



UNIVERSITY OF LEEDS

This is a repository copy of *Complications in DIEP Flap Breast Reconstruction After Mastectomy for Breast Cancer: A Prospective Cohort Study Comparing Unilateral Versus Bilateral Reconstructions*.

White Rose Research Online URL for this paper:  
<http://eprints.whiterose.ac.uk/111824/>

Version: Supplemental Material

---

**Article:**

Wade, RG [orcid.org/0000-0001-8365-6547](http://orcid.org/0000-0001-8365-6547), Razzano, S, Sasso, EM et al. (3 more authors) (2017) *Complications in DIEP Flap Breast Reconstruction After Mastectomy for Breast Cancer: A Prospective Cohort Study Comparing Unilateral Versus Bilateral Reconstructions*. *Annals of Surgical Oncology*, 24 (6). pp. 1465-1474. ISSN 1068-9265

<https://doi.org/10.1245/s10434-017-5807-5>

---

© Society of Surgical Oncology, 2017. This is an author produced version of a paper published in *Annals of Surgical Oncology*. Uploaded in accordance with the publisher's self-archiving policy. The final publication is available at Springer via <https://doi.org/10.1245/s10434-017-5807-5>.

**Reuse**

Unless indicated otherwise, fulltext items are protected by copyright with all rights reserved. The copyright exception in section 29 of the Copyright, Designs and Patents Act 1988 allows the making of a single copy solely for the purpose of non-commercial research or private study within the limits of fair dealing. The publisher or other rights-holder may allow further reproduction and re-use of this version - refer to the White Rose Research Online record for this item. Where records identify the publisher as the copyright holder, users can verify any specific terms of use on the publisher's website.

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.



[eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk)  
<https://eprints.whiterose.ac.uk/>

**Patients with DIEP flap Breast Reconstruction**

**Table 1. Patient Demographics**

		<b>Unilateral (N=371)</b>	<b>Bilateral (N=97)</b>	<b>p-value</b>
	Mean Age (SD)	56.7 (9.27)	51.7 (9.11)	<0.001
	Mean BMI (SD) [Range]	26.4 (3.00) [19-34]	27.1 (3.46) [20-37]	0.081
	Smoking History (%)	61 (16.4)	12 (12.4)	0.115
	Lower Abdominal Scars (%)	97 (26.1)	36 (37.1)	0.058
Parity (%)	Nulliparous	32 (8.60)	9 (9.3)	0.121
	Primiparous	47 (12.7)	20 (20.6)	
	Multiparous	292 (78.7)	68 (70.1)	
Family History of Breast Cancer (%)	None	319 (86.0)	66 (68.0)	<0.001
	1 <sup>st</sup> Degree Relative	28 (7.50)	24 (24.8)	
	2 <sup>nd</sup> Degree Relative	24 (6.50)	7 (7.2)	
Mastectomy Histology (%)	Normal Breast Tissue	3 (0.80)	12 (12.4)	<0.001
	Carcinoma In-Situ	113 (30.5)	45 (46.4)	
	Invasive Carcinoma	254 (68.5)	40 (41.2)	
	Indeterminate Neoplasm	1 (0.20)	0 (0)	
Oncological Treatment (%)	Neoadjuvant Chemotherapy	31 (8.40)	15 (15.5)	0.053
	Adjuvant Chemotherapy	211 (56.9)	46 (47.4)	0.108
	Adjuvant Radiotherapy	188 (50.7)	46 (47.4)	0.648
	Adjuvant Hormone Therapy	226 (71.7)	49 (50.5)	<0.001
Breast Reconstruction Timing (%)	Immediate	120 (32.3)	46 (47.4)	0.006
	Delayed	251 (67.7)	51 (52.6)	
	Mean Operative Time In Hours And Minutes (SD)	6:02 (1:26)	8:06 (1:49)	<0.001

Median Mastectomy Weight In Grams Per Flap (IQR)	645 (462 - 858)	699 (459 - 884)	0.943
Mean DIEP Flap Weight In Grams Per Flap (SD)	634 (189)	589 (203)	0.044
Median Ischaemia Time In Minutes Per Flap (IQR)	31.5 (25.0 - 41.0)	30.0 (24.5 - 37.5)	0.091
Median Days In Hospital (IQR)	6 (5 - 7)	7 (5 - 9)	0.002

**Table 1.** Baseline characteristics and operative variables for women undergoing unilateral versus bilateral DIEP flap breast reconstruction.

