

MOTOR PERFORMANCE IN CHRONIC LOW BACK PAIN: IS THERE AN INFLUENCE OF PAIN-RELATED COGNITIONS?

D. Kusters MSc¹, prof. dr. M.M.R. Vollenbroek-Hutten^{1,2}, prof. dr. H.J. Hermens^{1,2}

¹ Roessingh Research and Development, Enschede, The Netherlands ² Faculty of Electrical Engineering, Mathematics & Informatics, University of Twente, Enschede, The Netherlands

INSTITUTE FOR RESEARCH IN REHABILITATION MEDICINE AND TECHNOLOGY

GOAL

Chronic low back pain is often accompanied by an abnormal motor performance. The aim of the present study is to get insight in the contribution of both pain and pain-related cognitions to general motor task performance in chronic low back pain (CLBP).

PATIENTS

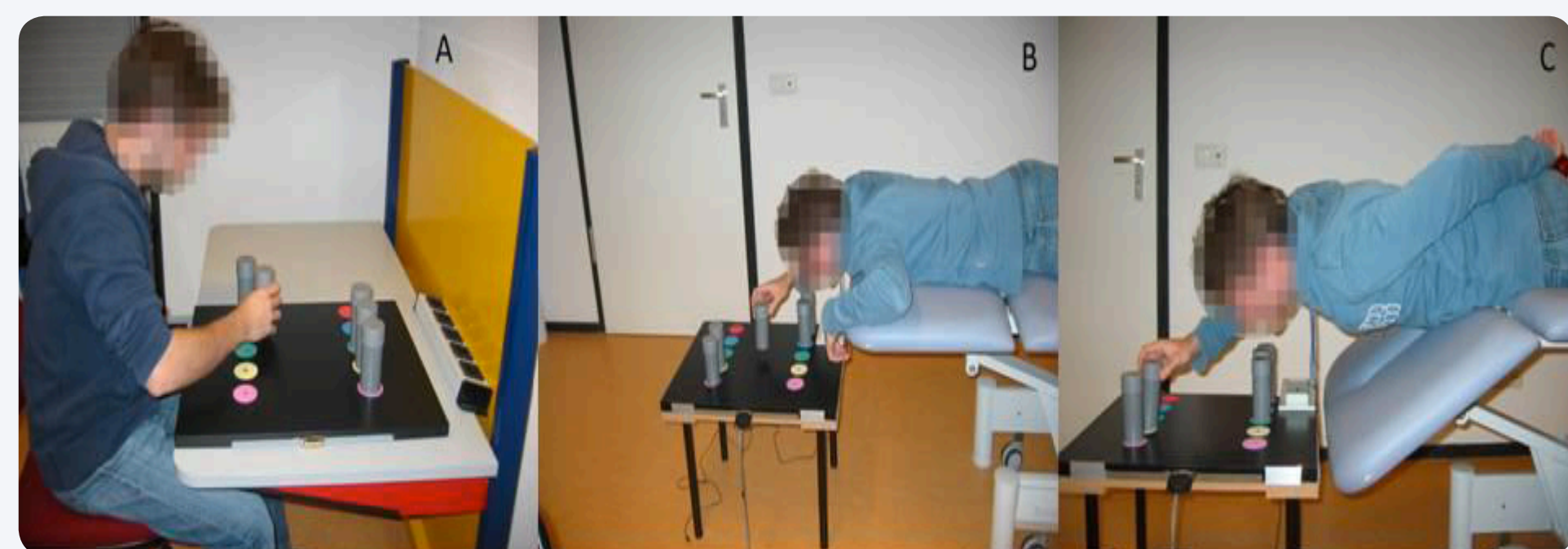
13 chronic low back pain patients and 15 subjects without back complaints

METHODS

Subjects performed a hand-function task in 3 conditions: sitting, lying prone (lying) and lying prone without trunk support (provoking).

The last condition was assumed to provoke pain-related cognitions. Successful provocation was expressed as pain expectancy prior to performance being at least 1 NRS point higher than actual pain experience during performance (scored on 0-10 NRS).

