Breast cancer

Coding issues

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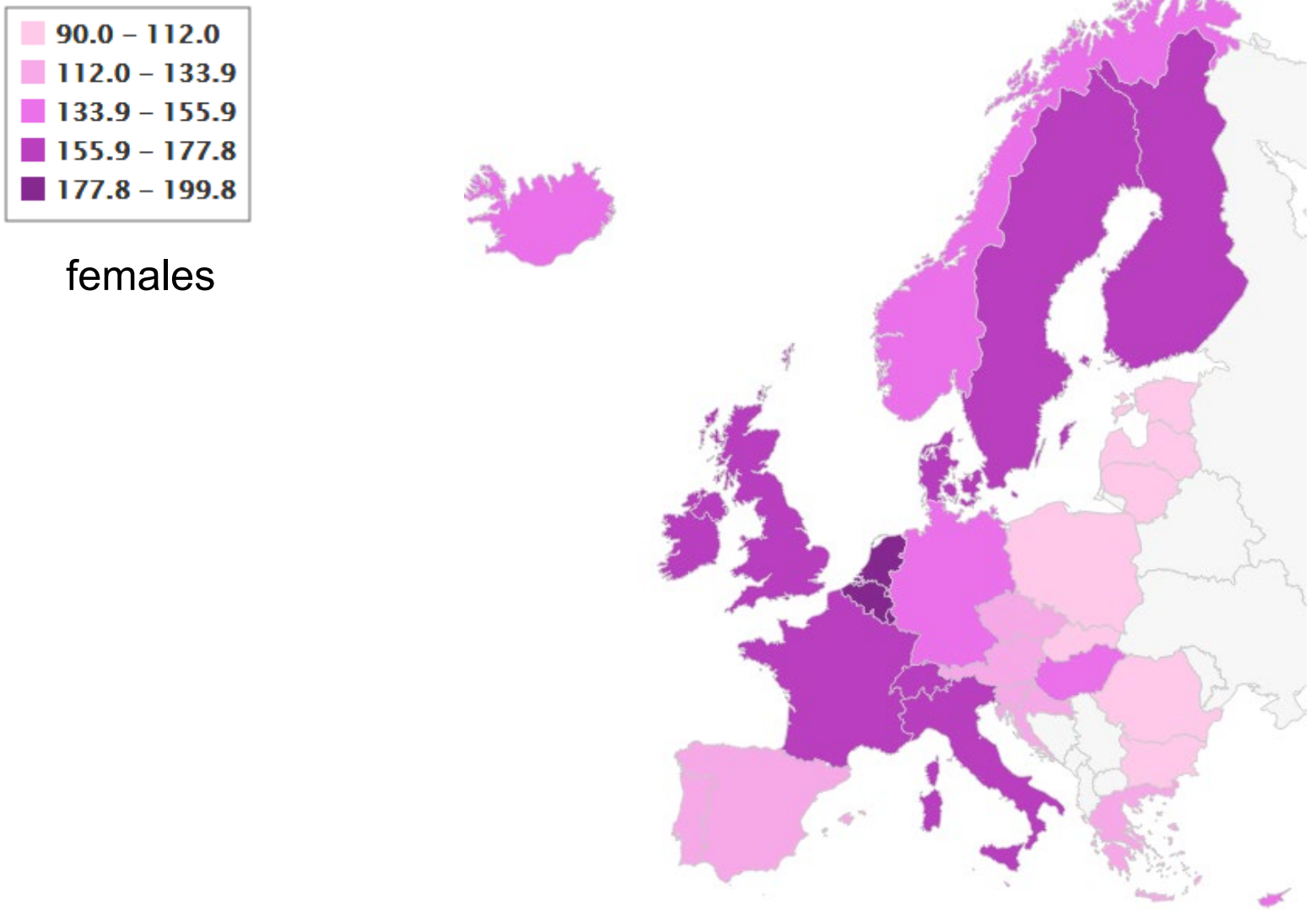
European Commission

