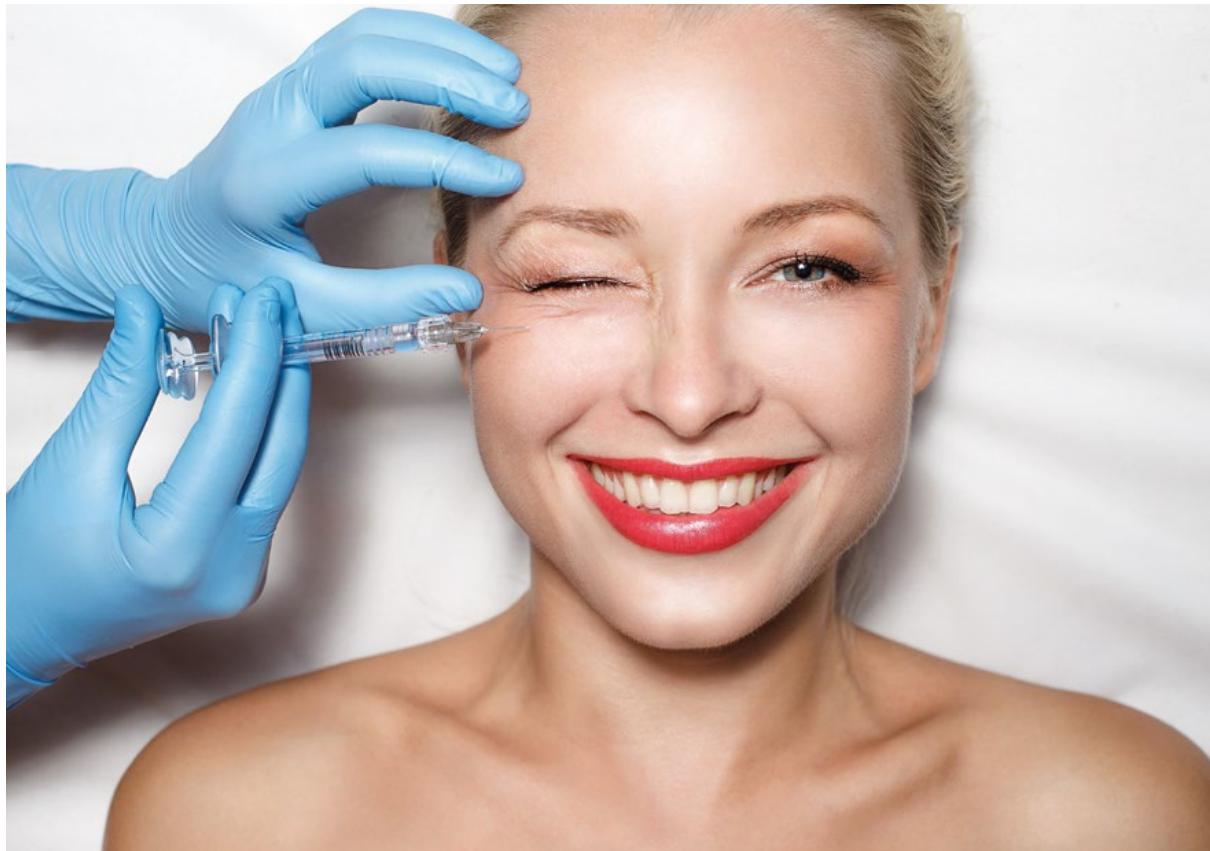




EYES wide open

Mr Daniel Ezra explores the surgical and non-surgical options for ageing eyes



One of the first places to show signs of ageing on the human body is the skin around the eyes, because the area is sensitive and more delicate than other parts of the body. It becomes even thinner with age due to reduced levels of elastin, collagen and hyaluronic acid, and is also slightly drier as there aren't as many sebaceous glands around the eyes to keep it moisturised. Since the skin becomes weaker, patients become more prone to unappealing age-related changes such as crow's feet, dark circles and bags, as well as swelling around or underneath the eyes. The skin contrasts in thickness and function all over the body, and the fragile eye area is distinctive for numerous reasons.

This delicate area comprises hardly any subcutaneous fat tissue, which then also declines in plumpness with age. Thus, it's particularly sensitive to stress from facial movements like squinting and laughing, both of which cause wrinkles to form. Ultraviolet rays also contribute to the development of wrinkles, especially if repeatedly exposed. The skin's elastin proteins and collagen are damaged, meaning the skin thins even more. As a result, fine lines build up – namely crow's feet – around the eyes. In fact, crow's feet are often the first wrinkles to show on the face.

