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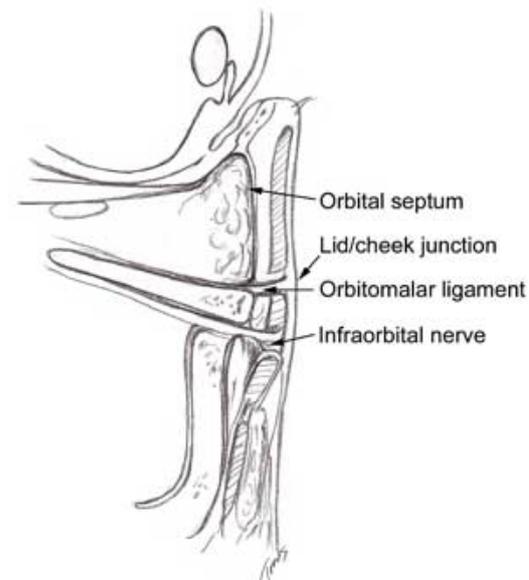
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Filler treatments for tear trough rejuvenation, hollow eyes & dark circles

The tear trough deformity

The tear trough is the groove at the junction between where the lower eyelid and the cheek. As we age, one of the changes which is commonly noticed and commented on is the appearance and gradual worsening of dark circles under the eyelids. This occurs due to the thinning of the overlying skin and soft tissue over the bony orbital rim. A band of tethering fibrous tissue called the orbitomalar ligament binds the skin underneath the lower eyelid to the underlying bony rim of the eye socket. In youth, due to the surrounding plump fat, thicker overlying skin and soft tissue surrounding this structure, this ligament is usually invisible. However as one ages, atrophy of the adjacent tissues and thinning of the skin occurs leading to increased visibility of this deep attachment between the skin and orbital rim- the so called **tear trough deformity**.



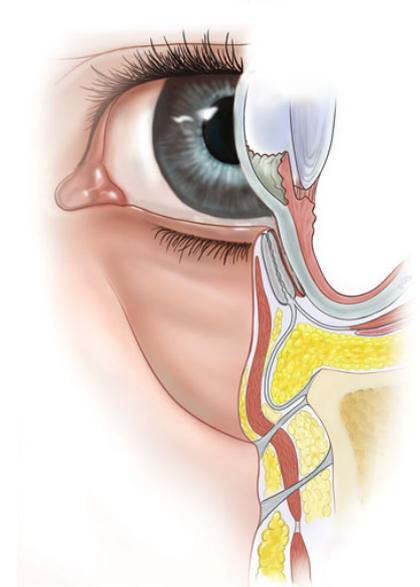
Treatment Options

Various treatment options for the disguising the tear trough deformity exist but all of them are based around two principles.

Either to:

- Plump up the tissue around the ligament (leaving the ligament intact) e.g. using filler or fat injections or to
- Disrupt the ligament altogether i.e. using surgery (lower eyelid blepharoplasty/ lower eyelid bag removal)

Both treatment principles have their advantages and disadvantages and the suitability of each treatment option varies from patient to patient. For example, some patients benefit from a combination of both surgery and filler injections. Mr Cheung offers multiple treatment options and will be able to advise on the best option for each individual patient.



Injectable filler (Restylane) for tear trough rejuvenation/ Tear Trough Filler Treatment

- A popular treatment is the use of injectable hyaluronic fillers, especially in patients in their late 30's to 40's, to essentially fill out the trough. Commonly in this age group, the loss of volume at the junction between the upper cheek and lower eyelid, i.e. a worsening tear trough deformity, is the only obvious sign of ageing. Therefore simple replacement of this lost volume without the need for surgery can lead to dramatic improvement. In the past various injectable implants e.g. the patients own harvested fat cells have been used with varying patient acceptability and success. Injectable fillers such as Restylane, which are based on hyaluronic acid, a natural tissue component produced by the body, have been used with excellent safety and effectiveness.
- The aim of the treatment is to place the filler deep below the skin and soft tissue around orbitomalar ligament, thereby lifting up these tissues, making the tear trough appear shallower. In most patients there is an almost immediate improvement with a reduction in the depth and width of the tear trough itself. Dark circles which are often due to shadowing within the trough itself similarly improve. In some patients though, there may remain some residual dark circles due to actual longstanding skin pigmentation built up over many years. In these patients they often notice an enhanced effect from using makeup to mask these lines.

