



Please note that the information contained in this document is intended as general guidance purposes only.  
For more information visit the Acne Support website: [www.acnesupport.org.uk](http://www.acnesupport.org.uk)

## Guide to Acne Causes

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There are many factors that determine whether a person has acne prone skin and how they will be affected by acne outbreaks. It is important to remember that several of these causes may interlink with one another and that a person might be affected by several of these causes at the same time.

### DNA and Hormones

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The overproduction of keratin and sebaceous oil are two key factors which cause acne. DNA is at the core of controlling how much keratin your skin produces and how large and productive your sebaceous glands are.

DNA can also affect your chances of developing acne through how it controls your hormones. Testosterone and DHT are two hormones that contribute to acne. They can cause the sebaceous gland to enlarge and increase the amount of oil that it produces, which can result in more follicle blockages.

### Bacteria

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The bacteria known as *Propionibacterium acnes* (*P. acnes*) lives on the skin, where it feeds on dead skin cells and sebum oil. If a hair follicle becomes blocked, or if the sebaceous gland starts to produce an increased level of sebum, then the conditions become ideal for *P. acnes* to rapidly multiply.

As *P. acnes* feeds, it releases substances that help it digest its nutrients. Some of these substances weaken the follicle wall and make it more susceptible to tearing. If the follicle wall splits then white blood cells will rush in to fight the bacteria, which can result in inflammation, redness and pus.

Everyone has a certain number of bacteria living in and on their body, this is not a sign of poor hygiene.

### Stress

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Stress is often thought to play a role in acne. However, there has not been enough research into the area to prove that stress is a definite contributing factor. Yet, anecdotal and observational evidence (meaning that it has not yet been confirmed in rigorous scientific studies) does suggest that stress can influence an acne outbreak.

## Cosmetics

Thicker, oilier products can sometimes make their way inside hair follicles, become stuck and form a blockage, along with the oil flowing outwards from the sebaceous gland and any dead skin cells that may have been inside the follicle. Hair products, such as hair wax, can also block hair follicles if they rub against the skin. These blockages can then develop into forms of acne if they are not broken down, either naturally or by exfoliating, and removed.

## Menstruation and Pregnancy

During menstruation, from day 14 until the period is due, hormones levels fluctuate. This can increase the amount of oil produced by sebaceous glands, increasingly the likelihood of acne.

During the first trimester of pregnancy, up until week 12, women's bodies release more of a hormone called progesterone. Progesterone has a similar effect on hair follicles as the hormones Testosterone and DHT, in that it causes the sebaceous gland to expand and produce more oil, which in turn can lead to more acne causing blockages forming.

## Diet

Currently, there has not been enough research to prove a direct link between diet and acne. However, on an anecdotal and observational level (meaning that it has been noticed but not confirmed in rigorous scientific studies and trials), it does appear that diet could be related to acne outbreaks.

## Medication

Steroids are known to influence the body's production of testosterone and DHT. Both oral steroids (taken by mouth) and steroids that are applied directly to the skin can increase the amount of testosterone and DHT in the body. The increase of these two hormones in the body results in larger, over-productive oil glands in the skin, which can result in an increase in acne.

Hormone replacement therapy for women and androgenic steroids, the steroids that are taken to increase physical performance and build muscle, can also have the same effect on the skin's oil glands, as can some progesterone-based contraceptive medications.

Topical steroids, that is steroids that are applied directly to your skin, can cause and aggravate acne in the body region that they are applied to.

Other drugs, such as lithium can make existing acne worse by causing increased inflammation of the skin.

## Friction

Friction, or rubbing, caused by tight clothing and repetitive pressure (such as backpack straps rubbing against shoulders) can lead to a type of acne known as 'acne mechanica'. This type of acne can occur anywhere on the body, although it is most common on areas that are more frequently subjected to friction, such as the back, shoulders, buttocks and forehead (when tight hats are worn). Tight fabrics, sweat and heat (caused by excessive rubbing) can block hair follicles and create a warm, moist environment for bacteria to multiply in. This combination of blocked hair follicles and multiplying bacteria can lead to acne forming.

Acne mechanica is often referred to as sports acne, as it is common amongst athletes due to the repetitive heat, sweat and friction that their skin is exposed to. It is also common amongst students and soldiers as well.

## Medical Conditions

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The main medical condition that is associated with acne is Polycystic Ovary Syndrome (PCOS for short). PCOS is a very common condition where underdevelopment in the ovaries results in higher testosterone levels in women. This increase in testosterone results in more of the hormone attaching to the skin, which leads to an increase in the size and oil production of the sebaceous glands. This then leads on to more hair follicles becoming blocked and acne forming.

SAPHO syndrome is another medical condition associated with acne, although it is much rarer. SAPHO syndrome refers to a variety of bone disorders that are associated with skin changes, in particular the onset of acne. SAPHO syndrome, and how it causes acne, is not well understood.

Acne conglobata is a form of severe acne where acne lesions form tunnels to one another under the skin, creating larger acne lesions. It can arise out of an already existing acne problem or in people who have previously been affected by acne. The condition is related to elevated levels of testosterone in the body.

There are several other medical conditions that can cause acne-like rashes on the body, such as staph infections and Pyoderma Faciale. However, these rashes are not acne and should not be treated as such.

If you have any concerns over your health then you should seek the advice of your healthcare provider.