

CAN EYE COSMETICS *damage YOUR eyes?*

Yes they can!



About the Author:

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He has been involved in thousands of optometric patient consultations over the past 30 years in a mix of part-time, full-time, independent, corporate and academic settings in the UK.

Eye cosmetics such as mascara, eye shadow, eyeliner and eye make-up remover are used extensively world-wide to highlight eyes. For centuries women (and some men) have worn eye makeup to accentuate their eyes and eyelids, to make themselves look more attractive. Regardless of what I say about eye cosmetics - positive or otherwise, I have to confess at the outset that I do not actually wear any eye cosmetics, nor have I ever worn any, am regarded as a bit of an academic and a clinical scientist at that. Having said that, my comments are based on my experience and knowledge as an eye care practitioner, having examined thousands of patients who use eye cosmetics.

Eye cosmetics are normally applied external to the surface of the eyelids and on the lid margins. All types of colours and dyes have been used, and in the past, pigments were applied to the external eye that contained concentrations of compounds regarded as dangerous when absorbed into the body (e.g. salts of antimony or lead found in Kohl, also known as al-kahl, kajal, or surma which are to be avoided). Now-a-days however, most reputable cosmetics contain much safer and much improved chemicals and pigments. These chemicals include preservatives, and a myriad of other, some common and some not so common, compounds.

So what exactly is the problem?

Because eye cosmetics are foreign substances to the body, and applied in intimate contact with the eyelids and the surrounding tissue, they can all contribute to any one or more of the following eye problems including:

- mild discomfort (stinging, itching or burning without visible skin lesions)
- eyelid/brow dermatitis (frank redness of the skin, swelling and itching)

- tear film instability(variable vision and sensation of dryness)
- inflammation (sensations of pain and heat, appearance of redness and swelling)
- inflammation of the lid margin (blepharitis)

Accumulation of mascara and eye-liner on the lid margin can cause blocking of the glands (meibomian) along the lid margin that secrete essential sebum oils and help stabilise the tear-film. This can also result in its pigmentation and less commonly, pigmentation of the surface of the white of the eye* and the inner surface of both the upper and lower eye lids**. This is particularly so when cosmetic material, goes onto the lid margins contaminating the tears and subsequently the surface of the eyeball.

Allergic and toxic reactions are known adverse effects of all cosmetics materials and the use of cosmetics with fragrances (probably the most common cause of allergy) is best avoided. However preservatives are normally included to stop microbes (bacteria, viruses and fungi) from spoiling make-up products; and to stop these microbes from causing potential eye problems. Additionally, many types of eye makeup, such as mascara and eye-liner, are applied with an applicator that is dipped and re-dipped into a container from one application to the next. Because of this repeated dipping, there is a much higher risk of microbial contamination of these products. Unfortunately, preservatives themselves can also be the culprit and may cause eye problems and can begin to break down when exposed to air, and in time, as the microbial load increases, become less effective. There are indeed, cosmetics that contain milder preservatives or claim to be preservative and fragrance free, that may better suit those predisposed to allergies or those who have sensitive skins. However there may well be trade-offs in terms of costs, availability, range of products, longevity of the products once opened, storage and the use of such products.

So what can you do about it?

Just like any material brought into contact with the body, the way it is brought into contact with the eye and the surrounding tissue is important. Your hands and any make-up applicators if not clean, will carry large amounts of microbes increasing the potential of infections. As an eye care practitioner, I have seen many patients who have attended my clinics with painful scratched corneas (the clear and very sensitive front surface of the eye). These were more often than not, acquired inadvertently when applying mascara in a moving car (even whilst driving!), or public transport or when trying to separate eyelashes with paperclips or toothpicks! On occasions, they have needed medication to avoid potentially serious infections and to aid comfort. However all patients after such episodes, are advised to stop the use of cosmetics temporarily and many require some degree of follow-up depending on severity of signs and symptoms.



How can you be savvier when it comes to eye cosmetics?

There are a few simple rules that will help you make sure that you reduce your chances of getting into difficulty from your eye cosmetics. They are:

- **Wash your hands before applying any cosmetics** and use disposable applicators whenever possible. Remember you can easily transfer microbes from you hand and from multiuse applicators to the eyes. For similar reasons always tightly close the caps and covers of the products you use to ensure minimal exposure to airborne microbes.
- **Choose your make-up products carefully.** Check the ingredients and avoid any that you know you are predisposed to being allergic or sensitive to. The more ingredients that you don't recognise, the more cautious you should be about the product. Check on the Cosmetics Database at: <http://www.cosmeticsdatabase.com> for more information. If you have "sensitive skin" then you should consider using "hypo-allergenic", "fragrance free" or "for sensitive skin" makeup. Remember "preservative free" products will normally require refrigeration for storage. However, even these products don't necessarily mean that you won't have a reaction – you may need to test different brands or even discuss your "reactions" with an eye care practitioner.

