Acne Classification.

- **Mild Acne** - open and closed comedones (blackheads and whiteheads) predominate but papules and pustules may also be present. Although the physical severity of the condition is limited and scarring is unlikely, the psychosocial impact may be disproportionate in some people, which is an indication for more aggressive treatment.

- **Moderate Acne** - inflammatory lesions (papules and pustules) predominate. The acne may be widespread, there may be a risk of scarring, and there may be considerable psychosocial morbidity, all of which are indications for aggressive treatment.

- **Severe Acne** - nodules and cysts (nodulocystic acne), as well as a preponderance of inflammatory papules and pustules. There is a high risk of scarring (or scarring may already be evident), and there is likely to be considerable psychosocial morbidity.

Management

**Patient Counselling**


- Ask the patient about factors which could aggravate acne including:
  - External factors (hygiene products and cosmetics including oily lotions, mechanical occlusion, rubbing, hot environment in some cases, sweaty work, holidays and sun exposure)
  - Internal factors (corticosteroids, lithium, iodine, antiepileptic medication, testosterone, anabolic steroids)
  - Rare diseases causing hyperandrogenism (polycystic ovarian syndrome [PCOS]; congenital adrenal hyperplasia, non-classic form)

**Recommended Self-care measures (What can I do?)**

- Try not to pick or squeeze your spots as this usually aggravates them and may cause scarring.

- However your acne affects you, it is important to take action to control it as soon as it appears. This helps to avoid permanent scarring and reduces embarrassment. If your acne is mild it is worth trying over-the-counter preparations in the first instance. Your pharmacist will advise you.

- Expect to use your treatments for at least two months before you see much improvement. Make sure that you understand how to use them correctly so you get the maximum benefit.

- Some topical treatments may dry or irritate the skin when you start using them. If your face goes red and is irritated by a lotion or cream, stop treatment for a few days and try using the treatment less often and then building up gradually.

- Make-up may help your confidence. Use products that are oil-free or water-based. Choose products that are labeled as being ‘non-comedogenic’ (should not cause blackheads or whiteheads) or non-acnegenic (should not cause acne).

- Cleanse your skin and remove make-up with a mild soap or a gentle cleanser and water, or an oil-free soap substitute. Scrubbing too hard can irritate the skin and make your acne worse. Remember blackheads are not due to poor washing.

- There is little evidence that any foods cause acne, such as chocolate and “fast foods”; however, your health will benefit overall from a balanced diet including fresh fruit and vegetables.
Hormone testing
In the absence of other signs of hyperandrogenism (hirsutism, abnormal menstrual bleeding, infertility) no hormone testing is required.

Acne starting at a very young age might be a sign of an endocrine disease.

If hyperandrogenism is strongly suspected, the serum levels of testosterone and sex hormone binding globulin (SHBG) may be tested in a female patient.

Differential diagnosis

- Rosacea: pustules, mainly affects the central portion of the face, telangiectasias, flush reaction
- Perioral dermatitis: often around the mouth, only papules
- Folliculitis: single pustules around the beard area or more widespread pustules on the upper body
- Acneiform drug reactions and rare rashes that resemble acne

Treatment
All treatments stated are considered to have high or medium strengths of recommendation based on published evidence or expert opinion

Mild Acne Treatment

- Prescribe a single topical treatment. Combined treatment is rarely necessary for mild acne.
- Prescribe a topical retinoid (isotretinoin 1st line, adapalene 2nd line) for pure comedonal acne or benzoyl peroxide (BP) (especially if papules and pustules are present) as first-line treatment.
- Pregnancy: Topical retinoids are contra-indicated in pregnancy; females of child-bearing age must use effective contraception (oral progestogen-only contraceptives not considered effective).
- Prescribe azelaic acid if both topical retinoids and benzoyl peroxide are poorly tolerated.
- Antibacterials alone are not effective for comedonal acne.
- Consider prescribing a standard combined oral contraceptive (COC) in women who require contraception, particularly if the acne is having a negative psychosocial impact. For most women, a ‘standard’ COC is suitable. A monophasic preparation containing 30 micrograms of ethinylestradiol (standard strength) with norethisterone or levonorgestrel (first-line progestogens) is recommended. COC’s containing ethinyl estradiol plus drospirenone are, NOT specifically licensed for this indication, and are NOT recommended. Do NOT prescribe the progestogen-only pill.

Arrange follow up after about 8-12 weeks to review the effectiveness and tolerability of treatment and the person's compliance with the treatment.

If there is an inadequate response to treatment, check adherence to treatment.

If adherence is poor, consider:

- Reducing the strength of treatment (for example reducing from 5% to 2.5% benzoyl peroxide).
- Switching to an alternative topical drug that causes less irritation (for example a topical antibiotic or azelaic acid).
- Using a different formulation of drug (for example a cream instead of a drug with an alcoholic base).

