



## X-Plain Acne

### Reference Summary

#### Introduction

Nearly 17 million people in the United States have acne, making it one of the most common skin diseases in the USA. Although acne is not a serious health threat, severe acne can lead to disfiguring, permanent scarring, which can be upsetting for people who have it.

This reference summary will help you understand what acne is and how it can be treated.

#### Anatomy

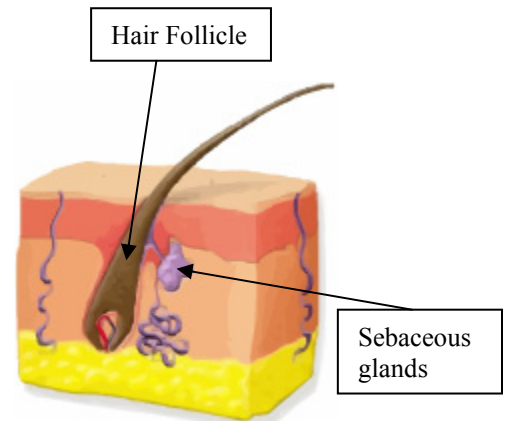
Our body is covered with hair, except for a few areas. Some of the hair is very smooth and barely noticeable.

Hair is made of a chemical compound called keratin, which is made inside the skin by the hair follicle.

Small glands located around hair follicles produce an oily substance called sebum. These glands are called sebaceous glands. Sebum seeps onto the skin surface through the opening of the follicle.

Together, the hair follicle and sebaceous glands around it are called a pilosebaceous unit.

Pilosebaceous units are biggest and most abundant on the face, upper back, and the chest. These are areas where acne tends to show up.



#### Acne

Acne is a disorder of the skin's sebaceous glands that results in clogged pores and lesions, commonly called pimples or zits. Acne lesions usually occur on the face, neck, back, chest, and shoulders.

Acne occurs when sebum is not able to pass through the hair follicle. Cells from the lining of the follicle are shed too fast and clump together, plugging up the follicle's opening so sebum cannot get through.

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The mixture of sebum and cells causes bacteria to grow in the plugged follicles. These bacteria produce chemicals and enzymes that can cause inflammation.

When a plugged follicle can no longer hold its contents, it bursts and spills sebum, skin cells, and bacteria onto nearby skin.

People of all ages get acne, but it is most common in adolescents. Nearly 85% of adolescents and young adults between the ages of 12 and 24 develop acne.

People of all races can have acne, but it is more common among Caucasians. Most people no longer have acne by the time they reach their 30s; however, some people continue to have acne in their 40s and 50s.

## **Causes**

The exact cause of acne is unknown, but doctors believe it results from several factors. The main factor is high hormone levels.

Male sex hormones called androgens increase in both boys and girls during puberty. More androgens leads to enlarged sebaceous glands, which means more sebum is made. Another factor related to acne is heredity, or genetics. The tendency to develop acne can be inherited from parents. For example, studies show that many school-age boys with acne have a family history of it.

Several factors can make acne worse. Hormone levels in girls and women may cause worse acne 2-7 days before their menstrual period starts.

Hormonal changes related to pregnancy can cause acne to get worse. When women start or stop taking birth control pills, hormonal changes can also cause acne to flare up. Stress, especially severe or prolonged emotional tension, may worsen acne.

Certain drugs are known to cause acne. These include:

- androgens - male hormones
- lithium - for treating bipolar disorder
- barbiturates – used to control seizures

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Greasy makeup can change the cells of the follicles and make them stick together, causing acne. Leaning on or rubbing the face may worsen acne. The pressure from bike helmets, backpacks, or tight collars can contribute to or worsen acne.

Environmental irritants, such as pollution and high humidity, can make acne worse. Acne may get worse if blemishes are squeezed or picked at. When the skin is scrubbed hard, acne can also become worse.



Acne is NOT caused by:

- eating chocolate
- eating greasy food
- dirty skin

## Symptoms

Acne causes lesions called comedones, which are enlarged hair follicles plugged with oil and bacteria. A comedo is often called a microcomedo because it cannot be seen by the naked eye.

If a comedo stays under the skin, it is called a closed comedo, or whitehead. Whiteheads usually look like small, whitish bumps on the surface of the skin.

A comedo that reaches the surface of the skin and opens up is called a blackhead because it looks black. The black discoloration is not due to dirt. Whiteheads and blackheads may stay in the skin for a long time.

Other kinds of acne lesions include:

- papules -- inflamed lesions that are small, pink bumps on the skin and can be tender to the touch.
- pustules (pimples) -- inflamed, pus-filled lesions that can be red at the base.
- nodules -- large, painful, solid lesions that are lodged deep within the skin.
- cysts -- deep, inflamed, pus-filled lesions that can cause pain and scarring.

