Latest Developments in Lasers and Light Therapies for Acne

South Beach Symposium
Miami Beach, Florida
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Presented by Michael H. Gold, MD
Gold Skin Care Center
Tennessee Clinical Research Center
Nashville, TN USA
Academic Appointments

- **Assistant Clinical Professor**
  - Department of Medicine, Division of Dermatology, Nashville, TN USA
    - Vanderbilt University School of Medicine: 2006 - 2014
    - Vanderbilt University School of Nursing: 2006 - Present

- **Adjunct Assistant Professor**
  - Meharry Medical College: 2013 - Present
    - School of Medicine, Nashville, TN USA

- **Visiting Professor of Dermatology**
  - Huashan Hospital, Fudan University (Shanghai Medical University), Shanghai, China: 2006 - Present
  - The First Hospital of China Medical University, Shenyang, China: 2008 - Present
  - Guangdong Provincial People’s Hospital, Guangzhou, China: 2013 - Present

- **Visiting Professor of Plastic Surgery**
  - First People’s Hospital of Foshan University, Guangdong, China: 2012 - Present
  - The First Affiliated Hospital of Zhejiang University, Hangzhou, Zhejiang: 2013 - Present
ACNE: WHY DO WE CARE

• Affects
  • >80% of adolescents
  • >40% of adults over than 25

• Genetics plays a role

• Associated with
  • Disfigurement
  • Pain
  • Loss of confidence
  • Depression

• Effects on quality of life are comparable to those suffering from chronic diseases like asthma, seizures and diabetes
Conventional Acne Treatment Model

Diagnose → Prescribe → Wait & See
Problem #1 with the Conventional Model: Unpredictable and Provides Limited Efficacy. Patients increasingly do not want drugs.
Problem #2 with the Conventional Model: Patient Adherence

Controlling patient outcome is lost as soon as a prescription is written, plus requires administrative time and fees
Problem #3 with the Conventional Model: Prescription prices are costly and rising, even for generics

Monthly patient costs can be more than $1,000
Your office receives none of this profit

From: Changes in Retail Prices of Prescription Dermatologic Drugs From 2009 to 2015
Problem #4 with the Traditional Model: Significant results may take up to 12 weeks to appear and hinders

Most dermatology patients see 3-5 doctors before finding one that solves their primary concern
Patients and physicians need a more effective, predictable, and cost-effective, cost-efficient approach to addressing acne for the modern patient.
Novel treatment options for severe inflammatory acne vulgaris

Michael H. Gold

Acne vulgaris is one of the most common dermatological disorders encountered in everyday practice. Treatment options for this often psychologically scarring disease are numerous and, for many individuals, provide relief from the disorder. However, factors such as antibiotic resistance and, slow onset of action from many topical therapies has led researchers to seek out alternative therapies, especially for those suffering from moderate to severe inflammatory acne vulgaris.

Acne Vulgaris

• Laser/Light technology

  • Lasers/light sources to reduce the *P. acnes* population

    • Blue Light Sources - Blu-U (Dusa)

    • Intense Pulsed Light Devices— Quantum/Vasculight/Lumenis One/M22 (Lumenis), Ellipse (DDD), elos Plus(Syneron), BBL/Joule (Sciton), Harmony XL (Alma), Lumecca (Invasix), Isolaz (Solta)

    • Vascular Lasers – Cynergy (Cynosure), V-Beam Perfecta (Candela), N-Lyte (ICN), AdvaTX (Advantix)

    • Short-Pulsed 650 usec 1064 nm – Aerolase Neo
Acne Vulgaris

- Blu-U device FDA cleared for inflammatory acne
  - Used originally for ALA-PDT therapy
  - Works for mild to moderate inflammatory acne vulgaris as well
    - Blu-U more effective in inflammatory acne lesions than 1% clindamycin solution
    - Safety and efficacy proved
A MULTICENTER CLINICAL EVALUATION OF THE TREATMENT OF MILD TO MODERATE INFLAMMATORY ACNE VULGARIS OF THE FACE WITH VISIBLE BLUE LIGHT IN COMPARISON TO TOPICAL 1% CLINDAMYCIN ANTIBIOTIC SOLUTION

