

Raynaud's Phenomenon

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Low level laser therapy for treatment of primary and secondary Raynaud's phenomenon.

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BACKGROUND: We recently performed a pilot study which suggested that clinical and thermographic improvements occurred in patients with primary and secondary Raynaud's phenomenon (RP) following treatment with low level laser irradiation (LLLI). In view of these findings, we have proceeded with a double blind, placebo-controlled study.

METHODS: Forty seven patients suffering from primary or secondary RP were randomly assigned in a double-blind manner to receive either 10 sessions of distant LLLI (16 f, 8 m, median age 45 years) or placebo irradiation (21 f, 2 m, median age 46 years) during winter months. The attack frequency of RP was measured by a diary count; its severity was assessed by means of visual analogue scale. Response to cold challenge test before and after LLL or placebo treatment was assessed by infrared thermography.

RESULT: Overall a significant reduction of the frequency as well as the severity of RP in patients with either LLLI (frequency $p < 0.0001$, severity $p < 0.0001$) or placebo treatment (frequency $p < 0.0001$, severity $p = 0.02$) was found, but patients in the LLLI group exhibited a statistically more significant improvement of the frequency at 6 weeks $p = 0.007$ and 3 months $p = 0.02$ and the severity $p = 0.02$, $p = 0.04$ of RP.

Thermographic response to cold challenge improved only in patients treated with LLL but not in those treated with placebo. **CONCLUSION:** LLLI significantly lowers the frequency and severity of Raynaud's attacks in patients with primary and secondary RP. Since this therapeutic modality is a safe, and non-invasive treatment, it might be considered as an alternative to existing therapeutic regimes.

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Low level laser treatment of primary and secondary Raynaud's phenomenon.

Al Awami M, Schillinger M, Gschwandtner M E et al.

This pilot study was performed to evaluate the efficacy of LLLT as a new non-drug non-invasive treatment for patients with primary and secondary Raynaud's phenomenon Forty patients (29 female, 11 male, mean age 51 years) with active primary (28%) and

secondary(72%)Raynaud's phenomenon received 10 sessions of LLLT distant irradiation during winter months. Assessment of subjective and objective parameters was performed at baseline, one week after the last session and three months later. Variations of subjective parameters as number of daily acute episodes and severity of discomfort were assessed by a coloured visual analogue scale. A standardised cold challenge test using computed thermography of continuous temperature recordings by means of infrared telethermography was used to assess the digital blood flow. A significant improvement was noticed clinically and thermographically after 6 weeks and 3 months, respectively.

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Double-blind, randomised, placebo controlled low level laser therapy study in patients with primary Raynaud's phenomenon.

Hirschl M, Katzenschlager R, Ammer K et al.

No causal treatment of primary Raynaud's phenomenon is available due to its unclear aetiology. Low level laser therapy (LLLT) is applied in a multitude of medical conditions often without sufficient evidence of efficacy and established mechanisms. To assess the effect of this therapy in patients with primary Raynaud's phenomenon a randomised, double blind, placebo controlled cross over study was designed.: Absolute and relative frequency and intensity of vasospastic attacks during three weeks of either LLLT or placebo therapy and results of infrared thermography before onset and at the end of both therapy sequences were evaluated in 15 patients with primary Raynaud's phenomenon. **RESULTS:** Frequency of Raynaud's attacks was not significantly affected by low level laser therapy. Compared to placebo a significantly lower intensity of attacks during laser irradiation was observed, but no transfer effect occurred. Additionally the mean temperature gradient after cold exposure was reduced after laser irradiation, while the number of fingers showing prolonged rewarming was unaffected. Though further studies are necessary to confirm these results we could demonstrate for the first time in a double blind placebo controlled clinical trial that low laser therapy is a potential candidate for an effective therapy of Raynaud's phenomenon, although effects seem to be of short duration.