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International Congress
of Breast Disease Centers

NEOADJUVANT THERAPY: WHEN AND HOW?

Point of view of the surgeons

Dr. M. Danaei
Head of Breast Unit
Marienhospital Aachen
Germany

Guidelines Breast
Version 2015.1

Breast Cancer Surgery
Oncological Aspects

AGO: ++

Surgery is only one sub-step out of multiple steps in breast cancer treatment. Thus, both a diagnostic and an oncological expertise are indispensable and a definite requirement.

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Further Information

References

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Neoadjuvant Systemic Chemotherapy Indications

	Oxford / AGO LoE	GR	
➢ Inflammatory breast cancer	2b	B	++
➢ Inoperable breast cancer	1c	A	++
➢ Large operable breast cancer primarily requiring mastectomy and adjuvant chemotherapy with the goal of breast conservation	1b	B	+
➢ If similar postoperative adjuvant chemotherapy is indicated	1b	A	+

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Further Information

References

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Neoadjuvant therapy and overall survival:

Earl *et al. BMC Medicine* (2015) 13:234
DOI 10.1186/s12916-015-0472-7

Spotlight on breast cancer

BMC Medicine

OPINION Open Access

Neoadjuvant trials in early breast cancer: pathological response at surgery and correlation to longer term outcomes – what does it all mean?

Helena Earl[1,2,3,4*], Elena Provenzano[2,3,4], Jean Abraham[1,2,3,4], Janet Dunn[5], Anne-Laure Vallier[3,4], Ioannis Gounaris[4,6] and Louise Hiller[5]

Summary

Neoadjuvant breast cancer trials have a great future but, in our opinion, with some modifications to their designs.

Current neoadjuvant chemotherapy trials are not statistically powered (in terms of numbers) for longer-term outcomes.

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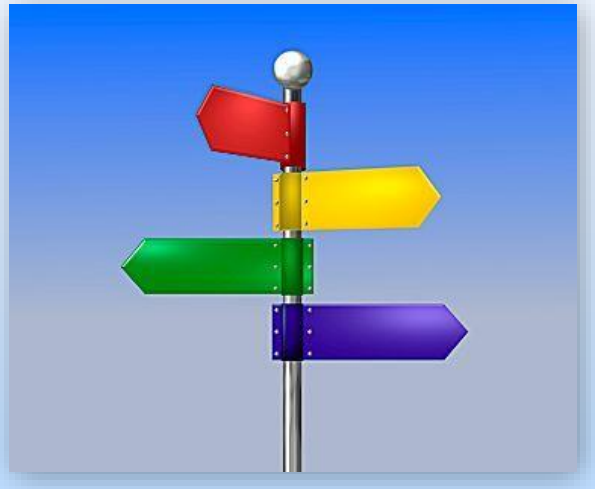

Neoadjuvant therapy:
concept
in a specialised
breast unit

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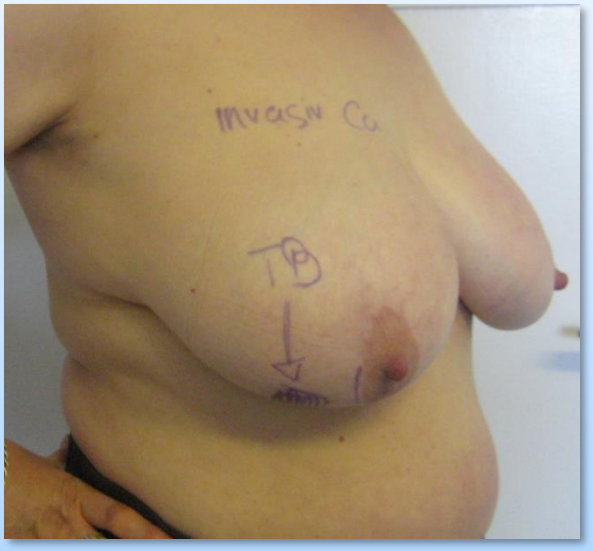
Outpatient clinic breast unit:



Suspicious lump/finding

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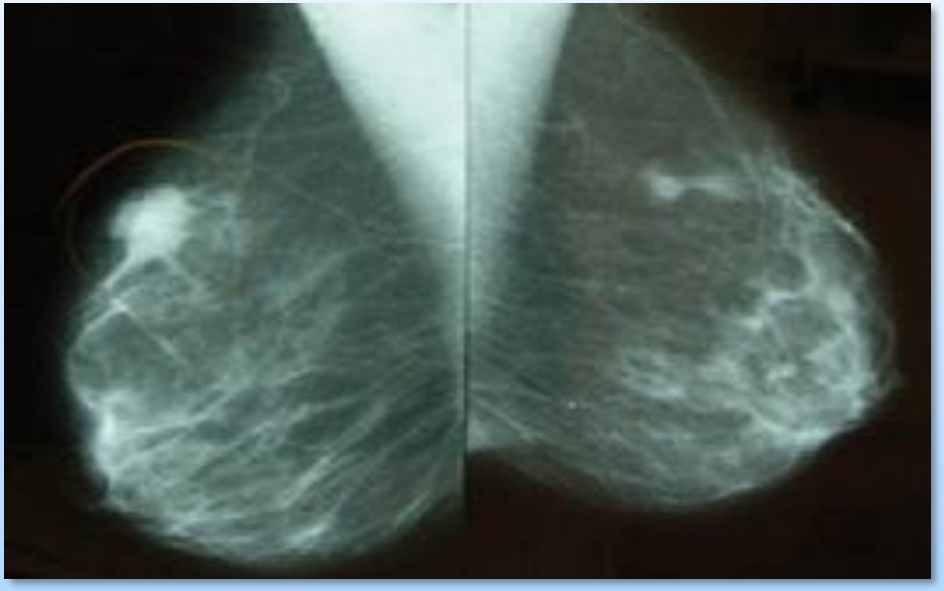
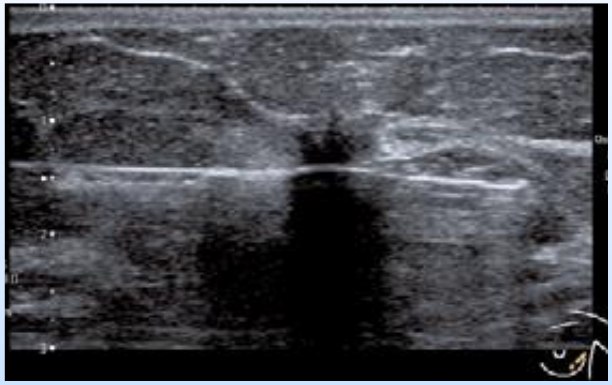
1. Imaging

