



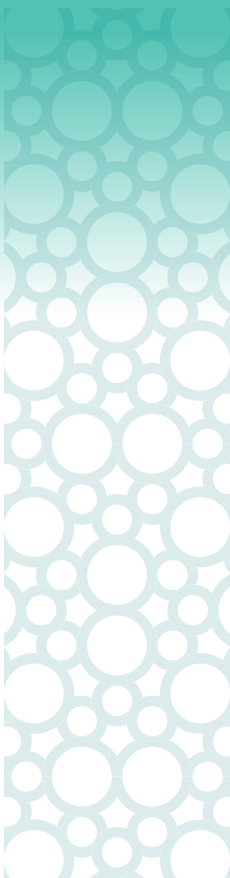
What you **need to know** about

ACNE



The Irish Skin Foundation is a national charity with a mission to improve quality of life for people with skin conditions, promote skin health and the prevention of skin disease through support, advocacy and by raising awareness.

We hope you find this booklet about acne helpful and informative. If you would like more information, visit our website www.irishskin.ie or call our free Helpline on (01) 486-6280



**Welcome to
your guide to
living with acne**



What you **need to know** about

ACNE



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What is acne?

Acne is a common inflammatory skin condition involving the blockage of pores in the skin; technically pores are called pilosebaceous units.

A pilosebaceous unit consists of: the hair shaft, hair follicle, sebaceous gland and the erector pili muscle.

This common skin condition can cause the development of blackheads, whiteheads, red and/or pus-filled spots, and can range from mild to severe. Acne occurs more commonly on the face, but it can also affect the neck, chest, back and shoulders.



What causes acne?

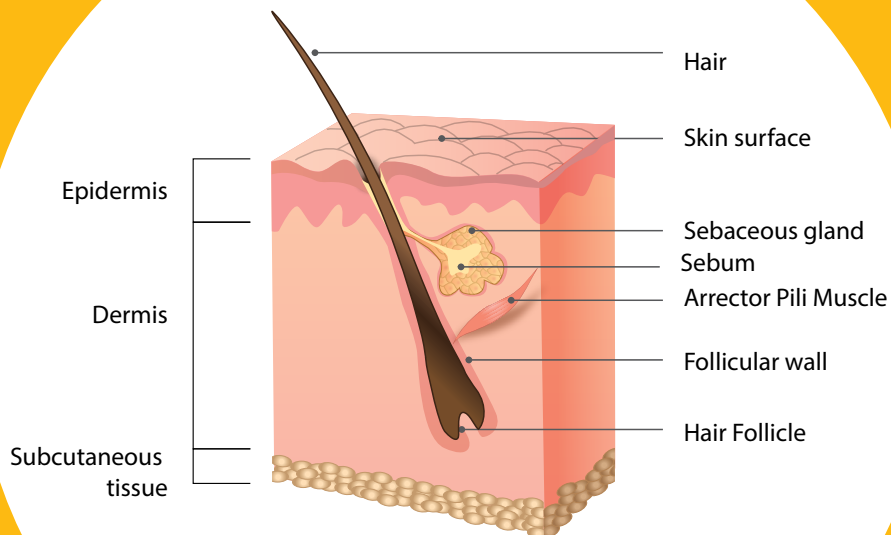
Acne occurs when there is:

- Blockage of a pore by dead skin cells.
- An increase in natural oil (sebum) in your skin.
- Growth of the bacterium called *C. acnes* (technically called *Cutibacterium acnes*) formerly known as *Propionibacterium acnes* (*P. acnes*).

If you have acne, all three processes are happening in your skin at one time, causing inflammation around the pore i.e. pimples.

These factors, which can accompany the natural surge of hormones in adolescence, result in the various acne “lesions”, commonly known as spots and pimples.

