🧠 BREAST PATHOLOGY – HIGH YIELD

🟢 1. Anatomy & Screening

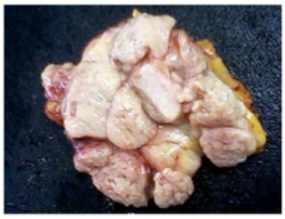
* Most tumors → Upper outer quadrant (≈50%)
* Screening via mammography:
  * Detects non-palpable lesions
  * Average tumor size detected ≈ 1 cm

🟢 2. Clinical Presentations

* Palpable breast lump
* Nipple discharge
* Skin changes (retraction, peau d'orange)
* Abnormal mammogram

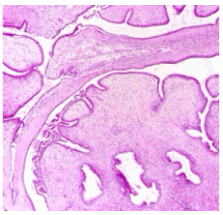
🟡 3. STROMAL TUMORS

🔷 Phyllodes Tumor



* Older women
* Can be **benign** → **malignant**

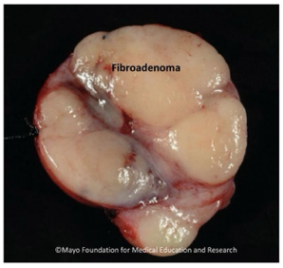
Key features:



* Leaf-like pattern (phyllodes = leaf 🌿)
* ↑ stromal cellularity
* Can recur

⚠️ High-grade → behaves like **sarcoma**

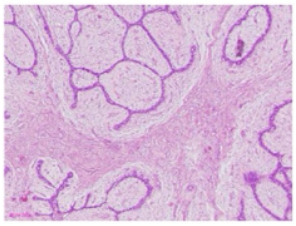
🔷 **Fibroadenoma** (VERY IMPORTANT)



* ⭐ **Most common benign breast tumor**
* Young women (reproductive age)
* **Estrogen-sensitive**

Key features:

* Mobile → "**breast mouse**"
* Well-circumscribed



Histology:

* Low cellular stroma
* Compresses ducts → **slit-like spaces**

🟡 4. BENIGN EPITHELIAL LESIONS

🔷 **Classification (EXAM FAVORITE)**

Cancer Risk	Type
❌ No risk	Nonproliferative
⚠️ Slight ↑	Proliferative (no atypia)
⚠️⚠️ Moderate ↑	Proliferative (with atypia)

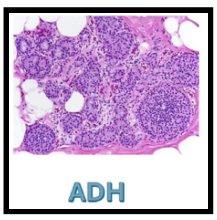
🔷 Nonproliferative (Fibrocystic Changes)

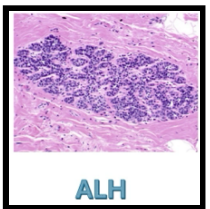
* Most common benign condition

Features:

* Cysts
* Fibrosis
* Adenosis
* Apocrine metaplasia

👉 Presents as lumpy breast





🔷 Proliferative WITHOUT atypia

* Epithelial hyperplasia
* Papilloma
* Sclerosing adenosis

👉 Slight cancer risk

🔷 Proliferative WITH atypia ⚠️

* ADH → like DCIS
* ALH → like LCIS

1. Atypical lobular hyperplasia (ALH) resembles lobular carcinoma in situ (LCIS).
2. Atypical ductal hyperplasia (ADH) resembles ductal carcinoma in situ (DCIS)

👉 Premalignant (clonal)

🔴 5. BREAST CARCINOMA (VERY HIGH YIELD)

📊 Epidemiology

* Most common cancer in women (except skin)
* 2nd cause of death (after lung)

🔷 Risk Factors

* **BRCA1 / BRCA2**
* **TP53, PTEN**
* Hormonal exposure

🔷 HER2 (SUPER IMPORTANT)

* Oncogene → ↑ proliferation
* HER2+ tumors:
  * Aggressive
  * Respond to **targeted therapy**

🟠 6. CLASSIFICATION

🔶 A. In Situ (Non-invasive)

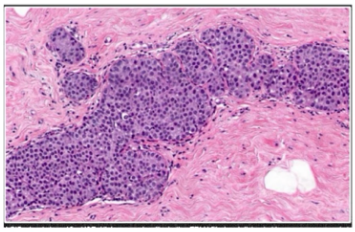
* Do NOT cross basement membrane

1. DCIS

* Ducts filled with malignant cells
* Patterns:
  * Cribriform
  * Solid
  * Papillary

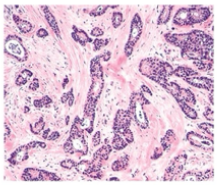
2. LCIS

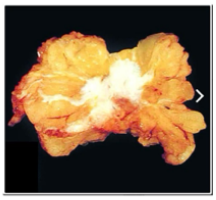
* Lobules filled with uniform cells
* Often **bilateral**
* Marker of increased risk (not always direct precursor)



⭐ 1. Invasive Ductal Carcinoma (IDC)

* **Most common (70–80%)**



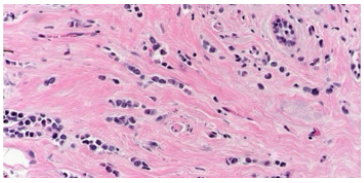


Features:

* Hard mass (desmoplasia)
* Associated with DCIS

⭐ 2. Invasive Lobular Carcinoma

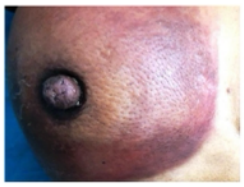
يعني الخلايا السرطانية تصطف بشكل خطّي وراء بعضها مثل صف واحد من الناس يمشون خلف بعضهم Indian file pattern

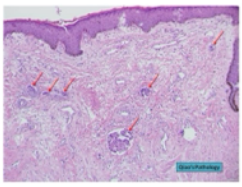


* Cells invade **single-file pattern**
* Often:
  * Bilateral
  * Multicentric

⚠️ 3. Inflammatory Carcinoma (VERY IMPORTANT)

* **Clinical diagnosis**





Features:
* Red, swollen breast
* **Peau d'orange**

Cause:
* Tumor blocks dermal lymphatics

👉 Very poor prognosis

🧬 7. MOLECULAR CLASSIFICATION (EXAM GOLD)

Prognosis	Markers	Type
Best	Hormone receptor +	ER+ / HER2-
Aggressive but treatable	HER2 amplified	HER2+
Worst	ER-, PR-, HER2-	Triple negative

💊 8. TREATMENT

* ER+ → Hormonal therapy
* HER2+ → Targeted therapy
* Chemo for aggressive types

📉 9. PROGNOSIS (VERY HIGH YIELD)

⭐ **MOST IMPORTANT FACTOR:**

👉 Axillary lymph node status

Other factors:

* Tumor size
* Metastasis (bone, liver, lungs)
* Tumor subtype

Pathologic Lesion	Relative Risk (Absolute Lifetime Risk)*
Nonproliferative Breast Changes (Fibrocystic changes)	1.0 (3%)
Proliferative Disease Without Atypia	1.5 to 2.0 (5% to 7%)
Proliferative Disease With Atypia	4.0 to 5.0 (13% to 17%)
Carcinoma *in situ*	8.0 to 10.0 (25% to 30%)