



McGILL FAMILY MEDICINE REFRESHER COURSE

Breast Cancer 2020:

Family Physician's Guide to Discussing Biopsy Results and their Treatment Implications

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December 2, 2020



Hôpital général juif
Jewish General Hospital

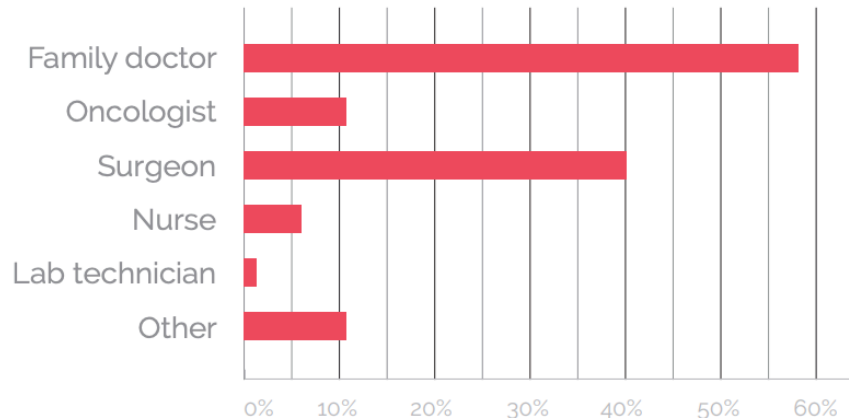


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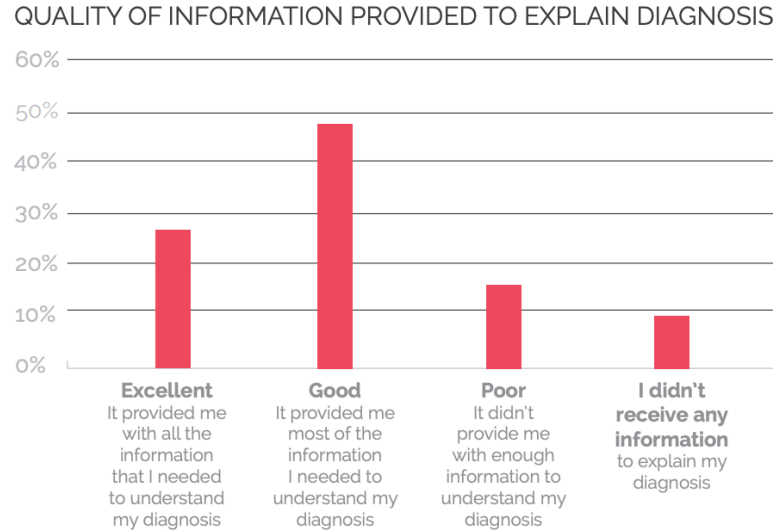
No disclosures



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HEALTH CARE PROFESSIONAL THAT DELIVERED THE BREAST
CANCER DIAGNOSIS

In one Canadian survey, **57%** of patients reported receiving their diagnosis from their family doctor.



In conversations with providers, the majority of patients said the information they received was good, while 15% indicated that information was lacking and up to 10% didn't receive any information.

How do I know my patient needs a biopsy?

The **BI-RADS** (Breast Imaging Reporting and Data System) designation is used to describe and classify findings by degree of suspicion

Patients with a BIRADS 4 or 5 lesion require tissue sampling with a biopsy...

BIRADS	Suspicion of malignancy	Recommended Action
4a	3-9%	Biopsy (US guided if sonographically visible, stereotactic if visible on mammogram only, MRI guided if visible on MRI only)
4b	10-49%	
4c	50-94%	
5	>95%	

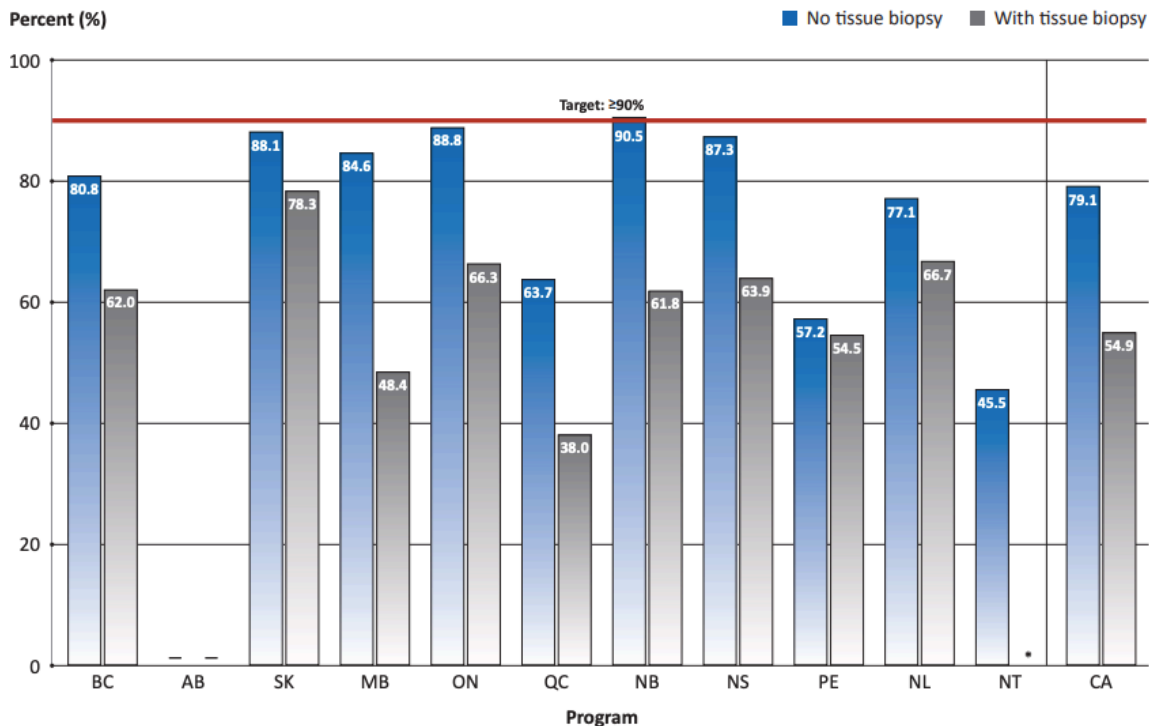
...BIRADS 5 lesions need urgent evaluation & biopsy for breast cancer NYD by tissue sampling