- There is an increase in sebum production, which is controlled by hormones called androgens. When puberty starts there is an increase in the production of androgens that results in an increased production of sebum. This is why acne and adolescence often go hand in hand.
- Skin cells called keratinocytes, that line the wall of the hair follicle are always being shed and replaced with new skin cells. In acne prone skin, there is an overproduction of these cells. This process combined with the over secretion of natural oil may cause the dead skin cells to stick together forming a keratin plug which can cause a blockage in the pore.
- The *C. acnes* bacteria is present on everyone’s skin and usually causes no problems. However, in people prone to acne, the build-up of dead skin cells and increase in natural oil, may provide a favourable environment for *C. acnes* to multiply within the pore. This may lead onto inflammation, recognisable by redness, swelling, heat and pain in the skin surrounding the blocked pore.
- The inflammation and blocked pores lead to the development of acne.



Cross section of skin unaffected by acne

Figure 1.

Pilosebaceous units, otherwise known as pores, let out the hair and sebum (natural oil). Within the pore, the sebaceous glands produce sebum, which lubricates the hair and skin.

Potential acne triggers can include:

- Hormonal changes during puberty, menstrual periods and pregnancy. Starting or stopping the contraceptive pill can sometimes also trigger acne.
- Certain medications given for other conditions may trigger acne eg. lithium, phenytoin and steroids, such as corticosteroids, anabolic steroids and glucocorticoids.
- Greasy or oily cosmetics and some hair products.
- Medical conditions such as polycystic ovary syndrome (PCOS).
- Stress
- Family history, acne can sometimes run in families.
- Constant rubbing, friction, tension, or pressure from protective sports equipment worn in contact sports, combined with heat may lead to mechanical irritation of the skin, causing acne. This type of acne is also known as 'acne mechanica' or 'sports acne'.
- Excessive sweat due to exercise or working in a humid environment may worsen acne in some people, especially if occluded under damp clothing.

How common is acne?

Acne is the 8th most common disease in the world, affecting more than 645 million people, around 9.4% of the global population. Acne can affect 85% of teenagers and young adults.



Acne typically occurs during the teenage years, frequently starting around 12-14 years of age, and peaks around 16-17 years in females, and 17-19 years in males. Sometimes acne can persist, or even appear for the first time, in adulthood.

What are the symptoms?

Acne lesions are commonly known as 'spots and pimples'. They broadly fall into two categories, non-inflammatory and inflammatory lesions. The simple terms used in this booklet can be useful when describing your symptoms to your doctor or pharmacist.

Non-inflammatory lesions

- Blackheads – also called open comedones, are clogged pores that appear as dark bumps on the surface of the skin. (Figure 2.)
- Whiteheads – also called closed comedones (Figure 3.), are clogged pores covered by a thin layer of skin. These appear as white bumps or spots on the surface of the skin (Figure 3.)

Inflammatory lesions

- Papules – small red swollen bumps (Figure 4.)
- Pustules – are small red bumps, with a yellow or white centre filled with pus. They may be painful to touch (Figure 4.)
- Nodules – are firm, red, tender, swollen bumps that form under the surface of the skin (Figure 5.)
- Cysts – are large swollen, painful bumps that form deep under the surface of the skin and are filled with pus.

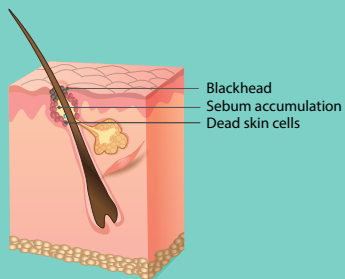


Figure 2.

Open comedone – Blackhead

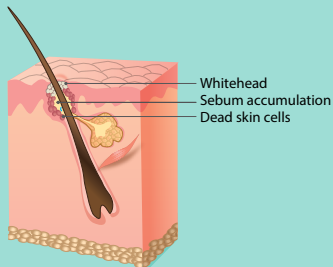


Figure 3.

