

# more than skin deep

## loss of sensation after mastectomy significantly impacts women's quality of life



Surgeons typically set the stage with their patients in terms of postoperative expectations following breast reconstruction but are often inconsistent in whether they discuss a common side effect—chronic numbness. **New research shows that women are often surprised by the loss of sensation after mastectomy and the significant impact it has on their recovery and quality of life (QoL).** It also reveals that women want not only to look like themselves, but to feel like themselves again.<sup>1,2</sup>

The loss of breast sensation is impacting more women as the prevalence of breast cancer continues to increase, and patients are living

longer thanks to advances in treatment. Between 2007 and 2020, ASPS member surgeons reported the number of reconstruction cases in the United States more than doubled.<sup>3,4</sup>

During a mastectomy procedure, breast tissue and nerves within the tissue are removed. These nerves are important for relaying sensory information about touch, pressure and temperature to the brain. With nerve signals interrupted, **the lack of perception for touch, pressure or temperature is similar to the temporary numbness that follows a dental procedure,** though it involves a much larger surface area of the body and can be permanent. <sup>1</sup>

## Understanding the reconstruction choice

Women who undergo a mastectomy for prophylaxis or after a breast cancer diagnosis experience a myriad of thoughts and feelings related to self-image and intimacy. A woman may view reconstruction as a solution to the problems affecting how she feels about her body, how she feels about being intimate, and how she feels about herself as a person. Nevertheless, these concerns aren't necessarily addressed by the cosmetic benefits a breast reconstruction procedure offers.

Excellent cosmetic results can be achieved, and many studies have shown the positive impact of breast reconstruction on the QoL of breast cancer survivors.<sup>5,6</sup> Research also has shown that QoL is determined not only by aesthetic outcome, but by functional aspects such as sensation. A pilot study by Cornelissen et al. showed a positive association between sensation resulting from neurotization in the reconstructed breast and QoL.<sup>2</sup>

