

## Breast Reconstruction Following Mastectomy



### What is breast reconstruction?

Many women who have a mastectomy—surgery to remove an entire breast to treat or prevent breast cancer—have the option of having the shape of the removed breast rebuilt.

Women who choose to have their breasts rebuilt have several options for how it can be done. Breasts can be rebuilt using implants (saline or silicone). They can also be rebuilt using autologous tissue (that is, tissue from elsewhere in the body). Sometimes both implants and autologous tissue are used to rebuild the breast.

Surgery to reconstruct the breasts can be done (or started) at the time of the mastectomy (which is called immediate reconstruction) or it can be done after the mastectomy incisions have healed and breast cancer therapy has been completed (which is called delayed reconstruction). Delayed reconstruction can happen months or even years after the mastectomy.

In a final stage of breast reconstruction, a nipple and areola may be re-created on the reconstructed breast, if these were not preserved during the mastectomy.

### How do surgeons use implants to reconstruct a woman's breast?

Implants are inserted underneath the skin or chest muscle following the mastectomy. (Most mastectomies are performed using a technique called skin-sparing mastectomy, in which much of the breast skin is saved for use in reconstructing the breast.)

In some cases, the implant can be placed in the breast during the same surgery as the mastectomy—that is, a tissue expander is not used to prepare for the implant.<sup>1</sup>

Surgeons are increasingly using material called acellular dermal matrix as a kind of scaffold or “sling” to support tissue expanders and implants. Acellular dermal matrix is a kind of mesh that is made from donated human or pig skin that has been sterilized and processed to remove all cells to eliminate the risks of rejection and infection.

### How is tissue from a woman's own body used to reconstruct the breast?

In autologous tissue reconstruction, a piece of tissue containing skin, fat, blood vessels, and sometimes muscle is taken from elsewhere in a woman's body and

used to rebuild the breast. This piece of tissue is called a flap.

Different sites in the body can provide flaps for breast reconstruction. Flaps used for breast reconstruction most often come from the abdomen or back, or alternately from the thigh or buttocks.

### How do surgeons reconstruct the nipple and areola?

After the chest heals from reconstruction surgery and the position of the breast mound on the chest wall has had time to stabilize, a surgeon can reconstruct the nipple and areola. Usually, the new nipple is created by cutting and moving small pieces of skin from the reconstructed breast to the nipple site and shaping them into a new nipple. A few months after nipple reconstruction, the surgeon can re-create the areola. This is usually done using tattoo ink. However, in some cases, skin grafts may be taken from the groin or abdomen and attached to the breast to create an areola at the time of the nipple reconstruction.<sup>2</sup>

A mastectomy that preserves a woman's own nipple and areola, called nipple-sparing mastectomy, may be an option for some women, depending on the size



and location of the breast cancer and the shape and size of the breasts.<sup>3,4</sup>

### What factors can affect the choice of breast reconstruction method?

Several factors can influence the type of reconstructive surgery a woman chooses. These include the size and shape of the breast that is being rebuilt, the woman's age and health, her history of past surgeries, surgical risk factors (for example, smoking history and obesity), the availability of autologous tissue, and the location of the tumor in the breast.<sup>4,5</sup> Women who have had past abdominal surgery may not be candidates for an abdominally based flap reconstruction.

All women who undergo mastectomy for breast cancer experience varying degrees of breast numbness and loss of sensation (feeling) because nerves that provide sensation to the breast are cut when breast tissue is removed during surgery. However, a woman may regain some sensation as the severed nerves grow and regenerate.

Any type of breast reconstruction can fail if healing does not occur properly. In these cases, the implant or flap

will have to be removed. If an implant reconstruction fails, a woman can usually have a second reconstruction using an alternative approach.

### What type of follow-up care and rehabilitation is needed after breast reconstruction?

Any type of reconstruction increases the number of side effects a woman may experience compared with those after a mastectomy alone. A woman's medical team will watch her closely for complications, some of which can occur months or even years after surgery.<sup>2,5,6</sup>

Women who have either autologous tissue or implant-based reconstruction may benefit from physical therapy to improve or maintain shoulder range of motion or help them recover from weakness experienced at the site from which the donor tissue was taken, such as abdominal weakness.<sup>7,8</sup>

### Selected References

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8. McAnaw MB, Harris KW. The role of physical therapy in the rehabilitation of patients with mastectomy and breast reconstruction. *Breast Disease* 2002; 16:163-174.

**Source:** National Cancer Institute.

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