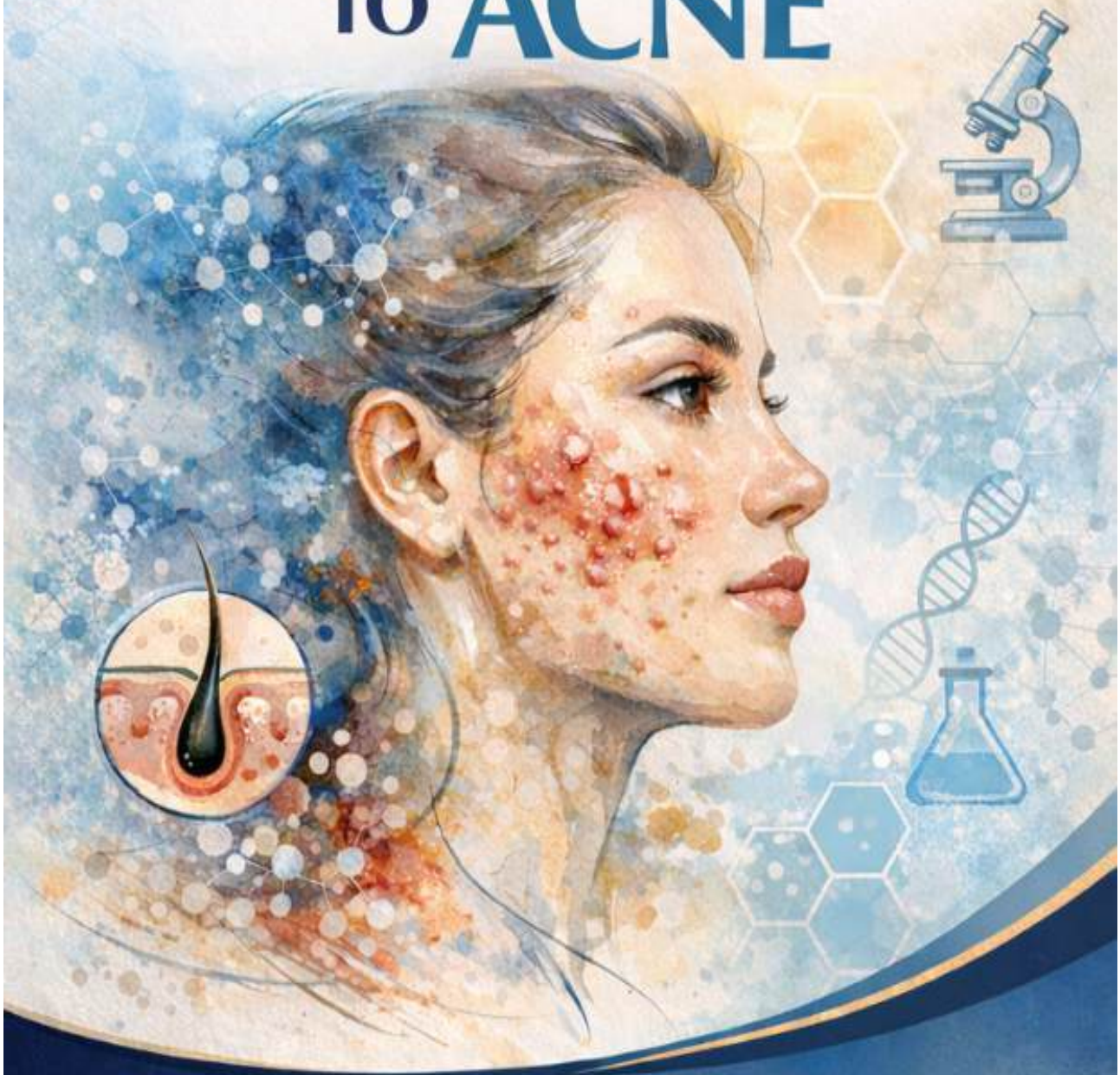
Francesco Bruno

COMPLETE GUIDE TO ACNE



Foreword by Gerd Plewig



COMPLETE GUIDE TO ACNE:

Clinical and Therapeutic Approach

Edited by **Prof. Francesco Bruno, MD**
Dermatologist, Milan

WITH ORIGINAL CLINICAL CASES, PHOTOGRAPHS, AND PRACTICAL GUIDANCE FOR PATIENTS AND DERMATOLOGISTS

FOREWORD by Prof Gerd Plewig Dermatology Clinic Munich

ABOUT THE AUTHOR

Prof. Francesco Bruno, Dermatologo
Who is this man, living and working in Milan?

Our paths have crossed repeatedly over the decades, through visits and professional encounters in Italy and Munich.

His dedication to dermatology is impressive. His particular areas of expertise include acne vulgaris, acne conglobata, hidradenitis suppurativa (also known as acne inversa), Gram-negative folliculitis, rosacea, and Demodex folliculorum.

It is a pleasure to talk with him and exchange views on the latest advances from around the world. He is a blessing to his patients and an asset to the reputation of Italian dermatology.

Gerd Plewig

ABOUT THE AUTHOR



Prof. Francesco Bruno is a dermatologist based in Milan, with over 40 years of experience in the study and treatment of acne. He is the author of numerous scientific publications, several books, and has contributed to university-level dermatology textbooks focusing on acne.

He completed his advanced training in the 1980s at the Department of Dermatology of the University of Munich. Drawing on his extensive clinical expertise, Prof. Bruno shares here evidence-based diagnostic and therapeutic guidance for all forms of acne.

Discover his professional background, scientific publications, and personalized medical approach.

CONTACT INFORMATION – DERMATOLOGIST IN MILAN

Prof. Francesco Bruno, MD
Dermatologist
Via Santa Sofia 18
Milan, Italy
Website: francescobrunodermatologo.it

INTERNATIONAL SCIENTIFIC COLLABORATIONS

Prof. Francesco Bruno has collaborated for many years with Prof. Gerd Plewig, one of the world's most authoritative dermatologists, former Director of the Department of Dermatology at the University of Munich, and co-author of the leading international dermatology textbooks.

This scientific collaboration, based on mutual respect and the sharing of clinical cases and acne research, has contributed significantly to the international recognition of Prof. Bruno's work.

The clinical images included in this volume are original and are the exclusive property of Prof. Francesco Bruno. Some of these images were kindly requested by Prof. Gerd Plewig for an upcoming scientific publication, further attesting to the high qualitative standard, methodological reliability, and scientific value of the clinical material produced at the Milan dermatology practice.



With Prof. Plewig in Munich, 1981.

He has collaborated with the most distinguished pioneers of international dermatology, particularly in the field of acne research.



