



Plump up the Volume

Writer Erica Cassidy investigates the process of Microfat grafting, whereby you can redirect body fat to where it's needed most





It's one of life's frustrations that fat accumulates right where we don't want it. Whilst fat cells give a welcome and youthful plumpness to the hollows of our faces, they are more likely to congregate around our bottoms, tummies and thighs and this topsy-turvy distribution only widens as we age. If only there was a way to redirect those fat cells and put them to good use. Lucky for us there is, and it's called autologous fat grafting, the latest iteration of which is microfat grafting.

Far from entering the market as a new procedure, fat grafting was first performed over a century ago in Germany when Dr. Gustav Neuber successfully transferred fat from a patient's arm to their eye region. Subsequent fat grafts were marred by complications and poor results due to inconsistent techniques for the extraction and processing of fat cells and it wasn't until the 1990s that liposuction techniques were standardised, which led to a rise in the popularity of fat grafting.

Performed predominantly by plastic surgeons due to the liposuction element of the procedure, fat grafting is a surgical process by which fat is extracted from a 'donor' part of the patient's body, such as the bottom, thighs or lower abdomen, under a local or general anaesthetic. A thin hollow tube, or cannula, is inserted through tiny incisions in the skin and moved gently back and forth to loosen fat cells which are suctioned out. Those cells are then processed and purified before being reinjected where they are needed. Because the fat cells are autologous (from one's own body), fat grafting is 100 percent biocompatible with every individual, and best of all there is usually a readily available (read: surplus to requirement) and easily harvested supply. When used correctly on the face, it's one of the best-kept secret weapons that plastic surgeons have in their anti-ageing toolbox. Wondering why? Read on.

We know that the smooth contours and visually pleasing plumpness of a youthful face rely on the interplay of four structural components: bone, muscle, skin, and

fat. As we age, our bone mineral density declines, muscle fibres shrink in number and size, and skin slackens thanks to insufficient collagen production and the loss of elastin. Visible ageing is further compounded by a loss of adequate fat cushioning in key areas. This exaggerates any existing wrinkles, folds, and hollows, and can leave our faces looking sunken and permanently tired. Areas particularly vulnerable to visible fat loss are the lips, cheeks, temples, under the eyes and the nasolabial folds, those 'laughter lines' that tend to drag the corners of your mouth downwards with age.

One way to support a youthful appearance is to restore this volume loss, which has traditionally been done through the injection of synthetic dermal fillers such as hyaluronic acid. Hyaluronic acid is a naturally occurring molecule found in our skin and yet the synthetic version can still trigger an allergic reaction in some clients. Currently used synthetic fillers are also temporary, lasting between 6 and 18 months before they are reabsorbed by the body and need topping up as the ageing process continues, more and more synthetic filler is required to maintain the same temporary result, which is time-consuming, expensive, and eventually unsustainable.

In contrast, a successfully grafted fat cell should remain in place permanently, and according to plastic surgeon Dr. Tristan de Chalain, advances in technique mean that between 40 to 60 per cent of grafted fat cells should survive. "Running the harvested autologous fat through a microniser before injecting it breaks up the cells, and the finer the division of cells, the more likely they are to survive," says Dr. de Chalain. "Once the microfat cells have established a blood supply in their new location, they are there pretty much forever."

Reducing fat cell clumps down to micro-size has another benefit. Rather than injecting bigger blobs, using many tiny globules of fat allows plastic surgeons greater control over the contours they create so you don't end up with an overly full, puffy face.

Microfat grafts are typically used to restore volume

Auckland-based plastic surgeons, Dr Katarzyna Mackenzie (above) and Dr. Tristan de Chalain (right).





“In addition to the plumping and revolumising benefits, injected microfat is known to improve the long-term quality of the skin.”

to areas of the face such as the temples, upper and lower eyelids, nasolabial folds and in the hollowing between the tear drops and the nose. They can be used to correct poorly shaped contours in the cheeks, lips and chin, whether they're due to the ageing process, trauma or congenital defects. Microfat can also be injected under scars to help minimise their appearance and stimulate healing.

In addition to the plumping and revolumising benefits, injected microfat is known to improve the long-term quality of the skin around it due to the high concentration of stem cells, which are powerhouses when it comes to wound healing and skin regeneration. Recent studies show that our body fat has the highest percentage of adult stem cells of any other tissue in the body, which is why fat grafting is frequently used in the treatment of hyper-sensitive scars and radiotherapy-damaged skin.

“Traditional synthetic fillers and fat grafts are both about restoring volume,” says Dr. De Chalain. “But with microfat grafting, you're not just putting volume back into the face where it needs it, you're adding biocompatible stem cells with all their restorative capabilities too.”

Sounds amazing, right? And it is, however, microfat grafting should not be seen as a standalone alternative to other dermal fillers, with most plastic surgeons preferring

to use it in combination with a facelift for the best results.

“We all age differently and it's really important to understand what the underlying problems are and advise clients on the appropriate surgical procedures for them,” says Dr. Katarzyna Mackenzie, Auckland-based plastic and hand surgeon. “Isolated fat grafting is of questionable benefit to patients troubled by significant facial sagging.”

There is also the cost factor. Whilst traditional fillers can be done with minimal downtime and just a few hundred dollars investment at a time, a fat graft is not a lunchtime treatment. Performed by a surgeon under anaesthetic, the cost of a microfat graft varies depending on the area being treated but will typically cost upwards of \$10,000-\$12,000 up front.

“The short-term cost is much higher, but the long-term cost associated with maintaining volume is much less,” says Dr. Chalain. “And the benefits are greater and longer-lasting.”

Like most parts of the beauty industry, fat grafting is edging into nano-territory, with new processing techniques that crush and filter out fat cells, leaving just a potent concentration of mesenchymal stem cells (MSCs) which are then injected into the skin. “Whilst microfat is injected underneath the skin for the purpose of volumisation and skin rejuvenation, nanofat delivers improvement in facial wrinkles and new collagen production in more cosmetically sensitive areas,” says Dr. Mackenzie. “It's a whole new ball game.” Watch this space.

As well as a visible, lasting improvement to the youthful curves and quality of the skin being injected with microfat, there's the collateral benefit of an improvement in body contouring as well. Microfat grafting takes those squidgy wobbly bits we love to hate and puts them to work creating volume and rejuvenation right where you need it. It's a win for your body and a win for your skin.