If adherence is adequate, consider:

- Increasing the drug strength and/or frequency of application.
- Combining different topical products:
  - A topical antibiotic combined with benzoyl peroxide or a a topical retinoid (isotretinoin 1st line, adapalene 2nd line) is the preferred regimen (may limit the development of bacterial resistance). Topical antibiotic course should be limited to a maximum of 12 weeks.
  - A topical retinoid combined with benzoyl peroxide is an alternative, but this may be poorly tolerated.

**Pregnancy:** Topical retinoids are contra-indicated in pregnancy; females of child-bearing age must use effective contraception (oral progestogen-only contraceptives not considered effective).

Consider prescribing a combined oral contraceptive (COC) or co-cyprindiol in women who require contraception. For most women, a ‘standard’ COC is suitable. Consider co-cyprindiol only when topical treatment or systemic antibiotics has failed (not licensed for the sole purpose of contraception and should be discontinued three to four menstrual cycles after the woman's acne has resolved).

**Referral in Mild Acne**
- Refer to psychiatry, people who have severe psychosocial problems, including a morbid fear of deformity (body dysmorphic disorder).
- Refer to endocrinology or gynaecology, those women suspected of having an underlying endocrinological cause of acne (such as polycystic ovary syndrome) that needs assessment.

**Moderate Acne - Treatment**
- Consider a single topical drug in people with limited acne which is unlikely to scar.
- Prescribe benzoyl peroxide or a topical retinoid as they are most effective against inflammatory acne. Azelaic acid is an option if other drugs are poorly tolerated.
- Pregnancy: Topical retinoids are contra-indicated in pregnancy; females of child-bearing age must use effective contraception (oral progestogen-only contraceptives not considered effective).
- Consider combined topical treatment in people with moderate acne that is at risk of scarring: A topical retinoid or topical antibiotic (clindamycin) combined with benzoyl peroxide may limit the development of bacterial resistance. Limited antibiotic use to a maximum of 12 weeks.
- Topical retinoid combined with benzoyl peroxide may be poorly tolerated.
- Consider an oral antibiotic combined with either a topical retinoid or benzoyl peroxide if there is acne on the back or shoulders that is particularly extensive or difficult to reach, or if there is a significant risk of scarring or substantial pigment change. Doxycycline is the first-line option. Lymecycline is an alternative and erythromycin should be used when tetracyclines are poorly tolerated or contraindicated (such as in pregnancy). Minocycline is not recommended.
  - Do not prescribe an oral antibiotic alone.
  - Do not combine a topical and an oral antibiotic.
- Oral antibiotics should be limited to the shortest possible period, and discontinued when further improvement of acne is unlikely. At follow up (usually about 6–8 weeks), assess response to oral antibiotics. If the person has responded to treatment: Continue for an additional 4–6 months (consider reducing the dose of antibiotic by half for the latter half of this period), and then stop completely. Topical treatment should be continued. If there are significant relapses or flares, consider restarting oral treatment. If the person has not responded adequately, continue for a minimum of 3 months before assuming treatment is ineffective. At this stage, consider seeking specialist advice or referring to a dermatologist.
  - Consider prescribing a standard combined oral contraceptive in women who require contraception OR consider co-cyprindiol only when topical treatment or systemic antibiotics has failed (not licensed for the sole purpose of contraception and should be discontinued three to four menstrual cycles after the woman's acne has resolved).

Arrange follow up after about 8-12 weeks to review the effectiveness and tolerability of treatment, and the person's compliance with the treatment.

**Moderate Acne Treatment failure**
For people using topical treatments check adherence to treatment. If adherence is poor consider:
- Reducing the strength of the treatment (for example reducing from 5% to 2.5% benzoyl peroxide).
- Switching to an alternative topical drug that causes less irritation (for example a topical antibiotic or azelaic acid).

Using a different formulation of drug (for example a cream instead of a drug with an alcoholic base). If adherence is adequate, consider:
- Increasing the drug strength and/or frequency of application.
- Prescribing an additional topical treatment for people using a single topical treatment.
- Starting an oral antibiotic combined with benzoyl peroxide or a topical retinoid.

For people taking an oral antibiotic in combination with a topical treatment:
- If there has been some response, continue treatment for up to 6 months.
- If there has been no response after 2–3 months consider the following options:
  - Seeking specialist advice regarding changing the antibiotic.
  - In women, consider prescribing co-cyprindiol. Note this is not licensed for the sole purpose of contraception and should be discontinued three to four menstrual cycles after the woman's acne has resolved.

Referral
Refer to psychiatry, people who have severe psychosocial problems, including a morbid fear of deformity (body dysmorphic disorder).
Refer to dermatology:
- People who are developing scarring, or are at risk of developing it, despite primary care interventions.
  - People who have moderate acne that has failed to respond adequately to treatment over a period of at least 6 months, and treatment failure should be judged on the person's perception of their condition.
  - People with features that make the diagnosis uncertain.

