

Acne

Introduction

Acne is a common skin condition that affects most people at some point. It causes spots to develop on the skin, usually on the face, back and chest.

The spots can range from blackheads and whiteheads which are often mild, to inflamed pus-filled pustules and cysts, which can be severe and long lasting and can lead to scarring.

Read more about the symptoms of acne.

What can I do if I have acne?

Keeping your skin clean is important to prevent new spots developing. Wash the affected area twice a day with a mild soap or cleanser, but do not scrub the skin too hard to avoid irritating it.

Although acne can't be cured, it can be controlled with treatment. Several creams, lotions and gels to treat spots are available at pharmacies. If you develop acne, it's a good idea to speak to your pharmacist for advice.

If your acne is severe and appears on your chest and back, it may need to be treated with antibiotics or stronger creams that are available on prescription.

See your doctor if you cannot control your acne with over-the-counter medication or if it is causing you distress and making you feel unhappy.

Also see your doctor if you develop nodules or cysts as they will need to be properly treated to avoid scarring.

Treatments can take up to three months to work, so don't expect overnight results. Once they do start to work, the results are usually good.

Try to resist the temptation to pick or squeeze the spots as this can lead to permanent scarring.

Why do I have acne?

It is thought that acne is linked to the changes in hormone levels during puberty.

Glands in the skin begin to produce excessive amounts of an oily substance known as sebum. This blocks small holes in the skin through which hairs grow (hair follicles), causing blackheads and whiteheads.

Normally harmless bacteria that live on the skin can then infect a blocked follicle, causing pus-filled papules or cysts.

Acne is known to run in families. If both your mother and father had acne, it is likely that you will also have acne.

Hormonal changes, such as those that occur during the menstrual cycle or pregnancy, can also lead to episodes of acne in women.

There is no evidence that diet, poor hygiene or sexual activity play a role in acne.

Who is affected?

Acne is very common in teenagers and younger adults. About 80% of people between the ages of 11 and 30 will be affected by acne.

Acne is most common between the ages of 14 and 17 in girls, and between 16 and 19 in boys.

Most people have acne on and off for several years before their symptoms start to improve as they get older. Acne usually disappears when a person is in their twenties.

In some cases, acne can continue into adult life. About 5% of women and 1% of men have acne over the age of 25.

Symptoms of acne

Acne most commonly develops on:

- **the face** – this affects almost everyone with acne
- **the back** – this affects over half of people with acne
- **the chest** – this affects about 15% of people with acne

Types of spots

Acne causes skin lesions that are commonly referred to as spots. A lesion is the medical term for damaged tissue.

There are six main types of spot caused by acne:

- **Blackheads** are small black or yellowish bumps that develop on the skin.
- **Whiteheads** have a similar appearance to blackheads but they can be firmer and have a white centre.
- **Papules** are small red bumps that may feel tender or sore.
- **Pustules** are similar to papules but have a white tip in the centre that is caused by a build-up of pus.
- **Nodules** are large hard lumps that build up beneath the surface of the skin and are usually painful.
- **Cysts** are the most serious type of spot caused by acne. They are large, pus-filled lumps that look similar to boils. Cysts carry the greatest risk of causing permanent scarring.

When to seek medical advice

Even mild cases of acne can cause distress for some people. If your acne is making you feel very unhappy or you cannot control your spots with over-the-counter medication, see your DOCTOR.

Also see your doctor if you develop nodules or cysts. These are usually associated with severe acne and could cause scarring if they're not properly treated.

Causes of acne

Acne is caused when tiny holes in the skin, known as hair follicles, become blocked.

Sebaceous glands are tiny glands found near the surface of your skin. The glands are attached to hair follicles, which are small holes in your skin that an individual hair grows out of.

Sebaceous glands lubricate the hair and the skin to stop it drying out. They do this by producing an oily substance called sebum.

In acne, the glands begin to produce too much sebum. The excess sebum mixes with dead skin cells and both substances form a plug in the follicle.

If the plugged follicle is close to the surface of the skin, it will bulge outwards, creating a whitehead. Alternatively, the plugged follicle can be open to the skin, creating a blackhead.