📸 **In the photograph:** Prof. Bruno together with Prof. Gerd Plewig (Germany), Prof. John Strauss (USA), Prof. Alan Shalita (USA), and Prof. William Cunliffe (United Kingdom).

These eminent scholars represent the true elite of global dermatology in acne research. They were pioneers in the investigation of acne pathogenesis and among the first worldwide to introduce **isotretinoin**, thereby revolutionizing the therapeutic approach to this disease.

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ETIOLOGY OF ACNE

Acne is a multifactorial disease resulting from the interaction of genetic, hormonal, environmental, and lifestyle-related factors.

Genetic Factors

Genetic predisposition plays a major role in the development of acne. Clinical studies have demonstrated that individuals with first-degree relatives affected by acne have a significantly increased likelihood of developing the condition themselves. Genetic factors influence sebum production, inflammatory response, and follicular sensitivity to hormonal stimulation.

Seborrhea and Sebum Production

Seborrhea, defined as excessive sebum production by the sebaceous glands, represents the primary pathogenic factor in acne. Excess sebum leads to follicular obstruction, promoting the formation of comedones and, subsequently, inflammatory lesions.

Both the quantity and quality of sebum are influenced by hormonal activity, genetic predisposition, and local skin factors.

Hormonal Factors

Hormones—particularly androgens—stimulate sebaceous gland activity and modulate cutaneous inflammation.

- In adults, hormonal imbalances, such as those associated with **polycystic ovary syndrome (PCOS)**, may lead to late-onset or recurrent acne.
- During adolescence, the physiological hormonal surge is responsible for the widespread development of acne vulgaris.

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DIET AND ACNE: WHAT CURRENT EVIDENCE SHOWS

Introduction

Although high–glycemic-index foods and dairy products are often discussed as potential aggravating factors for acne, there is currently no definitive scientific evidence supporting a direct causal relationship. A balanced diet contributes to overall health and well-being but does **not replace proper clinical management**, which remains the cornerstone of acne treatment. Patients should always consult a qualified dermatologist and avoid self-treatment.

Diet and Acne: Scientific Evidence

At present, no conclusive data demonstrate that specific foods directly cause or exacerbate acne. Available studies suggest that **genetic, hormonal, and environmental factors** play a more significant role in acne pathogenesis than dietary habits alone.

The Role of a Balanced Diet

A healthy diet supports general health and may indirectly benefit skin function; however, it does not substitute for dermatologic therapy. A balanced intake of fruits, vegetables, whole grains, and lean proteins is recommended to maintain overall metabolic and cutaneous homeostasis.

Always Consult a Dermatologist

Clinical management of acne should always be guided by a specialist. Patients are strongly advised to avoid do-it-yourself approaches and rely instead on treatments prescribed by experienced dermatologists to ensure safety and therapeutic efficacy.

STRESS AND EXTERNAL FACTORS

Stress alone does not cause acne. Rather, the relationship often works in the opposite direction: **acne itself increases psychological stress**, discomfort, and, in some cases, may contribute to anxiety or depressive symptoms.

Not all emotional stressors directly worsen acne; however, acne as a chronic inflammatory disease and visible aesthetic condition can significantly impact psychological well-being. For this reason, acne may be more accurately described as a **somatopsychic condition** rather than a psychosomatic one.

In certain cases, anxiety may significantly exacerbate acne by increasing sebaceous activity and contributing to therapeutic resistance. Consequently, it is essential to treat the **patient as a whole**, addressing both cutaneous lesions and psychological distress.

The following comic-style illustrations are taken from the book *"Acne in Comics"* by Prof. Francesco Bruno.
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📘 **Acne in Comics** – Prof. Francesco Bruno
Original illustrations by Prof. Francesco Bruno.
Preface by the distinguished dermatologist:

Prof. Otto Braun-Falco, Munich.

📘 It is of fundamental importance to disseminate accurate and reliable information on skin diseases to the general population.

For this reason, it is appropriate to state: *"The dermatologist will teach you how to understand and read the skin."*

Information on common dermatologic conditions and skin diseases also carries substantial **social and individual relevance**, particularly for patients affected by conditions such as neurodermatitis or skin cancers.

It is essential that such information be presented in a **clear, accessible, and convincing manner**. For this reason, the collaboration between a dermatologist and a graphic artist to create an educational comic is both innovative and highly effective.

I recall one of the earliest comics dedicated to melanoma.

Now, Francesco Bruno, dermatologist in Milan, has produced another comic—this time focused on acne. The work has been executed to an exceptionally high standard.

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It is aimed at young individuals who suffer both physically and psychologically from **moderate to severe acne**.

This booklet is rich in useful information and successfully dispels several common myths.

It will serve as a practical and valuable resource for all those affected by this widespread condition.

I wish this manual great success and broad international dissemination.

With my best wishes to the author,

O. Braun-Falco, MD
Munich

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With Prof Braun-Falco in Munich 1981

A clear and engaging guide to understanding acne and dispelling common myths.

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Francesco Bruno Cartoons on Acne Drawings: Ernesto Tomasini Foreword: O.Braun-Falco Useful advice for patients affected with acne Popular beliefs - Correct instructions

Francesco Bruno

Cartoons on Acne



Drawings: Ernesto Tomasini

Foreword: O.Braun-Falco

Useful advice for patients affected with acne
Popular beliefs - Correct instructions

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Download the complete PDF free of charge at:
https://www.francescobrunodermatologo.it/fb/pdf/acne_a_fumetti_en.pdf

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CLINICAL TYPES OF ACNE

Acne does not present uniformly. Several clinical forms exist, differing in severity, lesion depth, and response to treatment. Proper classification is essential for accurate diagnosis and selection of the most appropriate therapeutic strategy.

COMEDONAL ACNE

Comedonal acne represents the mildest form of acne and often constitutes the initial stage of the disease.

Clinical features:

