Acne

**Overview**

Acne is a skin condition that occurs when your hair follicles become plugged with oil and dead skin cells. It causes whiteheads, blackheads or pimples. Acne is most common among teenagers, though it affects people of all ages.

Effective acne treatments are available, but acne can be persistent. The pimples and bumps heal slowly, and when one begins to go away, others seem to crop up.

Depending on its severity, acne can cause emotional distress and scar the skin. The earlier you start treatment, the lower your risk of such problems.

## Symptoms

Acne signs vary depending on the severity of your condition:

* Whiteheads (closed plugged pores)
* Blackheads (open plugged pores)
* Small red, tender bumps (papules)
* Pimples (pustules), which are papules with pus at their tips
* Large, solid, painful lumps under the skin (nodules)
* Painful, pus-filled lumps under the skin (cystic lesions)

Acne usually appears on the face, forehead, chest, upper back and shoulders.

### When to see a doctor

If self-care remedies don't clear your acne, see your primary care doctor. He or she can prescribe stronger medications. If acne persists or is severe, you may want to seek medical treatment from a doctor who specializes in the skin (dermatologist or pediatric dermatologist).

For many women, acne can persist for decades, with flares common a week before menstruation. This type of acne tends to clear up without treatment in women who use contraceptives.

In older adults, a sudden onset of severe acne may signal an underlying disease requiring medical attention.

The Food and Drug Administration (FDA) warns that some popular nonprescription acne lotions, cleansers and other skin products can cause a serious reaction. This type of reaction is quite rare, so don't confuse it with any redness, irritation or itchiness that occurs in areas where you've applied medications or products.

**Seek emergency medical help** if after using a skin product you experience:

* Faintness
* Difficulty breathing
* Swelling of the eyes, face, lips or tongue
* Tightness of the throat

## Causes

Four main factors cause acne:

* Excess oil (sebum) production
* Hair follicles clogged by oil and dead skin cells
* Bacteria
* Inflammation

Acne typically appears on your face, forehead, chest, upper back and shoulders because these areas of skin have the most oil (sebaceous) glands. Hair follicles are connected to oil glands.

The follicle wall may bulge and produce a whitehead. Or the plug may be open to the surface and darken, causing a blackhead. A blackhead may look like dirt stuck in pores. But actually the pore is congested with bacteria and oil, which turns brown when it's exposed to the air.

Pimples are raised red spots with a white center that develop when blocked hair follicles become inflamed or infected with bacteria. Blockages and inflammation deep inside hair follicles produce cystlike lumps beneath the surface of your skin. Other pores in your skin, which are the openings of the sweat glands, aren't usually involved in acne.

Certain things may trigger or worsen acne:

* **Hormonal changes.** Androgens are hormones that increase in boys and girls during puberty and cause the sebaceous glands to enlarge and make more sebum. Hormone changes during midlife, particularly in women, can lead to breakouts too.
* **Certain medications.** Examples include drugs containing corticosteroids, testosterone or lithium.
* **Diet.** Studies indicate that consuming certain foods — including carbohydrate-rich foods, such as bread, bagels and chips — may worsen acne. Further study is needed to examine whether people with acne would benefit from following specific dietary restrictions.
* **Stress.** Stress doesn't cause acne, but if you have acne already, stress may make it worse.

### Acne myths

These factors have little effect on acne:

* **Chocolate and greasy foods.** Eating chocolate or greasy food has little to no effect on acne.
* **Hygiene.** Acne isn't caused by dirty skin. In fact, scrubbing the skin too hard or cleansing with harsh soaps or chemicals irritates the skin and can make acne worse.
* **Cosmetics.** Cosmetics don't necessarily worsen acne, especially if you use oil-free makeup that doesn't clog pores (noncomedogenics) and remove makeup regularly. Nonoily cosmetics don't interfere with the effectiveness of acne drugs.

## Complications

People with darker skin types are more likely than are people with lighter skin to experience these acne complications:

* **Scars.** Pitted skin (acne scars) and thick scars (keloids) can remain long-term after acne has healed.
* **Skin changes.** After acne has cleared, the affected skin may be darker (hyperpigmented) or lighter (hypopigmented) than before the condition occurred.

## Risk factors

Risk factors for acne include:

* **Age.** People of all ages can get acne, but it's most common in teenagers.
* **Hormonal changes.** Such changes are common during puberty or pregnancy.
* **Family history.** Genetics plays a role in acne. If both of your parents had acne, you're likely to develop it too.
* **Greasy or oily substances.** You may develop acne where your skin comes into contact with oil or oily lotions and creams.
* **Friction or pressure on your skin.** This can be caused by items such as telephones, cellphones, helmets, tight collars and backpacks.

## Treatment

If you've tried over-the-counter (nonprescription) acne products for several weeks and they haven't helped, ask your doctor about prescription-strength medications. A dermatologist can help you:

* Control your acne
* Avoid scarring or other damage to your skin
* Make scars less noticeable

Acne medications work by reducing oil production and swelling or by treating bacterial infection. With most prescription acne drugs, you may not see results for four to eight weeks. It can take many months or years for your acne to clear up completely.

The treatment regimen your doctor recommends depends on your age, the type and severity of your acne, and what you are willing to commit to. For example, you may need to wash and apply medications to the affected skin twice a day for several weeks. Topical medications and drugs you take by mouth (oral medication) are often used in combination. Treatment options for pregnant women are limited due to the risk of side effects.

