

# SPOT ON

## We examine the causes of and best treatments for acne

Acne is one of the most common skin conditions, affecting people of all ages, sexes and races, however, despite this, it is one of the most stigmatised and can be incredibly difficult and complicated to treat because of the psychological and physical effects of the disease.

Acne is also a very cosmetic disease, with its effects showing clearly and visibly on the face and body of sufferers, causing them embarrassment and making them feel self-conscious. As such cosmetic practitioners are now treating more and more patients for acne and acne scarring, which can be equally as debilitating.

A chronic inflammatory disease of the sebaceous glands and hair follicles of the skin, acne is most commonly found on the face but can occur on the shoulders, back, chest, neck, arms, buttocks and legs, depending on the activity of the sebaceous glands.

A staggering 80% of people are thought to suffer from some sort of acne ranging from mild to severe. Dr Tony Chu Professor of Dermatology and Consultant Dermatologist and Medical Director of the West London Dermatology Centre is a renowned expert in the field of acne he explains, "Acne is incredibly common – it almost seems to be physiological. If you see a patient in your clinic and you ask them if they suffer from acne they say no because acne is a dirty word and people do not like admitting that they have got acne but if you have got one blackhead or a spot then you have got acne. There is a spectrum from very mild i.e. one or two blackheads through to severe or cystic where you are covered in great nodules. When we talk about acne and its incidence if you look at the entire spectrum virtually everybody has acne or will have acne at some stage in their life. If you separate it down to acne that requires treatment then you are still looking at 85-90% of people who will have acne at some stage of their life."

And it is not just a disease that affects teenagers, more and more adults, particularly women, are suffering from the disease and stress is considered to be a contributing factor to this.

"There is this persistent myth that you will grow out of acne, that it miraculously disappears as you get older but it has been shown that that is not the case – people are hanging onto their acne for longer and longer", says Dr Chu. "We are seeing more and more adults with acne. If you look at my practice now probably 50% of my patients are in the 30s, 40s and 50s.

"There was some data published in 2008 from America where they looked at a population of people and divided them up into 10-year age groups from 20 onwards and looked at the incidence of acne in those age groups. Now between the age of 20-30 you are looking at around 49% between 30 and 40 in women it was about 30% and between 40 and 50 it was still 25% over 50 it was 15%.

"I am convinced that it is related to stress in modern life. When you are under stress your adrenal glands will produce more adrenalin and that's why during stressful events such as exams, a break down of marriage, loss of a loved one you often get a nasty flare of your acne. We all work under stress these days and I think that's why we are seeing acne persisting. There is a specific group of patients with maturity onset acne. These patients have minimal problems in adolescence and puberty and then suddenly in their mid 20s/early 30s they develop terrible acne. It is a common event now and is usually seen in high-powered business women."

Dr Lowe adds, "50% of women and 25% of men suffer from adult acne. Stress can be one of the leading factors in the development of oily skin or adult acne. Other factors include changes in the hormonal balance to include: pregnancy, menstruation, hormonal abnormalities and stopping contraceptive medication. Some dairy products can worsen acne from hormones that are fed to cows. Certain medicines such as the contraceptive pill, anti-inflammatory steroids, some anti-epileptic medications, lithium and related medications can lead to adult acne being triggered."

### CAUSES OF ACNE

When the skin is functioning normally, oil made by the sebaceous glands travels up the hair follicle and out to the skin's surface however patients who suffer from acne vulgaris have an excessive amount of oil production which in turn causes blockages in the openings of the oil producing glands resulting in blackheads. Bacterium known as *Propionibacterium acnes* or *P. acnes* then causes inflammation in the blocked glands causing the red, pussy spots that characterise acne.

Dr Chu explains, "The blockage will eventually restricts the oil flow so the oil pools under the skin and that's what encourages bacterial growth and inflammation. Inflammation is secondary but those are the spots people don't like and are desperate to get rid of and usually spend hours in front of the mirror squeezing. You don't go out with a zit on your nose, I understand that, but people are so aggressive with their squeezing that they squeeze until they see blood but if you see blood you have damaged the skin and you will be left with a scar."