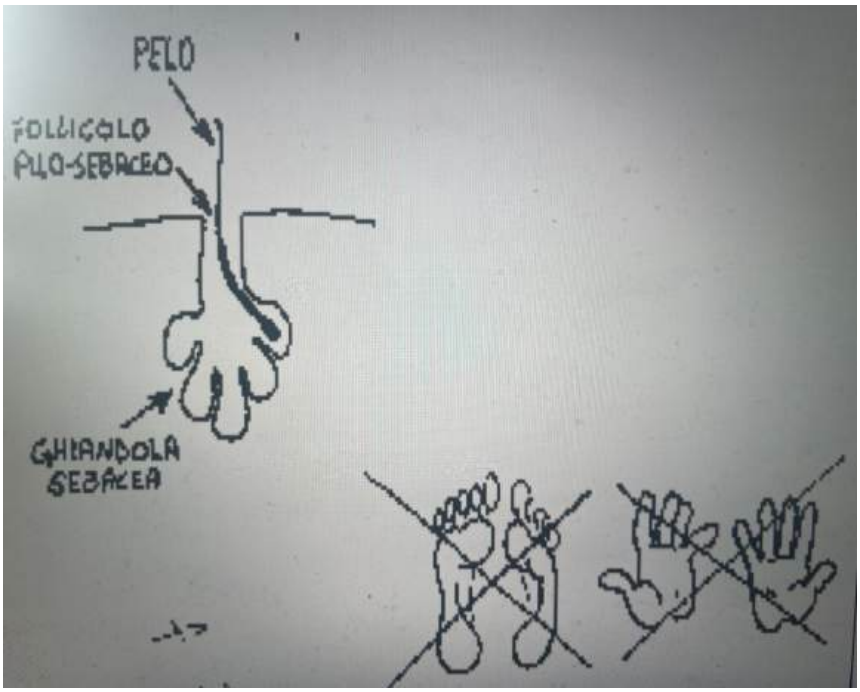
- Closed comedones (“whiteheads,” subclinical or subepidermal lesions)
- Open comedones (“blackheads”)

Typical distribution:

- Forehead, nose, and chin (the so-called **T-zone**)

Treatment:

- Specific cleansers
- Keratolytic or exfoliating agents
- Topical retinoids

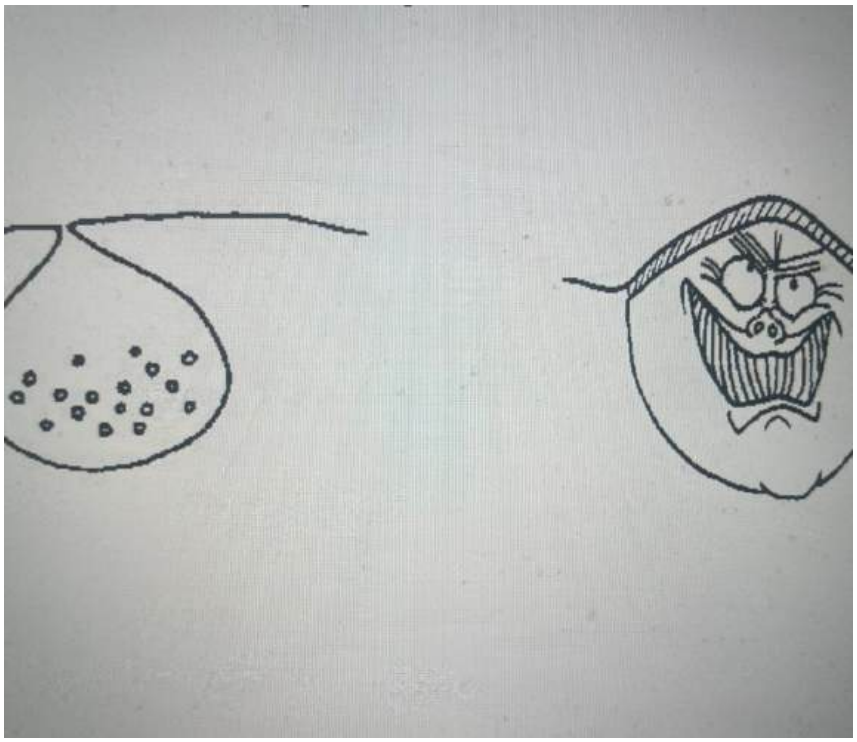


Each hair follicle is associated with a sebaceous gland whose physiological function is to lubricate and protect the hair shaft. Sebaceous glands are present throughout the body, with the exception of the palms of the hands and the soles of the feet. **“Have you ever seen hair in these areas?”**

Original illustrations by **Prof. Francesco Bruno, MD**, Dermatologist, Milan.
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The Comedone



The comedone is surrounded by a follicular capsule and exhibits a dark central opening. The black coloration is **not due to dirt or oxidation of sebum**, but rather to **melanin**, the pigment responsible for skin color.

Closed comedones frequently coexist with open comedones and represent the earliest visible acne lesions. They appear as small, subcutaneous nodules and may be present on the face and trunk. These lesions constitute the **primary, initial lesions of acne**.

Comedones may be aptly described as **"time bombs"**, as inflammatory lesions—papules, pustules, and nodules—develop directly from them.



Photograph of Prof. Gerd Plewig, kindly provided by the author. All rights reserved.

Complete resolution of comedones has been observed in a young patient following topical treatment with **0.05% retinoic acid cream** over a three-month period.

⚠️ **Important notice:**
Topical retinoic acid (cream or lotion) is a prescription medication with contraindications and potential side effects. It must be prescribed and managed by a dermatologist.

Sale without a specialist prescription is strictly prohibited.

PAPULOPUSTULAR ACNE

Papulopustular acne is the **most common inflammatory form** of acne.

It is characterized by:

- **Papules** (erythematous, tender inflammatory lesions)
- **Pustules** (pus-filled lesions)
- Frequently associated **seborrhea**

The most commonly affected areas are the **face and upper back**.

Treatment depends on disease severity:

- Mild forms are managed with **combined topical therapies**
- Moderate or treatment-resistant cases may require **topical or systemic antibiotics** under strict dermatologic supervision

The most widely used antibiotics worldwide for acne management are **tetracyclines**.



Presence of the three evolutionary elements: comedones, papules, pustules, and marked seborrhea.

NODULOCYSTIC ACNE

The Most Severe Form of Acne

Nodulocystic acne represents the most severe clinical form of acne and is characterized by **deep, painful nodules and cysts**, often leading to permanent scarring.

In Prof. Bruno's clinical practice in Milan, approximately **80% of patients with severe acne** present with nodulocystic disease, highlighting its clinical relevance and frequency.

This severe form involves the **deep dermis**, is often resistant to conventional therapies such as antibiotics or topical agents, and requires a **specialist, individualized approach**.

Clinical features:

- Deep, painful nodules
- Severe inflammation
- High risk of permanent scarring

Treatment:

Effective treatment requires oral isotretinoin administered under strict dermatologic supervision, together with regular monitoring to prevent complications and achieve long-lasting results.

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Medium- to large-sized nodules in an 18-year-old patient.”.



“Severe nodulocystic acne. Original images by Prof. Francesco Bruno, Dermatologist, Milan. All rights reserved.”

Conglobate Acne
Not all dermatologists distinguish between nodulocystic acne and conglobate acne. Nodulocystic acne is also referred to as conglobate acne in some texts.
Note: Some authors use the term “conglobate acne” for severe cases of nodulocystic acne; this distinction is not universally accepted.
Clinical features: Deep, painful nodules with a risk of permanent scarring.
Treatment: Oral isotretinoin under strict specialist supervision.

