

# Patient Priorities in Breast Sensation Among Patients Undergoing Breast Reconstruction

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## INTRODUCTION

- Breast reconstruction restores form and function after mastectomy, but sensory loss is common
- Studies report sensory loss in up to 80% of patients
- Breast sensation impacts body image, sexual function, psychological well-being, quality of life, and satisfaction with breast reconstruction
- Surgical strategies to improve sensation include nipple/flap innervation and nerve optimization (nerve preservation, coaptation, and grafting)
- Limited data exist on which sensation types matter most to patients, and how sensation influences decisions

## OBJECTIVE

Assess patient priorities regarding breast sensation, perceived importance in decision-making, awareness of nerve optimization, and associations with postoperative satisfaction.

## METHOD

- Online survey distributed via breast cancer communities (Breast of Us, Tower Collective, DiepCFoundation Facebook group) from April 2024 to July 2025
- Inclusion Criteria: Female,  $\geq 18$ , history of breast reconstruction for breast cancer
- Primary outcomes:
  - BREAST-Q Satisfaction with Breasts (Post-Op) (score 0-100)
  - BREAST-Q Satisfaction with Information (0-100)
- Statistical Analysis: Descriptive statistics; independent t-tests; multivariable linear regression adjusted for age, cancer stage, income, mastectomy type, and time since reconstruction

## RESULTS

### Patient Demographics

- Total N = 235
- Age:  $55 \pm 11.5$  years
- Time since reconstruction: 5 Years (IQR: 2-11)
- Race: White (90%), Non-White (10%)
- Reconstruction Type: Implant (49%), Free flap (50%), Pedicled (10%)
- Cancer Stage: 0/DCIS (18%); Stage I (34%), Stage II (29%), Stage III (15%), Stage IV (1%)