It is also a common misconception that acne is caused by poor hygiene or diet. Experts now believe it is more likely to be caused by hormonal factors and stress.

Dr Lowe says, "Some people believe that eating sweets such as chocolate and greasy foods are a cause of breakouts. This may be true in a few people who drink a lot of milk or eat a lot of milk chocolate as this can make acne worse by passing on hormones fed or produced by cows. Also, being overweight causes increased insulin production that signals the body to release extra androgens (male hormones), which are involved in pimple formation. Chocolate lovers needn't fear - dark chocolate is rich in antioxidants, which are good for the skin. The easiest solution to keep you and your skin looking its' best through diet is to eat a healthy and balanced range of foods and healthy drinks."

### TYPES OF ACNE

There are different types of acne ranging from mild to moderate acne to severe acne. Dr Lowe says, "In my clinical experience there is a six point scale of acne severity ranging from non inflamed which are the multiple blackheads, whiteheads and bumps, through to the very severe nodules, cysts and painful disfiguring lumps."

Mild/Moderate acne vulgaris consists of:

- **WHITEHEADS** - Whiteheads result when a pore is completely blocked, trapping sebum (oil), bacteria, and dead skin cells, causing a white appearance on the surface. Whiteheads are normally quicker in life cycle than blackheads.
- **BLACKHEADS** - Blackheads result when a pore is only



partially blocked, allowing some of the trapped sebum (oil), bacteria, and dead skin cells to slowly drain to the surface. The black color is not caused by dirt. Rather, it is the skin's own pigment, melanin, reacting with the oxygen in the air. A blackhead tends to be a stable structure, and can often take a long time to clear

- **PAPULES** - Papules are inflamed, red, tender bumps with no head
- **PUSTULES** - A pustule is inflamed, and appears as a red circle with a white or yellow center

Severe acne vulgaris is characterized by:

- **NODULES** - Nodules are large, hard bumps under the skin's surface. Scarring is common. Unresolved nodules can sometimes leave an impaction behind, which can flare again and again
- **CYSTS** - An acne cyst can appear similar to a nodule, but is pus-filled, and is described as having a diameter of 5mm or more across. They can be painful. Again, scarring is common with cystic acne \* (Source: [acne.org](http://acne.org))

### THE PSYCHOLOGICAL IMPACT OF ACNE

Because it is considered to be a cosmetic disease and not 'life threatening' the effects of acne are often trivialised however its psychological impact is well documented and its association with depression and suicide cannot be ignored.

When treating patients with acne it is therefore imperative that you take into account the psychological aspects of the disease as well as the physical. Dr Chu says, "Acne not only scars the skin it scars the psyche and that's the crucial thing. The psychological impact of having spots can be massive. I have got kids who bunk off school and adults who bunk off work because of they don't want to be seen with lots of spots. So many people with acne become depressed because of it. Its also an issue because its still a disease where you are made to feel responsible, you have got acne because you are not a nice person, you have got acne because you eat the wrong food, you have got acne because you don't wash properly - all complete rubbish but people still say that about themselves. It is a disease just like breast cancer or bronchitis and its got to be treated, that person is not responsible for it. If you get to a doctor early enough you can prevent the physical scarring but whether or not you can prevent the psychological scarring is another matter."

## TREATMENT OPTIONS

Traditionally acne has always been treated by GPs or dermatologists using oral or topical antibiotics, however the advent of medical aesthetics has opened the door to other treatments including chemical peels and laser and light which are not readily available on the NHS. Here we examine the most effective treatment options for acne...

## TOPICAL AND ORAL MEDICATIONS AND OVER THE COUNTER CREAMS

The first line of treatment used by most dermatologists to treat acne is topical medications or over the counter products containing ingredients such as benzoyl peroxide or salicylic acid. "There are a vast array of treatments available for acne", says Dr Chu. "If you look at the over the counter products for acne it's a billion dollar industry and it's horribly confusing because you go to a chemist and there is so much there. I did that as an experiment and said to the woman behind the counter 'my son has got acne what would you suggest?' I came out having spent £40 on half a dozen products most of which were complete rubbish. In my opinion benzoyl peroxide cream is still one of the best over the counter treatments. It's a very old treatment and it's very effective. The main problems with it is that it's a bleaching agent so can bleach your clothes, which doesn't make it terribly popular and there are a significant amount of people who can't tolerate it as it can irritate the skin."