Oral Isotretinoin and Nodulocystic Acne: Prof. Bruno's Perspective

Prof. Bruno was among the first dermatologists worldwide, and the first in Italy, to use isotretinoin starting in 1982 at the Dermatology Clinic of the University of Munich with Prof. Gerd Plewig (see attached certificate). Over the course of his career, he has treated tens of thousands of patients with severe nodulocystic acne, becoming a key reference for the management of the most complex cases of severe acne.

Prof. Dr. med. Gerd Plewig
Dermatologische Universitätsklinik
Frauenlobstraße 9-11
D-8000 München 2
Telefon 089/5397623

München, 26. Januar 1982

Sehr geehrte Herren!

Herr Dr. Francesco B r u n o aus Palermo war wiederholt als Gast zu kürzeren Aufenthalten an unserer Klinik, zuletzt vom 18. - 26. Januar 1982.

Herr Dr. Bruno hat sich unter anderem sehr genau über die Behandlungsmöglichkeiten mit 13-cis-Retinsäure bei Akne und Rosazea erkundigt. Dazu hat er auch in meiner Aknesprechstunde mitgearbeitet. Ich würde durchaus empfehlen, daß Herr Dr. Bruno die Möglichkeit erhält, mit 13-cis-Retinsäure bei richtiger Indikationsstellung Patienten unter den üblichen Vorsichtsmaßnahmen zu behandeln.

Plewig

Prof. Dr. G. Plewig

CERTIFICATE

Dr. Francesco Bruno has been a guest at our clinic on multiple occasions, most recently in January 1982. Dr. Bruno acquired extensive knowledge regarding treatment options with 13-cis-retinoic acid (isotretinoin) for acne and rosacea. In this regard, he also collaborated with me in my acne clinic. I would certainly recommend that Dr. Bruno be given the opportunity to treat patients **with 13-cis-retinoic acid, under the correct indications and observing the usual precautions**.

Prof. Dr. G. Plewig Clinica Dermatologica di Monaco di Baviera

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Indications for Oral Isotretinoin
Oral isotretinoin is indicated for patients with severe nodulocystic acne, particularly when there is a risk of permanent scarring or when conventional treatments, such as antibiotics or topical therapies, have not produced satisfactory results.

Safety and Personalized Management
As with all potent medications, isotretinoin has contraindications and potential side effects. The dermatologist will thoroughly explain all details during the consultation, ensuring a safe, personalized, and effective treatment plan.

Relying on an Expert
Turning to Prof. Bruno means addressing severe acne with a scientifically grounded and well-established approach, minimizing risks and maximizing outcomes. His decades of experience ensure effective, targeted, and safe treatment for patients suffering from severe nodulocystic acne.



18-year-old patient with nodulocystic acne presenting large lesions. Complete resolution after six months of oral isotretinoin therapy.”



Severe nodulocystic acne – Resolution after six months of oral isotretinoin therapy."



Patient with severe nodulocystic acne – Left: after one month of isotretinoin therapy. Typical “flare-up” phenomenon: a temporary worsening intended to “mature” deep facial nodules.

Right: after four months of therapy.



The same patient – Complete resolution of nodulocystic acne after six months of isotretinoin therapy.

Acne fulminans

A rare and severe form, it affects almost exclusively young male patients. It is characterized by ulcerative lesions and systemic symptoms, including fever, arthralgia, and malaise. Despite the severity of the overall clinical picture, the prognosis is favorable, and relapses are rarely reported. The case was managed and treated by Prof. Bruno, a dermatologist in Milan, in collaboration with Prof. Plewig for therapeutic management.

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Young patient affected by Acne Fulminans, presenting with severe pain in the lower limbs.

Acne Fulminans. Severe pain in the lower limbs was associated. The term *“fulminans”* derives from the characteristic shiny appearance of the skin.

Treatment:
Isotretinoin, corticosteroids, antibiotics.

