

## Acne vulgaris

Acne is a disease of oil glands that make too much oil, get plugged-up, and then get infected. We each have ten thousand oil glands on the face and another ten thousand on the neck, chest and back.

These oil glands, present at birth, are activated by puberty hormones, primarily androgens.

They use oil from fat, oil and grease in our diet, process this oil and then pump it through a small tube called the oil gland duct, from which it flows to the surface. If these oil gland ducts become obstructed, acne occurs.

Obstruction of these oil gland ducts is least likely to occur if the oil gland ducts are large in diameter and have a smooth lining, if the oil that flows through them is very fluid, not viscous or sticky, and if there are no bacteria to interfere with the flow of this oil.

**Diet** - polyunsaturated fats are low in viscosity, harden at only lower temperatures, and tend to flow more easily. The saturated fats are the opposite. They are viscous (flow poorly), become firm then hard at fairly high temperatures and are easily metabolized by bacteria. Therefore, minimizing saturated fats in the diet is worthwhile.

**Retin-a** – some families inherit very large oil gland ducts and because they are so large it is difficult for them to be obstructed. Other families tend to have small oil gland ducts and it seems these are the families more likely to have trouble with acne. However, if the lining of the oil gland duct is very smooth and slippery, even in those who have small oil gland ducts, obstruction is less likely to occur. Retin-a, after five to ten weeks of use, changes the lining of oil gland ducts to make the lining of the duct very smooth and even slippery (mucoid). Therefore, any plug that tends to form in these ducts is easily pushed to the surface where it is no longer a problem.

**Bacteria** – bacteria can be killed with antibacterial soaps, with benzoyl peroxide, with topical antibiotics and with oral antibiotics. None of these will kill every bacteria and combinations of the above four are often more useful than any single one used alone. It has been shown that the use of antibiotics over many months is safe and usually has no long term ill effects whatsoever. Bacteria can become resistant to an antibiotic and often is necessary, after weeks or months, to change to a different antibiotic. When these resistant bacteria have been killed off, the first antibiotic will usually be effective once again.

**Makeups and moisturizers** – some makeups and some moisturizers, but not all, contain oils that tend to plug up oil glands. While these are not a problem for the elderly, who produce very little oil and are not prone to get acne. They certainly are for those of the age group in which acne occurs. It is important that makeups and moisturizers be chosen that are “**non-comedogenic**,” that is, do not contain oils that tend to obstruct oil gland ducts.

In some, sweating seems to predispose to plugging of oil glands. The exact mechanism by which this occurs is not clear. The use of a topical antiperspirant, such as xerac ac liquid, in those areas that break out because of sweating, will usually prevent sweating and thus prevent the breaking out that occurs. This does not occur in everyone, but if you believe it is a problem for you, please let us know and we'll discuss it.

**Pre-menstrual flareups of acne** – some women who have pre-menstrual weight gain, gaining three or more pounds of water weight before menstrual periods, develop moderate to large size nodular lesions deep under the skin, especially of the chin and lower cheeks. It seems that fluid retention within the skin of these areas presses on the outside of these oil gland ducts compressing them and interfering with the proper outflow of oil. These oil gland ducts then become obstructed and these deep blemishes develop. If this water retention is prevented through the use of a diuretic tablet, this type of acne lesion does not develop.

**Acne used to be a very difficult disease to treat, but over the past several years more and better medications have become available to control this. Now there are very few cases where acne cannot be very substantially improved.**