Closed comedone – Whitehead

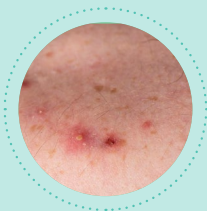
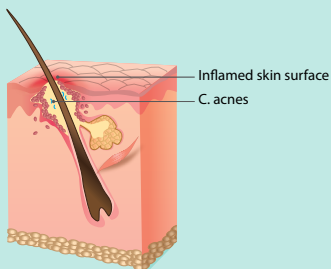


Figure 4.

Papule/pustule

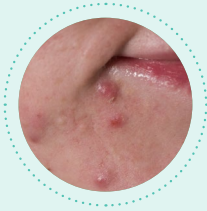
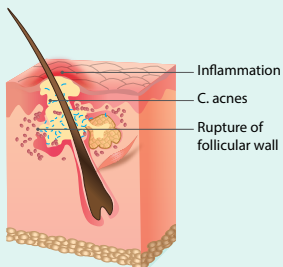


Figure 5.

Nodule

Adult acne

Acne can occasionally persist (known as persistent acne), or appear for the first time later in life, when someone is in their 20's, 30's, 40's and 50's. Persistent acne is described when acne in adolescents continues into adulthood. Acne which occurs for the first time after the age of 25 years is known as "adult-onset acne" or "late onset acne". Acne which occurs in adolescents and resolves but then reappears in adulthood is called relapsing or recurrent acne.

As acne can vary in severity in adults, it is important to visit your GP to establish a diagnosis and receive appropriate treatment.

Other types of acne


Acne Conglobata is an uncommon, but severe form of acne. It is seen more often in males, but can also affect females. This type of acne usually occurs on upper limbs, chest, back, buttocks and is less commonly seen on the face. It presents with multiple comedones, red papules, nodules and cysts which are red, tender and painful. Sometimes these nodules and cysts can interconnect to form abscesses and sinuses.

Acne fulminans is the most severe form of inflammatory acne, which presents with the sudden development of nodules, more commonly on the chest and back which can ulcerate. Fever and a general feeling of being unwell also accompanies the development of the nodules. It typically affects males with a history of mild to moderate acne.

When to contact your GP

There are different types of acne (non-inflammatory, inflammatory, others), so it is important to visit your GP to establish a diagnosis and receive appropriate treatment. Acne is usually diagnosed by the appearance of spots/pimples and their distribution, such as on the face, neck, chest, back and shoulders.

People frequently think that they will grow out of acne, but unfortunately for some people, it can continue for years, and if left untreated may lead to scarring. It is important to seek treatment early to decrease this risk.



*Acne is often
graded as mild,
moderate or
severe.*

Psychological burden of acne

Acne mainly occurs in teenage years, at a time when there are many changes in a person's physical, psychological and social life. Sometimes acne can persist, or even appear for the first time in adulthood. For some people, acne (whether mild, moderate or severe), is associated with feelings of low self-esteem, embarrassment, frustration, social anxiety or sometimes depression. However, not everybody will experience these feelings. Visiting a doctor will provide reassurance about how common acne actually is, and what kind of treatment may help.



How do doctors treat acne?

Choice of treatment depends on the type of lesions and severity of acne; the aim is to reduce the number of acne lesions and prevent scarring.

Acne can be effectively controlled, however, it is important not to become disillusioned if one treatment does not work straight away. Your doctor may prescribe a number of different treatments before finding one that works best for you. This is usually done in a step-by-step process.

If acne is moderate to severe, or is not responding to treatments prescribed by the GP, an onward referral to a consultant dermatologist may be required.

Treatments for acne

Treatments can be divided into 3 main categories

1. Topical treatments (creams and ointments) – come in the form of washes, gels, lotions and creams that are applied directly to the skin.
2. Tablets – medications taken by mouth that work throughout the body.
3. Other treatments – some include, steroid injected into the acne lesion, light and laser devices and chemical peels.



