ACNE TREATMENT ALGORITHM IN ADOLESCENTS AND YOUNG ADULTS

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**= can be a fixed combination product or as a separate component**
**Recommendations for Topical Therapies**

<table>
<thead>
<tr>
<th>Recommendation</th>
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<tr>
<td>Benzoyl peroxide or combinations with erythromycin or clindamycin are effective acne treatments and are recommended as monotherapy for mild acne, or in conjunction with a topical retinoid, or systemic antibiotic therapy for moderate to severe acne.</td>
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<tr>
<td>Benzoyl peroxide is effective in the prevention of bacterial resistance and is recommended for patients on topical or systemic antibiotic therapy.</td>
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<td>Topical antibiotics (e.g., erythromycin and clindamycin) are effective acne treatments, but are not recommended as monotherapy because of the risk of bacterial resistance.</td>
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<tr>
<td>Topical retinoids are important in addressing the development and maintenance of acne and are recommended as monotherapy in primarily comedonal acne, or in combination with topical or oral antimicrobials in patients with mixed or primarily inflammatory acne lesions.</td>
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<tr>
<td>Using multiple topical agents that affect different aspects of acne pathogenesis can be useful. Combination therapy should be used in the majority of patients with acne.</td>
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<td>Topical adalpine, tretinoin, and benzoyl peroxide can be safely used in the management of preadolescent acne in children.</td>
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<td>Azelaic acid is a useful adjunctive acne treatment and is recommended in the treatment of postinflammatory dyspigmentation.</td>
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<td>Topical dapsone 5% gel is recommended for inflammatory acne, particularly in adult females with acne.</td>
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<tr>
<td>There is limited evidence to support recommendations for sulfur, nicotinamide, resorcinol, sodium sulfacetamide, aluminum chloride, and zinc in the treatment of acne.</td>
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</tbody>
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**Recommendations for Systemic Antibiotics**

| Systemic antibiotics are recommended in the management of moderate and severe acne and forms of inflammatory acne that are resistant to topical treatments. |
| Doxycycline and minocycline are more effective than tetracycline, but neither is superior to each other. |
| Although oral erythromycin and azithromycin can be effective in treating acne, its use should be limited to those who cannot use the tetracyclines (i.e., pregnant women or children < 8 years of age). Erythromycin use should be restricted because of its increased risk of bacterial resistance. |
| Use of systemic antibiotics, other than the tetracyclines and macrolides, is discouraged because there are limited data for their use in acne. Trimethoprim-sulfamethoxazole and trimethoprim use should be restricted to patients who are unable to tolerate tetracyclines or in treatment-resistant patients. |
| Systemic antibiotic use should be limited to the shortest possible duration. Re-evaluate at 3-4 months to minimize the development of bacterial resistance. Monotherapy with systemic antibiotics is not recommended. |
| Concomitant topical therapy with benzoyl peroxide or a retinoid should be used with systemic antibiotics and for maintenance after completion of systemic antibiotic therapy. |
**Female Acne – Recommendations for Hormonal Agents**

- Estrogen-containing combined oral contraceptives are effective and recommended in the treatment of inflammatory acne in females.

- Spironolactone is useful in the treatment of acne in select females.

- Oral corticosteroid therapy can be of temporary benefit in patients who have severe inflammatory acne while starting standard acne treatment.

- In patients who have well documented adrenal hyperandrogenism, low-dose oral corticosteroids are recommended in treatment of acne.

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**Acne Differential Diagnosis Across the Age Spectrum**

**ADOLESCENT** (~12 to 18 y of age)
- Corticosteroid-induced acne
- Demodex folliculitis
- Gram-negative folliculitis
- Keratosis pilaris
- Malassezia (pityrosporum) folliculitis
- Papular sarcoidosis
- Perioral dermatitis
- Pseudofolliculitis barbae
- Tinea faciei

**preadolescent** (≥7 to ≤12 y of age)
- Acne venenata or pomade acne (from the use of topical oil-based products)
- Angiofibromas or adenoma sebaceum
- Corticosteroid-induced acne
- Flat warts
- Keratosis pilaris
- Milia
- Molluscum contagiosum
- Perioral dermatitis
- Syringomas

