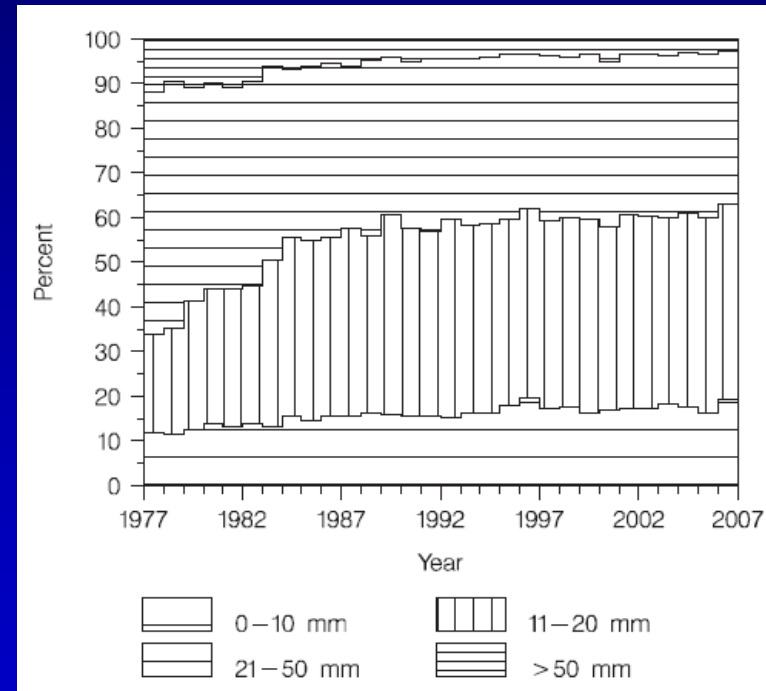
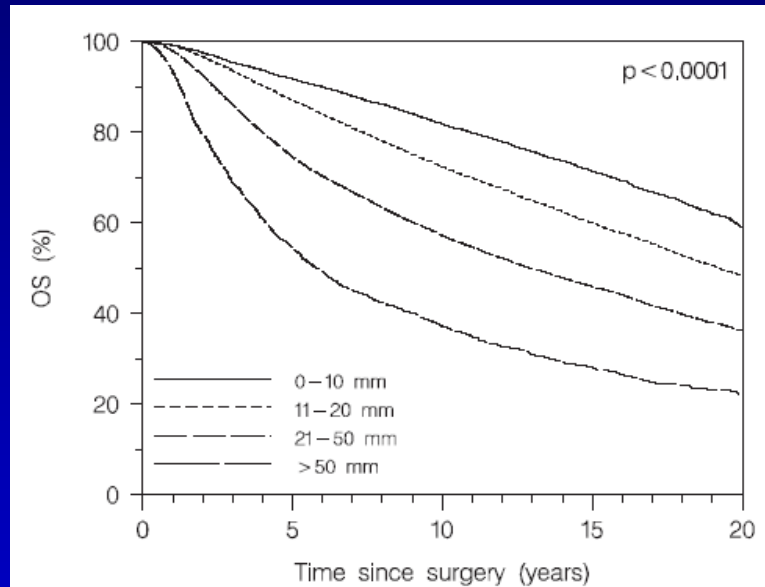
factor	yes/no
• Patient selection	no
• Improved general health condition	no
• Alterations in the biology of the disease	no
• <i>Diagnosis at an earlier stage</i>	
• Treatment	

Expression of stage at diagnosis

- Tumour size
 - Nodal status
-
- Are they prognostic
 - Have they changed according to time

