



## Aesthetics & Optometry

- Know Your Scope
- Insurance & Legal
  - Malpractice Coverage
  - Collaborate with other healthcare providers
  - Medical Director role
- Resources
  - State Board/License
  - AMSPA

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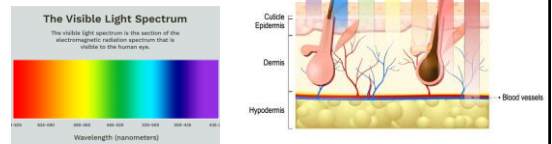
## IPL (Intense Pulsed Light)

- Light is being absorbed by pigment & blood (chromophore) in skin
  - Melanin: absorption 400-750 nm range
  - Hemoglobin: absorbs 578nm
- Use different wavelengths to target skin depth, adjust power/fluence
  - Shorter wavelengths target superficial structures
  - Longer wavelengths target deeper into skin
  - 590nm reaches dermis and nothing further

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## IPL

- Uses different wavelengths
- Not a laser, IPL is
  - Non-Monochromatic
  - Non-coherent
  - Defocused



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## BBL/IPL Devices



Lumenis



Sciton



Cynosure (Icon)

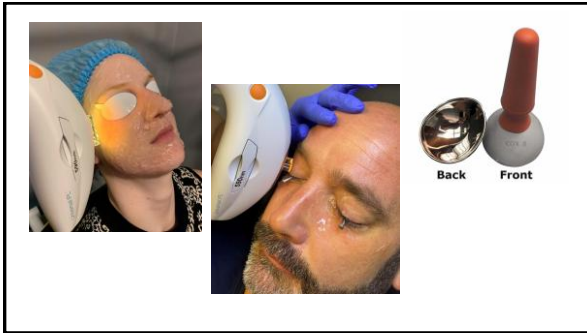


InMode

- On-Label:
- MGD & Rosacea
  - 22yo and older
  - Moderate to severe signs & symptoms of dry eye disease
  - Fitzpatrick Skin Types I-V

- Off-Label:
- Skin rejuvenation
  - Chalazion treatment

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|       |   |  |  |
|-------|---|--|--|
| 0-6   | Pale white skin                           |  |  |
| 7-13  | White skin                                |  |  |
| 14-20 | Light brown skin                          |  |  |
| 21-27 | Moderate brown skin                       |  |  |
| 28-34 | Dark brown skin                           |  |  |
| 35+   | Deeply pigmented dark brown to black skin |  |  |

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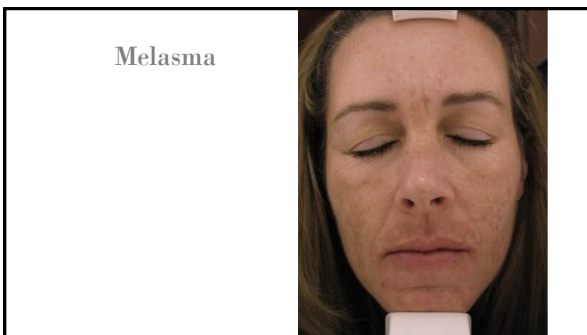
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### IPL Contraindications

- Sunburn/exposure, Tan (real or fake)
- Accutane (6-12mo)
- pregnant, postpartum, nursing
- H/x of cancer in treated area
- H/x of keloid
- h/x of metal in treated area
- Active cold sore, herpetic/zoster lesions
- Use of photosensitive medication or herbal supplementation
- Lupus, psoriasis, vitiligo, warts
- Avoid botox/filler 1-2 week prior
- Permanent Eye Liner

-Be cautious of darker skin types: Fitzpatrick 4-5

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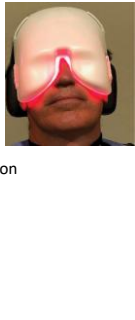
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### LLLT (Low Level Light Therapy)

- Sends low incident levels of photo energy to cause photoactivation of the target cells
- Photoactivated cells increase ATP production which may better repair cellular damage and improve function



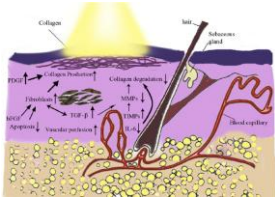
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### LLLT

