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## The effects of the music listening style on pain reactions and activity of stress-responsive systems: An experimental approach

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**Objective:** Music listening affects pain and stress. Music listening styles (MLS: music empathizers (ME) focus on emotional aspects of music, music systemizers (MS) on structural aspects) might affect pain and stress when listening to different music, depending on gender.

**Method:** 61 healthy male/female ME/MS (age:  $M=24.2$ ,  $SD=3.89$ ) listened to stimuli during a cold pressor test on 3 days (1 condition per day: researcher-selected or participant-selected music, sound of lapping water; random order). Pain intensity and tolerance, subjective stress, heart rate (HR), parameter RMSSD, salivary alpha-amylase (sAA) and cortisol (sCort) were repeatedly measured.

**Results:** Multilevel analyses showed sig. 4-way interactions (MLS, Gender, Condition, Time) for pain intensity ( $p=.001$ ), subjective stress ( $p=.002$ ), HR ( $p<.001$ ), RMSSD ( $p=.01$ ). Post-hoc tests revealed sig. differences for pain intensity and HR. The 4-way interactions were not sig. for sAA or sCort.

**Conclusion:** The study provides new insight into the role of MLS on pain and stress. The MLS can affect pain intensity and HR, depending on gender, and should be considered as a modulator for individualized pain and stress management.

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