



# Tear trough

Injecting hyaluronic acid into the tear trough is an effective alternative to surgery. Dr Rohit Kotnis and Dr Sonali Kotnis discuss the benefits of using injectable hyaluronic acid for volumisation

**T**he tear trough area is the hollow between the juncture of the cheek and the orbital rim. As we age, our skin loses volume and strength. This is partly caused by the gradual loss of collagen and relative dehydration. The reliable treatment of the tear trough with dermafillers has been challenging and controversial.

Surgeons have traditionally performed lower lid blepharoplasty to improve the problem. However, this treatment does not address the volume loss issue. The principle behind blepharoplasty is to remove excess tissue, so results have frequently been sub-optimal. Surgical options for volume loss, such as autogenous fat grafting, are limited and unreliable. Synthetic permanent fillers have also been beset by complications. Initial treatment with dermafillers proved disappointing, and practitioners encountered complications such as nodular formation. The true depth of volume loss was not fully appreciated and injections were frequently performed too superficially.

In the mid-face, loss of volume leads to increased visual exposure of the bony orbital rim. This results in accentuation of the infra-orbital fat pads, leading to enhancement of the tear trough hollow. The complex 3D nature of this area makes any volume loss appear harsher than it really is.

Clients often complain of a continuous tired appearance,

even after a relaxing holiday. Using fillers in the nasolabial region accentuates the visual effect of the tear trough hollow.

Goldberg et al performed a study on 155 patients, filling the peri-orbital hollows with hyaluronic acid. He reported high satisfaction rates (89%) and no serious complications using Restylane. Longevity was present at six months post-treatment with some patients still having evidence of residual filling after 12 months.

Injections should be performed by experienced cosmetic practitioners with at least 12 months' experience with injecting dermafillers. As the injection technique differs from traditional methods for treating nasolabial folds and marionette lines, I would recommend attending a training course.

The medico-legal issues to the practitioner of injecting at a deeper level need to be fully investigated. The small but minimal risk of sight loss should be explained to the patient. This may occur from direct injury to the eye or intra-vascular injection with local necrosis or distant embolisation. Physicians must be cautious when treating people who have previously undergone lower lid blepharoplasty.

Patients with excess lower lid skin, marked loss of skin elasticity in the tear trough or those more concerned with the fine lines in this region may not be ideal candidates. Prior to treatment, the aims and expectations of the client should be

accurately identified and a plan drawn up to maximise the chances of a successful outcome. An honest approach with realistic expectations is always crucial.

**Technique**

The thin layer of skin overlying the bone and the complex nature of the region's anatomy make injecting challenging. Injections that are too superficial can lead to skin colour distortion. The complex superficial and deep vein network increases the risk of bleeding and subsequent haematomas. Bleeding and swelling are more likely than in other areas and the client should be warned before booking a treatment.

Consent and pre-procedural photography are essential. Anaesthesia may be provided with topical anaesthetic cream or ice or both. Some clinicians use an infra-orbital nerve block using Lignocaine injected into the infra-orbital foramen, which increases comfort for the patient but is often unnecessary and has its own risks.

The patient should be seated upright to allow the physician to see the tear trough area and eyelid fat pads clearly. A thick particulate volume filler such as Perlane is required to achieve optimal results. Injections should be placed deep at the level of the sub-orbicularis muscle or preperiosteal. A guide to this depth is the bony prominence of the orbital rim.

Injection should follow the semicircular outline of the tear trough and use aliquots of approximately 0.1cc. Good control of the needle plunger should be maintained at all times—filling a large volume in a single area can easily lead to an irregular appearance.

The filler may be layered using a feathering technique and gentle massage should be performed to reduce the risk of nodular formation. Injecting the filler too far medial at the canthus must be avoided. Potential damage to the lacrimal apparatus and inadvertent injection into the angular vascular system is possible—this could theoretically result in blindness.

You will see an immediate improvement, provided the filler has been injected at the correct depth, with improvement continuing as the swelling subsides. Patients must avoid vigorous massage or rubbing of the area post-procedure.

Side-effects include significant bruising, contour irregularities and colour changes resulting from too superficial an application of the filler. Occasionally, fluid accumulation can occur.

Longevity ranges from six to nine months with thick particulate fillers. A thinner filler can be used, but I have found the results disappointing. I would recommend at least 1ml of filler per side to achieve good results.

Treating the tear trough hollow can be satisfying to both the client and practitioner. However, consideration must be given to different techniques and complications that may arise compared with filling of the lower face. For this reason, attendance at a training course and subsequent 1:1 training are advisable.

The treatment will enhance the services already offered and as experienced aesthetic practitioners know, clients fre-

quently discuss treatment of the tear trough. If the correct candidate is selected, he or she will experience a predictable result. This will enhance rejuvenation that may have already been achieved with conventional fillers and botulinum toxin treatment.

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The tear trough area constitutes the hollow between the cheek and orbital rim



Before and after treatment. Physicians will see an immediate improvement provided the filler has been injected at the correct depth

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