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4c	50-94%	
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INTRODUCTION

NATIONAL TARGET FOR TIME TO DIAGNOSIS: 7 WEEKS (WHEN Bx PERFORMED)

Time from abnormal screen to definitive diagnosis[§], women aged 50 to 69 years, 2011 and 2012 screen years

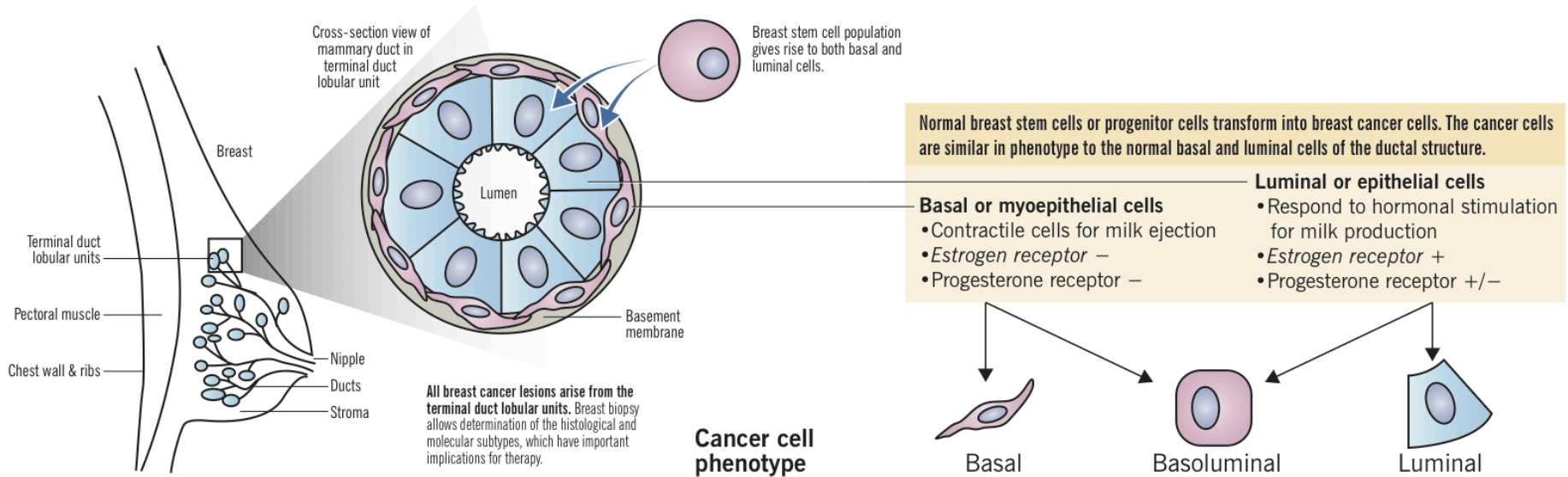


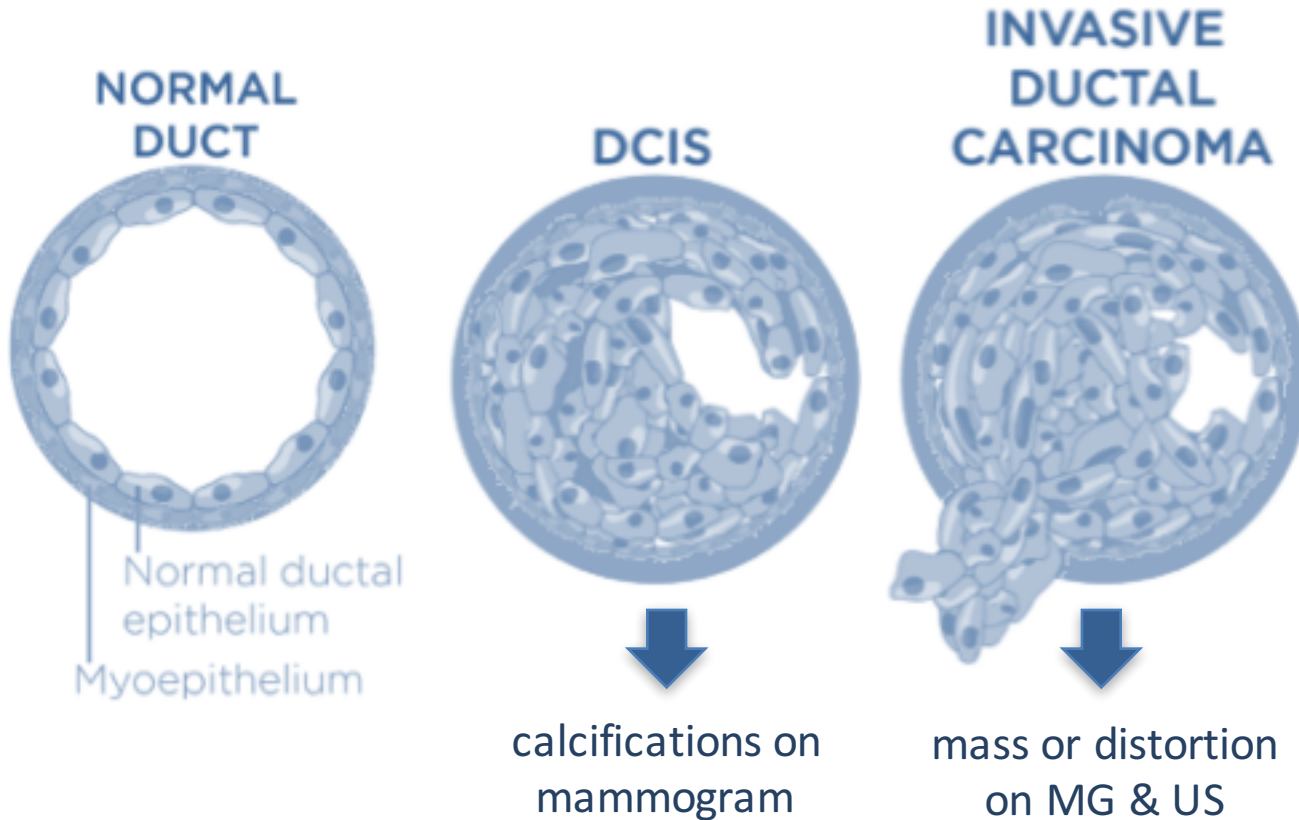
How do I interpret this breast biopsy result?