Tumour size

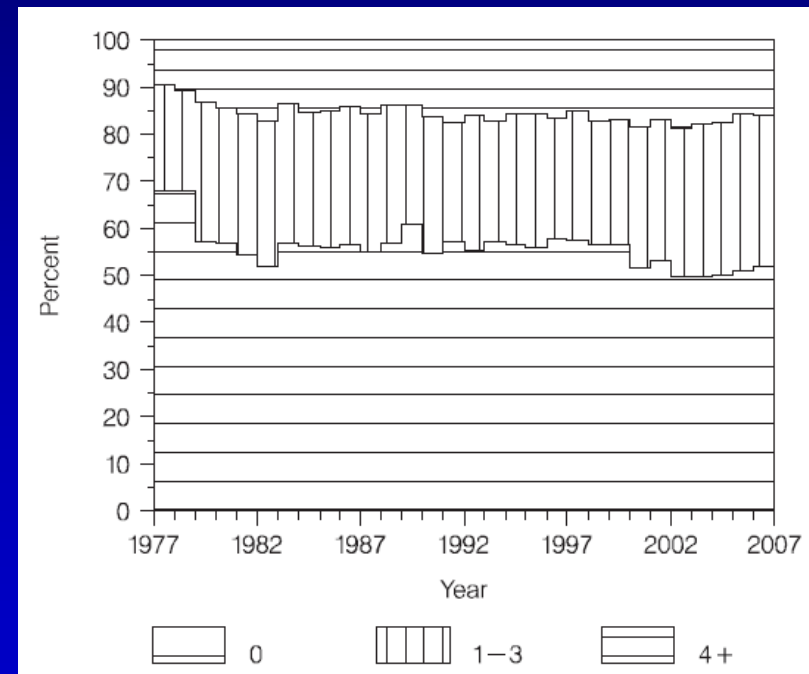
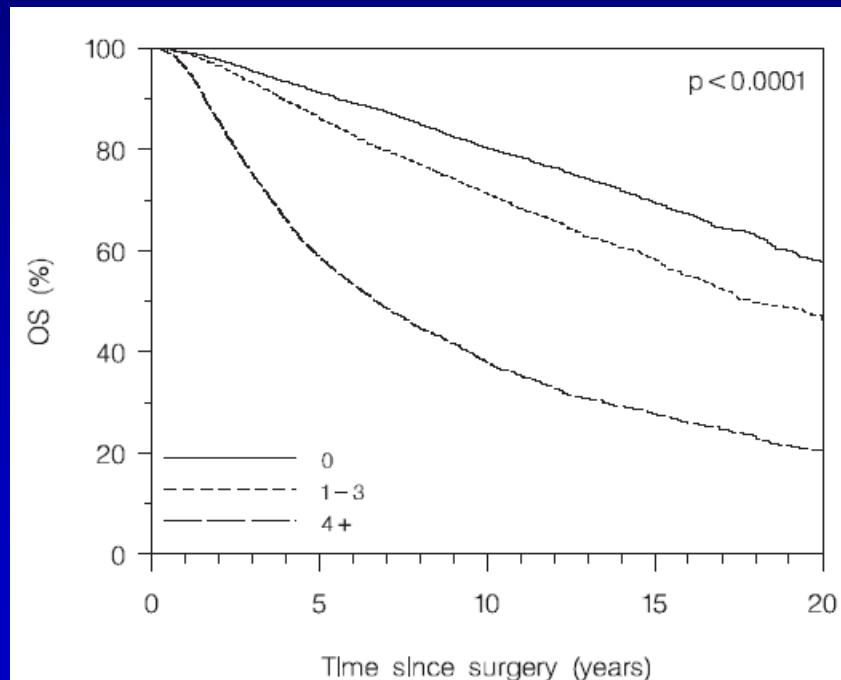
Enrolled patients < 70 years



Nodal status

Enrolled patients < 70 years.

Left Panel: At least 10 nodes examined or sentinel node technique applied



Tumor size and nodal status in screened population following the prevalence round compared to non-screened population

	<u>Size (%)</u>		<u>Nodal status (%)</u>		
	$\leq 10\text{mm}$	$\leq 20\text{mm}$	0	1 - 3	4 +
+ Screening	28%	74	63	24	13
- Screening	15%	50	53	29	18

Can the following factors contribute to the prognostic improvement

factor	yes/no
• Patient selection	no
• Improved general health condition	no
• Alterations in the biology of the disease	no
• Diagnosis at an earlier stage	yes
• <i>Treatment</i>	

Treatment

- **Surgery** **Shift towards more patients having BCS, but similar prognosis with mastectomy and BCS**
- **Radiotherapy** **Similar general guidelines throughout the period except in the 82-programme (+/- radiotherapy)**
- **Systemic therapy**
 - **Chemotherapy (CMF) and endocrine therapy (TAM 1-2 years) superior to control**
 - **Anthracycline combinations superior to CMF**
 - **TAM 5 years superior to TAM 1-2 years**
 - **Aromatase inhibitors superior to TAM**

