



## Acne – the teenager's scourge

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Acne is a common skin condition in which the pores of the skin become blocked, causing pimples to develop. It usually starts at puberty and varies in severity from a few spots on the face, neck, back or chest, to a more significant problem that may cause permanent physical and mental scarring. The typical appearance of acne is a mixture of the following: oily skin, blackheads and whiteheads, red pimples, yellow pus-filled pimples called pustules, and scars. Occasionally, large tender spots, cysts or nodules may develop that can burst and discharge their contents or that may heal without bursting.

Although superficial and not life-threatening, acne, especially severe acne, should be recognised as a serious disorder because its psychological impact can be striking, contributing to low self-esteem, depression and anxiety. Effective acne treatments are available over-the-counter in the pharmacy or on doctor's prescription. This article discusses mild to moderate acne and its management with products available over the counter in the pharmacy. In addition, a number of procedures, e.g. light-based therapies, are used for the treatment of acne.

### How does acne develop?

Four factors are involved in the development of acne:

- Hair follicles become blocked with a combination of skin cells and sebum (an oily substance that lubricates the hair and skin), creating a plug in the hair follicle. If the blockage is incomplete, a blackhead (open comedone) develops. If the blockage is complete, a whitehead (closed comedone) develops.
- The glands that produce sebum (i.e. the sebaceous glands)

enlarge during adolescence and produce more sebum during this time. Sebaceous glands are denser in certain areas of the body, such as the face, the upper part of the chest and the back.

- The increase in sebum production allows the overgrowth of the acne bacterium (*Propionibacterium acnes*). These bacteria normally live on the skin and usually cause no problems. However, in people prone to acne, the build-up of oil on the skin creates an ideal environment in which these bacteria can multiply. These bacteria break down the sebum into substances that irritate the skin.
- Inflammation occurs as a result of bacterial growth or other factors. This can lead to the rupture of the follicle and the formation of a red or tender pimple.

### What causes acne?

Hormonal changes during adolescence cause the sebaceous glands to become bigger and to increase their production of sebum. In most people with acne, hormone levels are normal, but the sebaceous glands are highly sensitive to the hormones. Other conditions that involve hormonal changes can also affect the occurrence of acne. For example, acne may worsen during menstruation in young women and may clear up or substantially worsen during pregnancy.

External factors such as oil-based skin care products may contribute to the development of acne. Psychological stress can also possibly worsen acne. The role of diet in acne is controversial. Some studies have found a weak link between cow's milk and an increased risk of acne. However, there is no strong evidence that milk, high-fat foods or chocolate increase the risk of acne. Certain medicines, e.g. corticosteroids and some oral contraceptives, contain hormones that can cause or worsen acne. Anabolic steroids taken by body builders contain hormones that can trigger acne. Individuals with close family members with acne are at increased risk of the disorder. In cases of severe acne, there is often a positive family history of acne, but the role of genetics in mild acne is uncertain because of the almost ubiquitous occurrence of acne in young people.

## Acne severity

There are three levels of acne severity: mild, moderate and severe.

People with mild acne have a few (less than 20) blackheads or whiteheads or a moderate number of small, mildly irritated pimples. Pustules, which resemble pimples with yellow tops, may also develop.

People with moderate acne have more blackheads, whiteheads, pimples and pustules.

People with severe acne may have large numbers of blackheads, whiteheads, pimples and pustules or they may have deep (cystic) acne. Cysts are large, red, painful, pus-filled nodules that may coalesce under the skin into larger oozing abscesses.

**“...squeezing pimples increases inflammation and the depth of injury to the skin, which may lead to scarring.”**

Mild acne usually does not leave scars. However, squeezing pimples increases inflammation and the depth of injury to the skin, which may lead to scarring. The cysts of severe acne often rupture and may leave scars after healing.

## Acne treatment

General skin care in people with acne involves gently washing the affected areas once or twice daily with a mild soap (e.g. Cetaphil®). Antibacterial or abrasive soaps, alcohol-containing products, vigorous scrubbing and washing can worsen acne and damage the skin's surface. Cosmetics and moisturisers should be water-based and those that are labelled non-comedogenic are preferred as they are less likely to block skin pores.

People with mild to moderate acne may use non-prescription products initially. Non-prescription treatments include the various topical treatments which are applied directly to the skin. Topical treatments should be applied to the entire affected area of the skin (e.g. the whole face) and not just on individual spots, usually every night or twice daily. A combination of these treatments (e.g. one used in the morning and another used in the evening) may be more effective than using a single product.

**People with mild to moderate acne which does not improve after three months of using non-prescription products should be referred to the doctor. People with more severe acne should be evaluated earlier to consider the use of the most effective treatment regimens to prevent or minimise scarring.**

Benzoyl peroxide is usually applied once or twice daily. It can be used alone in mild to moderate acne or it may be combined

with a topical retinoid (a prescription-only product) in moderate acne, in which case the benzoyl peroxide is applied in the morning and the retinoid is applied at night. A fixed-dose combination product containing a retinoid and benzoyl peroxide (i.e. Epiduo®) is available on a doctor's prescription. It is indicated for the topical treatment of acne when comedones, papules and pustules are present. The gel is applied to the entire acne affected areas, once a day in the evening on clean, dry skin.

Benzoyl peroxide can irritate the skin, sometimes causing redness and skin flaking, and it can bleach clothing, towels, bedding and hair. People using topical retinoids (e.g. tretinoin, adapalene) should apply a sunscreen with SPF 30 or greater before sun exposure. Alpha hydroxyl acids and tea tree oil have also been used in the treatment of acne.

If topical products cause irritation when starting treatment, patients may be advised to use the treatments less often, at least temporarily, to help overcome the problem. If the irritation persists, patients should be advised to consult the doctor.

People who are unable to tolerate retinoids may try other topical treatments, such as salicylic acid (e.g. Emzaclear® acne lotion), glycolic acid or azelaic acid (e.g. Skinoren®). All these treatments may be helpful in reducing mild acne, and azelaic acid may reduce acne-related darkening of the skin. Topical antibiotic products are available on prescription to treat mild to moderate acne.

Moderate to severe acne may be managed with oral antibiotics, oral isotretinoin or hormone therapy usually with oral contraceptives (women only). Not all oral contraceptives may be used for the treatment of acne as some can actually worsen acne.

Other treatments for acne include the many forms of light and laser therapy, but these forms of treatments have given mixed results when studied.

### Important points about acne and its management:

- Cleanse the skin with a mild soap or a gentle cleanser and water.
- Do not squeeze pimples as this may worsen skin injury and may cause scarring.
- It takes about two months of treatment with topical medicines before an improvement in acne is seen.
- Topical treatments may dry or irritate the skin at first. If the skin becomes irritated, reduce the frequency of application or even stop treatment for a few days and then try using the treatment less often, and building up more gradually.

## Bibliography:

1. Fulton J, Elson DM. Acne vulgaris. [Cited 27 July 2012]. Available from: <http://emedicine/medscape.com/article/1069804-overview>
2. British Association of Dermatologists. Acne. c2013 [cited August 2016]. Available from: <http://www.acneacademy.org>
3. Graber E. Patient education: Acne (Beyond the Basics). [Cited 4 October 2016]. Available from: <http://www.uptodate.com/contents/acne-beyond-the-basics>
4. McKoy K. Acne. Merck Manual. [Cited 4 October 2016]. Available from: <http://www.merckmanuals.com/home/SearchResults?query=acne>
5. Sinclair W, Jordaan HF. Acne guidelines 2005 update. S Afr Med J. 2005;95(11):883-892.