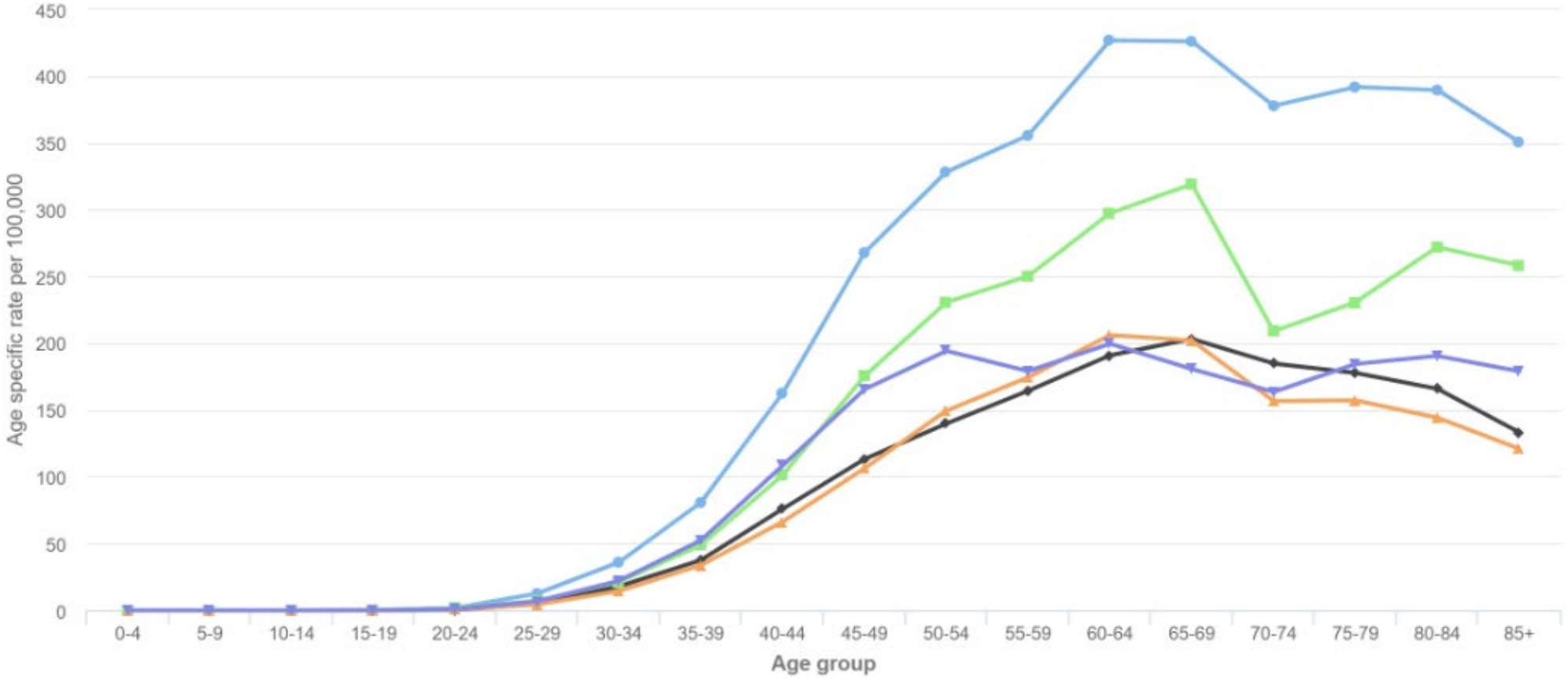
Introduction

- Epidemiological information
- Topography & morphology
- Stage
- Treatment

Incidence of breast cancer in Europe in 2018

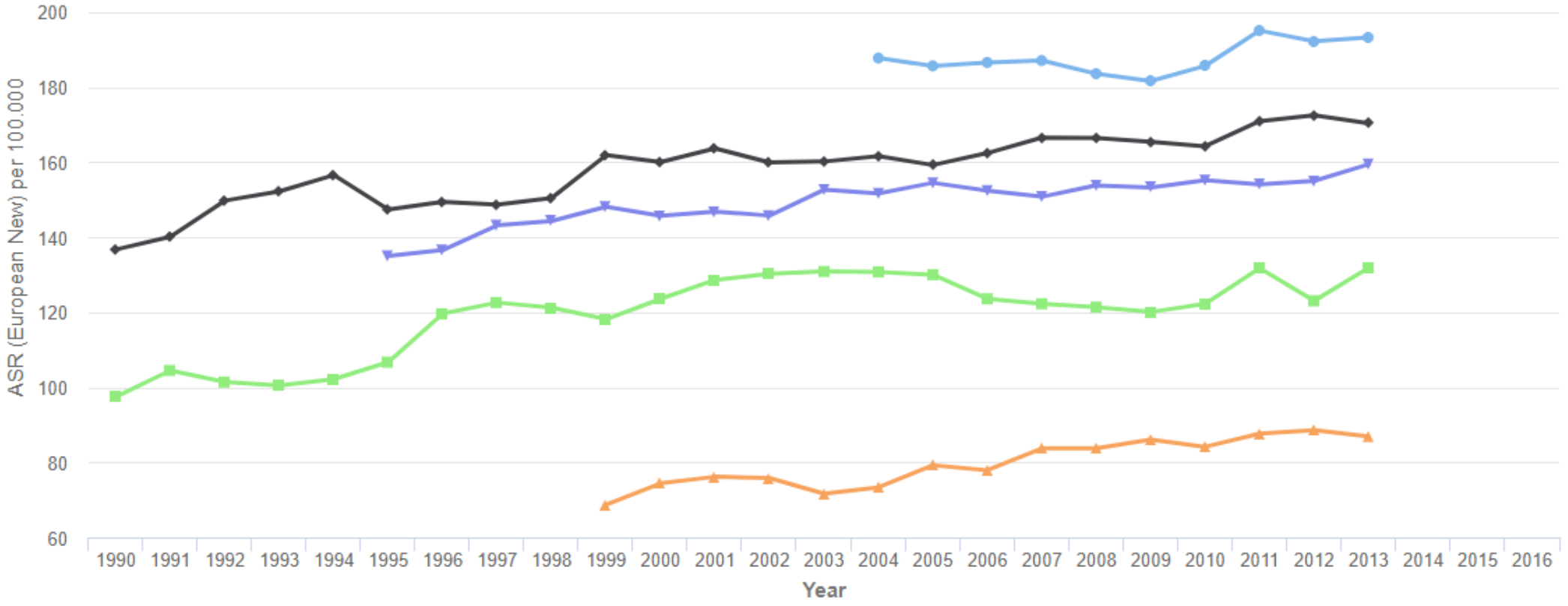


Age specific incidence of breast cancer



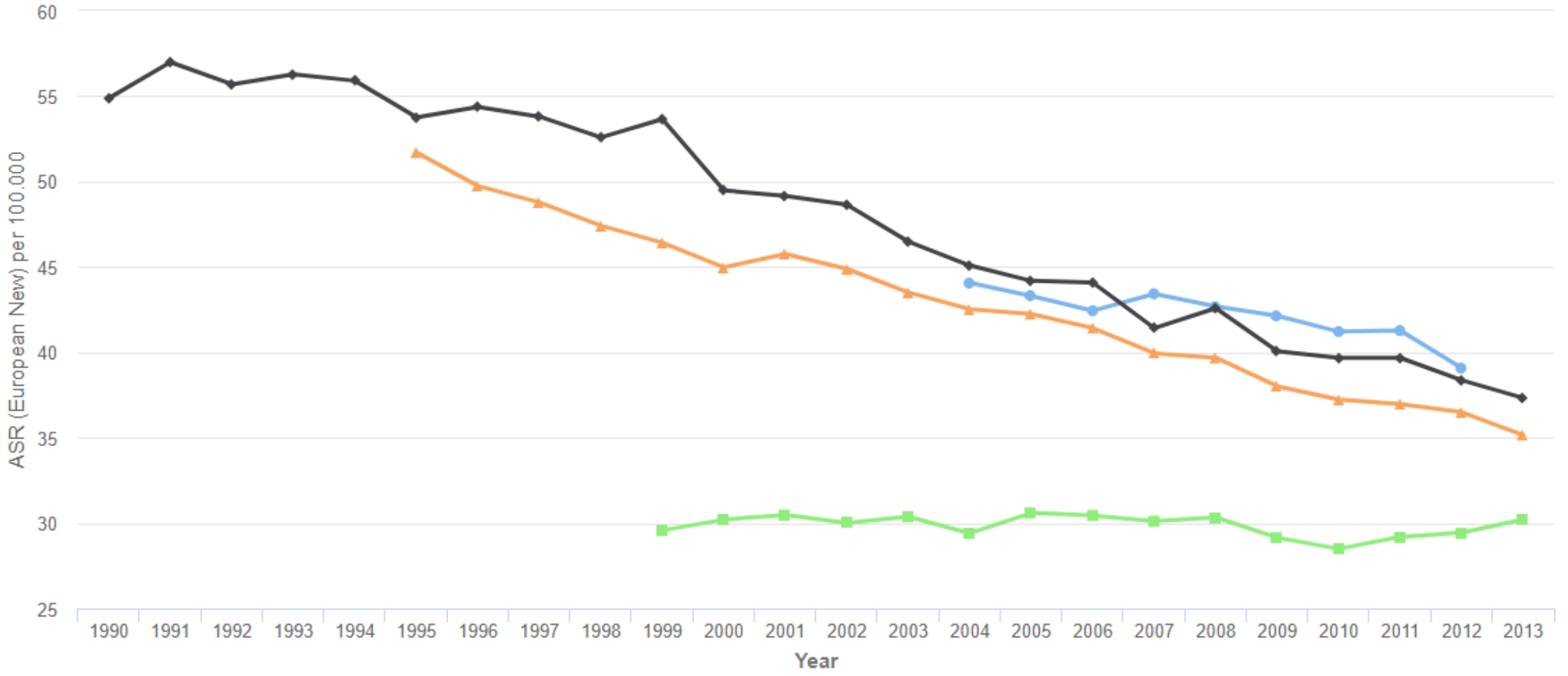
Indicator	Registry	Sex	Cancer	Year	▲
Incidence	BE Belgium	Female	Breast female	2004-2012	
Incidence	LV Latvia	Female	Breast female	2003-2012	
Incidence	NO Norway	Female	Breast female	2003-2012	
Incidence	PL Poland	Female	Breast female	2003-2012	
Incidence	ES Granada	Female	Breast female	2003-2012	

Trends in breast cancer incidence



