

## **Age and abdominal wall strength: assessing the aging abdominal wall after autologous breast reconstruction**

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**Background:** Free tissue transfer is safe in advanced age, yet the average age of women undergoing autologous breast reconstruction is skewed toward a younger patient population. While older women may be less likely to desire reconstruction, those that do are often directed to alloplastic methods, even with multiple studies advocating good outcomes and quality of life following autologous reconstruction. The purpose of our study was to better understand the effects of autologous reconstruction on the aging abdomen, in an effort to better counsel older patients who may consider autologous breast reconstruction.

**Methods:** This study was part of an ongoing, prospective cohort study assessing 3 measures of abdominal strength (upper and lower abdominal strength, and a functional independence measure) following free flap breast reconstruction using abdominal tissue. Several psychometric variables were also assessed. All enrolled women who underwent DIEP or msfTRAM procedures between 11/2006 and 3/2010, with preoperative and long term follow up (>120 days) data were included in this analysis. Preoperative and long term time points were examined in patients  $\geq 60$  years old as compared to patients <60 for both unilateral and bilateral reconstructions.

**Results:** 145 patients were included in analysis, with a mean age at reconstruction of 52.0 (7.3) and 50.3 (9.1) for unilateral and bilateral patients, respectively. Eleven of 69 unilateral reconstruction and 13 of 76 bilateral reconstruction patients were  $\geq 60$  years old. For unilateral reconstructions, no significant differences were noted between age groups comparing absolute scores for the upper abdomen, lower abdomen, or the functional independence measure at either time point. When examining scores over time within the cohorts, a slight decrease in upper abdominal strength was noted in the younger cohort ( $p=0.01$ ). No significant differences were noted in the degree of change in abdominal strength comparing patients <60 and >60. Analyses revealed no differences in satisfaction with abdominal function, as both groups reported being very satisfied. Lastly, no differences in hernia or bulge occurrence was observed ( $p=0.42$ ). Bilateral analyses also revealed no differences in absolute abdominal function scores between the two groups. Examining upper abdominal strength over time within groups, slight score decreases were noted for both <60 years ( $p<0.001$ ) and >60 years ( $p=0.04$ ). No differences were observed comparing the overall degree of change at late follow up. Several differences were noted on analysis of patient satisfaction, as patients >60 were slightly more satisfied with their abdominal strength compared to patients <60 ( $p=0.05$ ). Similarly, this cohort was more satisfied with sensation ( $p=0.03$ ) and scarring ( $p=0.008$ ) of the breast reconstruction. Younger patients were more likely to state that the breast reconstruction had some effect on decreasing their sense of being bothered in intimate situations ( $p=0.02$ ). Finally, rates of hernia or bulge were not different between the bilateral reconstruction groups ( $p=1.0$ ).

**Conclusions:** Autologous breast reconstruction with abdominal tissue can safely be performed in patients over the age of 60, with little to no difference in postoperative abdominal function as compared to younger patients. Such patients may be more satisfied with their surgical outcomes.