

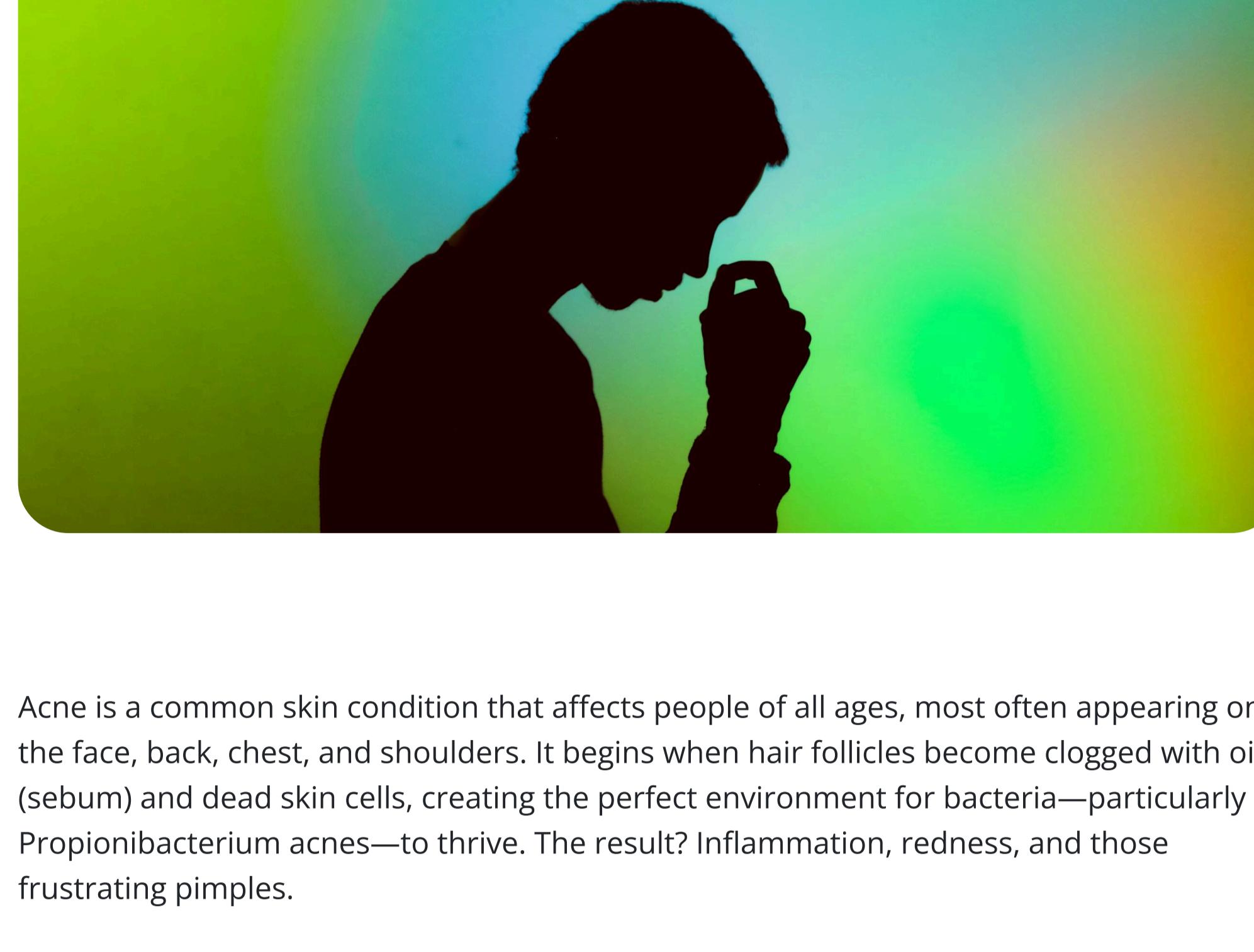
[Blog](#) > [Understanding Acne and the Role of Oxidative Stress](#)

Understanding Acne and the Role of Oxidative Stress

By Jane Doe

11 Jan 2023 • 5 min read

Share this post

[Prefer to listen? Click here to hear the related podcast episode.](#)

Acne is a common skin condition that affects people of all ages, most often appearing on the face, back, chest, and shoulders. It begins when hair follicles become clogged with oil (sebum) and dead skin cells, creating the perfect environment for bacteria—particularly Propionibacterium acnes—to thrive. The result? Inflammation, redness, and those frustrating pimples.