1. *in situ* vs. Invasive
2. Histologic subtype
3. Histologic grade
4. Biologic subtype

Breast cancer pathogenesis and histologic vs. molecular subtypes

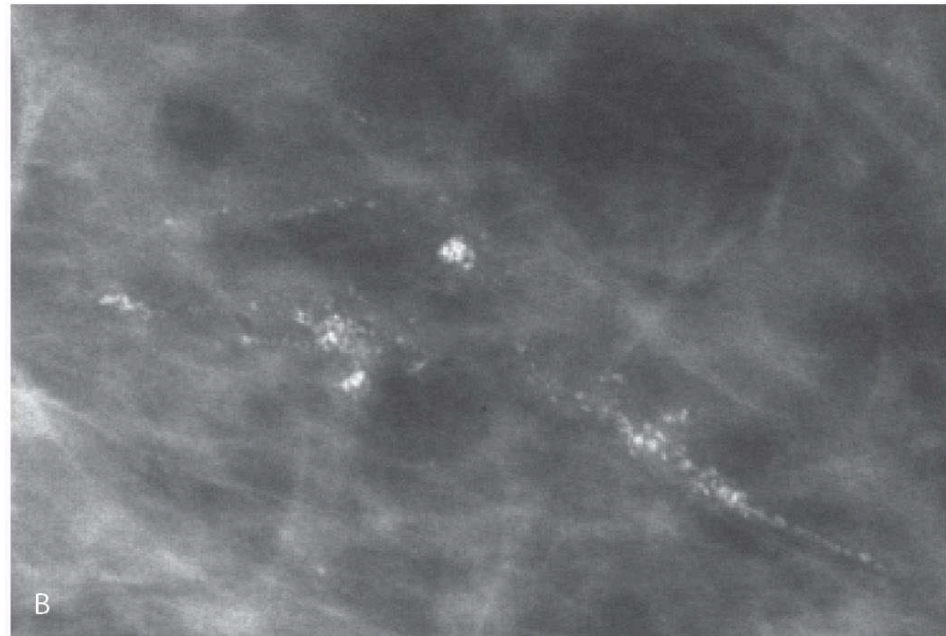
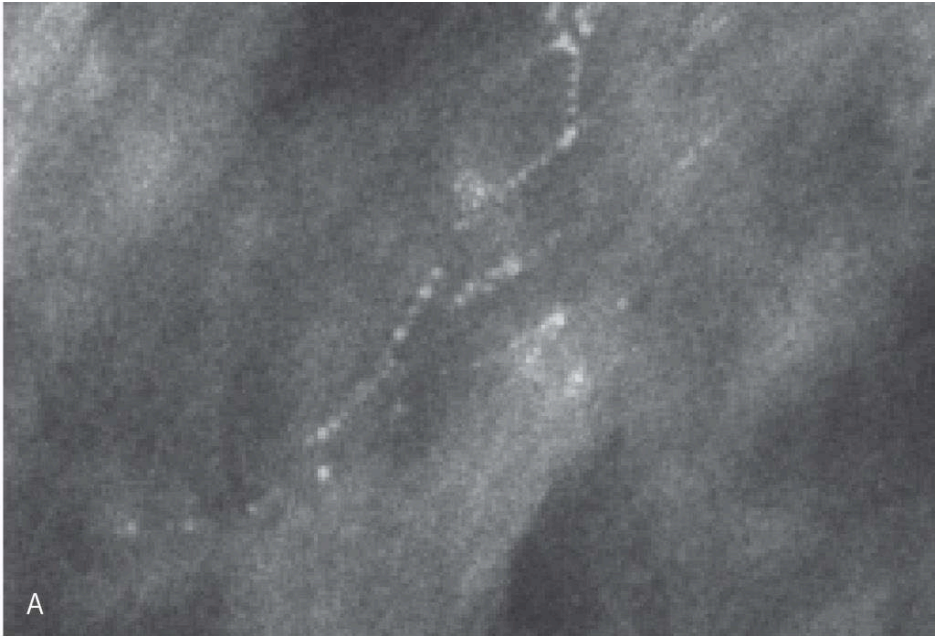
Eric Wong and Jenna Rebelo





IN SITU (DCIS)

