

# INVASIVE BREAST CASE STUDY

PATIENT 41 Year-Old Female Patient

TUMOR SIZE (cm) 2.3

MENOPAUSAL STATUS Pre-Menopausal

TUMOR TYPE Lobular

ER STATUS (IHC) ER positive

PR STATUS (IHC) PR positive

HER2/NEU STATUS Negative

HISTOLOGIC GRADE 3

LYMPH NODE STATUS Negative

GENERAL HEALTH Good

OTHER INFORMATION Tested on core biopsy, patient had pathological complete response (PCR)

**NODE**  
**Negative**

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# INVASIVE BREAST CASE STUDY

## CLINICAL EXPERIENCE

The Distant Recurrence Risk at 9 Years (Prognosis), in patients with N-, ER+ breast cancer treated with endocrine therapy alone, is provided by the TAILORx<sup>1</sup> trial for RS 0-25 and by the NSABP B-14<sup>2</sup> trial for RS 26-100. Risk is for individual RS results. The 95% confidence intervals for distant recurrence at 9 years are  $\pm 2\%$  or less for RS 0-22, and range from  $\pm 3\%$  to  $\pm 11\%$  as RS increases from 23-50. The TAILORx trial enrolled 10,273 patients and 5,018 patients with RS 0-25 were treated with endocrine therapy (tamoxifen or an aromatase inhibitor) alone. The NSABP B-14 trial enrolled 668 patients who were treated with tamoxifen alone.

The Absolute Benefit of Chemotherapy for all ages is provided by the TAILORx trial for RS 11-25 and by the NSABP B-20<sup>3</sup> trial for RS 0-10 and RS 26-100. Results for the reduction in distant recurrence at 9 years are for the TAILORx-defined RS groups 0-10, 11-25, and 26-100. TAILORx trial enrolled 10,273 patients and 6,711 were randomized to endocrine therapy (tamoxifen or an aromatase inhibitor) alone or endocrine therapy plus chemotherapy (including anthracyclines and/or taxanes). The NSABP B-20 clinical trial enrolled 651 patients who were randomized to treatment with tamoxifen alone or tamoxifen plus CMF/MF chemotherapy. The magnitude of the absolute benefit of chemotherapy was  $\sim 6\%$  at RS 26, and increased as the RS results increased from 26-100, with an average absolute benefit of  $\sim 24\%$  and a conservative group estimate of  $>15\%$  based on the width of the confidence intervals.

## RESULTS

### Recurrence Score®

32

#### Distant Recurrence Risk at 9 Years

With AI or TAM Alone

**20%**

95% CI (15%, 27%)

NSABP B-14

AI = Aromatase Inhibitor / TAM = Tamoxifen  
CI = Confidence Intervals

#### Group Average Absolute Chemotherapy (CT) Benefit\*

RS 26-100 All Ages

**>15%**

95% CI (9%, 37%)

NSABP B-20

\*For estimated CT benefit for individual RS results, see page 2.

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## CLINICAL EXPERIENCE

Exploratory Subgroup Analysis for TAILORx and NSABP B-20 indicate that RS and age are the strongest predictors of chemotherapy benefit. The absolute reduction of distant recurrence from chemotherapy for patients >50 years and ≤50 years is shown here for RS groups: 11-15, 16-20, and 21-25 from TAILORx, and 0-10 and 26-100 from NSABP B-20.

