



## ENDOCRINE PERSPECTIVE

BY GEOFFREY P. REDMOND, M.D.

*Dear Dr. Redmond: It took several years but I finally persuaded a client of mine to see an endocrinologist. She has very heavy facial hair growth and has to shave every day. After doing several blood tests for hormone levels, the endocrinologist told my client that everything was normal. Now the client is annoyed with me for encouraging her to go, she says the work-up solved nothing. Hair growth so heavy that it needs to be removed with a razor is not normal for a woman. How could it be that she had normal hormone levels?*

The question you have asked is one I have been asked over and over. Lab tests are important in medical evaluation hirsutism but they have their limitations, too. In our culture, in awe of technology, it is often lab tests which make a condition seem real. This is a misunderstanding. The laboratory does not tell us what is wrong with someone, rather it aids in doing so. Tests may be ordered because there are symptoms or other reasons to suspect a disease. But a negative test does not mean there is no problem, simply that a particular disease is not present.

Let me be more specific. Hirsutism, i.e. increased hair on a woman's body, is always due to the action of androgens. Androgens are what in high school biology were called "male hormones," but this is misleading. All adult males and females have biologically effective levels of androgens in their blood. The levels in men are about 10 times higher than the levels in women. In childhood, androgen levels are unmeasurable in both boys and girls.

At puberty levels begin to rise in both sexes, but of course rise much more sharply in boys. Some of the normal events produced by androgens at puberty are: the appearance of pubic and underarm hair, increased oiliness of the face and darkening of the genital skin. In males, androgens stimulate

sexual feelings but their role in this regard is far less clear in women.

As androgen levels increase, more areas of the skin start to respond by showing hair growth. The genital area is most sensitive, followed by the underarms, chin, middle of the upper lip, around the edge of the nipples and the midline of the abdomen. Many women have some hair in these locations and in small amounts it is certainly not abnormal. For a few the amounts are greater, and embarrassment and self-consciousness result.

While all the body hair in the sexual distribution is due to the action of androgens, it is not always due to high levels of these hormones. How can this be? The main answer is that some women have skin that is much more sensitive to the action of androgens than others. It is also possible to have high testosterone levels without getting at all hirsute, though this is not a common situation.

There are some other factors to consider. Testosterone levels in women are at their highest in the late teens and early 20s. After that levels decline until after menopause when they are usually very low. But once stimulated by testosterone, hair follicles stay active. A woman might have slightly high testosterone levels when she is in her 20s, but the elevations are long gone when she has a lab work-up during her 30s or 40s. Also, testosterone levels fluctuate in the blood. A woman with increased secretion of testosterone may not have high levels all the time, and there's a chance that the mild elevations won't be picked up on a single blood draw.

Confusion arises when it's assumed that hormone levels are the only thing which determine the amount of facial and body hair. Hormone levels are actually only one factor, but many doctors and patients find this confusing.

Normal hair and normal hormone levels are two different matters. A large increase in hair makes it impor-

tant to see if hormone levels are high. If they are, a hormonal disorder is present. If levels are normal, there is no hormonal disorder — the ovaries and adrenals are functioning properly — but there is *still too much hair*. A normal hormone level does not make the hair any less.

Many women have abnormal amounts of hair but normal hormone levels. Yet some are told that because their hormone levels are normal, their hair is normal. This is like taking a culture because someone has a fever and, if the culture is negative, telling them that they do not have a fever.

The purpose of hormone testing for increased hair growth is: first, to be sure that there is no serious hormone problem; and second, to see if any androgens are elevated, so that treatment can be given to bring them down.

Increased hair can still be treated when levels of testosterone and other androgens are normal. Medications which block androgens such as spironolactone (Aldactone®) still help, because they protect the hair follicles against the testosterone. Indeed, more than half of the women I treat have this situation. Elevated androgens can be treated, too, but when levels are normal the treatment is simpler and very often successful.

Your client should be relieved that her levels are normal, but she should not conclude from this that nothing can be done medically to help her.

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