

# Stress in the orchestra: Mood plays a part

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Even professional orchestra musicians suffer from particular stress on the day of the concert and release more cortisol. For the first time it has now been possible to demonstrate that, amongst others, the enzyme myeloperoxidase, which is regarded as a risk factor for cardiovascular disease, plays a part in the stress reaction in musicians. This effect is however dampened by an emotional factor: this is because a good mood reduces the stress-induced release of myeloperoxidase.

This is the core result of a current joint study carried out by the Institute for Occupational Medicine at the MedUni Vienna, the MedUni Vienna Biobank (KILM) and the Health and Prevention Centre belonging to the

health scheme for the employees of the City of Vienna. Here people are hoping for new approaches in stress research. Meanwhile, at the New Year's Concert in a few days' time, the [good mood](#) and high spirits at the start of 2014 ought to have a stress-relieving effect.

The stress reactions in 47 [musicians](#) and the conductor of the Austrian radio symphony orchestra, the ORF, were examined at the dress rehearsal and on the following day, the day of the premier, at Vienna's Musikverein. Saliva and blood samples were taken for the purpose of producing a cortisol profile and to measure the myeloperoxidase, which plays a major role in inflammatory processes – these were taken before and after each performance, as well as during the concert and rehearsal intervals.

## **More stress for the director and the first violins**

"The result is clear-cut," says Alexander Pilger from the MedUni's Institute for Occupational Medicine and Robert Winker from the KFA's Health and Prevention Centre. "In the acute stress situation on the day of the concert the myeloperoxidase increases just as clearly as does the overall release of cortisol." In this however – as well as the inherent stress caused by appearing in front of an audience – other factors also play a role: "The musicians in the first violins and the conductor had on average higher myeloperoxidase levels not only at the dress rehearsal but also in the concert than all the other musicians together."

And the better the mood the musicians were in according to their own self-assessment, the lower the stress-related rise in myeloperoxidase. And vice versa, the worse their mood, the higher the myeloperoxidase-release in comparison with the dress rehearsal. This trend was also observed with cortisol, but here the influence of the level of excitement played the more significant part.

"The general good mood cannot be explained by the 'dream job' of being an orchestral musician," qualifies Pilger. "Earlier studies have shown that even musicians suffer from boredom and monotony, comparable with other, less exposed occupations. Furthermore, the social stress caused by the orchestral hierarchy is very great.

As well as the biochemical and emotional factors, the factor of "[general work ability](#)" was also examined anonymously using the so-called Work Ability Index of the German WAI network with questions on the situation at work, health, previous illnesses and self-assessment of work ability. With the result, according to Pilger that: "Work ability played no role whatsoever with regard to the stress-induced effects observed here." Whether and to what extent these new results are also transferable to other [stress](#) situations in the world of work would have to be looked at in further investigations.

**More information:** Alexander Pilger, Helmuth Haslacher, Elisabeth Ponocny-Seliger, Thomas Perkmann, Karl Böhm, Alexandra Budinsky, Angelika Girard, Katharina Klien, Galateja Jordakieva, Lukas Pezawas, Oswald Wagner, Jasminka Godnic-Cvar, Robert Winker, "Affective and inflammatory responses among orchestra musicians in performance situation," *Brain, Behavior, and Immunity*, Available online 26 October 2013, ISSN 0889-1591, [dx.doi.org/10.1016/j.bbi.2013.10.018](https://doi.org/10.1016/j.bbi.2013.10.018).

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