- Aesthetic Use: reduce fine lines, wrinkles, acne treatment, pain management, wound healing, & hair restoration
- Dry Eye
  - Treatment MGD, blepharitis, chalazion, & Hordeolum
  - Red Light = decrease inflammation
  - Blue Light = kill bacteria
  - Lower power than IPL (more inclusive for skin types & ages)
  - Devices on Market: Celluma (bioPhotas), Equis (Marco), & Epi-C Plus (Marco)
  - Treatments last 15-30min

Park Y, Kim H, Kim S, Cho KJ. Effect of low-level light therapy in patients with dry eye: a prospective, randomized, observer-masked trial. *Sci Rep*. 2022;12(1):3079. doi: 10.1038/s41598-022-07427-6

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#### The science of LLLT for hair restoration

Hair Miniaturization causes hair to thin and eventually fall

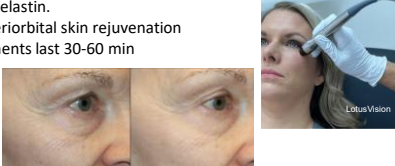
LLLT fights miniaturization and helps to grow hair back

New hair grows back thicker and fuller

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### Radio Frequency

- Generates vibrations of the tissue particles, which produce friction between tissue particles and, consequently, heat is generated
- Heat generated with RF could be useful for liquefying waxy secretions, unclogging MGs
- Activate the fibroblasts responsible for producing and repairing skin collagen and elastin.
- Stimulate periorbital skin rejuvenation
- Treatments last 30-60 min



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### Radio Frequency

- RF is energy delivered to the skin via applicator → applicator emits RF energy that penetrates deep within the skin converting to thermal heat
- Different thermal temps=different goals
  - When collagen is heated, reacts by producing more collagen to improve texture & elasticity
  - When fat cells are heated, it induces apoptosis of select fat cells
- RF energy is electrical (rather than light based) so melanin is unaffected
- RF for Dry Eye=40-43degrees (higher temps could cause orbital fat loss)

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### Radio Frequency

- Monopolar RF
  - Applicator with 1 electrode (used on treatment area) & grounding plate/pad (usually patient's back)
  - Average depth 20mm (can affect deep dermis & subcutaneous fat)
  - Monopolar is different than unipolar devices
- Bipolar & Multipolar RF
  - Applicator has 2 electrodes (energy travels from one electrode into the skin back to the 2<sup>nd</sup> electrode on the same handpiece)
- Contraindications
  - pacemaker, internal defibrillator, any active electrical implant in the body
- Improvements in signs and symptoms in RF + expression patients were similar to patients treated with LipiFlow 3 months after treatment.

Jaccoma E, Litherland C, Jaccoma A, Ahmed A, Pelleveé vs LipiFlow MGD-Related Dry Eye Treatment Study: The Thermoat Procedure. *Journal of Dry Eye Disease*. 2018;1(1):e11-e21




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### Microneedling


- Minimally invasive procedure where thin needles make tiny holes in top layer of skin
- Damage helps stimulate skin's healing process so it produces more collagen, elastin, and increases blood flow

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### RF & Microneedling

- Uses tiny needles & radiofrequency waves to rejuvenate facial skin (aka controlled skin injury)
- Damage stimulates the growth of healthy new skin which can benefit acne scars and wrinkles
- Procedure: anesthetic 1 hr before, clean skin, 15-60minutes



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### Muscle Stimulation



- OptiLIFT/TriLIFT uses Dynamic Muscle Stimulation Technology (DMST) to tone and tighten the periorbital area
- Uses electrical pulses to trigger nerve signals & activate muscles and inducing contractions
- Improves lower laxity & impaired blinking
- Clinical Data: 4 treatments (4-6 wk intervals)

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### OptiLIFT<sup>SM</sup>

BY LUMENA



TREATED AFTER 1 SESSION



UNTREATED

**STEPHEN M. LAZARUS, M.D.**  
STEPHEN M. LAZARUS, M.D. FACS  
 TriLIFT 5 tx series plus 2 tx DMST



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### Hydrafacial

- Medical-grade "hydradermabrasion" device that carries out a patented three-part regimen: cleansing, exfoliating, and then infusing skin with intensive serums
- Vacuums out pores while simultaneously pushing in potent actives that moisturize, brighten, plump, and protect
- Handpiece holds patented spiralized treatment tips equipped with "vortex technology" — the whirling force that both gives and takes away
- Impact on ocular surface



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### Plasma Energy/Fibroblast Plasma Pens

