PURPOSE: Breast reconstruction is uniquely personal with many options available for patients and surgeons to consider. Among the methods of autologous breast reconstruction, abdominal based free flaps (ABFFs) including the transverse rectus abdominis myocutaneous (TRAM), deep inferior epigastric perforator (DIEP), and superficial inferior epigastric artery (SIEA) flaps are the most common, with pedicled latissimus dorsi (LD) flaps as an alternative. While there is data to suggest that autologous tissue is advantageous, there are few studies directly comparing ABFFs and LD with an implant. The purpose of this study was to compare these methods of reconstruction in terms of post-operative outcomes and patient reported outcomes in a multi-centered cohort.

METHODS: The patients included were part of the Mastectomy Reconstruction Outcomes Consortium (MROC) multicenter cohort study of 11 centers (57 providers). Those undergoing autologous-based reconstructions with either an ABFF (DIEP, TRAM or SIEA flaps) or LD flaps and had at least one year of follow up were included. Reconstructive procedure choice was based on patient and surgeon preferences. One-year post-operative complications and revision procedures were recorded. Pre-operative and one-year post-operative patient reported outcomes were measured using the BREAST-Q. Mixed effects regression models were used to control for a range of demographic and clinical covariates.

RESULTS: A total of 834 patients undergoing autologous breast reconstruction were included (90.6% ABFF vs. 9.4% LD). In general, reconstruction was more likely to be immediate and unilateral. There was a significantly lower rate of major complications in the LD cohort compared to ABFFs (odds ratio 0.43, 95% confidence interval 0.2–0.92); there were no significant differences in the rates of overall complications (P=0.96) or revision procedures (P=0.07). There were no differences in physical (P=0.34), psychosocial (P=0.82), sexual well being (P=0.66), or overall patient satisfaction (0.65) between the LD and ABFF patients. Delayed reconstruction and age were associated with significantly higher post-operative BREAST-Q scores regardless of type of reconstruction.

CONCLUSIONS: Although LD flap reconstruction has a lower risk of major complications, overall complications and revision rates were similar with ABFF reconstruction in this large, multi-center outcomes study. Patient reported outcomes at one year are comparable between the two cohorts.

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Biosynthetic Mesh Compares Favorably to ADM in Tissue Expander-Based Breast Reconstruction

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PURPOSE: Acellular dermal matrix (ADM) is commonly utilized during immediate expander-based breast reconstruction, with potential advantages of greater intraoperative expansion, decreased time to complete expansion, and decreased rates of capsular contracture. However, ADM is associated with increased infection rate, seroma, and subsequent reconstructive failure. Poly-4-hydroxybutyric acid (P4HB) mesh is a large pore, biosynthetic scaffold shown to fully resorb and incorporate host tissues within 18 months in pre-clinical data. We sought to compare outcomes between the use of P4HB and ADM in immediate expander-based reconstruction.

METHODS: Here we review 110 cases (64 patients) of breast reconstruction by a single surgeon (DMO) using P4HB mesh from October 2014 to June 2016 compared to 198 cases (113 patients) of ADM between November 2011 and October 2014. In all patients, reconstruction was performed immediately following mastectomy for confirmed or high genetic risk cases of breast cancer. Data was analyzed by Fisher’s exact test or unpaired T-tests. IRB approval was obtained for purposes of this study.

RESULTS: Groups were similar in terms of patient characteristics and age (mean 50 yo P4HB vs 48 yo ADM; p=0.17). Overall infection rates were lower, but not significantly different between P4HB and ADM (8% vs 15%, p=0.27). In cases of infection, implants were removed in 6% with P4HB versus 8% with ADM (n=7/110 vs. 15/198; p=0.82). Patients who underwent external beam radiation (XRT) were higher in the ADM group (37% vs 28%; p=0.25), though not statistically different. Similar numbers of patients received chemotherapy in each group (42% P4HB vs 46% ADM; p=0.64). Of patients who underwent XRT, fewer infections were seen with P4HB (13%
vs 26%; p=0.1). Cost of P4HB mesh was approximately $14/cm² compared to $25/cm² for ADM (44% less expensive).

CONCLUSIONS: These data show biosynthetic P4HB mesh to be a safe alternative to ADM in expander-based breast reconstruction, with trends toward decreased rates of infection and need for device removal using P4HB mesh. There was also a trend toward decreased infection rates in P4HB patients that were not radiated. Although our results are limited to a small series of initial patients, P4HB porous mesh may be a promising novel technique to decrease complications inherent to use of ADM.

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Long-Term Satisfaction in Young Reduction Mammaplasty Patients: a 30 Year Follow-Up Using the Breast-Q

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PURPOSE: Reduction mammaplasty is the most effective means of improving symptomatic macromastia. Although studies have shown lasting improvement in middle-aged patients, there is a paucity of data regarding young patients. With the growing obesity epidemic, more young patients are requesting reduction mammaplasty, signifying a need for long-term outcomes data. We hypothesize that young reduction mammaplasty patients experience excellent long-term quality of life and overall satisfaction.

METHODS: Female patients less than 25 years of age who underwent reduction mammaplasty by a single surgeon from 1980–2004 were identified (n = 134). Contact information was obtained for 52 patients, for which 47 consented to participate. These patients were then mailed BREAST-Q Post-Operative Reduction Module surveys. Completed surveys were scored on a scale of 0–100 using the Qscore software. Demographic characteristics, comorbidities, surgical details, and length of follow-up were also reviewed.

RESULTS: Thirty-six surveys were returned (response rate: 76.6%). The average age at surgery was 20.2 years (range: 12.4–24.6 years), with a mean follow-up of 21.2 years (range: 11.4–32.4 years). The mean BMI at surgery was 29.2. The inferior pedicle reduction technique was used in all cases. For satisfaction domains, mean scores were as follows: breasts, 66.9; outcome, 78.1. Regarding quality of life domains, mean scores were as follows: psychosocial, 76.1; sexual, 72.8; physical, 81.0. BMI <25 at the time of surgery was not a statistically significant predictor of long-term satisfaction or well-being.

CONCLUSION: This study provides the longest follow-up of young reduction mammaplasty patients, and it is the only study to use the validated BREAST-Q in this population. Compared to normative values, young reduction mammaplasty patients more than ten years out from the procedure demonstrated higher scores across all domains. Surgeons should be aware of these data and advocate for their young patients to gain access to care.

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Implant-Based Breast Reconstruction and the Timing of Adjuvant Radiotherapy: A Systematic Review and Meta-Analysis of Surgical Outcomes

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PURPOSE: Implant-based breast reconstruction is the most common type of reconstruction. Outcomes of breast reconstruction are worse following post-mastectomy radiation therapy (PMRT), however, the impact of factors like timing, duration and dosage remain poorly understood. The impact of the timing of PMRT relative to the course of reconstruction is perhaps one factor that can be potentially modified by reconstructive surgeons. The systematic review aims to evaluate surgical outcomes following implant-based reconstruction in the setting of PMRT.

METHODS: A systematic review of the English literature published from 2000 to 2016 in the PubMed/MEDLINE electronic database was performed to identify all manuscripts reporting outcomes of implant-based breast reconstruction in patients receiving PMRT. Patients in each study were grouped by timing of PMRT relative to reconstructive