Normally harmless bacteria that live on the skin can then contaminate and infect the plugged follicles, causing papules, pustules, nodules or cysts.

Acne triggers

Teenage acne is thought to be triggered by increased levels of a hormone called testosterone, which occurs during puberty. The hormone plays an important role in stimulating the growth and development of the penis and testicles in boys, and maintaining muscle and bone strength in girls.

The sebaceous glands are particularly sensitive to hormones. It is thought that increased levels of testosterone cause the glands to produce much more sebum than the skin needs.

Acne is also thought to run in families. If your parents had acne, it's likely that you will too.

One study has found that if both your parents had acne, you are more likely to get more severe acne at an early age. It also found that if one or both of your parents had adult acne, you are more likely to get adult acne too.

Acne in adults

Over 80% of cases of adult acne occur in women. It is thought that many cases of adult acne are caused by the changes in hormone levels that many women have at certain times.

These times include:

- Periods – some women have a flare-up of acne just before their period is due.
- Pregnancy – many women have symptoms of acne in pregnancy, usually during the first three months of their pregnancy.
- Polycystic ovary syndrome – this poorly understood but common condition can cause acne as well as weight gain and the formation of small cysts inside the ovary.

In some people, acne can be a side effect of medication, such as steroid medication and lithium (which is often used to treat depression and bipolar disorder).

Acne myths

Despite being one of the most widespread skin conditions, acne is also one of the most poorly understood. There are many myths and misconceptions about it, including:

- **"Acne is caused by a poor diet."** There is no evidence that diet plays a role in acne. Eating a healthy, balanced diet is recommended because it is good for your heart and your health in general. However, it will not help your acne.
- **"Acne is caused by having dirty skin and poor hygiene."** Most of the biological reactions that trigger acne occur beneath the skin, not on the surface of the skin. Therefore, how clean your skin is will have little to no effect on your acne. You should wash every day and wash your face twice a day. More frequent washing will make no difference to your acne and could make symptoms worse by aggravating your skin.
- **"Squeezing blackheads, whiteheads and spots is the best way to get rid of acne."** Squeezing or picking your acne could make your symptoms worse and may leave you with permanent scarring.
- **"Sexual activity can influence acne."** Having sex or masturbating will not make acne any worse or any better.
- **"Sunbathing, sunbeds and sunlamps help improve the symptoms of acne."** There is no conclusive evidence that prolonged exposure to sunlight or using sunbeds or sunlamps can improve acne. However, many medications used to treat acne can make your skin more sensitive to light, so prolonged exposure could cause painful damage to your skin. There is also an increased risk of getting skin cancer.
- **"Acne is infectious."** You cannot pass acne on to other people and it is not infectious.

Diagnosing acne

Your doctor will be able to diagnosis acne by looking at your skin. This will involve examining your face, chest and back for the different types of spot, such as blackheads or sore, red nodules.

How many spots you have and how painful and inflamed they are will help determine how severe your acne is. This is important in planning your treatment.

Four grades can be used to measure the severity of acne:

- **Grade 1 (mild)** – acne is mostly confined to whiteheads and blackheads with just a few papules and pustules.
- **Grade 2 (moderate)** – there are multiple papules and pustules which are mostly confined to the face.
- **Grade 3 (moderately severe)** – there is a large number of papules and pustules as well as the occasional inflamed nodule. The back and the chest are also affected by acne.

- **Grade 4 (severe)** – there is a large number of large painful pustules and nodules.

Treating acne

Treatment for acne depends on how severe it is. It can take several months of treatment before acne symptoms improve.

If you just have a few blackheads, whiteheads and spots, you should be able to treat them successfully with over-the-counter gels or creams (topical treatments) that contain benzoyl peroxide (see below).