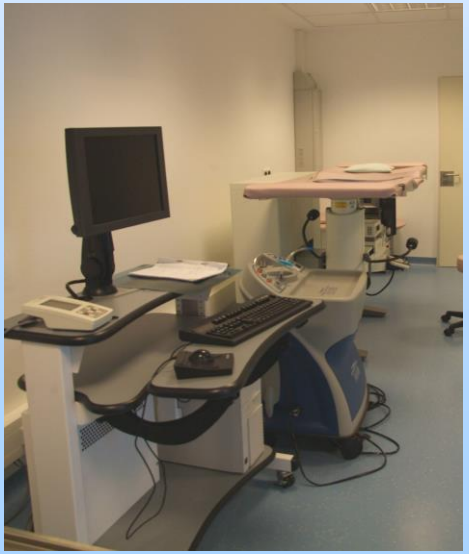


2. Biopsy



sonographically controlled biopsy

vacuum assisted biopsy



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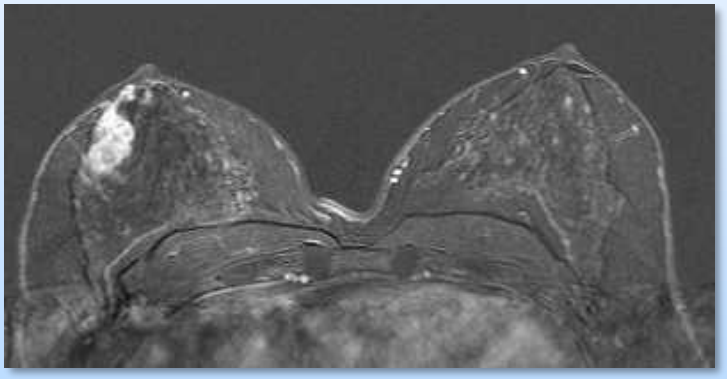
3. Histological verified breast cancer:
additional imaging (MRT)



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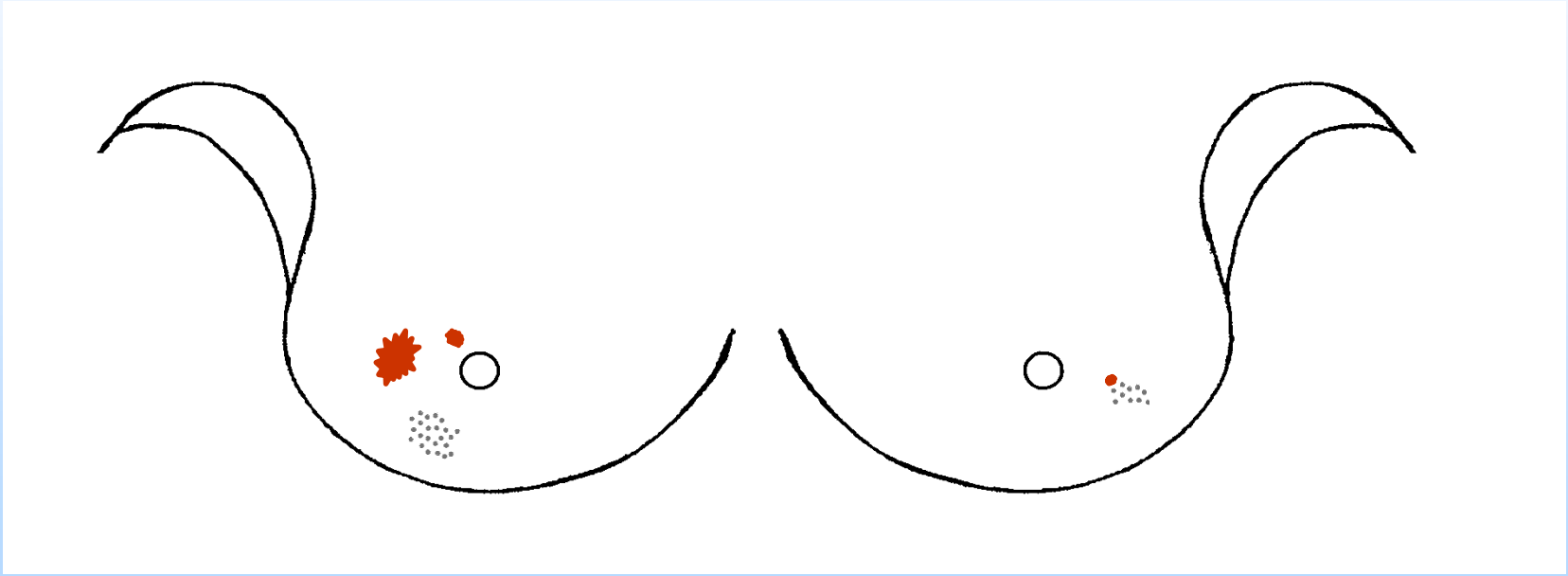
Clarification:
BCS or MRM indicated?
What about contra lateral?



4. Biopsy confirmation of all ipsi or contra lateral findings prior preoperative tumour board

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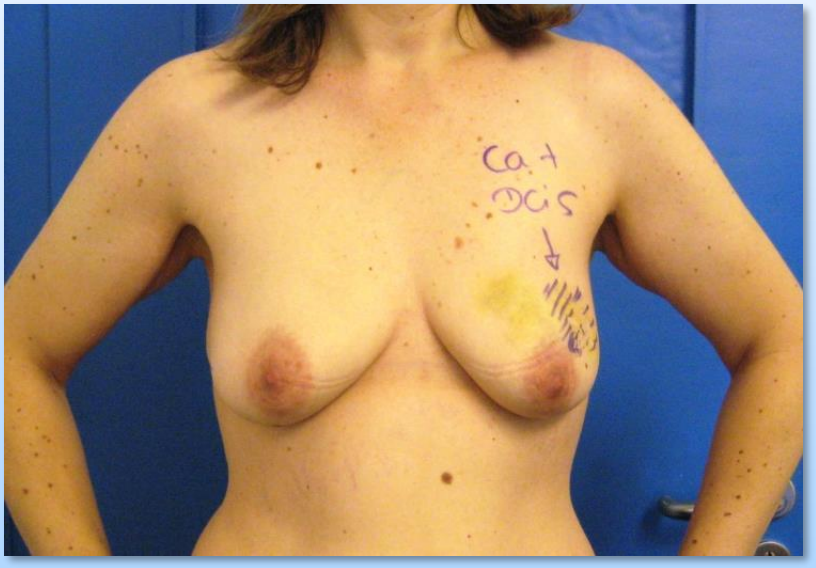
Preoperative knowledge:

