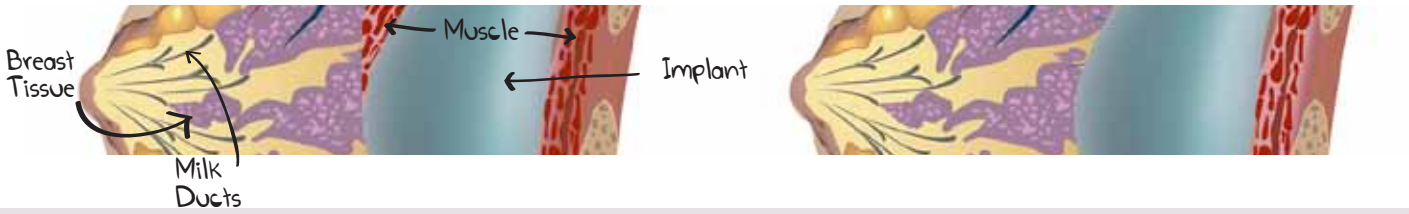
BREAST AUGMENTATION



BREAST AUGMENTATION

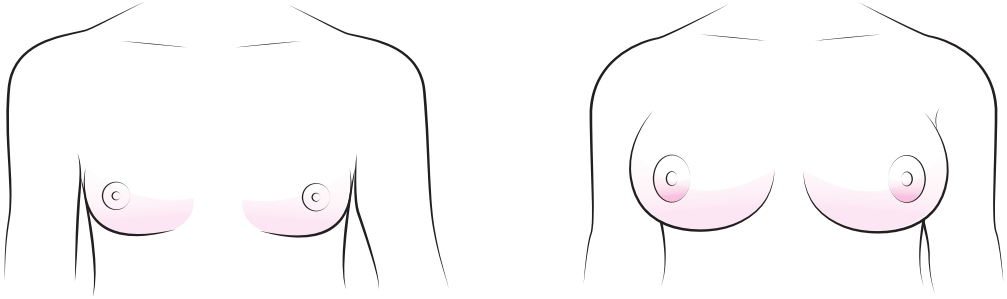
Breast augmentation is the enlargement of the breasts. Some transwomen choose to undergo this procedure if hormone therapy does not yield satisfactory results. Usually, typical growth for transwomen is one to two cup sizes below closely related females such as the mother or sisters. Estrogen is responsible for fat distribution to the breasts, hips and buttocks, while progesterone is responsible for developing the actual milk glands. Progesterone also rounds out the breast to an adult tanner stage 5 shape and matures and darkens the areola.

Breast augmentation and augmentation mammoplasty are plastic surgery terms for the breast-implant and the fat-graft mammoplasty approaches used to increase the size, change the shape, and alter the texture of the breasts of a woman. As a primary reconstruction, augmentation mammoplasty is applied to effect a post–mastectomy breast reconstruction, the repair of the chest wound consequent to the removal of a cancerous breast; to correct congenital defects of the breast(s); and to correct congenital defects of the chest wall. As an elective, cosmetic surgery, primary augmentation changes the aesthetics — of size, shape, and texture — of healthy breasts.

The surgical implantation approach effects the global augmentation of the breast hemisphere using a breast implant, either an implant filled with saline-solution, or an implant filled with silicone-gel. The use of silicone gel has resulted in some serious malfunctions when leakage or deterioration of the sac containing the gel occurs. There have also been serious consequences from the use of the wrong kind of silicon.

The surgical augmentation approach can include the application of transplanted autologous skin flaps harvested from the woman's body. The fat-graft transfer approach augments the size and corrects contour defects of the breast hemisphere with grafts of autologous adipocyte fat tissue, drawn from the woman's body.

In a breast-reconstruction procedure, within a multi-stage reconstruction-mammoplasty, a tissue expander (a temporary breast-implant device) is emplaced and used to prepare (shape and enlarge) the recipient site (implant-pocket) to receive and accommodate the breast implant prosthesis. In a non-implant breast-augmentation procedure, some fat-graft injection approaches feature tissue-engineering, which is the pre-operative, external expansion of the tissues of the recipient site to receive the grafts of adipocyte tissue drawn from the woman's body. Non-surgical approaches to breast augmentation can consist of an externally applied vacuum-device that will expand the tissues of the recipient site. In most instances of fat-graft breast augmentation the increase is of medium volume — usually one brassière cup-size or less — which usually is the physiologic limit allowed by the metabolism of the woman's body.



Illustrations by the Gender Centre

MEDICAL COMPLICATIONS

In every surgical and non-surgical procedure, the risk of medical complications exists before, during, and after a procedure, and, given the sensitive biological nature of breast tissues (adipocyte, glandular), this is especially true in the case of fat graft breast augmentation. Despite its relative technical simplicity, the injection (grafting) technique for breast augmentation is accompanied by post-procedure complications—fat necrosis, calcification, and sclerotic nodules—which directly influence the technical efficacy of the procedure, and of achieving a successful outcome. The Chinese study Breast Augmentation by Autologous Fat-injection Grafting: Management and Clinical Analysis of Complications (2009), reported that the incidence of medical complications is reduced with strict control of the injection-rate (cm3/min) of the breast-filler volume being administered, and by diffusing the fat-grafts in layers to allow their even distribution within the breast tissue matrix. The complications occurring in the seventeen-patient group were identified and located with 3-D volumetric and MRI visualisations of the breast tissues and of any sclerotic lesions and abnormal tissue masses (malignant neoplasm). According to the characteristics of the defect or abnormality, the sclerotic lesion was excised and liquified fat was aspirated; the excised samples indicated biological changes in the intramammary fat grafts—fat necrosis, calcification, hyalinisation, and fibroplasia.

The complications associated with injecting fat grafts to augment the breasts are like, but less severe, than the medical complications associated with other types of breast procedure. Technically, the use of minuscule (2-mm) incisions and blunt-cannula injection much reduce the incidence of damaging the underlying breast structures (milk ducts, blood vessels, nerves). Injected fat-tissue grafts that are not perfused among the tissues can die, and result in necrotic cysts and eventual calcifications—medical complications common to breast procedures. Nevertheless, a contoured abdomen for the patient is an additional benefit derived from the liposuction harvesting of the adipocyte tissue injected to the breasts.

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