**Patients Undergoing DIEP Flap Breast Reconstruction**

**Table 2. Peri-Operative Outcomes**

		<b>Unilateral (N=371)</b>	<b>Bilateral (N=97)</b>	<b>p-value</b>	<b>RR</b>	<b>95% CI</b>
Any Peri-Operative Complication(s) Requiring Return To Theatre (%)		41 (11.1)	23 (23.7)	0.002	2.1	1.4, 3.4
Peri-Operative Complications Requiring Return To Theatre (%)	Breast Haematoma	13 (3.50)	7 (7.22)	0.153	2.1	0.8, 5.0
	Venous Congestion of a Flap	10 (2.70)	8 (8.25)	0.011	3.1	1.2, 7.5
	Ischaemia of a Flap	6 (1.62)	2 (2.06)	0.673	1.3	0.3, 6.2
	Breast Envelope Skin Necrosis	4 (1.08)	1 (1.03)	1.000	0.9	0.1, 8.3
	Umbilical Stalk Necrosis	2 (0.54)	1 (1.03)	0.595	1.9	0.2, 20
	Infected Breast Seroma Or Haematoma	2 (0.54)	1 (1.03)	0.503	1.9	0.2, 20
	Abdominal Wall Haematoma	2 (0.54)	0 (0)	0.858	-	-
Operative Outcome (%)	Partial Flap Loss	11 (2.96)	2 (2.06)	0.747	0.7	0.2, 3.0
	Total Flap Loss	3 (0.81)	5 (5.15)	0.011	6.4	1.6, 26

**Table 2.** Post-operative complications for women undergoing unilateral versus bilateral DIEP flap breast reconstruction.

**Patients Undergoing DIEP Flap Breast Reconstruction**

**Table 3. Revision Surgery**

		<b>Unilateral (N=371)</b>	<b>Bilateral (N=97)</b>	<b>p-value</b>	<b>RR</b>	<b>95% CI</b>
Cumulative Need For Revision Breast Surgery (%)		88 (23.7)	30 (30.9)	0.189	1.3	0.9, 1.8
Revision Breast Surgery (%)	Revision Reconstruction For Total Flap Failure	3 (0.81)	4 (4.12)	0.037	5.1	1.2, 22
	Revision NAC reconstruction	3 (0.81)	0 (0)	1.000	-	-
	Liposuction or Lipofilling	43 (11.6)	10 (10.3)	0.726	0.9	0.5, 1.7
	Flap Remodelling	21 (5.66)	6 (6.19)	1.000	1.1	0.4, 2.6
	Excision of Fat Necrosis	5 (1.35)	1 (1.03)	1.000	0.8	0.1, 6.5
	Scar Revision	22 (5.93)	10 (10.3)	0.172	1.7	0.9, 3.5
	Skin Graft	2 (0.54)	1 (1.03)	0.503	1.9	0.2, 20
Cumulative Need For Revision Abdominal Surgery (%)		24 (6.47)	11 (11.3)	0.127	0.2	0.0, 1.3
Revision Abdominal Surgery (%)	Delayed Closure	2 (0.54)	1 (1.03)	0.595	1.9	0.2, 20
	Scar Revision	13 (0.12)	5 (5.15)	0.377	1.5	0.5, 4.0
	Bulge / Hernia Repair	2 (0.54)	0 (0)	1.000	-	-

**Table 3.** Revision breast and abdominal surgeries for women undergoing DIEP flap breast reconstruction.