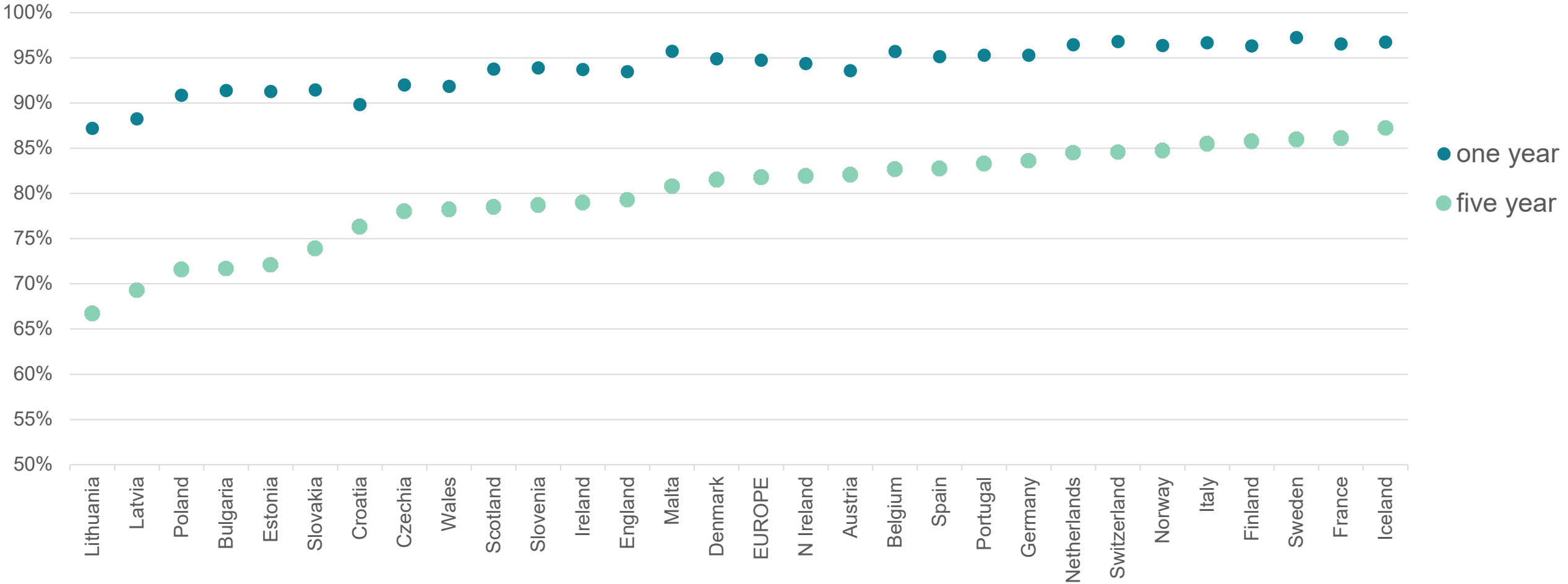
Indicator	Registry	Sex	Cancer	Age Group
Incidence	BE Belgium	Female	Breast female	0-85+
Incidence	NL Netherlands	Female	Breast female	0-85+
Incidence	NO Norway	Female	Breast female	0-85+
Incidence	PL Poland	Female	Breast female	0-85+
Incidence	UK England	Female	Breast female	0-85+

Trends in breast cancer mortality



Indicator	Registry	Sex	Cancer	Age Group	▲
Mortality	BE Belgium	Female	Breast female	0-85+	
Mortality	NL Netherlands	Female	Breast female	0-85+	
Mortality	PL Poland	Female	Breast female	0-85+	
Mortality	UK England	Female	Breast female	0-85+	

Relative survival of breast cancer (2000-2007)