Michael H. Gold MD, a Jaggi Rao MD, b Mitchell P. Goldman MD, c Taneey M. Bridges NP d Virginia L. Baublitz NP e, Molly M. Boring NP f, April N. Guider RN g

a. Medical Director, Gold Skin Care Center, Tennessee Clinical Research Center, Nashville, TN
b. Medical Director, Dermatology, Cosmetic, Laser Associates of La Jolla and La Jolla Spa MD, La Jolla, CA
c. Gold Skin Care Center, Tennessee Clinical Research Center, Nashville, TN
d. Dermatology, Cosmetic, Laser Associates of La Jolla and La Jolla Spa MD, La Jolla, CA

Abstract

Background: Blue light sources have been shown to be effective in the treatment of mild to moderate inflammatory acne vulgaris lesions.

Objective: We evaluated the safety and efficacy of a new blue light source in the treatment of mild to moderate inflammatory acne vulgaris in comparison to topical 1% clindamycin solution.

Results: Blue light therapy reduced inflammatory acne vulgaris lesions by an average of 34%, as compared to 14% for topical 1% clindamycin solution.

Conclusions: The blue light source presented in this report is a safe and effective treatment option available to our patients with mild to moderate inflammatory acne lesions.
BLU-U Blue Light Photodynamic Therapy

**Open BLU-U**

1. Adjustable height positioning of the unit for treatment flexibility
2. Large casters and post handle for easy mobility
3. A pivoting post for compact storage and easy movement within the treatment facility

**Closed BLU-U**

- Storage space needed is 2 x 3 feet

**BLU-U specifications**

- **Weight**: 155 lbs.
- **Light source**: Narrow band blue fluorescence
- **Wavelength range**: 402-432 nm (FWHM)
- **Surface treatment area (active emitting area)**: 30 x 46 cm²
- **Peak wavelength**: 417 ± 5 nm
- **Power requirements**: 120/220-240 VAC; 60/50 Hz; 2.5/1.5 A
Acne Vulgaris

• Laser/Light technology

  • Intense Pulsed Light (IPL) technology for acne—many systems exist

    • Quantum, VascuLight, Lumenis One, M22 by Lumenis

    • Other systems – Harmony by Alma, BBL by Sciton, Isolaz by Solta, Elos Plus by Syneron, Lumecca (Invasix)

  • ClearTouch, SkinStation by Radiancy

    • Ross V (2002 ASLMS) – 50% inflammatory acne lesion improvement


      • 85% > 50% improvement; 15-20% non-responders
Lumenis One – Dr. Li, China
## IPL

### China Examples

<table>
<thead>
<tr>
<th>病变类型：</th>
<th>Acne</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>治疗参数：</th>
<th>波长：560nm</th>
<th>脉冲延迟：30ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>能量密度：14–20J/cm²</td>
<td>脉宽：3.5ms</td>
<td></td>
</tr>
<tr>
<td>脉冲方式：2个同步脉冲</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

治疗前 | 1次治疗后 | 4次治疗后
IPL
China Examples

病变类型：
痤疮/玫瑰痤疮的
红斑、印痕以及瘢痕
Post acne/Rosacea/Scar

治疗参数：
波长：590nm
能量密度：17-19J/cm²
脉冲延迟：30ms
脉宽：3.0ms
脉冲方式：3个同步脉冲
Sciton BBL is available in 2 options

- BBL module incorporated into JOULE™
- BBLs Standalone System
BBL™ easy to change Smart Filters™

- BBL uses Smart Filters™ allowing for quick and easy adjustment of wavelengths on a single hand piece.
- This allows you to address multiple skin concerns without having to use or change multiple hand pieces.
• **Square-wave Energy Delivery**
  
  • BBL delivers a pulse to tissue with precise on and off times and controlled irradiance.
  
  • Many systems deliver only single, double or triple pulses with extended low power tails.
  
  • BBL square wave pulsing does not create low energy tail and waste of energy.

• **True Pulse Width Control**

  • BBL utilizes active feedback modulation up to 10 times per pulse width with a wide range of delivery times.

