

# Superior analgesic effect of an active distraction versus pleasant unfamiliar sounds and music: the influence of emotion and cognitive style.

[Villarreal EA](#), [Brattico E](#), [Vase L](#), [Østergaard L](#), [Vuust P](#).

## Source

Center of Functionally Integrative Neuroscience, University of Aarhus, Aarhus, Denmark.

## Abstract

Listening to music has been found to reduce acute and chronic pain. The underlying mechanisms are poorly understood; however, emotion and cognitive mechanisms have been suggested to influence the analgesic effect of music. In this study we investigated the influence of familiarity, emotional and cognitive features, and cognitive style on music-induced analgesia. Forty-eight healthy participants were divided into three groups (empathizers, systemizers and balanced) and received acute pain induced by heat while listening to different sounds. Participants listened to unfamiliar Mozart music rated with high valence and low arousal, unfamiliar environmental sounds with similar valence and arousal as the music, an active distraction task (mental arithmetic) and a control, and rated the pain. Data showed that the active distraction led to significantly less pain than did the music or sounds. Both unfamiliar music and sounds reduced pain significantly when compared to the control condition; however, music was no more effective than sound to reduce pain. Furthermore, we found correlations between pain and emotion ratings. Finally, systemizers reported less pain during the mental arithmetic compared with the other two groups. These findings suggest that familiarity may be key in the influence of the cognitive and emotional mechanisms of music-induced analgesia, and that cognitive styles may influence pain perception.

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