Risk factors & symptoms

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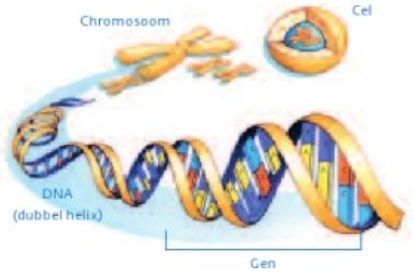
Risk factors

Reproductive factors

Hormonal factors

Life style

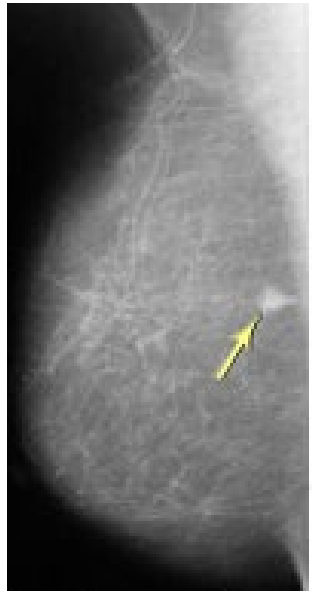
Genetic factors

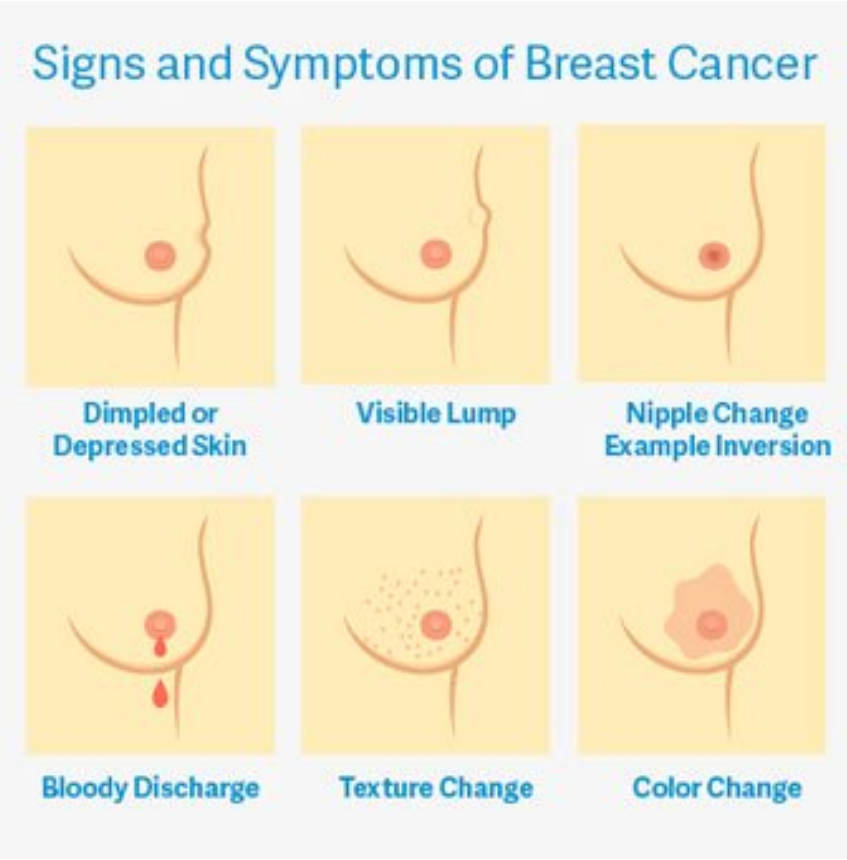


Symptoms

- Palpable/visible lesion in the breast or axilla
- Discharge from the nipple
- Nipple pain or nipple turning inward
- Skin irritation (ulceration) or dimpling

- Cancers without symptoms may be detected on a mammogram





Topography

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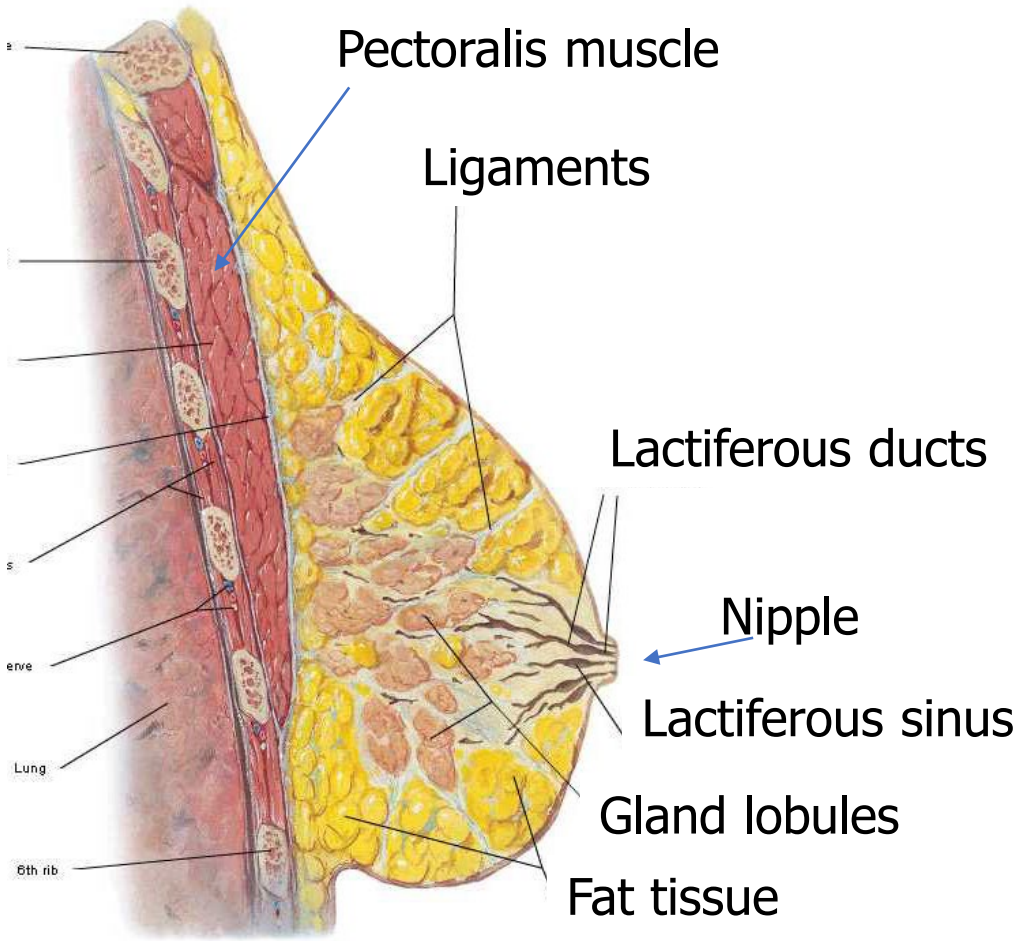
Anatomy of the breast



