

# 670 nm Continuous Wave Diode Laser Array, Revage-670, Low Level Laser Therapy Device for the Treatment of Alopecia Capitis Totalis: Efficacy of a Novel Therapy

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Case report selected from an ongoing prospective study that is evaluating the application of an LLLT device for the treatment of Androgenetic Alopecia.

The objective of this study was to evaluate the effectiveness of the Laser Hair Care Revage-670 laser system for the treatment of Androgenetic Alopecia. This was a prospective, non-controlled study with five male and five female patients of skin types I-VI and ages ranging from 17-56 years (average age of 39 years.) Treatments were performed on the frontal, temporal and vertex areas of the scalp. This case report has been extracted from the full study because of its uniqueness.

A 17-year-old Hispanic female, skin type III, with a history of Alopecia Capitis Totalis for more than four years was entered into the study at the request of her parents because all prior treatment modalities had failed. It was reported that various primary and secondary therapies had been attempted without any positive results. These included topical corticosteroids, 5% Minoxidil, triamcinolone injections, oral corticosteroids and contact immunotherapy. Immediately prior to the commencement of the LLLT, the patient was started on L-Tyrosine 2500mg, QD and 5% minoxidil lotion B.I.D. The patient received two treatments per week for 22 weeks, each session was 20 minutes in duration. Standard digital photography was used to document the progress. A pre-treatment photograph was taken prior to the first therapy session and 44<sup>th</sup> treatment session. A laser helmet containing 30, 4mw diode lasers fixed into a rotating fixture that effectively delivered 14.4 J/cm<sup>2</sup> of energy

during the 20-minute session, is lowered over the entire scalp. There is no discernible sensation throughout the therapy, which serves to increase compliancy by patients.

## PRIMARY RESPONSE

By the 13<sup>th</sup> treatment, dark terminal hairs had begun to perforate the epidermis. This was determined to be anagen growth primarily in the temporal and vertex areas. There was no growth observed in the frontal area. Treatments continued concomitantly with minoxidil and L-Tyrosine. A photograph after the 44<sup>th</sup> treatment demonstrates the remarkable growth of terminal hairs in the temporal and vertex areas.

## SECONDARY RESPONSE

As the therapy sessions progressed, a quantitative analysis was performed. A technician who is experienced with hair counting techniques performed this manually. The Revage-670 laser therapy induced the growth of 672 terminal hairs where none had existed previously.

## CONCLUSION

This result suggested that the emerging technology of Low Level Laser Therapy may play a potentially significant role in the physician's armamentarium of therapies for the disease Alopecia Areata. Based upon this case, a randomized controlled double-blind multi-center study would be appropriate.



Before Treatment



After 44th Treatment