**mid-childhood** (1 to 7 y of age)
- Adrenal tumors
- Congenital adrenal hyperplasia
- Cushion syndrome
- Gonadal tumors
- Ovarian tumors
- PCOS
- Premature adrenarche
- True precocious puberty

**any age**
- Acne venenata or pomade acne (from the use of topical or oil-based products)
- Bilateral nevus comedonius
- Chlorinated aromatic hydrocarbons (chloracne)
- Corticosteroids (topical, inhaled, and oral)
- Demodicidosis
- Facial angiofibromas (tuberous sclerosis)
- Flat warts
- Infections (bacterial, viral, and fungal)
- Keratosis pilaris

**medication-induced** (anabolic steroids, dactinomycin, gold, isoniazid, lithium, phenytoin, and progestins)
- Milia
- Miliaria
- Molluscum contagiosum

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Mild Acne = Comedonal or Inflammatory/Mixed Lesions

Mild Comedonal Acne
(central face common in preteens and early teens)

More Extensive Comedonal Acne
(forehead involvement common in preteens and early teens: often with no or few scattered superficial inflammatory lesions)

Mild Inflammatory Acne
(scattered superficial inflammatory papules/pustules + some comedones)

**Pediatric Treatment Recommendations for MILD ACNE**

**Initial Treatment**

- Benzoyl Peroxide (BP)
- or
- Topical Retinoid
- or
- Topical Combination Therapy*
  - BP + Antibiotic
  - or
  - Retinoid + BP
  - or
  - Retinoid + Antibiotic + BP

Inadequate Response**

- Add BP or Retinoid
  - If Not Already Prescribed
  - or
  - Change Topical Retinoid
    - Concentration, Type and/or Formulation
  - or
  - Change Topical Combination Therapy

*Topical fixed-combination prescription available

**Assess adherence

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**Additional Treatment Considerations**

- Previous treatment/history
- Costs
- Vehicle selection
- Ease of use
- Managing expectations/side effects
- Psychosocial impact
- Active scarring
- Regimen complexity

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PEDIATRIC TREATMENT RECOMMENDATIONS FOR MODERATE ACNE

Additional Treatment Considerations

- Previous treatment/history
- Costs
- Vehicle selection
- Ease of use
- Managing expectations/side effects
- Psychosocial impact
- Active scarring
- Regimen complexity

Moderate Acne = Comedonal or Inflammatory/Mixed Lesions

Note Marked Number of Inflammatory Lesions

Some Comedones Present

Pediatric Treatment Recommendations for MODERATE ACNE

Initial Treatment

Topical Combination Therapy*
- Retinoid + Benzoyl Peroxide (BP)
- Retinoid + (BP + Antibiotic)
- (Retinoid + Antibiotic) + BP

OR

Oral Antibiotic + Topical Retinoid + BP

OR

(Topical Retinoid + Antibiotic) + BP

Oral Antibiotic + Topical Retinoid + Antibiotic + BP

Inadequate Response**†

Change Topical Retinoid Concentration, Type and/or Formulation

OR

Change Topical Combination Therapy

AND / OR

Add or Change Oral Antibiotic

FEMALES:
Consider Hormonal Therapy

- - - OR - - -

Consider Oral Isotretinoin†

Some Comedones Present

Topical dapsone may be considered in place of topical antibiotic

*Topical fixed-combination prescription available

**Assess adherence

†Consider dermatology referral

PEDiATRIC TREATMENT RECOMMENDATIONS FOR
SEVERE ACNE

Severe Acne = Inflammatory Mixed and/or Nodular Lesions

Extensive Inflammatory Lesions Involvement

Note Diffuse Scarring

Initial Treatment

Combination Therapy*
Oral Antibiotic
or
Topical Retinoid
+
Benzoyl Peroxide (BP)
+/-
Topical Antibiotic

Inadequate Response**†

Consider Changing Oral Antibiotic
AND
Consider Oral Isotretinoin

FEMALES:
Consider Hormonal Therapy

Topical dapsone may be considered in place of topical antibiotic
† Consider dermatology referral

*Topical fixed-combination prescription available
**Assess adherence; consider change of topical retinoid

Additional Treatment Considerations

• Previous treatment/history
• Costs
• Vehicle selection
• Ease of use
• Managing expectations/side effects
• Psychosocial impact
• Active scarring
• Regimen complexity

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