

# Skin

## Problems Related to Hormonal Dysfunction

by Vktoria **Rayner, Dermatology Associate**

If the subject of this article has captured your interest, chances are you are concerned about a client who seems to be experiencing some skin problems which you suspect may be associated with hormonal dysfunction.

Hormonal dysfunction is a topic that has aroused a great deal of interest lately, since the majority of the female population (ages 34 to 45) is either beginning to or is already experiencing menopause. These problems usually occur gradually over time. It is important for you as an esthetician to know how the skin is influenced by the hormones in order to provide proper skin care to all your clients. Possible hormonal deficiencies, therefore, should be considered part of the total picture in the evaluation of the client's skin.

Fortunately, the vast majority of skin conditions associated with hormonal dysfunction are minor and pose no major threat to the health, but since hormones do play a crucial role in the beauty of the skin, they merit discussion. It is important to point out that, although the same level of hormone may be found in the bloodstream of two women, the response may not necessarily be the same.

### **Five hormones are associated with the skin**

The five hormones associated with the skin are: androgens, estrogens, thyroid, steroids, and insulin.

A hormone is a cellular product in body fluids that has a specific effect on other cells. The various glands that make up the hormonal system establish and control a communications network that is complementary to the nervous system. However, instead of using neural impulses, these glands secrete hormones (chemical messengers) that affect other glands and tissues in other parts of the body. The bloodstream carries these hormones to their target areas, where they wield their specific effects, causing a wide range of actions. The following chart (on page 50) from the American Medical Association's *Encyclopedia of Medicine* lists the sources and main effects of selected hormones:

<b>Section of Body</b>	<b>Hormone Secreted</b>	<b>Effects</b>
hypothalamus	Releasing hormones	Stimulate hormonal secretions by pituitary gland
<b>Pituitary Gland</b>	Growth hormone	Stimulates growth and metabolism
	<b>Prolactin</b>	Stimulates milk production after childbirth
	<b>ACTH (adrenocorticotropic hormone)</b>	Stimulates cortisol production by adrenal glands
	<b>TSH (thyroid-stimulating hormone)</b>	Stimulates hormonal production by thyroid gland
	<b>FSH (follicle-stimulating hormone) &amp; LH (luteinizing hormone)</b>	Stimulate gonads (ovaries & testes)
	<b>ADH (antidiuretic hormone)</b>	Acts on kidneys to reduce urinary production
	<b>Oxytocin</b>	Stimulates contractions of uterus during labor and ejection of milk during breastfeeding (lactation)
	<b>MSH (melanocyte-stimulating hormone)</b>	Acts on the skin to promote production of skin pigment (melanin)
<b>Brain</b>	<b>Endorphins</b>	Alleviate pain
<b>Thyroid Gland</b>	Thyroid hormones	Increase metabolic rate; affect growth
<b>Parathyroid Gland</b>	<b>Thyrocalcitonin</b>	Controls levels of calcium in blood
<b>Thymus</b>	Parathyroid hormone	Controls levels of calcium in blood
	Thymic hormone	Stimulates lymphocytic development
<b>Adrenal Glands</b>	<b>Epinephrine &amp; Norepinephrine</b>	Prepares body for stress
	<b>Aldosterone</b>	Regulates sodium and potassium excretion by kidneys
<b>Kidneys</b>	<b>Androgens</b>	Affect growth and sex drive
	<b>Renin</b>	Regulates blood pressure
	<b>Erythropoietin</b>	Stimulates erythrocytic production
	<b>Vitamin D</b>	Controls calcium and phosphorus metabolism
<b>Pancreas</b>	Insulin, glucagon	Regulate blood sugar
<b>Placenta</b>	<b>Chorionic gonadotropin &amp; Estrogens &amp; Progesterone</b>	Maintain pregnancy
<b>Gastrointestinal Tract</b>	<b>Gastrin, Secretin &amp; Cholecystokinin</b>	Regulates secretion of some digestive enzymes
<b>Testes</b>	<b>Testosterone</b>	Affects development of male secondary sexual characteristics and genital organs
<b>Ovaries</b>	<b>Estrogens &amp; Progesterone</b>	Affects development of female secondary sexual characteristics and genital organs; controls menstrual cycle; maintains pregnancy

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## **Treatment & outlook**

A study of these hormones of the body and their functions is very necessary as a great many skin conditions arise in which these hormones are involved. The esthetician is not required and, in fact, should not audibly diagnose any hormonal dysfunction but should be able to recognize such a disorder. With this knowledge, we, as estheticians, may help our clients to seek the proper medical care necessary to counteract these adverse effects.

Hormones affect both the intracellular and extracellular fluid volume. Too much fluid makes the skin look swollen, and the pores appear oversized. Insufficient fluid causes the skin to look saggy. The hormones also regulate cellular turnover and control the temperature and the color tone of the skin.

## **Five hormones most associated with the skin:**

### **Androgens**

The androgen hormone with the greatest potency and effect is testosterone. In men, it is produced in the testes and in women, in the adrenal gland.

Too much androgen encourages the enlargement of the oil glands which in turn produces an excessive production of sebum. When this occurs, acne may result. Hair loss may also occur. Birth control pills and stress stimulate the androgens. Overstimulation of this hormone may cause hair growth on the face. Certain foods have high androgen content and should be avoided if high androgen levels are suspected. They are: beef, liver and wheat germ.

### **Estrogens**

Estrogens are produced in the ovaries. Adequate estrogen levels reduce sebum production and enhance skin elasticity. A decline in estrogen production occurs around the age of 40. Estrogen replacement therapy (ERT) is prescribed to relieve menopausal symptoms such as hot flashes and night sweats. Women taking estrogen supplements will experience darker and larger moles. Note: Moles that are more than one color and those which do not have a distinct border will warrant immediate examination by a dermatologist. Some of the drawbacks of estrogen are the appearance of blood vessels (telangiectasia), cherry angiomas, and other skin lesions. High levels of estrogen can also result in rosacea.

### **Thyroid hormones (T4 & T3)**

Unbalanced levels of the thyroid hormones, especially too much (hyperthyroidism) result in persistent

flushing, excessive sweating and thinning of the hair. Hair color can become whiter or darker. Nails may also split horizontally or separate from the nail bed.

Too little of thyroid hormones (hypothyroidism) results in dry, brittle hair, hair loss, loss of eyebrows, dry skin and premature wrinkling.

### **Steroids**

The adrenal glands produce steroids. Too much (hypersteroidism or hypercorticism) causes the skin to thin and makes it more prone to infection. It becomes plagued with "broken" (dilated) capillaries (telangiectasia) and has poor healing capability. In addition, overstimulation causes overproduction of the sebaceous glands, which could lead to acne flare-ups.

Hyposteroidism or hypocorticism (insufficient steroid) results in loss of body hair and hyperpigmentation (excess pigment) of the skin, nails and mucous membranes.

### **Insulin**

Insulin is produced by the pancreas. A deficiency leads to diabetes, poor healing, flushed complexion, boils and other bacterial infections, and yeast infections due to candidiasis.

Knowing how these hormones affect the skin can give you the clues you need to ascertain whether you believe any of your clients may be suffering from hormonal dysfunction and therefore, should refer them to a physician. ■



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