

## **Beauty and the Blink**

***The Eyecare Professional's Guide to Aesthetics***

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## FINANCIAL DISCLOSURES

### **Andrea Lasby**

Sun Pharma

Thea

Bausch & Lomb

Alcon

Cooper Vision

### **Janice Luk**

Thea

Labtician

Sun Pharma

Johnson & Johnson

Alcon

EyeSpa  
AESTHETICS

MISSION  
EYE CARE

OXYgeneo  
3-IN-1 SUPER FACIAL

THE #1 FACIAL  
IN CANADA



# Objectives

## In Office Therapies

- 1 | Intense Pulsed Light (IPL)
- 2 | Radiofrequency (RF)
- 3 | Fractional Radiofrequency
- 4 | Plasma Pen

## Beauty Trends

- 5 | Tattoo Eyeliner
- 6 | Lash Extensions
- 7 | Lash tints, lifts
- 8 | Lash serums , cosmetics
- 9 | Botox

# Optometrists are all starting to dabble...

- Times have changed
- In office therapies:
  - Intense Pulsed Light (IPL)
  - Radiofrequency (RF) / Fractional Radiofrequency
  - Low Level Light Therapy (LLLT)
  - Plasma pen
- Dry eye treatments have aesthetic benefits





# Intense Pulsed Light

# Intense Pulsed Light

- Traditionally used in dermatology to treat rosacea and acne
- Polychromatic Xenon flashbulb 400nm-1200nm with filters for 500-580nm
- Selective Photothermolysis:
  - blood cells (hemoglobin) in abnormal telangiectasias absorb the energy, coagulate, and close the blood vessels
    - Reducing inflammatory mediators secreted by these telangiectasis
  - Melanin absorbs the energy which is converted to heat, coagulating the lesion which disintegrates and is eliminated by the immune system = photo-rejuvenation process
- For Fitzpatrick Skin Types 1, 2, 3 (sometimes 4)

# IPL Indications

- Telangiectasias
- Photorejuvenation
- Facial wrinkles
- Hyperpigmentation
- Lentigines
- Ephelides
- Melasma
- Rosacea
- Poikiloderma of Civatta
- Acne Vulgaris
- Port-wine Stains
- Hemangiomas
- Leg veins
- Venous malformations
- Removal of unwanted hair

# IPL Contraindications

- Pregnancy
- Breastfeeding
- Recent sunburn

## Medications

- No NSAIDs for 1 wk prior
- No tetracyclines for 3-7days prior
- No retinoids, tretinoin, alpha or beta hydroxy acids, vitamin C, exfoliants for 1 wk prior
- No accutane for 6 months

## Relative:

- history of HSV: start prophylactic oral antiviral 1 day before therapy, and for up to 14 days after
- Skin Cancer? = comanage

# Skin type IPL considerations

- Must have Fitzpatrick Skin types 1, 2, 3 (and sometimes 4)
- Darker skins are prone to depigmentation

						
	TYPE I	TYPE II	TYPE III	TYPE IV	TYPE V	TYPE VI
BEFORE SUN	Ivory	Fair or pale	Fair to beige, with golden undertones	Olive or light brown	Dark brown	Deeply pigmented dark brown to darkest brown
AFTER SUN	Always freckles, always burns/peels, never tans	Usually freckles, often burns/peels, rarely tans	Might freckle, burns on occasion, sometimes tans	Doesn't really freckle, rarely burns, often tans	Rarely freckles, almost never burns, always tans	Never freckles, never burns, always tans

# IPL Outcomes

Reducing Hyperpigmentation

Patient had 1 IPL

2<sup>nd</sup> photo is 3 weeks later



# IPL Outcomes

Treating Inflammation  
(Rosacea)

Rosacea patient:

Photo on the right is  
immediately after 1 IPL session



# IPL Outcomes

Improving Dry Eye due to  
Ocular Rosacea/MGD

Rosacea patient:

Photo on the right is 4 weeks  
after 2 sessions of Eyes+Full  
face IPL



# IPL Outcomes

## Chalazion Treatment

Before/ immediately after 1 session IPL (MG with expression)



# IPL Procedure





# IPL complications

- Blistering
- Skin swelling
- Hair loss at brow/forehead
- Redness of face
- Subcutaneous hemorrhage
- Iris transillumination defects/posterior synechiae/permanent iris atrophy/pupil dilator dysfunction
- Anterior uveitis
- Pupillary defects
- Conjunctival Cyst



Sabine Stangl, Ina Hadshiew, Wolfgang Kimmig. Side effects and complications using intense pulsed light (IPL) source. Medical Laser Application. 2008; 23(1):15-20.

# IPL aftercare and maintenance

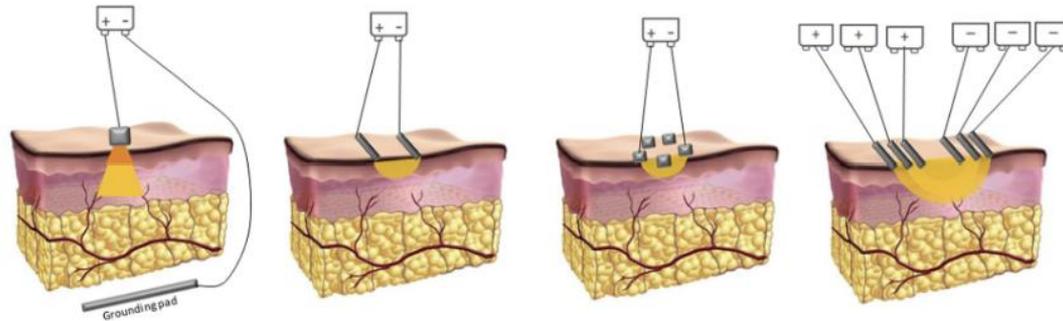
- Can be repeated every 3-4 weeks
- After initial 4-6 treatments, maintenance recommended q3-6 months
  - Studies show benefit is not maintained beyond 6-12 months
- Ensure patient goes home with sunscreen on & instructed about sun protection going forward
  - Consider recovery balms to help with skin erythema

A close-up photograph of a woman lying down, her eyes closed, receiving a radiofrequency treatment. A hand is holding a white and black handheld device against her cheek. The device has a white handle and a black, rounded applicator tip. A white cable is attached to the handle. The woman's face is the central focus, with her lips slightly parted and her hair pulled back. The background is a plain, light-colored surface.

**Radiofrequency**

# RF

- Used to noninvasively tighten and contour loose and wrinkled skin
- Heat is delivered to different skin layers at varied levels of impedance causing initial collagen denaturation and contraction
- Collagen remodeling occurs via a wound healing response and neocollagenesis
- Can be monopolar, unipolar, bipolar or multipolar



# RF indications

- Mild to moderate skin laxity
- Improvement of acne scars
- Improvement of cellulite
- Improvement of striae (stretch marks)
- Ideal age range between 30-60 years
- Patients with healthier skin may see better results than those with more extensive collagen damage
- Obstructive MGD

# RF contraindications

## **Absolute:**

- pacemakers or defibrillators, facial implants

## **Relative:**

- collagen-vascular disease, diabetes, cardiac insufficiency, skin cancer; active local/systemic infections; immunosuppression; pregnancy or breastfeeding; atopic skin conditions
- no recent dermabrasion/chemical peels or laser skin resurfacing within last 3 months
- fat augmentation within last 18mo
- fillers, botulinum toxin or oral retinoids within last 6 months
- topical retinoids within last 2 weeks
- topical steroids within last 2 months
- oral steroids within the last 12 months
- history of recurrent HSV (start preventative oral meds)

