GLOW & FLOW: THE INTERSECTION OF DRY EYE & AESTHETIC CARE

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1

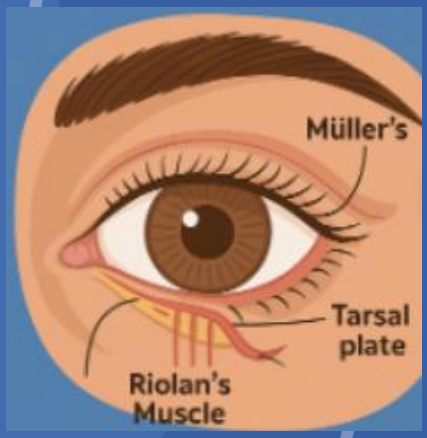
Course Description

- The intersection of optometry and aesthetics is expanding.
- Dry eye treatments often overlap with aesthetic procedures.
- Overview of advanced treatments benefiting both ocular health and cosmetic appearance.
- Key focus: IPL, LLLT, RF, PRP, exosomes, DMST
- Impact of cosmetic procedures (Botox, fillers, lash serums) on ocular surface health.

2

Key Eyelid Anatomy Related to Meibomian Gland Function

- **Meibomian Glands (MG):** Lipid secretion for tear film stability.
- **Orbicularis Oculi Muscle (OOM):** Essential for effective blinking & meibum expression.
- **Riolan's Muscle:** Stabilizes lid margin; dysfunction leads to tear evaporation.
- **Müller's Muscle:** Elevates the eyelid; influenced by hormonal & autonomic factors.
- **Tarsal Plate & Lid Margin:** Provides structure; chronic inflammation and lid laxity leads to gland dropout.



3

Autologous Serum & PRP – Mechanism of Action

- **Autologous Serum: Growth factors & anti-inflammatory proteins**
- **→ Heals ocular surface in severe dry eye**
- **PRP Drops: Higher concentration of platelets & cytokines**
- **→ More regenerative than serum tears**

4

PRP – Aesthetic Benefits

- Popular in dermatology (“vampire facials”)
- Boosts collagen synthesis
- Improves skin hydration & rejuvenation

5

PRF – Next Evolution

- High levels of platelets, fibrin, & growth factors
- Longer-lasting effects than PRP
- Benefits to the skin
- ??Benefits to the eyes???

6

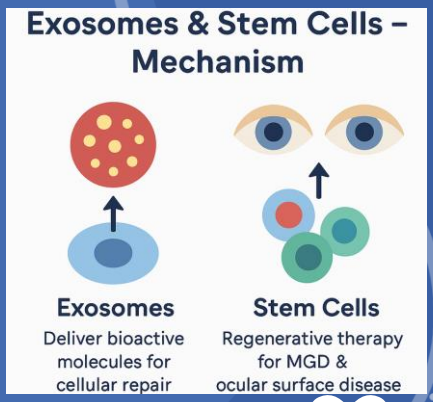
Clinical Integration – PRF

- Targeted Rejuvenation: Treats under-eye hollows, dark circles, fine lines & crepey skin—ideal where fillers pose higher risk.
- Biologic Filler: Autologous, water-free—minimizes puffiness unlike HA fillers.
- Regenerative Action: Sustained growth factor release supports collagen renewal for months.
- Low-Risk Delivery: Blunt cannula injection reduces trauma; uses body's own biologic material.
- Protocol: 3 treatments, 4 weeks apart; results appear in 4–8 weeks, lasting

7

Exosomes & Stem Cells – Mechanism

- Exosomes: Deliver bioactive molecules for cellular repair
- Stem Cells: Regenerative therapy for MGD & ocular surface disease



8

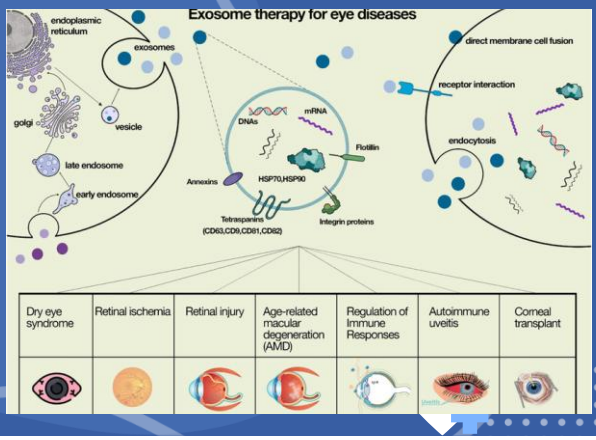
Economies Aesthetic & Regenerative Benefits