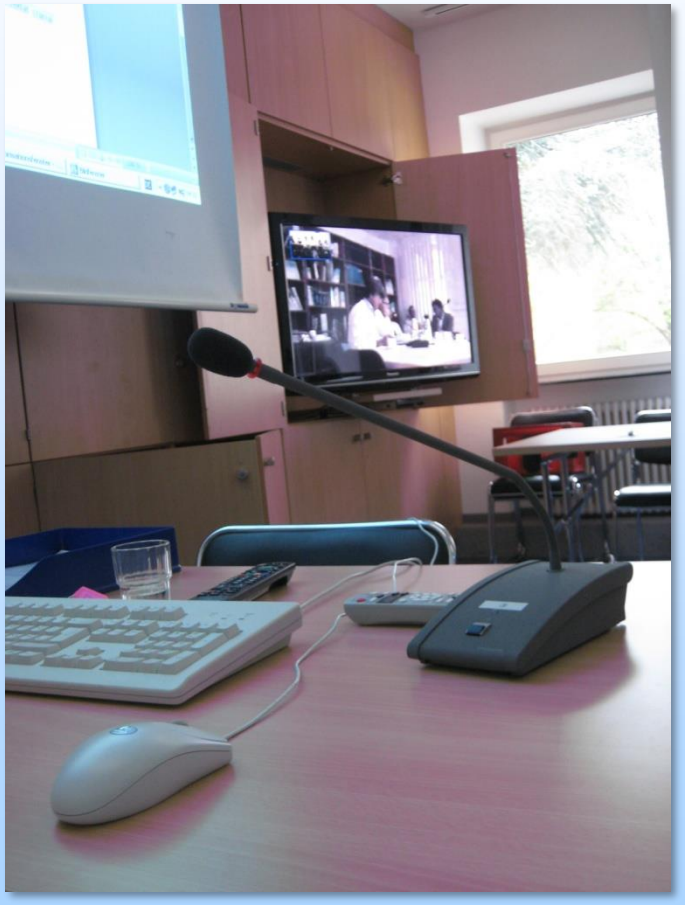


individual risk characteristics:

1. age
2. tumour size
3. nodal status
4. grading
5. hormone receptor state
6. Her2-neu state
7. KI67
8. tumour topic
9. family incidence