ACNE TREATMENTS

Topical treatments

Topical treatments are typically used when acne is mild to moderate. Depending on the active ingredient they can work at reducing the inflammation and bacteria and/or help to unplug pores.

These treatments may be used alone or in combination with oral medication. Some preparations are available over-the-counter while others are on prescription only. They contain various active ingredients and some preparations are combined together to treat acne.

Common active ingredients in topical preparations

Benzoyl peroxide (BPO) – This ingredient works by decreasing the bacteria which contributes to acne formation and also helps prevent the accumulation of dead skin cells blocking hair follicles, as well as the build up of sebum. It can cause irritation to the skin which includes redness, skin peeling, flaking and mild stinging. It comes in different strengths (2.5% - 10%) and sometimes it may be prescribed at a lower strength, with a reduced frequency of application to improve tolerance initially for sensitive skin. This may be adjusted once tolerated. Be aware, BPO can bleach and stain clothes and bedlinen.

Azelaic acid – Similarly to BPO, this ingredient works by reducing the bacteria. It also has an anti-inflammatory (reducing redness) action and has some effect on preventing blockage of the pore. It may cause some irritation to the skin in some people.

Glycolic acid (Alpha-hydroxy acids) & Salicylic acid (Beta-hydroxy acids) – These ingredients work by removing dead skin cells, which may clog pores. They are available in wash-off and leave on products.

Topical retinoids – Retinoids are vitamin A derivatives. They help to prevent dead skin cells plugging hair follicles and reduce the production of sebum. They are also anti-inflammatory. Retinoids are contraindicated in pregnancy, and women of childbearing age should use contraception.

These preparations can dry out the skin resulting in peeling, redness and irritation, especially in sensitive skin. To help improve tolerance, you may consider introducing this product gradually, slowly increasing the amount and frequency of application as prescribed. In very sensitive skin, this may involve a short contact application e.g. applying the retinoid for 30-60 minutes and then washing off for the first 2-4 weeks, or application of retinoid every other day, or every third day for the first 2-4 weeks. A good moisturiser can also often help improve tolerance.

Retinoids, BPO, azelaic acid, glycolic acid and salicylic acid can make your skin more sensitive to ultraviolet radiation (UV) from the sun, and therefore you should avoid direct sunlight or use a non-oily broad-spectrum sunscreen with a minimum SPF 30 with UVA/UVB protection.

Topical antibiotics – Appear to reduce inflammation/redness and bacteria, and are prescribed in mild to moderate acne. Generally, topical antibiotics are not used alone when treating acne, but rather combined with other agents such as topical benzoyl peroxide or topical retinoids, so bacterial resistance does not become a problem.

Fixed dose combined preparations for acne

Some topical preparations come in a fixed dose combined preparation which are more convenient than applying two topical treatments separately.

These combined preparations target the multiple factors that contribute to acne, by; unblocking plugged hair follicles, reducing inflammation and the number of bacteria on the skin. It can take up to 6-8 weeks before you may notice an improvement. If you experience pronounced prolonged side effects (irritation, redness and peeling of the skin), you should report them to your doctor.

Many of these topical preparations can cause sun sensitivity, therefore it is important to avoid direct sunlight or use a non-oily (non-comedogenic) broad spectrum sunscreen offering protection from both UVA/UVB, with a minimum SPF 30.

Systemic treatment

Systemic medication may be prescribed for moderate to severe acne, or in circumstances where topical treatments have not worked, or are not recommended.

These can include medications such as, antibiotic tablets, the oral contraceptive pill and oral Isotretinoin.

