ACNEOLOGY TODAY

ISSUE - 3

Research Highlights

The impact of energy-based devices on sebum in acne vulgaris: A systematic review

Introduction:

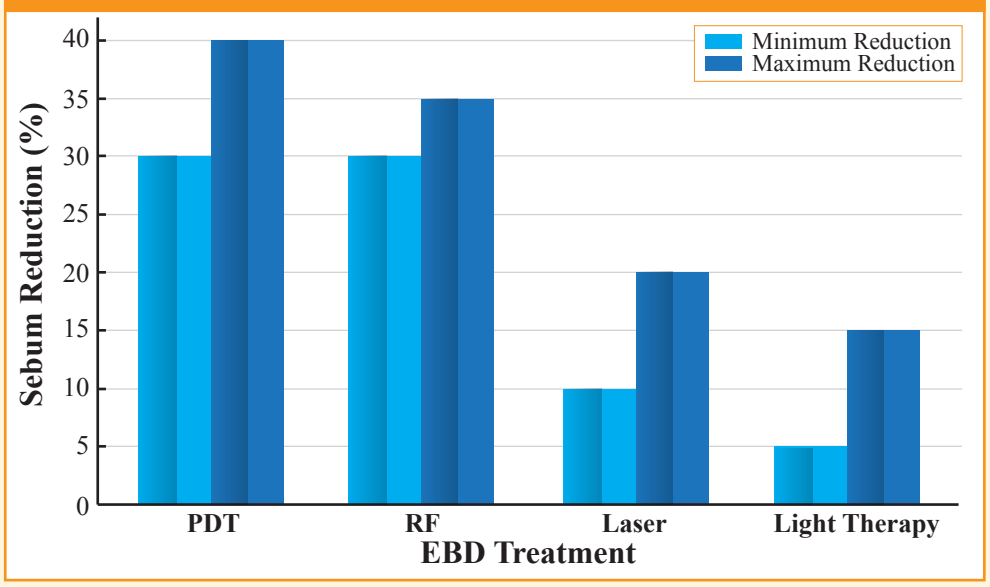
Acne vulgaris (AV) is a widespread inflammatory skin condition associated with increased sebum production, abnormal keratinization, bacterial overgrowth, and inflammation. Overactive sebaceous glands (SGs) produce excess sebum, promote Cutibacterium acnes growth, and affect acne development. Energy-based treatments (EBDs), including light therapy, photodynamic therapy (PDT), lasers, and radiofrequency (RF) devices, have emerged as effective treatment options. As the use of EBDs becomes more widespread, it is imperative to understand their effects on skin parameters, such as sebum, in AV.

Methods:

A systematic review of Embase, PubMed, Web of Science, and the Cochrane Library evaluated the impact of EBDs on casual sebum levels (CSL) in facial AV.

Key Results:

Sebum Reduction by Energy-Based Device Treatement



Laser + FMR (fractional microneedling radiofrequency) Combined Therapy: Most Effective	
PDT with CSL	High Efficacy
RF with CSL	Moderate-High Efficacy
Laser Monotherapy	Moderate Efficacy
Light Therapy	Variable Results

Based on 23 Clinical Studies

PDT Therapy with CSL Reduction: 30-40%
RF with CSL Reduction: 30-35%

Key Conclusions:

- PDT and RF were the most reliable in reducing sebum (30-40%)
- 1450-nm Diode Laser had the best laser-based sebum reduction (40-48%)
- Light therapy showed mixed results; blue-red LED was more effective than single-light therapy
- Combination therapies (Laser + RF, PDT + Light) performed better than individual treatments
- Sebum reduction was significant but not as high as isotretinoin (~60-90%)

Study Outcomes on Energy-Based Devices for Acne Sebum Reduction

Treatment Type	Sebum Reduction (%)	Best Performing Treatment	Key Findings
Light Therapy (4 studies)	Variable (19.9% - 60.9%)	Blue light (60.9% at 8 weeks)	Mixed results; blue-red LED worked better than single-light therapy
Photodynamic Therapy (PDT) (9 studies)	Consistent (30-40%)	Chlorophyll-a PDT (37.4%)	PDT outperformed light therapy; long incubation did not improve results
Laser Therapy (5 studies)	Moderate (27-48%)	1450-nm Diode Laser (40-48%)	1450-nm DL > 1064-nm Nd: YAG laser; laser + PDT more effective than laser alone
Radiofrequency (RF) (5 studies)	Consistent (30-35%)	Fractional Microneedling RF (FMR)	RF showed stable sebum reduction; FMR better than laser alone
Combination Therapies	Higher than single therapy	Laser + RF (FMR), PDT + Light	Combination > Monotherapy in reducing sebum
Control (No Treatment)	Minimal to No Reduction	--	All EBDs were significantl more effective than no treatment

References:

Jaalouk D, Pulumati A, Algarin YA, Humeda J, Goldberg DJ. The impact of energy-based devices on sebum in acne vulgaris: A systematic review. J Cosmet Dermatol. 2024;23(10):3066-3077. doi:10.1111/jocd.16466

Understanding Moisturizers & Acne: A Scientific Guide for Acne-Prone Skin

The Moisturizer Paradox

Commonmisconception -
"Oily, acne-prone skin doesn't need moisturizer"