- Plasma forms when gas is super heated
- Plasma pen device discharges an ionized gas in the air to create a small electrical arc that improves the appearance of the skin without heating surrounding tissue
- Make tissue firmer/tighter by inducing trauma that triggers skin cells called fibroblasts to produce more collagen (same logic as microneedling devices)



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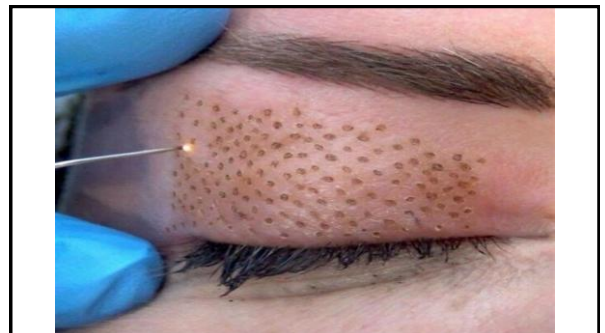
PICLAB

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## Plasma Energy Pen Contraindications

- Lupus
- Vitiligo
- Medications: Accutane, corticosteroids, blood thinners
- Pregnancy
- Breastfeeding
- Skin Type V or VI
- Hepatitis/HIV/Aids
- Melasma

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## Injectables-Neurotoxins

- Botulinum toxin produced by bacteria *Clostridium botulinum*
- 7 serotypes of the toxin
  - 5 are effective at the human skeletal neuromuscular junction
    - Type A → cosmetic use
    - Type B → muscle disease (cervical dystonia and sialorrhea)
- Induces paralysis by blocking the release of acetylcholine (the chemical that carries info between nerve cells) and thus inhibits the transmission of nerve impulses across the synaptic junction to the motor end plate
- Once injected, it rapidly & firmly binds at receptor site to cause localized muscle weakness (does gradually reverse over time)

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## Injectables-Neurotoxins

### Neurotoxins "tox"

- "Baby Botox"
- "BlowTox"
- "BroTox"
- "NewTox"
- "Budget Tox"

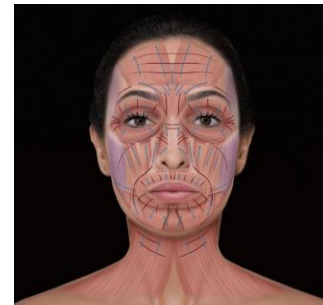
### Types

- onabotulinumtoxinA (Botox)
- abobotulinumoxinA (Dysport)
- incobotulinumtoxinA (Xeomin)
- prabotulinumtoxinA-xvfs (Jeuveau)



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## Neurotoxins in Eye Care

- 1970s= strabismus
- Protective ptosis (ie corneal compromise/ulceration, CN palsy → no need for taping/suturing, still easily lifted for drops)
- Upper eyelid retraction from thyroid eye disease
- Spastic & inwardly turned lower eyelid that has caused entropion
- Bells palsy
- Lacrimal gland for excessive lacrimation/tearing/Crocodile tears
- Mild to moderate Dermatochalasis
- Benign essential blepharospasm

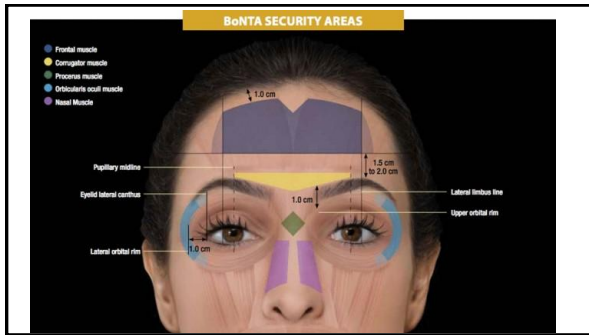
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## Neurotoxins in Eye Care

- Administered in "units"
- 1 unit represents the lethal dose in 50% of a group of Swiss Webster mice within 3 days of intraperitoneal injection
- Lethal Dose of 154lb person: 2500 to 3000 units
- Single dose should not exceed 500 units
- Most common dilution is 2.5 units per 0.1ml of volume (4ml of saline injected into "Botox" vial) → 0.1ml or 0.2ml is typically administer at each treatment site

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## Neurotoxins Complications

- Ptosis of eyelid/eyebrow
- Eyebrow asymmetry
- Diplopia
- Lakeopthalmos
- Palpebral ectropion
- Prominence of palpebral bags

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Aesth Plast Surg (2022) 46:385–394  
https://doi.org/10.1007/s00266-021-02483-1