# RF outcomes

Skin Tightening or Striae



# RF outcomes

Improve meibum secretions  
and treat hordeola

Before/after 1 treatment with  
radiofrequency



# RF Procedure



# RF complications

\*

- Erythema (36%)
- Edema
- Abrasions
- Hyperpigmentation
- Blistering
- Blanching
- Purpura
- Scars
- Ulceration
- Persistent edema needing systemic corticosteroids (3%)
- Urticarial reactions
- Formations of subcutaneous nodules
- Hematoma



# RF aftercare and maintenance

- Hydrate well after treatment
- Do not vigorously rub the skin
- Continue with regular skin care routine
- No laser treatments, chemical peels, waxing, microdermabrasion for 3-4 weeks
- Wait 7 days before resuming use of retinoids
- Schedule ~4 treatments in intervals of 1-2 weeks





# Fractional Radiofrequency

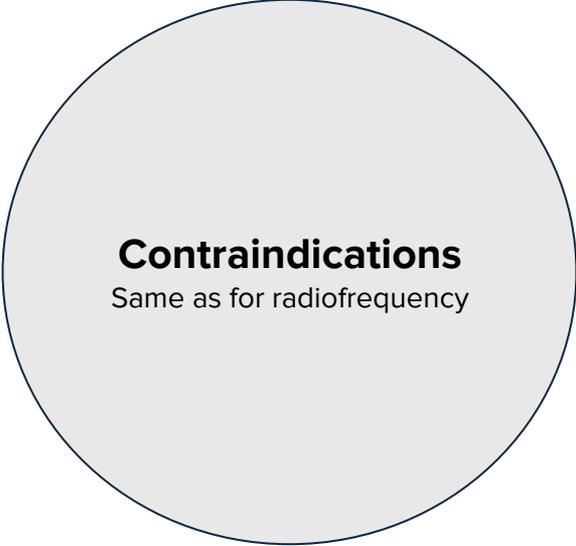
# Fractional Radiofrequency

- Similar to radiofrequency, causes an increase in epidermal cells, collagen, elastin, fibroblasts, vasculature, and a decrease in inflammatory cells.
  - All resulting in skin tightening effect
  - Needles vary from 1-4mm length depending on depth of treatment necessary



# Fractional RF Indications

- treatment of scars, cellulite and skin rejuvenation
- Recent study compared treatments for active acne and acne scars:
  - relapse rates were: isotretinoin group, 36 of 54 (67%); laser group, 12 of 16 (75%), and fractional RF microneedling group, 7 of 29 (24%)

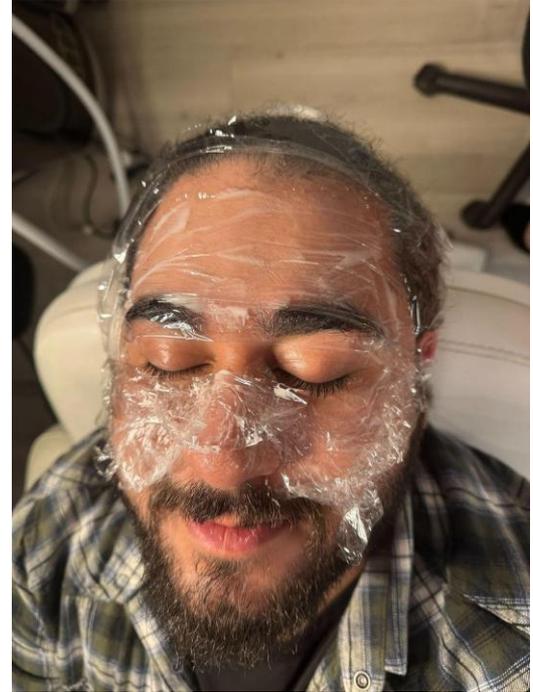


## **Contraindications**

Same as for radiofrequency

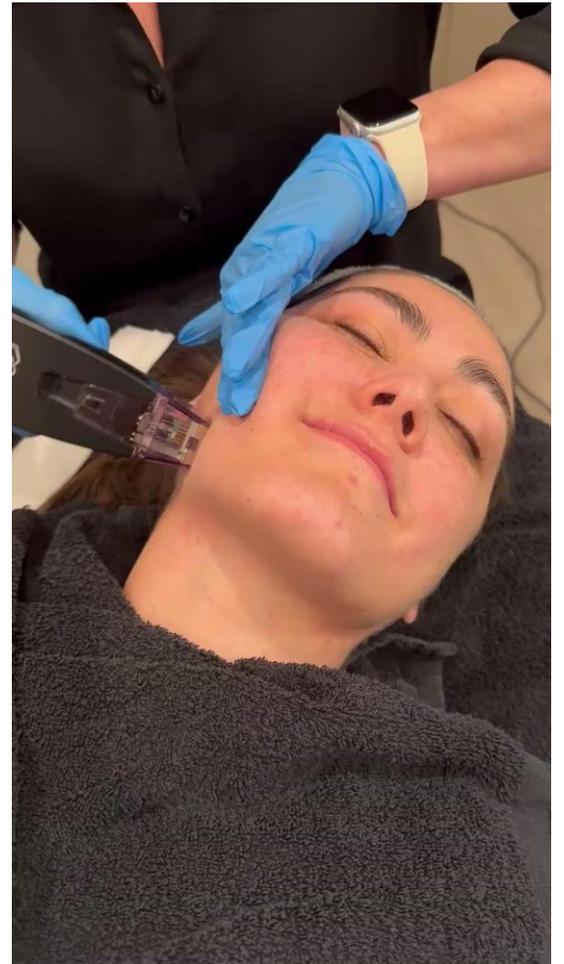
# Fractional RF Procedure

- Cleanse skin
- Apply & Occlude numbing cream for 45 minutes to affected areas
- MEC's numbing cream ingredients:
  - 27% lidocaine
  - 7% tetracaine



# Fractional RF Procedure

- Deeper needles okay for neck/lower face
- Shorter needles around nose/lips/forehead/upper cheeks
- Avoid too close to eyes – do not want to decrease fat in under-eye area



# Fractional RF outcomes

Reduce Acne Scarring

Before/after 3 fractional RF  
sessions



# Fractional RF outcomes

Skin Tightening

Before/after 2 treatments  
q4 wks



# Fractional RF outcomes

Decrease pigmentation

Hormonal melasma  
before/after: this patient was  
on skincare protocol for 4  
wks prior to 1 session of  
fractional RF



# Fractional RF outcomes

\*

Striae reduction with skin  
tightening (and shrinking of  
some excess adipose tissue)

Before/after 1 session of  
fractional RF



# Fractional RF complications

- Similar to radiofrequency
- Most commonly: mild to moderate pain, transient erythema and edema were the commonest adverse events.  
Hyperpigmentation, hypopigmentation, and scarring are possible.

# Fractional RF aftercare and maintenance

- Stop taking NSAIDs and retinoids 14 days before treatment
- Avoid smoking/alcohol 3 days before treatment
- Expect slight swelling after treatment and needle marks may be visible 3-7 days after treatment
- Treat skin with mild cleanser before going to bed, avoid exfoliants.
- Use skin balms and avoid make-up for 2 days and retinol for 5-7 days
- Avoid sun exposure for 7 days, use at least SPF 30 sunscreen

# Combination Therapies

- Can combine/alternate therapies for best outcomes
  - IPL + RF have been shown to be more effective when compared to historical controls
  - May consider alternating with plasma therapy – no research on this yet
- For Facial Rejuvenation – improved outcomes with combination therapies:
  - IPL + RF
  - IPL + Fractional RF
  - IPL + Plasma
  - IPL + RF + infrared diode laser



A close-up photograph of a person's face, focusing on the skin texture. The skin appears to have some minor imperfections or pores. A blue surgical cap is visible on the left side of the frame. The text "Plasma (Ablative & Non-Ablative)" is overlaid in white, bold font across the center of the image.