FINE PLEOMORPHIC CALCIFICATIONS ON MG



1. *in situ* vs. invasive

- *in situ carcinoma*: cancerous cells remain within the duct

2. Histologic subtype

3. Histologic grade

4. Biologic subtype

TREATMENT IMPLICATIONS

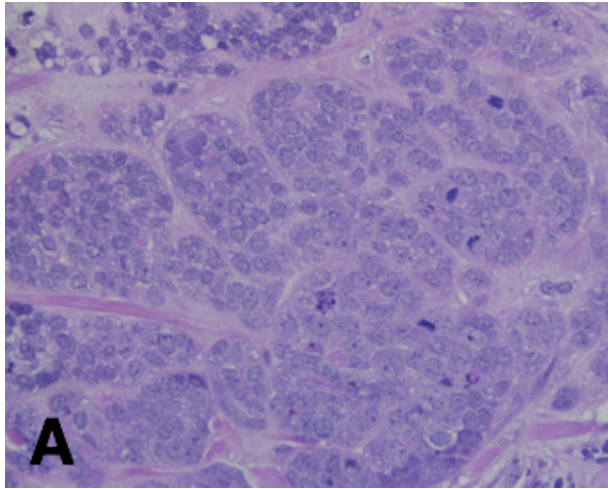
Biopsy Result	Implications	Standard treatment
Ductal carcinoma <i>in situ</i> DCIS aka “stage 0” aka “precancer”	Theoretically cannot spread to nodes or metastasize = No need for nodal evaluation = No chemotherapy	(1) Surgery (always) (2) Possible radiation (prevention) (3) If ER+, possible endocrine therapy (prevention)
Invasive carcinoma (stage I-III)	Could spread to other areas of the body = Check axillary lymph nodes = Need to use multimodality treatment to prevent it from coming back in the locally (breast lymph nodes) as well as other areas of the body	(1) Surgery (always) (2) Usually radiation (3) If ER+, endocrine therapy (4) Possible Chemotherapy/targeted therapy
Metastatic invasive carcinoma (stage IV)	Has spread to other areas of the body = focus on systemic therapies to treat metastatic disease	(1) Chemotherapy/targeted therapy (2) If ER+, endocrine therapy (3) Palliative radiation for symptoms

Ductal carcinoma *in situ* (DCIS) is precancer or “stage 0” cancer that is contained within the duct, and theoretically cannot spread. For DCIS, chemotherapy is never indicated.

TREATMENT IMPLICATIONS

Biopsy Result	Implications	Standard treatment
Ductal carcinoma <i>in situ</i> DCIS aka "stage 0" aka "precancer"	Theoretically cannot spread to nodes or metastasize = No need for nodal evaluation = No chemotherapy	(1) Surgery (always) (2) Possible radiation (prevention) (3) If ER+, possible endocrine therapy (prevention)
Invasive carcinoma (stage I-III)	Could spread to other areas of the body = Check axillary lymph nodes = Need to use multimodality treatment to prevent it from coming back in the breast, lymph nodes and other areas of the body	(1) Surgery (always) (2) Usually radiation (3) If ER+, endocrine therapy (4) Possible Chemotherapy/targeted therapy
Metastatic invasive carcinoma (stage IV)	Has spread to other areas of the body = focus on systemic therapies to treat metastatic disease	(1) Chemotherapy/targeted therapy (2) If ER+, endocrine therapy (3) Palliative radiation for symptoms

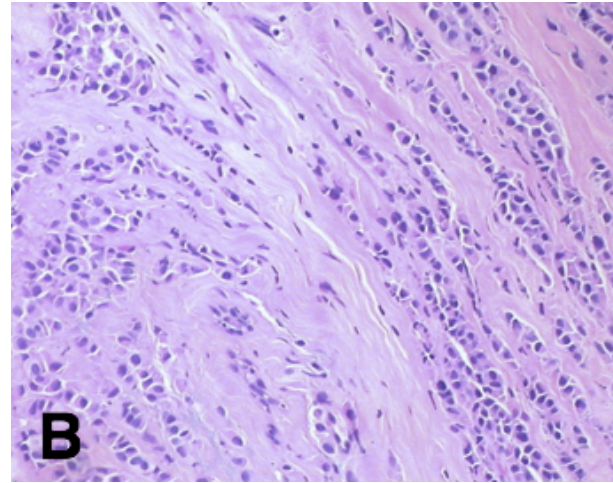
1. *in situ* vs. invasive
2. Histologic subtype
 - Tells us about what the cancer looks like under the microscope and how it grows
3. Histologic grade
4. Biologic subtype



A

Ductal (80-85%)

Cells grow into ducts - Produce a firm, irregular mass that is often palpable; can be any biologic subtype



B

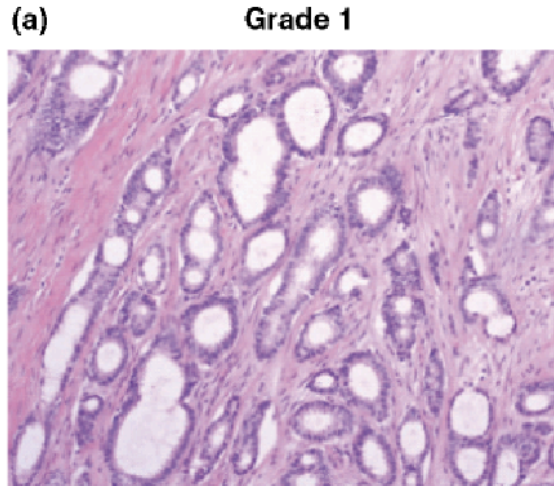
Lobular (10-15%)

Cells grow single file - Diffuse infiltrative growth pattern; more likely to be clinically & radiologically occult; almost always ER+HER2-

1. *in situ* vs. invasive
2. Histologic subtype
3. Histologic grade
 - Tells us about how abnormal the cells are and how quickly they are dividing
4. Biologic subtype

HISTOLOGIC GRADE

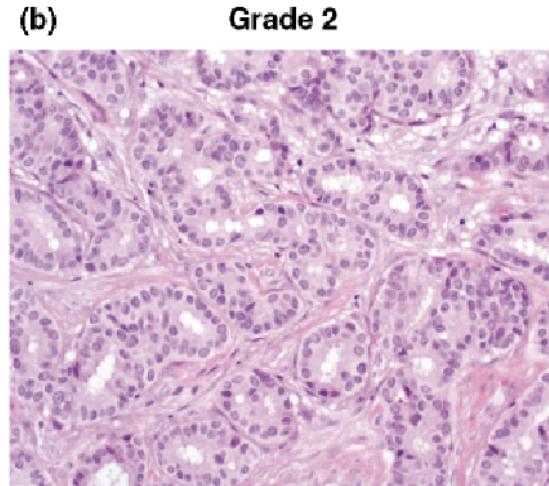
INVASIVE BREAST CANCER



Slow growing (years)