## Sensation loss impacts confidence, self-esteem and safety

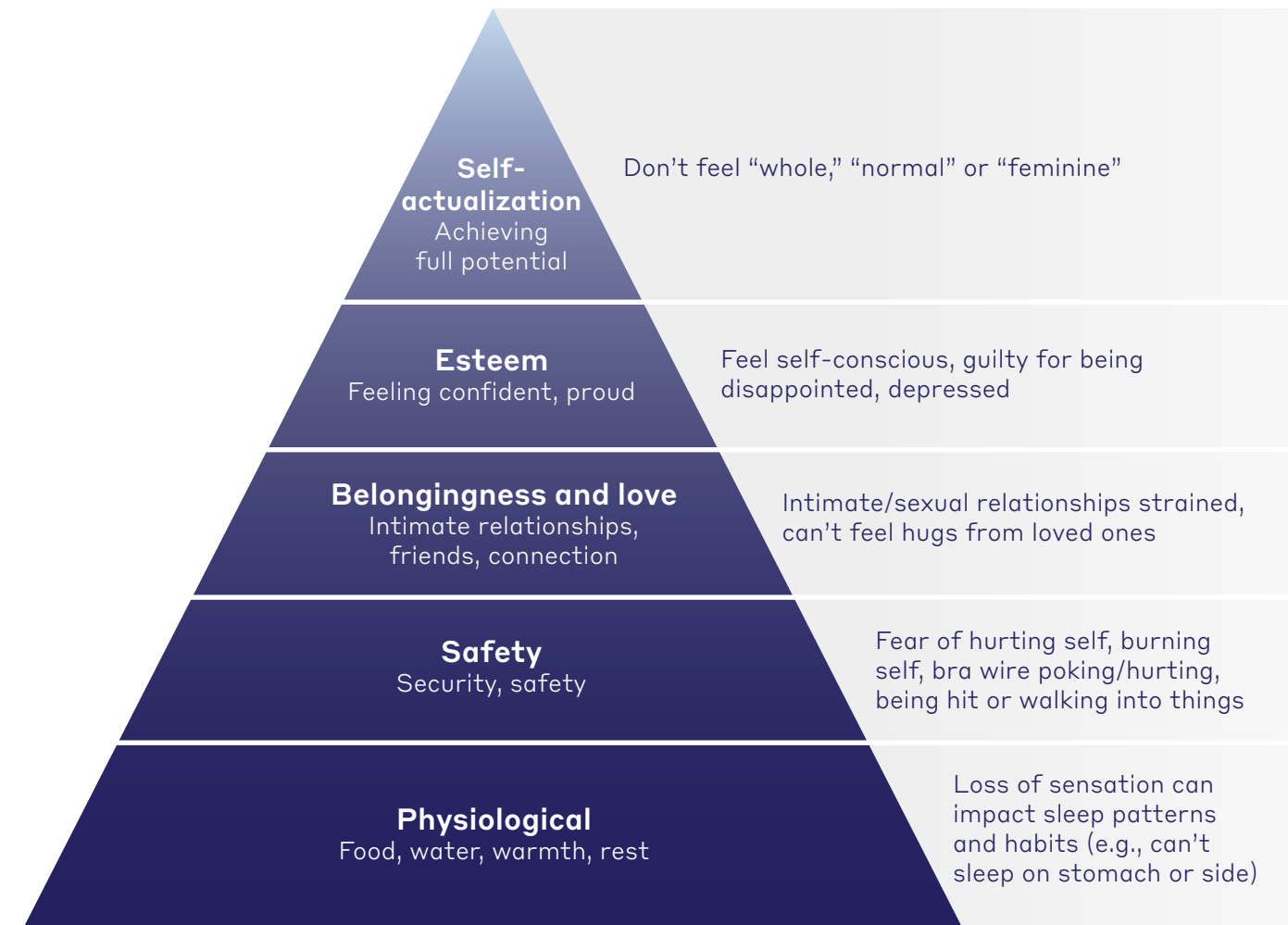
The loss of breast sensation prevents some women from feeling like the best version of themselves after mastectomy and reconstruction. **Women who recover little to no sensation postoperatively report experiencing daily reminders of what has been lost because of their cancer diagnosis, mastectomy and reconstruction.**<sup>1</sup>

Some women who have sensation loss experience guilt surrounding their disappointment, saying, "I should just be happy to be alive." Many others post-rationalize the loss of breast sensation, saying they are grateful to be cancer-free. "You mourn a loss but then you feel grateful because your life hasn't been lost."<sup>1</sup>

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I have no feeling in my breasts—they are just hanging flaps. I avoid looking in the mirror because it's not what I want or expect to see. I think feeling like a woman is having feeling in your breasts. I can't feel when I hug my kids. I might feel more confident and inclined to initiate intimacy if I had sensation.

Megan  
DIEP Flap<sup>1</sup>



## Maslow's Hierarchy of Needs and the impact of sensation loss

As illustrated by Maslow's hierarchy (see above), **the impact of sensation loss following breast reconstruction spans the entire human experience**, from the most fundamental needs to the higher-level needs that are most self-fulfilling.<sup>1</sup> One example: worrying about your own safety because you can't feel your breasts.

While burns following breast reconstruction are a relatively rare complication, it's a growing problem that illustrates there is room for improvement in burn prevention. A recent study concluded that patients undergoing breast reconstruction should be advised of the potential risks of burns and told to avoid significant heat exposure and steer clear of dark-colored bathing suits.<sup>7</sup> The same study noted that from a surgical standpoint, burn risk could be reduced through innervated reconstruction "that would in all probability restore functionality and thermoregulatory capacity."<sup>7</sup>



## Open dialogue is key to addressing the impact of sensation loss

### Have more conversations more frequently about the loss of sensation after breast reconstruction surgery

Women who experience a cancer diagnosis prior to their reconstruction can feel overwhelmed by all the decisions they need to make in a short period of time. As they progress through their journey, their challenges and priorities change, including the importance of sensation loss and how they think about it.

