The trend and popularity for improving one’s appearance is constantly on the rise not just with women, but also men who are now also seeking services that can improve age-related concerns. Skin-rejuvenation techniques have come a long way in recent years – both through traditional aesthetic therapies as well as clinical procedures. However, the new trend is for a natural outcome that does not betray that anything has been done, both surgically or otherwise. With advances in technology, new innovative solutions that provide a greater variety of outcomes are now able to achieve subtle, yet appealing improvements in appearance enhancement. Understanding the scope of possibilities of these advances, both aesthetic tools and the more invasive ones, is important to every practitioner so that they can direct their clients and assist them to gain maximum treatment outcome to their ultimate satisfaction.

Dr Ingrid Tall has years of experience in a variety of innovative techniques. In this article she explores the possibilities of combination therapies to achieve successful eye rejuvenation.

The cliché the ‘eyes are the window to the soul’ is a truism because this is the landing zone of visual interaction between people. Impressions are made within microseconds and first impressions are vitally important to how we relate as human beings, and the eyes are the first target when that initial connection is made.
If a person's eyes are lacklustre, sad looking, sunken with dark rings, then they tend to look tired, unwell, aged or simply that they have had a 'hard life'.

As we age the brows become increasingly heavy, lines develop under the eyes, crow's feet become more prominent, infra-orbital fat bulges or fat pads herniate out from directly under the eyes and below this the opposite happens, where subcutaneous fat and fat pads atrophy with age and drop over time to create hollowing under the eyes. The juxtaposition of the convexity of the fat bulges and the concavity of the enhanced tear duct trough underneath this creates a 'lack of smoothness' and smoothness and flowing curves is the quintessence of youth.

There is not much in cosmetic medicine that is 'perfect', despite expectations from clients that cosmetic interventions and results are dramatic and virtually free of side-effects or complications. One treatment modality is often not enough to achieve their expectations and address problems but a multiple-solution approach often offers a superior result. A combination of treatments to rejuvenation of the eye area is outlined below.

**SURGERY**

Blepharoplasty, or upper or lower eyelid surgery, has been the mainstay of periorbital rejuvenation for many years, however, clients are often reluctant to go under the 'knife' due to fear of complications, or to the downtime required of often up to two weeks. With the boom in cosmetic medicine, conservative non-surgical treatments are becoming increasingly popular. Having said that, blepharoplasty remains in the top three plastic surgery procedures performed and results are usually edifying and successful. The procedure involves removing excess or redundant skin and the skin is surgically tightened and bulging fat pads are surgically excised. Scars are usually successfully hidden in skin folds and creases.

**HOLLOWS AND DARK RINGS UNDER THE EYES**

Hollows under the eyes are often blamed on 'lack of sleep' or alcohol excess, but they are usually due more to genetics than anything else.

Although a very common presentation at a cosmetic clinic, treating dark circles under the eyes is a challenge. The skin around the eyes is the thinnest than anywhere on the body and eyelids do not have any subcutaneous fat tissue. The under-eye area loses it scaffolding with age faster due to its 'lims'y structure and is prone to fine lines and wrinkles due to excessive movement with smiling, crying and general expressive movements.

Dark circles under the eyes are due to a combination of factors. They may be due to pigmentation of the skin, the bluish orbicularis oculi muscle showing through the thin, translucent skin in this area and blood vessels or increased vascularity in the area. The eyes are the 'window to the soul' so they are very much an important focal point for most people. Changes that can compromise their appearance could also be the underlying muscle and blood vessels and the deoxygenated haemoglobin in the blood vessels that can darken the complexion further in this area. Addressing the pigmentation, vascularity and texture of the periorbital skin will lead to cosmetic improvement.

Pigmentation under the eyes can be improved by a variety of methods. A simple method may be addressing 'atopic shinners' and encouraging allergy-prone people to minimise rubbing the skin under their eyes. Melanocytes or pigment-producing cells are stimulated by trauma and inflammation and physical trauma such as vigorous rubbing of itchy eyes can stimulate melanin production. Sun protection is of course a 'no brainer', however, much of the damage from the sun has usually already been done in early childhood and most appearance and health-conscious people these days are diligent with sun protection.

![Before BOTOX eyes](image1) ![After BOTOX eyes](image2)

**CLINICAL SOLUTIONS**

Existing pigmentation can be improved with fading creams such as 2 to 4% hydroquinone, and cosmeceutical skin agents such as Vitamin A and C. IPL can be used in lighter-skinned people (Fitzpatrick 1 to 4) and Q switched Nd Yag laser in darker-skinned people (Fitzpatrick 3 to 6). Pulling down the infraorbital skin while wearing eye-protection goggles can increase skin exposure to light therapy, or intraocular shields can be utilised after using local anaesthetic eye drops.