Definition of risk groups

Variable	77	82	89	99	01	04	07
Nodal status	NEG	NEG	NEG	NEG	NEG	NEG	NEG
Size (cm)	≤ 5	≤ 5	≤ 5	≤ 2	≤ 2	≤ 2	≤ 2
Grade			I, pre	I	I	I	I
Rec. Status				Pos/?	Pos/?	Pos/?	Pos/?
Age					≥ 35	≥ 35	≥ 35
HER2 status						Neg/?	Neg/?
TOP2A status							Normal/?
Proportion (%)	50	53	50	23	21	21	

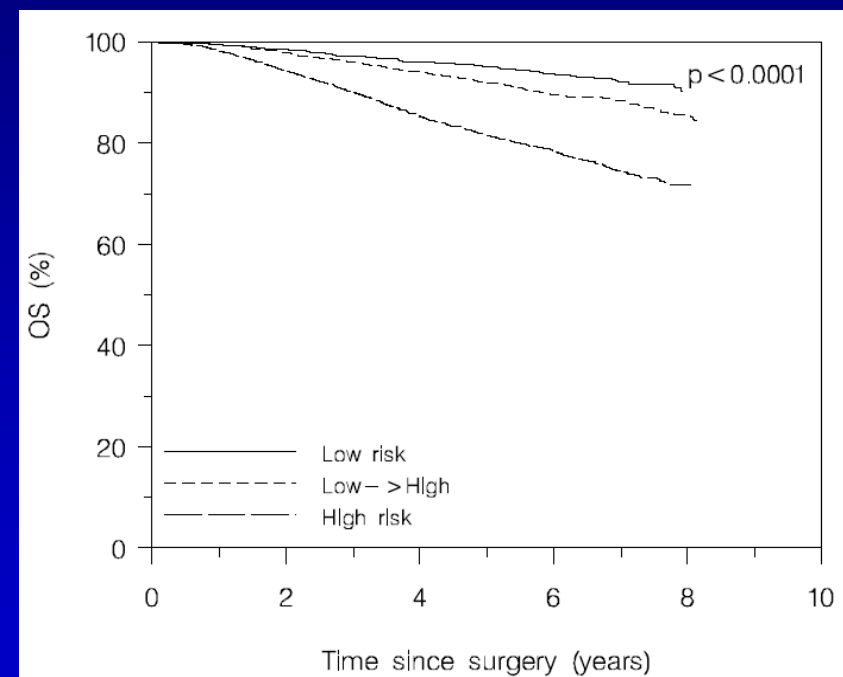
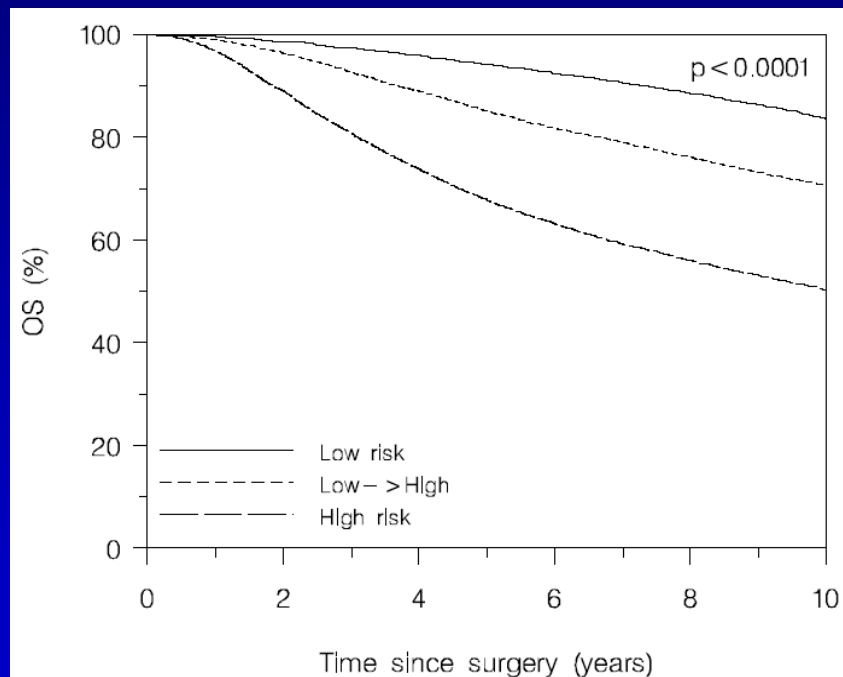
The retrospective low → high risk group