5. Preoperative tumour board

Tumour board in our unit



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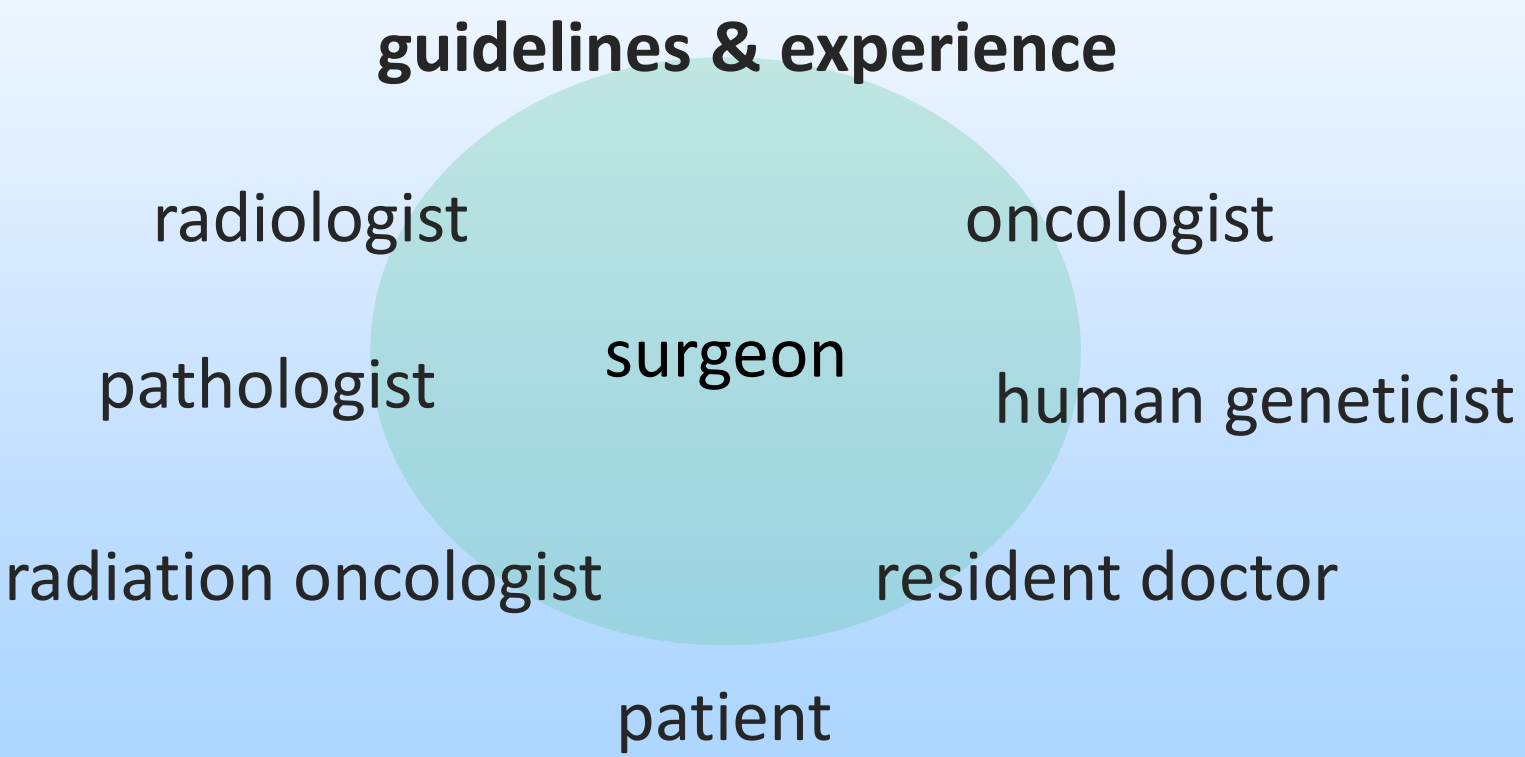
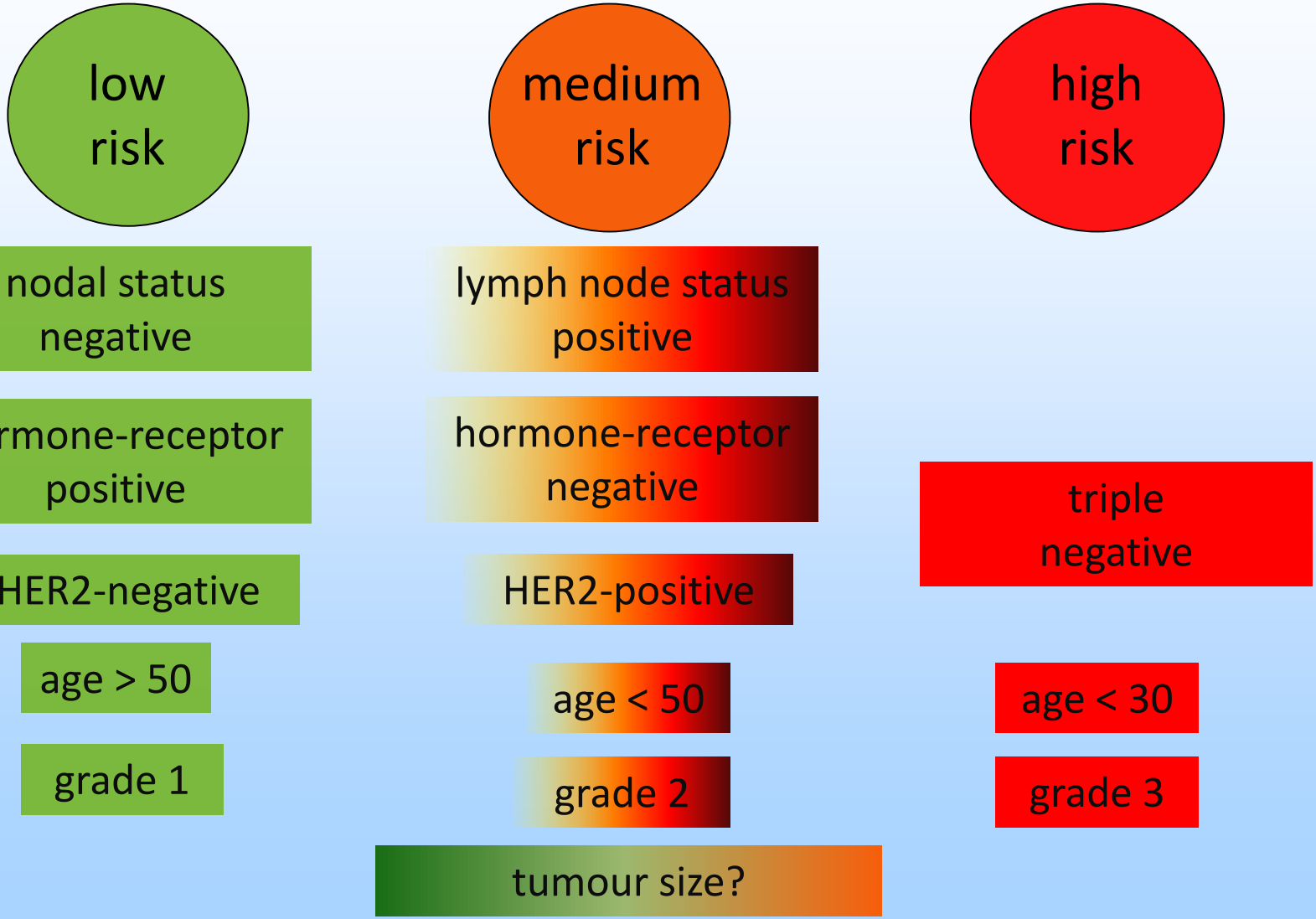
Preoperative tumour board



Preoperative tumour board:
risk estimation invasive breast cancer



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Preoperative tumour board

statements on

- neoadjuvant/(adjuvant) CHT
- postoperative radiation
- genetic testing
- BET / MRM?
- study participation

have to be made here and now!

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Targets:

oncological safety

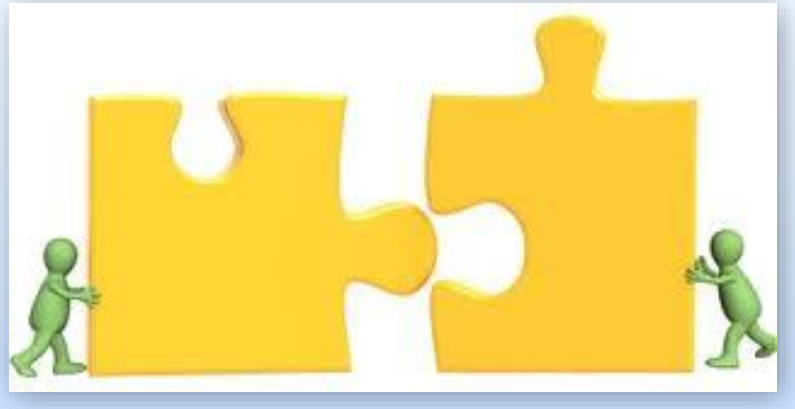
- prevent relapses
- increase survival rate

quality of living

- satisfying cosmetic result
- reduce disease-induced suffering & avoid complications

recommendation
tumour board

situation & individual
needs of patient



treatment concept

mandatory requirement: informed consent

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Neoadjuvant chemotherapy and target oriented breast surgery

Guidelines Breast
Version 2015.1

Neoadjuvant Systemic Chemotherapy
Clinical Benefit

	Oxford / AGO LoE	GR	
➢ Survival is similar after neoadjuvant (preoperative, primary) and adjuvant systemic therapy	1a	A	
➢ Pathological complete response is associated with improved survival in particular subgroups	1b	A	
➢ Can achieve operability in primary inoperable tumors	1b	A	++
➢ Improved options for breast conserving surgery	1b	A	++
➢ Allows individualization of therapy according to mid-course treatment effect	1b	B	+*
➢ Allows individualization of post-neoadjuvant management according to refined risk assessment after neoadjuvant treatment and surgery	2b	B	+/-*

