TURUN YLIOPISTO

Latissimus Dorsi with Immediate Fat Transfer Flap versus Deep Inferior Epigastric Perforator Flaps for Autologous Breast Reconstruction: A Retrospective Comparison of 400 Patients

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Breast reconstruction is a procedure that is commonly used after mastectomy. Nowadays, autologous tissue use has become the cornerstone for breast reconstruction. In this study, we compared two methods of autologous breast reconstruction: the fat-augmented latissimus dorsi flap (FALD) and the deep inferior epigastric perforator flap (DIEP). The purpose of this study was to evaluate and compare postoperative outcomes and overall complication rates between FALD and DIEP breast reconstruction techniques.

This retrospective study compared outcomes of FALD and DIEP reconstruction in 400 patients treated at Turku University Hospital between 2009 and 2024. Of these, 130 patients underwent FALD reconstruction and 270 underwent DIEP reconstruction. Demographic data, operative details and postoperative complications were analyzed.

The overall complication rates were similar between the two groups. DIEP reconstructions had longer operative times, hospital stays, and wound healing issues. Immediate contralateral symmetrization and seromas were more frequent in the FALD group. Both techniques demonstrated comparable safety profiles. While the DIEP flap remains the gold standard for autologous breast reconstruction, FALD procedures may offer a less complex postoperative course. Moreover, FALD provides a viable autologous option for surgeons without microsurgical expertise or access to microsurgical facilities.

Avainsanat: Rintarekonstruktio, LD-rekonstruktio, DIEP-rekonstruktio, postoperatiivinen komplikaatio

Abstract

Background: Autologous breast reconstruction is associated with higher long-term patient satisfaction and quality of life compared with implant-based approaches. The latissimus dorsi flap with fat transfer of fat-augmented latissimus dorsi flap (FALD) offers an alternative to abdominally based free flaps (Deep Inferior Epigastric Perforator, DIEP), enabling fully autologous reconstruction for surgeons without microsurgical expertise. We aimed to evaluate and compare the clinical outcomes of these two techniques at long-term postoperatively.

Methods: A retrospective review was conducted on patients who underwent FALD or DIEP breast reconstruction between January 2009 and December 2024 at Turku University Hospital. Data collected included demographics, breast volume, medical history, smoking status, complications, and patient-reported satisfaction. The primary outcome was the incidence of postoperative surgical site complications, while secondary outcomes included procedure-specific complications and rates of reoperation during follow-up. Comparative analyses were performed using Student's t-test for continuous variables, the Mann-Whitney U test for nonparametric data, and the Chi-squares test for categorical variables.

Results: A total of 400 patients were included: 130 underwent FALD, and 270 underwent DIEP reconstruction. The mean follow-up was 58.8 ± 56.0 months. Patient demographics differed between groups, with the FALD cohort being older and having higher rates of hypertension and smoking history. In contrast, neoadjuvant therapy, as well as adjuvant radiotherapy and chemotherapy, were significantly more common in the DIEP group.

Operative time and length of hospital stay were significantly longer in the DIEP group, whereas immediate contralateral symmetrization was more frequently performed in the FALD group. Overall postoperative complication rates were comparable between groups (47.7% vs. 48.0%, $p = 1.000$). However, the DIEP group showed significantly higher rates of wound dehiscence, fat necrosis, and hematoma, while seromas were more frequent in the FALD group.

Early reoperations (<30 days) occurred more often in the DIEP cohort, whereas late reoperations did not differ significantly. Multivariable analysis did not identify independent predictors of postoperative complications; however, diabetes demonstrated a trend toward significance, with an odds ratio of 2.9.

Conclusions: While the DIEP flap remains the gold standard for autologous breast reconstruction, fat-augmented latissimus dorsi (FALD) procedures may offer a less complex postoperative course.

FALD may be particularly advantageous for patients with significant comorbidities to minimize postoperative complications. Moreover, it provides a viable autologous option for surgeons without microsurgical expertise or access to microsurgical facilities.

Introduction

Mastectomy is a common procedure in the treatment and prophylaxis of malignant breast disease, and with known psychological benefits from post-mastectomy reconstruction, various breast reconstruction procedures have become a significant part of the management of breast cancer [1]. Breast reconstruction to alleviate the cancer treatments' impact on daily functioning and living, enhance body image, and reduce symptoms of depression and anxiety [2]. Nowadays, autologous tissue use is the cornerstone for breast reconstruction. The benefits of using autologous techniques are widely recognized, including the employment of the body's own tissues, the capability to form a breast that appears more natural, the elimination of the need for synthetic materials, and the durability of the outcomes [3].