Non Permanent

As with all hyaluronic acid based fillers, there is very slow absorption of the injected material over time and these injections can quite safely be repeated if necessary. As one's face slowly changes with time, cosmetic doctors have now recognised that non-permanent treatments are advantageous since they allow them to maintain harmony rest of the patients face. A permanent implanted material such as silicone given to a patient in their 30's may not look as good or harmonious if it still present when the patient is 80. For this reason, patients and their surgeons are seeking non-permanent absorbable injectable implants since they allow for retreatments in the future, customised for that patient.

Reversible

Another major advantage of these hyaluronic acid based fillers is that they can quickly be reversed if the patient so desires. In the rare situation where the patient is not content with the treatment, a small injection of Hyalase solution (generic name: hyaluronidase) into the injected filler can be used to quickly dissolve the implant.

No Surgery Required

- On the whole, the treatments are very well tolerated, being virtually painless with only a small amount of skin numbing local anaesthetic cream necessary applied to the skin just prior to injection. Patients can feel some mild pressure during the procedure itself.
- The procedure is usually performed within the outpatient clinic and takes about 5-10 minutes per side.
- Most patients go back to work immediately following treatment. Bruises and lumps can occur and if so last typically 3-7 days. They can often be covered up using makeup.
- The recovery time is very quick and although patients do notice some mild swelling over the first post procedure week, most of this would have disappeared within 10 days. As the mild trauma associated with the injection can cause some minimal swelling and lumpiness, it is advised that

patients be aware of this and be reassured that it is often normal for the treated area to look swollen and slightly lumpy during this period.

- After 1-2 weeks though the injection trauma swelling should have largely settled down. Any lumpiness may uncommonly therefore be due to irregular distribution of filler material. The material is still mouldable under the skin over the forthcoming weeks to months and this characteristic is very often useful as patients can often self mould the implant to their own liking e.g. to smooth out any tiny visible lumps.
- Mr Cheung uses a combination of standard injection using needles and also subdermal fanning techniques using microcannula depending on the area to be treated. The use of a microcannula has greatly improved the safety, comfort and reliability of treatment recently. Minor bruising is uncommon with this procedure and usually disappears over 10 days. Most bruising is superficial and light and is easily concealed with makeup.
- Mr Cheung's filler of choice for tear trough filler is Restylane.
- Although Perlane has been used in the past by Mr Cheung with the added advantage of Perlane lasting longer than Restylane, Restylane gives more consistent results when using a cannula injection technique.
- A first course of treatment consists of an outpatient clinic visit for treatment, then a follow up clinic review usually two to four weeks later to reassess and top up if necessary.
- For medicolegal reasons in the UK and because we wish our patients to be fully informed about their procedure and risks, Mr Cheung cannot offer same day initial consultation and treatments.
- Patients may undergo a repeat course of top up retreatment if desired to replace any filler which has slowly dissolved over time, sometimes 12-18 months later.



Tear trough deformity in a lady in her late 30s (left). 20 minutes after injection of hyalauronic acid filler to the tear trough (right) to mimic the soft tissue lost. Notice the increased youthful looking fullness. Besides the mild bruising caused by the injection, there are very few indicators that she has undergone any treatment at all. This lady went straight back to work the following day. Notice the small amount of bruising and swelling.

This fades and often becomes inconspicuous within a week

Risks

There are risks associated with any medical procedure and doing nothing is always the safest option in comparison to cosmetic treatments. However the risks associated with tear trough filler treatment are rare. Despite this, Mr Cheung tries to be as comprehensive as possible when it comes to informing patients of risks so that they can make a fully informed choice.