* Study participation recommended

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Further Information

References

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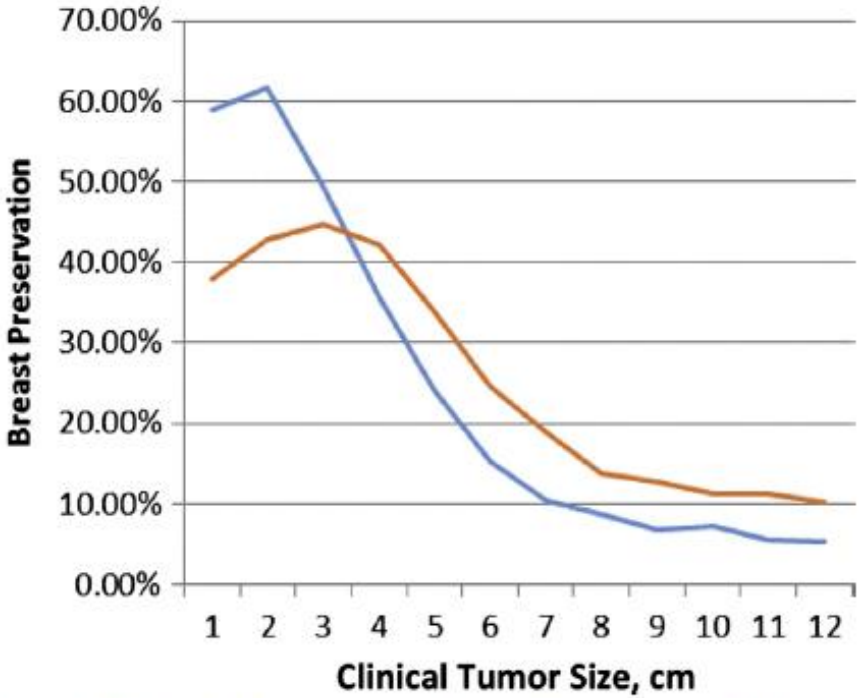

Figure 1. Rates of breast preservation by tumor size. Blue line, adjuvant; orange line, neoadjuvant.

STUDY DESIGN: We performed a retrospective review of the National Cancer Database (NCDB). The NCDB is a joint project of the Commission on Cancer of the American College of Surgeons and the American Cancer Society and contains about 80% of the cancer cases in the United States. All women in the NCDB diagnosed with invasive breast cancer from 2006 through 2011, who underwent definitive breast surgery and received either neoadjuvant or adjuvant chemotherapy, excluding patients with distant metastases or T4 tumors, were included and rates of breast preservation were determined.

Surgical Procedure of the Axilla Before or After NACT

Oxford / AGO LoE / GR

SLNB before or after NACT in cN0						
SLNB before NACT **SLNB after NACT**				2b 2a	B B	+ +/-
Further surgical procedures depending on SLNB						
cN-Status (before NST)	**pN-Status (before NST)**	**cN-Status (after NST)**	**Surgical procedure**			
cN0	pN0(sn)	-	nihil	1a	A	+
cN0	pN+(sn) analogue ACOZOG	ycN0	ALND	3	B	+/-
cN0	pN+(sn) not analogue ACOZOG	ycN0	ALND	2b	B	+
cN+	cN+ (CNB/FNA)	ycN0	SNB ALND	2a 2b	B B	+/- +
		ycN+ (CNB/FNA)	ALND	2b	B	++

Neoadjuvant Systemic Therapy
Indications for Mastectomy

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	Oxford / AGO LoE	GR	
➢ Positive margins after repeated excisions	3b	C	++
➢ Radiotherapy not feasible	5	D	++
➢ In case of clinical complete response			
➢ Inflammatory breast cancer	2b	C	+
➢ In case of pCR			+/-
➢ Multicentric lesions	2b	C	+/-
➢ cT4a-c breast cancer	2b	B	+/-

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Neoadjuvant Systemic Therapy
Timing of Surgery and Radiotherapy

	Oxford / AGO LoE / GR
➢ **Surgery**	4 C ++
➢ After the nadir of the leucocyte count (2 to 4 weeks after last course of chemotherapy)	
➢ **Radiotherapy after surgery**	2b B ++
2–3 weeks after surgery BCS	