The first documented autologous breast reconstruction was performed by Verneuil in 1887, using a pedicled flap taken from the opposite breast. Shortly afterward, Czerny built on this approach by using a lipoma to repair a lumpectomy defect [4]. The most common autologous breast reconstruction method today is the deep inferior epigastric perforator (DIEP) flap [3]. The concept of the deep inferior epigastric perforator (DIEP) flap was first introduced by Koshima in 1989. It was Robert Allen who later adapted the DIEP flap for breast reconstruction in 1994. Over time, this method has become recognized as the premier choice for free flap breast reconstruction [5].

Beyond the most used free abdominal flaps, the fat-augmented latissimus-dorsi (FALD) flap has emerged as a dependable alternative for exclusively autologous breast reconstruction [3]. The latissimus dorsi muscle flap was initially introduced by Ignio Tansini in 1906. However, it wasn't until the 1970s that this method became widely adopted for breast reconstruction [6]. The fat-augmented latissimus dorsi (FALD) flap addresses the issue of volume deficiency in LD flaps through direct fat grafting into the flap. This technique enables the reconstruction of small to moderate-sized breasts without resorting to implants [7]. A systematic review done in 2025 concluded that FALD is a safe alternative to implant-based LD flaps and may be associated with a trend toward lower rates of major complications compared to implant-based flaps [8].

Nowadays, there are various of different autologous reconstructive techniques used. Surgeons are able to utilize tissue from the abdominal wall, gluteal region, musculocutaneous gracilis, and

latissimus dorsi muscles [1,3]. In this study, we focused on the two most common autologous procedures performed in Turku University Hospital, which are the fat-augmented latissimus dorsi (FALD) flap and deep inferior epigastric perforator (DIEP) flap. Previous studies have shown that both FALD and DIEP flaps are effective techniques for autologous breast reconstruction, each with its own advantages. In previous comparisons with the DIEP flap, the FALD flap has provided similar clinical outcomes regarding complication rates and patient-reported satisfaction. FALD is considered to be especially appropriate for younger and leaner individuals, presenting with small to medium contralateral breast volume [3,7]. On the other hand, DIEP flap has been associated with higher patient-reported satisfaction compared with LD flap reconstruction, despite its relatively increased incidence of certain complications such as skin flap necrosis and wound dehiscence [2,9].

In some cases, microsurgical reconstruction may not be optimal due to comorbidities or patient preference for a shorter operative time.

The aim of this study was to evaluate and compare long-term clinical outcomes of FALD and DIEP autologous breast reconstruction at our institution. We assessed patient characteristics, demographic factors and postoperative complications to better understand the relative performance of these two commonly used techniques.

We hypothesized that the fat-augmented latissimus dorsi (FALD) and deep inferior epigastric perforator (DIEP) flaps would yield comparable long-term clinical outcomes in autologous breast reconstruction.

Methods

This is a retrospective cohort of all consecutive patients who underwent autologous breast reconstruction using either the fat-augmented latissimus dorsi (FALD) flap or the deep inferior epigastric perforator (DIEP) flap at Turku University Hospital between January 2009 and December 2024. The study was approved by the institutional research ethics committee, and all procedures were conducted in accordance with relevant guidelines for retrospective clinical research. Patients were identified through institutional surgical databases. All consecutive cases meeting the inclusion criteria were analyzed. Patients were eligible if they underwent unilateral or bilateral reconstruction with either technique during the study period. Those with incomplete follow-up data were excluded.

Demographic and clinical variables were extracted from electronic medical records, including age, body mass index (BMI), breast volume, medical comorbidities, smoking status, and oncologic

treatment history (neoadjuvant therapy, adjuvant radiotherapy, and chemotherapy). Procedural variables included operative time, length of hospital stay, and performance of immediate contralateral symmetrization. Postoperative outcomes were recorded systematically with documentation of all surgical site complications, reoperations, and patient-reported satisfaction when available.

The primary outcome was the incidence of postoperative surgical site complications, defined as any documented wound-related event occurring during follow-up. Secondary outcomes included flap-specific complications (e.g., fat necrosis, wound dehiscence, hematoma, seroma) at follow-up.

