

## OVERNIGHT HAIR WHITENING: A MEDICAL PERSPECTIVE ON THE TALMUD

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“And the six hours of deadly terror which I then endured have broken me up body and soul. You suppose I am an old man, but I am not. It took less than a single day to change these hairs from a jetty black to white...” [1] This poetic exaggeration refers to the age old myth that sudden terror can cause one’s hair to turn white overnight. Although it is typical to encounter such folkloristic and improbable accounts in literary tales, this precise myth was first recorded in the Babylonian Talmud as a story accepted as fact by many people.

In 83 C.E. the primary Talmudic academy in Israel necessitated the selection of a new Rabbinic notable. The esteemed position was offered to the young, but highly competent scholar by the name of Elazar ben Azariah, aged 17 years [2]. In an outburst of deep concern regarding the youthful appearance of her husband, the wife of Rabbi Elazar ben Azariah cried, “You have no white hair” [3]. The day that Rabban Gamliel was unseated was the same day that Rabbi Elazar ben Azariah reached his 18th birthday, and on that day 18 rows of his hair inexplicably turned white, an ample amount to mature the appearance of the young scholar [2, 3].

The Rambam, a highly regarded medieval rabbinic figure and physician, offered a medical explanation for this overnight hair whitening phenomenon. For both day and night Rabbi Elazar ben Azariah was enthralled by the texts of Torah and scrupulously engaged in its study. Due to the continuous exertion of his bodily strength in his vigorous daily activity, he appeared a man of 70, even though, chronologically he was much younger [3].

Current medical literature suggests that hair whitening is a natural consequence of the aging process, yet can be aggravated in a sudden manner by certain medical syndromes. Under normal circumstances, as the years pass, the bulb from which a hair grows slowly decreases production of melanin, the pigment that gives hair its color. This diminishing production of melanin causes hair to become lighter in color and eventually to appear gray or white [4].

On the other hand premature graying is coupled with

a host of different factors including poor nutrition, thyroid problems, anemia, certain medications, AIDS, and some cancer treatments. In addition, premature graying can sometimes be a reflection of inherited genes [4]. Vitiligo, which tends to run in families, is a condition in which white patches develop on the skin and can affect any location on the body. It is caused by a loss of pigment in the skin due to the dysfunction of melanocytes, the cells that produce pigment [5]. Linked to this cosmetic defect is early whitening of the hair, observed in patients with the disorder [2].

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Although vitiligo has been recognized for over 2000 years and is referenced in Buddhism, Islam, and perhaps Judaism as the potential cause for the depigmentation referred to as *tzaraat*, the factors that cause the onset of vitiligo have not, as yet, been proven scientifically [5, 6]. However, researchers speculate that vitiligo can be caused by either one of or a combination of three factors. The most popular position is that vitiligo is an autoimmune disease, in which the immune system acts aversely toward the body’s own tissues and organs. Other theories propose the role of inherited genes as well as just a single event, such as sunburn or emotional distress [5].

Although the literature on vitiligo explains premature whitening of hair, it does not explain the overnight hair whitening phenomenon. However, a disorder known as alopecia areata may provide a more enlightening explanation, particularly in individuals who have “salt and pepper hair,” a mixture

of pigmented and non-pigmented hair [7]. Alopecia areata is a condition in which hair is lost from some or all parts of the body. This condition typically affects the scalp, and since bald spots appear in its early stages, it is sometimes referred to as “spot baldness” [8]. Pigmented hairs are usually lost initially, while the non-pigmented hairs are retained. Thus, strands of hair which seem to have suddenly turned white were, in reality, white all along, and were simply unnoticed among the pigmented hairs. This “illusion” can make it appear as though the affected individual has gone white overnight. As to the cause of the condition, presumably it can be triggered by hereditary factors in conjunction with a sudden shock [7].

Still, despite their plausibility, it is difficult to draw on the aforementioned conditions to adequately explain the

overnight hair whitening of an individual’s full head of hair or beard. The historical accuracy of popular anecdotes such as the overnight hair whitening of Sir Thomas More’s beard the night before his execution should be approached with caution as it is medically impossible for grown pigmented hair to transform into non-pigmented hair [2, 7]. Vitiligo and alopecia areata, which cause hair whitening to occur much more rapidly than natural whitening processes, seem only to account for the rapid and progressive hair whitening that occurs over a prolonged period of time rather than over one night [2]. Thus, the sudden overnight hair whitening of Rabbi Elazar ben Azariah was not likely attributable to any specific medical condition, but rather as traditionally accepted, to a miraculous event.

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