Breast: mostly glands and fat

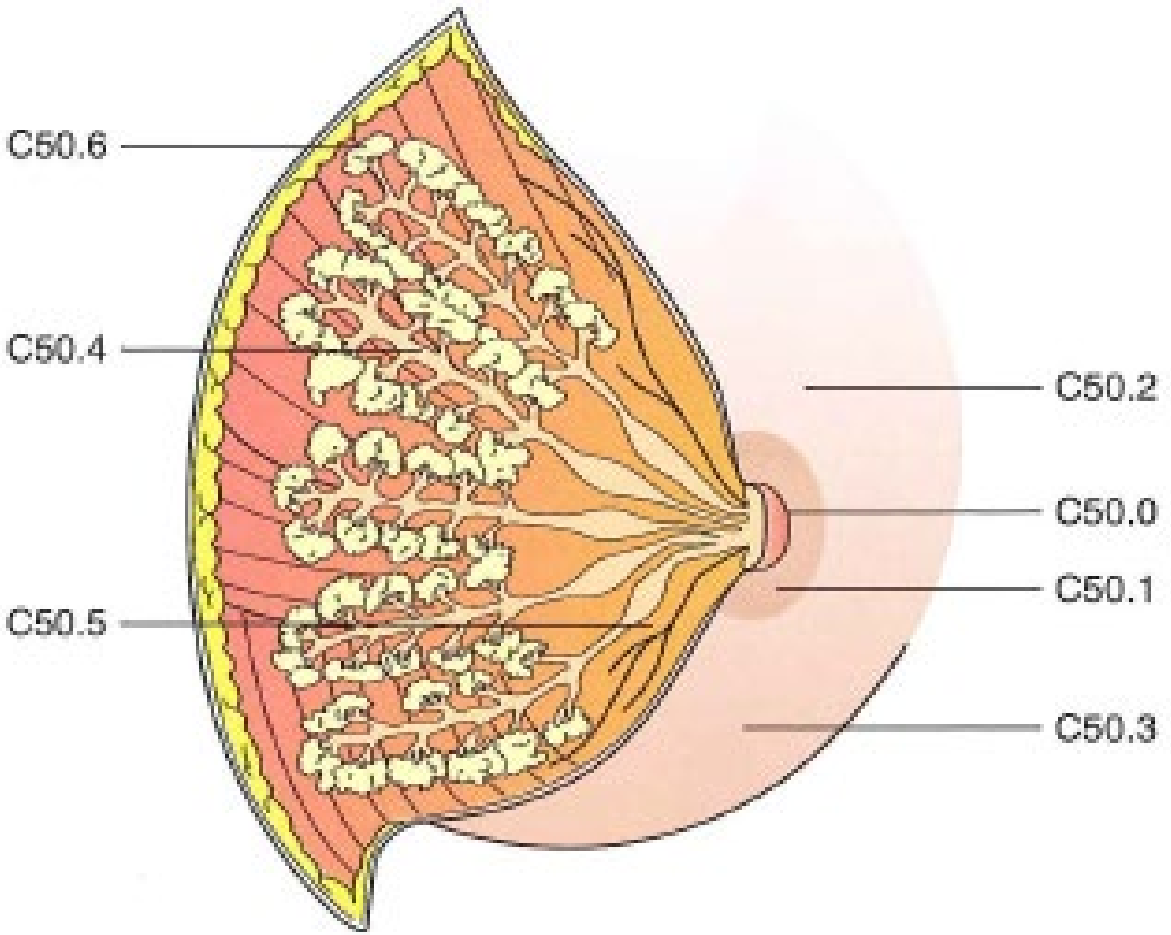
Glands consist of ducts and acini

A lobe consists of several glands

About 20 lobes per breast

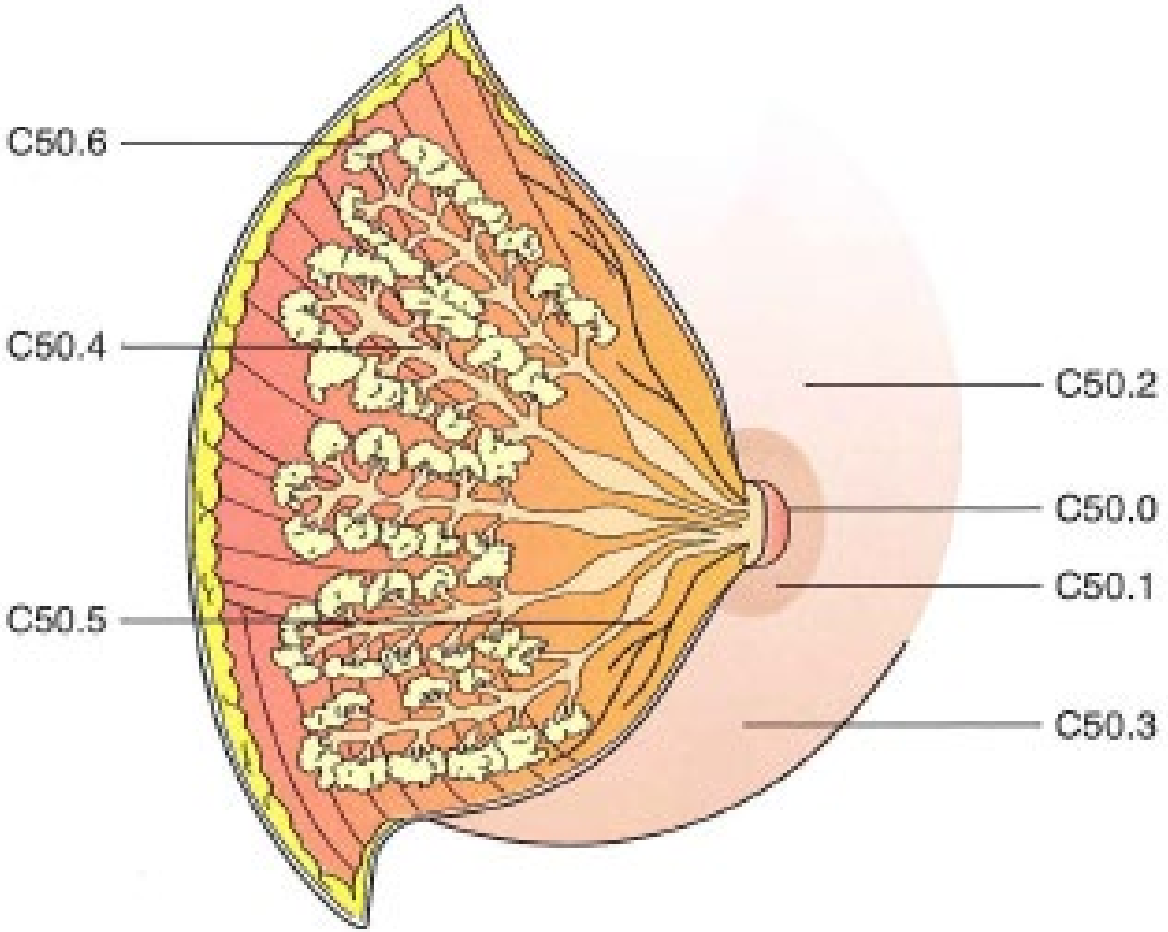
The lactiferous ducts end in the nipple

Topography codes of the breast



- Nipple (C50.0)
- Central portion (C50.1)
- Upper-inner quadrant (C50.2)
- Lower-inner quadrant (C50.3)
- Upper-outer quadrant (C50.4)
- Lower-outer quadrant (C50.5)
- Axillary tail (C50.6)
- Overlapping *or* multiple in anatomically contiguous subsites (C50.8)
