



# Restoration of Sensation after Gender-Affirming Mastectomy: A Multi-Institutional, Prospective Case Control Study of Quantitative and Qualitative Sensory Outcomes of Targeted Nipple Areola Complex Reinnervation (TNR)

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## BACKGROUND

- Gender-affirming mastectomy (GAM) is one of the most performed gender-affirming care procedures in the US, representing 85% of procedures requested by transmen and nonbinary individuals
- Following GAM patients often complain of numbness and lack of sensation in their chest, which negatively impacts patient quality of life
- Targeted Nipple Reinnervation (TNR) is a method used to restore chest and nipple sensation following surgery
- Our study analyses quantitative and qualitative changes in sensation following GAM with TNR

## METHODS

- Prospective case control study
- 50 patients received GAM
  - 25 with TNR (subjects)
  - 25 without TNR (controls)
- Monofilament and patient-reported outcomes were completed preoperatively and postoperatively at 1, 3, 6, 9 and 12 months
- Pressure, 2-point discrimination, vibration, pinprick, and temperature sensation were tested preoperatively and postoperatively at 12 months.

## RESULTS

Figure 1. Overview of Gender Affirming Mastectomy with Targeted Nipple Reinnervation

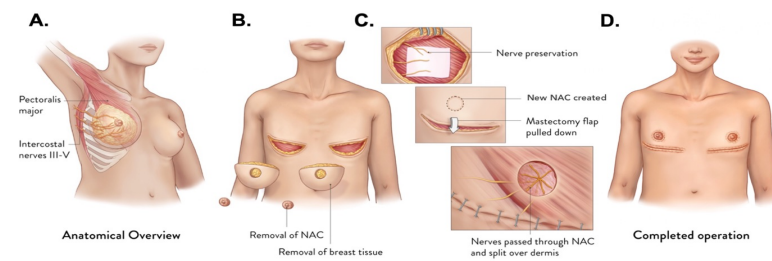
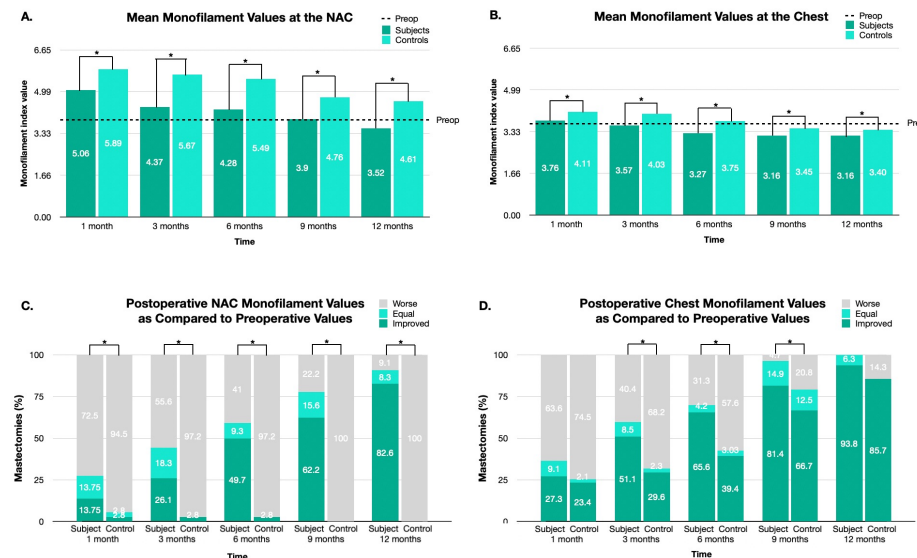


Figure 2. Longitudinal monofilament testing results at the NAC and chest. Dotted black line represents preoperative values. Asterix represents statistical significance of p<0.05.



## RESULTS

### Light Touch Sensation

- NAC and chest light touch values in subjects were significantly better than in controls ( $p < 0.05$ )
- Sensation was comparable to preoperative values starting 3 months and 1 month postoperatively, respectively, among subjects.

### Long term Sensory Outcomes:

- Pinprick, temperature, and pressure all returned to patient preoperative baseline by 12 months in subjects ( $p < 0.05$ )

### Patient Related Outcomes

- Subjects reported:
- Improved erogenous sensation
  - Increased Nipple and chest light touch
  - Decreased phantom pain
  - Transient hypersensitivity within the first three months postoperatively

## CONCLUSIONS

GAM with TNR leads to restoration of sensation to preoperative values by 12 months with less pain and phantom sensation with transient hypersensitivity.

## REFERENCES

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