'Thickening' the thin skin in this area and stimulating collagen is a challenge with fractional resurfacing (laser or radiofrequency or dermal skin needling) due to the proximity of the vulnerable eyeball and the tendency to quick and easy bruising in the area. Platelet Rich Plasma is often used in the infraorbital area and offers relative ease of access compared to fractional resurfacing. In this procedure, a simple blood collection is taken in the clinic. The collected blood is spun down in a centrifuge to separate the plasma from the red blood cell component. The plasma, which is rich in platelets, is injected in the surrounding tissues to help stimulate collagen and elastin and rejuvenate the skin. After the application of numbing cream to the area to be treated, superficial blebs in the skin using a fine 32-gauge needle can help minimise bruising in the treated area. Swelling lasts usually for two to three days.
Platelet Rich Plasma, which helps to improve the skin texture and is thought by some to improve pigmentation as well, does not, however, tend to 'volumise' an area and often dermal fillers are required to fill out the hollows under the eyes.

Dermal fillers under the eye for orbital hollowing are increasingly utilised, but they are not without risks. They have been fraught with problems in the past such as bluish discolouration and 'bags' forming under the eyes, and every practitioner who is worth their salt and performed enough treatments in this area has encountered problems.

However, over the years results have been improving due to both increased practitioner experience in this area, lower volumes of fillers being utilised and superior dermal fillers entering the market that possess less-unpredictable water absorption, which help lower the risk of hyperinflation or 'bags' being paradoxically created in this area, such as Juvederm Volbella™. It is now recommended that techniques that skilfully use minimal products – ‘less is more’ in this area – allow for lower risk of overcompensating for the loss of volume. Hyaluronidase can be used to break down the product in this area in the event of this occurring.

Techniques for dermal filling vary, however, usually the filler is inserted deep under the muscle in this area to minimise the risk of the 'bluish discolouration' which can occur due to the 'Tyndall effect', or light refracting within the filler. Sometimes a cannula or fine tube is used, but usually it is simply injected with a needle.

Extremely fine threads of hyaluronic acid can also be injected superficially into the thin skin under the eye to help hydrate the skin and lessen its translucency. Filler inferior to the tear-duct trough in the medial mid face can also enhance the treatment of dark rings and some practitioners routinely offer this with tear-duct trough filling.

On completion of the treatment, it is important the client is instructed to occasionally firmly push on the area (every morning for the first two weeks and at least twice a week thereafter for at least the next year) overlying the tear-duct trough to ensure the product remains distributed in the area. Filler in this area can be massaged down by the repetitive action of orbicularis oculi muscle with smiling which can then create a 'lump' under the eye, even up to a year later. Filler in the tear duct trough area can persist for at least 18 months and often even longer.

Dermal fillers can also be injected in the temple hollows and frown lines to help frame the eyes. Targeting multiple areas with filler is ideal to help the aesthetic improvement flow chronologically throughout the entire face rather than treating just isolated aesthetic units of the face. This avoids the 'cognitive dissonance' of one part of the face being younger than other parts of the face.

CARBOXYTHERAPY
Carboxytherapy or carbon dioxide (CO²) injections are commonly used in Europe and South America for 'dark rings' and fine lines under the eyes and is not yet commonly available in Australia. It is a quick and simple procedure with minimal risks and discomfort to the patient. A study of ‘N=1’ is hardly rigorous medical evidence, however, treating my left eye with two treatments of CO² injections has had impressive results, similar to PRP months later after three treatments. After the first treatment there was a discernible reduction in the fine lines under the treated eye. The lines lessened immediately under the treated eye and did not return after the reduction in temporary 'swelling'. Neocollagenesis begins after approximately six weeks and is usually visible for most subjects around the three-month mark. My hypothesis is that the CO² gas 'shears' the tissues and physically disrupts the rhytides to soften the lines through a traumatic process, not only by...
the usual method of collagen stimulation which comes much later.

The CO₂ gas is injected into the tissues using a fine needle and a small CO₂ ‘gun’. The area becomes immediately distended with the CO₂ gas causing a ‘subcutaneous emphysema’. This gas is absorbed over the ensuing half to one hour and there is usually minimal residual swelling or bruising afterwards. The only consumable is the CO₂ gas and a small filter, which attaches to the hub of the CO₂ dispenser. It can be used in conjunction with dermal skin fillers simultaneously and it is often advantageous to have the filler with the concomitant local anaesthetic on board to help with the 'stinging' sensation of the gaseous distension of the tissues.