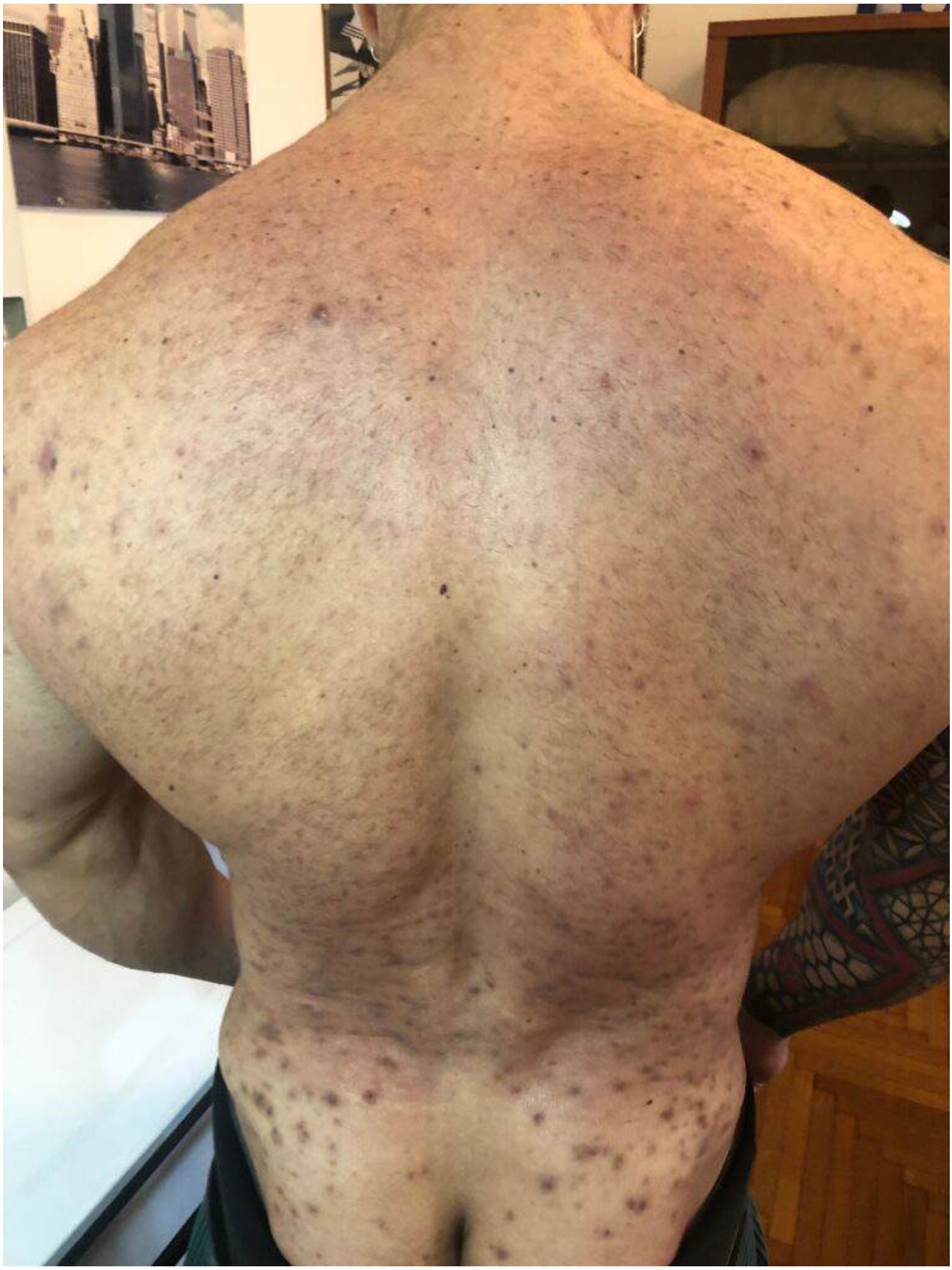


Acne Fulminans. Complete resolution following treatment with isotretinoin, corticosteroids, and antibiotics. Residual scarring is present.

Bodybuilding Acne

A form of acne affecting individuals who use systemic testosterone or anabolic steroids. The use of these substances may cause severe cutaneous alterations and can seriously compromise overall health.





Bodybuilding Acne –
Acne caused by the use of testosterone and/or anabolic steroids.

Patient using high doses of testosterone and anabolic steroids to increase muscle mass.

Bodybuilding Acne – Original photographs by Prof. Bruno, Milan.

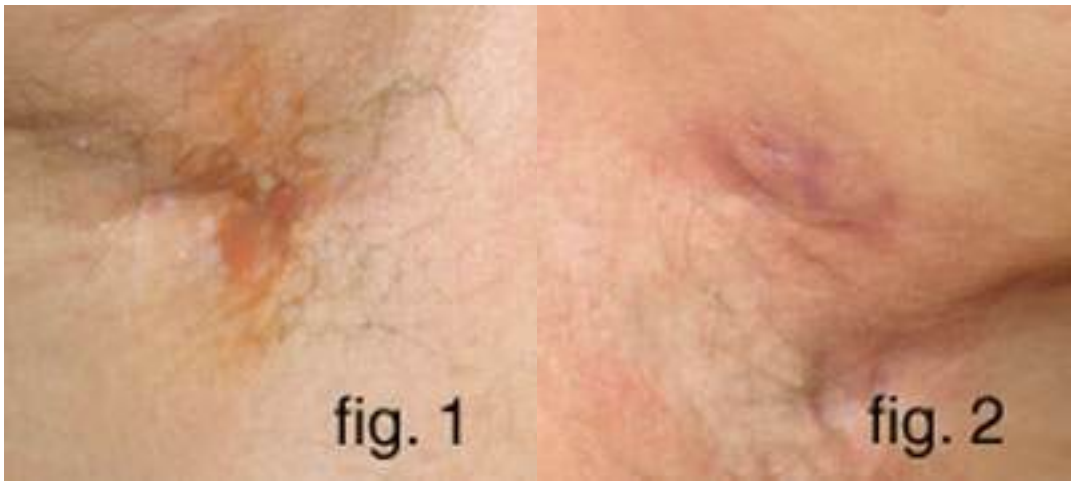
- **Mechanical acne:** caused by prolonged friction or pressure (e.g., helmets, face masks, backpacks).
- **Cosmetic acne:** induced by comedogenic or excessively occlusive cosmetic products.

Acne Inversa (Follicular Tetrad)

It affects approximately 1% of the population and is a disease that, unfortunately, is still underrecognized. It is defined as *inversa* because it involves anatomical sites that are not typically affected by acne, such as the axillae, groin, coccygeal area, scalp, and genital region. The term *"tetrad"* derives from the fact that this type of acne may simultaneously involve four anatomical sites, although in clinical practice more than four sites may be affected.

The disease may assume dramatic and disabling features, as lesions—usually nodular—can evolve into true abscesses, resulting in significant functional impairment and severe discomfort, sometimes with devastating psychological consequences. The social impact of the disease is so profound that patients affected by *acne inversa* have established a non-profit patient association to advocate for their rights. They are regularly invited to congresses organized by the Italian Acne Board to voice their concerns and clinical needs.

Adapted from Prof. Bruno's book *"Acne Patogenesi, Clinica e terapia."*



FIGG 1-2 Questa patologia ascellare è conosciuta anche sotto il nome di **idrosadenite**. Quando si infetta si definisce **idrosadenite suppurativa**.

Therapy for Acne Inversa (Follicular Tetrad)

Topical and systemic antibiotics are often ineffective. Oral isotretinoin represents the first-line treatment and should be continued for at least six months. In more complex cases, surgical intervention may be required.

References:
From the book *Acne: Pathogenesis, Clinical Features, and Therapy – Obsolete Acne Variants* (Ganassini, 1996), authors: Francesco Bruno, Paolo Piazza, Desanka Raskovic, Christos Zouboulis, Franco Di Maria. Preface by Gerd Plewig.

For further reading, see Prof. Bruno's article published in *La Pelle*:
Acne: Variant Clinical Forms.

