



Optimizing audiovisual itch induction: The role of attention and expectancy

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Optimizing audiovisual itch induction: The role of attention and expectancy

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In this issue of the BJD, Marzell and colleagues¹ show for the first time that the level of itch induced by audiovisual itch stimuli is not inferior to histaminergic itch after dermal priming. New insights into the underlying mechanisms of audiovisual itch induction can further optimize its effectiveness.

The itch-inducing property of audiovisual material has been described previously². Itch contagion may serve a nocifensive function (i.e. signaling potential bodily threat)³, and it probably involves activation of an affective mirror neuron system^{1,4}. Audiovisual itch contagion has been described for both humans and non-human primates, but does not seem effective in rodents⁵. This underlines the role of higher order cognitive processes, of which attention and expectancies will be highlighted below.

Focusing attention on itch cues is evolutionary advantageous because it enables a protective response, e.g., removing a mosquito from your skin. Marzell et al. showed that audiovisual effects on itch are particularly strong after dermal priming (i.e. showing a non-itch-inducing skin-related video). They plausibly state that dermal priming would lead to attention being shifted in a way that it “potentiates mental processes”¹. Priming prioritizes subsequent stimuli presented within the same modality⁶, arguably resulting in facilitation of the audiovisual material (whether somatosensory priming would result in prioritization of somatosensory input remains to be investigated). This focusing was further enhanced because the participants were instructed to report their bodily sensations and emotions. At the same time, showing neutral audiovisual material during the histamine provocation may have distracted participants from the histaminergic itch, similar to the ca. 50% reduction in itch we previously observed during a simple visual task⁷.

Negative expectancies are known powerful itch amplifiers⁸. In the present study, it is not unlikely that placebo iontophoresis induced nocebo effects on itch amplifying the itch-inducing effects of the audiovisual itch induction. Marzell and colleagues’ statement that somatosensory provocations induce anxiety¹ - which plays a key role in nocebo effects⁹ - is consistent with this hypothesis.

From this perspective, it is not surprising that audiovisual stimuli are more effective in patients with chronic itch². The persistent clinical itch of these patients may induce a tendency to be attentive to itch stimuli, to expect itch, and to interpret stimuli in the context of itch^{8,10}.

To conclude, advantages of audiovisual itch induction over histamine iontophoresis are non-invasiveness, more widespread distribution of audiovisual itch (representative of patients’ symptoms), and less contamination by painful sensations¹. Limitations of audiovisual itch include its inability to target specific body locations, as well as less control over induced scratching and onset and duration of induced itch. The effectiveness of the method can be further enhanced by increasing the relevance (e.g., dermal priming), and inducing negative expectations (e.g., informing participants that the audiovisual stimuli induce quite some itch). Audiovisual itch stimuli may even be used as short-lived human model

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3 of widespread chronic itch, e.g., by repetitively combining the presentation of the material together with
4 a unique cue, under ethical conditions. In summary, we agree with Marzell and colleagues¹ that
5 audiovisual itch-material can be very powerful.
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16 **Conflicts of interest**

17 None declared.
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