- Stimulate fibroblasts → Collagen production
- Skin regeneration & anti-aging potential

9

Clinical Evidence & What's Next

- Promising early studies on exosome eye drops
- Future: Broader use in dry eye & aesthetic eye care
- Expanding biologic therapies in optometry



10

The Fitzpatrick Scale & Its Role in Aesthetic & Dry Eye Treatments

- Classification of skin types based on UV exposure response.
- Impact on IPL, RF, and LLLT treatments.
- Breakdown of the six Fitzpatrick skin types and their relevance to treatment safety.

11

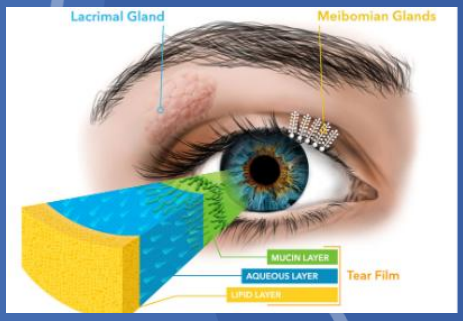
Fitzpatrick Scale & Light-Based Treatments

- **IPL:** Higher risk for hyperpigmentation in Types IV-VI.
- **RF:** Safe for all skin types; energy settings may vary.
- **LLLT:** Generally safe, but blue light may not be ideal for Type V-VI.
- **Clinical considerations:** Adjustments for different skin types.

12

MGD & Its Impact on the Tear Film

- Key Concept: MGD disrupts the tear film, leading to chronic dry eye.
- Lipid dysfunction increases tear evaporation.
- Light-based therapies (IPL, LLLT) ans well ans RF improve gland function and tear stability.



13

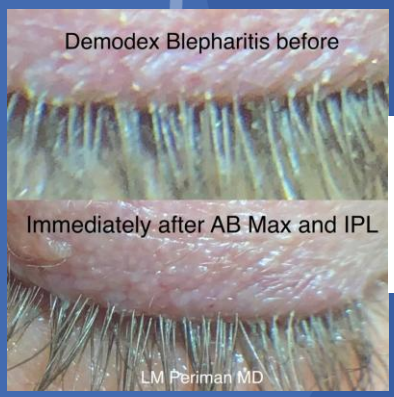
Intense Pulsed Light (IPL) for Dry Eye & Aesthetic Treatments

- Originally dermatological, now widely used in optometry.
- Targets telangiectasia, reduces inflammatory mediators, improves meibum secretion.
- Coagulates abnormal vessels, restoring tear film stability.

14

How IPL Works for Dry Eye & Ocular Health

- Reduces inflammatory mediators (IL-1, TNF-α, MMP-9, VEGF, ROS).
- Stimulates meibum secretion through thermal softening.
- Controls Demodex and bacterial overgrowth.



15

Addressing Common Patient Concerns About IPL

- **Pain level:** Mild discomfort, "rubber band snap" sensation.
- Timeline for results: Some relief after one session; 2–3 sessions for optimal improvement.
- **Session count:** Typically four sessions with maintenance every 6–12 months.
- **Longevity of results:** Long-term improvement, but retreatment may be needed.
- **Safety:** FDA-approved for periocular use with protective eye shields.

16

Expanding IPL Applications & Future Potential

- Optimized wavelength filtering & pulse durations.
- Potential role in Sjögren's Syndrome & autoimmune conditions.
- Combination therapy with PRP & stem cell treatments.
- IPL's increasing role in periocular skin rejuvenation.

17

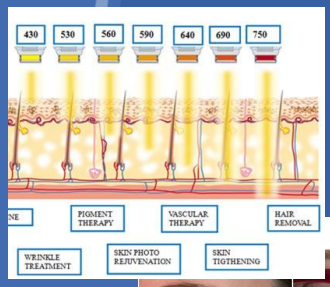
Integrating IPL in Optometry Practice

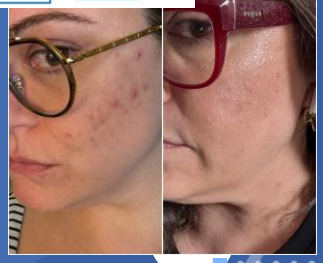
- Selecting an FDA-approved device.
- Staff training for patient screening & safety.
- **Marketing:** Before/after photos, in-office materials.
- **Revenue Potential:** Cash-based service; bundling treatments.