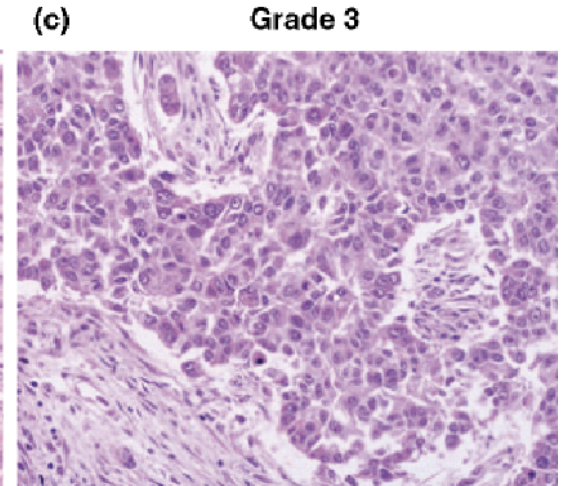
Well differentiated, cells uniform and nuclei similar to normal breast cells

Good Prognosis



(months-years)

Most common; moderate variability in size and shape, cells larger than normal, visible nucleoli



Fast growing (weeks-months)

Aggressive; Cells variable in size and shape, prominent nucleoli

Poor Prognosis

1. *in situ* vs. invasive
2. Histologic subtype
3. Histologic grade
4. Biologic subtype

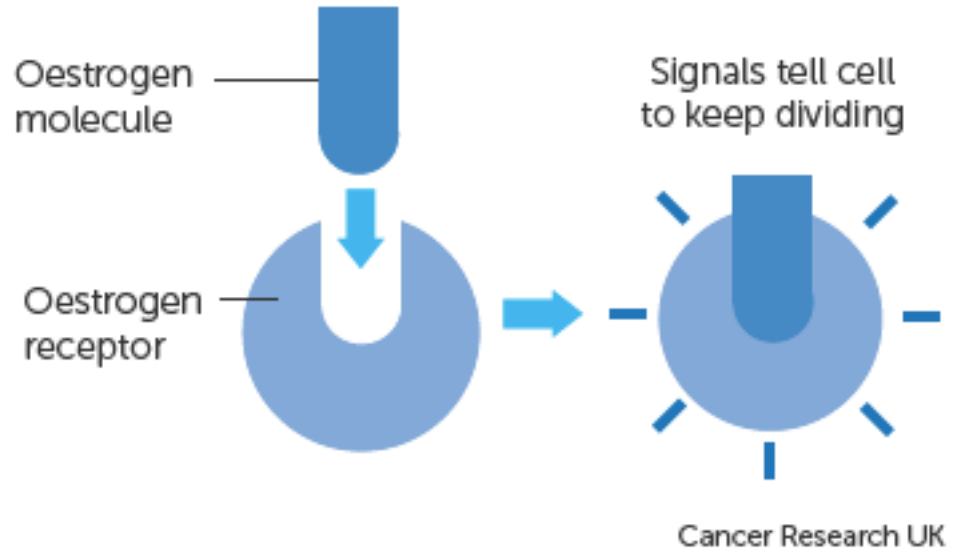
ER+ HER2-

“Hormone-positive”
or “Luminal” (60-65%)

Tend to be low-intermediate grade
with good prognosis

Only treat with chemotherapy if
high risk for recurrence

Always receive endocrine therapy



INVASIVE BREAST CANCER

TREATMENT IMPLICATIONS

Biopsy Result	Implications	Surgery	Radiation*	Chemo	Endocrine
ER+HER2-	“Tumor uses estrogen like food or like fuel”; good prognosis	YES	+/-	+/-	YES

*Decision for radiation depends on surgery and pathologic factors;
if breast conserving surgery or lumpectomy performed, radiation is almost always recommended

BIOLOGIC SUBTYPE

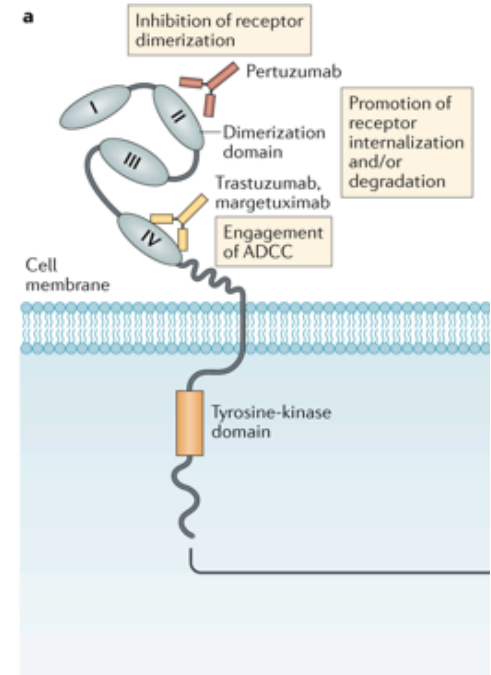
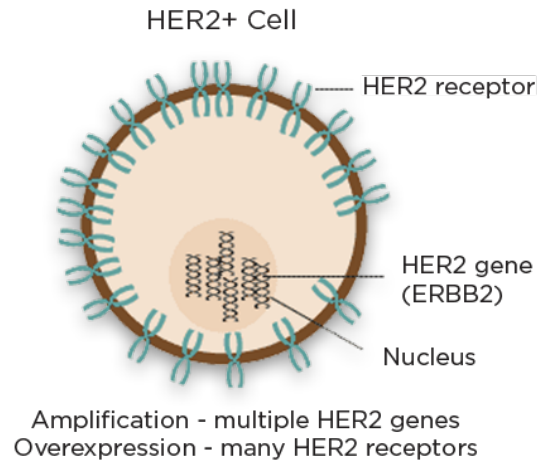
HER2/NEU AMPLIFIED (ER+/- PR+/- HER2+)