Scientific Reality-

Proper moisturizing can help prevent excess oil production and maintain skin barrier function

When Moisturizer is Essential	
During Acne Treatments	Other Conditions
Topical Treatments	During isotretinoin treatment
Benzoyl peroxide	Dry weather conditions
Salicylic acid	Winter season
Adapalene	
Tazarotene	
Tretinoin	

The Science Behind Moisturizing

Dry skin triggers increased oil production

Excess oil production can lead to clogged pores

Proper moisturizing helps maintain skin barrier

AAD recommends - Selecting the Right Moisturizer

References:
Available at: Moisturizer: Why you may need it if you have acne https://www.aad.org/public/diseases/acne/skin-care/moisturizer accessed on 4.02.2025

The Personalised Acne Treatment Tool (PATT) Insights & Recommendations

Introduction:

Acne, a commonly treated skin disease, requires patient-centered management due to its varying presentations, chronicity, and impact on health-related quality of life. Evidence-based clinical guidelines focus primarily on the clinical severity of facial acne, omitting important patient- and disease-related factors, including ongoing management.

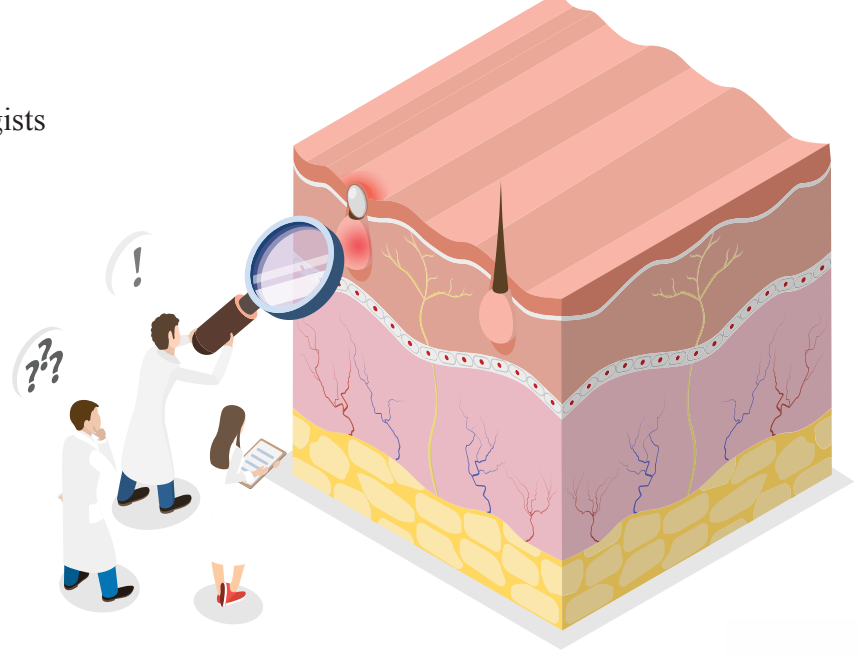
Objectives:

To generate recommendations to support patient-centered acne management, which incorporate priority and prognostic factors beyond conventional clinical severity, traditionally defined by grading and extent of visible lesions.

Methods:

Modified Delphi Consensus Methodology

17 dermatologists



Strongly Agree

Agree

75%

Consensus factors:

✓ Patient-Related Factors
✓ Treatment-Related Factors

Personalized Acne Treatment Tool:

- Acne sequelae
- Location of acne
- High burden of disease
- Individual patient features

Limitations:

- Expert Opinion-Based: May differ from patient perspectives
- Regional Variations: Healthcare system differences may affect applicability

Key Conclusions:

- **Expert Consensus Panel Recommendations** are tailored based on patient features for personalized acne treatment
- Implementation of recommendations improves treatment outcomes & effectiveness, enhances patient adherence, and contributes to higher patient satisfaction

Portable High-Frequency Spot Acne Remover Electrode | Comb Electrode | Spoon Electrode | Mushroom Electrode | Bulb Electrode

References:
Layton AM, Alexis A, Baldwin H, et al. The Personalized Acne Treatment Tool - Recommendations to facilitate a patient-centered approach to acne management from the Personalizing Acne: Consensus of Experts. JAAD Int. 2023;12:60-69. Published 2023 Apr 26. doi:10.1016/j.jdin.2023.03.013

Myth vs. Evidence

Objective:

Improve understanding by debunking commonmisconceptions with evidence-based explanations.

Choose "Myth" if the statement is incorrect or **"Evidence-Based"** if it is supported by scientific research or **Discuss** with your team. If it is a myth, scientific evidence can be checked to correct the myth.

1. Acne only affects teenagers _____
2. Acne comes from too much dirt _____
3. Chocolate is to blame _____
4. Only people with oily skin get acne _____
5. Stress causes acne _____
6. Get a tan to remove acne _____
7. Pop your pimple for instant relief _____
8. Acne grows overnight _____
9. Acne is just a cosmetic problem _____
10. Don't wear sunscreen, it will aggravate your acne. _____

References:
https://www.arlingtonvaderm.com/10-acne-myths-dermatologists-answer-your-acne-questions
https://www.webmd.com/skin-problems-and-treatments/acne/features/10-myths-and-facts-about-adult-acne