**REVIEW** NON-SURGICAL AESTHETIC

### Avoiding Complications on the Upper Face Treatment With Botulinum Toxin: A Practical Guide

André Borba<sup>1</sup> · Suzana Matayoshi<sup>1</sup> · Matheus Rodrigues<sup>2</sup>

Received: 5 May 2021 / Accepted: 8 July 2021 / Published online: 2 August 2021  
© Springer Science+Business Media, LLC, part of Springer Nature and International Society of Aesthetic Plastic Surgery 2021

**Abstract**  
**Background** Currently, botulinum toxin (BoNT) injections are the most commonly performed non-invasive procedure for rejuvenation on the upper face. The therapeutic use of botulinum toxin has generally been safe and well tolerated. Adverse effects are considered mild, transient, and self-limited. However, as with all other injectable procedures, this one is also susceptible to adverse events and complications. When the safety zones  
**Results** The main complications secondary to BoNT injections on the upper face are: ptosis of eyelid or eyebrow, eyebrow asymmetry, diplopia, Lakeopthalmos, Palpebral ectropion, and prominence of the palpebral bags. To avoid such complications, it is necessary to have knowledge of the anatomy of this region and adequate and individualized planning based on the existing patterns of the frontalis muscle, glabella, and crow's feet. This review presents the specifications of each of these regions and

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**Table 1** Treatment areas with a focus on the upper face

| Treatment areas               | Treated muscle   | What to consider in this treatment?  |
|-------------------------------|--|--|
| Frontal lines                 | Frontalis  | Softening of horizontal forehead lines and weakening of the single eyebrow lift  |
| Repositioning of the eyebrows | Frontalis and orbicularis muscles, mainly corrugators and procerus secondarily | Frontalis: its movement must be maintained according to the need to raise the eyebrows<br>Orbicularis oculi: its treatment allows elevation of the eyebrow tails<br>Procerus and corrugators: its treatment allows elevation of the medial portion of the eyebrows |
| Glabella                      | Corrugators and Procerus   | Corrugators: smoothing of vertical lines and eyebrow distancing<br>Procerus: smoothing of horizontal lines   |
| Crow's Feet Lines             | Orbicularis oculi  | Smoothing of periorbital lines and lifting of eyebrow tails  |

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## Injectables-Dermal Fillers

- Gel-like substances that are injected beneath the skin to restore lost volume, smooth lines, soften creases, or enhance facial contours
- Fillers are made with hyaluronic acid, calcium hydroxylapatite, poly-L-lactic acid, PMMA, autologous fat injections

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### Dermal Fillers

- Hyaluronic acid (HA)
  - Juvederm products: Juvederm XC, Voluma, Volbella, Vollure
  - Restylane, Belotero Balance, Revanesse Versa, The RHA collection
- Calcium hydroxylapatite
  - Radiesse
- Poly-L-lactic acid
  - Sculptra
- PMMA
  - Bellafill

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### Dermal Fillers under the eyes

- Can Migrate
- Cause more inflammation
  - More swelling/puffiness
- Tyndall effect (blueish tone causing more sunken appearance)
- Highly vascularized area → blindness

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### Permanent Eye Makeup

**BEFORE**

**6 SESSIONS REMOVAL HEALED**

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### Eyelash Enhancements: Tint & Lift

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### Eyelash tints/lifts

- Lift: perm for eyelashes
- Tint: hair dye for eyelashes
- Risk: allergy, toxicity, chemical burn, trauma

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### Eyelash Enhancements

Congenital Hypertelorism      Skin Hyperpigmentation      Orbital Fat Displacement

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### Cosmetic Impact

- Cosmetics \$62B/yr industry; Anti-aging \$2.1B/yr
- 1938: last time law governing cosmetics was updated
- 11 banned chemicals in USA; 1300+ banned in EU
  - Avg female: 12 cosmetic products & 168 chemicals on body/day
  - Avg male: 6 products
- Ingredients, procedures, and cosmetic habits can make blepharitis, demodex, and ocular rosacea worse

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### What is a “cosmetic”?