# Plasma (Ablative & Non-Ablative)

# Plasma Pen Treatment

- Approved by Health Canada in 2022
- Very quick treatment to improve the look of mild-moderate wrinkles
- Anesthetic required: either intradermal injection or with topical creams (occlusion w/ saran wrap strongly recommended)
- More down-time: usually 1 week for charred spots/scabs to fall off
- **\*\*\*check with your college if Optometrists are permitted to use plasma pens in your province\*\*\* (or delegate)**

# Plasma Pen Contraindications

- Similar to RF
- pacemaker, any implanted electrical device, epilepsy, pregnancy, metal implants in treated area

# Plasma Pen Blepharoplasty

- Upper and Lower blepharoplasties can be treated noninvasively



# Plasma Pen Lesion Removal

- Irreversible electroporation to remove unwanted tissue
- Great for benign lesions such as skin tags, milia, etc.
- Can also consider for melasma, but check with manufacturer settings

Before treatment



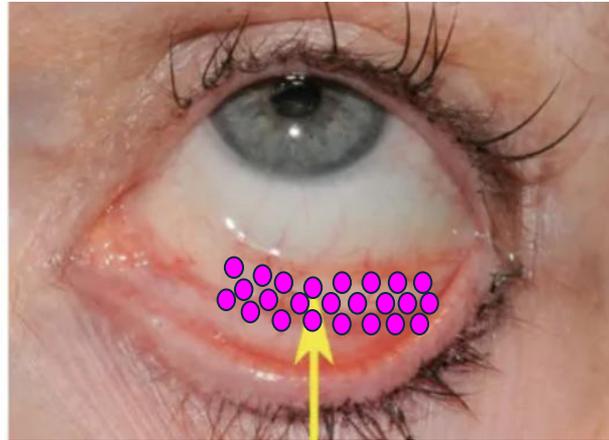
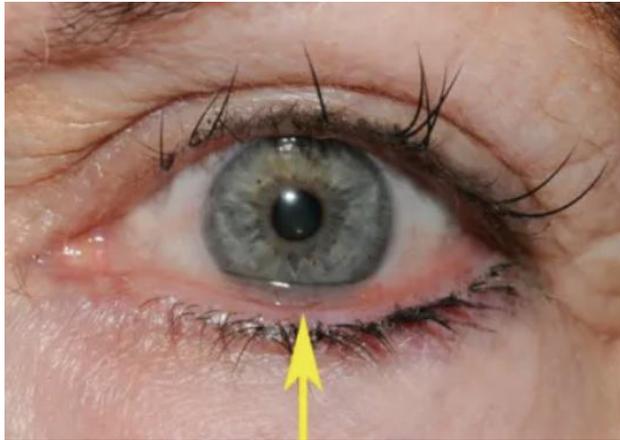
A week after treatment



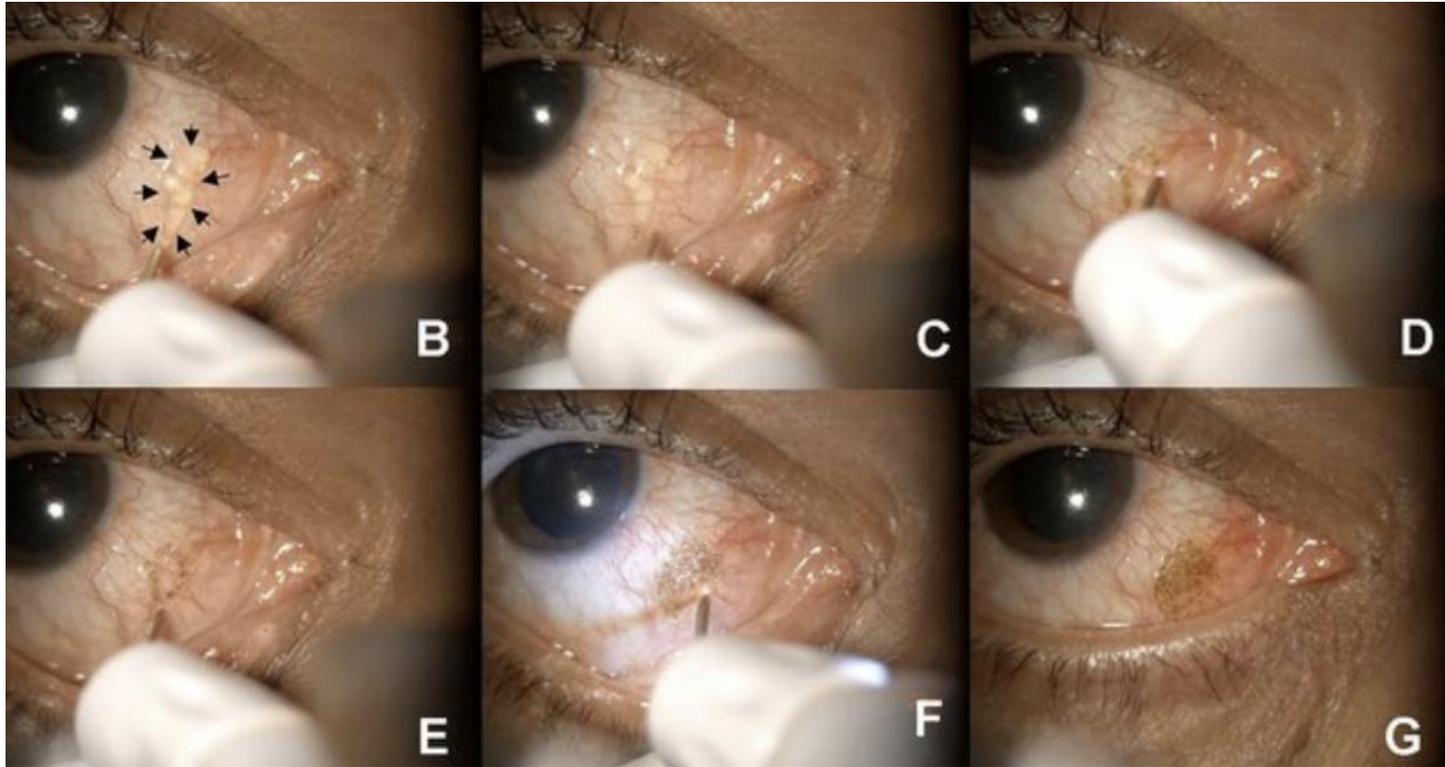
Photo courtesy of Jett Pen

# Plasma Pen Conjunctivochalasis Treatment

- Shown to be simple and minimally invasive effective treatment for CCH
- Maintain 2mm from limbus
- At least 3 lines (approx. 2mm deep) to conjunctiva from temporal quadrant to nasal quadrant
- Symptoms, NaFI clearance, NaFI staining, OSDI questionnaire, TBUT, tear meniscus height all improved