Figure 1. Pre-operative ranking of most important breast sensations

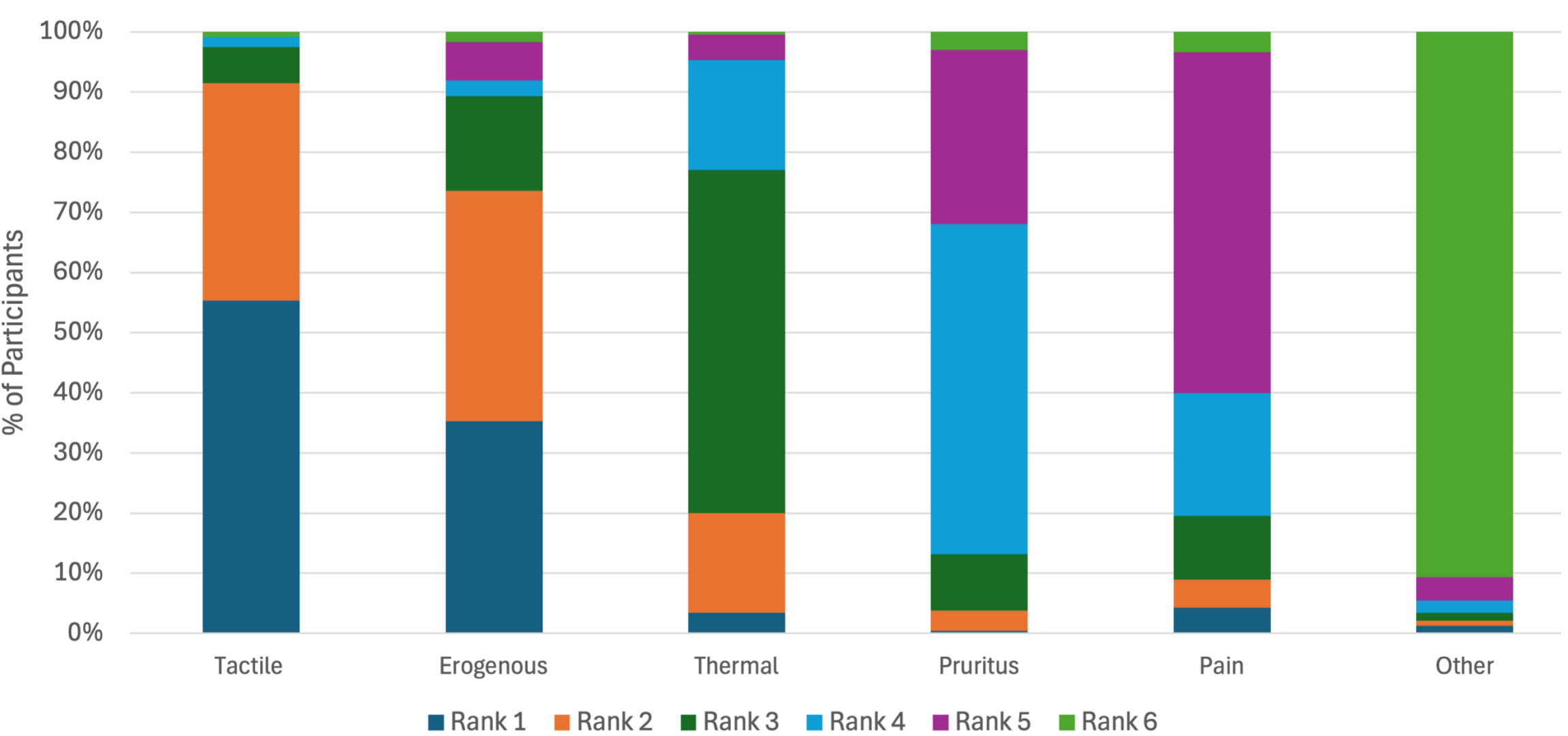