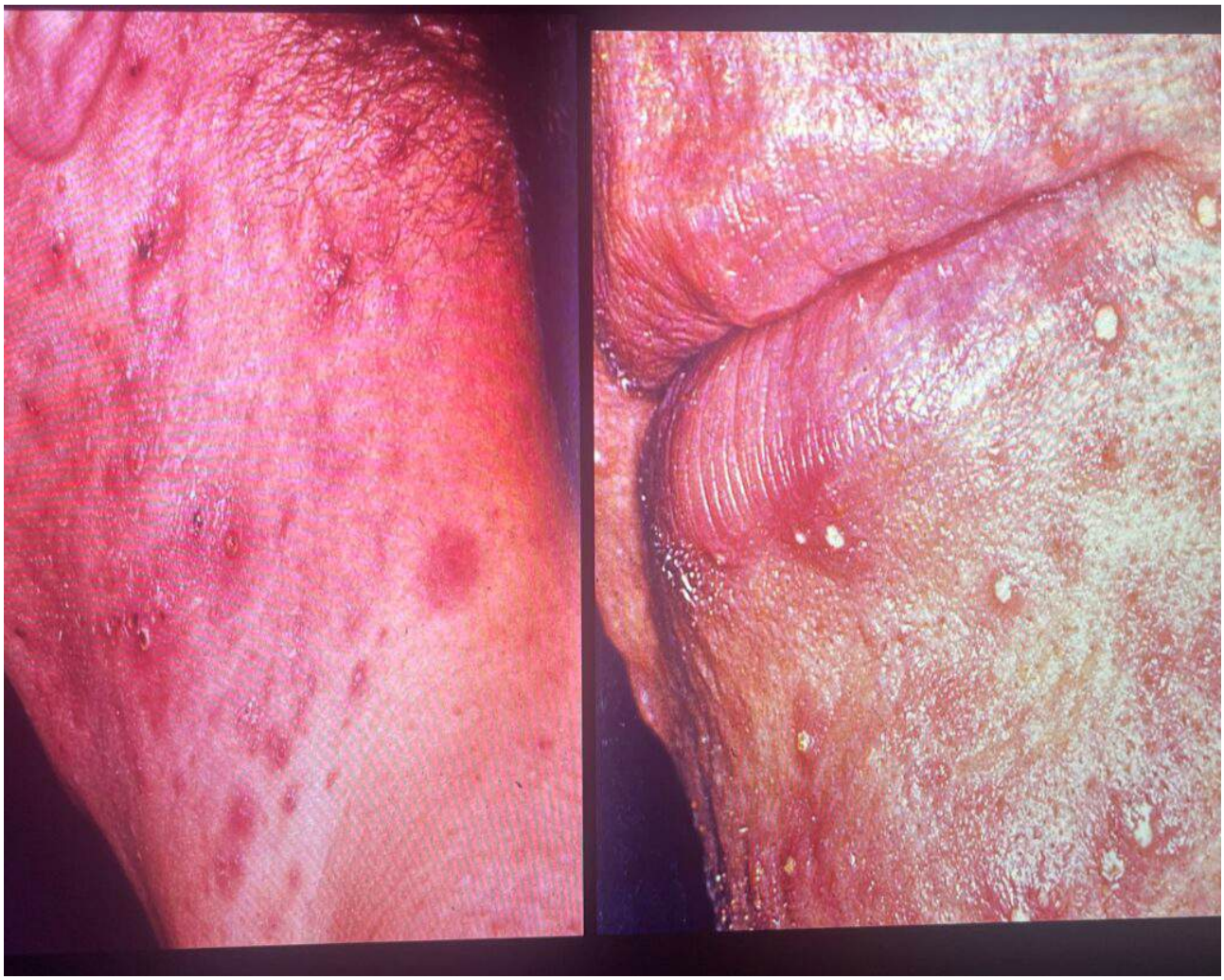
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Gram-Negative Acne

A form of acne that is far more common than generally assumed. It typically develops after prolonged or repeated antibiotic therapies that have failed to produce clinical improvement.

Main features: oily skin, absence of comedones, and short-lived pustules.

Recommended therapy: oral isotretinoin. It does not act as an antibiotic but rather modifies the cutaneous environment, making it unfavorable for the proliferation of Gram-negative organisms by eliminating the *pabulum* necessary for their growth.



It develops after ineffective antibiotic therapies. Oily skin, absence of comedones, and short-lived pustules are observed.
Oral isotretinoin: reduces the cutaneous environment favorable to Gram-negative bacteria, thereby preventing their proliferation.

Photograph of Prof. Gerd Plewig, kindly provided by the author. All rights reserved.

ROSACEA

Rosacea: An Updated Guide

What is Rosacea

Rosacea is a chronic inflammatory skin disease primarily affecting the central facial region, including the cheeks, nose, forehead, and chin. It is characterized by persistent erythema, visible capillaries (telangiectasias), flushing, papules, and pustules, and may also involve the eyes (ocular rosacea).

Rosacea should not be confused with acne: comedones are absent, and although some pathogenic mechanisms may overlap, they are fundamentally different. Rosacea affects different age groups compared with acne and, unlike acne, dietary management plays a crucial role.

Classification of Rosacea

International guidelines have abandoned the traditional classification into “subtypes” in favor of a phenotype-based approach.

The main diagnostic features suggestive of rosacea include:

- Persistent or transient facial erythema (flushing)
- Visible telangiectasias (so-called “couperose”)
- Papules and/or pustules on an erythematous background
- Phymatous skin changes (skin thickening)
- Ocular manifestations (foreign body sensation, redness, blepharitis)

The presence of one or more of these features warrants specialist dermatologic evaluation.

Pathogenesis and Triggering Factors

Rosacea arises from a complex interaction of factors, including skin barrier dysfunction, vascular hyperreactivity, immune activation (mast cells, neuropeptides), altered cutaneous microbiota, and exogenous stimuli.

Common triggering or exacerbating factors include sun exposure, temperature changes, spicy foods, alcohol, stress, wind, and irritating cosmetics. Identification and avoidance of triggers are an integral part of treatment.

Rosacea and Gastrointestinal Disorders: The Skin–Gut Axis

Rosacea is not solely a cutaneous condition; in many cases it may be associated with gastrointestinal disorders. In the presence of symptoms such as gastroesophageal reflux, gastric acidity, or abdominal bloating, a breath test for *Helicobacter pylori* is recommended, as this bacterium is frequently associated with digestive disorders.

If the test is positive or symptoms persist, referral to a gastroenterologist and possible gastroscopy are advisable. Optimizing gastrointestinal health may positively influence facial skin symptoms, reducing erythema, burning, and inflammation.

The recommended diet is consistent with that advised for patients with gastritis or reflux.

Restricted foods: fasting coffee, citrus fruits, meat broths and broths in general, alcohol; dairy products should be consumed in moderation.

Role of *Demodex folliculorum*

Demodex is a skin mite that may rarely affect the face, producing rosacea-like lesions. Treatment with a simple antiparasitic agent such as permethrin typically leads to resolution within a few days. Lesions are characteristically unilateral.

Diagnosis

Diagnosis is clinical, based on skin examination and patient history.

Topical Therapy

- Metronidazole, sodium fusidate, and anti-inflammatory agents: effective for papules, pustules, and mild-to-moderate erythema
- For persistent erythema: topical vasoconstrictors (e.g., brimonidine, oxymetazoline) and **mandatory physical photoprotection** (zinc oxide, titanium dioxide)
- Dietary management, especially in patients with concomitant gastroesophageal reflux
- *Helicobacter pylori* testing via breath test; gastroenterologic evaluation and gastroscopy when indicated
- **Topical corticosteroids are absolutely contraindicated**
- Investigation for *Demodex folliculorum* in unilateral rosacea or in cases unresponsive to conventional therapy

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Oral Therapy

- Low-dose doxycycline or minocycline: effective for inflammatory lesions or cases refractory to topical therapy
- In more severe cases, oral isotretinoin may be used (see image below)



Patient with **severe rosacea** treated with **oral isotretinoin**.

Physical / Device-Based Therapies

- Pulsed neodymium:YAG laser for the treatment of telangiectasias.

Complications: Rhinophyma

Rhinophyma is a rare complication of rosacea characterized by hypertrophy of the sebaceous glands of the nose. It predominantly affects male patients.