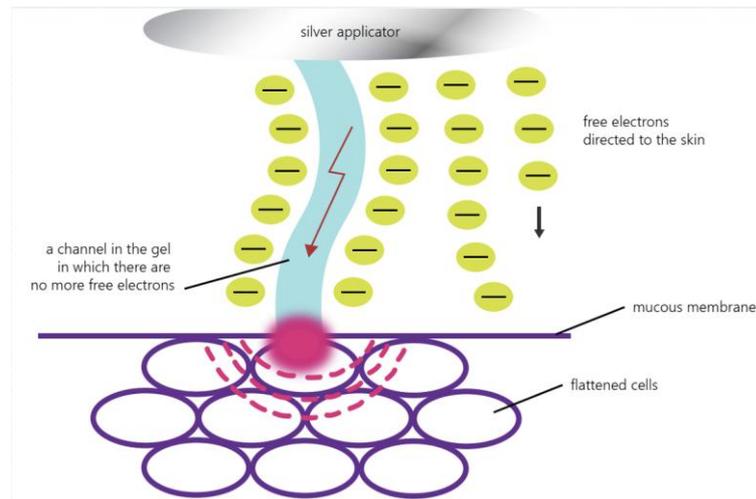
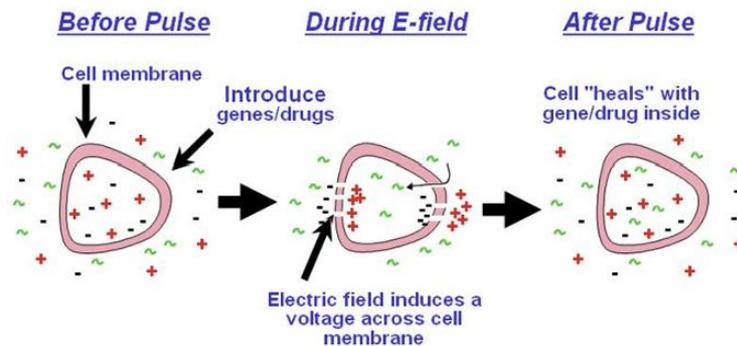
# Conjunctival Cysts



Nejat, Farhad & Jadidi, Khosrow & Pirhadi, Shiva & Adnani, Seyede-Yasamin & Nabavi, Nazanin-Sadat & Nejat, Mohammad Amin. (2020). A Novel Approach to Treatment of Conjunctival Cyst Ablation Using Atmospheric Low-Temperature Plasma. *Clinical Ophthalmology*. 14. 2525-2532.

# Plasma Pen MGD Therapy

- Electroporation
  - Increased permeability of the cell membrane as a result of applied short high-voltage pulse
  - Introduction of transient nanopores for drugs, dyes, proteins, etc.
  - Water & nutrients pass into cells and function is restored
  - Theorized to stimulate goblet cells to release mucus and liquifies meibom



# Plasma Pen MGD Therapy \*



# Plasma Pen Aftercare

- Disinfect the treated placed two times per day for 2-3 days after treatment (HOCL spray is a great option)
- Apply regeneration gel containing hyaluronic acid BID for next 5-7 days
- Avoid make-up for 2-3 days or until scabs fall off
- Avoid sun and apply sunscreen with SPF 50+ for 7-10 days after treatment
- Follow-up appointment 2 weeks later

# Other Aesthetics Adventures

- a. Facials
- b. Chemical Peels
- c. Hair Removal
- d. Body Contouring
- e. Electrical Muscle Stimulation + RF  
for pelvic floor tightening



# Sometimes, non-invasive procedures won't cut it

a. Neurotoxins/Botox

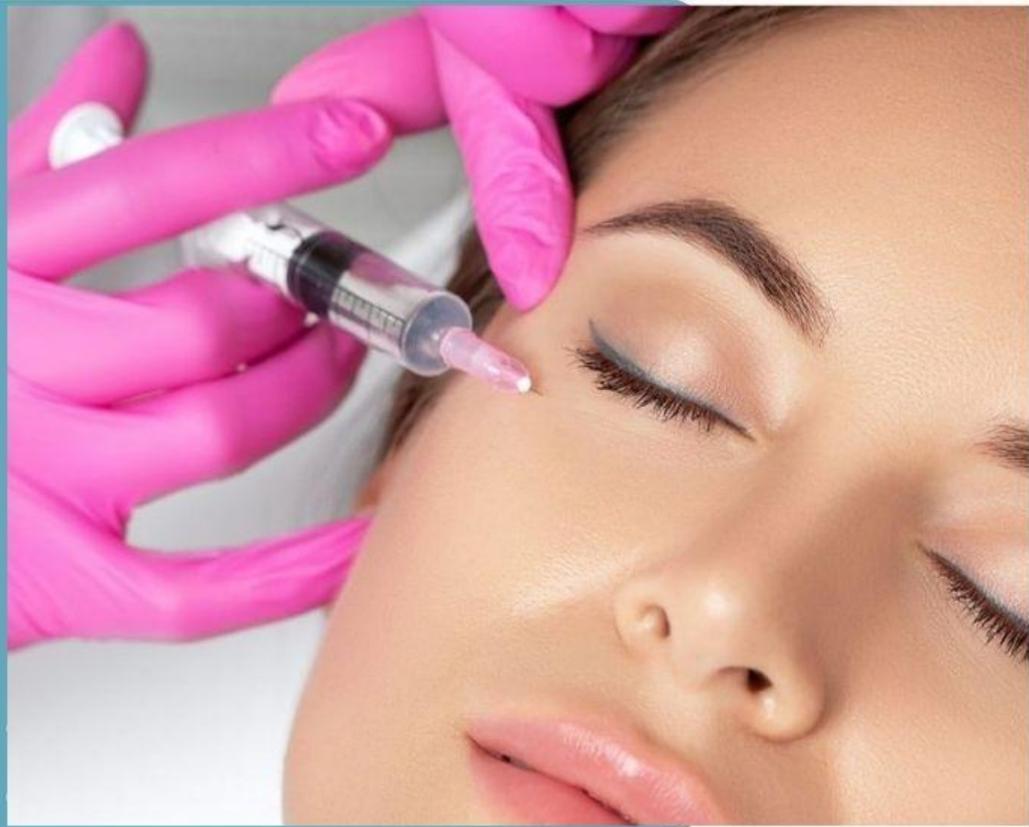
b. Filler

c. Plastic Surgery (tummy tuck, blepharoplasty, face lift, etc)



Cheek filler before/after

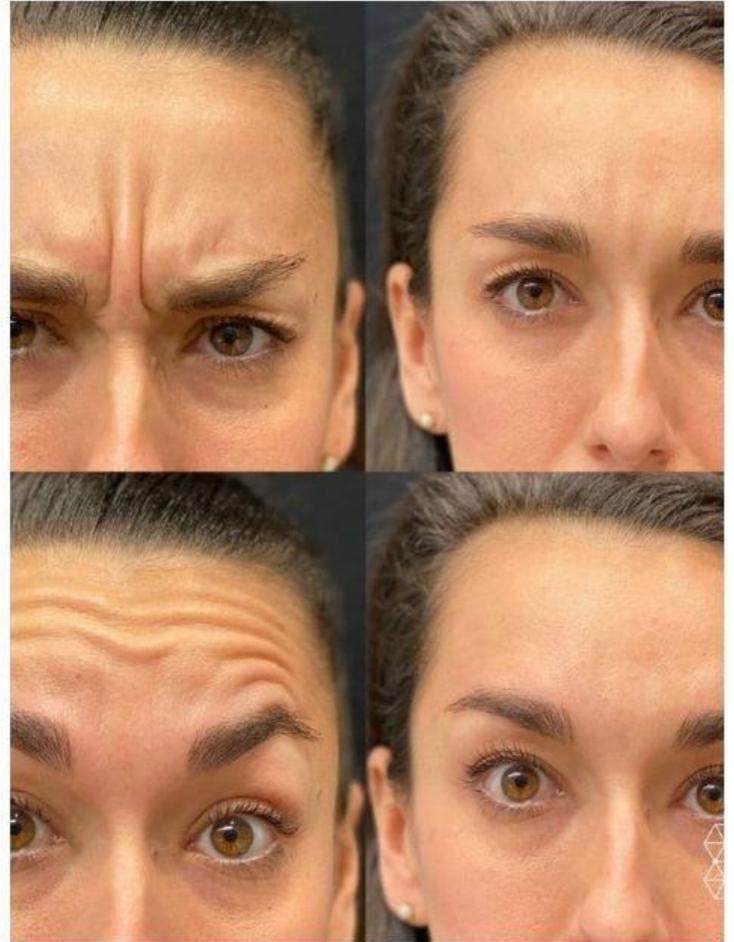
# Botox



# Botulinum Neurotoxin

What is it?

