



Feeling Sensational: Exploring the Impact of Comorbidities on Sensory Return after DIEP Flap Reconstruction

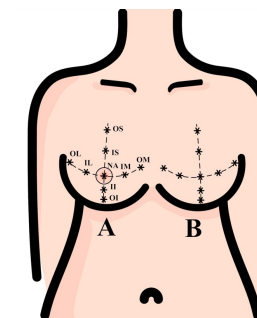
Nancy Qin BA, Grant G. Black BA, Marcos Lu Wang BA, Yunchan Chen BS, David M. Otterburn MD
Division of Plastic and Reconstructive Surgery, Weill Cornell Medicine, New York, NY

Introduction:

- Recent growing emphasis on restoring breast sensation for women undergoing mastectomy and reconstruction
- Post-reconstruction breast numbness and poor sensory restoration remain ongoing issues with few improvements made in recent years.
- Our previous study found that deep inferior epigastric perforator (DIEP) flap reconstruction yields superior sensory return in comparison to implant-based reconstruction.
- The purpose of this study is to identify patient demographics and comorbidities that may impact nerve regeneration in order to better set expectations and optimize outcomes.**

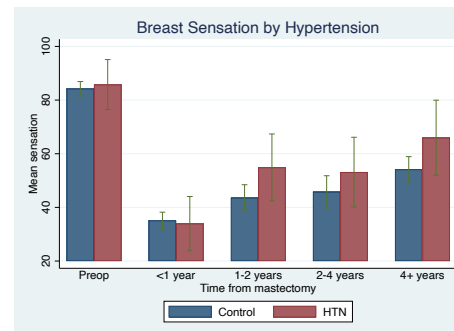
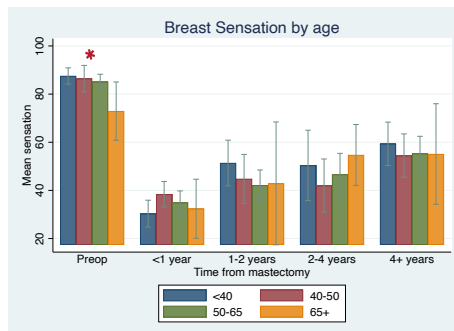
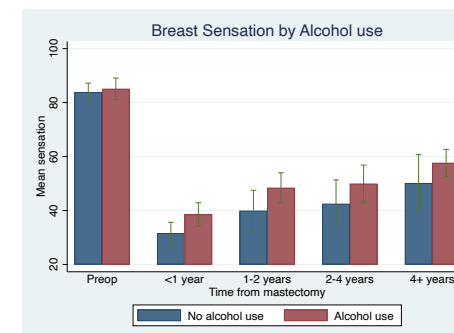
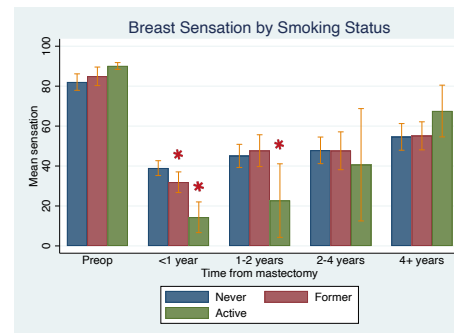
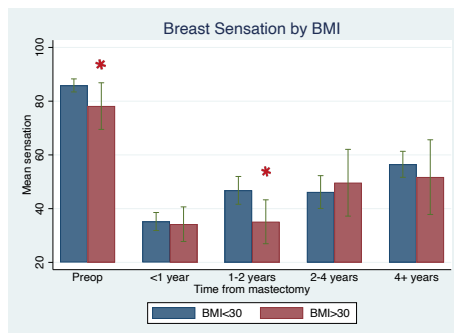
Methods

- Prospective study: Identified patients undergoing mastectomy with either tissue expander (TE) or neurotized DIEP flap breast reconstruction
- Neurosensory measurements obtained at pre-defined time points
 - Preoperative, <1 year, 1-2 years, 2-4 years, and 4+ years after reconstruction
- Neurosensory testing:
 - AcroVal pressure-specified sensory device
 - 1-point static cutaneous thresholds measured
 - Measured in 9 distinct regions
 - Values averaged and scaled on a 0-100 point range; higher values indicate increased sensitivity.



Results:

- 131 patients total
- Patients were grouped by comorbidities (obesity (BMI>30kg/m²), age, smoking status, hypertension, and alcohol use)
- At baseline**
 - Increased age (-0.32 sensation points/year, p<0.01) and obesity (-9.24 points, p<0.02) were significantly correlated with decreased breast sensation
- At <1-year post-mastectomy**
 - Former (-9.99, p<0.01) and active (-23.2, p<0.01) tobacco use were significantly correlated with decreased breast sensation.
- At 1-2 years post-mastectomy**
 - Obesity (-16.93, p<0.02) and active tobacco use (-30.1, p<0.03) were found to be significant factors.
- At 2-4 years post-mastectomy**
 - None of the comorbidities significantly impacted overall sensation.
- At >4-years post-mastectomy**
 - None of the comorbidities significantly impacted overall sensation.



Conclusions:

- Our findings can help set expectations and guide pre-operative patient counseling.
- Smoking status and BMI had observable effects on breast sensation during the first two years following mastectomy.
- Our findings suggest that the regenerative capabilities of breast sensory nerves is largely independent of patient comorbidities in the long run.