  • OLDER technologies simply fire two short pulses with a delay between them to inefficiently simulate longer pulses.
The BroadBand Light Family

**BBL**
- Correcting Treatment

**FOREVER YOUNG- BBL**
- Anti-Aging Treatment

**FOREVER CLEAR- BBL**
- Acne Treatment

**FOREVER BARE- BBL**
- Hair Removal

**SkinTyte**
- Skin Tightening Treatment

---

**BBL**
- 1 year post-treatment (courtesy of Hryhorii Bigorga, MD)
- 1 year of multiple treatments

**FOREVER YOUNG- BBL**
- 1 year of multiple treatments
- 2 years post-treatment (courtesy of Patsy Stinchfield, RN)

**FOREVER CLEAR- BBL**
- 1 year post-treatment (courtesy of Michelle Yager, MD)
- 1 year of multiple treatments

**FOREVER BARE- BBL**
- Skin Tightening Treatment
- 4 months post-treatment (courtesy of Elizabeth Engsig, MD)

**SkinTyte**
- 3 months post-treatment (courtesy of Addison Lee, MD)
- 1 year of multiple treatments (courtesy of Brandi McConathy, MD)
<table>
<thead>
<tr>
<th>BBL</th>
<th>FOREVER YOUNG- BBL</th>
<th>FOREVER CLEAR- BBL</th>
<th>FOREVER BARE- BBL</th>
<th>SkinTyte</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correcting Treatment</td>
<td>Anti-Aging Treatment</td>
<td>Acne Treatment</td>
<td>Hair Removal</td>
<td>Skin Tightening Treatment</td>
</tr>
<tr>
<td>Pigmented lesions: hyperpigmentation, melasma</td>
<td>Mostly sun-induced indications.</td>
<td>Mild to moderate inflammatory and pustular inflammatory acne vulgaris</td>
<td>Removal of unwanted hair from all skin types, and to effect stable long-term or permanent hair reduction.</td>
<td>Topical heating for the purpose of elevating tissue temperature to initiate the body's natural healing process.</td>
</tr>
<tr>
<td>Cutaneous lesions: warts, scars and striae</td>
<td>Pigmented lesions: dyschromia, ephelides (freckles)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vascular lesions: rosacea, portwine stains, hemangiomas, telangiectasias, angiomas, leg veins and venous malformations</td>
<td></td>
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</tbody>
</table>
Let our pictures do the talking...

Courtesy of Melody Dyer, DO

Courtesy of Phillip Chang, MD

Courtesy of Paula Hicks, MD

Courtesy of Antonio Campo, MD, PhD

Courtesy of Jason Pozner, MD

Courtesy of Kei Negishi, MD
Forever Clear BBL Results
Photopneumatic Technology: The Mechanism

- Hand piece is placed on treatment area
- Targets elevated closer to skin’s surface
  - Blood concentration reduced
  - Melanin concentration reduced
- Light applied to treatment area
- Targets are safely and painlessly destroyed
Isolaz acne therapy harnesses the clinically proven, unique combination of vacuum extraction, broadband light and enhanced topical application.
Isolaz treatments cleanse, purify, and shrink pores while destroying acne causing bacteria for a clearer, more even complexion.

**CLEANSE**
*Isolaz Tip*

Vacuum tip gently lifts acne impurities and extracts dirt, blackheads, and excess oil from your pores.

**PURIFY**
*Isolaz Tip*

Broadband light is applied to help destroy acne causing bacteria and reduce sebum production.

**REPLENISH**
*Profusion Tip*

Skin care regimens get a kick-start by accessing the deeper layers of your skin.

**RELEASE**
*Profusion Tip*

Skin is released to normal position, and pores are left clean and purified for clearer, replenished skin.
Clinical Studies
Weiss & Munavalli

• Reduction of acne lesions began as soon as 2 days with median of 5 days.
• Overall reduction of acne activity evaluated by blinded assessment
• Average reduction:
  • papules 50-60%,
  • pustules 70-80%,
  • comedones 40-50%.
• Inflammatory papules showed reduction in erythema and size but not number at one week.
• At one month, however, a 50% reduction in number inflammatory lesions was noted.
• Pain was judged as minimal by immediate post-treatment survey. No blistering or pigmentation changes were observed.
Efficacy of a Novel Combination of Pneumatic Energy and Broadband Light for the Treatment of Acne