Figure 2. Sensation missed most after breast reconstruction

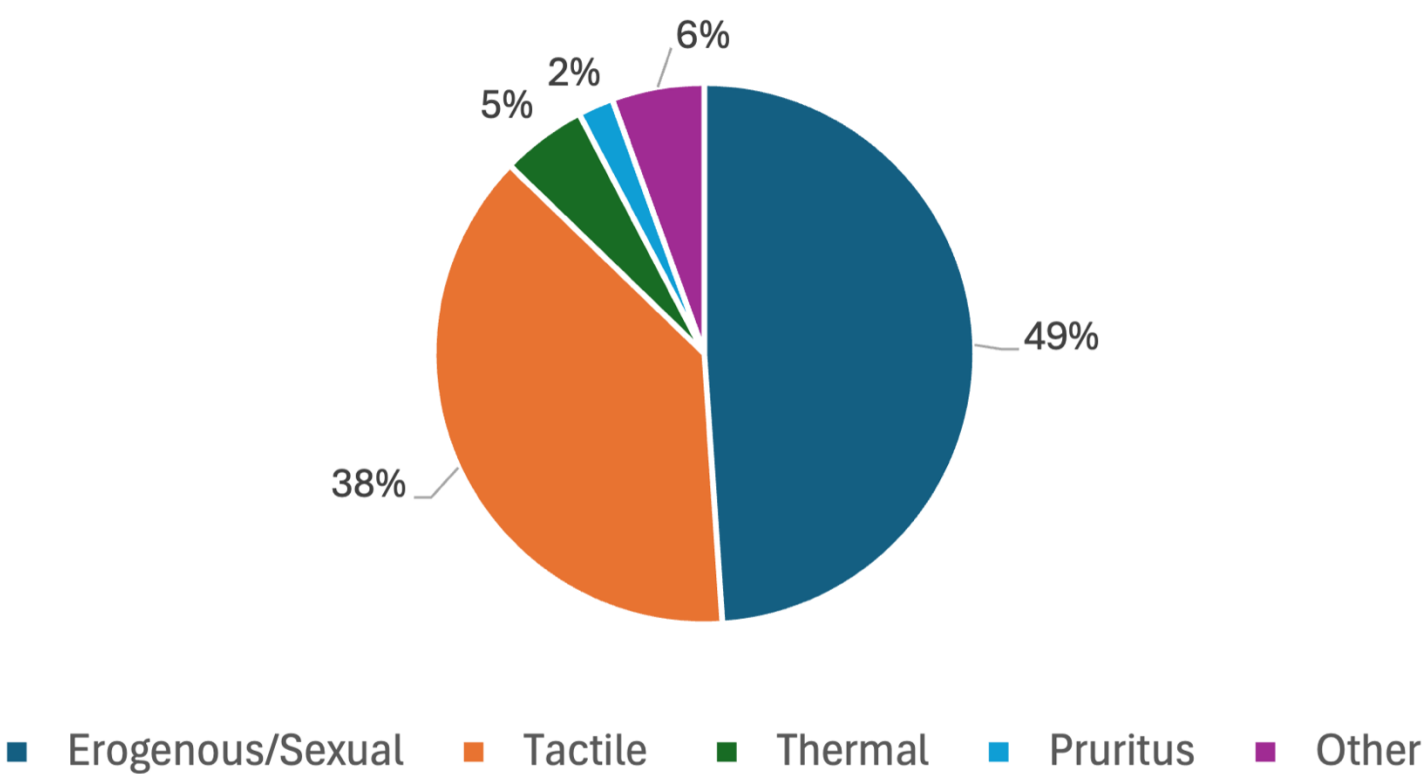
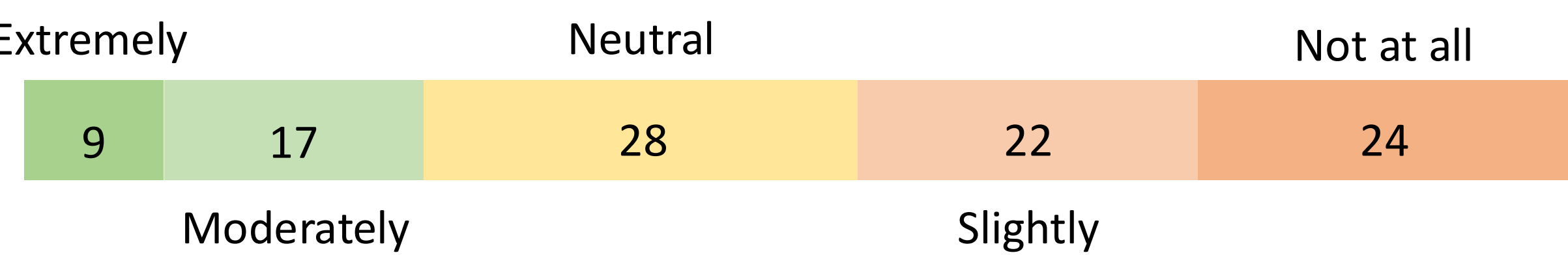