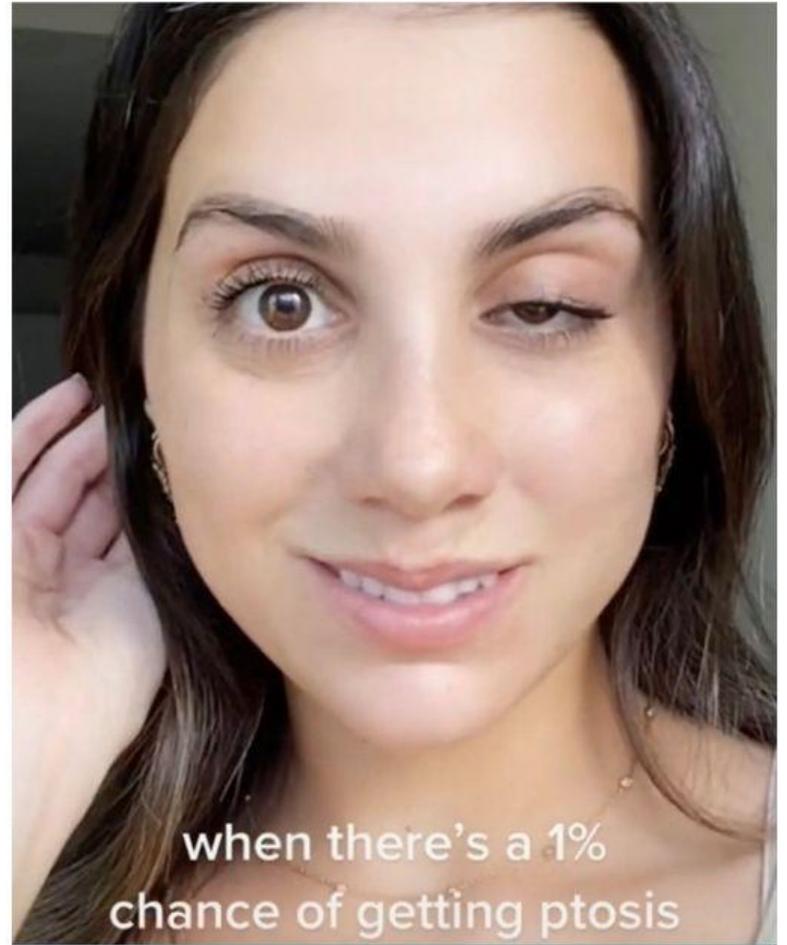
- Cosmetic form of botulinum toxin, referred to as "Botox"
  - injectable temporarily reduces / eliminates facial fine lines and wrinkles
  - first introduced to ophthalmology in the 1970s as a non-surgical treatment for strabismus
- Botox can help dry eye symptoms but can also cause dry eye symptoms
  - The evidence is mixed



# Botox

How can it affect your eyes:

- Lagophthalmos
- Incomplete blink
  - impairs secretion of lipids from meibomian glands
- Upper Eyelid Ptosis
  - Due to spread of toxin beyond target region
  - Toxin infiltrating through the orbital septum into the levator



# Botox for Dry Eye? \*

- **It can cause dry eye symptoms**
  - injecting in glabellar rhytides = lacrimal (tear) gland paralyzation, resulting in dryness
  - Injecting in lateral canthus for 'crows feet' = weaken orbicularis oculi muscle = difficulty closing eyes
  - impairs secretion of the lipid layer of tears from meibomian glands
- **It can decrease dry eye symptoms**
  - Small study in 2018 found improved eye dryness and light sensitivity symptoms in patients treated for migraines
    - Results were echoed in a small 2020 case report
  - injections to the medial upper and lower eyelid
    - due to inhibition of the orbicularis muscle
    - increased tear retention



*Our patients rely on us  
to be the 'expert' on  
**all things eyes***

Beauty trends are no exception



# Popular Beauty Trends



**Tattoo Eyeliner**



**Lash Extensions**



**Lash Tints / Lifts**



**Lash Serums**



**Cosmetics**



**Botox**

# Tattoo Eyeliner/ Blepharopigmentation



# Tattoo Eyeliner / Blepharopigmentation

## What is it :

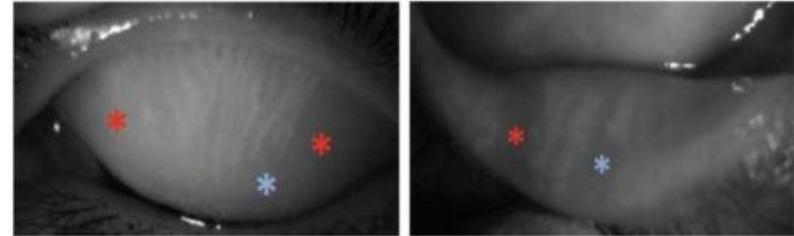
- a PMU (permanent makeup) treatment using a specialized tattoo machine to implant pigment on the lash line to replicate the look of eyeliner on upper / lower eyelids
- Pigment deposited into superficial dermis along the cilia of the eyelid
- Ink often contains copper, aluminum and titanium
  - Many pigments used as not approved for skin contact



# Tattoo Eyeliner / Blepharopigmentation

How can it affect our eyes?

- Disruption of architecture of eyelids
  - Needle and pigment can penetrate deeper than expected
  - trauma = gland damage (shortening and dropout)
- Chronic inflammation from tattoo pigment
- Histopathological examination - residual pigment found
  - within the macrophages in the dermis
  - connective tissue of the superficial orbicularis oculi muscle



# 2015 Study \*

- 40 patients (10 with tattoo eyeliner, 30 without)
- Eyelid tattooing exacerbated signs and symptoms of OSD
  - shortened TBUT
  - increased fluorescein staining
  - induced MG loss



> Cornea. 2015 Jul;34(7):750-5. doi: 10.1097/ICO.0000000000000452.

## Eyelid Tattooing Induces Meibomian Gland Loss and Tear Film Instability

Young Bok Lee<sup>1</sup>, Jin Joo Kim, Joon Young Hyon, Won Ryang Wee, Young Joo Shin

Affiliations + expand

PMID: 25933400 DOI: 10.1097/ICO.0000000000000452

### Abstract

**Purpose:** To investigate the changes of meibomian gland (MG) and tear film stability in subjects with eyelid tattoos.

**Methods:** Forty female subjects were recruited. Ten subjects had eyelid tattoos and 30 subjects did not (control group). Tear film break-up time (TBUT) measurement and fluorescein staining were performed to evaluate the tear film. Distances between the eyelid tattoo and the MGs were measured and used to assign a tattoo score. The overall tattoo score, defined as the sum of upper and lower lid tattoo scores, was determined for each eye. MG loss was scored for each eyelid and added together to obtain the total "meiboscore" for each eye using meibography. Values between the tattoo and control groups were examined and compared.