Some self-help techniques may also be useful:

- Do not wash affected areas of skin more than twice a day. Frequent washing can irritate the skin and make symptoms worse.
- Wash the affected area with a mild soap or cleanser and lukewarm water. Very hot or cold water can make acne worse.
- Don't try to "clean out" blackheads or squeeze spots. This can make them worse and cause permanent scarring.
- Avoid using too much make-up and cosmetics. Use water-based products that are described as non-comedogenic (this means the product is less likely to block the pores in your skin).
- Completely remove make-up before going to bed.
- If dry skin is a problem, use a fragrance-free, water-based emollient.
- Regular exercise cannot improve your acne but it can boost your mood and improve your self-esteem. Shower as soon as possible once you finish exercising as sweat can irritate your acne.
- Regularly wash your hair and try to avoid letting your hair fall across your face.

Treatments can take up to three months to work, so don't expect overnight results.

If your acne is more widespread, for example if you have a large number of papules and pustules, or if over-the-counter medication hasn't worked, see your doctor as you probably need prescription medication.

Prescription medications that can be used to treat acne include:

- topical retinoids
- topical antibiotics
- azelaic acid
- antibiotic tablets

If you have severe acne, such as a large number of papules and pustules on your chest and back as well as your face, or if you have painful nodules, your doctor can refer you to an expert in treating skin conditions (dermatologist).

A combination of antibiotic tablets and topical treatments is usually the first treatment option for severe acne. If this doesn't work, a medication called isotretinoin may be prescribed.

Hormonal therapies can also be effective in women who have acne.

Many of these treatments can take two to three months before they start to work. It's important to be patient and persist with a recommended treatment even if there is no immediate effect.

Topical treatments (gels, creams and lotions)

Benzoyl peroxide

Benzoyl peroxide works in two ways:

- it helps prevent dead skin plugging up hair follicles
- it kills the bacteria on the skin that can cause plugged follicles to become infected

Benzoyl peroxide is usually available as a cream or gel. It's used either once or twice a day. It should be applied 20 minutes after washing to all of the parts of your face affected by acne.

It should be used sparingly as too much can harm your skin. It also makes your face more sensitive to sunlight, so avoid too much sun and ultraviolet (UV) light, or wear sun cream.

Benzoyl peroxide can have a bleaching effect so avoid getting it on your hair or clothes.

Common side effects of benzoyl peroxide include:

- dry and tense skin
- a burning, itching or stinging sensation
- some redness and peeling of the skin

Side effects are usually mild and should pass once the treatment has finished.

Most people need a six-week course of treatment to clear most or all of their acne. You may be advised to continue treatment less frequently to prevent acne returning.

Topical retinoids

Topical retinoids work by reducing the production of sebum while preventing dead skin cells plugging hair follicles.

Tretinoin and adapalene are topical retinoids used to treat acne.

They are available in a gel or cream and are usually applied once a day before you go to bed.

Apply to all of the parts of your face affected by acne 20 minutes after washing your face.

It is important to apply topical retinoids sparingly and avoid excessive exposure to sunlight and UV.

Topical retinoids are not suitable for use during pregnancy as there is a risk that they might cause birth defects.

The most common side effects of topical retinoids are mild irritation and stinging of the skin.

A six-week course is usually required, but you may be advised to continue using the medication less frequently after this.

Topical antibiotics

Topical antibiotics help kill the bacteria on the skin that can infect plugged hair follicles.

Topical antibiotics are available as a lotion or gel that is applied once or twice a day.

A six- to eight-week course is usually recommended. After this, treatment is usually stopped as there is a risk that the bacteria on your face could become resistant to the antibiotics. This could make your acne worse and cause additional infections.

Side effects are uncommon but can include:

- minor irritation of the skin
- redness and burning of the skin
- peeling of the skin

Azelaic acid

Azelaic acid is often used as an alternative treatment for acne if the side effects of benzoyl peroxide or topical retinoids are particularly irritating or painful.

Azelaic acid works by getting rid of dead skin and killing bacteria.

It is available as a cream or gel and is usually applied twice a day (or once a day if your skin is particularly sensitive).

The medication does not make your skin sensitive to sunlight so you do not have to avoid exposure to the sun.

You will usually need to use azelaic acid for a month before your acne improves.

