

Review Article

Chemistry of Acne

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Abstract: In this brief paper, we consider the chemistry of the secretions for the sebaceous glands in the skin. We see that acne may be the result of too much secretion caused by diet and hormones, particularly testosterone. There are pharmacology treatments for acne that work well. However, if simply the diet is controlled, eating low cholesterol foods, consuming fewer calories, and avoiding sugar and alcohol, acne can be controlled. Acne is a serious ailment sometimes leading to suicide and adolescence.

Keywords: Acne; Sebaceous glands; Alcohol; Testosterone; Cholesterol.

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INTRODUCTION

As a person who suffered with moderate acne myself, I know the pain for a young person acne cause. Just when the individual wants to be attractive to the opposite sex, their face is a bloody, open, pussy soar.

Some young women attempt suicide because of severe acne. My intention here is to try to find the root causes of facial acne in young people.

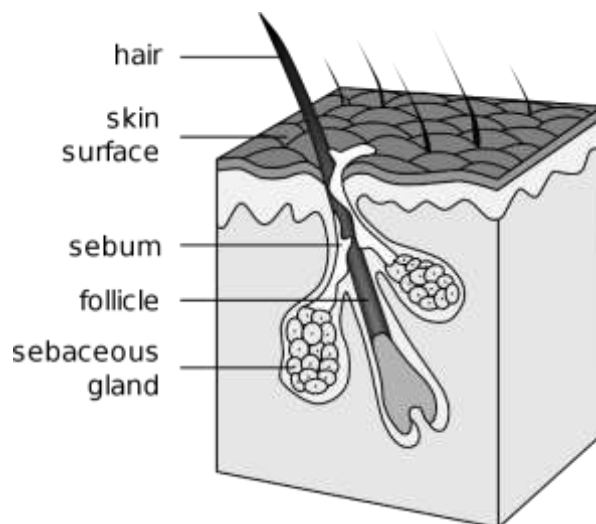


Figure 1. Sebaceous glands

Severe Acne is caused by overactive sebaceous glands that become clogged by scar tissues. The sebaceous glands are at the base of a hair follicle. We see deep pitting at the location of hair follicles. The sebaceous glands produce a mixture of lipids or fats. They include:

- Triglycerides
- Squalene
- Cholesterol
- Waxy esters

Triglycerides are a type of fat produced by overeating in combination with hormones. Squalene is

a lipid that is saturated oil. Cholesterol comes from the diet. Wax esters are fatty acids and fatty alcohol.

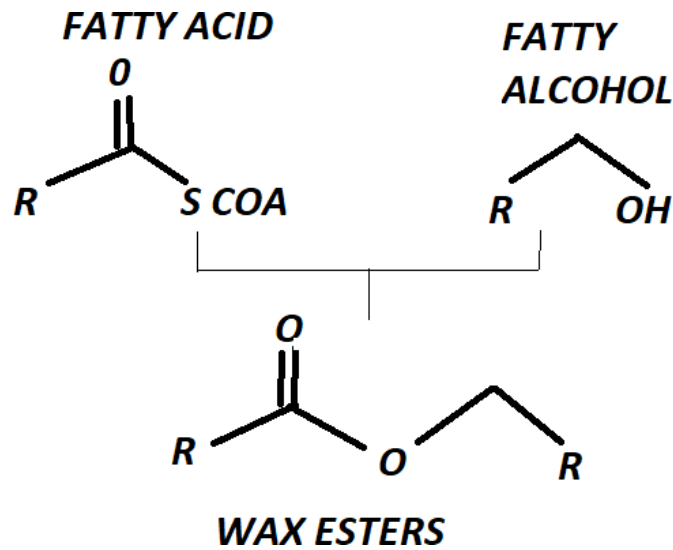
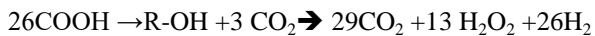
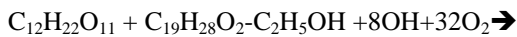


Figure 2. Wax Esters

The chemistry of this combination is as follows:

Severe acne caused by overeating (too many calories); hormones (testosterone) and Alcohol consumption (produces acids and fat.) Alcohol and stress cause the skin to become acidic which leads to bacteria growth that also leads to acne. Too much sugar consumption is a cause of acne as well. We now consider the chemistry of acne:

Sugar + Testosterone + Alcohol → Waxy Esters



Sugar $C_{12}H_{22}O_{11}$

$$12 \times 12.011 = 144.132$$

$$22 \times 1.079 = 23.738$$

$$\underline{11 \times 15.999 = 175.989}$$

$$\Sigma 343.859$$

Testosterone $C_{19}H_{28}O_2$

$$19 \times 12.011 = 228.209$$

$$28 \times 1.079 = 30.212$$

$$\underline{2 \times 15.999 = 31.998}$$

$$\Sigma = 291.419$$

Alcohol C_2H_5OH

SUBSTRACT

$$2 \times 12.011 = 24.022$$

$$5 \times 1.079 = 5.0395$$

$$1 \times 15.999 = 15.999$$

$$\underline{1 \times 1.079 = 1.079}$$

$$\Sigma -46.068$$

$$OH$$

$$1 \times 15.999 = 15.999$$

$$\underline{1 \times 1.0079 = 1.079}$$

$$\Sigma 17.078$$

$$O_2$$

$$\underline{2 \times 15.999 = 31.998}$$

$$\Sigma 31.998$$

$$\Sigma_T = 637.788$$

$$= M$$

$$1/M = 0.1568 = 1 - \sin 1$$

$$29 \times 12.011 = 348.029$$

$$2 \times 29 \times 15.999 = 927.942$$

$$2 \times 13 \times 1.0079 = 26.064$$

$$13 \times 2 \times 15.999 = 415.974$$

$$\underline{26 \times 2 \times 1.0079 = 52.413}$$

$$\Sigma 1770.422$$

$$29 \times 12.011 = 348.029$$

$$2 \times 29 \times 15.999 = 927.942$$

$$2 \times 13 \times 1.0079 = 26.064$$

$$13 \times 2 \times 15.999 = 415.974$$

$$\underline{26 \times 2 \times 1.0079 = 52.413}$$

$$\Sigma 1770.422$$

$$1770.422 / 637.788 = 277.587 = 1/3602$$

$$1770.422 - 637.788 = 1132.6 = (1/9 - 1.25) = SE$$

$$P = 1.770422$$

$$= Et$$

$$Fdt$$

$$= Mom. T$$

$$1770.422 = 0.1568 (t)$$

$$t=112.9$$
$$\sim 113.36 = \Delta E$$

$$112.9/6.023=1/0.533=1/(2SF)$$

$$112.9 \times 6.023=1/147=1/M$$

$$T.E.=Mc^2+MGh+1/2Mv^2+S.E.$$

$$=147(9)+(147(6.67)(1)+1/2(147)(1/\sqrt{2})^2+(-1.25+1/9))$$

$$=140.9$$

$$\sim \sqrt{2}$$

$$=T.E.$$

=hypotenuse of the 45-45-90 triangle.

$$\cos^2 45^\circ + \sin^2 45^\circ = 1$$

$$(1/\sqrt{2})^2 + (1/\sqrt{2})^2 = 1$$

CONCLUSION

Acne is caused by too hormones (testosterone); overeating (too many calories); Alcohol consumption; and high cholesterol. Changing the diet is the key to a cure.

REFERENCES

None.