Oral antibiotics – These are used in moderate to severe acne or in mild to moderate acne that is not controlled with topical treatments alone. They are also prescribed for acne on the back and chest where topical treatments are less practical. Oral antibiotics may be prescribed alongside a topical treatment such as BPO or topical retinoids. Oral and topical antibiotics should not be used at the same time, in order to limit antibiotic resistance in acne treatment. Common antibiotics prescribed for acne are include:

- Tetracycline (Lymecycline)
- Doxycycline
- Erythromycin
- Minocycline
- Trimethoprim

Hormonal treatments

Females with acne that do not respond to topical preparations and /or oral antibiotics and/or acne that is thought to be caused by hormones, may respond to hormone treatment. One common hormone treatment is the combined oral contraceptive pill. Your doctor will be able to advise you further if, or what, hormone treatment is best suited to you. This treatment may be used in combination with other topical preparations such as BPO, Azelaic acid, retinoids, topical and systemic antibiotics.

Taking the combined oral contraceptive pill can increase your risks of getting blood clots, therefore before prescribing this treatment, your doctor will take a full medical history to identify and discuss any potential risks or complications. Some oral antibiotics have been implicated in oral contraceptive failure. It would be wise to check this with your doctor if both are being prescribed.

Another type of treatment that can have hormonal effects and that may be prescribed in select incidences for females, but not males with acne, is spironolactone. This medication should be avoided if you are pregnant or planning to become pregnant as it may affect the normal development of the foetus.

Spironolactone is currently used “off-licence” to treat women with acne in Europe, this means that spironolactone is not exclusively indicated for acne in the prescribing licence.

Talk to your doctor about the benefits and risks of any medication that is prescribed.

Oral Isotretinoin

Isotretinoin, also known as Roaccutane®, belongs to a group of medicines called retinoids, which are related to vitamin A. It is a very effective treatment for severe acne and where there is a risk of scarring. Certain types of acne such as scarring acne, acne conglobata and acne fulminans, require treatment in secondary care with Isotretinoin. Your doctor will advise, on the benefits and risks of potential side effects, and the close monitoring that is required while on this medication.

Oral Isotretinoin works by decreasing sebum production, therefore reducing the amount of bacteria and inflammation.

Initially when some people start oral Isotretinoin, acne may flare and appear worse before it improves.

Female patients **MUST** avoid pregnancy if taking oral Isotretinoin due to its harmful effects on the developing foetus. It is mandatory that a female patient use one, and preferably two, forms of contraception. Contraception must have commenced at least one month prior to treatment, and continued through the course of the treatment, and for 4-5 weeks after the treatment is finished. Oral isotretinoin should not be taken by someone that has a soya allergy as the capsules contain soya.

Common side effects of oral Isotretinoin

- Dryness of lips, skin and eyes commonly occur. Frequent use of a lip balm should help with dry lips. Individuals that are prone to dry skin, can use a non-comedogenic moisturiser (i.e. one that does not block pores) of their choice. Nosebleeds can occur if the inside of the nose gets dry, a small amount of lubricant applied just inside the nose, such as Vaseline® may reduce crusting and dryness. Artificial tear drops and eye sprays, which can be purchased over the counter, may relieve dry eyes.
- Vision changes have been reported in some individuals, particularly the ability to see at night.
- In some patients the skin can peel and become delicate, with injuries to skin taking longer to heal.

- During the course of oral Isotretinoin and for six months afterwards, your skin may be more fragile than normal, and take longer to heal, therefore treatments such as chemical peels, laser treatments, dermabrasion, waxing and epilation should be avoided to reduce the risk of scarring. Shaving is usually tolerated.
- Joint stiffness and muscle pain can occur, especially after exercise.
- This medication makes your skin more sensitive to UV present in sunlight. Therefore, it is important to protect your skin e.g. avoid direct sun exposure, apply a non-comedogenic broad-spectrum sunscreen offering protection from UVA and UVB, with a minimum SPF 30.
- Isotretinoin is metabolised (broken down) in the liver. Therefore it is important not to take alcohol while on a course of treatment. Isotretinoin can increase the cholesterol or other fats in your blood. You will have a blood test to monitor your liver function.