* bulbar conjunctiva - a clear mucous-wet membrane that covers the sclera - white part of the eye - and also lines the inside of the eyelids.

** palpebral and tarsal conjunctiva.

- **Do not apply your make-up whilst moving.** This includes, travelling as a driver or a passenger or whilst in any motion. Only apply your make-up when you are still, and in a clean environment.
- **Store your cosmetics properly.** Generally this would be in a cool dark place avoiding direct sunlight, excessive heat or even cold (except refrigeration as recommended by the product manufacturer). Extreme environments will tend to accelerate the breakdown of the ingredients in the products and encourage microbial growth.
- **Check the expiry date and the packaging.** Not all countries however require it, and not all products are therefore marked with an expiry date. In Europe however, a number followed by an M and an open jar symbol tells you when to throw a product away after opening. The letter M stands for the month and the number refers to how many months to keep the product for after opening it. So 12M with an open jar symbol means you should throw the product out 12 months after you've opened it. However unless otherwise marked, all cosmetic products particularly those without expiry date markings should be discarded after 6 months of opening or first usage. Replace brushes and sponges every two to three months and additionally discard immediately any cosmetics product:
 - ▶ If it seems discoloured, runny or lumpy, has separated, has a strange odour, or feels different on the skin. Do not try and extend its life in any way.
 - ▶ If the packaging has expanded or has signs of deterioration, it is definitely a warning that something is wrong inside.
 - ▶ If you don't remember the last time you used it! Don't forget to discard all your cosmetics and start afresh after any eye infection such as conjunctivitis.
- **Never share your make-up products.** This is a complete "no-no". Every individual has their own skin type and their own "resident" skin microbes. These however may not be so kind to another person and may well result in an infection on that person. In any case sharing any make-up product is a sure way of passing on infections that people themselves are unaware of but are harbouring in their makeup products. This also means that when you go to a cosmetics counter to try out new products, you need to ensure that only fresh or disposable applicators are used. Remember never to use a "tester" product that does not have single-use applicators available for your use.
- **If you wear contact lenses.** Place your contact lenses into the eyes before applying makeup and remove them prior to removing makeup. Always wash your hands before touching your contact lenses.

What about some of the more "out of the ordinary" approaches to eye makeup?

These include the use of "glue-on lashes", tinting and permanent tattooing of the lids and eye brows, and the use of jewellery pierced around the lid and brow area. Like all foreign substances applied in contact with eye lids and

surrounding areas, glue-on lashes, lash and brow colouring (dyes), pigment (inks) used for eyeliner and brow tattooing, and jewellery all have the potential of causing allergic reactions and infections. Lash glue has the added potential, when ineptly applied, of gluing together the upper and lower lids!

Permanent make up procedures are generally not regulated in most countries. However where they are, choose a practitioner who is licenced and in every case one who is experienced in the art and science of this type of tattooing, and where possible working in a clinical setting with or under the supervision or direction of a medical professional or a para-medical professional (e.g. a qualified nurse). This procedure may well be useful for people with significant tremors, mobility restrictions, and physical disabilities or for those who have lost their eyebrows and eyelashes following chemotherapy. Remember it is more or less permanent and what is fashionable today, you may live to regret later! Piercing and tattooing the delicate tissues in and around the eyes carries the same risks of potential problems as piercing and tattooing any other body part and they include (apart from allergies and infections):

- formation of scar tissue,
- contraction of blood borne diseases (e.g. HIV, hepatitis B and hepatitis C)
- complications whilst undergoing Magnetic Resonance Imaging (MRI) studies.

Then there is medication to enhance the eyelashes.....this medication is available on prescription only, currently in the USA (to my knowledge) and is an ophthalmic solution of 0.03% bimatoprost. This drop is normally used for the treatment of glaucoma, an eye disease, and for patients who may have raised pressures inside their eyes. It was during the treatment of these eye conditions that it was noted that this product and other similar ophthalmic drugs had the interesting side effect of thickening, darkening and lengthening of eye lashes of patients using the eye drop. As a result in December 2008, the use of 0.03% ophthalmic solution (marketed as "Latisse" by Allergan) was approved by the U.S. Food and Drug Administration (FDA) for cosmetic purposes to lengthen, thicken and darken eyelashes (treatment of "hypotrichosis" of the eyelashes). It is normally used by applying one drop on a sterile disposable applicator to the skin at the base of the lashes of the upper lid nightly. It is a prescription only drug and requires very careful selection of patients who may be suitable for this treatment. Needless to say, these patients require close monitoring for any undesirable changes to their eyes.

Finally, if you are in doubt about any aspect of eye cosmetics and their use on your eyes – leave them off and consult your eye care practitioner regarding your concerns. 📌



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