A retrospective review was conducted on patients who underwent a breast reconstruction with a FALD or DIEP flap between January 2009 and December 2024 at Turku University Hospital. In this study, we included patients who were followed up for a minimum of six months. A total of 400 female patients were included: 130 underwent FALD (Group A), and 270 underwent DIEP (Group B) reconstruction. Most patients had undergone a mastectomy 12-24 months prior to reconstruction. Other procedures were performed as immediate reconstructions.

Statistical Analyses

Continuous variables were described using means and standard deviations (SD), while categorical variables were summarized as frequencies and percentages. The distribution of continuous variables was evaluated for normality using histograms, skewness, kurtosis, and the Kolmogorov–Smirnov test. Comparisons between patients who had FALD and DIEP were performed using Student's t-test for normally distributed continuous variables. Categorical variables were compared using either Pearson's Chi-square test or Fisher's exact test, as appropriate. To identify independent risk factors for complications, a multivariable logistic regression analysis was conducted based on the technique performed, and results were presented as adjusted odds ratios. The Hosmer- Lemeshow test indicated good model fit ($p = 0.587$). All statistical tests were two-sided, with a significance level set at $p \leq 0.05$. Analyses were performed using IBM SPSS Statistics, version 30.0 (Armonk, NY, USA).

Results

A total of 400 patients were included in the study, of whom 130 underwent FALD reconstruction and 270 underwent DIEP reconstruction. The overall mean follow-up was 58.8 ± 56.0 months and did not differ significantly between groups ($p = 0.311$).

The two cohorts demonstrated notable baseline differences. Patients in the FALD group were significantly older (54.7 ± 12.6 vs. 51.1 ± 7.7 years, $p = 0.004$) and had higher rates of hypertension (26.2% vs. 14.4%, $p = 0.006$) and smoking history (30.1% vs. 20.2%, $p = 0.038$). In contrast, neoadjuvant therapy (2.3% vs. 9.7%, $p = 0.012$), adjuvant radiotherapy (54.3% vs. 70.9%, $p = 0.002$), and adjuvant chemotherapy (57.0% vs. 81.1%, $p < 0.001$) were significantly more common among DIEP patients.

No significant differences were observed between the groups in BMI ($p = 0.186$), overall comorbidity burden ($p = 0.177$), pulmonary disease ($p = 0.821$), depression ($p = 0.566$), herbal supplement use ($p = 0.515$), or neoadjuvant radiotherapy ($p = 1.000$). Diabetes rates were higher in the DIEP group ($p = 0.026$). A detailed summary of patient demographics is presented in Table 1.

Operative time was significantly longer in Group B (416.6 vs. 251.0 minutes, $p < 0.001$), whereas immediate contralateral symmetrization was performed more frequently in Group A (34.6% vs. 22.2%, $p = 0.011$). No significant differences in intraoperative blood loss were

observed. Length of hospital stay was also significantly longer in Group B (5.1 vs. 2.9 days, $p < 0.001$, Table 2).

The primary outcome, defined as the overall postoperative surgical site complication rate, did not differ significantly between the FALD and DIEP groups (47.7% vs. 48.0%, $p = 1.000$).

However, procedure-specific complication profiles varied between techniques. Patients in the DIEP group experienced significantly higher rates of wound dehiscence (13.4% vs. 3.1%, $p = 0.002$), fat necrosis (7.8% vs. 0.8%, $p = 0.004$), and hematoma (9.6% vs. 3.1%, $p = 0.024$). Conversely, seroma formation was markedly more common in the FALD cohort (43.8% vs. 10.4%, $p < 0.001$). Rates of superficial and deep wound infection were comparable between the groups.

Early reoperations (<30 days postoperatively) occurred significantly more often in the DIEP group (14.0% vs. 2.0%, $p < 0.001$), whereas late reoperations (>30 days) did not differ (54.4% vs. 48.5%, $p = 0.286$). Comprehensive postoperative complication data are presented in Table 3.

Multivariable logistic regression was performed to identify independent predictors of postoperative complications. The analysis did not reveal the reconstructive technique (FALD vs. DIEP) as an independent predictor. Diabetes showed a trend toward significance, with an odds ratio of 2.9, but did not reach statistical significance (Table 4).

Discussion

Both reconstruction techniques demonstrate favorable outcomes, with few differences considering the perioperative and postoperative time. A total of 40 patients were included in the analysis; 130 underwent FALD surgery, and 270 underwent DIEP surgery. Mean follow-up was 58.8 months. There were no significant differences between the two when looking at the overall complication rates.