Michael H. Gold MD, a Julie Biron BS b

a. Medical Director, Gold Skin Care Center, Tennessee Clinical Research Center, Clinical Assistant Professor, Division of Dermatology, Department of Medicine, Vanderbilt University Medical School, Vanderbilt University Nursing School, Nashville, TN; Visiting Professor of Dermatology, Huashan Hospital, Fudan University, Shanghai, China
b. Director, Tennessee Clinical Research Center, Nashville, TN

Abstract

Introduction: A novel photopneumatic platform (Isolaz, Pleasanton, CA), combining vacuum pressure with a broadband light source device has been designed to attack multiple targets for the effective treatment of acne.

Objective: The objective of this study was to evaluate the safety and efficacy of photopneumatic technology for the treatment of mild to moderate acne vulgaris.

Methods: Eleven subjects (7 women) aged 15 to 54 years with skin types 1 to 4 presented with mild to moderate facial acne (defined as 15 or more facial inflammatory or noninflammatory lesions) were recruited to the study. All subjects underwent 4 photopneumatic treatments at 3-week intervals with follow-up visits at 1 and 3 months.

Results: Inflammatory lesion counts continued to decrease for at least 3 months after the final treatment. At 3 months, reductions in lesion counts were significant for both inflammatory (P=.0137) and noninflammatory (P=.0383) lesions. Mean scores between visits consistently dropped sharply from their immediate posttreatment values for pain, erythema, and edema. Nine subjects (82%) were moderately satisfied to very satisfied with treatment.

Conclusion: Results suggest that the photopneumatic device is a safe and effective modality for the treatment of mild to moderate inflammatory and comedonal acne vulgaris.
Clinical Study –
Gold and Biron – ASLMS 2008, AAD 2008

• Eleven Subjects, aged 15-54 years of age with mild to moderate acne vulgaris
• Four PPx treatments at 3 week intervals; follow-up at one and three months post last treatment
• Inflammatory acne lesion counts continued to decrease for at least the three months after the last treatment
• At 3 months:
  • Inflammatory lesion counts: 78% reduction (p=0.0137)
  • Non-inflammatory lesion counts: 57.8% reduction (p=0.0383)
  • Pain minimal with treatment
  • 82% moderate to very satisfied
PPx
Acne Study

After 4 treatments
PPx
Acne Study

After 4 treatments
PPx

Before

Post 1 treatment
Photopneumatic Therapy for the Treatment of Acne

Rungsima Wanitphakdeedecha MD MA MSc, Elizabeth L. Tanzi MD, and Tina S. Alster MD

a. Department of Dermatology, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand

ABSTRACT

Background: A wide variety of laser and light-based therapies have been utilized for acne vulgaris; however, current techniques have been limited by photosensitivity issues or inconsistent results.

Objective: To determine the clinical efficacy and side-effect profile of photopneumatic therapy for the treatment of facial acne vulgaris.

Methods: Twenty adults with mild to severe facial acne vulgaris received 4 successive treatments at 2-week intervals with a combined photopneumatic device (intense pulsed light [IPL]; fluences=3.6-4.2 J/cm²; negative pressure=3 psi). Clinical improvement was evaluated on a quartile grading scale using comparative digital photographs at baseline, and 1 month and 3 months after the final treatment. Acne lesion counts were obtained at baseline, prior to each treatment session, and at the end of the study.

Results: Modest reduction in acne lesion counts and global clinical improvement was seen in the majority of patients. Patients with severe acne experienced the most clinical improvement. Side effects were mild and limited to transient erythema and rare purpura. Most patients experienced acne worsening early in the treatment course.

Conclusion: Photopneumatic therapy is a safe and effective treatment for acne vulgaris. Patients with more severe acne respond best to treatment.
ADVA

- Solid-state 589/1319nm
  - ND Yag Diode Crystals
    - No Consumables

- Scanner Hand piece
  - Single spot or fractional
  - 1mm spot size
  - Multi-pattern up to 10x10mm
  - Both wavelengths delivered with the same hand piece
Treatments – 589nm

- Telangiectasia
- Spider veins, both facial and leg
- Rosacea
- Hemangiomas
- Port wine stains
- Venous lakes
- Red or hypertrophic scars
- Melasma
- Hyper pigmentation
- Skin rejuvenation
Treatments 1319nm

- Skin rejuvenation
- Reduction of acne scars
- Reduction in the appearance of pores
- Mild and moderate inflammatory acne vulgaris
Objective

Examine the safety and efficacy of a 589nm solid-state laser used for treatment of facial erythema.

