

Epidermis

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The epidermis constitutes 5% of the skin and is composed of five layers of keratinised, stratified squamous epithelium – the strata: basalis (deep), spinosum, granulosum, lucidum and corneum (superficial). Most epidermal cells are keratinocytes arranged in layers. The basal epidermis (stratum basalis) also contains melanocytes. Keratinocytes are classified according to their depth in the epidermis and their degree of differentiation. Keratinocytes grow and are replaced via mitosis in the cells of stratum granulosum as they progress from deep to superficial, losing their nuclei and organelles as they ascend, before forming the stratum corneum. The other keratinocyte layers in the skin (strata lucidum, granulosum and spinosum) are variably thick according to body site; for instance, all three are thick in the glabrous skin of the palms and soles of the feet and almost absent in eyelid skin. Melanocytes are dendritic cells of neural crest origin, usually located in the basal epidermis. Each melanocyte synthesises melanin, a brown-black pigment, which is transferred via membrane processes to the keratinocytes in the strata granulosum and spinosum. Melanin provides protection against ultra violet radiation (UVR). Ethnic differences in skin colour are determined by variations in the amount, combination and Paul Langerhans, 1847–1888, Professor of Pathological Anatomy, Freiberg, Germany. Friedrich Sigmund Merkel, 1845–1919, Professor of Anatomy, successively at Rostock, Königsberg (now Kaliningrad in Russia) and Göttingen, Germany. George Meissner, 1829–1905, Professor of Physiology, Göttingen, Germany. Filippo Pacini, 1812–1883, Professor of Anatomy and Physiology, Florence, Italy. distribution of melanin within the keratinocytes, not by differences in the number of melanocytes. The surface of the epidermis is coated with a mixture of secreted molecules and microorganisms and generally has an acid pH, which is protective against harmful flora.

The classification of benign skin tumours • The management of malignant skin tumours •

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