Refer routinely to endocrinology or gynaecology, those women suspected of having an underlying endocrinological cause of acne (such as polycystic ovary syndrome) that needs assessment

Severe Acne Treatment
- Refer all people with severe acne for specialist assessment and treatment (for example with oral isotretinoin which should be prescribed by or under the supervision of a Consultant Dermatologist with expertise in the use of systemic retinoids for the treatment of severe acne and a full understanding of the risks of isotretinoin therapy and monitoring requirements). The MHRA have recently re-highlighted the potential increased risk of psychiatric disorders with oral isotretinoin and the continued need for specialist supervision during treatment with oral isotretinoin.
- Whilst waiting for an appointment benzoyl peroxide or a topical retinoid or a combination of both are recommended as adjunctive treatment for most people. Azelaic acid is an alternative.
- Pregnancy: Topical retinoids are contra-indicated in pregnancy; females of child-bearing age must use effective contraception (oral progestogen-only contraceptives not considered effective
- Always consider contraceptive needs of females of child bearing age and discuss the pregnancy risks of oral retinoids before referral.
- Consider prescribing a combined oral contraceptive (COC) or co-cyprindiol in women who require contraception. For most women, a 'standard' COC is suitable. Consider co-cyprindiol only when topical treatment or systemic antibiotics has failed (not licensed for the sole purpose of contraception and should be discontinued three to four menstrual cycles after the woman's acne has resolved).
- Consider prescribing an oral antibiotic in combination with a topical drug. Do not prescribe an antibiotic alone.

Treatment failure
- If the acne deteriorates whilst waiting for referral, seek advice or arrange an urgent appointment.
- If there has been no improvement, continue treatment for up to 3 months before assessing the effectiveness of treatment.
Referral

- Refer urgently to a dermatologist, if the person has a severe variant (acne with systemic symptoms (such as acne fulminans).
- Refer (soon) to a dermatologist, all other people with severe acne, including people with painful, deep, nodules or cysts (nodulocystic acne).
- Refer to psychiatry, people who have severe psychosocial problems, including a morbid fear of deformity (body dysmorphic disorder).
### Summary of Primary care topical treatments in acne:

<table>
<thead>
<tr>
<th>Drug</th>
<th>Brand</th>
<th>Indication</th>
<th>Dose</th>
<th>Additional notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Topical retinoids</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isotretinoin 0.05%</td>
<td>IsotreX® gel</td>
<td>mild to moderate acne</td>
<td>Apply thinly 1-2 times daily</td>
<td>Topical retinoids see BNF Cautions and Contraindications</td>
</tr>
<tr>
<td>Adapalene 0.1%</td>
<td>Differin® Gel or Cream</td>
<td>mild to moderate acne</td>
<td>Apply once daily in the evening</td>
<td>Retinoid like drug. Adults and children over 12 years.</td>
</tr>
<tr>
<td><strong>Benzoyl Peroxide and Azelaic acid</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzoyl peroxide</td>
<td>Generic or PanOxyl® (if available) Other brands include Acnecide®, Brevoxyl®</td>
<td>mild to moderate acne,</td>
<td>Apply 1-2 times daily</td>
<td>Both comedones and inflamed lesions respond well. Apply preferably after washing with soap and water. Start treatment with lower strength preparations. Adverse effects include local skin irritation, particularly when therapy is initiated. May bleach fabrics and hair. Avoid contact with eyes, mouth and mucous membrane. Avoid exposure to sunlight</td>
</tr>
<tr>
<td>Azelaic acid 20%</td>
<td>Skinoren® cream</td>
<td>mild to moderate acne</td>
<td>Apply twice daily</td>
<td>Adults and children over 12. For patients with sensitive skin, use once daily for first week</td>
</tr>
<tr>
<td>Azelaic acid 15%</td>
<td>Finacea® Gel</td>
<td>mild to moderate acne</td>
<td>Apply twice daily</td>
<td>Adults and children over 12. For patients with sensitive skin, use once daily for first week</td>
</tr>
<tr>
<td><strong>Topical antibiotics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clindamycin 1%</td>
<td>Dalacin T® Solution or Lotion</td>
<td>moderate acne</td>
<td>Apply thinly twice daily</td>
<td>Some manufacturers advise preparations containing alcohol are not suitable for use with benzoyl peroxide. Lotion does not include alcohol</td>
</tr>
<tr>
<td></td>
<td>Zindaclin® gel</td>
<td>moderate acne</td>
<td>Apply thinly once daily</td>
<td>Adults and children over 12.</td>
</tr>
<tr>
<td>Erythromycin 2%</td>
<td>Stiemycin® solution</td>
<td>moderate acne</td>
<td>Apply thinly twice daily</td>
<td>Contains alcohol. Some manufacturers advise preparations containing alcohol are not suitable for use with benzoyl peroxide. Contains alcohol</td>
</tr>
<tr>
<td></td>
<td>Zineryt® topical solution</td>
<td>moderate acne</td>
<td>Apply twice daily</td>
<td>Contains alcohol. Some manufacturers advise preparations containing alcohol are not suitable for use with benzoyl peroxide. Contains alcohol</td>
</tr>
</tbody>
</table>
## Combined therapy options including combination products