- Infection- As with any type of filler treatment there is a tiny risk that the patient develops a skin infection from the injection. This risk is quite rare and is greatly reduced by the use of aseptic injection techniques.
- Reactions including allergy- very rarely patients are allergic to the filler substance. This may range from low grade local chronic allergic type reactions to full blown acute anaphylactic shock reactions. Mr Cheung would not recommend tear trough filler treatment in any patient who has had any unexplained reaction to dermal fillers or to local anaesthetics such as lidocaine. Uncommonly patients may need dissolution of hyaluronic acid filler using an enzyme (hyaluronidase) mixture if it is suspected that they are suffering from a low grade allergic inflammatory reaction against the filler. Patients who have had previous allergy to hyaluronidase enzyme (often used in local anaesthetic injections) should therefore not undergo tear trough hyaluronic acid filler injection treatments. Patients who have certain allergies e.g. to eggs or bee stings have a higher risk of being allergic to hyaluronidase enzyme too and therefore should similarly avoid hyaluronic acid filler injections.
- Visibility - Uncommonly filler treatment can appear to cause blue discolouration of the skin in bright light. This is more common in patients with very thin skin injected with the higher viscosity fillers such as Perlane. This can be avoided though by careful filler type choice and accurate placement of the filler itself into the deeper layer. For the technically minded, Mr Cheung tends to inject in a fan type configuration under the muscles specifically to avoid this potential problem.
- Migration - there have been reports of late movement of the filler away from its originally injected area. This is quite uncommon especially with the use of low pressure cannula injection techniques but can usually be easily treated.
- Vision loss and double vision - Due to the way that the blood vessels of the face interconnect with the blood vessels of the eye, there is a very rare risk of blockage of the blood vessels of the eye leading to blindness. So for example, fillers which are commonly injected into the lips or forehead have a risk of causing obstruction of the blood vessels of the eye resulting in loss of vision. This risk is incredibly rare and most of the case reports have been with the use of injected fat (liposculpture) but can theoretically occur with any type of injected substance anywhere on the face where there is interconnection with the blood supply of the eye. Indeed any clinician practising facial filler work should therefore inform their patients of this risk at the consent process. There are sparse case reports of this happening with hyaluronate based fillers injected elsewhere in the face but taking into context how many facial filler injections are administered worldwide and the number of reports, one can see that it is incredibly rare. As of 2015 there have not been any reports of embolic central retinal artery occlusion secondary to tear trough filler injection but it can theoretically happen. The risk of this complication is theoretically much reduced with oculoplastic surgeons performing this procedure as they have intimate knowledge of the major blood vessels around the eye and therefore can avoid them better. In addition the use of blunt cannula techniques should reduce this already minuscule risk even further.

