

# Revisiting the No-vertical-scar, Free Nipple Graft Breast Reduction

Eric Swanson, MD

Vazquez et al<sup>1</sup> promote a breast reduction with no vertical incision and free nipple grafting for women with large, ptotic breasts who do not plan to breast-feed. The authors claim that this technique offers aesthetic advantages, including elimination of the vertical scar and enhanced breast projection.<sup>1</sup> The authors do not discuss how commonly they use this method and what their alternative breast reduction approach may be.

This operation was first reported by Thorek<sup>2</sup> in 1922. This American surgeon resected the lower pole of the breast and replaced the nipple/areola as a free nipple graft, with the horizontal scar tucked in the inframammary fold and no vertical scar. Thorek claimed that he was the first to graft the nipple, and Blair Rogers, in an editor's footnote to a 1989 republication,<sup>3</sup> confirmed it. Later, the operation was modified to include a midline tissue resection to improve shape.<sup>4</sup> The authors reference a 1997 article by Manstein et al<sup>5</sup> describing a lower pole resection and free nipple graft without a vertical incision, including a superiorly based dermoglandular flap. Manstein et al<sup>5</sup> reference Thorek's original article. Indeed, most comprehensive reviews of breast reduction reference Thorek's publication.<sup>6,7</sup> The 2022 article by Vazquez et al<sup>1</sup> is a testament to the observation that if one looks hard enough, one may find that many "new" operations are not so new after all.<sup>8</sup>

The authors did not measure nipple sensation, but state that "all patients regained tactile sensitivity under the graft over time."<sup>1</sup> No patient surveys were conducted, and no breast measurement data were collected. The mean patient age for breast reduction was 58.6 years. Two of the patients featured in photographs were 42 years old and 43 years old. Based on notes in chart reviews over a 22-year period, the authors conclude, "all patients were pleased with their results and healing outcomes." The authors report one case of capsular contracture, which is puzzling because none of the patients received breast implants.

From the Swanson Center, Leawood, Kans.

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Eighty percent of women report that nipple sensation is important sexually.<sup>9</sup> A 2011 functional magnetic resonance study of nipple stimulation found that sensory impulses from the nipples travel to the genital sensory cortex in the brain, confirming a neurological basis for women's reports of erogenous nipple sensation.<sup>10</sup>

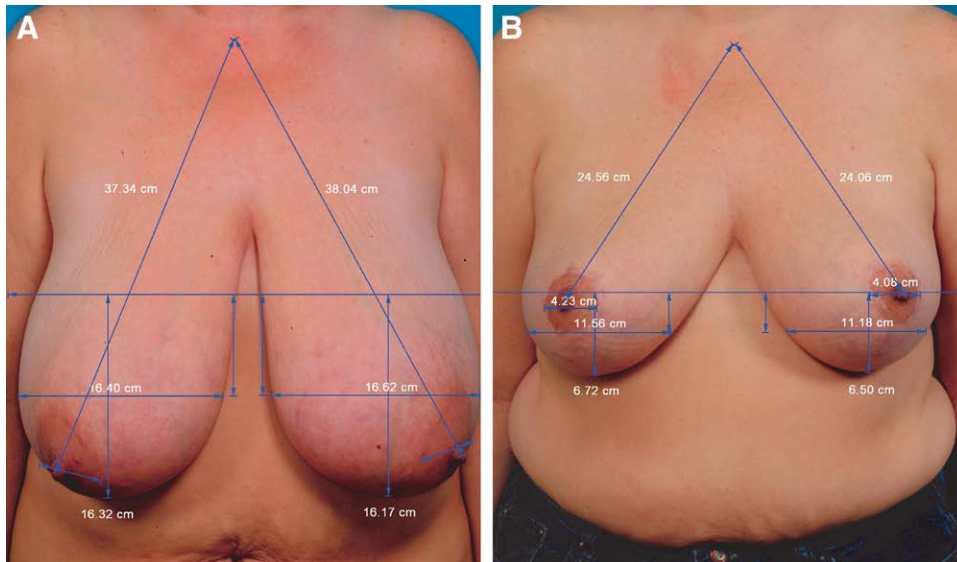
Regardless of sexual function, sensate body parts are always preferred. Subjected to debilitating ischemia, a healed nipple/areola graft is really a functionless facsimile. The nipple/areola complex, a unique appendage, loses its three-dimensionality. All vascular and sensory inputs are sacrificed. Normal and erotic sensation is lost permanently.<sup>11,12</sup> By contrast, pedicle techniques usually preserve sensation.<sup>11,13-16</sup>

