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Why does your hair turn gray?

Canities is the technical term for graying of hair or, specifically, when the melanocytes in the hair follicles produce less than a normal amount of pigment. Maturation of head hair occurs in three phases. Initially, it is anagen (growth), subsequently catagen (involution) and finally, telogen (resting) when the hair sheds. The dark color of the hair is the age of the follicle, and the width is determined by the follicular size. The growth lasts six years and the resting lasts four months. At any time, 95 percent of the follicles are in the growth phase, less than 1 percent in the involutionary phase and 5 percent in the resting.

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All Things Medical

Hair growth occurs independently of color and gender, and varies with ethnicity. On average, in Caucasians, graying begins at age 34, in Asians, at age 37, and in African Americans,at age 40. With Caucasians, the "50-percent rule" applies with 50 percent of the population grey at 50 years of age. In men, the first grey hair appears on the chin whiskers, then the rest of the beard, followed by the scalp (usually at the temples) and then the pate.

The grayness is secondary to a progressive decline in the number and the function of the melanocytes of the hair follicles. As time goes on, the melanocyte reservoir decreases the ability to repopulate new pigmented hair. The average hair follicle produces only between seven and 15 cycles of pigmented hair before it becomes too old to make pigment. This allows for approximately 50 years of pigmented hair growth. In general, for every 10 years after that, there is a 10 percent decrease of melanocyte production.

Grey hair is permanent. However, it may transiently darken, following some inflammatory processes, and there may be temporary intermittent bursts of pigmented hairs. There are drugs that not only grow more hair, but make the hair darker, such as the antihypertensive, Minoxidil.

Premature graying may be caused with autoimmune diseases (pernicious anemia), thyroid disease and nutritional deficiencies. It is associated with heart disease and osteoporosis. It is more than an old wive's tale that ones hair may turn completely white within a brief period of time following physical or emotional stress. There is a hereditary form of tuft of white hair. A family in England and elsewhere whose last name is Whitlock had this gene.