Study performed by Dr. David Goldberg, 2018
Study Design

-- Single-center, prospective cohort of 30 patients
  18 years or older
  Fitzpatrick type I to IV
  Varying degrees of facial erythema

-- 4 full face monthly treatments
  Follow-up one month after 4\textsuperscript{th} treatment

-- Erythema evaluation by investigator and participant using scale 0 to 4 (0 = no erythema; 4 = severe erythema)

-- Safety assessed by investigator-reported side effects

<table>
<thead>
<tr>
<th>Treatment Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-15 J/cm\textsuperscript{2}</td>
</tr>
<tr>
<td>46 msec pulse duration</td>
</tr>
<tr>
<td>Scanning hand piece</td>
</tr>
</tbody>
</table>
Investigator assessment:

Baseline erythema grade
Left side:
Right side:

Final erythema grade:
Left side:
Right side:

Patient assessment:

Baseline erythema grade
Left side:
Right side:

Final erythema grade:
Left side:
Right side:

Baseline
1 month s/p 4 treatments
Safety

No complications were reported.
Conclusion

A new 589nm solid-state, non-rhodamine dye laser represents a novel approach for the treatment of facial erythema.
ADVATx Laser for Acne

Photos Courtesy of Carsten Philip, MD - Berlin, Germany

Pre Treatment

Post 2 Treatments

Tx 1: 1st pass: 1319nm, 20 J/cm², square pattern 10x10mm filling factor, pulse duration 38ms, scan time 2.6s
2nd pass: 589nm, 10 J/cm², square pattern 10x10mm filling factor, pulse duration 34ms, scan time 3.2s

Tx 2: 1st pass: 1319nm, 22 J/cm², square pattern 10x10mm filling factor, pulse duration 38ms, scan time 2.7s
2nd pass: 589nm, 12 J/cm², square pattern 10x10mm filling factor, pulse duration 37ms, scan time 4s
ADVATx Laser for Acne

BEFORE

AFTER
ADVATx Laser for Acne
AdvaTX – Each Tx 2 weeks apart

Photos Courtesy of Michael H. Gold, MD

Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

Before Tx

Post 1 Tx

Post 2 Txs

Post 3 Txs

Post 4 Txs
AdvaTX Laser Treatment

Before Tx

Post 1 Tx

Post 2 Txs

Post 3 Txs

Post 4 Txs

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Background and Objectives for TCRC Study

- Facial acne scarring is a prevalent disease
  - Physical and psychosocial sequelae
- Innovative solid state, dual-wavelength laser investigated
  - 589/1319 nm
  - No consumables
  - No dye kits
Study Designs/Materials/Methods

• 12 patients treated
  • 11 Female – 1 Male
  • Fitzpatrick skin types of II and III
  • Acne scars for more than 1 year

• 2 passes, both covering the entire face
  • 1319 nm and subsequently 589 nm
  • 3 sessions, 1 every other week
  • Full face covered in approximately 30 minutes

• Acne scars scored by one physician evaluator
  • ECCA grading scale
  • Before and 2 weeks after the final treatment
  • 3 and 6 month follow-ups after last treatment

• Safety
  • Recording subject discomfort scores
  • Adverse effects
Results

• Fluence
  • 28 J/cm² +/- 2.4 J/cm² 1319nm
  • 16 J/cm² +/- 2.9 J/cm² 589 nm
• Baseline mean ECCA was 99 +/- 21
• 42% reduction in ECCA score after 3rd treatment
• One patient did not improve after 3 sessions
• Slight to moderate erythema sometimes observed
• No or minimal burning or stinging was reported
• No crust was observed
ECCA Scale

![ECCA Scale Diagram](image)
Before and After
Advalight for acne scars

Baseline

Post 6 Month

Photos Courtesy of Michael H. Gold, MD
The Tennessee Clinical Research Center, Nashville, TN USA
Advalight for acne scars