HER2+

“HER2-enriched” or “Triple positive” (15-20%)

Tend to be intermediate-high grade

Aggressive & recurs early to liver, lung and brain if HER2-directed therapy (Herceptin) not administered



INVASIVE BREAST CANCER

TREATMENT IMPLICATIONS

Biopsy Result	Implications	Surgery	Radiation*	Chemo	Endocrine
ER+HER2-	“Tumor uses estrogen like food or like fuel”	YES	+/-	+/-	YES
HER2+	“Tumor is aggressive and requires HER2-targeted treatment which includes chemotherapy”	YES	+/-	YES	If ER+HER2+

*Decision for radiation depends on surgery and pathologic factors;
if breast conserving surgery or lumpectomy performed, radiation is almost always recommended

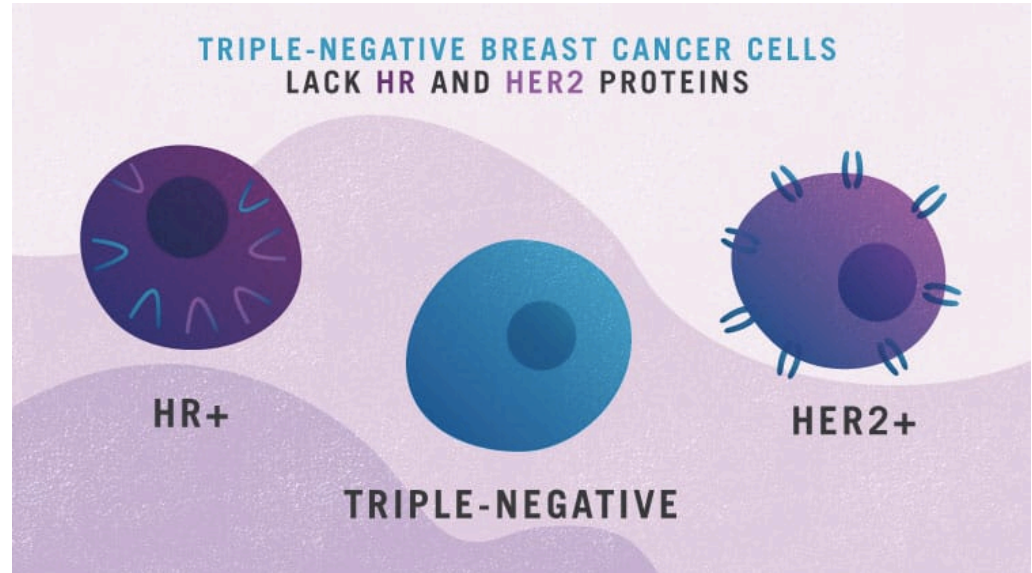
Triple Negative

(15-20%)

Tend to be high grade;
Young women, BRCA1 carriers,
African American and Hispanic
population

Aggressive but chemo-sensitive;
almost always treated with
chemotherapy as there are no good
targeted therapies

Immunotherapy showing promise*



INVASIVE BREAST CANCER

TREATMENT IMPLICATIONS

Biopsy Result	Implications	Surgery	Radiation*	Chemo	Endocrine
ER+HER2-	“Tumor uses estrogen like food or like fuel”	YES	+/-	+/-	YES
HER2+	“Tumor is aggressive and requires HER2-targeted treatment which includes chemotherapy”	YES	+/-	YES	If ER+HER2+
TNBC	“Tumor is aggressive and requires chemotherapy”	YES	+/-	YES	NO

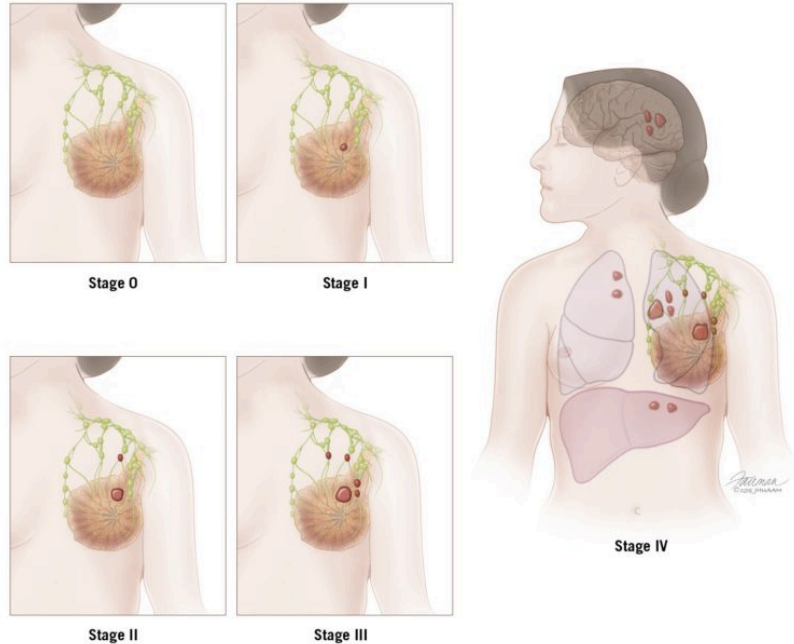
*Decision for radiation depends on surgery and pathologic factors;
if breast conserving surgery or lumpectomy performed, radiation is almost always recommended

Treatment of invasive breast cancer involves a **multimodal approach** including surgery, radiation therapy, chemotherapy, and endocrine therapy that work to remove the breast cancer and prevent it from coming back.