- Need for hyaluronidase dissolution - Occasionally hyaluronic acid fillers need to be dissolved when the aesthetic treatment has not produced the desired outcome or there is a possibility of vascular occlusion or impending necrosis (tissue death) which could lead to compromise of healthy tissue. Hyalase® (hyaluronidase 1500 units) has an off-license use in aesthetic medicine and except in the case of emergency administration requires the patient to undergo a skin patch test at least twenty minutes prior to the procedure being undertaken. The skin patch test is carried out by injecting Hyalase® into the subcutaneous tissue of the forearm and observed for signs of reaction (i.e. hives or wheals). If a positive patch test result is observed, treatment with Hyalase® cannot be carried out. Erythema or redness and slight vasodilation may be expected. Hyalase® is an enzyme which breaks down hyaluronic acid fillers, but it can also break down naturally occurring hyaluronic acid present in the body therefore this may lead to loss of volume and there can be some skin laxity. Hyalase is safe to use around the eye and has been used for over 20 years off license during eye surgery. While many single treatments have been successful, there is no guarantee that the dermal filler will be dispersed fully after one treatment and may require further treatments. Hyalase® administration can result in a severe allergic reaction and so conservative treatment options or leaving the dermal filler to break down naturally which may take several months. After hyaluronidase treatment some other common injection-related reactions might occur including redness, swelling, pain, itching, bruising and tenderness at the injection site. They have generally been described as mild to moderate and typically resolve spontaneously a few days after injection. Bruising may occasionally be more significant. Infection can rarely occur as with any infection. Allergic reactions and severe anaphylaxis reactions have rarely been reported and can occur.
- Need for surgery - Very very rarely patients may need surgery with possible additional costs to the patient to deal with complications related to tear trough filler treatments.
- Risks of Injection - Trauma during the procedure is caused by needles and cannulas passing through tissue and can include bleeding, bruising, haematoma (i.e. a larger collection of blood in the skin, outside of blood vessels), damage to underlying structures including veins, arteries, nerves, salivary glands, lymph nodes, bone, muscle and other soft tissues structures are possible. In rare cases this could cause continuous problems in appearance, sensation or function and may require medical intervention to treat or may be permanent. Most traumatic injuries heal completely on their own.
- Permanent volume changes - Hyaluronic acid fillers in most patients will slowly dissolve away leaving no evidence of their previous injection. In most patients therefore undergoing tear trough filler injections, they will therefore require a top up treatment 12-18 months later. However occasionally some patients notice that their tear trough filler treatments appear to last much longer than anticipated. Rarely the patient's skin may react to the tear trough filler treatment causing collagen deposition leading to the injected area becoming plumper and fuller. Rarely the patient's tissues may react against the filler leading to the filler become entrapped long term preventing or slowing down its gradual natural dissolution (filler encystment). For most patients this is actually a welcome phenomenon meaning that they won't need to have a top up but this may rarely be troublesome for some patients.
- Patients should not have this treatment if they are breastfeeding or pregnant.
- Patients should not have this treatment if they have an active infection of their eyelids.
- Disappointment - Rarely patients may be disappointed with the results of treatment despite Mr Cheung's and the Westbourne Centre's best efforts. Indeed rarely patients may request dissolution of any injected hyaluronic acid filler because the outcome does not meet the patient's expectations. e.g. the filler may look lumpy or cause a tissue reaction due to its presence. Unfortunately these poor outcomes are often not predictable and may not be discovered until after treatment and the usage of consumables, facility usage, etc with their associated costs. Before embarking on this course of treatment, you must therefore be aware that the Westbourne Centre and Mr Cheung

therefore may not be able to offer any refund in the event of patient disappointment and any refunds (whether partial or full) of procedure fees in the event of patient disappointment are wholly discretionary.



(Left) 24 year old lady complaining of dark circles and minimal bulging due to tear trough deformity and minor lower lid orbital fat prolapse. (Right) Same patient two weeks following tear trough filler treatment with restylane.

Prices

The typical cost for a course tear trough rejuvenation with injectable fillers by Mr Cheung is around £990 (£100 for initial consultation and £890 for a course of tear trough filler treatment with Restylane at the Westbourne Centre).

- Tear trough filler treatment is performed personally by Mr Cheung at The Westbourne Centre, Birmingham (www.westbournecentre.com).
- Following an initial consultation (consultation fee £100) which can take place at any of the clinics where Mr Cheung consults, tear trough filler treatment may be recommended. Mr Cheung will supply information to allow you to make an informed choice about whether they wish to proceed. If you are still happy to proceed, please then contact Mr Cheung or his PA directly, who will ask Westbourne Centre to liaise with the patient to arrange a convenient date of treatment and collect payment in advance of the procedure. From March 2021, the treatment charge for this treatment is £890 and includes procedure fee, facility fees, consumables and necessary review appointments.
- Most patients require a 1ml vial of hyalauronic acid filler for their treatment. However for patients who have excessively deep troughs, larger volumes of filler may be necessary which the Westbourne centre may need to bill for.
- For patients undergoing their initial treatment course, it is recommended that they attend clinic again 2-4 weeks following their treatment to be reviewed in person Mr Cheung. However if the patient is comfortable and has no problems, they may decide to forgo this review appointment and keep in contact with Mr Cheung via email.