- NOS *or* multiple in anatomically non-contiguous subsites (C50.9)

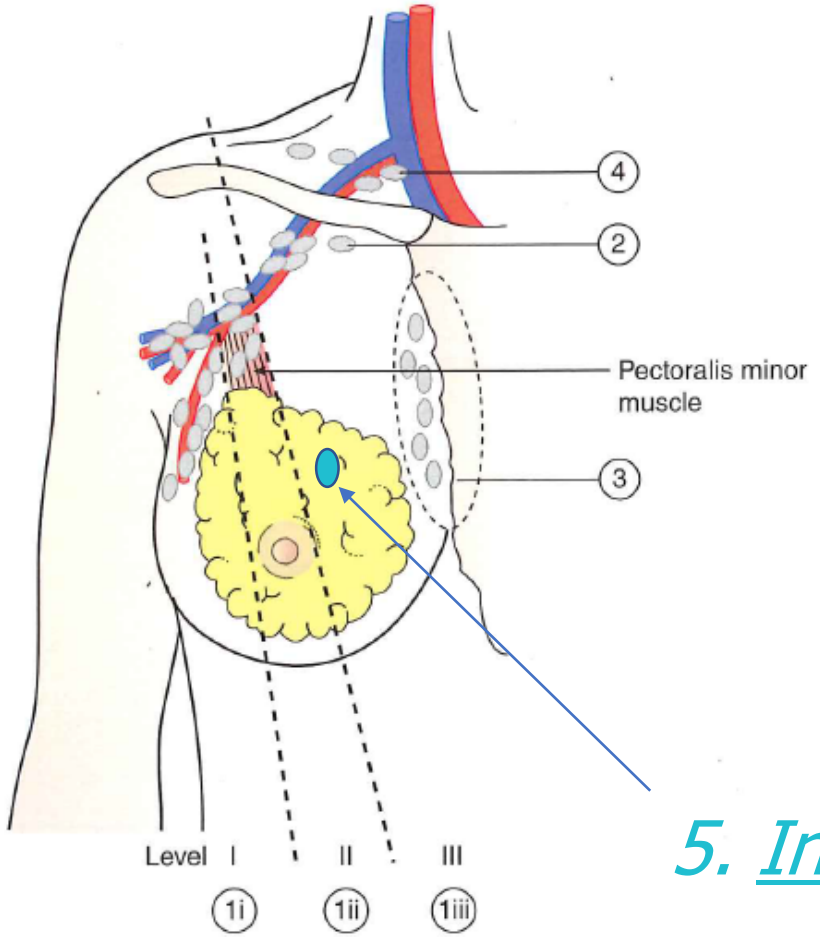
Topography codes of the breast



- Lateral
- Medial
- Caudal
- Cranial

→ All coded as C50.8

Regional lymph nodes of the breast



1. Axillary
   - Level I
   - Level II
   - Level III
2. Infraclavicular
3. Internal mammary
4. Supraclavicular

5. Intramammary (=in the breast) ~= level I

Morphology

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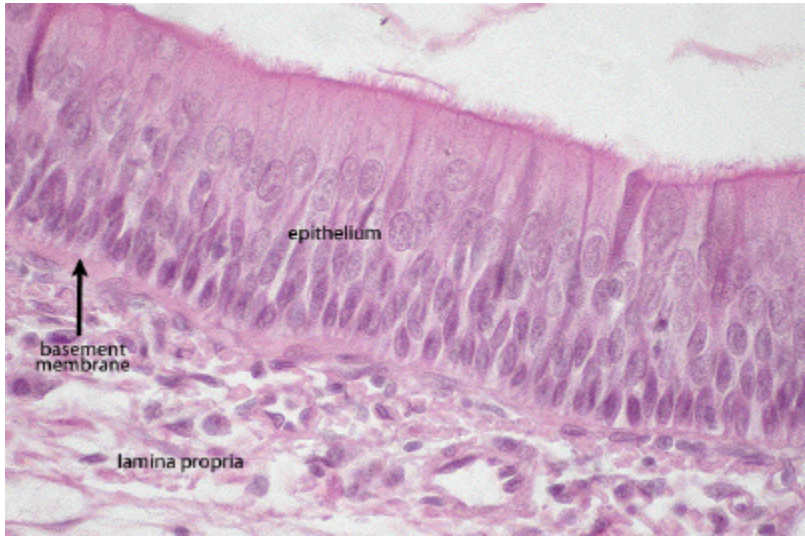
Non-invasive breast cancer

