**Supplementary Material**

**Sensitivity Analyses**

**Methods S1**

As an additional manipulation check, a priori planned sensitivity analyses on the main analyses were conducted without data from participants that indicated an NRS < 1 on the sensations of interest during the baseline stimuli and separately during the SAT (e.g. NRSitch < 1 for itch stimulus and NRSpain < 1 for pain stimulus). A similar sensitivity analysis was conducted to examine influence of “contaminating sensations” during the SAT only, defined as NRSpain> 1 for an itch stimulus or NRSitch > 1 for a pain stimulus.

**Results S1**

Results of the sensitivity analyses excluding data of participants with unsuccessful inductions during baseline showed no significant main and interaction effects, meaning that the interference effect by pain and itch disappeared, *F*(2, 29) = 1.57, *p = .*225, *ηp²* = .098 . Analysis with only the data of participants with a pure pain sensation during the SAT (pain stimulation with NRSitch >1, *n* = 43) and without participants with unsuccessful inductions (*n* = 41) gave the same results as the main analysis.