

■ HAIR FOLLICLE GROWTH AND DIFFERENTIATION

The number of hair follicles remains unchanged over the life span, but follicle size and the type of hair can change in response to numerous factors, particularly androgens. Androgens are necessary for terminal hair and sebaceous gland development and mediate differentiation of pilosebaceous units (PSUs) into a terminal hair follicle and/or a sebaceous gland. In the former case, androgens transform the vellus hair into a terminal hair; in the latter case, the sebaceous component proliferates and the hair remains vellus.

There are three phases in the cycle of hair growth: (1) *anagen* (growth phase), (2) *catagen* (involution phase), and (3) *telogen* (rest phase). Depending on the body site, hormonal regulation may play an important role in the hair growth cycle. Hair growth on the face, chest, upper abdomen, and back typically requires elevated androgen concentrations. However, there is only a modest correlation between androgen levels and the quantity of hair growth. This is due to the fact that hair growth from the follicle also depends on local growth factors, and the variability in end-organ (PSU) sensitivity to androgens. Genetic factors and ethnic background also influence hair growth. Androgen excess in women may result in hair thinning or loss because androgens cause scalp hairs to spend less time in the anagen phase.

In general, dark-haired individuals tend to be more hirsute than blond or fair individuals. Asians and Native Americans have relatively sparse hair in regions sensitive to high androgen levels, whereas people of Mediterranean descent are more hirsute.

■ CLINICAL ASSESSMENT

Historic elements relevant to the assessment of hirsutism include the age at onset and rate of progression of hair growth and associated symptoms or signs (e.g., menstrual irregularity and acne). Depending on the cause, excess hair growth typically is first noted during the second and third decades of life. The growth is usually slow but progressive. Sudden development and rapid progression of hirsutism suggest the possibility of an androgen-secreting neoplasm, in which case androgenization may also be present.