During the initial shock of a cancer diagnosis, the end goal of staying alive and getting the cancer out is at the forefront of every decision. Many women describe a general fog clouding their initial conversations with doctors about the procedure (lumpectomy vs. mastectomy; unilateral mastectomy vs. bilateral mastectomy) and about reconstruction (to reconstruct vs. not to reconstruct; what type of reconstruction). Moreover, most women don't think to ask about loss of sensation in their breasts and are totally unaware of the possibility that they will lose sensation.<sup>1</sup>

Loss of sensation and its impact on quality of life may not be important to patients at the time of mastectomy, but it can become much more important later. **Frequent conversations along the care journey between a woman and her care team about this side effect can help avoid frustration and disappointment later.**

## Share information about neurotization techniques that may help patients regain sensation

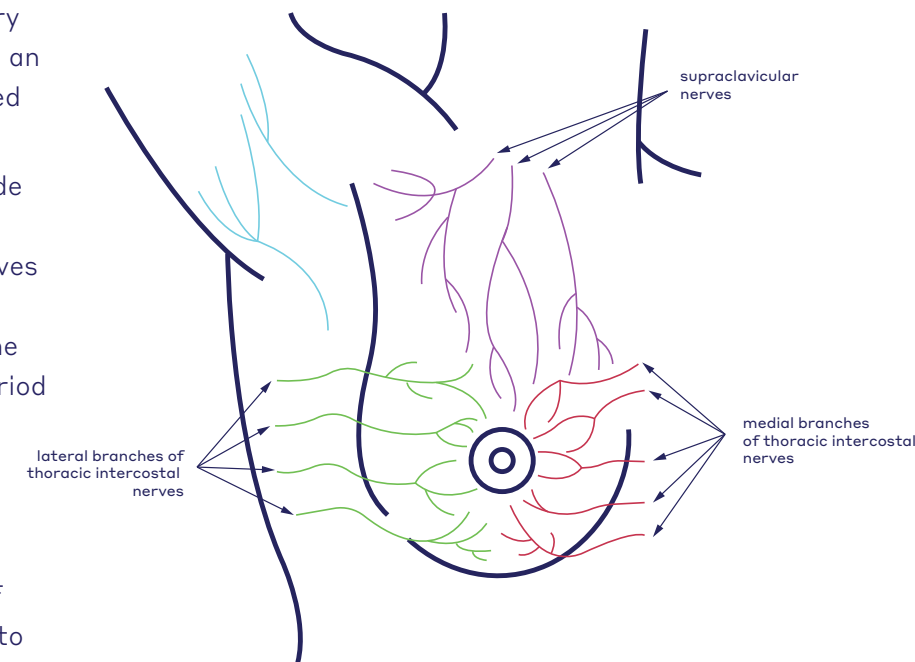
There are new nerve repair techniques and resources to consider and incorporate into practice for the benefit of patients. **A breast neurotization technique that has the potential to restore feeling is called Resensation®.** It is performed at the time of breast reconstruction, most commonly during a DIEP flap procedure.

During the Resensation procedure, sensory nerves in the chest are reconnected using an allograft to bridge the discontinuity caused by the mastectomy.<sup>8,9</sup>

The allograft acts as a scaffold and a guide to allow the nerve to regenerate without tension in the reconstructed breast.<sup>8</sup> Nerves regenerate slowly, typically at a rate of 1 mm/day, so the return of sensation in the reconstructed breast can occur over a period of months and up to two years.<sup>10</sup>

A recent study found that neurotization of flap breast reconstructions using processed nerve allograft (Resensation technique) resulted in a greater degree of return of protective sensation compared to reconstructions without neurotization by 12-18 months post-surgery.<sup>11</sup>