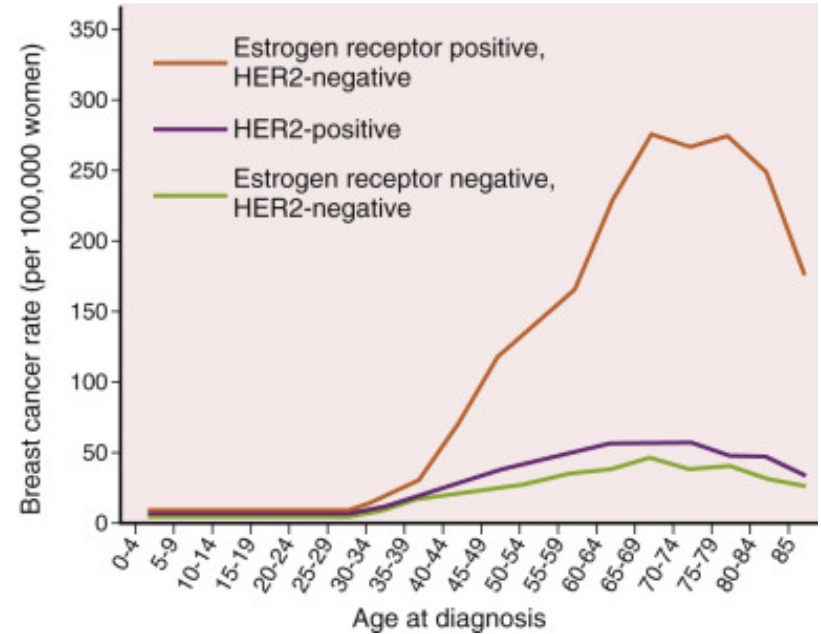
PROGNOSIS

1. *in situ* vs. Invasive
2. Histologic subtype
3. Histologic grade
4. Biologic subtype
5. ... +/- *tumor size, nodal status (imaging reports)*

6-7th Edition: ANATOMIC (TNM)

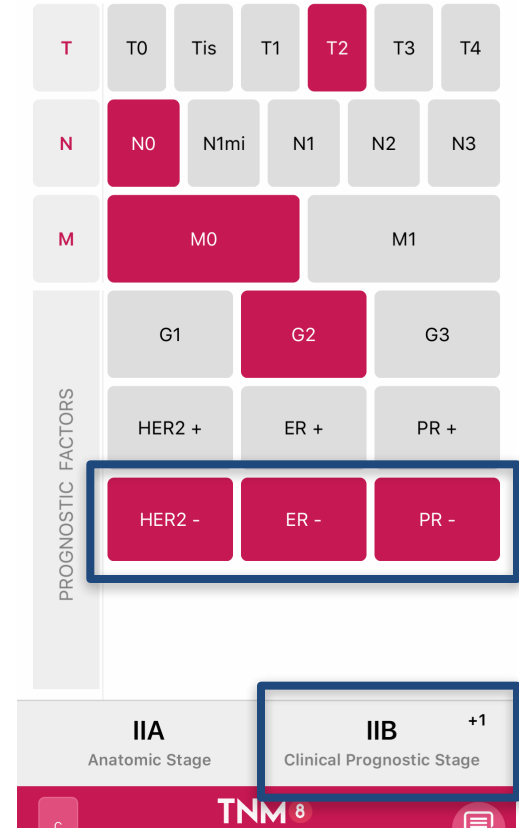
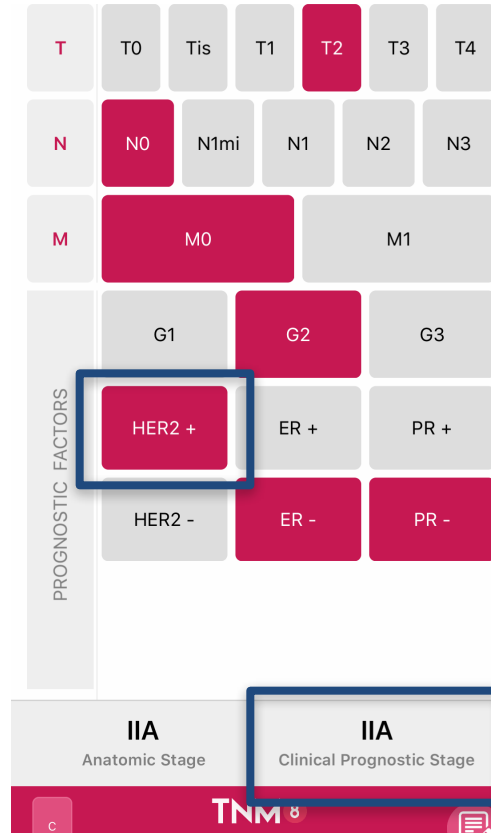
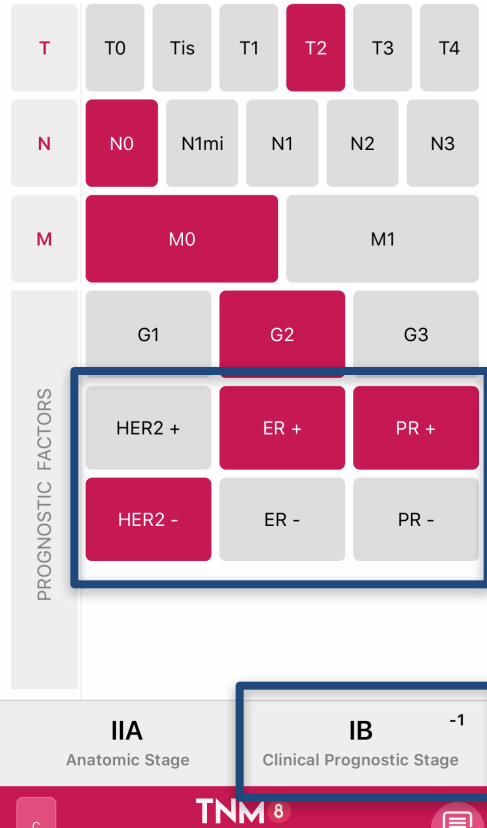