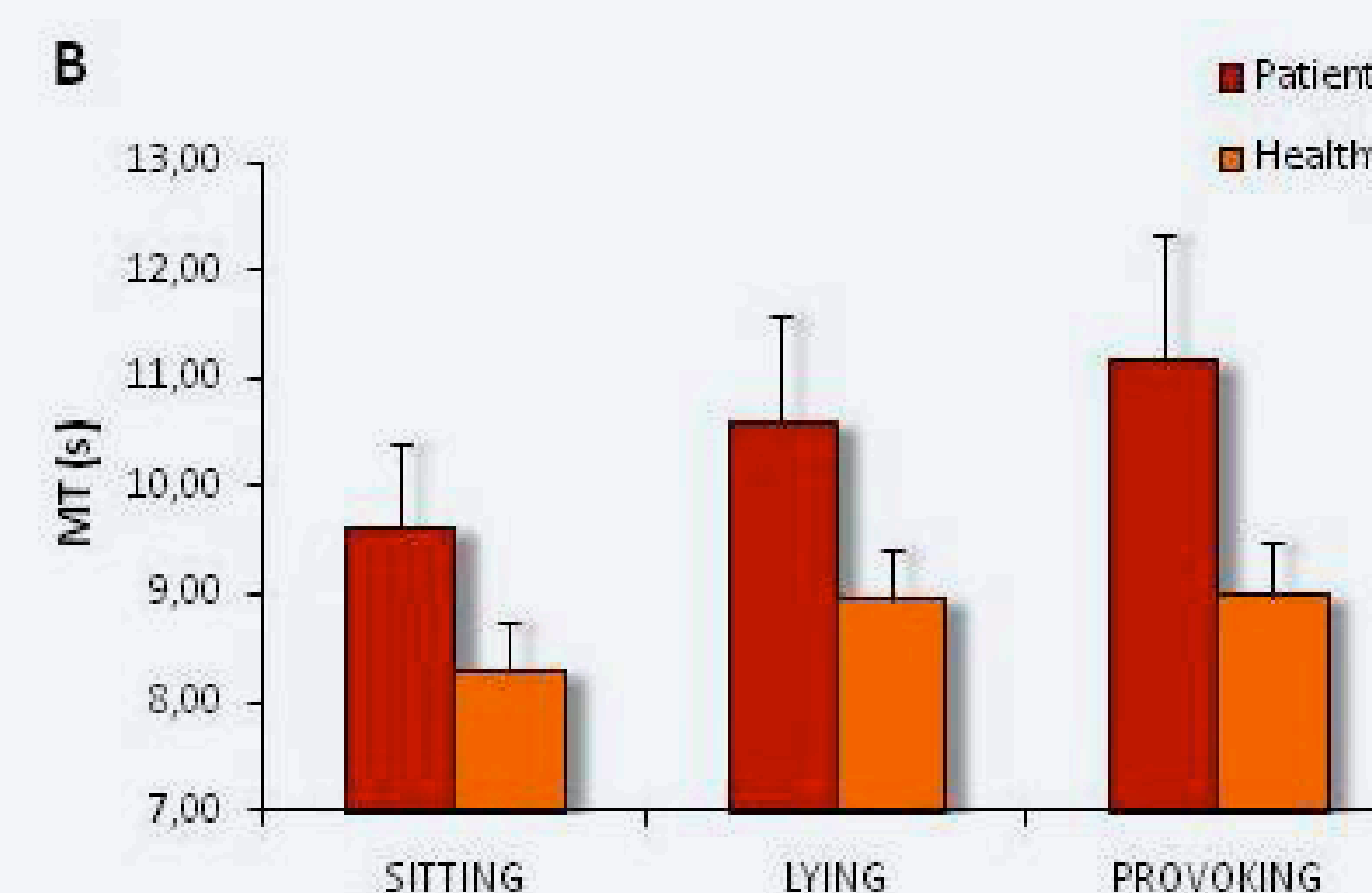
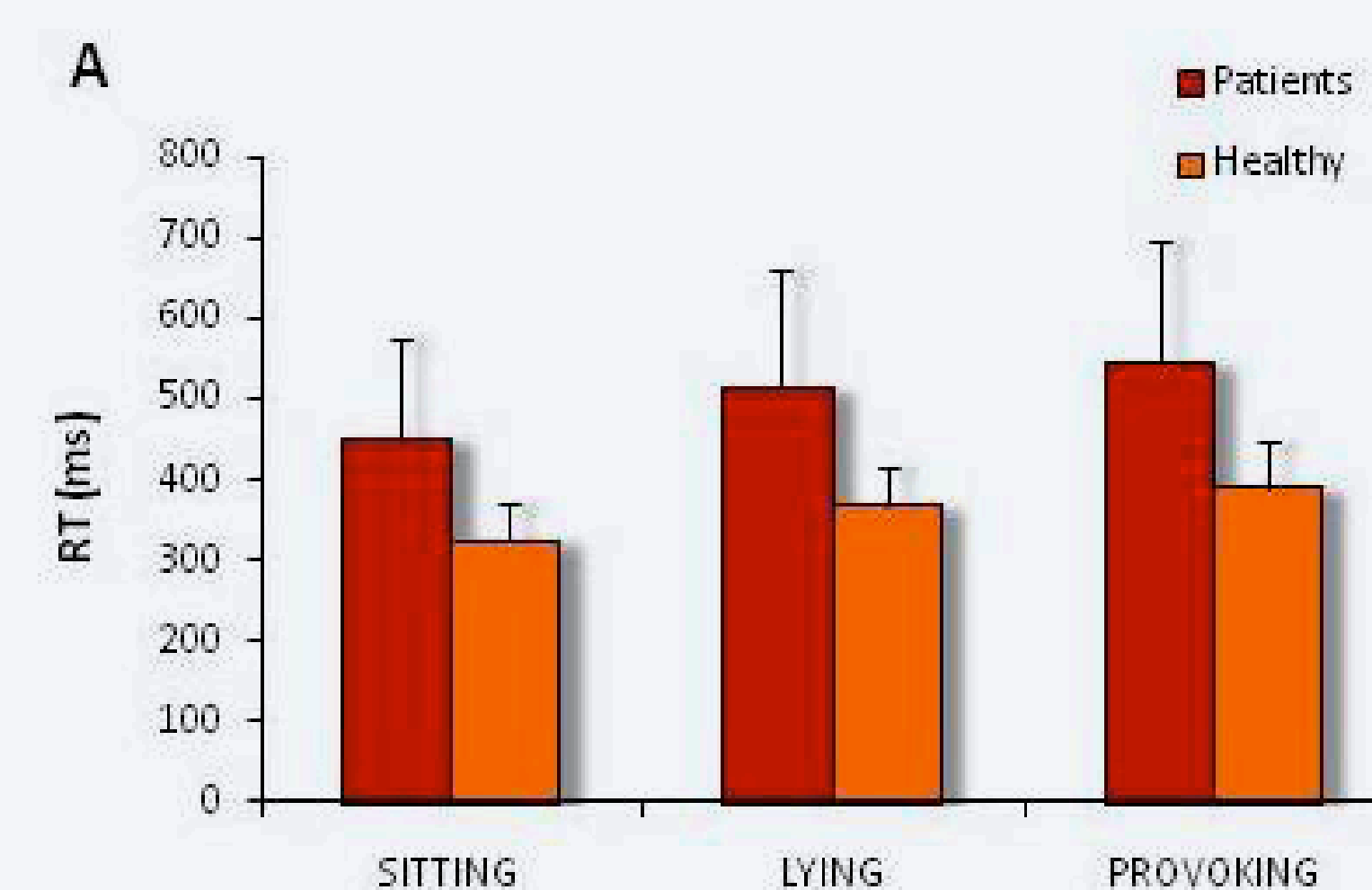
Subjects' performance was expressed in reaction time (RT) and movement time (MT).