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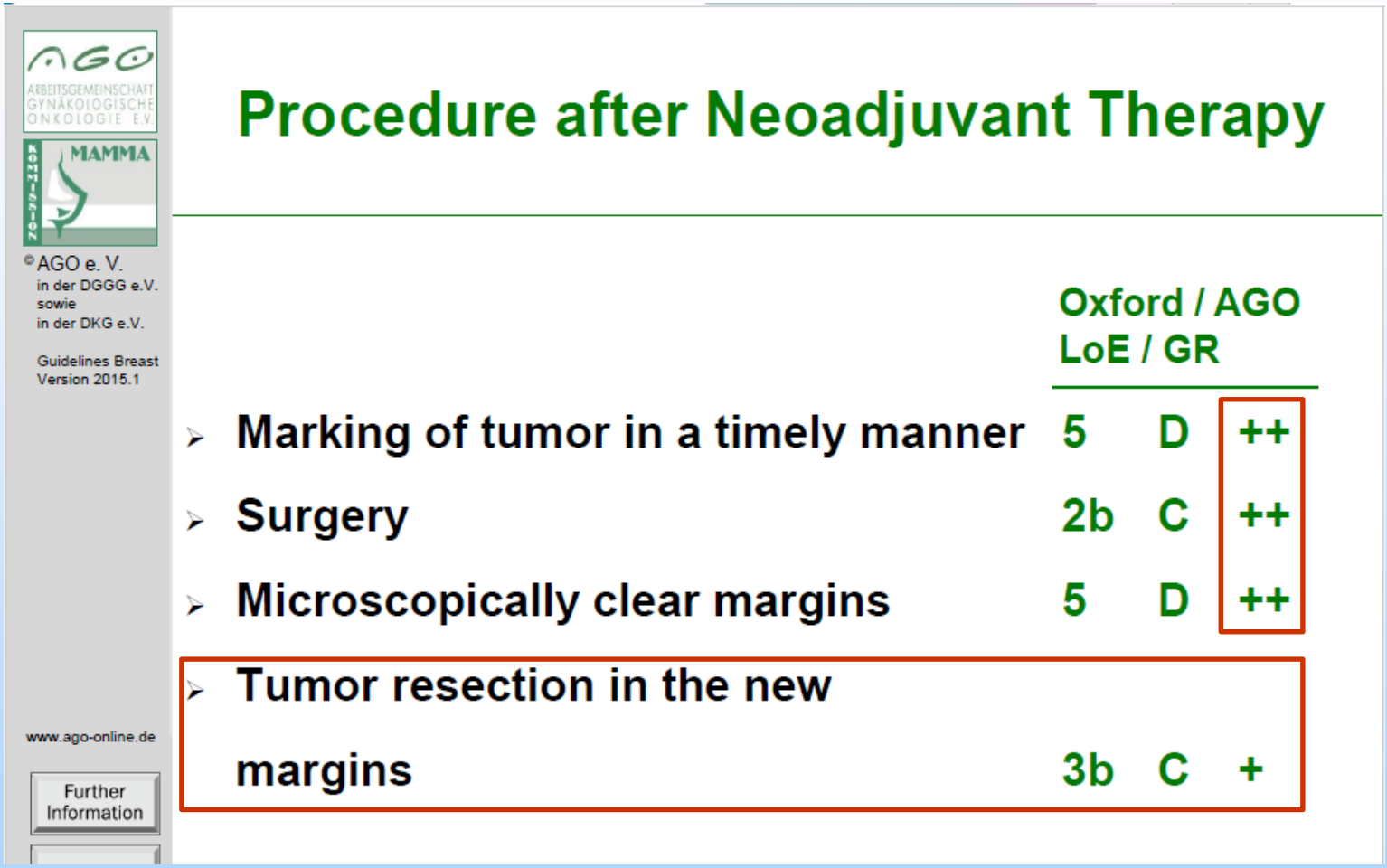
Concept NACT and surgery

- SNB or axilla dissection (radiation of lymphatic pathways necessary?)
- clip marking tumour

- starting NACT
- after 3 cycles NACT tumour regress?/re-staging: sonography, MRT, biopsy

response?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sowie
in der DKG e.V.
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Further Information
Procedure after Neoadjuvant Therapy
Oxford / AGO
LoE / GR
Marking of tumor in a timely manner 5 D ++
Surgery 2b C ++
Microscopically clear margins 5 D ++
Tumor resection in the new margins 3b C +

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Neoadjuvant CHT:

If it works, its amazing...

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ulcerated BC:

after the first cycle NACT

after the seventh cycle NACT

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Neoadjuvant CHT:

But if not works?

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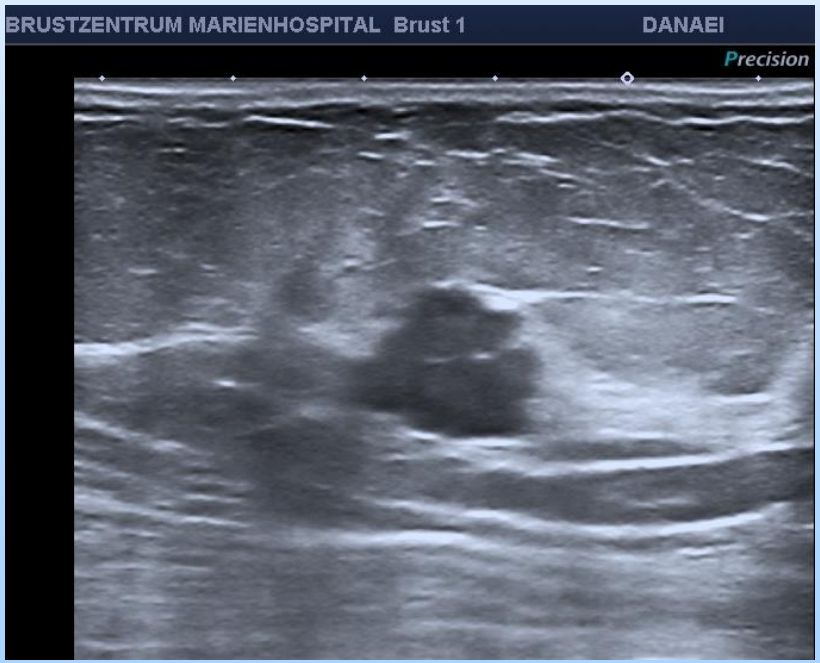
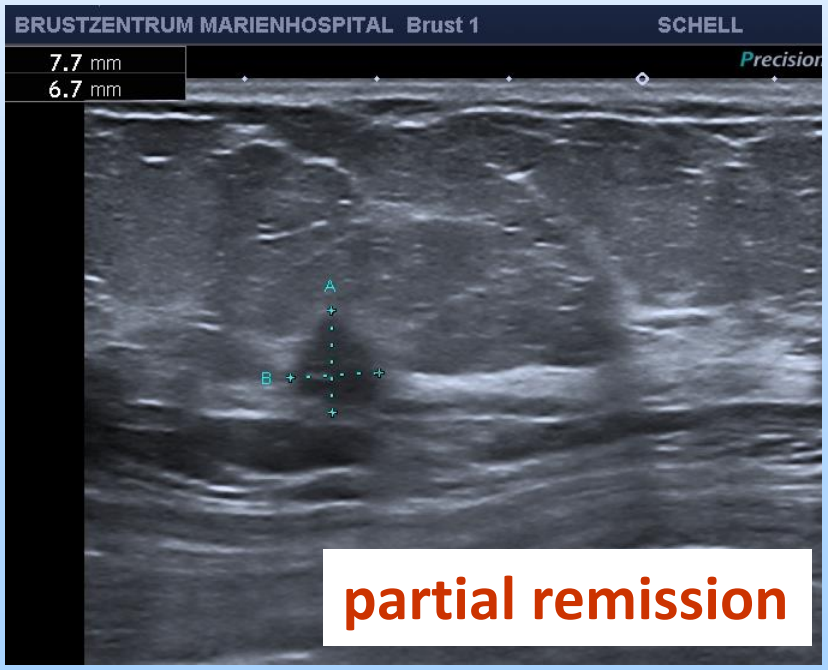
Response assesment:

Imaging and histo-pathological expertise (Sinn-score):

1. **CR**
2. **PR**
3. **No Change**





No change/progress:

→ stop NACT, immediate surgery

CR:

→ further NACT, followed by surgery

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Breast conserving surgery

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Negative examples of breast conserving surgery:

better results after NACT?