### Nerve anatomy of the breast



### Set realistic expectations

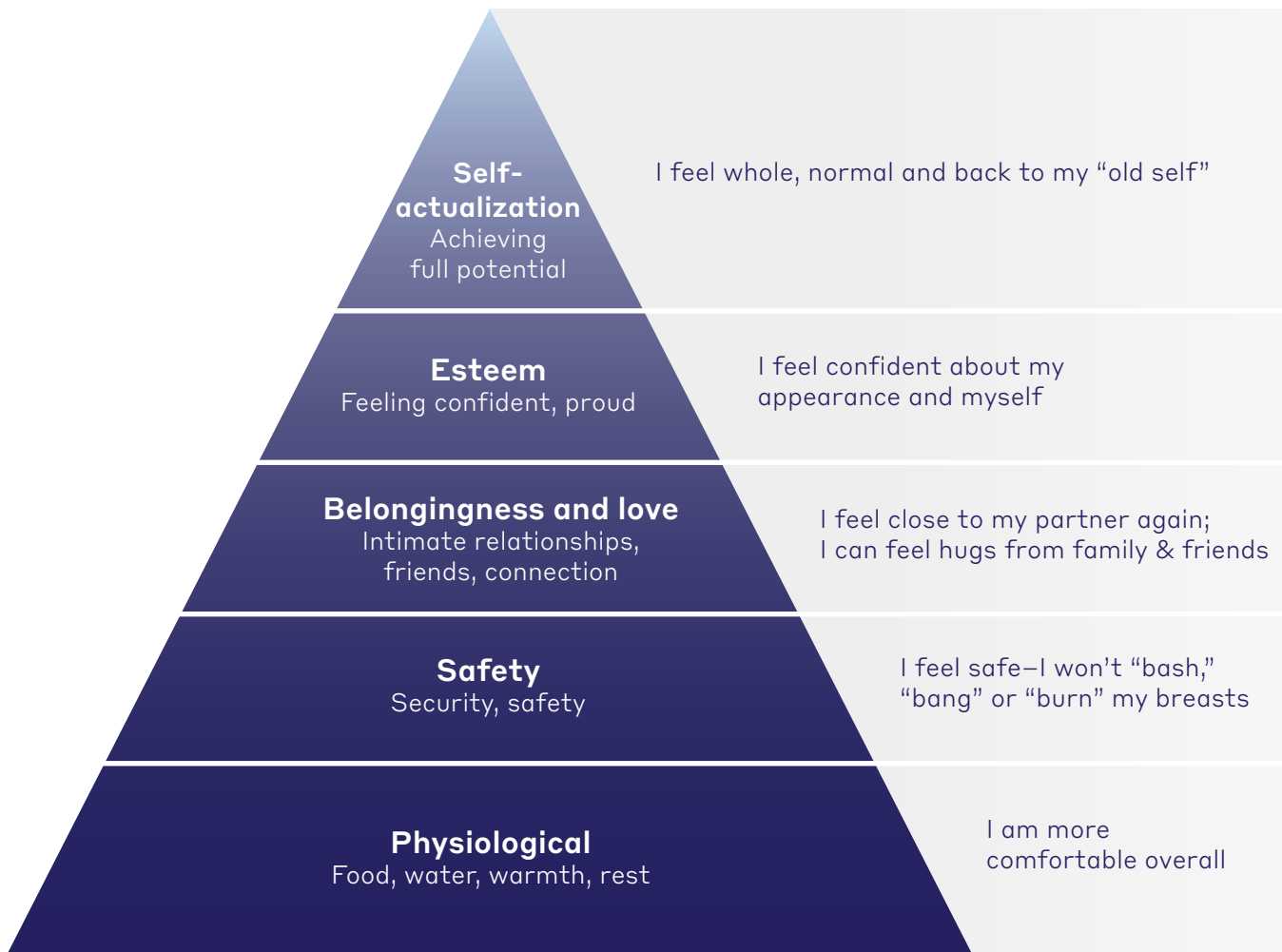
Women whose surgeons set realistic expectations about the possible level of sensation return ultimately felt more satisfied during and after recovery compared to women whose surgeons were not clear about a timeline to recovery or what sensations could be expected as they recovered.<sup>1</sup>

