

Melanin

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Melanin Latest News

Melanin tells the tale of how our ancestors survived from the Sun's heavy UV rays 50000 years back.

About Melanin

- Melanin is a **natural pigment** found in **most living organisms**.
- It is present in human and animal skin to varying degrees, and is responsible for **your unique eye, hair and skin color**.
- Melanin is produced within **special structures called melanosomes**. Melanosomes are found inside **melanin-producing pigment cells called melanocytes**.

Types of Melanin

- **Eumelanin**: It is responsible for **brown and black shades** of hair, skin, and eyes.
- **Pheomelanin**: It produces **red or yellow hues** — more common in people with red hair or lighter skin.

- **Neuromelanin:** It is found in the brain, and develops from **the oxidation of dopamine** (a feel good chemical) and **noradrenaline** (a fight-or-flight hormone)

Melanin-Related Skin Conditions

- **Vitiligo:** It is a condition where the **skin loses its pigment-producing cells**, leading to white patches.
- **Albinism:** It is a **genetic mutation** that prevents melanin production, resulting in pale skin, hair, and eyes.
- **Hyperpigmentation:** Excess melanin causes darker spots or patches, often due to sun exposure or hormones.

Role of Melanin

- **Biological Shield:** It acts as a **biological shield, absorbing harmful ultraviolet rays** and thereby protecting the skin from potential skin cancers like **melanoma, and various carcinomas**
- **Camouflage and Survival:** It helps animals to blend in with their **environment via camouflage**. This ability is very crucial for both **predator and prey**.
- **Thermoregulation:** It also **helps in thermoregulation**, controlling heat loss and generation through mechanisms like sweating.

Source: **TH**

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