When grafted, the nipple loses its erectile capability<sup>11,13</sup> because of the division of its smooth muscles.<sup>11</sup> The nipple/areola must rely on plasmatic imbibition for survival.<sup>1</sup> As the graft becomes thicker, the risk of tissue loss increases.<sup>17,18</sup> Superficial nipple necrosis is common.<sup>18</sup> Nipple projection is compromised.<sup>1,19</sup> Hypopigmentation frequently results,<sup>1,5,7,12,19</sup> and is especially problematic in Black patients.<sup>1,5</sup> Postoperative tattooing may be needed to restore pigmentation.<sup>1</sup>

Thorek's contemporaries were aware of the importance of preserving an intact nipple.<sup>20-22</sup> For this reason, almost all other reduction methods preserve the nipple on a vascular pedicle.<sup>23</sup> It is commonly believed that the risk of nipple loss is increased in women with greater degrees of ptosis.<sup>1,12</sup> This is certainly true for the inferior pedicle Wise pattern method. However, this is not true for a short medially or superomedially based pedicle and a vertical reduction.<sup>15,24</sup> The vertical reduction itself, because of the geometry of a vertical elliptical resection, pushes the base of the nipple/areola pedicle superiorly, reducing the distance the nipple must be mobilized (Fig. 1).<sup>24,25</sup> A woman with a very large nipple-to-sternal notch distance requires only a modest nipple repositioning. Eighty percent of nipple elevation is produced by elevation of the breast mound.<sup>25</sup> In the series reported by Swanson,<sup>25</sup> the maximum nipple movement on the breast was 6.5 cm.

The Wise pattern and the no-vertical-scar method both make use of a large horizontal elliptical tissue resection.<sup>23</sup> The geometric effect of this method is to reduce projection and increase the width of the

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**Fig. 1.** Preoperative (A) and 6-month postoperative (B) orientation-matched photographs of a 43-year-old woman treated with a vertical breast reduction, using a medial pedicle. Resection weights: right breast, 953 g; left breast, 1040 g. The suprasternal notch-to-nipple distances were 37 cm on the right and 38 cm on the left. Despite the severe ptosis, the preoperative right nipple displacement is only 3.8 cm. Reproduced with permission from the work by Swanson.<sup>24</sup>

breast.<sup>23</sup> This effect is the opposite of the vertical mammoplasty, which trades width for projection.<sup>23</sup> The result of a horizontal resection is a constricted, wide breast.<sup>23</sup> The no-vertical-scar technique produces an even wider breast than a Wise pattern because there is no keyhole resection to relieve the width increment caused by closing the elliptical wound.<sup>23</sup> Measurements confirm a reduction in breast projection using the no-vertical-scar method.<sup>23</sup> A vertical scar is avoided, but at the cost of a long horizontal scar and a less conical breast.<sup>23,26</sup> The horizontal scar, particularly the lateral extent, is prone to hypertrophy.<sup>8,27</sup> The medial scar can encroach on the cleavage area.

The authors report only two complications (not counting the capsular contracture) and two revisions. Any full-thickness skin graft is prone to epidermolysis.<sup>12</sup> Some surgeons believe that a nipple graft produces a 100% complication rate.<sup>7</sup>

A vertical reduction mammoplasty has an excellent safety record, with numerous series reporting no cases of nipple loss.<sup>24,28–33</sup> Many plastic surgeons use the vertical

method exclusively<sup>24,28–33</sup> and find nipple grafts unnecessary.<sup>24,30,32</sup> The only published prospective controlled study finds that patients prefer the aesthetic result and scars of a vertical reduction over an inferior pedicle, inverted-T procedure.<sup>34</sup> Vertical mammoplasty with a medial pedicle usually preserves nipple sensation.<sup>15,16</sup> Some women even report improved nipple sensation after surgery.<sup>16</sup> Erectile function is almost always maintained.<sup>16</sup>

The deleterious effect of nipple grafting should not be underestimated. Surgeons must be very circumspect when offering a procedure that sacrifices an erogenous area in women, and there should be no prejudice because of a woman’s age. A viable alternative is available (Table 1).

*Eric Swanson, MD*  
 Swanson Center  
 11413 Ash St  
 Leawood, KS 66211  
 E-mail: [eswanson@swansoncenter.com](mailto:eswanson@swansoncenter.com)

**Table 1. Comparison of Breast Reduction Methods**

Parameter	No Vertical Scar, Nipple Graft	Vertical Mammoplasty, Medial Pedicle
Breast feeding	0	+++
Nipple sensation	+	+++
Erotic sensation	0	+++
Nipple erection	0	+++
Nipple viability	++	++++
Maintenance of pigmentation	+	++++
Nipple projection	0	+++
Breast projection	0	+++
Scarring acceptability	+	+++
Breast shape	+	+++

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