-Personal care products are cosmetics  
-Personal Care Safety Act (2015/2016)

|                   |             |             |           |
|-------------------|-------------|-------------|-----------|
| MOISTURIZER       | AFTER SHAVE | PERFUMES    | LIPSTICK  |
| FINGERNAIL POLISH | EYE MAKEUP  | FACE MAKEUP | HAIR CARE |
| SKIN CARE         | HAIR COLOR  | TOOTHPASTE  | DEODORANT |

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### Ingredients matter

CLEAN beauty

- Buzzwords & Marketing
  - “hypoallergenic”, “clean”, “gentle”, “sensitive skin/eyes”, “natural”, “nontoxic”
- FDA does not require all ingredients to be listed if less than 1% (potential allergens might not be listed)
- \$\$\$ products does not make them safer
- Skincare & Makeup (any cosmetic)
- Don't focus on “brands” as brands change ingredient deck

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### COSMETIC OFFENDERS TO AVOID:

|                       |                   |
|-----------------------|-------------------|
| AMINOPHENOL           | PETROLEUM         |
| BENZALKONIUM CHLORIDE | DISTILLATES       |
| BHA & BHT             | POLYETHYLENE      |
| CADMIUM               | GLYCOL            |
| CARBON BLACK          | RETINYL ACETATE   |
| COLOR ADDITIVES       | RETINYL PALMITATE |
| DIAMINOBENZENE        | SODIUM LAURYL     |
| ETHANOLAMINES         | SULFATE           |
| KOHL                  | SYNTHETIC         |
| ISOPROPYL             | FRAGRANCE         |
| CLOPROSTENATE         | TITANIUM DIOXIDE  |
| OXYBENZONE            | TRICLOSAN         |
| PARABENS              | TRICARBAN         |

**SMARTEYE CARE**



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### Preservatives

MAKEUP, SKINCARE, EYE DROPS  
BAK: benzalkonium chloride

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### Ingredient resources

- ThinkDirty App 
- Ingridio App 
- <https://www.ewg.org/skindeep/>

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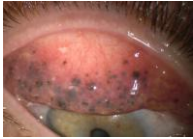
### Toss expired products





**REPLACE MASCARA EVERY 1 to 3 MONTHS**

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### Remove eye makeup before sleeping



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### Avoid glitter & waterproof



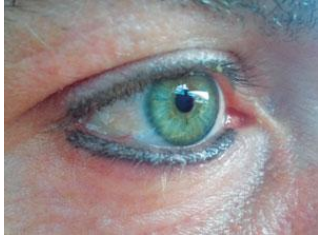
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### Avoid tightlining/waterlining



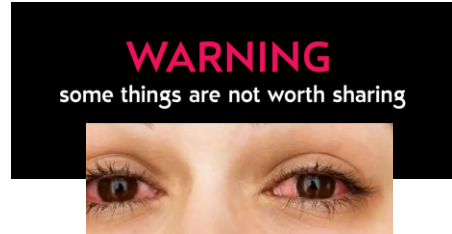
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Avoid permanent makeup



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Avoid sharing



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Clean brushes/applicators frequently

- Clean weekly (minimum)
- Watch ingredients in products using to clean makeup tools



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Keep lashes natural

- Purpose: protection
- Optimal Length: 1/3 eye width
- Longer funnel air & debris to front surface of eye
- Allergy, lash loss, Dry Eye Disease

- Avoid glues with formaldehyde
- Wear 'Natural' length instead of 'Glam'
- Wear partial instead of full
- Save for special occasions
- Take breaks



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- DMDM HYDANTOIN
- QUANTERNIUM-15
- IMIDAZOLIDING UREA
- FORMALIN AKA-Formaldehyde
- FORMIC ALDEHYDE
- METHANEDIOL
- METHANAL
- METHY ALDEHYDE/METHYLENE GLYCOL/METHYLENE OXIDE

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lash extension-healthier OPTION

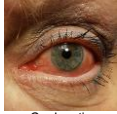
- Request esthetician to use better materials
- Non-formaldehyde glues
- 'Natural' lash length, fewer lashes
- Keep them clean
- Consult with your Eye Care Provider



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## Eye lash serums

- PROSTAGLANDIN/PROSTAGLANDIN ANALOG
- SIDE EFFECTS
- OTC/Non-Rx: not required to lid side effects on



Conjunctival  
Hyperemia



Skin  
Hyper-  
pigmentation



Orbital Fat  
Displacement

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## Sunscreen

- Broad-Spectrum: UVA & UVB
- Mineral Based
- Don't forget Eyelids



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## How to Get Started

- Educate yourself on scope & State laws
- Aesthetic Screener
- Consent Forms
- Before & After Photos (photo documentation)
- Recruiting, Training, & Staff Education
- Set Realistic Expectations with patients
- Maximize Revenue Opportunities

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## Thank you!

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