

2023 Jan 28.

doi: 10.1007/s00484-023-02433-3. Online ahead of print.

The effects of immersion in 42°C radon, sodium, calcium, bicarbonate content thermal-mineral water on chronic low back pain. Controlled, follow-up study

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1. PMID: 36708381
2. DOI: [10.1007/s00484-023-02433-3](https://doi.org/10.1007/s00484-023-02433-3)

Abstract

In our minimized follow-up trial with 137 participants with chronic low back pain, one group of participants received regular outpatient care, and the other group received balneotherapy by immersion in 42°C thermal-mineral water in addition to regular outpatient care on 15 occasions for 3 weeks. Pain on movement and at rest on the 0-100 mm visual analogue scale (VAS), Oswestry index, the number of participants evaluating the symptoms clinically acceptable (Patient Acceptable Symptom State, PASS) and the EuroQol-5D-5L (EQ-5D-5L) quality of life questionnaire were assessed at basal time (at week 0) and after balneotherapy (at weeks 3 and 12). The VAS pain scores, the Oswestry index, the EQ-5D-5L index and the EQ-VAS significantly improved in the balneotherapy group after treatment at week 3 ($p < 0.001$) and week 12 ($p < 0.001$) compared to baseline, with a significant between group difference at week 3 ($p < 0.001$) and week 12 ($p < 0.001$). The pain VAS score on movement was 66.82 ± 11.48 , 26.69 ± 21.49 , and 20.09 ± 23.29 in the balneotherapy group, and 63.67 ± 14.77 , 67.35 ± 15.44 , and 70.23 ± 18.26 in the control group at the consecutive visits. The PASS increased in both groups at week 3 and week 12 compared to the baseline, with a significant between-group difference at week 3 and week 12 for the balneotherapy group. Our results suggest the therapeutic efficacy of immersion in 42°C thermal mineral water on chronic low back pain. ClinicalTrials.gov Identifier: [NCT05342051](https://clinicaltrials.gov/ct2/show/study/NCT05342051).