**TREATING CROW’S FEET WRINKLES**
Traditionally Botox™ or its equivalent is used to treat crow’s feet, which relax the underlying contracted orbicularis oculi muscle to minimise the concertinaing of the skin overlying the muscle. The results are gratifying and reproducible in most hands.

As we age the skin tends to become thinner in the area and the effects of Botulinum toxin in sexagenarians and beyond is not as gratifying due to the skin not adhering as firmly to the underlying muscle. Filler can be infiltrated to help ‘thicken’ up the tissues in the upper cheek area to make the skin look less crepey. The filler can be fanned in this area with a cannula, which helps improve the skin texture and integrity and can also help bolster the upper cheek area subtly as well. The crow’s feet lines can only be rarely ‘directly’ injected by threading the filler underneath them as this can lead to a ‘fishing-line’ effect unless the filler is placed deeply enough or the lines themselves are very deep and can absorb the filler without it showing through the skin.

Collagen stimulation therapies such as Ultherapy™ or Fractional Resurfacing (laser, radiofrequency or dermal rolling) can also subtly help, but the first line treatment is still Botulinum toxin in this area.

**BROW LIFTING**
The eyebrows start descending from the late 20’s, which creates an increasingly tired look. The most common way to counteract this is using Botulinum toxin as a chemical brow lifter. Clients often love this effect of lifting their eyebrows. Botulinum toxin can selectively elevate the medial or lateral aspect of the brow and brow sculpting with ‘flared, horizontal or arc’ brows is possible in skilled and experienced hands. As they age, the brow elevation can lead to paradoxically creating more lines above their lateral eyebrows due to the elevated brows pushing the thinner lateral forehead skin together. Clients are often stuck between a ‘rock and a hard place’ having to choose between more lateral forehead lines or a refreshed elevated brow. Recently, improved dermal skin fillers such as Juvederm Volift™ can soften these lines to ameliorate the situation.

Too much eyebrow elevation can give that ‘scary, starey Botox™ look, commonly referred to as ‘spocking’ after Mr Spock in Star Trek. Even in the most experienced hands, this can be difficult to predict or avoid. Clients who have experienced this previously should always be treated with a ‘preventative’ or ‘despocking’ prophylactic shot of Botulinum toxin (approximately half a unit of Botox™ in each site or equivalent of alternative Botulinum toxin), near the vertex of their potential ‘spock’ to ensure this does not occur.

Alternative methods of raising the depressed eyebrow is through ultrasound (Ultherapy™) or radiofrequency collagen stimulation. Methods such as these employing the use of collagen stimulation have longer-lasting effects than Botulinum toxin, which needs to be performed on average every four months.

Dermal fillers are also used for subtle brow lifting and are increasingly commonly performed, especially in Asian populations who are keen to emulate Western and European features by enhancing roundness and curves. As features progressively flatten with age, dermal fillers can re-contour and drape the skin to emulate youthful features.

Cosmetic medicine has even encroached in the eyelash-extension area. Longer eyelashes have a powerful, endearing effect on the appearance as evidenced by the prolific rash of eyelash extensions by beauty therapists. Mascara-like medical applications can emulate longer eyelashes by inhibiting them falling out. Latisse™ is awaiting TGA approval and other products are available on the market. Some practitioners go ‘off label’ and use a topical application on the eyelashes of glaucoma medication drops such as Lumigan™ which generates longer eyelashes usually within a couple of weeks.

The aesthetic centre point of the face can be approached from multiple standpoints and utilising ‘combination’ therapy is ideal to maximise the cosmetic outcome for the client. If you only have a hammer, then you only use a nail, while there is so much to choose from in the modern cosmetic ‘toolbox’.

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Dr Tall is a cosmetic doctor and General Practitioner, former AMA Qld President and TV Medical Journalist, who has over 20 years’ experience in the cosmetic medicine industry. Cosmetic Image Clinics has been operating for more than eight years in the Brisbane CBD. She has been at the helm of the business since 2011 and in that time it has grown from a two-room practice offering cosmetic medicine and surgery to the modern 1250m² multi-modality, award-winning Medispa with full cosmetic injectable and surgical options along with a fitness centre, bathhouse, physiotherapy treatment options and Day Spa. She is a frequent speaker at medical conferences and will also be a speaker at the APANAESTHETIC CONFERENCE in May at the Stamford Plaza in Brisbane. For further information on her lecture please see pages 46-49.