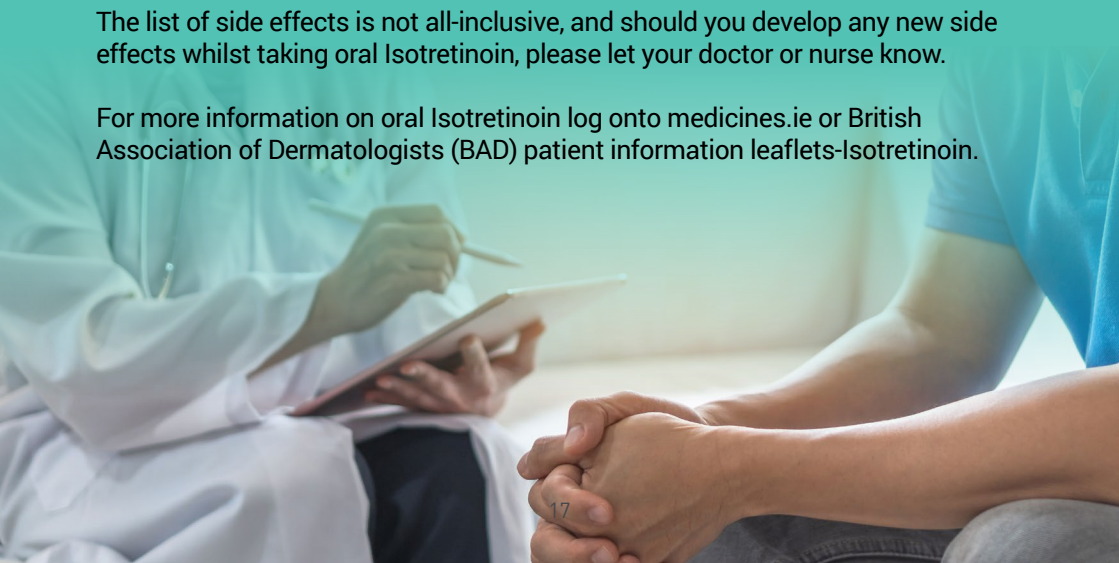
Rare side effect

- Rare side effects can include changes in mood and/or behaviour. If you are being considered for oral Isotretinoin, please inform your doctor if you have any history of depression. It is very important to contact your prescribing doctor if you start to experience symptoms of low mood while taking this medication, e.g. tearfulness, sadness, mood swings. It is also recommended that patients let a family member know that they are taking Isotretinoin so that they can observe for any mood changes, and give honest feedback.

You must never share Isotretinoin tablets with anybody.

The list of side effects is not all-inclusive, and should you develop any new side effects whilst taking oral Isotretinoin, please let your doctor or nurse know.

For more information on oral Isotretinoin log onto [medicines.ie](https://www.medicines.ie) or British Association of Dermatologists (BAD) patient information leaflets-Isotretinoin.