One of the main differences found in this study was longer operative time in the DIEP group, compared to FALD. This can be explained by the complexity of the procedure and the fact that it requires microsurgical expertise from the surgeon [9,10]. Other studies have also reported significantly longer durations of the surgery in the DIEP group [11]. A study done in 2023 suggested that longer operative time was an independent risk factor for postoperative complications when looking at DIEP reconstruction. They also reported a maximum threshold period of 460 min. When surgery lasted more than 460 minutes, the risk for postoperative complications increased significantly compared to operations performed in less than 460 min [10]. When looking at our operation times, the mean operative time in the DIEP group (Group B) was 416.6±97.3 minutes, meaning that some of the DIEP surgeries were over 460 minutes. In the FALD group (Group A), the mean operative time in this study was 251.0±76.9 minutes, meaning that all of the FALD surgeries were performed in less than 460 minutes. However, our study did not show a significant time difference between the two. On the other hand, the longer operative time might have had some impact on the nature of the complications that were seen more often in our DIEP group, such as higher rates of wound dehiscence, fat necrosis, and hematoma.

Longer operative time has an impact on other things as well. It is commonly known that the extended use of operating rooms and staff might suggest increased costs for the healthcare system. When the operating time is shorter, there may be more additional procedures performed [12]. However, insufficient data are available to allow a comprehensive comparison of overall cost differences between these two breast reconstruction techniques, as total costs are influenced by multiple factors, including complications, reoperations, length of hospital stay, and follow-up visits.

In this study, the length of hospital stay was also significantly longer in Group B. This could also contribute to the overall cost difference between the two. Longer operative time has its effects on surgeons' beliefs and preferences. Some plastic surgeons say that the main reason why they do not perform microsurgical procedures is the time commitment that it requires [13].

While the overall complications did not differ between the two groups, we found that both techniques had their own procedure-specific complications. Patients in the DIEP group demonstrated significantly higher incidences of wound dehiscence, fat necrosis, and hematoma. These are all known complications of the DIEP surgery, and other studies have shown higher rates of these kinds of complications in the DIEP surgery [3,9,11]. Such complications typically occur early after reconstruction. Higher rates of obesity and diabetes have been associated with increased flap and donor-site complications in previous studies [14,15]. In our study, the mean BMI and the occurrence of diabetes were slightly higher in the FALD group, possibly due to patient selection, given the known association between elevated BMI, diabetes, and postoperative complications. Differences in diabetes and BMI were not, however, significant.

In the FALD cohort, there were significantly more cases of seroma formation compared to the DIEP group. This finding is in agreement with other studies [3,9,16,17]. It has previously been suggested that muscle harvesting in LD flaps may create greater dead space, potentially increasing the risk of seroma formation compared with DIEP flaps [9]. Obesity has also been associated with an increased risk of postoperative seroma formation [18]. The incidence of seroma formation in LD flap surgeries has been reduced through the use of quilting sutures and progressive retention sutures [13].

In our study, early re-operations occurred significantly more often in the DIEP group, possibly due to the previously mentioned higher rate of wound dehiscence, fat necrosis, and hematoma. This could also reflect the complexity of the procedure or vascular issues. The later reoperation rates did not differ between groups. This observation is in agreement with findings reported in previous studies [9,17].

Previous studies comparing FALD and DIEP have reported comparable overall complication rates between the two techniques [3,19]. Our findings are consistent with these results, supporting their equivalence in terms of safety. In our study, no significant difference in intraoperative blood loss was observed, further supporting surgical safety. In some studies, DIEP flaps tend to have a broader range of complications, especially earlier complications [9,11].

When looking at our patient demographics, it is notable that in the DIEP group, there were significantly more patients who had neo-adjuvant chemotherapy (NACT), adjuvant radiotherapy, and adjuvant chemotherapy. The subject of NACT affecting breast reconstruction complications has been unclear before. In previous studies, NACT has not been associated with more surgical complications compared to the control group [20–22]. Adjuvant chemotherapy has shown a marginal association with higher rates of minor complications in reconstructive surgery, while the timing of chemotherapy has not been demonstrated to have a significant impact [23]. When looking at radiotherapy, one meta-analysis was conducted in 2020, where they compared patients who underwent radiotherapy (post-mastectomy or neo-adjuvant radiotherapy) with patients with those who did not receive any radiotherapy, and showed higher overall complications in the radiotherapy group [24]. It has been recognized that radiotherapy is a well-known risk factor for complications at the reconstruction site [11].