Original images by Prof. Francesco Bruno, Dermatologist, Milan.
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Additional Useful Recommendations

- Use gentle cleansers free of alcohol and irritating fragrances.
- Daily photoprotection with **physical sunscreens** (ZnO/TiO_2).
- Avoid individually identified triggers (e.g., specific foods, alcohol, citrus fruits, fasting coffee, extreme temperatures).
- **Psychological support:** rosacea may have a significant impact on quality of life, self-image, and psychosocial well-being.

Follow-Up and Prognosis

Rosacea does not have a single universally applicable “definitive cure”; however, with a timely and specialist-based approach, symptoms can be effectively controlled, relapses reduced, and skin quality markedly improved.

Patient reassessment after approximately **6–12 weeks** is essential to evaluate treatment efficacy and to modify the therapeutic plan if necessary.

When to Consult a Dermatology Specialist

- Persistent acne or worsening despite home treatments
- Inflamed comedones, papules, pustules, or painful nodules
- Late-onset acne in adulthood or sudden onset of severe lesions
- Signs of developing scarring
- Social withdrawal or psychological distress

Diagnosis and Dermatologic Evaluation

Recognizing the Different Types of Acne, Recommended Tests, and the Role of the Dermatologist

Main Types of Acne

- **Comedonal acne:** characterized by blackheads and microcysts, typical in adolescents
- **Papulopustular acne:** inflammatory lesions with erythema
- **Nodulocystic acne:** severe form with deep nodules that may result in scarring
- **Adult-onset (late) acne:** predominantly affects women over 30 years of age, often hormonally driven

Recommended Diagnostic Tests

The dermatologist may request:

- Hormonal assays in women, particularly in cases of adult-onset acne
- Ovarian ultrasound when an endocrine etiology is suspected

The Role of the Dermatologist

The dermatologist plays a central role in identifying the acne subtype, assessing disease severity, and establishing a personalized treatment plan.
Modern management integrates **pharmacologic, cosmeceutical, and technological treatments** (e.g., laser therapy), particularly for acne scarring.

Effective Acne Treatments

Acne treatment must always be individualized. Each patient presents unique characteristics, including skin type, lesion severity, age, hormonal status, and genetic predisposition.

Only an experienced dermatologist can select the most appropriate therapeutic strategy and minimize the risk of permanent scarring.

Topical Therapies: Creams, Gels, and Lotions

Topical treatments are the first-line approach for mild to moderate acne.
They act by regulating sebum production, limiting bacterial proliferation, and reducing inflammation.

Main active agents include:

- **Topical retinoids** (e.g., tretinoin): normalize cell turnover and unclog obstructed pores
- **Benzoyl peroxide:** reduces bacterial load and inflammation without inducing resistance
- **Topical antibiotics:** effective in the short term, always under medical supervision

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Systemic Therapies

For more extensive or inflammatory forms, systemic treatment may be prescribed:

- **Oral antibiotics** (doxycycline, minocycline, tetracyclines): reduce deep inflammation
- **Oral isotretinoin:** treatment of choice for severe, recalcitrant acne or acne at high risk of scarring

Isotretinoin requires medical monitoring and informed consent but may lead to **long-term or definitive remission in up to 95% of treated cases**.

- **Hormonal therapies in women:** oral contraceptives or antiandrogens (e.g., spironolactone) are effective in hormonally driven acne

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Specialist Dermatologic Procedures

In addition to pharmacologic therapy, aesthetic–medical procedures may be combined to improve skin quality and reduce scarring:

- Chemical peels for skin renewal
- Fractional laser therapy (e.g., Multifrax laser) for scars and dyschromia

Follow-Up and Maintenance Therapy

Nutritional Supplements in Acne

In mild acne or after clinical resolution, natural supplements may be used as maintenance therapy. They offer the advantage of minimal contraindications and side effects and may include vitamin A, beta-carotene, vitamin E, lapacho (tree bark extract), and bilberry.

Acne is a chronic condition with a variable course. Adherence to the therapeutic plan and regular dermatologic follow-up are essential, with treatment adjustments tailored to different disease phases.

Importance of Dermatologic Follow-Up

After clinical resolution, scheduled follow-up visits are necessary to monitor skin response and prevent relapse. Follow-up allows clinicians to:

- Evaluate long-term treatment efficacy
- Adjust therapy based on hormonal or seasonal changes
- Detect early signs of recurrence

In patients treated with isotretinoin, regular monitoring is particularly important to confirm sustained remission and skin stability.

Maintenance Phase: Preserving Results

After the active treatment phase, continued use of **non-comedogenic, lightweight formulations** prescribed by the dermatologist is recommended.

An appropriate home skincare routine may include:

- Gentle, sebum-balancing cleansers
- Low-dose retinoids or azelaic acid
- Daily photoprotection to prevent pigmentation disorders
- Moisturizers specifically formulated for acne-prone skin

Patient Education and Prevention

Understanding the nature of acne is essential for effective management. Patients should not discontinue treatments independently and should consult a dermatologist if skin changes occur.

A continuous, informed approach is the most effective strategy to prevent relapse and maintain long-term skin health.

Skin Care and Prevention

Daily skincare routines and practical measures are crucial. To reduce the risk of scarring and post-acne hyperpigmentation:

- Avoid squeezing or manipulating lesions
- Maintain proper cleansing with products suitable for the skin type
- Apply soothing and protective creams when needed
- Intervene promptly in cases of deep inflammatory lesions

Early and consistent management significantly reduces permanent sequelae, improving both skin appearance and psychological well-being.

Acne Scars: Prevention and Treatment

Acne scars represent the most feared and psychologically burdensome consequence of acne. They develop when inflammation extends deeply into the dermis, destroying surrounding tissue.

Prevention: Early Treatment Is Essential

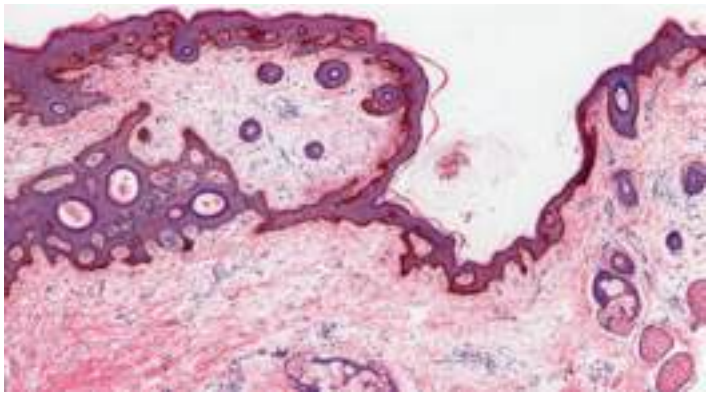
The most effective strategy to prevent scarring is early acne treatment. Prompt dermatologic intervention with targeted, personalized therapies prevents inflammatory lesions from evolving into permanent damage.