Baseline

Post 6 Month

Photos Courtesy of Michael H. Gold, MD
The Tennessee Clinical Research Center, Nashville, TN USA
Treatment of Acne Scarring with a Novel Dual-Wavelength Laser


Original Contribution

Treatment of acne scarring with a novel dual-wavelength laser

Michael H. Gold MD | April Wilson RN, BSN, CCRP | Serge R. Mordon PhD

Tennessee Clinical Research Center, Nashville, TN, USA
University of Illinois, Chicago, IL, USA
University of Illinois, Chicago, IL, USA

Correspondence
Serge Mordon, University of Illinois, Chicago, IL, USA

Abstract

Background: Facial acne scarring is a prevalent disease with both physical and psychosocial sequelae.

Aim: This study aims to evaluate an innovative solid state dual-wavelength 1,319 and 589 nm laser, which does not require consumable dye, for the treatment of acne scarring.

Patients/methods: A total of 12 patients (11 female, 1 male - Fitzpatrick skin phototypes III & IV) with acne scar for more than one year, were treated with a 1,319 nm laser and subsequently by 589 nm, all having four sessions, one every other week. A full face was covered in approximately 30 minutes. Acne scars were scored by one physician evaluator using the ECCA grading scale before 2 weeks after each treatment and 1 month and 6 months after the 4th treatment. Safety was monitored by recording subject discomfort scores and adverse effects.

Results: 12 subjects were enrolled into the study. 10 completed all 4 treatments and 2 were lost to follow up. Efficacy was measured as a 2.4 cm² at 1.319 nm and 2.9 cm² at 589 nm. At baseline, mean ECCA score was 93 ± 23. This score was reduced to 88 ± 80 (p = 0.02) after one session, to 68 ± 21 (p = 0.01) after 3 sessions, to 61 ± 17 (p < 0.01) after 3 sessions to reach 58 ± 15 (p < 0.01) 1 month after the 4th and finally 44 ± 11 (p < 0.01) at 6 month follow up. This observation corresponds respectively to 14%, 33%, 42%, 46% and 50% reduction of the ECCA score. Only one patient (ECCA score 100) did not improve after 3 sessions. Slight to moderate erythema was sometimes observed without dryness or bruising. No or minimal burning or stinging was reported. No crust was observed.

Conclusion: Improvement in scarring was noted in all patients with minimal discomfort and minimal downtime. Combining both minimal side effects with effective acne scar reduction, this laser appears to be highly effective. Long-term evaluation remains necessary to confirm the efficacy of this new laser.

Keywords
acne, ECCA, near-infrared laser, scarring, yellow laser.
LightPod Neo

- 650-microsecond technology for up to 255 J/cm² in a single pulse duration
- More than 50 FDA cleared medical aesthetic indications
- Ability to perform anesthetic, gel & skin contact free treatment on all skin types
- Eliminates pain, burns or adverse effects of the previous generation of lasers
- No costly service contracts
Current treatments of acne: Medications, lights, lasers, and a novel 650-µs 1064-nm Nd: YAG laser

J Cosmet Dermatol 2017:1-16
Neo Treatments Before and After

Before

3 Mos. After 5th Treatment
Neo Treatments Before and After Photos

Before

After 4th Treatment
Neo Treatments Before and After Photos

- Before
- 1 Month After 4th Treatment
Neo Treatments Before and After Photos

Before

After 3rd Treatment
Neo Treatments Before and After Photos

Before

After 2nd Treatment
Neo Treatments Before and After Photos

Before

After 3\textsuperscript{rd} Tx
Neo Treatments Before and After Photos

Before Treatment  Post 2 Treatments – 4 weeks apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Neo Treatments Before and After Photos

Before Treatment                                    Post 4 Treatments, 4 Weeks Apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Neo Treatments Before and After Photos

Before Treatment

Post 1 Treatment – 2 weeks apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Neo Treatments Before and After Photos

Before Treatment  Post 1 Treatment

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Neo Treatments Before and After Photos

Before Treatment

Post 2 Treatments – 4 weeks apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Neo Treatments Before and After Photos

Before Treatment

Post 11 Treatments – 1 week apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Neo Treatments Before and After Photos

