Normal Skin Color Determinants

- Melanin
  - Yellow, brown or black pigments

- Carotene
  - Orange-yellow pigment from some vegetables

- Hemoglobin
  - Red coloring from blood cells in dermis capillaries
  - Oxygen content determines the extent of red coloring
Skin color is controlled by:

Genetic Factors
• varying amounts of melanin
• varying size of melanin granules
• albinos lack melanin

Physiological Factors
• dilation of dermal blood vessels
• constriction of dermal blood vessels
• carotene
• jaundice

Environmental Factors
• sunlight
• UV light from sunlamps
• X rays
Emotional stimuli can influence skin color and signify an illness:

Redness or erythema- may appear if a person is embarrassed, has a fever, hypertension, inflammation or an allergy.

Pallor or blanching- (fear or anger) skin becomes pale, may be a sign of anemia, hypotension, or impaired blood flow to a certain area.
Emotional Stimuli can influence skin color and signify illness:

Jaundice- yellow cast usually signals a liver disorder in which excess bile pigments are absorbed in the blood, circulated in the body and deposited in the body tissues.

Bruises or black-and-blue marks- sites where blood has escaped the circulatory system and clotted in tissue spaces (called hematomas). May signify a deficiency of vitamin C or hemophilia.
Dark Skin
Effect of UV light on melanin production

prior to UV
upper = 497 = 2%
middle = 6382 = 26%
lower = 17884 = 72%

1 week post-UV
upper = 1016 = 3%
middle = 19327 = 54%
lower = 15443 = 43%
Albinism- genetic factor

(Russell 1994)
Jaundice - physiological factor