The side effects of azelaic acid are usually mild and include:

- burning or stinging skin
- itchiness
- dry skin
- redness of the skin

Antibiotic tablets

Antibiotic tablets (oral antibiotics) are usually used in combination with a topical treatment to treat more severe acne.

In most cases, a class of antibiotics called tetracyclines is prescribed, unless you are pregnant or breastfeeding.

Pregnant or breastfeeding women are usually advised to take an antibiotic called erythromycin, which is known to be safer to use.

It will usually take about six weeks before you notice an improvement in your acne.

Depending on how well you react to the treatment, a course of oral antibiotics can last four to six months.

Tetracyclines can make your skin sensitive to sunlight and UV light and can also make the oral contraceptive pill less effective during the first few weeks of treatment. You will need to use an alternative method of contraception, such as condoms, during this time.

Hormonal therapies

Hormonal therapies can often benefit women with acne, especially if their acne is associated with hormonal conditions such as polycystic ovary syndrome.

If you don't already use it, your doctor may recommended that you start taking the combined oral contraceptive pill, even if you are not sexually active. This combined pill can often help improve acne in women.

Co-cyprindiol

Co-cyprindiol is a hormonal treatment that can be used for more severe acne which doesn't respond to antibiotics. Co-cyprindiol helps reduce the production of sebum.

You will probably have to use co-cyprindiol for two to six months before you notice a significant improvement in your acne.

There is a small risk that women taking co-cyprindiol may develop breast cancer in later life.

For example, out of a group of 10,000 women who have not taken co-cyprindiol, you would expect 16 of them to develop breast cancer by the time they were 35. This figure rises to 17 or 18 for women who were treated with co-cyprindiol for at least five years in their early twenties.

There is also a very small chance of co-cyprindiol causing a blood clot. The risk is estimated to be around 1 in 2,500 in any given year.

It is not thought to be safe to take co-cyprindiol if you are pregnant or breastfeeding. Women may need to have a pregnancy test before treatment can begin.

Other side effects of co-cyprindiol include:

- bleeding and spotting between your periods, which can sometimes occur for the first few months
- headaches
- sore breasts
- mood changes
- loss of interest in sex

- weight gain or weight loss

Isotretinoin

Isotretinoin has a number of beneficial effects:

- It helps reduce the production of sebum.
- It helps prevent follicles from becoming clogged.
- It decreases the amount of bacteria on the skin.
- It reduces redness and swelling in and around spots.

However, isotretinoin can also cause a wide range of side effects. Therefore, it's only recommended for severe cases of acne that have not responded to other treatments.

Because of the risk of side effects, isotretinoin can only be prescribed by a dermatologist and not by your doctor.

Isotretinoin is taken as a tablet. Most people take a four- to six-month course. Your acne may get worse during the first 7 to 10 days of treatment. However, this is normal and is caused by the medication pushing out bacteria from the deeper layers of your skin.

Common side effects of isotretinoin include:

- inflammation, dryness and cracking of the skin, lips and nostrils
- changes in your blood sugar levels
- inflammation of your eyelids (blepharitis)
- inflammation and irritation of your eyes (conjunctivitis)
- blood in your urine

Rarer side effects of isotretinoin include:

- inflammation of the liver (hepatitis)
- inflammation of the pancreas (pancreatitis)
- kidney disease

Read more about the side effects of isotretinoin.

Because of the risk of these rarer side effects, it may be recommended that you have regular blood tests to check the health of your liver, kidneys and pancreas.

Isotretinoin and birth defects

Isotretinoin will damage an unborn baby. If you're a woman of childbearing age:

- Don't use isotretinoin if you are pregnant or you think you are pregnant.
- Use one or ideally two methods of contraception for one month before treatment begins, during treatment and for one month after treatment has finished.
- Have a pregnancy test before, during and after treatment.

You will be asked to sign a form confirming that you understand the risk of birth defects and are willing to use contraceptives to prevent this risk, even if you are not currently sexually active.

If you think you may have become pregnant when taking isotretinoin, contact your dermatologist immediately.

Isotretinoin is also not suitable if you are breastfeeding.

Isotretinoin and mood changes

There have been reports of people experiencing mood changes while taking isotretinoin. There is no evidence that these mood changes were the result of the medication.