# Lash Extensions



# Lash Extensions

What is it :

- Adhesion of false lashes to the base of natural lashes to enhance length and thickness of natural lash
- Convenient for patients not wanting to apply make up on daily basis
- Semi-permanent procedure
  - Lasts 4-6 weeks



# Lash Extensions

## How it can affect your eyes

- Allergic /Irritant Contact dermatitis
  - All glues contain cyanoacrylate
- Anterior blepharitis due to lack of lid hygiene
  - Dry eye symptoms, hordeolum
- Altering natural length of lash causes wind tunnel
  - Length  $\frac{1}{3}$  width of eye is ideal
- Eyelash loss, eyelash base calcification
- Subconjunctival migration of nylon fibers from eyelash extensions



# Contact Dermatitis \*

- All lash glues contain cyanoacrylate
  - "Sensitive" glues contain less
- Cyanoacrylate releases formaldehyde fumes when 'curing'
  - Ocular surface irritant can lead to contact dermatitis
- Consider not removing immediately and prescribing an eye safe steroid ointment



# What we see in the slit lamp...



# Consider Microblepharoexfoliation

- Time with patients before going in for their lash extensions / fill
- "Dental cleaning"
- Need to maintain lid hygiene daily with eye safe, lash safe cleanser



# Eyelash Extension / Eye Safe Lash Cleansers



- Do **not** recommend oil based products for lash extension users (ie. Tea Tree Oil) will dissolve the lash adhesive bond
- Consider hypochlorous acid

# Trends in the Lash Industry



**UV LED Lights**  
'Quicker' curing



**Lash Robotics**  
Using AI, quicker  
Does not replace lash artists



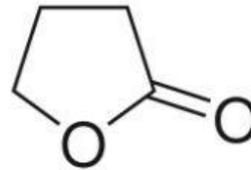
**Microblepharoxfoliation**  
Ocular hygiene



**Home DIY Lash Kits**

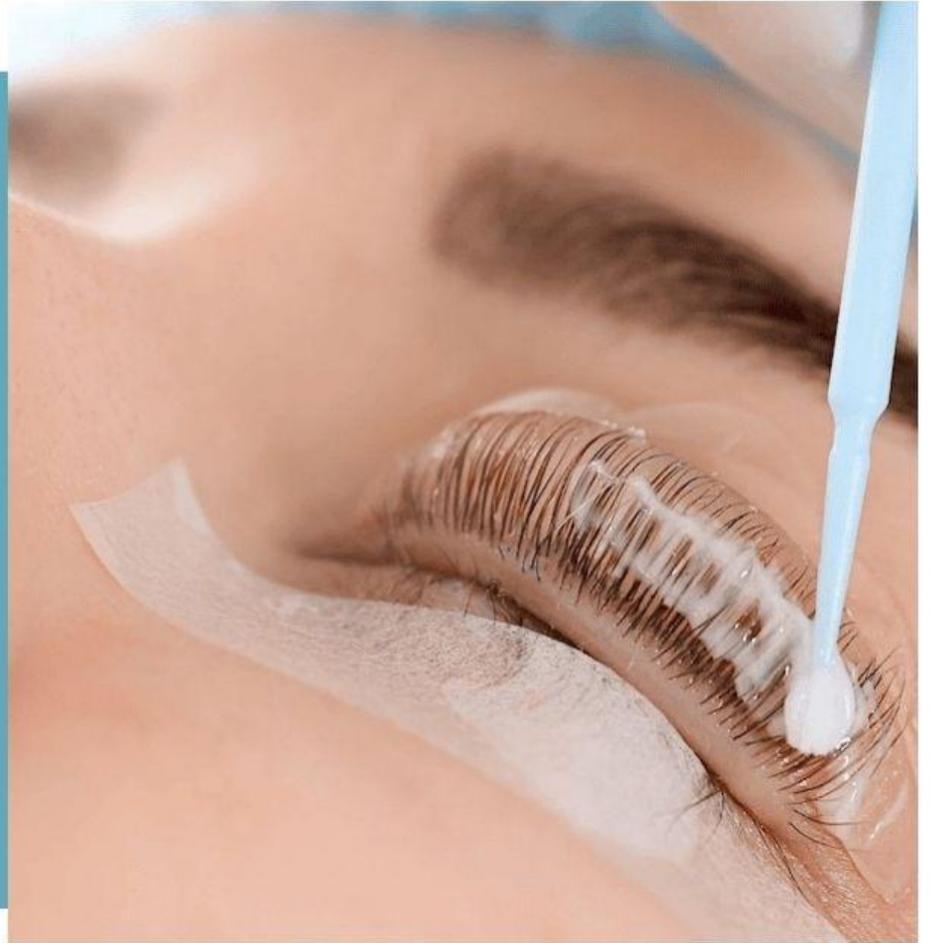
# If things go wrong...

Consider having an eye safe lash extension remover in office



- Look for ones that don't contain **gamma butyrolactone**
  - Found in paint remover, cleaners, adhesives

## Lash Lifts



# Lash Lifts

- chemical procedure that changes the curvature of the eyelashes for a period of 6–8 weeks
- Procedure (usually 4-5 steps)
  - mold (silicone, metal, plastic) coated with adhesive
  - eyelashes are wrapped around to achieve desired shape
  - Chemicals for perming, neutralization and conditioning the lash are applied
- Can be performed at salon and at home



# Lash Lifts

- Alkaline substance applied has higher pH than hair's pH
  - increasing pH opens hair shaft (cuticle) outer layer, breaks disulphide bonds in the middle layer (cortex) to modify its structure
- Two common types
  - Cysteamine Hydrochloride
  - Ammonium Thioglycolate



# Types of Keratin Lash Lifts



## Cysteamine Hydrochloride Lash Lift



- less invasive ingredient, takes longer to work
- decarboxylated derivative of cysteine
  - amino acid that makes up 18% of the keratin protein structure
- increases the strength of the hair structure while in use



## Ammonium Thioglycolate (TGA)



- traditional ingredient for brow lamination / lash lift
- Extremely harsh ingredient, works quickly
- Made from thioglycolic acid and ammonia
  - chemical that's used to clean toilets, car rims
- Ammonium opens the hair cuticle
- Thioglycolate breaks the disulphide bonds
- Very dehydrating for lashes

both can cause damage but the risk is much lower with Cysteamine

# Recent Health Canada Changes - April 2025

MENU

Canada.ca > Health > Product safety > Consumer products and cosmetics > Cosmetics  
> Cosmetic Ingredient Hotlist: Prohibited and Restricted Ingredients

## Cosmetic Ingredient Hotlist

For assistance on the Ingredient Hotlist, please refer to "[How to read the Cosmetic Ingredient Hotlist](#)"

2025

- [List of Ingredients that are Prohibited for Use in Cosmetic Products](#)
- [List of Ingredients that are Restricted for Use in Cosmetic Products](#)

### List of Ingredients that are Prohibited for Use in Cosmetic Products

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Ingredient	CAS (including but not limited to) <a href="#">1</a>	Synonyms and Related Compounds (including but not limited to) <a href="#">2</a>
1,2-Epoxybutane	106-88-7	
1,3-Butadiene	106-99-0	
1,3-Dimethylpentylamine and its salts	105-41-9	
11- $\alpha$ -Hydroxypregn-4-ene-3,20-dione and its esters	80-75-1	
1- and 2-Naphthylamines and their salts	134-32-7; 54-64-8	See " <a href="#">Mercury and its compounds</a> "
<b>Thioglycolic acid esters</b>	30618-84-9; 25103-09-7	Glyceryl thioglycolate; Isooctyl thioglycolate
Thioteopa	52-24-4	



Health Canada has banned or restricted the use of thioglycolic acid and its esters due to skin sensitization

- explicitly identified and prohibited
  - Glyceryl Thioglycolate
  - Isooctyl Thioglycolate

# Recent Health Canada Changes - April 2025

## List of Ingredients that are Restricted for Use in Cosmetic Products

The following ingredients are only permitted in cosmetic products under the conditions of use specified below:

Warnings and cautionary statements must appear on the label in both English and French.