## RESULTS

### Recurrence Score®

32

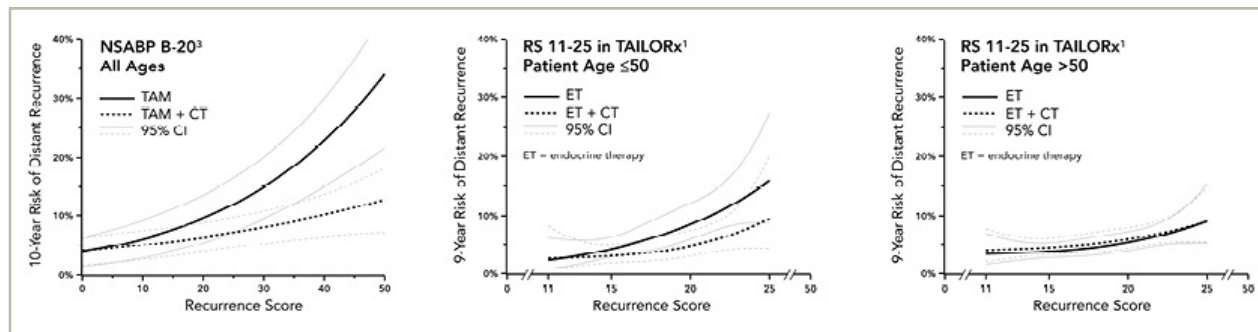
Age	RS 0-10	RS 11-15	RS 16-20	RS 21-25	RS 26-100
>50 years	No CT Benefit (<1%)				>15% CT Benefit
≤50 years	No CT Benefit (<1%)	~1.6% CT Benefit	~6.5% CT Benefit	>15% CT Benefit	

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## ESTIMATED CHEMOTHERAPY BENEFIT FOR INDIVIDUAL RECURRENCE SCORE RESULTS

Recurrence Score ranges shown reflect randomized patients in NSABP B-20 and TAILORx.

32



TREATMENT  
GIVEN:

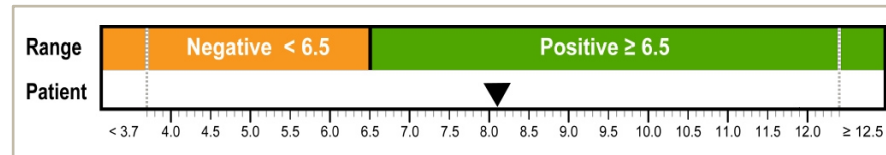
Patient decided neoadjuvant chemo  
based on RS

# INVASIVE BREAST CASE STUDY

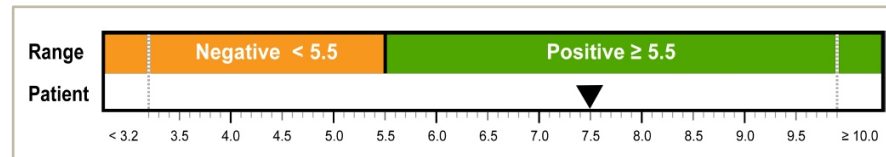
## QUANTITATIVE HORMONE RECEPTOR ANALYSIS

Quantitative Single-Gene Scores for quality control. The Oncotype DX test uses quantitative RT-PCR to determine the RNA expression of ER, PR, and HER2, using the published validated cut-offs<sup>4</sup>. The standard deviations of single-gene results are less than 0.5 units. The RT-PCR single-gene results may differ from ER, PR, or HER2 results reported using other methods or reported by other laboratories.

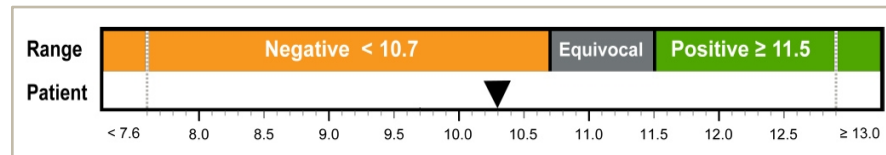
ER Score  
8.1



PR Score  
7.5



HER2 Score  
10.3



### References

1. Paik et al. N Engl J Med. 2004.
2. ER Score based on quantitative ESR1 expression (estrogen receptor); PR Score based on quantitative PGR expression (progesterone receptor).
3. Kim et al. J Clin Oncol. 2011.
4. Badve et al. J Clin Oncol. 2008. May 20;25(15):2473-81
5. Paik et al. ASCO 2005.