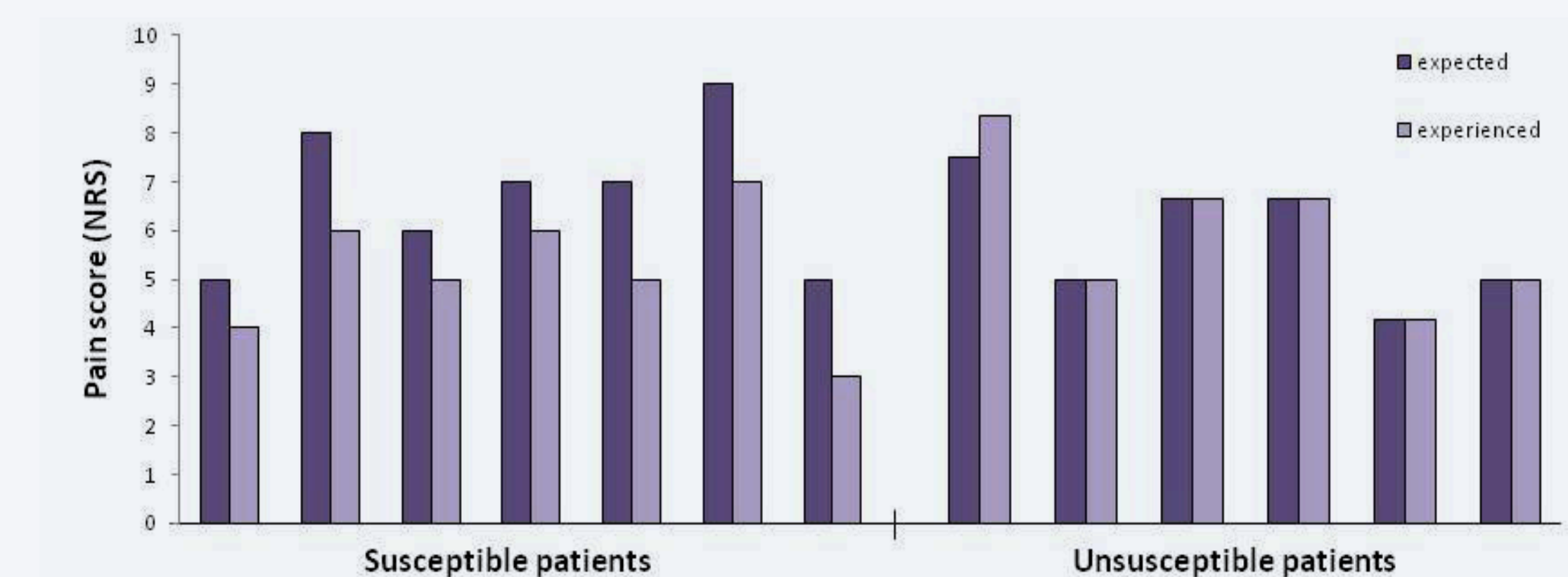
A subject performing the task in the three subsequent conditions: A. Sitting, B. Lying and C. Provoking