Before Treatment

Post 11 Treatments – 1 week apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Patient Satisfaction in a Minimally Invasive Laser Practice with Aerolase

**Treatment:** Acne Clearance  
**Presenter:** Michael Gold, MD

**Fluence:** 28 j/cm²  
**Pulse Width:** 0.6msec  
**Spot Size:** 6mm  
**Passes:** 3  
**Skin Type:** II

**Treatment Notes:** Mode 8. Patient received two treatments over a 4 week period.

BEFORE

AFTER 2nd Tx
Patient Satisfaction in a Minimally Invasive Laser Practice with Aerolase

Treatment: Acne Clearance
Presenter: Michael Gold, MD

AFTER 2\textsuperscript{nd} Tx

BEFORE

**Fluence:** 28 j/cm\textsuperscript{2}  
**Pulse Width:** 0.6 msec  
**Spot Size:** 6 mm  
**Passes:** 3  
**Skin Type:** II

**Treatment Notes:** Mode 8. Patient received two treatments over a 4 week period.
Aerolase Before and After Tx

Before Treatment

6 treatments post 13 months

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Aerolase Before and After Tx

Before Treatment

6 treatments post 13 months

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
Aerolase Before and After Tx

Before Treatment

6 treatment post 13 months

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN
TREATMENT OF MODERATE TO SEVERE ACNE AND POST ACNE SCARS WITH 650 MICROSECOND 1064nm LASER COMBINED WITH LOW DOSE ISOTRETINOIN
Authors and Disclosures

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Background and Purpose

It is well documented that using isotretinoin for acne therapy can delay the repair of skin scar tissue and, therefore, the use of laser and phototherapy in patients receiving retinoid therapy is relatively contraindicated.

Traditionally, it is believed that these procedures should be postponed for at least 6-8 months after the end of systemic therapy with isotretinoin.

Modern revision of treatment protocols, safer, more effective lasers, and the transition to lower dosages have made it possible to reduce the likelihood of side effects in combination therapy, which is important for the timeliness of treating post-acne scars and the prevention of their occurrence.

This study was completed to determine the safety, efficacy, and tolerability of a combining a 650 Microsecond 1064nm laser with low dosages of isotretinoin for the treatment of moderate to severe acne and post-acne scars.
Materials and Methods

Patient Selection

• 28 Females and 18 Males aged 18-29, Fitzpatrick Skin Phototypes I-III with moderate to severe acne (up to 20 papulopustular elements) complicated by atrophic scars.

• All patients included underwent genetic analysis revealing the polymorphism of genes Col1A2, MMP3, ESR1, MMP1, MMP7, which can lead to the appearance of scars

• IGA parameters before therapy averaged 1.8 ± 0.2 points

• Dermatology Life Quality Index (DLQI) before treatments averaged 10.1± 1.3 points
Treatment Protocol

All patients underwent combination therapy:
- Systemic use of isotretinoin at a low dosage of 0.2 – 0.3 mg/kg/day for 6 months
- 12 laser procedures performed at 2 week intervals with a 650 microsecond 1064nm laser, pulse duration of 650µsec, fluence of 21 J/cm2, spot diameter of 6mm
Results: IGA Parameters

IGA Parameters

Before: Decreased by 72.2% and reached 0.5 ± 0.4 (p < 0.01) points.
Results: DLQI Parameters

Decreased to 2.8 ± 1.2 points (p < 0.01)
Before and After 12 Laser Treatments in Combination with Low Dose Isotretinoin
Results

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• During the study, it was noted that the resolution of inflammatory elements occurred without scarring.

• Increased sensitivity of the skin to laser radiation and the deterioration of the repair process of the skin was not observed.

• Tolerability was high.
Conclusions

• Use of combination therapy is pathogenetically warranted, especially for patients who are genetically prone to the formation of post-acne scarring

• A 650 microsecond 1064nm laser is effective at stimulating neocollagenesis without the risk of excessive heating of the skin or pain

• Pathological scarring in acne was not observed. Improvement of preexisting acne scars was noticeable.

• Combination therapy of a 650 microsecond 1064nm laser and isotretinoin at a low dosage (0.2-0.3 mg/kg/day) is safe, effective, and tolerable.