Other major demographic differences between the two cohorts were that in the FALD group, the patients were older and had more hypertension and smoking history. This finding may have been partially influenced by patient selection. When looking at previous studies, there has been no clear correlation between older age and reconstruction surgery outcomes [14,25,26]. Hypertension, on the other hand, has been recognized as an individual risk factor in autologous breast reconstruction in some previous studies [16,27]. A study done in 2025, on the contrary, didn’t see any correlation between hypertension and DIEP flap surgeries [14]. Smoking is a well-established risk factor for surgical procedures. Previous studies have shown an increased risk, especially for wound healing disturbances, in patients who had a history of active smoking [15,28].

Although differences in patient demographics and their impact on outcomes were not included in the analysis, these factors may influence the results and should be taken into account when interpreting the findings.

In previous literature, FALD has been considered a better option for older, more comorbid, or smaller-breasted patients. This could be seen in our cohorts as well. The FALD group (Group A) was overall older and more comorbid. When discussing the right reconstruction technique, FALD could offer an easier post-operative course than DIEP, considering that wound problems and re-operations were more often seen in the DIEP group. FALD has been the first choice in small to medium-breasted patients in other cohorts as well [3]. For patients seeking larger-volume reconstruction, DIEP might be a suitable option, considering it usually has more tissue available. The most common trade-offs, as mentioned previously, are longer operative time, hospital stay, and more early complications. These reconstruction style characteristics should be discussed with

patients when planning for surgery. The realistic expectations for complications, aesthetic outcomes, and possible reoperations should be discussed beforehand.

In this retrospective study design, we performed multivariable analysis to identify independent risk factors for complications based on whether the technique was used. The analysis did not reveal the reconstruction (FALD vs. DIEP) technique as an independent predictor, which supports the increased risk (OR 2.9). This may reflect the known wound healing issues associated with diabetes. No other risk factors were recognized.

Patient satisfaction was not assessed separately in this study. However, patient satisfaction has been evaluated in previous studies comparing latissimus dorsi flap combined with an implant with DIEP flap reconstruction. In these studies, satisfaction has typically been assessed using a validated questionnaire addressing outcomes such as overall satisfaction, aesthetic satisfaction with the breast, impact on daily life, and psychosocial and sexual well-being. Comparative results have consistently shown higher patient satisfaction with DIEP flap reconstruction than with LD reconstruction combined with an implant [29,30]. These findings cannot be directly extrapolated to LD reconstruction with fat transfer, as the use of implants may have played a significant role in previously reported patient satisfaction outcomes. Therefore, further studies are required to assess patient satisfaction in comparisons of FALD and DIEP reconstruction.

This study has several limitations. Its retrospective and single-center design may limit generalizability and introduce the potential for patient selection bias. Baseline differences in patient characteristics may also have influenced the results. In addition, patient-reported outcome data were incomplete, highlighting an important area for future research. Stronger study designs are needed to more reliably compare the outcomes between FALD and DIEP. This could be done by creating prospective studies to reduce recall bias and collect data in standardized ways. In addition, a multicenter study could better confirm these findings across different hospitals or institutions. Despite these limitations, the study has notable strengths, including a large sample size, a long follow-up period, and the inclusion of both perioperative and long-term outcomes. Furthermore, the use of multivariable analysis strengthens the reliability of the findings.

Conclusions

FALD and DIEP provide comparable long-term safety and effectiveness, but differ in operative time, hospital stay, and procedure-specific complications. While the DIEP flap remains the gold standard for autologous breast reconstruction, fat-augmented latissimus dorsi (FALD) procedures

may offer a less complex postoperative course. FALD may be particularly advantageous in patients with significant comorbidities to minimize postoperative complications. Moreover, it provides a viable autologous option for surgeons without microsurgical expertise or access to microsurgical facilities.

Level of Evidence: III

Keywords: Free tissue transfer, Breast reconstruction, Latissimus Dorsi Flap, DIEP breast reconstruction, postoperative complications

Tables

Table 1. Demographics of patients at time of study.

Table 2. Comparison of peri-operative parameters in the two groups of patients.

Table 3. Postoperative complications at follow-up.

Table 4. Multivariable logistic regression was used to assess independent risk factors for complications based on whether DIEP was performed, with adjusted odds ratios provided.