Avoiding manipulation of lesions is equally critical, as squeezing exacerbates inflammation and promotes scar formation.

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Types of Acne Scars

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Acne scars may present in different morphological patterns.



Photograph of Prof. Gerd Plewig, kindly provided by the author. All rights reserved.



Atrophic (ice-pick) scars: the most common type, resulting from collagen loss.

Acne scars appear as actual depressions in the skin, reddish in color if recently healed, or whitish if older. See image below.



- **Dyspigmented scars:** areas of altered pigmentation, more noticeable after sun exposure.

Advanced Dermatologic Treatments

Today, the appearance of acne scars can be significantly improved using state-of-the-art laser technologies and combined approaches:

- **Fractional Multifrax laser** to stimulate collagen regeneration
- **Chemical peels** to smooth the skin surface
- **Biorevitalization and soft fillers** in selected cases
- **Personalized therapies** according to skin phototype and scar type

Treatment is always planned after careful clinical and photographic evaluation, often integrated with digital video-dermatoscopy to document progress.

A Comprehensive Recovery Path

Aesthetic improvement is accompanied by significant psychological benefit.
Treating acne scars also restores confidence and emotional well-being for those who have lived with acne for a long time.

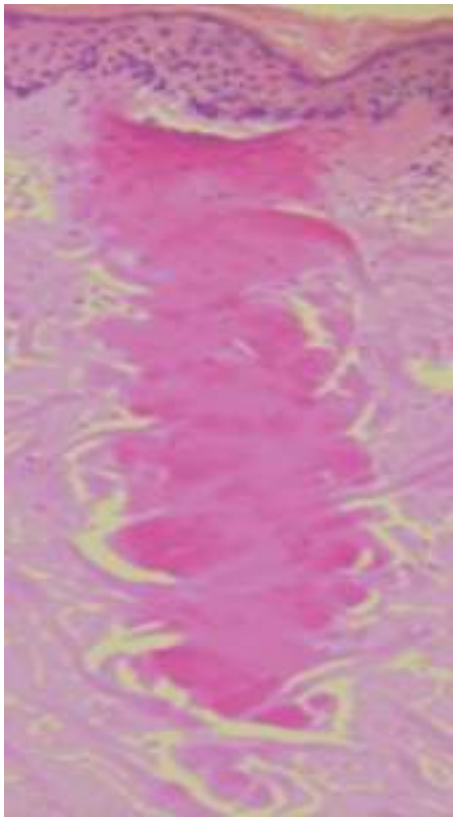
THE MULTIFRAX LASER

Material adapted from www.francescobrunodermatologo.it
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It is the **only non-ablative fractional laser** that operates with two distinct wavelengths. It is called **MULTIFRAX (MULTIFRACTIONAL)** because the **two different wavelengths (1927 nm and 1550 nm) work simultaneously**. The benefits of this combined and synchronized action result in deeper laser penetration, allowing for more effective treatments..



The effect of the **thermal microcolumns** reaches deep into the dermis, where fibroblasts are stimulated to produce increased amounts of **hyaluronic acid, elastin, and collagen**, which are essential for tissue repair. For this reason, it also provides excellent **anti-aging benefits**.

MultiFrax Laser: The New Frontier for Acne Scars and Skin Rejuvenation

Unlike traditional fractional lasers, which use a single wavelength (1540 nm), the **MultiFrax Laser (multifractional)** is the only non-ablative laser that employs **two different wavelengths (1927 nm and 1550 nm) acting simultaneously**, penetrating more deeply into the dermis.

The term **non-ablative** means that this laser does not cause skin injury (such as abrasions or crusting), but only mild erythema that disappears within approximately three hours. During treatment, patients may feel only a slight tingling, with no pain or downtime.

Compared with previous lasers, the MultiFrax penetrates deeper, stimulating dermal fibroblasts to produce **new collagen, hyaluronic acid, and elastin**, resulting in smoother, firmer, and more uniform skin.

Long-Lasting Results and Comfortable Treatment

Results obtained with the MultiFrax Laser are **durable over time**.
Each session lasts **10–15 minutes**, after which patients can immediately apply makeup and return to work. Sun exposure is allowed, provided **SPF 50+ protection** is used.

The number of sessions varies from **6 to 8**, on a monthly basis, depending on the **depth of acne scars** and **skin aging**. Improvement can range from **60% to 100%** depending on the case.

Not Just Acne: Complete Aesthetic Benefits

Thanks to its **deep yet gentle action**, the MultiFrax Laser delivers excellent results not only for acne scars, but also for **skin aging, photoaging, melasma, and stretch marks**.

Treatment of acne scars requires **dermatologic expertise and clinical experience**. Each patient has unique skin characteristics—phototype, thickness, and scar type—so no single protocol applies to all. Experience in managing different forms of acne allows for **personalized treatment plans**, combining laser therapy, chemical peels, or regenerative methods based on skin response.

A **structured and monitored approach** achieves progressive and natural results without altering facial morphology, maintaining a harmonious and healthy appearance.

Acne Scar Treatment with MultiFrax Laser: Real Results

Real results of **MultiFrax Laser treatment** for acne scars and skin rejuvenation.
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MultiFrax Laser Treatment performed by Prof. Bruno: visible improvement of acne scars and skin texture.
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Prevention

Clinical advice to prevent scars and pigmentation.

Prevention of acne scars begins with **early diagnosis and timely treatment**.
Any untreated lesion can leave a permanent mark; therefore, it is essential to consult a specialist at the first signs of inflammatory lesions.
Manipulating lesions or using irritating products may worsen the condition, increase the risk of **post-inflammatory hyperpigmentation**, and complicate subsequent interventions.

A correct **dermocosmetic routine**, combined with targeted medical treatments, reduces inflammation and promotes orderly healing of the skin, limiting scar formation.
The dermatologist, evaluating each case individually, may also recommend **maintenance protocols** to preserve treatment results and reduce the risk of recurrence.

Conclusions: Managing Acne with Expertise and Method

Acne is a **multifactorial condition** that is treatable and manageable when approached with medical competence and consistent therapy. There are no miracle cures: success depends on **accurate diagnosis, personalized therapy, and regular follow-up**.

The **dermatologist plays a central role**, from identifying the acne type to selecting the most effective treatments and preventing relapses.
An **integrated approach** that also considers lifestyle and psychological well-being can significantly improve both skin appearance and quality of life.

Relying on an **experienced specialist** allows for not only inflammation control, but also scar prevention and restoration of self-confidence. With **method, knowledge, and targeted therapy**, acne can be effectively managed, ensuring long-lasting results.

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