## Treatment

A dermatologist is a doctor who specializes in diseases and disorders of the skin. Acne is usually treated by a dermatologist.

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The purpose of acne treatment is to prevent scars. Acne treatment also aims to reduce the number of lesions and minimize embarrassment caused by acne.

Dermatologists usually use medication to treat acne. Acne medication reduces:

- clumps of cells in the follicles
- oil production
- bacteria
- inflammation

Depending on how severe acne is, the doctor may prescribe a topical medication or an oral medication. Topical means the medication is applied to the skin and oral medication is taken by mouth.

Sometimes, the doctor prescribes more than one topical medication, or both oral and topical medications at the same time.

Some common over-the-counter topical medications for acne are:

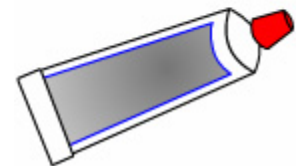
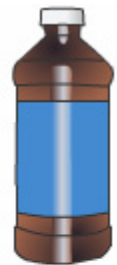
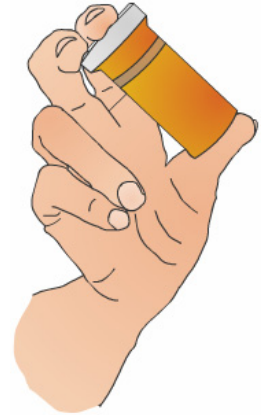
- benzoyl peroxide
- salicylic acid
- sulfur
- sulfur and resorcinol

Some common prescription topical medications for acne are:

- benzoyl peroxide
- clindamycin
- erythromycin
- tetracycline
- tretinoin (Retin-A®, Avita®)

Prescription medications are different from over-the-counter ones because they include antibiotics and other chemicals that decrease the growth of the bacteria.

In some patients, acne medications cause side effects such as skin irritation, burning, or redness. Side effects usually stop after the medication has been used awhile. Severe side effects should be reported to the doctor.



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It may be 4-8 weeks after medication is started before improvement is noticed in the skin.

If severe acne does not improve with other medications, isotretinoin (Accutane®) may be needed. Isotretinoin is an oral drug that is usually taken once or twice a day for 16-20 weeks.

Isotretinoin is very expensive and can have severe side effects. Some side effects of isotretinoin include, but are not limited to:

- itching
- nosebleeds
- muscle aches
- photosensitivity
- dry mouth, nose, or skin
- decreased night vision
- birth defects in pregnant women who use isotretinoin

Side effects of isotretinoin usually go away when the medication is stopped. To prevent severe side effects, the patient is monitored before and during isotretinoin treatment. This usually involves taking blood samples.

Women must use a birth control method for 1 month before taking isotretinoin, while taking it, and for 1 month after taking it.



Other treatments for acne include:

- hormonal treatment
- low-dose corticosteroids
- anti-androgen drugs
- removal of the comedones by a dermatologist
- steroid injections in the lesions
- skin peeling therapy
- cosmetic surgery to reduce scarring

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## Skin Care

People with acne should wash their skin GENTLY with a mild cleanser, once in the morning and once in the evening. If acne areas are scrubbed, the acne could get worse.

The skin should be washed after heavy exercise. The face should be washed from under the jaw to the hairline; rough scrubs or pads should not be used. It is important to thoroughly rinse the skin after washing.

People with acne should wash their hair regularly. If hair is oily, it can be washed every day.



The skin should not be touched very often. People who squeeze, pinch, or pick their blemishes risk developing scars.

Men who have acne should find out whether an electric or safety razor is more comfortable. If a safety razor is used, the blade should be sharp and the beard hairs should be softened with soap and water before shaving cream is applied.



Tanning should be avoided. Even though a tan may “hide” blemishes, the benefits are temporary. The sun can damage skin, promote aging, and cause skin cancer. Also, many medications used to treat acne make the skin burn faster.

Choose cosmetics carefully. While taking acne medication, cosmetics may need to be changed. All cosmetics, such as foundation, blush, eye shadow, and moisturizers, should be oil free.

It may be difficult to apply foundation evenly during the first few weeks of treatment because skin may be red or scaly, especially with topical tretinoin or benzoyl peroxide.

Lip products that contain moisturizers may cause small, open and closed comedones to form.

Hair products that touch the skin along the hairline can cause burning or stinging. Products that are labeled “non-comedogenic” should be used. Non-comedogenic means the product does not encourage blemishes to form.

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## Summary

Acne is a very common, treatable skin condition. Frequent follow-ups, different medication options, and lifestyle changes may be necessary.

Most patients can control acne with current medications and have little to no scarring.

With the help of a dermatologist, you or someone you love can control acne and go on enjoying life!



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