What Causes Acne?

- **Excess Oil Production:** Overactive sebaceous glands produce too much sebum, which clogs pores.
- **Bacterial Growth:** Blocked follicles become breeding grounds for bacteria.
- **Inflammation:** The body's immune response leads to swelling, redness, and acne lesions.

There are different types of acne, ranging from whiteheads and blackheads to more severe forms like nodules and cysts.

Oxidative Stress and Acne: What's the Connection?

Emerging research shows a strong link between acne and oxidative stress—an imbalance between free radicals (reactive oxygen species) and the body's antioxidant defenses. Here's how oxidative stress can worsen acne:

- **Triggers Inflammation:** Increases the severity and visibility of acne lesions.
- **Stimulates Sebum Production:** Encourages oil buildup that clogs pores.
- **Damages Skin Barrier:** Makes skin more vulnerable to irritants and bacteria.
- **Slows Healing:** Leads to prolonged breakouts and potential scarring.
- **Reduces Antioxidant Protection:** Skin becomes less capable of fighting off free radicals.

[Add Space](#)

Can Hydrogen Help?

Studies suggest that hydrogen purification treatments and electrolyzed oxidized water may improve acne symptoms by reducing oxidative stress, cleansing pores, and supporting skin healing. For example:

- A 2021 study on adult women found that hydrogen purification improved acne and skin health.
- Earlier research in 2004 showed that electrolyzed oxidized water was effective and well-tolerated for mild to moderate acne.

The Bottom Line

Acne is more than a surface-level issue—oxidative stress plays a deeper role in its formation and persistence. Treatments that target both inflammation and oxidative damage, like hydrogen-based skincare, may offer promising results for clearer, healthier skin.

Have questions about acne, oxidative stress, or hydrogen skincare? Feel free to reach out—we're here to help!

[Contact Us](#)

Related Studies

NIR-Activatable Heterostructured Nanoadjuvant Cop/Nicop Executing Lactate Metabolism Interventions ...

2023 - Whole Body - Immune Regulation

United Nations (UN), Department of Economic and Social Affairs, Population Division. World population ageing 2019: highlights (ST/ESA/SER.A/430). New York, USA: United Nations; 2019.

Micromotor-Enabled Active Hydrogen and Tobramycin Delivery for Synergistic Sepsis Therapy

2023 - Whole Body - Sepsis

Sepsis is a highly heterogeneous syndrome normally characterized by bacterial infection and dysregulated systemic inflammatory response that leads to multiple organ failure and death. Single anti-inflammation or anti-infection treatment exhibits ...

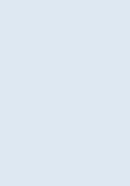
Still have questions?

We're here to help. Whether you're curious about acne, hydrogen treatments, or our latest research—don't hesitate to reach out.

[Contact Us](#)

Stay Updated on Hydrogen Studies

Subscribe to our newsletter for the latest insights and research on molecular hydrogen. Stay informed about how hydrogen can enhance your health.

[Sign Up](#)By clicking Sign Up you're confirming that you agree with our Terms and Conditions.

HYDROGEN STUDIES

Quick Links

[All Studies](#)[Health Topics](#)[Body Systems](#)[Blog](#)[Podcast](#)

Explore Options

[Hydrogen Bathing](#)[Hydrogen Benefits](#)[Hydrogen Inhalation](#)[Hydrogen Water](#)

Research Categories

[Cardiovascular](#)[Neurological](#)[Metabolic](#)[Inflammation](#)[Exercise & Performance](#)

Follow Us

[Facebook](#)[Twitter](#)[Instagram](#)[YouTube](#)[LinkedIn](#)[TikTok](#)[Spotify](#)

Hydrogen Studies does not provide medical advice, diagnosis or treatment.
[See Additional Information](#)

© 2025 HydrogenStudies.com. All rights reserved.