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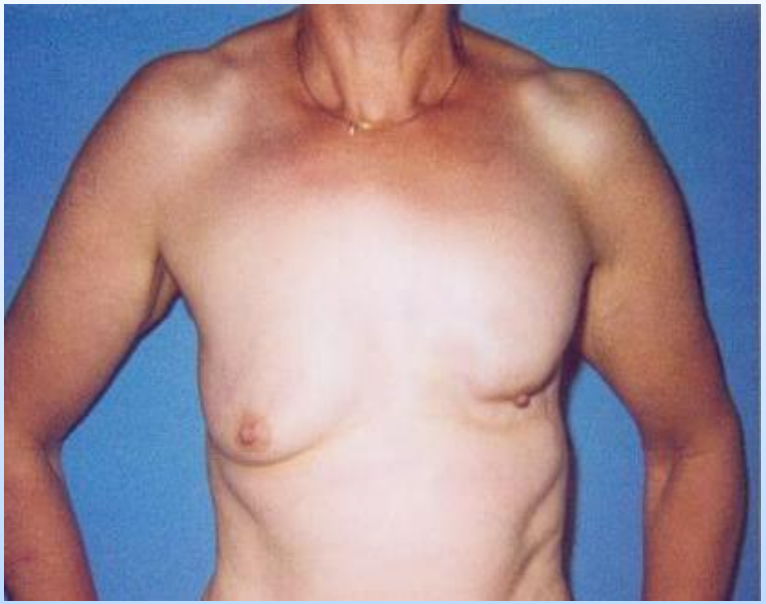
Negative examples of breast conserving surgery:



better results after NACT?

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BCS after NCT
(3x EC, 4x TAC)

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BCS after NACT

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Mastectomy and Breast Reconstruction

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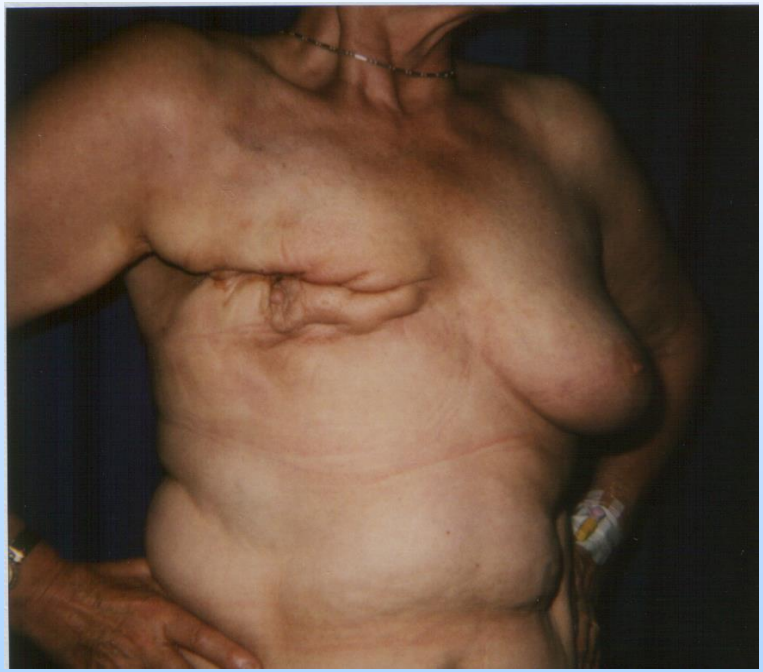
Negative examples MRM



better results after NACT?

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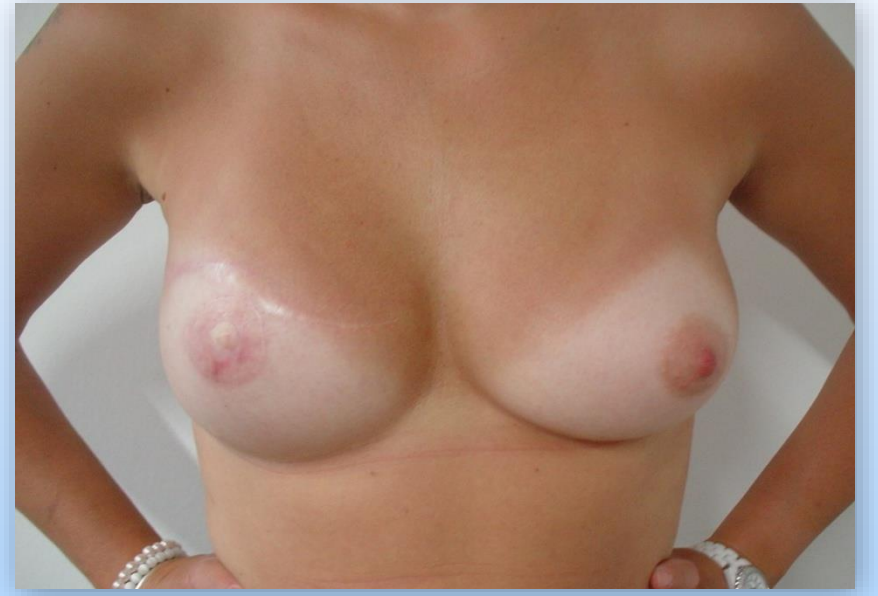
Expander and prosthesis technology without radiation: good results

expander and prosthesis technology, reconstruction NAC, adapting reduction surgery left