When the skin thins, it can also bring about unsightly hollowed regions below the eyes, which look like dark circles or bags, making patients look continually exhausted. Reduced fat and collagen as well as thinning skin cause the skin to look thinner and more transparent, thus, reddish-blue vessels show up more obviously beneath the eyes.

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Collagen is also affected by certain internal processes in the body, namely the damaging effect of glycation. This happens when simple sugars affix themselves to collagen and proteins. The contaminated collagen fibres become less strong and flexible, meaning skin becomes looser in this area.

NON-SURGICAL OPTIONS

If my patients don't need or want to go under the knife, I follow the “relax, refill, resurface” approach:

- **Relax muscles:** As the BoNT-A (botulinum toxin type A) clinical lead at Moorfields Private Eye Hospital, I recommend using BoNT to soften facial expressions. Injecting into the tail of the eyebrow and between the brows counteracts the muscle from dragging downwards and decreases lines. This type of treatment for ageing eyes can last for roughly three to four months.
- **Refill volume:** When the skin around the eyes loses volume, it contributes to hollowing, so fat pockets appear more noticeable. The appearance of bags under the eyes can be reduced by using tear trough fillers, which work to fill out the valley and reduce the shadow. Fillers are placed along the orbital rim of the lower eyelid to flatten the area. What's more, they enable the build-up of collagen, meaning dark circles appear less obvious. That said, fillers won't improve dark circles caused by brown or purple discolouration.
- **Resurface texture:** One of the most effective treatments for tightening upper and lower lids is microneedling. The treatment involves the application of a numbing cream

and eye shields to a patient's eyes, before a stamping pen containing several needles is used to pierce the skin. The process encourages collagen production, which tightens skin and enhances texture, tone and rigidity.

A patient will normally undergo three to five treatments per month for roughly two to three years. The treatment can also decrease dark eye circles, with the overall process taking just half an hour; however, one of the side effects is swelling and bruising for up to one week.

SURGICAL PROCEDURES

Upper eyelid blepharoplasty is a popular cosmetic surgery to remove extra or protruding fat pockets under the eyes. It involves removing varying amounts of skin, muscle and fat. If pre-existing upper eyelid hollowness is present, these tissues can be relocated to fill the hollows to attain a younger-looking appearance of the eyelid and to increase the visual field.

A full slit lamp biomicroscope examination is usually performed to ascertain and eliminate any cause for ocular surface irritation before the procedure, as irritations to the eye are normally either due to dry eye or blepharitis. Following the required amount of removal during the procedure, buried dissolvable stitches are applied to close the skin surface.

If lower eyelid blepharoplasty surgery is needed, this is a little more complicated. An incision is made below the eyelash line, running beyond the corner of the eye. Surplus muscle, skin and fat are then removed or repositioned through this

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incision. Eyelid surgery should be tailored to a patient's facial balance, employing scar-less hidden incision practises and the most advanced technology available to give the most natural results. A patient is usually able to return to work within one week and the surgery is generally performed in an out-patient or office setting.

There are two approaches to blepharoplasty surgery, the former of which I practice myself:

- **Transconjunctival:** An incision is made in the lower lid, which gives direct access to the fat pockets. These fat pockets are removed through heat-induced sculpting or by repositioning. The latter aids in dispersing some of the excess fat into regions that may have volume loss, like the infraorbital rim (tear trough region). Laser treatment and chemical peels may be needed when a patient has extreme wrinkles or minor excess skin.

- **Transcutaneous:** If a patient requires surplus fat and skin to be removed, the lower lid skin and excess fat are directly removed together. This procedure is usually performed if a patient has moderate to excessive surplus skin where skin re-surfacing (chemical peels and laser) aren't of much use.

Although for any surgery, scarring is a concern, I have undertaken laboratory research on skin cells taken from the eyelids to investigate their scarring potential. I found that the eyelid fibroblasts have a much lower tendency to form scars and are a unique component of eyelid cell biology. My research on this area is published in the *Journal of Plastic Reconstructive Surgery*. **AM**



>> **Mr Daniel Ezra** is one of the UK's leading ophthalmic and oculoplastic surgeons. He specialises in lacrimal disease and is the endoscopic lacrimal surgery lead at Moorfields Private Eye Hospital, where he is also the research lead and training director. Another area of his expertise is in cosmetic and reconstructive eyelid surgery.