



Lipografter Clinical References:

Megavolume autologous fat transfer: part I. Theory and principles

Roger K Khouri 1, Gino Rigotti, Eufemiano Cardoso, Roger K Khouri Jr, Thomas M Biggs

Plast Reconstr Surg. 2014 Mar;133(3):550-557.

Abstract

This article describes the theory and principles behind the authors' success in megavolume (250-ml range) autologous fat transfer to the breasts. When large volumes are grafted into a tight space, the interstitial fluid pressure increases to impair capillary blood flow and the crowded graft droplets coalesce into lakes, with poor graft-to-recipient interface. These factors have historically restricted the volume of fat that can be grafted into small recipient breasts. The decreased interface increases the distance oxygen must diffuse to reach the grafted adipocytes, causing central necrosis to occur before neovascularization. The increased interstitial fluid pressure reduces capillary radius, reducing oxygen delivery to grafted adipose tissue. The Brava external expansion device harnesses the regenerative capabilities of mechanical forces to preoperatively increase the volume and vascularity of the recipient site, allowing megavolumes of fat to be grafted diffusely without significantly decreasing graft-to-recipient interface or increasing interstitial fluid pressure. The application of these principles has allowed the authors to successfully graft megavolumes of fat into the breasts of over 1000 patients with substantial long-term retention.

See online: PMID: 24572848 DOI: [10.1097/01.prs.0000438044.06387.2a](https://doi.org/10.1097/01.prs.0000438044.06387.2a)

Megavolume autologous fat transfer: part II. Practice and techniques

Roger K Khouri 1, Gino Rigotti, Eufemiano Cardoso, Roger K Khouri Jr, Thomas M Biggs

Plast Reconstr Surg. 2014 Jun;133(6):1369-1377

Abstract

The authors describe the techniques that use the principles of fat grafting to allow them to successfully graft megavolumes (250-ml range) of autologous fat into breasts. The Brava external volume expansion device preoperatively increases the volume and vascularity of the recipient site. Low-pressure liposuction and minimal centrifugation are used to gently extract and purify the adipose tissue with minimal trauma. Even and diffuse reinjection of the fat increases graft-to-recipient interface and reduces interstitial fluid pressure. Postoperative Brava use protects the graft and acts as a three-dimensional immobilizing splint. By adhering to these techniques, we have been able to graft megavolumes of fat into the breasts of over 1000 patients and obtain substantial long-term volume retention.

See online: DOI: [10.1097/PRS.0000000000000179](https://doi.org/10.1097/PRS.0000000000000179)



Lipografter Clinical References:

Aesthetic applications of Brava-assisted megavolume fat grafting to the breasts: a 9-year, 476-patient, multicenter experience

Roger K Khouri 1, Roger K Khouri Jr, Gingo Rigotti, Alessandra Marchi, Eufemiano Cardoso, Silvia C Rotemberg, Thomas M Biggs

Plast Reconstr Surg. 2014 Apr;133(4):796-807.

Abstract

Background: Autologous fat grafting to the breasts was banned in 1987 because of unpredictable graft retention and cyst formation that could not be differentiated from cancer. Surgical and radiologic advances induced a lifting of the ban in 2009. Small- to moderate-volume autologous fat grafting to the breast has become common. The authors present their aesthetic applications of megavolume autologous fat grafting to the breast.

See online: doi: [10.1097/PRS.000000000000053](https://doi.org/10.1097/PRS.000000000000053)

Current Clinical Applications of Fat Grafting

Roger K Khouri Jr, Roger K Khouri

Plast Reconstr Surg. 2017 Sep;140(3):466e-486e.

Abstract

Learning objectives: After reading this article, the participant should be able to: 1. Understand the theory and principles behind successful avascular fat transfer; 2. Apply these principles into techniques that yield safe and successful fat grafting operations; 3. Identify the well-established indications and limitations of the various fat grafting operations as well as the indications that require additional clinical and translational research.

PMID: 28582333 DOI: [10.1097/PRS.00000000000003648](https://doi.org/10.1097/PRS.00000000000003648)



Lipografter Clinical References:

Roll, Spin, Wash, or Filter? Processing of Lipoaspirate for Autologous Fat Grafting: An Updated, Evidence-Based Review of the Literature

Emily C Cleveland 1, Nicholas J Albano, Alexes Hazen

Plast Reconstr Surg. 2015 Oct;136(4):706-713.

Abstract

Background: The use of autologous adipose tissue harvested through liposuction techniques for soft-tissue augmentation has become commonplace among cosmetic and reconstructive surgeons alike. Despite its longstanding use in the plastic surgery community, substantial controversy remains regarding the optimal method of processing harvested lipoaspirate before grafting. This evidence-based review builds on prior examinations of the literature to evaluate both established and novel methods for lipoaspirate processing.

PMID: 26397249 DOI: [10.1097/PRS.0000000000001581](https://doi.org/10.1097/PRS.0000000000001581)

The Effects of Fat Harvesting and Preparation, Air Exposure, Obesity, and Stem Cell Enrichment on Adipocyte Viability Prior to Graft Transplantation

Rodolfo Cucchiani, Luis Corrales

Aesthet Surg J. 2016 Nov;36(10):1164-1173.

Abstract

Background: Adipocyte viability is affected by fat preparation and processing methods, but rigorous and objective studies of these relationships are lacking.

Objectives: The authors conducted a comprehensive evaluation of variables affecting adipocyte viability prior to injection of fat at the recipient site.

PMID: 27474770 DOI: [10.1093/asj/sjw106](https://doi.org/10.1093/asj/sjw106)