18

Aesthetic Benefits of IPL

- Improves skin tone, texture, and reduces rosacea.
- **Hyperpigmentation & Sun Damage:** Breaks down melanin clusters.
- **Periorbital Rejuvenation:** Stimulates collagen & elastin.





19

Best Candidates & Contraindications for IPL in Dry Eye

- **Ideal candidates:** Moderate-severe MGD, ocular rosacea, chronic dry eye.
- **Contraindications:** Fitzpatrick IV-VI, no inflammation.

20

Low-Level Light Therapy (LLLT) for Dry Eye & Aesthetic Treatments

- Non-invasive treatment targeting mitochondrial function.
- Stimulates ATP production, reduces oxidative stress, enhances tissue repair.

21

Mechanism of Action - LLLT

- Photobiomodulation enhances mitochondrial respiration.
- Improves MGD function, promotes collagen, reduces inflammation.

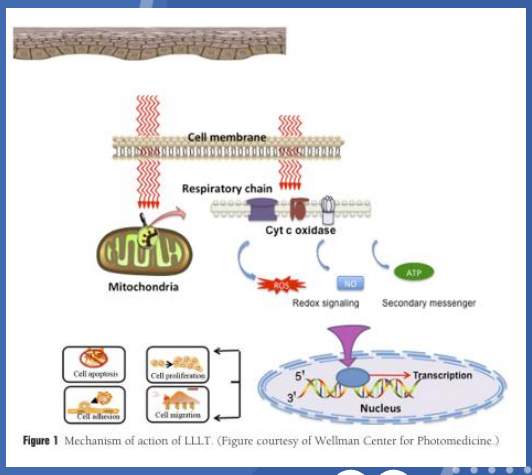


Figure 1 Mechanism of action of LLLT. (Figure courtesy of Wellman Center for Photomedicine.)

22

Best Candidates & Contraindications for LLLT

- **Best for:** Chronic evaporative dry eye, mild MGD, post-IPL maintenance.

23

LLLT for Aesthetic & Ocular Health

- **Red Light (600–700 nm):** Reduces inflammation & enhances collagen.
- **Blue Light (400–470 nm):** Kills Demodex & acne bacteria.
- **Near-Infrared (800–1100 nm):** Deep tissue repair.

24

LLLT vs. IPL – Clinical Integration

- **Combination Therapy:** IPL (inflammation) + LLLT (cellular repair).
- **Post-PRP/Microneedling:** Enhances wound healing & skin renewal.

25

Why High-End LLLT Devices Outperform Consumer-Grade Models

Feature	Clinical-Grade ($15K–$20K)	Consumer-Grade ($200)
Wavelength Precision	Targeted wavelengths	Randomized light
Power Output	~100 mW/cm²	~10–20 mW/cm²

26

Why High-End LLLT Devices Outperform Consumer-Grade Models

Feature	Clinical-Grade ($15K–$20K)	Consumer-Grade ($200)
Pulse Modulation	Pulsed waves for response	Continuous waves
Energy Density	Consistent therapeutic dose	Weak, inconsistent

27

What is Radiofrequency (RF)?

- Uses electromagnetic waves to deliver controlled heat to deeper skin layers.
- Stimulates collagen, elastin, and circulation—supporting firmer, smoother skin.
- Safe and effective for all Fitzpatrick skin types with proper energy adjustments.

28

RF for the Ocular Area

- Promotes periorbital skin firmness and radiance
- Stimulates meibomian gland flow, aiding in dry eye relief
- Reduces fine lines and crow's feet
- Improves tear film stability through improved blink mechanics

29

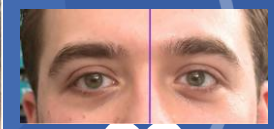
Understanding RF Modalities

Type	Description	Use in Ocular Aesthetics
Monopolar	Deep tissue penetration via a grounding pad	Used for deeper tissue lifting outside sensitive eye area
Bipolar	Energy flows between two closely placed electrodes	Ideal for periorbital tightening & meibomian therapy
Tripolar	Multiple electrodes to combine depth and comfort	Full face & periorbital toning with more comfort

