

## Hair Colour Loss & Other problems

*Diseases/conditions featuring hair pigment reduction/loss include:*

*Albinism • Canities • Leucotrichia (Poliosis) • Premature Greyness • Pili Annulati (Ringed hair) • Sudden Pigment Loss Syndrome • Vitiligo • White hair*

**Albinism** - a recessive hereditary trait which presents as white hair due to defective melanin production thought to be caused by a mutation within genes. Albinos have no melanin pigment and do not tan. Their skin is otherwise normal. Albinism affects people from all races. Melanin is a skin pigment which absorbs the sun's ultraviolet radiation. It is produced in melanocytes, cells present in hair follicles which convert the amino acid - Tyrosine into Melanin pigment. There are two types of pigment: Eumelanin (black-brown) and Pheomelanin (red-blond).

Tyrosinase is the major enzyme responsible for the formation of Melanin pigment viz:

Tyrosine > DOPA > Dopakinone > Eumelanin or Pheomelanin.

The development of a suntan occurs as melanin pigment is increased in the skin.

**Canities** ( the 'greying of hair') - a pigment deficiency frequently seen in middle-aged people of either sex. Close examination of greying hair confirms that it is an illusion caused by the presence of white hairs among a percentage of normal dark pigmented hairs.

A single grey hair often glistens resembling shot-silk, and reflects the colours of its immediate surroundings. In many people canities precedes the development of snow-white hair in later life. This gradual progressive process of pigment (melanin) reduction/loss may be accompanied by hairshaft thickening or thinning. Possible cause: Genetic influences.

Canities commences at the anterior parietals, and progresses over the vertices eventually effecting the occiput. Beard hair is often the first to lose its pigment. Axillary and pubic hair becomes depigmented much later if at all.

**Leucotrichia (Poliosis)**- refers to a congenital absence of pigment in a lock of hairs which will show as grey/white. Several generations of some families have been known to exhibit this dominant trait.

**Premature Greyness** - describes the appearance of such hairshafts during the twenty-thirty age span. This can be a dominant hereditary trait and also associated with vitamin B deficiency.

**Ringed hair (Pili Annulati)** - a rare condition in which naturally pigmented bands measuring 2 - 6 mm alternate with similar sized grey/white bands along the hairshaft. The ringed appearance may be localised or throughout a hairshaft, and may affect few or many hairs. This condition is present from birth, and is sometimes observed in other family members. It is suggested that pigment deemed absent is actually present but rendered invisible by air cavities reflecting light in the loose structure of outer layers of cuticle cells. Others argue in favour of the theory of 'failure or absence of pigment formation before cornification occurs'. This theory sights the study of grey and white hairs under low and high powered magnification and the obvious presence of minute bright spots adjoining the nuclei of the cells of the cortex. These bright spots - reminiscent of light reflected from glass, remain after boiling or soaking the hair in glycerine or canada balsam.

**Sudden Pigment Loss Syndrome**- Rapid (almost overnight) losses of hair pigment following severe shocks have been reported over the years. Whereas this phenomenon is not understood it is difficult to dismiss claims made and documented by such eminent persons as: Dr A.J. Ephraim (*Arch.Derm.*, 1959) R. Mc Neill Love (*Brit.Med.Journal.*, 1947) Sir Arthur Hurst, G.T.Jackson (*Diseases of the Hair, London 1913*) Dr Claye Shaw (*St Bart's Hospital, Rep.*, 1884) Dr Brown-Sequard (*Arch.de Physiol.*, 1869) Dr Raymond (*Revue de Med.*, 1882) Dr Darrier.

**Vitiligo** - loss of pigment at small or large areas of skin/hairs. This is due to melanin failure caused by damaged melanocytes. This damage or destruction is thought to be associated with an immune system reaction, or genetic defect. The progress of the disease is unpredictable. Approx. 2% of the population is affected.

**White hair** - having no pigment. Possible causes: Genetic. Vitamin B deficiency. Drugs for treatment of arthritis. Other health factors.



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