

Project title: Optimism, the natural placebo: Inducing optimism to maximize treatment outcomes in chronic pain patients.

Project leader: Prof. Dr. Madelon L. Peters

Function: Professor in Experimental Health Psychology

Collaborators: Dr. Marjolein M. Hanssen

Proposal (250 words):

Introduction: Chronic pain is a serious health threat, impacting heavily on peoples' lives. Fear of pain and avoidance were identified as important factors for pain-related disability. Although exposure treatments challenging fear-avoidance patterns have proven successful, a subset of patients is resistant to treatment or experiences relapse. In the last decades, evidence has accumulated that optimism protects against pain-related disability. Moreover, recent work suggests that positive emotions/cognitions might enhance short- and long-term exposure effects. **Hypothesis and Objectives:** This project aims to further unravel 'if', 'when' and 'how' optimism enhances extinction of pain-related fear. The key objectives are to systematically investigate: 1. causal effects of optimism on distinct extinction phases and 2. the role of underlying mechanisms through which optimism might enhance extinction processes. **Setting and Methods:** First, three experiments are carried out in healthy participants to study the influence of optimism on 'extinction', 'generalization of extinction' and 'post-extinction retrieval of fear' with a voluntary movement paradigm. Second, the influence of an optimism intervention on short- and long term treatment effects are experimentally investigated using a replicated single case experimental design in chronic pain patients receiving an (optimism-enriched) exposure treatment. A well-validated writing- and visualization exercise (Best Possible Self) will be used to induce optimism in all studies. **Impact:** The results will provide more insight in the causal effect and underlying mechanism of optimism on fear extinction. The project will contribute to a novel/exciting research field. It might stimulate creating new avenues in the treatment of chronic pain based on optimism.

Requirements candidate: Highly motivated student with good English communication skills and proactive and resolute attitude.

Keywords: optimism – fear of movement-related pain – fear extinction - best possible self – exposure treatment – (chronic) pain

Top 5 selected publications:

1. Gatchel, R. J., Peng, Y. B., Peters, M. L., Fuchs, P. N., & Turk, D. C. (2007). The biopsychosocial approach to chronic pain: scientific advances and future directions. *Psychological Bulletin*, 133(4), 581-624. (Impact Factor: 16.793; Number of Citations WoS: 716)
2. Hanssen, M.M., Peters, M. L., Vlaeyen, J.W.S., Meevissen, Y., & Vancleef, L. M. G. (2013). Optimism lowers pain: Evidence of the causal status and underlying mechanisms. *Pain*, 154(1), 53-58. (Impact Factor: 5.445; Number of Citations WoS: 53)
3. Meevissen, Y. M. C., Peters, M. L., & Alberts, H. J. E. M. (2011). Become more optimistic by imagining a best possible self: Effects of a two week intervention. *Journal of behavior therapy and experimental psychiatry*, 42(3), 371-378. (Impact Factor: 2.517; Number of Citations WoS: 72)
4. Hanssen, M. M., Vancleef, L. M. G., Vlaeyen, J.W.S, & Peters, M. L. (2014). More optimism, less pain! The influence of generalized pain-specific expectations on experienced cold-pressor pain. *Journal of Behavioral Medicine*, 37(1), 47-58. (Impact Factor: 2.500; Number of Citations WoS: 16)
5. Geschwind, N., Meulders, M., Peters, M. L., Vlaeyen, J. W. & Meulders, A. (2015). Can experimentally induced positive affect attenuate generalization of fear of movement-related pain? *Journal of Pain*, 16(3), 258-269. (Impact Factor: 4.519; Number of Citations WoS: 11)