Figure 3. Importance of breast sensation in reconstruction decision making



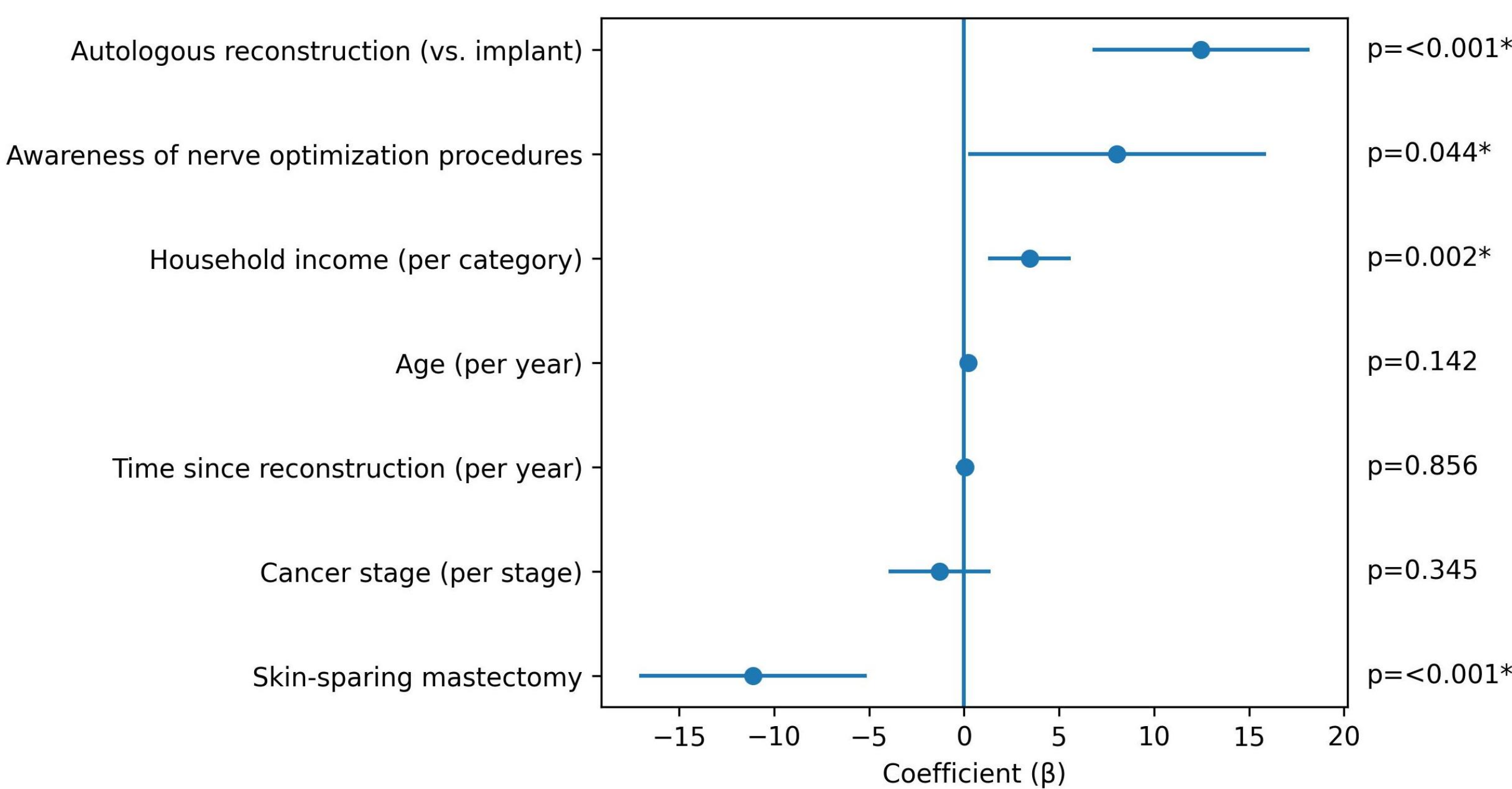
### Consideration of Nerve Optimization

- Aware, considered – 16%
- Aware, did not consider – 5%
- Not aware, would have considered – 54%
- Not aware, would not have considered – 16%
- Unsure – 9%

Table 1. Outcomes by awareness of nerve optimization

| Outcome (mean $\pm$ SD)                  | Aware & considered (n=37) | Not aware but would consider (n=126) | P-value |
|------------------------------------------|---------------------------|--------------------------------------|---------|
| Felt informed (1–10)                     | 8.6 $\pm$ 1.5             | 7.4 $\pm$ 2.2                        | 0.002*  |
| Decision confidence (1–10)               | 8.7 $\pm$ 1.7             | 7.8 $\pm$ 2.4                        | 0.03*   |
| BREAST-Q Satisfaction w/ Info (0-100)    | 69.2 $\pm$ 16.9           | 57.2 $\pm$ 16.7                      | 0.0002* |
| BREAST-Q Satisfaction w/ Breasts (0-100) | 67.7 $\pm$ 22.9           | 53.6 $\pm$ 21.7                      | 0.0008* |

Figure 4. Multivariable linear regression forest plot showing effect sizes ( $\beta$ ) and 95% CIs for predictors of BREAST-Q Satisfaction with Breasts.



## DISCUSSION

- Sensation importance is heterogenous: 26% rate it extremely or moderately important while 24% rate it not important
- Sensory priorities shift from pre- to post-reconstruction
- Most patients were unaware of nerve optimization, yet many would have considered it if informed
- Awareness and consideration is associated with higher satisfaction and confidence

## CLINICAL IMPLICATIONS

Pre-op counseling should:

- Ask each patient which sensations matter most
- Explain tactile vs erogenous vs thermal/protective vs pain/pruritus outcomes
- Discuss nerve optimization options
- Set realistic expectations and recovery timelines

## CONCLUSIONS

- Breast sensation is a critical but under-addressed component of reconstruction
- Awareness of nerve optimization is associated with higher postoperative satisfaction
- Enhancing preoperative education represents a modifiable opportunity to improve patient outcomes

## ACKNOWLEDGEMENTS

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