<table>
<thead>
<tr>
<th>Therapy Options</th>
<th>Product Description</th>
<th>Strength/Concentration</th>
<th>Application Details</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoyl peroxide (strength variable) +</td>
<td>Dalacin T® + Generic BP or PanOxyl (if available): other brands of BP include Acnecide®, Brevoxyl®</td>
<td>moderate acne</td>
<td>Apply thinly 1-2 times daily</td>
<td>Consider if single topical treatment is ineffective, Some manufacturers advise preparations containing alcohol are not suitable for use with benzoyl peroxide. For once daily administration, consider applying one product in the evening and one product in the morning to minimise risk of skin reactions.</td>
</tr>
<tr>
<td>clindamycin 1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isotretinoin 0.05% + erythromycin 2%</td>
<td>Isotrexin®</td>
<td>mild to moderate acne</td>
<td>Apply thinly 1-2 times daily</td>
<td>Consider if there is poor compliance with combined use of single constituent products. Topical retinoids see BNF Cautions and Contra indications.</td>
</tr>
<tr>
<td>Benzoyl peroxide 3% + clindamycin 1%</td>
<td>Duac® Once Daily Gel</td>
<td>moderate acne</td>
<td>Apply once daily in the evening</td>
<td>Consider if there is poor compliance with combined use of single constituent products.</td>
</tr>
<tr>
<td>Benzoyl peroxide 5% + clindamycin 1%</td>
<td>Duac® Once Daily Gel</td>
<td>moderate acne</td>
<td>Apply once daily in the evening</td>
<td>Consider if there is poor compliance with combined use of single constituent products.</td>
</tr>
<tr>
<td>Adapalene 0.1% + benzoyl peroxide 2.5%</td>
<td>Epiduo® Gel</td>
<td>moderate acne</td>
<td>Apply once daily in the evening</td>
<td>Consider if there is poor compliance with combined use of single constituent products. Topical retinoids see BNF Cautions and Contra indications.</td>
</tr>
</tbody>
</table>
Oral Antibiotics

- **Doses**
  - Doxycycline 50–100 mg once daily
  - Lymecycline 408 mg once daily
  - Erythromycin 500 mg twice daily

- Duration of treatment is at least 3 months. The daily dose can be reduced after 2–4 months if adverse effects emerge. A treatment with a smaller dose over 6 months may result in a better long term result than shorter treatments.
- At follow up (usually about 6–8 weeks), assess response to oral antibiotics. If the person has responded to treatment, continue for an additional 4–6 months (consider reducing the dose of antibiotic by half for the latter half of this period), and then stop completely.
- Continue topical treatment after stopping oral antibiotics. If there are significant relapses or flares, consider restarting oral treatment. If the person has not responded adequately, continue for a minimum of 3 months before assuming treatment is ineffective. At this stage, consider seeking specialist advice or referring to a dermatologist, particularly if adverse effects emerge.
- Oral erythromycin should be reserved for use when tetracyclines are contraindicated. There is a lack of evidence from placebo-controlled trials to verify the efficacy of erythromycin, although evidence from comparative trials indicates it is probably as effective as tetracyclines. However, there is evidence from observational and controlled studies that there are particular problems with the development of bacterial resistance to erythromycin.
- Tetracyclines should not be given to children younger than 12 years.
- All the tetracyclines, including lymecycline, are contraindicated in pregnancy. Erythromycin is an appropriate alternative.
- Doxycycline may sensitize patient to sunlight.
- A treatment with a smaller dose over six months may result in a better long term result than shorter treatments.

Topical retinoids (Topical tretinoin, its isomer isotretinoin, and adapalene) issues

Warn patients that some redness and skin peeling can occur initially but settles with time. If undue irritation occurs, the frequency of application should be reduced or treatment suspended until the reaction subsides; if irritation persists, discontinue treatment. Several months of treatment may be needed to achieve an optimal response and the treatment should be continued until no new lesions develop.

- **Cautions** See BNF
- **Side-effects** See BNF

**Pregnancy:** Topical retinoids are contra-indicated in pregnancy; females of child-bearing age must use effective contraception (oral progestogen-only contraceptives not considered effective)

**References**