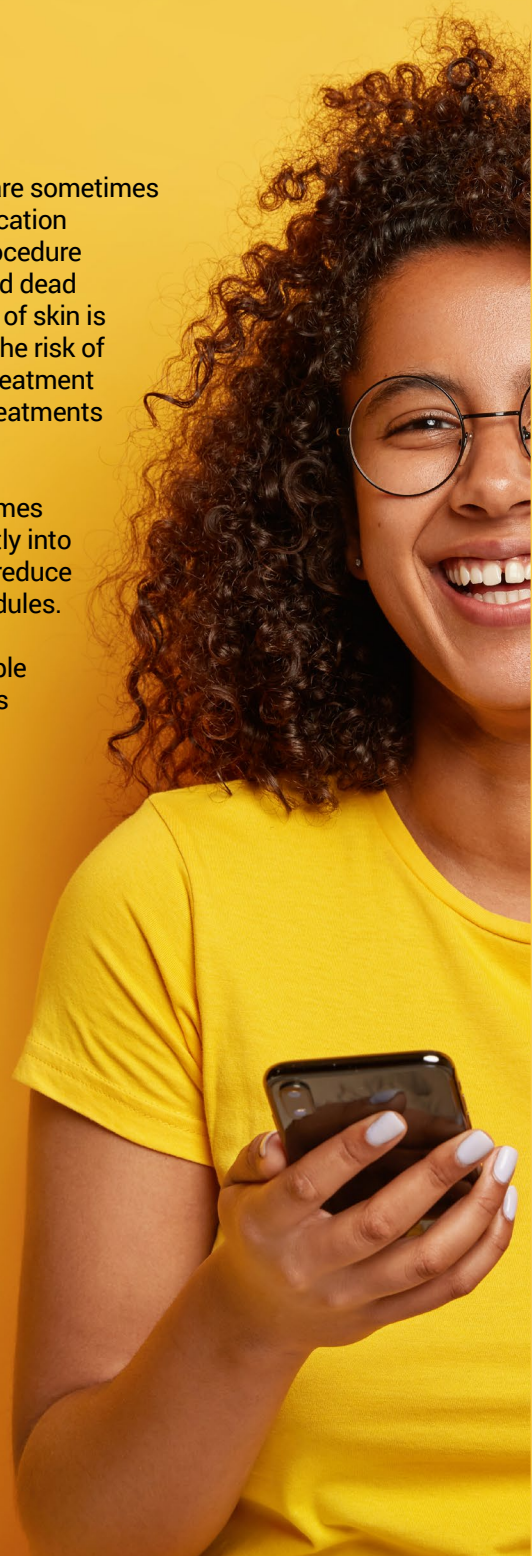
Other treatments

Multiple closed comedones (whiteheads) are sometimes treated with light tip cautery after the application of topical local anaesthetic cream. This procedure facilitates the release of trapped sebum and dead keratinocytes when the overlying thin layer of skin is broken with light cautery. This can reduce the risk of them progressing to inflamed spots. The treatment is usually well tolerated; though multiple treatments may be needed.

In addition to systemic treatments, sometimes the doctor may inject corticosteroids directly into acne lesions (intralesional steroid) to help reduce the size and pain of inflamed cysts and nodules.

Some laser and light treatments are available in private clinics. These types of treatments have given mixed results and are generally not considered as a first-line treatment for inflammatory acne. More research is required to evaluate results.

Chemical peels are another form of acne treatment available in private clinics. Chemical peels are acids, which come in different strengths. They are applied to the skin and multiple treatments may be required. Some of the acids include: glycolic acid (alpha hydroxyl acid) and salicylic acid (beta hydroxyl acid).



Acne scarring

Inflammatory acne lesions can have a tendency to form scars as they heal, depending on the individual.

- During the healing process, loss of collagen at the acne lesion site, may result in dips in the skin, also known as “pitted, ice-pick or boxcar” scars, due to their appearance on the skin. The medical term used for these scars is ‘atrophic acne scars’.
- Alternatively, raised acne scars can occur due to an overproduction of collagen, they are also called keloid and hypertrophic scars. There is a difference between the two types of scars. Hypertrophic scars grow within the original borders of the acne spot that caused it. Keloid scars grow beyond the original border of the acne spot that originally caused it.

Severe acne, delay in seeking treatment and relapsing acne are some of the risk factors for scarring. Unfortunately, scarring is irreversible. However, there are treatments available to improve the appearance of scarring. Depending on the type of scar, it is best to speak to your GP for onward referral to a qualified specialist who is an expert in providing these treatments.

Cosmetic skin camouflage can be helpful if there are changes in the pigmentation of the skin as a result of inflammatory acne.




Complementary and alternative treatments

Although you may hear the phrases **complementary therapy** and **alternative therapy** used, there are important differences between the two.