- Invasion means that the cancer invades through the basement membrane of the epithelium (the lobe or the duct)
- Non-invasive cancer (= carcinoma in situ) does not invade the basement membrane and therefore the cancer is limited to the lumen of the duct or the lumen of the lobe.
- Within the epithelium there are no lymph or blood vessels and therefore non-invasive cancers cannot metastasize
- In the breast there are two types of non-invasive cancers:
  - Ductal carcinoma in situ (DCIS)
  - Lobular carcinoma in situ (LCIS)



New morphology codes/terms in ICD-O-3

Code	Term
8500/3	Invasive breast carcinoma of no special type (C50._)
	Basal like carcinoma of breast (C50._)
8504/2	Encapsulated papillary carcinoma
8504/3	Encapsulated papillary carcinoma with invasion
8507/3	Invasive micropapillary carcinoma of breast (C50._)
8509/2	Solid papillary carcinoma in situ (C50._)
8509/3	Solid papillary carcinoma with invasion (C50._)
8519/2	Lobular carcinoma in situ, pleomorphic (C50._)
9715/3	Anaplastic large cell lymphoma, ALK negative
	Breast implant-associated anaplastic large cell lymphoma (C50._)

Morphology: main breast cancer types

1. Ductal carcinoma (breast carcinoma of NST) → 8500/3 (~75%)
2. Lobular carcinoma → 8520/3 (~12%)
   Includes several subtypes:
   - Solid lobular
   - Alveolar lobular
   - Pleomorphic lobular
   - Tubulolobular
   - Mixed lobular
3. Mucinous carcinoma → 8480/3 (~2%)

Morphology: rare types (all <1%)

- Tubular carcinoma → 8211 (~0.8%)
- Papillary carcinoma → 8503 (~0.6%) [8503 has preference over 8260]
  - solid (8509)
  - encapsulated (8504)
- Micropapillary carcinoma → 8507 (~0.6%)
- Medullary carcinoma → 8510 (~0.5%)
- Metaplastic carcinoma → 8575 (~0.5%)
- Apocrine carcinoma → 8401 (~0.2%
- Cribriform carcinoma → 8201 (~0.1%)

Morphology: very rare types (all <0.1%)

- Neuro-endocrine carcinoma → 8246, 8013, 8041, 8574
- Lipid-rich carcinoma → 8314
- Glycogen-rich carcinoma → 8315
- Secretory carcinoma → 8502
- Polymorphous carcinoma → 8525
- Acinic cell carcinoma → 8550
- Adenomyoepithelioma → 8983
- Epithelial-myoepithelial carcinoma → 8562

Metaplastic carcinoma

- A group of epithelial cancers with differentiation into squamous cells and/or mesenchymal-looking (sarcoma-like) elements
- May contain e.g. spindle, chondroid, osseous or rhabdoid cells
- Entirely metaplastic or a mixture of carcinoma and metaplastic areas

Term	code
Metaplastic carcinoma	8575/3
Adenosquamous carcinoma	8560/3
Squamous cell carcinoma	8070/3
Adenocarcinoma with cartilaginous or osseous metaplasia	8571/3
Adenocarcinoma with spindle cell metaplasia	8572/3
Spindle cell carcinoma	8032/3
Myoepithelial carcinoma	8982/3

Mixed cancers

- Different elements within 1 tumour *or* multiple primary simultaneous tumours within 1 breast
- Use the appropriate combination code if it is a mixture with ductal of lobular carcinoma:

Term	Invasive
Ductal (carcinoma of NST) and lobular carcinoma	8522/3
Ductal (carcinoma of NST) and other carcinoma (mucinous, tubular, cribriform, etc.)	8523/3
Lobular and other carcinoma (mucinous, tubular, cribriform, etc.)	8524/3

- Other combinations: adenocarcinoma with mixed subtypes (8255/3)
- Combinations with SCC or sarcoma are considered metaplastic carcinoma

Paget disease of the nipple

- Breast cancer with presence of malignant (Paget) cells in the squamous epithelium of the nipple
- May extend to the areola and the adjacent skin
- Paget disease may be invasive (8540/3) or non-invasive (8540/2)
- Usually associated with high grade DCIS or invasive ductal carcinoma

Term	Non-invasive Paget	Invasive Paget
Paget disease without underlying tumour	8540/2	8540/3
Paget disease and DCIS	8543/2	8543/3
Paget disease and invasive duct carcinoma	8541/3	8541/3

Cancer of the male breast

- Men have a small amount of glandular breast tissue
- The risk of breast cancer ~=1% of the female risk
- No specific codes for male breast cancer

Differentiation grade

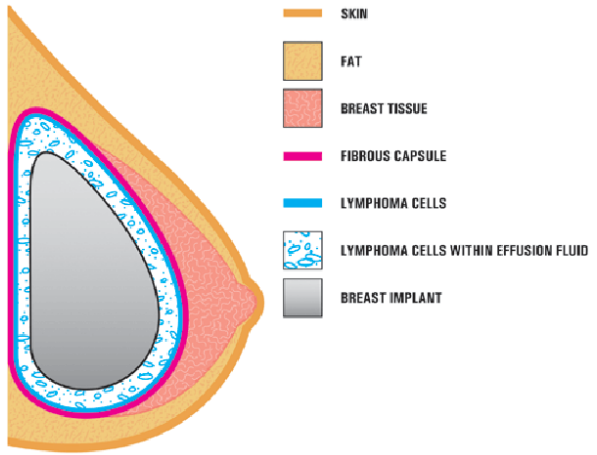
- Code the proper differentiation (Bloom-Richardson=BR) grade of the invasive tumour
- In pure DCIS-lesions (without an invasive component) the grade may also be coded