30

Amplifying Results with DMST

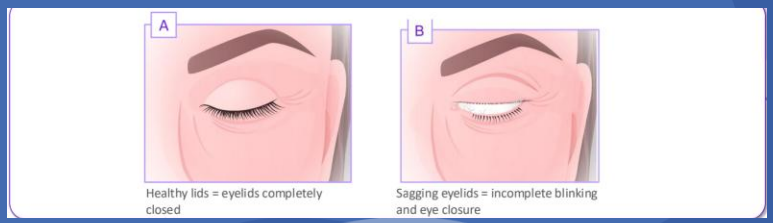
- RF Alone:
- Focuses on dermal collagen, gland heating, and wrinkle reduction.
- RF + DMST:
- Combines heat with muscle activation to:
- Strengthen orbicularis oculi
- Improve blinking mechanics
- Enhance lymphatic drainage
- Yield visible lift and dry eye improvement



31

Dynamic Muscle Stimulation Technology (DMST)

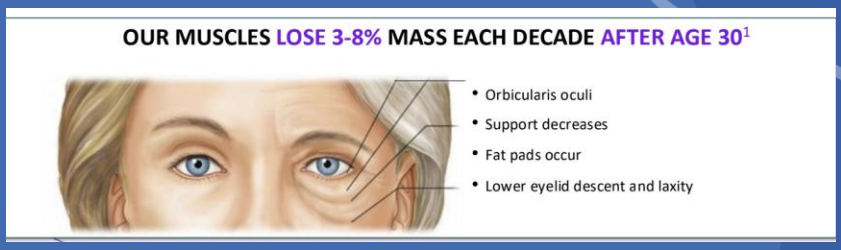
- DMST delivers gentle electrical impulses that:
- Trigger nerve signals
- Activate facial muscles
- Simulate natural muscle contractions
- Think: a “workout for your eyelids”
- Improves lid tone, blinking function, and aesthetic lift



32

Why Muscles Matter in Dry Eye

- Muscle loss begins after age 30 — 3–8% per decade
- Weak orbicularis = sagging lids → incomplete blinking
- DMST restores tone → healthier blinks, tear stability, MGD relief

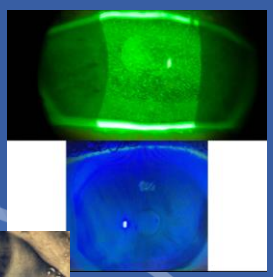


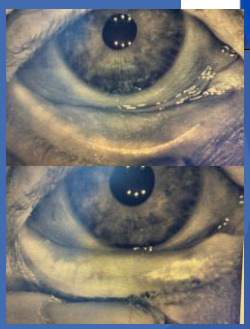
Lower lid laxity is associated with DED features including a decreased Schirmer score, reduced TBUT and increased corneal staining. Gland dropout may be the consequence of meibum stasis due to incomplete or imperfect blinking. ~ TFOS DEWS II

33

Collagen + Contraction = Powerful Rejuvenation

- RF enhances collagen remodeling
- DMST re-engages muscle tone and movement
- Together, they:
- Improve TBUT by 286%
- Reduce lower lid laxity by 75%
- Enhance eyelid appearance by 60%
- Decrease MGD by 70%





34

What Patients Experience

- Healthier blinksLifted, toned lids
- Brighter, more youthful eyes
- Better meibum expression
- Reduced dependence on drops/ointments

35

Botox & Ocular Surface Disruption

- Botox weakens orbicularis oculi, the muscle responsible for blinking.
- ↓ Blink strength → ↓ Meibum expression → MGD & evaporative dry eye
- May cause lagophthalmos or incomplete blinking
- Dry eye symptoms may worsen 1–2 weeks post-treatment

36

Dermal Fillers Around the Eyes

- Can cause lymphatic congestion → puffiness, tear film instability
- Improper placement = mechanical pressure on lid margin
- Tear drainage changes → epiphora or dryness
- Risk of intravascular occlusion → vision-threatening if near vessels

37

Lash Serums & Ocular Irritation

- Prostaglandin analogs (e.g., latanoprost-like serums):
- Can cause meibomian gland dropout
- Associated with periorbital fat atrophy
- Contribute to conjunctival hyperemia & irritation
- Non-prostaglandin serums are less irritating, but caution still needed

38

Counseling Patients Proactively

- As eye care providers:
- Ask about aesthetic treatments during dry eye evals
- Educate on the ocular risks of injectables and serums
- Collaborate with injectors for placement guidance
- Monitor blinking patterns and tear film post-treatment

39

Key Takeaways

40