These realistic expectations include:

- That it may take several months before they notice sensation returning and it could continue to develop for up to two years
- That sensation might start with feeling little shocks, zaps or itchiness
- Sensation regained may feel different than before the mastectomy, and there's a possibility that sensation may or may not return

## Regaining sensation is a game changer

Women report that regaining sensation helps them recover and move on from their experience with cancer, the mastectomy and the reconstruction process. It also helps them feel more normal and more like their old selves.<sup>1</sup>



**Maslow's Hierarchy of Needs and the impact of sensation loss**

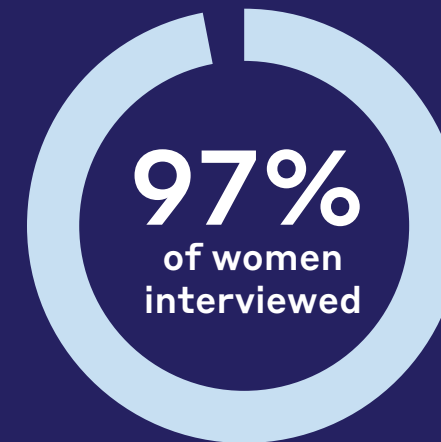
## Take the whole breast reconstruction journey into account

The primary goal of breast reconstruction is to fulfill a woman's expectations about how she will look and feel postoperatively.<sup>12</sup> Beyond appearance, the restoration of breast sensation is often overlooked despite being integrally tied to feeling whole, confident, loved and safe. The loss of breast sensation may prevent some women from moving on from their mastectomy experience and significantly impact their quality of life. Surgeons and their care teams can potentially avoid the dissatisfaction and disappointment associated with unexpected chronic numbness by communicating honestly and openly about its potential impact following mastectomy and breast reconstruction without neurotization. Expectations for sensation recovery after reconstruction with neurotization should also be thoroughly explored and clarified with patients.

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Ask your surgeon if it's possible to do the nerve grafting. It can be life-changing to the patient. Just a short additional time in the operating room can change somebody's entire life.

Jane  
Resensation patient



**97% of women interviewed who underwent Resensation:<sup>1</sup>**

- Would recommend that a friend or family member explore Resensation options
- Said potential rewards in terms of physical and emotional impact and quality of life outweighed potential risk of the procedure not being successful
- Believe that restoring breast sensation should become standard of care for breast reconstruction

To learn more about how chronic numbness impacts quality of life following breast reconstruction, visit [resensation.com](https://www.resensation.com)

### About the study

This Axogen-sponsored study was conducted by Inspired Health, an independent market research firm. In-depth interviews were completed with 30 women who had breast reconstruction following mastectomy within the past two years. The goal of these interviews was to establish a baseline understanding of what these women experienced from diagnosis through reconstruction, and how losing and regaining breast sensation impacted their recovery and quality of life.

### References

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### Disclaimers

The level of sensation restored following use of the Resensation technique may vary and cannot be guaranteed, due to unique anatomy and other considerations. Please consult a surgeon for more detailed information.

### Regulatory classification

Avance Nerve Graft is a human tissue for transplantation. Avance Nerve Graft is processed and distributed in accordance with U.S. FDA requirements for human cellular and tissue-based products (HCT/P) under 21 CFR Part 1271 regulations, U.S. State regulations and the guidelines of the American Association of Tissue Banks (AATB). Additionally, international regulations are followed as appropriate.

This graft is to be dispensed only by or on the order of a licensed physician.

### Indications for use

Avance Nerve Graft is a processed nerve allograft (human) intended for the surgical repair of peripheral nerve discontinuities to support regeneration across the defect.

### Contraindications

Avance Nerve Graft is contraindicated for use in any patient whose soft tissue implants are contraindicated. This includes any pathology that would limit the blood supply and compromise healing or evidence of a current infection.