Talk with your doctor about the risks and benefits of medications and other treatments you are considering. And make follow-up appointments with your doctor every three to six months until your skin improves.

### Topical medications

The most common topical prescription medications for acne are:

* **Retinoids and retinoid-like drugs.** Drugs that contain retinoic acids or tretinoin are often useful for moderate acne. These come as creams, gels and lotions. Examples include tretinoin (Avita, Retin-A, others), adapalene (Differin) and tazarotene (Tazorac, Avage, others). You apply this medication in the evening, beginning with three times a week, then daily as your skin becomes used to it. It prevents plugging of hair follicles. Do not apply tretinoin at the same time as benzoyl peroxide.

Topical retinoids increase your skin's sun sensitivity. They can also cause dry skin and redness, especially in people with brown or Black skin. Adapalene may be tolerated best.

* **Antibiotics.** These work by killing excess skin bacteria and reducing redness and inflammation. For the first few months of treatment, you may use both a retinoid and an antibiotic, with the antibiotic applied in the morning and the retinoid in the evening. The antibiotics are often combined with benzoyl peroxide to reduce the likelihood of developing antibiotic resistance. Examples include clindamycin with benzoyl peroxide (Benzaclin, Duac, others) and erythromycin with benzoyl peroxide (Benzamycin). Topical antibiotics alone aren't recommended.
* **Azelaic acid and salicylic acid.** Azelaic acid is a naturally occurring acid produced by a yeast. It has antibacterial properties. A 20% azelaic acid cream or gel seems to be as effective as many conventional acne treatments when used twice a day. Prescription azelaic acid (Azelex, Finacea) is an option during pregnancy and while breast-feeding. It can also be used to manage discoloration that occurs with some types of acne. Side effects include skin redness and minor skin irritation.

Salicylic acid may help prevent plugged hair follicles and is available as both wash-off and leave-on products. Studies showing its effectiveness are limited. Side effects include skin discoloration and minor skin irritation.

* **Dapsone.** Dapsone (Aczone) 5% gel twice daily is recommended for inflammatory acne, especially in women with acne. Side effects include redness and dryness.

Evidence is not strong in support of using zinc, sulfur, nicotinamide, resorcinol, sulfacetamide sodium or aluminum chloride in topical treatments for acne.

### Oral medications

* **Antibiotics.** For moderate to severe acne, you may need oral antibiotics to reduce bacteria. Usually the first choice for treating acne is a tetracycline (minocycline, doxycycline) or a macrolide (erythromycin, azithromycin). A macrolide might be an option for people who can't take tetracyclines, including pregnant women and children under 8 years old.

Oral antibiotics should be used for the shortest time possible to prevent antibiotic resistance. And they should be combined with other drugs, such as benzoyl peroxide, to reduce the risk of developing antibiotic resistance.

Severe side effects from the use of antibiotics to treat acne are uncommon. These drugs do increase your skin's sun sensitivity.

* **Combined oral contraceptives.** Four combined oral contraceptives are approved by the FDA for acne therapy in women who also wish to use them for contraception. They are products that combine progestin and estrogen (Ortho Tri-Cyclen 21, Yaz, others). You may not see the benefit of this treatment for a few months, so using other acne medications with it for the first few weeks may help.

Common side effects of combined oral contraceptives are weight gain, breast tenderness and nausea. These drugs are also associated with increased risk of cardiovascular problems, breast cancer and cervical cancer.

* **Anti-androgen agents.** The drug spironolactone (Aldactone) may be considered for women and adolescent girls if oral antibiotics aren't helping. It works by blocking the effect of androgen hormones on the oil-producing glands. Possible side effects include breast tenderness and painful periods.
* **Isotretinoin.** Isotretinoin (Amnesteem, Claravis, others) is a derivative of vitamin A. It may be prescribed for people whose moderate or severe acne hasn't responded to other treatments.

Potential side effects of oral isotretinoin include inflammatory bowel disease, depression and severe birth defects. All people receiving isotretinoin must participate in an FDA-approved risk management program. And they'll need to see their doctors regularly to monitor for side effects.

### Therapies

For some people, the following therapies might be helpful, either alone or in combination with medications.

* **Light therapy.** A variety of light-based therapies have been tried with some success. Most will require multiple visits to your doctor's office. Further study is needed to determine the ideal method, light source and dose.
* **Chemical peel.** This procedure uses repeated applications of a chemical solution, such as salicylic acid, glycolic acid or retinoic acid. This treatment is for mild acne. It might improve the appearance of the skin, though the change is not long lasting and repeat treatments are usually needed.
* **Drainage and extraction.** Your doctor may use special tools to gently remove whiteheads and blackheads (comedos) or cysts that haven't cleared up with topical medications. This technique temporarily improves the appearance of your skin, but it might also cause scarring.
* **Steroid injection.** Nodular and cystic lesions can be treated by injecting a steroid drug into them. This therapy has resulted in rapid improvement and decreased pain. Side effects may include skin thinning and discoloration in the treated area.

### Treating children

Most studies of acne drugs have involved people 12 years of age or older. Increasingly, younger children are getting acne as well. The FDA has expanded the number of topical products approved for use in children. And guidelines from the American Academy of Dermatology indicate that topical benzoyl peroxide, adapalene and tretinoin in preadolescent children are effective and don't cause increased risk of side effects.

If your child has acne, consider consulting a pediatric dermatologist. Ask about drugs to avoid in children, appropriate doses, drug interactions, side effects, and how treatment may affect a child's growth and development.

Doctors

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