EDITORIAL

Characteristics of skin colour

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Humans come in a rainbow of colours, from dark chocolate browns to pinkish whites. These colours are a reflection of difference in environment and geographical background. Human beings in general belong to three races, the Congoids, Caucasoids and the Mongoloids. Each race has distinct physical features such as the shape and size of the bones, stature, shape of the eyes, colour of the skin and texture of the hair by which they are recognized. The colour of the skin and texture of the hair is the most apparent phenotype of human race No one skin colour is superior over the other, each have their advantages and disadvantages. Racial characteristics that predispose to skin disease are closely interwoven with their colour, culture and socioeconomic factors.

There are 6 phototypes of skin colour according to Fitzpatrick: type 1 the fairest skin and type VI the darkest. Skin types 1-111 are known as the fair or white skin; and types 1V to VI are known as the skin of colour.[1,2] Type's 1-111 burn easily when exposed to ultraviolet light, but tan with difficulty; while types 1V to V1 tan easily but burn with difficulty. Very little is known about the polygenic inheritance of skin colour.

Skin colour is a blend of skin chromophores: melanin, oxyhaemoglobulin (red) reduced haemoglobulin (blue), carotene (yellow/orange). The melanin pigment is the most important constituent of skin colour.[3] It is produced by cells called melanocytes. The number of melanocytes, are equal in all races, it is the content of melanin produced by melanocytes that differ in the different races.[1-3] The melanin content of the dark skin is greater than in the light skin. It was found that on the average, five times as much UVL reaches the upper dermis of Caucasians when compared with the Afro-Caribbean's.[4] The carotene content of the ancient Mongoloids was greater than in the Congoid's and Caucasoid's, which was responsible for their yellowish complexion.[5] It was due to their high intake of the plant Enhydra Fluctuan which has a high content of carotene; it has good nutritional value and it was also used to treat a number of diseases.[6]

There is a direct correlation between the geographic distribution of UV radiation (UVR) and the distribution of indigenous skin pigmentation around the world. Areas that receive higher amounts of UVR, generally located close to the equator, tend to have darker skin. Areas that are far from the tropics and closer to the poles have lower intensity of UVR, which is reflected in lighter skin colour. A walk from the African tropics to northern Europe reveals this gradual variation in skin colour.

It is said that the dark skin of the Congoids was a protection against ultraviolet radiation of the sun; they also have less quantity of body hair to help in evaporation of the sweat to lower their body temperature due to heat. As human beings moved out of Africa from equatorial and tropical regions, to the temperate and cooler regions, they no longer required the desired protection from ultraviolet radiation. The melanin content of their skin decreased giving them the fairer and white skin. The sun and the energy it transmits, is essential for the life on earth. For Greeks the sun was the supernatural God figure; but despite its various benefits, the ultraviolet spectrum of sunlight also has its disadvantages such as skin cancer and premature ageing.

Ultraviolet radiation can damage the skin in a number of ways such as sunburn, actinic keratosis, actinic elastosis, actinic cheilitis, triradiaite scars, senile comedones, purpura, poikiloderma and skin cancer. Ultraviolet radiation is the most common cause of skin cancer; these are mainly found on the sun-exposed areas. The fairer skin is more prone to cutaneous malignancy because of less protection against ultraviolet radiation due to their low melanin content. Darker skin has greater protection against skin cancer and ageing. It is more prone to postinflammatory pigmentation and melasma.[7,8]

The fairer skin shows signs of ageing much earlier than the dark skin. With age the collagen fibers get fragmented and disoriented, there is increasing fragmentation of elastic tissue, responsible for wrinkling seen in old age. These changes are accelerated by ultraviolet radiation.

The collagen fibres' in the dark skin are smaller and more closely stacked, while the collagen fibres of the white skin are larger and occasionally fragmented. The arrangement of collagen in the dark skin is responsible for the increased incidence of scars and keloids.[7]

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Mast cells of black skin contain 1.5 times larger granules due to which pruritus and scratching are a frequent observation in African Americans. Increased amount of tryptase is found in the granules of mast cells in black skin, this also contributes to the formation of keloids.[8]

The skin produces vitamin D in the presence of ultraviolet light. It is produced in the epidermis from the precursor 7-dehydrocholesterol. The lighter skin permits more ultraviolet light in their skin; it therefore produces more vitamin D than the dark skin. Vitamin D is necessary for bone metabolism and growth.

The Mongoloid skin has a tendency towards lichenification; they occupy an intermediate position between Caucasoids and Congoids with regards incidence of skin disease.[3]

Four types of hair are recognized, straight, spiral, wavy and helical. The spiral hair is characteristic of the Congoids, the hair is straight in Mongoloids, and in the Caucasoids the hair may be straight, wavy or helical.[3,9] Few elastic fibres anchor the hair follicles to the dermis in black skin; their hair is more susceptible to breakage and spontaneous knotting than the hair of fairer skin.[1] The spiral hair of the Congoids has a tendency to develop pseudofolliculitis barbae and acne keloidalis.[1,9] Traction alopecia, hot comb alopecia and follicular degeneration syndrome are common in Afro-Caribbean's because of their hair styling procedures. Hot comb alopecia and follicular degeneration syndrome is now known as central centrifugal cicatricial alopecia.[10,11]

As seen above there is no supremacy of the white or any colour of skin; God has created mankind, with no disparity between the human races. All races black, brown and white are creations of God, cherished by Him; he is most honoured who is most righteous.

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