

during childhood, and becomes drastically enlarged during puberty (7). In each gland, a common excretory duct is supplied by smaller ducts that originate in the acini of the gland. As the flattened or cuboidal peripheral sebaceous cells move toward the center of the gland, lipid synthesis within the cell increases. The cell swells with fat until a 100- to 150-fold increase in the cell volume occurs. The entire cell then ruptures, expelling its contents into the excretory stream of the gland as sebum. Finally, the sebum passes through the pilosebaceous follicle and is deposited into the uppermost region of the hair shaft. Synthesis and discharge of the lipid contained in the sebaceous gland requires 1 to 3 weeks (7). The discharge of this lipid has been demonstrated by Kligman to be constant, without regard to either season or the amount of lipid already on the skin surface (8). However, the quantities of sebum that are normally encountered on unprotected healthy skin depend more upon the rates of flow (or refatting process) of sebum than upon the absolute rate of production of sebum in the sebaceous gland. This results because there is a large reserve of fully synthesized sebum contained in the *follicular reservoir* (9), that is, the upper portions of the hair follicle and the orifice to the sebaceous gland. This source of sebum is not depleted, even by repeated solvent extractions. Thus, after careful cleansing of the skin, sebum contained in the follicular reservoir initially appears to flow out onto the skin surface at a constant rate over a several-hour period until the amount of sebum normally present on the skin surface (defined by Kligman as the *casual level*) is reached. After the skin has regained the original casual level of sebum, it appears that the normal loss process (i.e., reabsorption into the skin, further migration to less sebum-rich areas of the skin, and loss from the skin surface to the surroundings) reaches an equilibrium with the refatting processes, and no further increase in sebum concentration is observed. For example, on a relatively sebum-rich skin area, such as the forehead, where the follicular reservoir is estimated to contain a few milligrams of sebum per cubic centimeter, it has been shown (10) that the refatting of the skin surface occurs at a rate of from about 0.1 to 2.1 μg of sebum per square centimeter a minute, and that the casual level of sebum is essentially restored 3 or 4 hr after defatting. For areas of the skin that are less rich in sebaceous glands, it can be expected that the rate of refatting will be slower and that the ultimate casual level of sebum will also be lower.

Once on the surface of the skin, the sebum has already been chemically modified by microorganisms in the pilosebaceous unit and becomes mixed with lipids of epidermal origin. Hence, the term *sebum* is more precisely reserved to describe the lipid contained in the sebaceous gland, and the term *skin surface lipid* is used to describe the lipid mixture on the skin surface.