Table 1. Demographics of patients at time of study.

	Group A: FALD (n=130)	*Group B: DIEP (n=270)*	*p-value*
Age (mean ± SD)	54.7±12.6	51.1±7.7	**0.004**
Mean BMI (kg/m^2)	29.3±23.5	26.5±3.0	0.186
Any comorbidity	51 (39.2%)	86 (31.9%)	0.177
Diabetics	9 (6.9%)	6 (2.2%)	0.026
Hypertension	34 (26.2%)	39 (14.4%)	**0.006**
Pulmonary disease	8 (6.2%)	15 (5.6%)	0.821
Depression	9 (6.9%)	24 (8.9%)	0.566
Smokers	37 (30.1%)	50 (20.2%)	**0.038**
Herbal supplement	5 (4.6%)	6 (2.7%)	0.515
Neo-Adjuvant radiotherapy	0	1 (0.4%)	1.000
Neo-Adjuvant chemotherapy	3 (2.3%)	26 (9.7%)	**0.012**
Radiotherapy	70 (54.3%)	190 (70.9%)	**0.002**
Chemotherapy	73 (57.0%)	215 (81.1%)	**<0.001**
Follow-up (months)	62.9±54.8	56.9±56.6	0.311

Table 2. Comparison of peri-operative parameters in the two groups of patients.

	Group A: FALD (n=130)	*Group B: DIEP (n=270)*	*p-value*
ASA Score (mean ± SD)	1.88±0.66	1.85±0.46	0.734
Operative time (min, mean ± SD)	251.0±76.9	416.6±97.3	**<0.001**
Bilateral Reconstructions	11 (8.5%)	11 (4.1%)	0.099
Resection weight (g, mean ± SD)	565.1±334.9	599.7±350.1	0.472
Immediate Symmetrization	45 (34.6%)	60 (22.2%)	**0.011**
Blood loss (ml, mean ± SD)	313.6±263.9	335.4±157.5	0.461
Flap Weight (g, mean ± SD)		653.4±133.7	
Fat Injected (cc, mean ± SD)	159.3±85.3		
Hospital stay (days, mean ± SD)	2.90±1.30	5.11±1.56	**<0.001**

Table 3. Postoperative complications at follow-up.

	Group A: FALD (n=130)	*Group B: DIEP (n=270)*	*p-value*
Patients with complications (medical included)	62 (47.7%)	129 (48.0%)	1.000
Complications			
Superficial wound infection (received antibiotics <30 days)	10 (7.8%)	39 (14.4%)	0.072
Deep wound infection (revision in local anaesthetics or general)	1 (0.8%)	7 (2.6%)	0.285
Wound dehiscence (need for revision -local/general)	4 (3.1%)	36 (13.4%)	**0.002**
Fat necrosis (need for operation)	1 (0.8%)	21 (7.8%)	**0.004**
Hematoma (need for operation)	4 (3.1%)	26 (9.6%)	**0.024**
Seroma (requiring aspiration after drains removal)	57 (43.8%)	28 (10.4%)	**<0.001**
Reoperation <30 days	8 (2.0%)	56 (14.0%)	**<0.001**
Reoperation at follow up, more than 30 days post operatively	63 (48.5%)	147 (54.4%)	0.286
Mean number of Fat Grafting procedures	0.73±0.93		
Re-admissions <30 days	3 (2.3%)	16 (5.9%)	0.136
Reoperation for dog-ear / scar revision	15 (11.5%)	40 (14.8%)	0.439

Table 4. Multivariable logistic regression was used to assess independent risk factors for **complications** based on whether technique was used, with adjusted odds ratios provided.

	Odd Ratios	*95% Confidence Interval*	*p-value*
Diabetes	2.93	0.61-14.08	0.179
Bilateral Reconstruction	2.30	0.66-8.00	0.191
Smoking	1.77	0.91-3.43	0.090
Pulmonary disease	1.69	0.57-5.00	0.341
ASA score	1.22	0.70-2.11	0.478
BMI	1.06	0.99-1.15	0.111
Axillary Lymphadenectomy	1.05	0.62-1.79	0.851
Depression	1.02	0.43-2.43	0.961
Operative time	1.00	1.00-1.01	0.096
Blood loss	1.00	0.99-1.00	0.443
Age	0.99	0.97-1.03	0.902
Hypertension	0.68	0.32-1.45	0.321
DIEP	0.58	0.27-1.28	0.178

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