

Appendix S1

SUPPLEMENTARY MATERIAL

Detailed information on validation of dot-probe task material

For the dot-probe task with pictures, hundreds of pain-related photos, itch-related photographs and neutral skin photographs were taken by the research team. In addition, neutral images and negative copyright free images were taken from the internet with the International Affective Picture System (IAPS) as reference in mind (32). The authors decided to not use the IAPS pictures, as the negative pictures of this set are moderately to highly aversive and rather old-fashioned in their content and quality (e.g. blurry). Furthermore, pictures are from a limited range of categories (e.g. wild and dangerous animals), which did not fit our purposes well. Therefore, new mildly aversive pictures were selected that healthy people could easily relate to (e.g. dirty rubbish bin) to match the itch- and pain-related material that was used best.

Itch- and pain- related and neutral words were derived from different questionnaires (e.g. McGill Pain Questionnaire (33),

Eppendorf Itch Questionnaire (34)), previous attention tasks (35, 36), and by brainstorming. Only somatosensory (e.g. itching, stiff) and associative (e.g. lice, migraine) itch and pain words were included in the selection. Words that had an affective component (e.g. unbearable, tiring) were excluded, because they were often ambiguous in their applicability to itch and pain. The valence of each word and picture was rated on a scale ranging from -5 (very negative) to +5 (very positive), and on applicability to itch and pain, both scales ranging from 1 (not applicable) to 5 (very applicable).

The resulting set of itch- and pain-related words and pictures has been rated moderately on valence and high on applicability to itch (pain) for the itch (pain) stimuli. The resulting set of neutral pictures and words, on the other hand, has been rated close to 0 on the valence scale and had a low rating on applicability to both itch and pain. The resulting set of negative words and pictures has been rated low on applicability to itch and pain and moderately on negativity.