


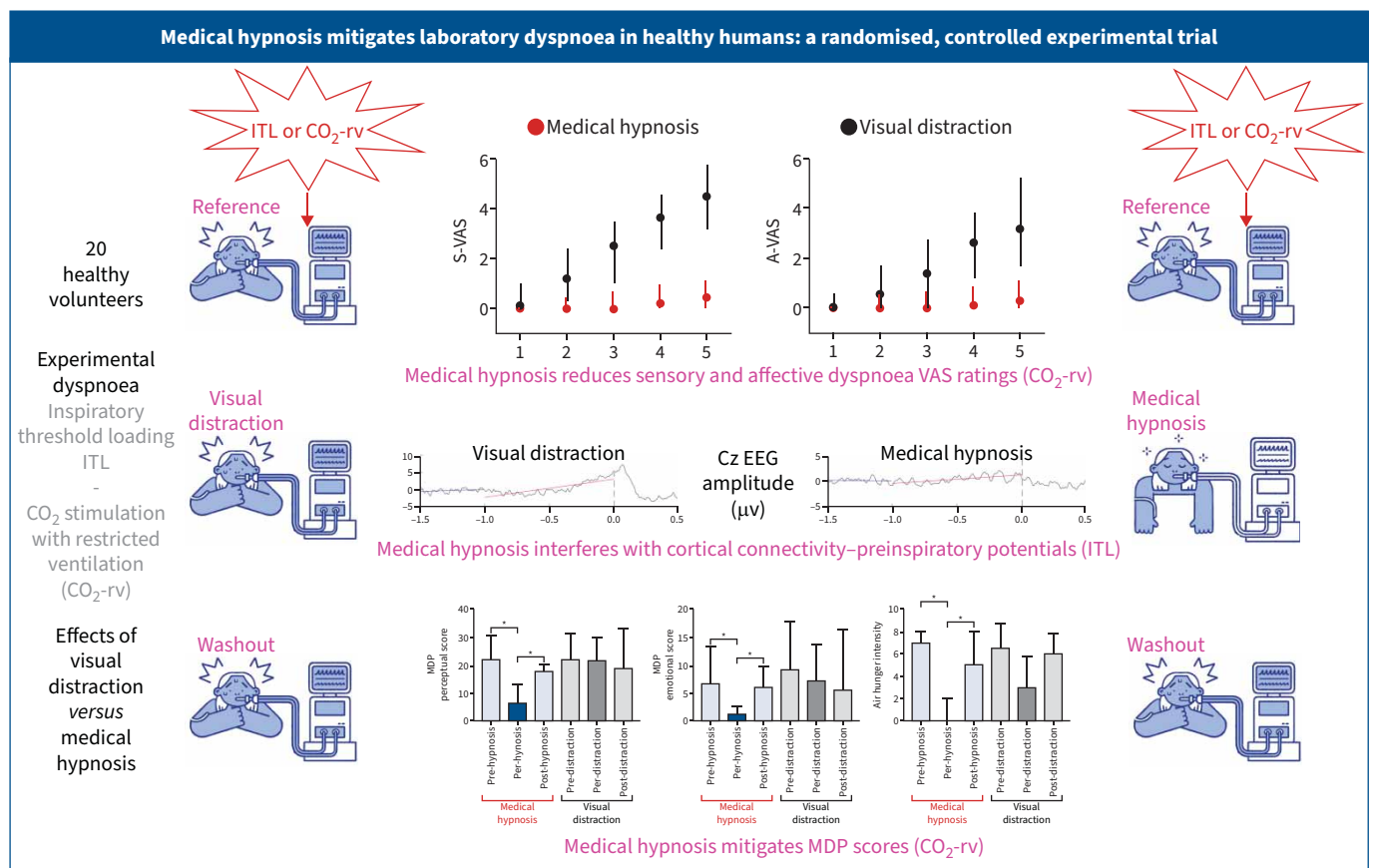




# Medical hypnosis mitigates laboratory dyspnoea in healthy humans: a randomised, controlled experimental trial




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**GRAPHICAL ABSTRACT** Summary of the study. ITL: inspiratory threshold loading; CO<sub>2</sub>-rv: carbon dioxide stimulation with restriction of the reflex ventilatory response; VAS: visual analogue scale; S-VAS: sensory dyspnoea VAS; A-VAS: affective dyspnoea VAS; EEG: electroencephalogram; MDP: Multidimensional Dyspnea Profile. \*: p<0.05.



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Shareable abstract (@ERSpublications)

**Medical hypnosis is capable of spectacularly attenuating the affective and sensory components of dyspnoea by interfering with both breathing drive and cortical processing. This provides a solid experimental basis for clinical studies.** <https://bit.ly/3R5F6jn>

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## Abstract

**Question** Dyspnoea persisting despite treatments of underlying causes requires symptomatic approaches. Medical hypnosis could provide relief without the untoward effects of pharmacological approaches. We addressed this question through experimentally induced dyspnoea in healthy humans (inspiratory threshold loading (excessive inspiratory effort) and carbon dioxide stimulation (air hunger)).

**Material and methods** 20 volunteers (10 women, aged 21–40 years) were studied on four separate days. The order of the visits was randomised in two steps: firstly, the “inspiratory threshold loading first” *versus* “carbon dioxide first” group (n=10 in each group); secondly, the “medical hypnosis first” *versus* “visual distraction first” subgroup (n=5 in each subgroup). Each visit comprised three 5-min periods (reference, intervention, washout) during which participants used visual analogue scales (VAS) to rate the sensory and affective dimensions of dyspnoea, and after which they completed the Multidimensional Dyspnea Profile.

**Results** Medical hypnosis reduced both dimensions of dyspnoea significantly more than visual distraction (inspiratory threshold loading: sensory reduction after 5 min 34% of full VAS *versus* 8% (p=0.0042), affective reduction 17.6% *versus* 2.4% (p=0.044); carbon dioxide: sensory reduction after 5 min 36.9% *versus* 3% (p=0.0015), affective reduction 29.1% *versus* 8.7% (p=0.0023)). The Multidimensional Dyspnea Profile showed more marked sensory effects during inspiratory threshold loading and more marked affective effects during carbon dioxide stimulation.

**Answer to the question** Medical hypnosis was more effective than visual distraction at attenuating the sensory and affective dimensions of experimentally induced dyspnoea. This provides a strong rationale for clinical studies of hypnosis in persistent dyspnoea patients.

