

Minimally invasive bipolar fractional radiofrequency treatment upregulates anti-senescence pathways.

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Public Summary:

BACKGROUND: The sirtuin gene family has been implicated in various anti-senescence pathways. Its connection, if any, with the skin wound healing response has yet to be elucidated. OBJECTIVE: The goal of our study was to better understand the effects of FRF treatment on the sirtuin anti-senescence pathway in skin. METHODS: Human abdominal skin was treated with FRF, and then harvested at 0, 2, 14, and 28 days post-treatment to assess for temporal changes in gene expression levels. RESULTS: Decreased levels of SIRT1, 3, 5, and 7 were observed immediately post-FRF treatment. By Day 2, SIRT1, 6, and 7 expressions increased 50-100%. SIRT6 and 7 expression continued to increase through Day 28. Expression levels of apoptosis genes FoxO3 and p53 decreased, while Bax levels increased by Day 28. CONCLUSIONS: Our results raise the possibility that sirtuin activity may be used as an accurate corollary to clinical improvement in skin quality

Scientific Abstract:

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