However, as a precaution, contact your dermatologist immediately if you feel depressed or anxious, have feelings of aggression or suicidal thoughts.

Non-pharmaceutical treatments

Several treatments for acne do not involve medication.

These include:

- comedone extractor – a small pen-shaped instrument that can be used to clean out blackheads and whiteheads
- chemical peels – where a chemical solution is applied to the face, causing the skin to peel off and new skin to replace it
- photodynamic therapy – where light is applied to the skin in an attempt to improve symptoms of acne

There is only limited evidence to support these types of treatment.

Complications of acne

Acne scarring

Acne scarring can sometimes develop as a complication of acne. This happens when the most serious types of spots – nodules and cysts – burst and damage nearby skin.

Scarring can also occur if you pick or squeeze your spots, so it is important not to do this.

There are three main types of acne scars:

- **ice pick scars** – small, deep holes in the surface of your skin that look like the skin has been punctured with a sharp object
- **rolling scars** – caused by bands of scar tissue that form under the skin giving the surface of the skin a rolling and uneven appearance
- **boxcar scars** – round or oval depressions, or craters, in the skin

Treating scarring

Treatments for acne scarring are regarded as a type of cosmetic surgery, which is not usually available on the NHS. However, in the past, exceptions have been made when it has been shown that acne scarring has caused serious psychological distress.

See your doctor if you are considering having cosmetic surgery. They will be able to discuss your options with you.

It is important to have realistic expectations about what cosmetic treatment can achieve.

While treatment can certainly improve the appearance of your scars, it will not be able to get rid of them completely. After treatment for acne scarring, most people notice a 50% to 75% improvement in appearance.

Some of the available treatments for acne scarring are explained below.

Dermabrasion

Dermabrasion involves removing the top layer of skin using either lasers or a specially made wire brush.

After the procedure, your skin will look red and sore for several months, but as it heals, you should notice an improvement in the appearance of your scars.

Laser treatment

Laser treatment can be used to treat mild to moderate acne scarring. There are two types of laser treatment:

- **ablative laser treatment** – where lasers are used to remove a small patch of skin around the scar to produce a new smooth-looking area of skin
- **non-ablative laser treatment** – where lasers are used to stimulate the growth of new collagen (a type of protein found in skin), which helps repair some of the damage caused by scarring and improves appearance

Punch techniques

Punch techniques are used to treat ice pick scars and boxcar scars. There are three types of punch technique:

- **Punch excision** is used to treat mild ice pick scars. The scar is surgically removed and the remaining wound is sealed. After the wound heals, it will leave a smoother and more even area of skin.
- **Punch elevation** is used to treat boxcar scars. The base of the scar is surgically removed leaving the sides of the scar in place. The base is then reattached to the sides but lifted up so that it is level with the surface of the skin. This makes the scar much less noticeable.
- **Punch grafting** is used to treat very deep ice pick scars. As with a punch excision, the scar is removed, but the wound is then "plugged" with a sample of skin that is taken from elsewhere on the body (usually from the back of the ear).

Subcision

Subcision is a surgical treatment that can be used to treat rolling scars. During surgery, the upper layer of the skin is removed from the underlying scar tissue. This allows blood to pool under the affected area. The blood clot helps form connective tissue that pushes up the rolling scar so that it is level with the rest of the surface of the skin.

Once subcision has been completed, additional treatment, such as laser treatment and dermabrasion, can be used to further improve the appearance of the scar.

Depression

Acne can often cause intense feelings of anxiety and stress, which can sometimes make people with the condition become socially withdrawn. This combination of factors can lead to people with acne becoming depressed.

You may be depressed if during the last month you have often felt down, depressed or hopeless and have little interest or pleasure in doing things.

If you think that you or your child may have depression, it is important to speak to your doctor.

Treatments for depression include talking therapies such as cognitive behavioural therapy and a type of antidepressant called selective serotonin reuptake inhibitors (SSRIs).

However, there is a range of informally run message boards and blogs about acne on the web. You may find it supportive to read about other people's experience of living with acne.