- **Definition** Node negative, ≤ 5 cm and < 35 years, or tumour > 2 cm, or tumour ≤ 2 cm, grade II – III, or tumour ≤ 2 cm, rec. neg.
- **Allocation** Initially low risk group, later high risk group
- **Treatment** Initially no systemic therapy, later systemic therapy

Retrospective low → high group

Enrolled patients < 70 years

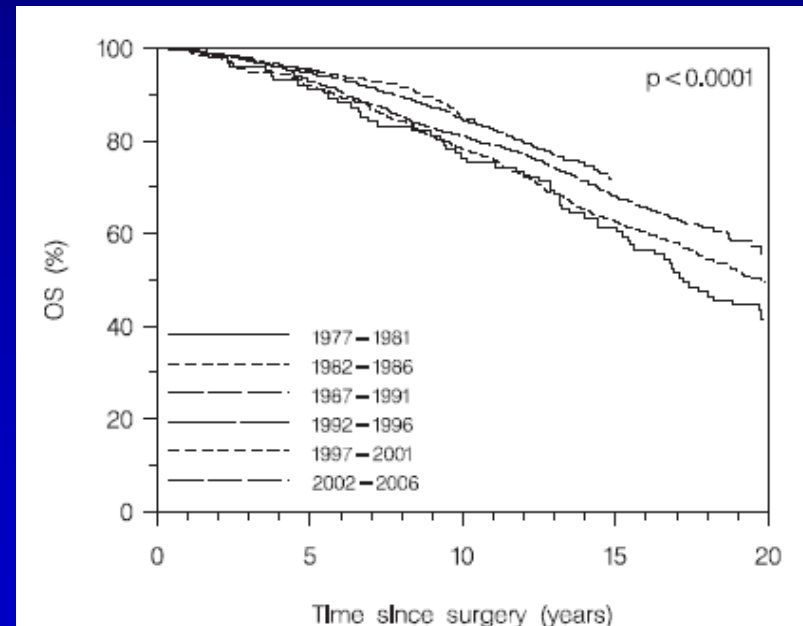
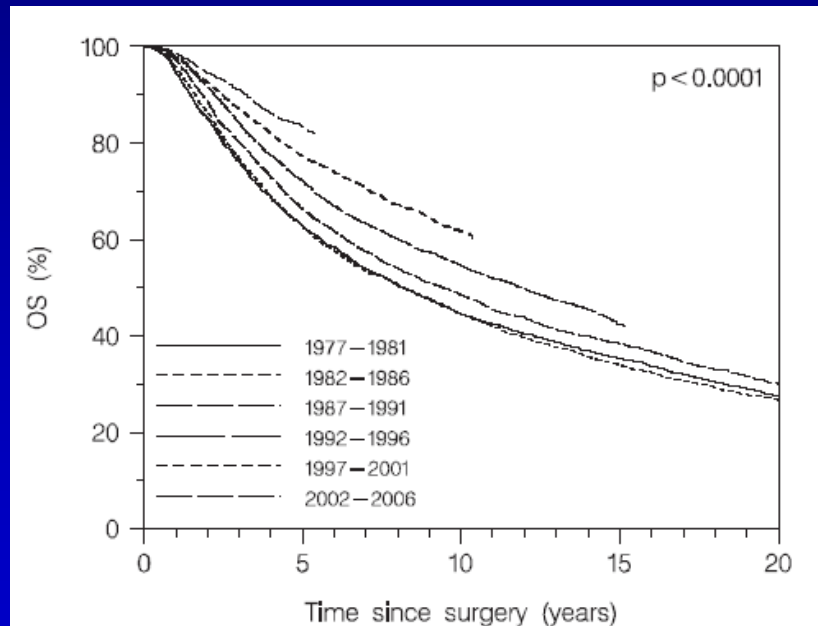
No treatment (left) and treatment (right)



Survival according to diagnosis period

Enrolled patients < 70 years

retrospective high risk group (left) and low risk group (right)



Can the following factors contribute to the prognostic improvement

factor	yes/no
• Patient selection	no
• Improved general health condition	no
• Alterations in the biology of the disease	no
• Diagnosis at an earlier stage	yes
• Treatment	yes

Conclusions

- **Significant improvement of the prognosis of primary breast cancer 1977 – 2006**
- **Contributions to the better prognosis are**
 - **Diagnosis at an earlier stage in the natural course of breast cancer**
 - **More active systemic therapies**
 - **Improved quality of the surgical approach**

Tak til alle i DBCG