A B C D E F G H I K L M P R S T U Z

Ingredient Information		Restrictions		
CAS (including but not limited to) <sup>1</sup>	Synonyms and Related Compounds (including but not limited to) <sup>2</sup>	Conditions of Use by product type <sup>3</sup>	Maximum Concentration Permitted <sup>4</sup>	Warnings and Cautionary Statements: (to the effect of) <sup>5</sup>
Thioglycolic acid and its salts 68-111-7		a) Eyelash curling products  b) Hair dyes, waving or straightening products  c) Hair dyes, waving or straightening products for professional use  d) Depilatory products	a) 11% (as thioglycolic acid) with a pH less than or equal to 9.5  b) 8% (as thioglycolic acid) with a pH less than or equal to 9.5  c) 11% (as thioglycolic acid) with a pH less than or equal to 9.5  d) 5% (as thioglycolic acid) with a pH less than or equal to 12.7	a) "For professional use only."; "Avoid direct skin contact, wear suitable gloves."; "Avoid contact with eyes and, in the event of contact with eyes, rinse immediately with plenty of water and seek medical attention."  b) "Avoid direct skin contact, wear suitable gloves."; "Not for use in the area of the eye."  c) "For professional use only."; "Avoid direct skin contact, wear suitable gloves."; "Not for use in the area of the eye."  d) "Avoid contact with eyes and, in the event of contact with eyes, rinse immediately with plenty of water and seek medical attention."



The regulations specify:

1. **Maximum TGA concentration 11%** (expressed as Thioglycolic Acid)
2. **Approved pH range ( $\leq 9.5$ )** for professional use lash lift and brow lamination products

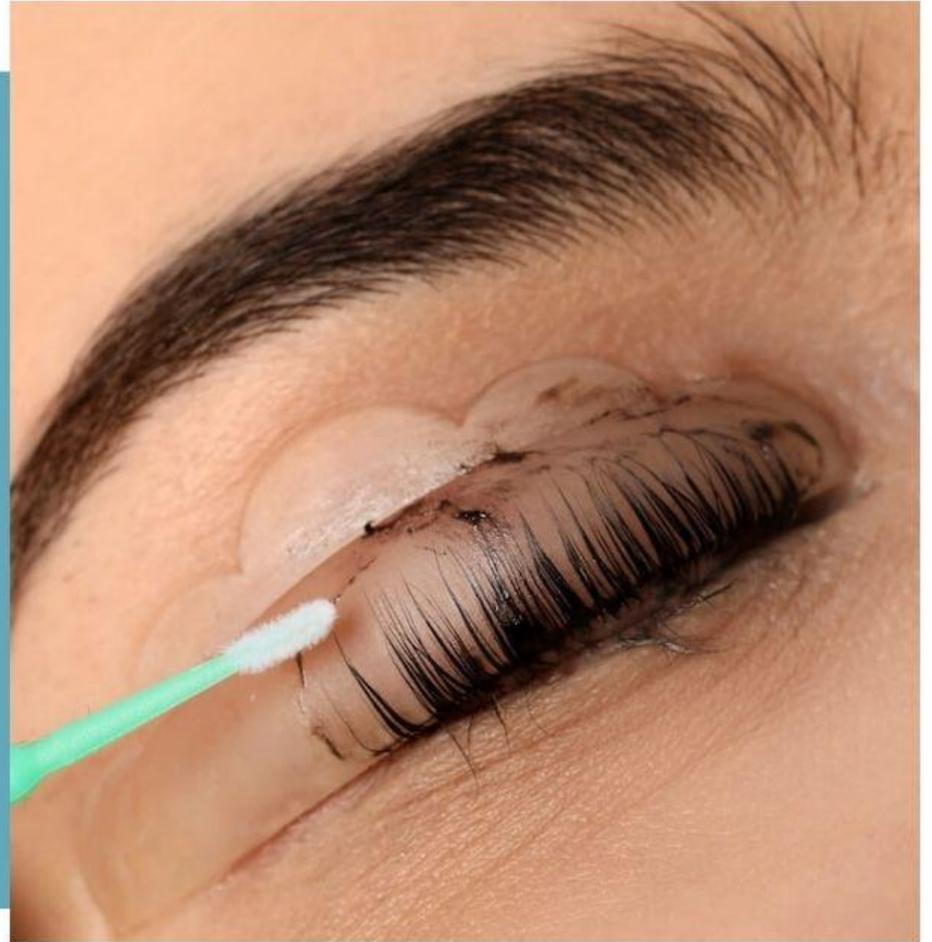
# Lash Lifts

## How it can affect your eyes?

- Short term
  - Irritation secondary to chemicals applied
  - Toxic keratoconjunctivitis / contact dermatitis
  - dries out natural lashes, brittle
- Long term
  - Can change the air movement on ocular surface, increase evaporation = dry eye disease
- For trichiasis?



## Lash Tints



# Lash Tints

What is it ?

- Semi- permanent effect that darkens lashes (similar to mascara)
- A mixture of hair dye and hydrogen peroxide developer = dyeing lashes
- Applied to the eyelashes and rinsed afterwards
- Dyes used are often prepared with non- standardized ingredients
  - black Henna (US FDA-approved in 1965 for hair pigmentation, but not for use in the periorcular area )
  - paraphenylene diamine (PPD) = hair dye often mixed with coal tar



# Lash Tints

## How it can affect your eyes?

- Allergic response
  - Irritation
    - prospective study of 544 participants found that 82.6% of all dye users reported worsening of their allergic eye diseases
  - Toxic keratoconjunctivitis / contact dermatitis
- Permanent silver staining (argyrosis) of the ocular adnexa
  - silver exposure may stimulate benign and malignant lesions, such as conjunctival melanoma
- Xanthelasma / corneal erosions
- Home kits may lead to more frequent clinical complications due to inappropriate use



## Lash Serums



# Lash Serums

What is it :

- Serum applied to eyelashes to enhance eyelash growth
  - length, thickness and darkness
- Not every eyelash serum is the same!
- Common offensive ingredient:
  - Prostaglandins / Prostaglandin analogues (PGAs)
    - ie) isopropyl cloprostenate most common
    - look for ingredients that contain “prost.”



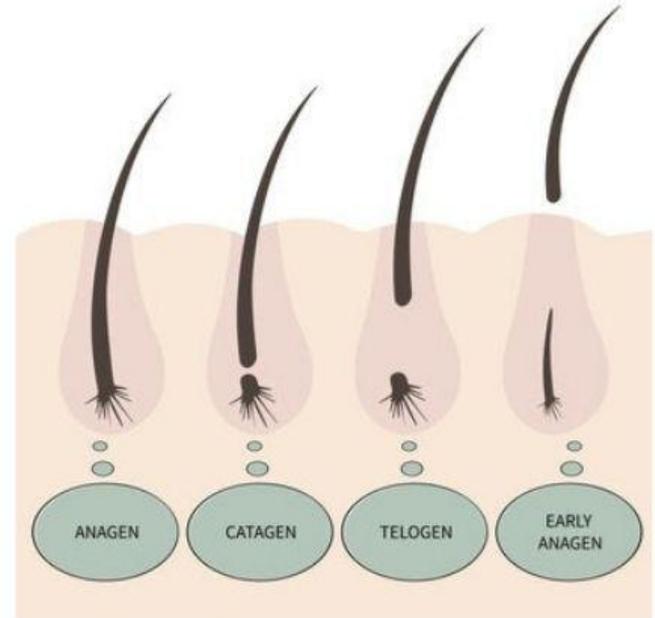
# Bimatoprost ophthalmic solution 0.03%

- the only US FDA approved product for eyelash growth
- **Indication:**
  - Initially in patients with eyelash hypotrichosis
  - later gained approval in the treatment of
    - trichotillomania
    - chemotherapy-induced eyelash loss
    - alopecia
- Prescription-only product
- 16 weeks of use is required for maximal efficacy