A study published in the July issue of the *Journal of the American Academy of Dermatology* (JAAD) July issue entitled, "Meta-analysis comparing efficacy of benzoyl peroxide, clindamycin, benzoyl peroxide with salicylic acid, and combination benzoyl peroxide/clindamycin in acne." Showed that a benzoyl peroxide (BPO) and salicylic acid regimen (CLENZiderm - Obagi) is superior (at early end points) to other BPO Rx and OTC as well as BPO combo products (BPO plus antibiotic). Alexa Kimball, M.D. of Harvard Medical School and Elizabeth Seidler of Massachusetts General Hospital, conducted a meta-analysis of 23 studies (7,309 patients) to assess the efficacy of single and combination acne treatments, including 5% BPO, 5% BPO with SA, 1-1.2% CL, and a BPO/CL combination. At two to four weeks, 5% BPO with SA had statistically greater lesion reductions than the other treatment groups. The researchers wrote "All BPO plus SA studies used the same solubilised BPO (CLENZiderm Serum Gel), which may suggest the formulation and vehicle as the cause for enhanced efficacy, not simply the combination of BPO plus SA". (See picture above right).

Dr Chu also recommends Aknicare. He says, "There are some very nice new products coming through which are going to be much better tolerated. There is a preparation called Aknicare, which

Before and After from Obagi CLENZiderm MD



works in a slightly quirky way. It is available over the counter at chemists but is also prescribable. It works extraordinarily well and is very well tolerated and is the only topical preparation that I have ever found that will reduce oil production. We did a study a few years back to measure oil production and patients reduced their oil production by 30-70% so that horrible greasy skin you often get with acne can be sorted by using this product."

Professor Lowe, who has developed his own range of topical skincare products designed to treat acne adds, "The severity and the type of acne depends on the treatment I will use. If it is mild to moderate I will often combine my own blemish range with either salicylic acid peels or visible light. If they have oily skin I will use our oil reducing foaming cleanser as well as our sebum control cleanser. If they have combination skin I will use our foaming moisturising cleanser then get them to use the sebum control cleanser on a cotton bud to the oily areas. If they are getting occasional larger inflamed spots I will get them to use my spot gel up to four or five times a day."

If over the counter products do not work then topical and oral medicines including antibiotics, anti-inflammatories, steroids or topical retinoids can be prescribed. Dr Chu recommends using a topical vitamin A in most instances. He explains, "The next step if you are not responding to the over the counter products is to go and see your doctor. You develop acne when your oil glands over respond to the male hormone. The gland over reacts and therefore you have an oily skin. You then get a blockage in the skin pore. That blockage has got nothing to do with dirt and grime its due to growth change in the skin cells. The skin cells get sticky and they clog up. The only way of getting rid of that blockage is to use topical vitamin A. Vitamin A will normalise the way those cells grown and will allow the plug to dissipate and grow out - no more plugs, no more spots. But it does take time to work. A topical vitamin A is an essential part of treatment for anyone with acne. My daughters who are now 11 have started developing a little bit of acne with blackheads on their noses and they are on topical vitamin A already - I think by treating them now I can hopefully prevent them from getting more inflammatory lesions in the future.

"You also need an antibiotic or an anti-inflammatory to really get rid of the inflammation.

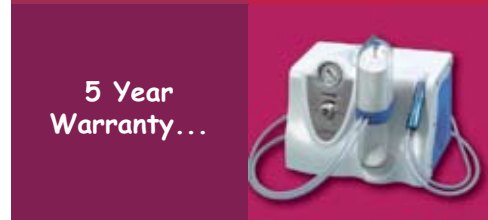
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