Examples:

- Invasive breast cancer, NST, BR2 → 8500/32
- High grade DCIS → 8500/23
- Invasive breast cancer, NST, BR2 + high grade DCIS → 8500/32

Non-epithelial cancers of the breast

- Malignant phyllodes tumour → 9020/3
- Angiosarcoma → 9120/3
  - Mostly due to prior radiotherapy
  - Superficial (in the skin=C44) or in the soft tissue of the breast (C50)
- Leiomyosarcoma → 8890/3
- Liposarcoma → 8850/3
- Diffuse large B-cell lymphoma → 9680/3
- MALT lymphoma → 9699/3
- Breast implant-associated anaplastic large cell lymphoma → 9715/3



Treatment

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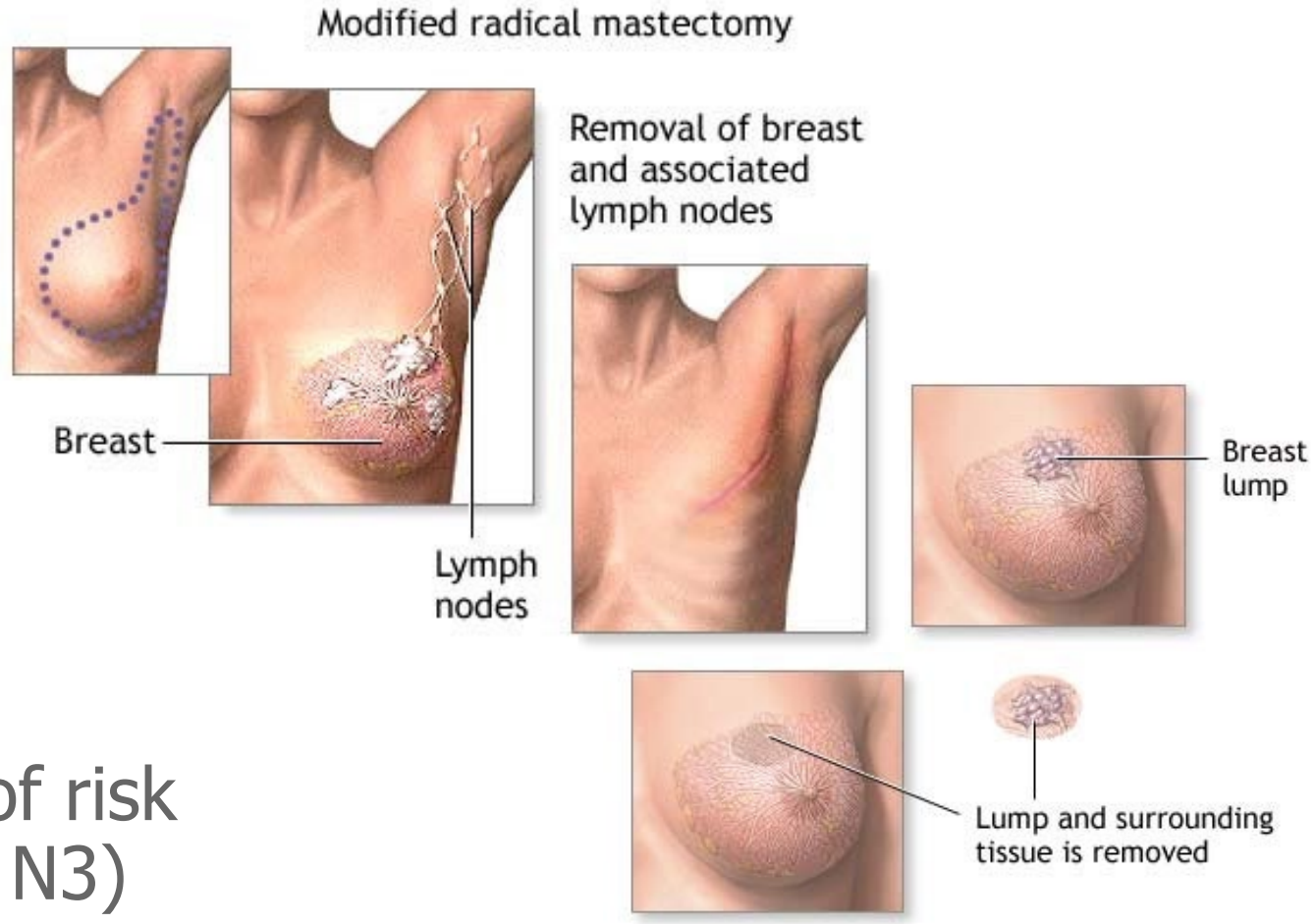
Treatment for breast cancer

The treatment for breast cancer mainly depends on:

- size of the tumour
- number and site of positive lymph nodes
- distant metastases
- differentiation grade (Bloom-Richardson grade)
- tumour-free margins
- ER/PR-status
- HER2-status
- age & sex
- personal preference of the patient

Main treatment modalities for breast cancer

- (Sentinel node procedure)
- Surgery
  - Mastectomy
  - Breast conserving operation
  - Breast reconstruction
- Radiotherapy
  - Standard after BSO
  - After a mastectomy in case of risk factors (e.g. T4, pT3N1, N2, N3)



Systemic treatment modalities for breast cancer

- Chemotherapy
  - Post-operative (adjuvant; depending on age and risk factors)
  - Pre-operative (neo-adjuvant; depending on age and risk factors)
- Hormone therapy
  - For ER/PR-positive breast cancers
- Targeted therapy (immunotherapy)
  - For HER+ positive breast cancers (trastuzumab, pertuzumab)
  - Many other drugs recently introduced or under development (mostly for metastatic breast cancer)

EXERCISES

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