

## **Prophylactic Nipple-Sparing Mastectomy in Young Previvors: Examining Decision-Making, Reconstructive Outcomes and Patient Satisfaction in BRCA+ Patients Under 30**

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**Background:** Prophylactic nipple-sparing mastectomies (NSMs) in young “previvors” with high-risk genetic mutations are rising dramatically with increasing awareness of cancer predispositions and genetic testing. However, there is a paucity of data on patient management, appropriate timing of diagnostic and interventional therapies, and surgical and patient-reported outcomes.

**Methods:** A retrospective review of BRCA+ patients under the of age 30 undergoing prophylactic NSM from 2006-2018 at a single institution was performed. Demographics, indications, referral trends, operative characteristics and reconstructive outcomes were analyzed. A survey was developed to query patient decision-making, utility of available patient resources, decisions for undergoing surgery and preoperative patient comprehension. Patients also completed BREAST-Q surveys to evaluate satisfaction and quality of life.

**Results:** Twenty-two patients (44 breasts) ages 23 to 29 (mean 27) underwent prophylactic NSM for BRCA1 (68.2%) and BRCA2 (31.8%) diagnoses. Average age of genetic diagnosis was 22.9 after which patients waited, on average, 4.1 years to surgery. Most patients were referred by breast surgeons (45.5%), though 22.7% presented initially to plastic surgeons. Eighty-two percent of patients had a first-degree relative with BRCA or breast cancer diagnoses.

All patients underwent immediate reconstructions with two-stage tissue expanders (77.3%), immediate implants (18.2%), or abdominal perforator flaps (4.5%). There were no cases of complete nipple or major mastectomy flap necrosis. Four breasts (9.1%) had partial nipple necrosis resolved with wound care. There were no cancer occurrences within a mean follow-up of 40 months.

Eleven patients completed surveys at an average of 28.8 months postoperatively. Most patients (63.6%) cited family advice and personal decisions (fear of getting cancer; peace of mind) as the most important reasons for genetic testing, and personal decision (63.6%) for mastectomy. 81.8% cited recommendations of their plastic surgeon as the most important influence in reconstructive modality. 81.8% of patients would undergo mastectomy and 90.9% reconstruction at the same age. 63.6% of

patients felt they completely understood risks and benefits of NSM and 72.7% of reconstruction. Patients reported high BREAST-Q scores for Satisfaction with Breasts (74.6), Satisfaction with Information (79.3), Physical Well-Being (82.9), Psychosocial Well-Being (79.9) and Sexual Well-Being (83).

**Conclusions:** Young adults with high-risk mutations undergoing prophylactic NSM and reconstruction have low rates of complications and high satisfaction and quality of life. Decisions to undergo testing and surgery are highly personal, though health-care professionals are influential in treatment choices. Continued development of educational resources is needed to optimize shared decision-making in the reconstructive process.