

# **Concert attendance reduces stress and improves immune function**

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This research was conducted by **Daisy Fancourt and Aaron Williamon** at the **Royal College of Music and Imperial College London**

## **Summary**

This study was the first to investigate the impact of the arts on health and wellbeing by assessing the effects of attending a live, public concert on hormonal responses. The paper describes how attending such a cultural event can influence endocrine activity and, in particular, reduce biological stress.

## **Stress and relaxation levels were assessed before and after concerts**

Two experiments, four months apart, were conducted in two separate venues where composer Eric Whitacre was performing. Respectively, 49 and 68 participants volunteered to participate. They represented a variety of concert-going backgrounds, experience in music making and familiarity with the music performed. Immediately before and shortly after each concert, participants' saliva samples were analysed for cortisol, cortisone, progesterone and testosterone: hormones involved in biological stress response. Levels of dehydroepiandrosterone (DHEA) were also measured, this is implicated in immune enhancement.

## **Participants exhibited improved stress response and general relaxation effects**

Indicators of a lower stress response – reduced levels of cortisol, cortisone and cortisol/cortisone ratio – were present in both experiments. In the second set of tests, reductions were also noted in the cortisol/DHEA ratio as well as

progesterone levels, signifying a wider change in hormonal response and improvement in immune function.

## There is a common biological response to concert attendance

An increase in the absolute levels of DHEA among men and decrease among women may suggest that women experience greater relaxation than men when attending concerts. However, no other results were influenced by differences in age, gender, musical background or familiarity with the music performed: emphasising a collective reaction. The authors suggest that further research should explore how these effects vary in participants attending other cultural events, exposed to different types of music and assessed under controlled conditions.

This summary is by **Anna Kolliakou, King's Knowledge Exchange Associate**

### Keywords

**music** **UK** **experiment** **stress** **concerts** **immune**

Title	Attending a concert reduces glucocorticoids, progesterone and the cortisol/DHEA ratio
Author(s)	Fancourt, D & Williamon, A.
Publication date	2016
Source	Public Health, Vol 132, pp 101-104
Link	<a href="http://www.publichealthjnl.com/article/S0033-3506%2815%2900499-0/abstract?cc=y=">http://www.publichealthjnl.com/article/S0033-3506%2815%2900499-0/abstract?cc=y=</a>
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By **Culture Case** | 7 July 2016 | **Health and wellbeing impacts of arts and culture** |



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