# Prostaglandins and PGAs

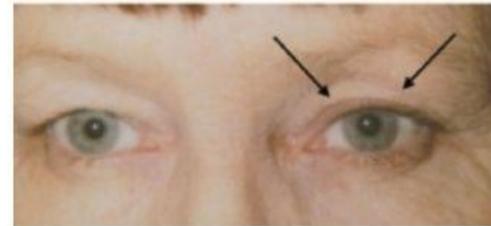
- **Prostaglandin:**
  - target the **anagen** phase of the eyelash growth cycle
    - eyelash growth and melanin deposition
  - increase the number of eyelashes in the growth phase



# Lash Serums

## How they can affect the eye:

- Prostaglandin Associated Periorbitopathy
  - Darkened eyelid and iris
  - Ptosis of eyelid
  - Periorbital fat atrophy
  - Ocular surface disease
- Other side effects documented:
  - acquired blepharophimosis (narrowing in palpebral aperture)
  - thinning of eyelid skin
  - conjunctival hyperemia
  - eyelash loss/ trichiasis
  - itching



# Lash Serums

- Consider a **peptide based eyelash serum\*\***
  - short chains of amino acids stimulate keratin production
  - condition lashes, making them less likely to break





## CAUTION:

- Cosmetics ingredients can constantly change without informing the consumer!
- Name variations of PGAs



# Cosmetic Ingredients



# Impact of cosmetics on the ocular surface



## TFOS DEWS II Lifestyle Report 2018

- US FDA estimated 12,500 chemicals used in cosmetics
- fewer than 20% reviewed for safety by scientists in Cosmetic Ingredient Review
- 11 ingredients banned in the USA whereas 1300 chemicals restricted or banned in European Union
- number of these ingredients may act as allergens, carcinogens, endocrine disruptors, immunosuppressants, irritants, mutagens, toxins and/or tumor promoters, and may damage the ocular surface

# Some ingredients to watch for



<b>Preservatives</b>	prevent bacterial, fungal, yeast and/or mold contaminations preservatives in make up have an important role!
<b>Carnauba Wax</b>	<ul style="list-style-type: none"><li>- derived from the tropical palm, Copernicia Cerifera, is an excellent emulsifier (smooth glossy finish)</li><li>- 60% of commercial mascaras contain carnauba wax</li><li>- linked to eyelid contact dermatitis</li></ul>
<b>Retinoids</b>	<ul style="list-style-type: none"><li>- can cause dryness and irritation</li><li>- isotretinoin (13-cis retinoic acid), detrimental to the health of the meibomian glands</li></ul>
<b>Phthalates</b>	<ul style="list-style-type: none"><li>- common solvent in fragrances and make up remover</li><li>- lipophilic, can potentially penetrate through to the corneal stroma and into the corneal endothelial cell layer</li><li>- DBP banned in Europe</li></ul>
<b>Acrylates</b>	<ul style="list-style-type: none"><li>- Some acrylates as being possibly carcinogenic to humans</li><li>- Methyl acrylates found to trigger allergic contact dermatitis</li></ul>

# Preservatives to Watch for



<b>BAK (bactericidal quaternary ammonium)</b>	<ul style="list-style-type: none"><li>- found in cosmetics and eyedrops</li><li>- induce tear film instability, goblet cell loss, conjunctival cell apoptosis, corneal neurotoxicity, and disruption of the corneal epithelium barrier</li><li>- Irritation, burning, foreign body sensation, redness, meibomian gland loss</li></ul>
<b>Formaldehyde-releasing compounds (quaternium-15; imidazolidinyl urea; diazolidinyl urea)</b>	<ul style="list-style-type: none"><li>- formaldehyde is toxic to human corneal, conjunctival and meibomian gland epithelial cells in vitro</li><li>- cause ocular irritation and conjunctival redness</li></ul>
<b>Parabens</b>	<ul style="list-style-type: none"><li>- found in 22 K cosmetic products in USA</li><li>- allergen and endocrine disruptor</li><li>-express antiandrogen activity can cause MGD, dry eye disease</li></ul>
<b>Phenoxyethanol</b>	<ul style="list-style-type: none"><li>- decreases the survival of human meibomian gland epithelial cells</li><li>- exposure causes reduced tear film break up time</li></ul>
<b>Thimerosal</b>	<ul style="list-style-type: none"><li>- Mercury derived preservative, used to be in CL solutions</li><li>- still found in some make up removers, eye moisturizers</li><li>- 5th most common allergen found on patch testing (11% reaction)</li><li>- banned in Canada, allowed in USA in small amounts</li></ul>

# Trend: Clean Beauty



- Make up market = trending products are **natural, clean, sustainable**
  - need to standardize these words
  - Branding / marketing vs science
  - Beware of fear mongering



# Reading Ingredient Lists is NOT easy!



01.

**Pay attention to ingredient order** ingredients typically ordered from the highest to lowest concentration

02.

**Understand Ingredient Types**

Active ingredients, Preservatives, Emollients and Humectants, Fragrances, Surfactants, Dyes

03.

**Know What to Avoid**

04.

**INCI names Ingredients**

International Nomenclature of Cosmetic Ingredients (INCI) name scientific names that are used globally for labeling.  
Ex) Vitamin C vs sodium ascorbyl phosphate

# 2 Websites

1 | <https://incidecoder.com/>

\*

2 | <https://www.ewg.org/skindeep/>

CosDNA, Beautipedia

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## decode ingredient lists like a pro\*



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10

Isopropylparaben

EWG Rating

Isopropylparaben is in the parabens family of preservatives used by the food, pharmaceutical, and personal care product industries. Parabens mimic

Type to search for products or ingredients



## Make up Removers



# Our Eyelid is Unique

- **Thinnest skin in the body**  
0.32 mm thick Supports the physiology of the eye and the tear film
- **Sensitive, Fragile, Easily irritated**



# Make up Removers

- Sensitive eyes are prevalent, affecting 46% of people
  - Surfactant: the most irritating ingredient in a make up remover/ cleanser
  - Fragrance
  - Polyethylene glycol (PEG)
- Generic micellar waters tested for facial skin, not skin around eyes



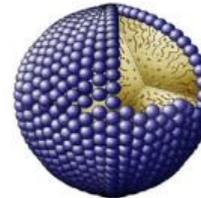
## Micellar Solution:

composed by amphiphile molecules known as a micelle



← Hydrophilic head soluble in water

← Hydrophobic tails soluble in lipids



The dirt, debris and impurities on the skin are trapped by the hydrophobic part of the micelle

And the skin is cleansed and hydrated by the hydrophilic part of the micelle

Take home message :



*Learn, then  
Empower and  
Educate patients ...*  
**Don't just tell them not to do it!**

\*



# The Business of Medical Aesthetics

- a. **Creating a separate corporation to reduce business risk**
- b. **Choosing the right person for the job - hiring a medical aesthetician**
- c. **Business/patient management platforms that are beneficial**
  - a. Fresha
  - b. Vagaro
- d. **Packages & Subscriptions**
- e. **Fair Warning: 2 biggest downfalls that will kill your new business**
  - i. **discounting services**
  - ii. **lack of informed consent (including before/after photos)**
- f. **How to bring aesthetics up during medically-oriented eye exams without offending your patient!**





Thank you!

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