

## Are We Ashamed of Our Skin Tone?

We are living in a society where fair skin tone is considered as standard of beauty, power and high social status. Fair-complexioned people are privileged and respected members of the society. They are being offered better job opportunities over others inspite of possessing comparatively less skills for the said job. Moreover, they have prospects of getting good marriage proposals in a society where they are mostly arranged by parents. Those having darker skin tone wait for good proposals for long. Darker skin tone is not only looked down by people but also by the parents and siblings. Media also reinforces the desire for lighter skin tone by offering creams for this purpose. Many girls had suffered cosmetically at the hands of these advertisements by using sub- standard creams. Celebrities and social media influencers are now days trending the use of I/V glutathione injections for lighter skin tone. This is being practiced not only by trained dermatologists but also by the so-called cosmetologists who have attended few workshops on it.

This trend of skin whitening has been practiced from ancient times in Indo -Pak where children were bathed with lentils, milk and almonds with oil massage. High school girls enter into practice of bleaching facial hairs and using skin whitening creams. Bleaching agents like ammonia and hydrogen peroxide is being used either at home or in salon [1, 2].

Glutathione is an antioxidant which in reduced form is required not only to maintain the stability of cell membranes but it also counters reactive oxygen species produced in our body, reduces oxidative stress and protect cells from damage. It also plays crucial role in detoxifying the liver by binding to toxins and aiding in their elimination. It helps to boost immune system that leads to an improved overall health, which may be reflected in the skin's appearance. It helps in improving skin tone by inhibiting the enzyme tyrosinase, which is involved in the production of melanin, the pigment responsible for skin color. Another mechanism is stimulation of pheomelanin pathway which gives some degree of lesser shades of skin tone. This leads to a gradual lightening of the skin tone [3]. It helps to reduce signs of aging, such as wrinkles and fine lines, leading to youthful appearance. Common systemic skin-lightening agents used in IV injects are glutathione, tranexamic acid, vitamin C and agents such as pine bark extract, astaxanthin, hyaluronic acid, and epidermal growth factor [4]. However, glutathione injections intravenously may have several side effects. I/V injections may lead to serious allergic reactions which may be fatal in some cases. Rashes on skin may occur which may further erupt the skin. Loss or greying of hairs may occur in some cases. Long term use may pose extra metabolic load on kidneys and liver especially in the individuals with pre- existing subclinical conditions leading to the complications and organ damage. There is need for maintenance therapy to maintain the fair skin tone as it may fade away with the stop of injections, which is not only costly but also make the individuals psychologically dependent. The temporary nature of IV glutathione treatment creates a cycle of dependency in most cases, where they feel compelled to continually undergo the procedure to maintain their desired appearance. This reliance on external measures for self-worth can contribute to a negative self-perception and a lack of self-acceptance. It is crucial for individuals to critically examine their motivations and seek professional guidance to help navigate these complex emotions and foster a healthier relationship with one's appearance and self-esteem [1].

Study conducted by Zubair et al. [5] in Multan, Pakistan compared two groups with one given I/V injections of glutathione for 6 weeks (two injections per week) and others the placebo. In group A, 8 patients experienced deranged liver functions and one developed anaphylactic shock during the study from I/V group and had to be excluded from the study. Out of 16 patients in the I/V group, all developed adverse reactions at the end and were not able to maintain fair skin tone after stop of treatment.

Glutathione therapy offers several advantages, particularly in skin lightening and overall skin health due to its antioxidant properties. However, these benefits come with potential side effects and risks, particularly when used without proper medical supervision. The decision to undergo glutathione therapy should be made with careful consideration of these factors, ideally under the guidance of a qualified healthcare provider. There is need to counsel the patients to develop self confidence in what and who they are and concentrate on developing skills to develop a useful society rather than only beautifying oneself.

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