RESULTS

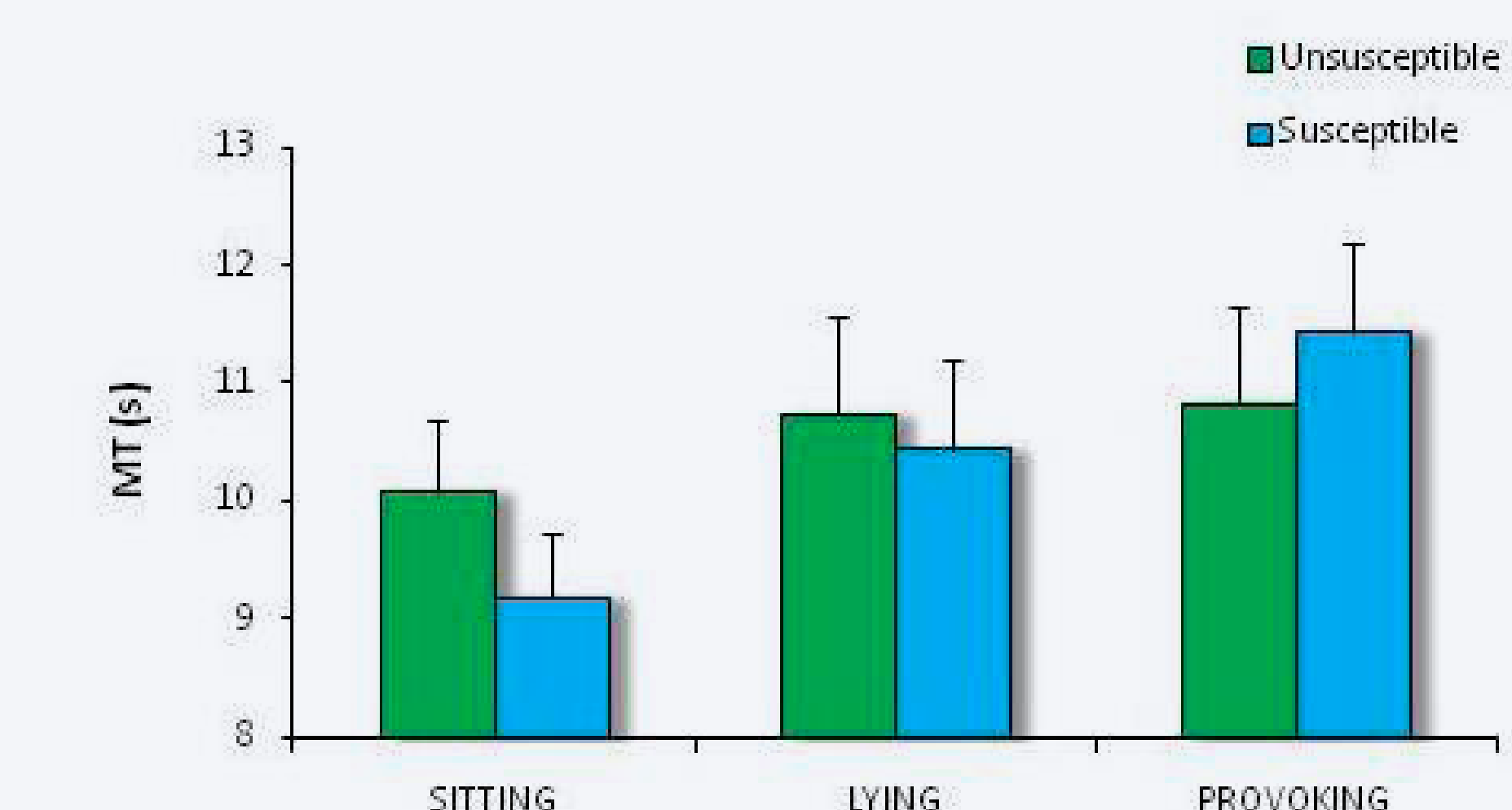
Performance data showed that patients had slower RT (Fig A) and MT (Fig B) throughout all conditions compared to healthy subjects. The difference was most apparent in the provoking condition.



Patients' NRS data revealed that provocation was successful in 7 patients (susceptible) and not in 6 patients (unsusceptible). On average experienced pain was comparable between groups.



Comparison of patients subgroups showed that susceptible patients performed worse throughout conditions than patients that were unsusceptible to provocation. This only applied to MT, no differences were apparent with respect to RT.



CONCLUSIONS

- CLBP patients in general have worse motor task performance compared to healthy subjects
- Provoking pain-related cognitions (i.e. false pain expectation) further worsens performance
- Both in future studies and in clinical practice it is advisable to recognize the importance of patients' (pain) expectations with regard to task performance.

