CAN RED LIGHT THERAPY IMPROVE WRINKLES AND SIGNS OF AGING?

STUDY TITLE: *Photobiomodulation Reduces Periocular Wrinkle Volume by 30%: A Randomized Controlled Trial*

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STUDY DESIGN AND STATS:

YEAR/PUBLICATION: 2023
DESIGN: split-face randomized controlled trial (Level of Evidence II)
PARTICIPANTS: 137 women aged 40 to 65 years old, with moderate signs of aging
- Fitzpatrick scale II-IV and Glogau photoaging scale II-IV
- Only 83 women completed the trial

TREATMENT: 10 sessions over 4 weeks
- One side of their face received red LED & the opposite side received amber LED
- 660nm wavelength for red LED & 590nm wavelength for amber LED
- Participants came in 2-3x a week for 10-minute sessions

MEASUREMENTS: outcomes were measured using image technology and determined based on wrinkle volume, skin hydration, skin elasticity, and quality of life

KEY FINDINGS:

- Periocular wrinkle reduction showed significant improvement, both wavelengths produced similar improvements
  - Red LED: 31.6% reduction in wrinkle volume
  - Amber LED: 29.9% reduction in wrinkle volume
- Red and amber LED reduced wrinkle volume by approximately 30% overall after only 4 weeks
- Limitations to keep in mind
  - 40% of participants dropped out of study which affected the reliability of results
  - Elasticity data was incomplete, they only had usable data for half of the participants
  - Left side of faces may have more photoaging & wrinkling from driving which would compromise the split-faced benefit of the study
- LED should be used as an adjunctive treatment, not a primary modality for anti-aging

CATEGORY IMPROVEMENT	RED 660nm	AMBER 560nm
Wrinkle volume	31.6%	29.9%
Skin hydration	None	None
Skin elasticity	None	None
Quality of life	Yes	Yes