loss of projection and volume. Available commercial scaffolds similarly are unable to maintain projection after only one year post-operatively. We have previously developed a novel technology using biocompatible 3D-printed scaffolds that have demonstrated the ability to maintain the volume, projection and contour of neo-nipples engineered from autologous costal cartilage (CC). Herein, we compare two alternate methods of processing CC, zesting and mincing, and their effect on the ultimate biomechanical properties of the fabricated tissue.

Methods: Custom external scaffolds were designed and 3D-printed using polylactic acid (PLA). Patient derived CC was minced into approximately 2-3mm3 portions or flaked by processing with a zesting device into larger 5-6mm3 portions. In both the minced and zested groups, half of the samples were packed into 3D-printed PLA scaffolds (the “scaffolded” group), and in the remainder, an equal volume of processed cartilage was wrapped in Surgicel® only (the “naked” group). The constructs were implanted into nude rats by creating a subcutaneous pocket using a CV flap technique. After 3 months, histological, topographical, and gross analysis were performed on explanted neo-nipples. Biomechanical analysis was performed using confined compression with 5% strain per step up to 30% compression. Samples were prepared with 3mm biopsy punches and cut to 2mm in height for placement into the compression chamber.

Results: After 3 months, analysis of biomechanical properties of explanted neo-nipples in the four groups (minced scaffolded, minced naked, zested scaffolded, and zested naked) revealed no significant difference in equilibrium modulus between the native human nipple and minced scaffolded (p = 0.53), minced naked (p = 0.99), zested scaffolded (p = 0.98), or zested naked (p = 0.99) neo-nipples, representing strong recapitulation of native biomechanical properties. Neo-nipples in the zested naked group had the lowest average difference in equilibrium modulus, and thus the greatest similarity to the biomechanical properties of the native human nipple (20.48 kPa). Hematoxylin and eosin staining in both groups showed the presence of healthy and viable cartilage after 3 months in-vivo which was confirmed by LIVE/DEAD assay. Formation of fibrous tissue around the processed CC was noted in both groups. Furthermore, the resultant tissue was spongy and compressible much like a native nipple.

Conclusion: We demonstrate that autologous CC, which is usually discarded during a DIEP procedure, can be processed by either zesting or mincing to tissue engineer a viable implant for nipple reconstruction that maintains the biomechanical properties of the native nipple. While our group has previously shown that tissue engineered neo-nipples preserve volume, projection and contour over time, the ability to tissue engineer nipples with similar biomechanical properties to the native human nipple represents a significant advancement.

135

Medicare Reimbursement Rates For Common Plastic Surgery Procedures: An Analysis From 2000 To 2019

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Purpose: Knowledge of financial trends of Medicare reimbursement is essential for plastic surgeons providing care to Medicare beneficiaries in both private and non-private settings. We sought to evaluate changes in Medicare reimbursement for common plastic surgery procedures from 2000 to 2019.

Methods: We obtained appropriate approval and we assessed the records of the Physician Fee Schedule of the Centers for Medicare and Medicaid Services website. We extracted rates of work, facility, or malpractice related relative value units, and total units for twenty common plastic surgery procedures from 2000 to 2019. We then applied descriptive statistics to calculate relative differences and compare the observed changes over time with the inflation rate.

Results: Unadjusted relative differences were ranging from -16.98% to +41.6%. However, after adjusting for inflation rates, we found that adjusted percent change was negative for all procedure (range: -44.32% to -5.04%). In particular, from 2019 to 2000, Medicare reimbursement was statistically significantly decreased by 21.81% on average for total compensation, 29.06% for physicians work compensation, and 16.71% for facility related compensation, while it was increased by 26.6% for malpractice related compensation.
**Conclusion:** Medicare reimbursement rates have changed significantly during the last two decades. However, those changes did not seem to follow the inflation trend. It is important that plastic surgeons and policymakers are aware of these trends and public discussion should be continued for establishing fair reimbursement rates.

136

**Patient Experiences With Cost Discussions And Financial Toxicity In Breast Reconstruction**

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**Purpose:** The burden of healthcare costs in the United States is increasingly passed on to patients in the form of out-of-pocket spending. Although there is growing awareness of the financial toxicity associated with breast cancer treatment, there is a paucity of patient-reported data about the impact of out-of-pocket spending for breast reconstruction. This study aims to quantify the out-of-pocket costs associated with breast reconstruction and the impact of those costs on the financial wellbeing of patients. In addition, this study seeks to characterize patient experiences and expectations regarding cost discussions on breast reconstruction with their plastic surgeon.

**Methods:** Women (>18 years old) with a history of breast cancer who had undergone post-mastectomy breast reconstruction at least 1-year earlier are being recruited from the Army of Women Foundation (an online community of women with and without breast cancer engaged in breast-cancer related research) to complete a 34-item survey. In addition to their demographic and medical information, we are surveying women on their estimated out-of-pocket medical and non-medical spending for their breast reconstruction and its impact on their financial status. We are also surveying women on their preferences regarding cost discussions on breast reconstruction with their plastic surgeon. This study is still actively recruiting.

**Results:** A total of 403 women have responded and met inclusion criteria. The majority (n=361, 90%) were Caucasian, had a Bachelors or Graduate degree (n=338, 84%), a combined household income of ≥ $50,000 (n=292, 73%) and insurance through an employer or union (n=236, 59%). Most women underwent bilateral reconstruction (n=294, 73%) and implant based breast reconstruction (n=249, 62%). Most women (n=244, 61%) reported out-of-pocket medical costs of under $2,000, but a fifth spent more than $5,000 (n=82, 20%). Out-of-pocket non-medical costs were lower (<$2,000, n=343, 85%; >$2,000, n=58, 14%). Of the women (n=339) who remembered their conversations on breast reconstruction with their plastic surgeon, most did not discuss costs before or after (n=222, 66%). Of the 222 women that did not, 160 (72%) felt it would have been helpful to have had this discussion before pursuing breast reconstruction and 125 (56%) after. Due to the direct impact of undergoing breast reconstruction, 97 women (24%) felt their financial status was worse off, 40 women (10%) felt their economic status was worse off, and 66 women (16%) felt their insurance status was worse off. Of the 97 women, the majority (n=55, 57%) did not have a cost discussion with their plastic surgeon before or after pursuing breast reconstruction.

**Conclusion:** The majority of women in this cohort did not have a discussion with their plastic surgeon on costs related to breast reconstruction but would have preferred receiving this information before undergoing surgery. Despite a high proportion of insured patients in this cohort with higher household income than the national mean, almost a quarter felt their financial status was worse off after undergoing breast reconstruction. Cost discussions related to breast reconstruction may be useful in preoperative visits with patients to help prepare for postoperative expenses and financial repercussions.

137

**National Trends In Hospitalization Charges For Implant Based Breast Reconstruction**

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**Purpose:** Implant based breast reconstruction is the most commonly used type of breast reconstruction. There exists significant cost variation among patients undergoing..