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## The role of trace elements in psoriatic patients undergoing balneotherapy with Dead Sea bath salt.

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**BACKGROUND:** A beneficial effect was observed in patients with psoriasis vulgaris following balneotherapy with Dead Sea bath salt.

**OBJECTIVES:** To evaluate the possible role of trace elements in the effectiveness of balneotherapy. **METHODS:** Serum levels of 11 trace elements were analyzed in 23 patients with psoriasis vulgaris who participated in a double-blind controlled study of balneotherapy with either Dead Sea bath salt (12 patients) or common salt (11 patients). Thirteen healthy volunteers served as controls.

**RESULTS:** The mean pre-treatment serum levels of boron, cadmium, lithium and rubidium were significantly lower in patients compared to controls, whereas the mean pre-treatment serum level of manganese was significantly higher in patients compared to controls. Balneotherapy with Dead Sea bath salt resulted in a significant decrease ( $P = 0.0051$ ) in the mean serum level of manganese from  $0.10 \pm 0.05$  mol/L to  $0.05 \pm 0.02$  mumol/L. The mean reduction in the serum level of manganese differed significantly ( $P = 0.002$ ) between responders (% Psoriasis Area and Severity Index score reduction  $\geq 25$ ) and non-responders (% PASI score reduction  $< 25$ ). Following balneotherapy with Dead Sea bath salt the mean serum level of lithium decreased in responders by  $0.01 \pm 0.02$  mumol/L, whereas its level in non-responders increased by  $0.03 \pm 0.03$  mumol/L. ( $P = 0.015$ ).

**CONCLUSIONS:** Manganese and lithium may play a role in the effectiveness of balneotherapy with Dead Sea bath salt for psoriasis.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

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