8th Edition: ANATOMIC + BIOLOGIC (GRADE + SUBTYPE)



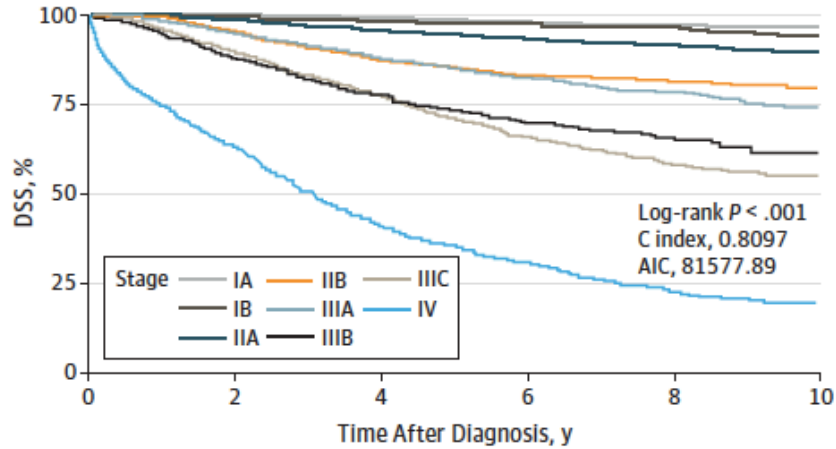
PROGNOSIS: 2 cm, cN-

AJCC 8th EDITION STAGING (2018)



Tumor biologic factors (**biologic subtype**) have become increasingly important for determining both treatment and prognosis.

C California Cancer Registry anatomic stage



D California Cancer Registry prognostic stage

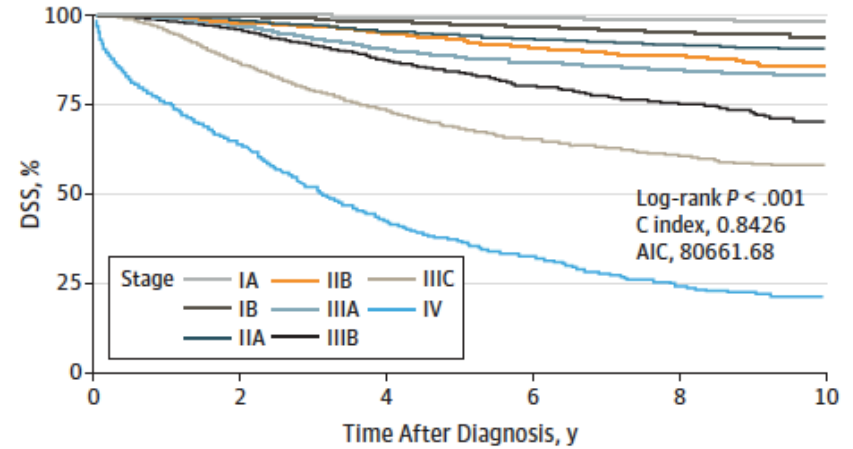


Table 1. Five-Year Disease-Specific Survival (DSS)

Stage	MD Anderson				California Cancer Registry	
	Anatomic Stage		Prognostic Stage		Anatomic Stage	
	No.	DSS (95% CI)	No.	DSS (95% CI)	No.	DSS (95% CI)
IA	1437	99.1 (98.4-99.5)	1072	99.6 (98.8-99.8)	27 553	98.5 (98.4-98.7)
IB	82	100	844	99.3 (98.2-99.8)	1574	98.1 (97.2-98.6)
IIA	999	98.0 (96.5-98.8)	387	97.9 (95.5-99.0)	12 663	94.6 (94.2-95.0)
IIB	110	95.6 (92.3-97.5)	181	97.0 (90.0-99.0)	2175	85.2 (83.6-86.7)
IIIA	183	95.4 (89.7-98.0)	207	95.0 (90.2-97.5)	3690	85.3 (84.1-86.4)
IIIB	NA	NA	101	93.4 (84.6-97.3)	520	73.4 (69.2-77.2)
IIIC	65	79.5 (65.6-88.2)	84	78.0 (66.4-86.0)	1592	70.8 (68.5-73.1)
IV	NA	NA	NA	NA	1215	35.5 (32.7-38.3)

Abbreviation: NA, not applicable.

In 2020, the majority of breast cancers are **treatable and curable** and carry an excellent prognosis.

So what's next?

The **first step** is to meet with a **surgeon**, but you will likely also have a whole team of professionals involved in your cancer care including:

medical oncologists
radiation oncologists
genetic counsellors/genetics
fertility preservation specialists
breast radiologists

breast pathologists
pivot/oncology nurses
geriatric oncology specialists
psychologists and social workers
physiotherapists

“**Hard copies** were the best format for receiving information about their diagnosis: **65% indicated this**, while 33% preferred information digitally, and 2% indicated that they didn’t want any information.”



Breast Cancer
Understanding your diagnosis



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Canadian Breast Cancer Network
Réseau canadien du cancer du sein

INFORMATION

EDUCATION

Breast Cancer Basics

What is Breast Cancer?
Types & Sub-Types
Diagnosing Breast Cancer
Staging
Your Pathology Report
Hereditary Breast Cancer
Male Breast Cancer

Treatment & Side Effects

Surgery
Radiation Therapy
Systemic Therapy
Clinical Trials
Roles of Your Treatment Team
Side Effect Management
Complementary Therapies

Prosthetics & Reconstruction

Breast Prosthetics
Breast Reconstruction
Living Flat or Asymmetrical



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Questions?

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