

The relaxing effect of tempo on music-aroused heart rate

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Background

Music is frequently used as a means to relax, while its arousing effects are often employed in sports and exercise contexts. Previous work shows that music tempo is one of the most significant determinants of music-related arousal and relaxation effects. However, in the literature on human heart rate, music tempo itself has not yet been studied rigorously on its own.

Aims

The aim was to investigate the link between music tempo and heart rate during passive music listening, adopting an experimental design with tight control over the variables.

Method

Heart rate was measured in silence after which music was provided in a tempo corresponding to the assessed heart rate. Finally, the same stimulus was presented again but music tempo was decreased, increased, or kept stable.

Results

The experiment with heart rate measurements of 32 participants revealed that substantial decreases in music tempo significantly reduced participants' heart rates, while heart rate did not respond to less considerable drops or increases. It was also shown that heart rate significantly increased in the music condition compared to the silent one. The person's gender or music preference did not seem to be of significant importance.

Conclusions

Generally, it is believed that music can induce measurable and reproducible effects on human heart rate, leading to a condition of arousal proportional to the tempo of the music. However, our findings revealed that only substantial decreases in music tempo could account for heart rate reductions, while no link between tempo increase and heart rate was uncovered. As music listening showed to increase heart rate compared to silence, it is suggested that possible effects of tempo increases are regulated by the arousal effect of music itself. These results are a major contribution to the way in which music is used in everyday activities and are valuable in therapeutic and exercise contexts.