expander and prosthesis technology, reconstruction NAC

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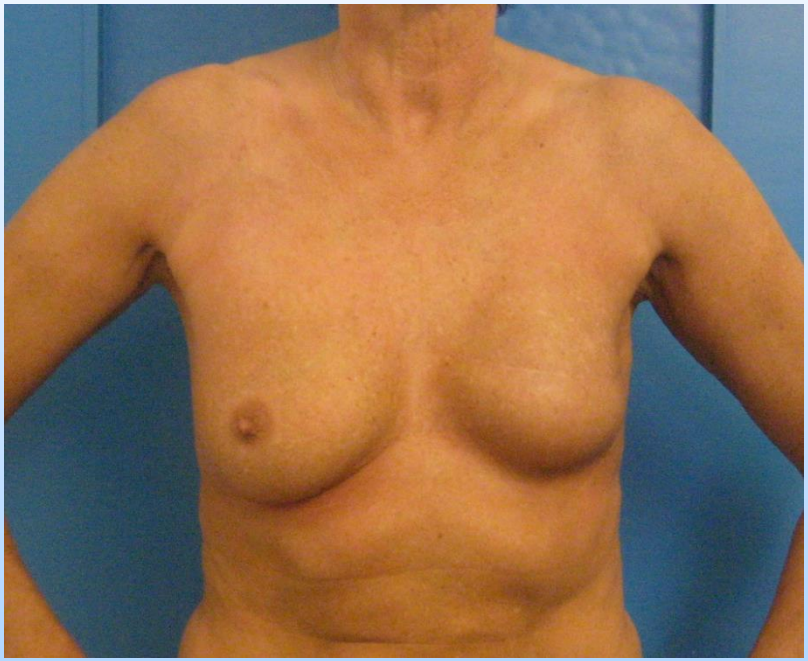
Expander technology
with radiation: good result



Radiation
increases risk of
capsular fibrosis
and inflammation

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Prosthesis technology & radiation:
negative examples

2 months after expander-implantation

8 years after prosthesis-implantation (outward performed)

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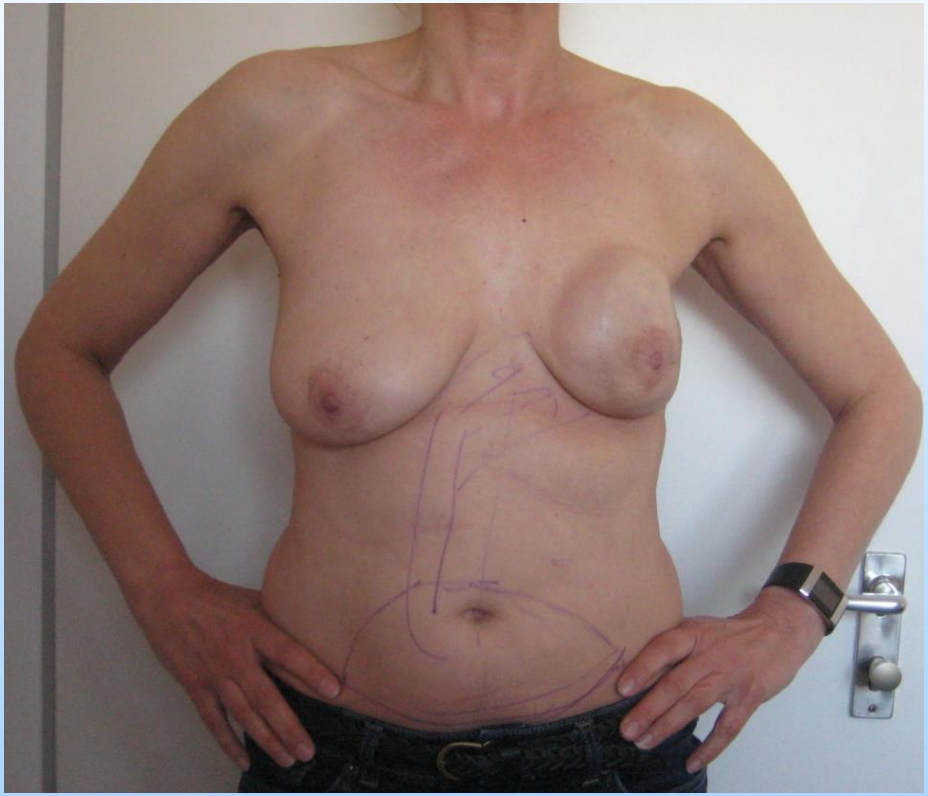
Alternative after radiation: breast reconstruction with own tissue

Alternative after radiation:



MRM left side, CHT, radiation, expander-/ prosthesis-implantation (outwards performed)

now planning TRAM-Flap

Alternative after radiation:

Latissimus plastic surgery

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Alternative after radiation:

TRAM-Flap

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Alternative after radiation:

TRAM & reconstructed NAC, adapting reduction surgery right side

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Alternative after radiation:

TRAM & reconstructed NAC

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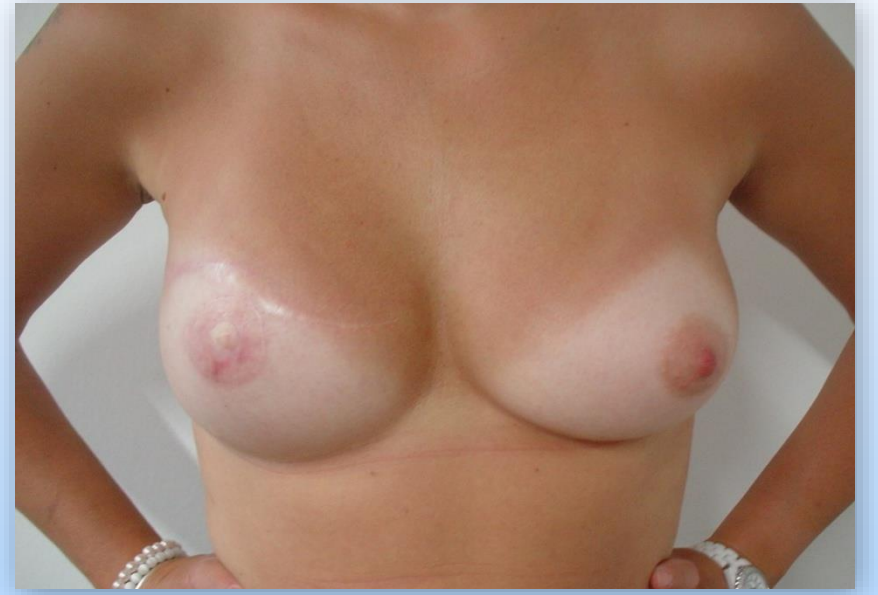
What counts in the end?



oncological safety and patient satisfaction

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No single approach is appropriate for all patients

decision has to consider the combination of:

– clinical pathologic features of tumour

– patient factors such as age, co-morbidities, breast size

– individual patient needs

necessary: patient-based decision making

Concept
+ quality
+ cooperation
= **good results**

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NEOADJUVANT THERAPY: WHEN AND HOW?

Agree to disagree?


THANK YOU
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