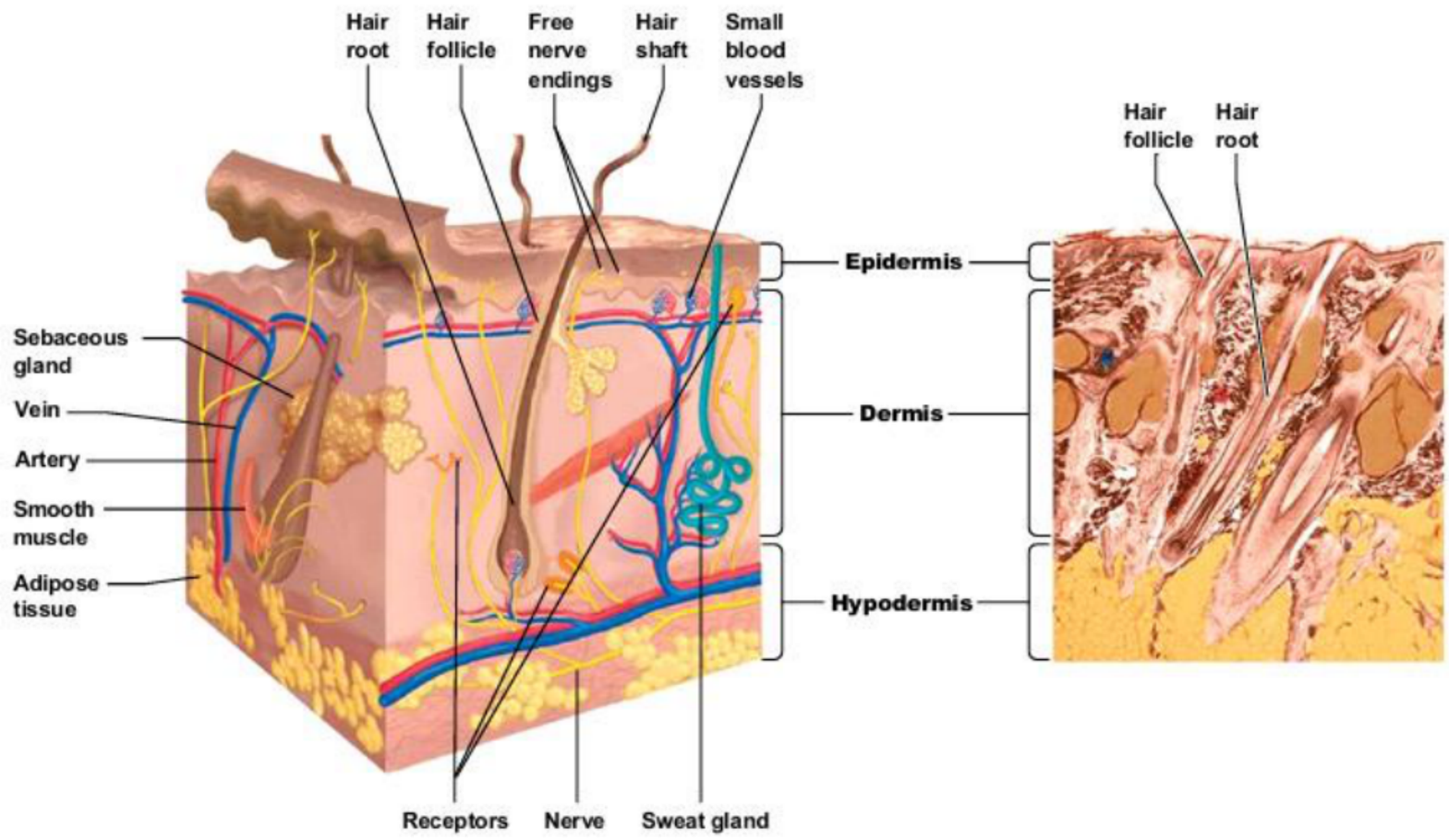
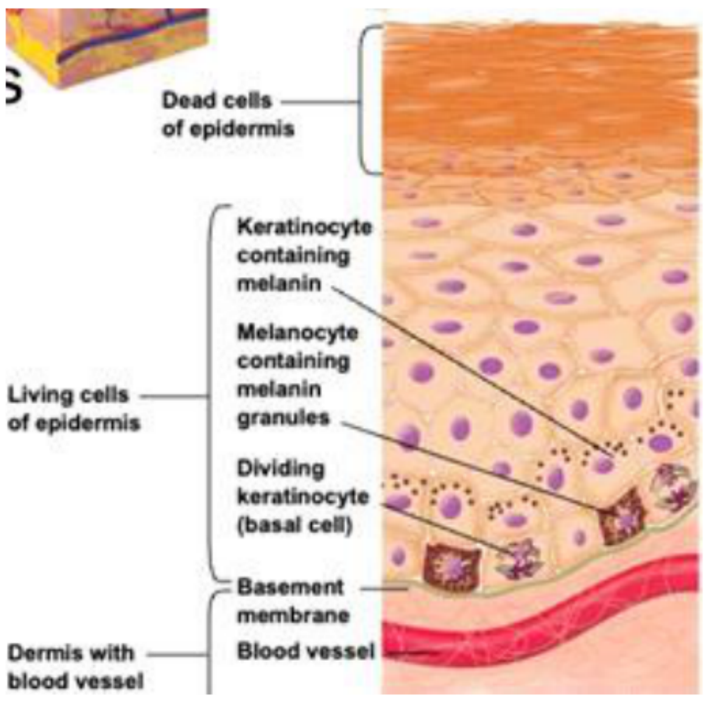
An aside on *blisters* : the separation of the epidermis and dermis results in blister formation, where the lymphatic system floods the separated region with fluid to protect underlying cells (including exposed nerve cells).

An aside on *sunburn* : the redness, pain, and swelling associated with sunburn is an inflammatory response to DNA damage caused by UV radiation. When skin is sunburned, the damaged cells are shed via peeling, and replaced.



Epidermis - the outer skin layer



The epidermis contains stratified squamous (multi-layered square-shaped) epithelial cells, and no blood vessels. The inner/bottom layer of cells (basal cells) in the epidermis divide constantly, effectively pushing outer cells further outwards. The outer layer of cells are dead epidermal cells, and are shed. There are two major cell types in the epidermis:

- *Keratinocytes* : produce keratin, a tough rigid waterproof protein. Can absorb melanin produced by melanocytes as a defence/precaution against UV damage.
- *Melanocytes* : produce melanin (a dark pigment) in response to UV exposure.

Epidermal disease spotlight:

- *Basal cell carcinoma (BCC)* : cancerous basal cells caused by UV damage to DNA. Results in uncontrolled tumour growth. Note also that basal cells are actively dividing, and are therefore prone to mutations.