- A **complementary therapy** is one that is used **along with or alongside** conventional (normal or standard) medical treatment for acne (e.g. prescribed topical treatments and systemic treatments). An example of a complementary therapy could be acupuncture. You may choose to talk to your healthcare professional about the pros and cons of these options.
- An **alternative therapy** is one that is used **instead of** conventional medical treatment. An example could include such things as herbal medicine.

In accordance with Irish and European law, all conventional medical treatments prescribed by your doctor have to go through careful and thorough scientific testing to prove that they are both safe and effective, but alternative therapies are not held to the same standard.



Also, some treatments may interact so it is very important to talk to your doctor before considering using any non-conventional therapies.

Top tips

1. Current understanding of whether there are direct links between food and acne development continues to evolve. In the meantime, the advice/guidance is to follow a healthy balanced diet which includes fresh fruit and vegetables.
2. As mentioned previously, even mild cases of acne can cause distress and unhappiness. If your acne cannot be controlled by over-the-counter acne treatments, go and speak with your GP.
3. Unfortunately, patience is necessary; many acne treatments may take 8-12 weeks to produce a clinical improvement.
4. Use prescribed topical preparations and oral acne medications as directed; e.g. the right dose, right frequency, at the right time of day, and note for example, whether antibiotics should be taken with/or without food, as all of these factors can alter the effectiveness of medications.
5. Do not poke, squeeze or pick spots, as this can cause scarring. Do not go pimple popping, this damages your skin!
6. Cleansing – when you are on an acne treatment, avoid vigorous washing and scrubbing as this can irritate the skin. Wash the skin with a gentle skin cleanser twice daily, use lukewarm water and pat dry with a clean towel. Completely remove any make-up before going to bed.
7. Shave carefully – boys/men who shave, and who have acne, should test both electric and safety razors to see which is more comfortable. Shave gently, slowly and in the direction of the hair growth. Shave only when necessary to reduce the incidence of nicking pimples.
8. Shampoo your hair regularly especially if you have oily hair. If you have long hair, pull your hair back to keep hair out of your face.
9. If applying acne medication to the skin, apply a thin layer to the entire affected area (e.g. all of the face, with clean hands) and not just to individual spots as this helps treat existing acne as well as potential breakouts. Some topical acne treatments can cause skin irritations, so starting with a lower strength treatment and gradually increasing the frequency of application or dose (as prescribed) may be helpful.

10. Choose cosmetics, toiletries and sunscreens that do not block pores, these products may be labelled “non-comedogenic” or “oil-free”. In the first few weeks of using acne treatments such as topical retinoid and benzoyl peroxide, it may be difficult to apply foundation evenly because the skin may be red and scaly.
11. Avoid sunburn and suntan – many medicines used to treat acne can make your skin more sensitive to sunlight. A sunburn that reddens the skin, or suntan that darkens the skin may make the acne less visible and make the skin feel drier. However, these perceived benefits are temporary, and there are known risks of excessive sun exposure, such as premature skin aging and the risk of developing skin cancer.
12. For some, excessive sweat due to exercise can make their acne worse. Some key tips to follow which may help are: remove make-up before exercise, use a clean towel to wipe off sweat during exercise, and showering after you exercise.



Where can I get more information, or support for acne?

Reliable sources for patient information are available, including those listed here:

Irish Skin Foundation:
www.irishskin.ie

British Association of Dermatologists:
<http://www.bad.org.uk/for-the-public/patient-information-leaflets>
www.acnesupport.org.uk

Irish Association of Dermatologists
<https://www.irishdermatologists.ie>

Irish Skin Foundation:
Helpline: 01 486-6280
Email: info@irishskin.ie
www.irishskin.ie



What you **need to know** about **ACNE**

This booklet has been prepared by the Irish Skin Foundation in consultation with people with acne, dermatology nurses and consultant dermatologists.



**IRISH SKIN
FOUNDATION**

Supporting people with skin conditions

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Charity Regulatory Authority Number: 20078706