

**Can a musician who functions best in the morning perform equally well at a 7:00 PM concert?
And if not – can certain personality traits help them overcome this challenge?**

Each of us has our natural daily rhythm – some are "larks" most active in the morning, others are "owls" reaching peak performance in the evening. But what happens when our natural time preferences don't match professional demands? This question is particularly relevant for musicians, who most often perform in the evening, regardless of their circadian preferences. Chronotype is an individual characteristic biologically determined – shaped by genetic predispositions, hormonal regulation, and the mechanisms that govern circadian rhythms. When our daily obligations are misaligned with our internal biological clock, it leads to so-called social jetlag. This can manifest as sleep disorders, decreased concentration, and mood decline.

In the case of professional musicians, whose concerts most often take place in the evening, there may be repeated misalignment between biological rhythm and work demands. Their work involves late-night performances, high stress, and demanding psychological and physical requirements. For individuals with morning chronotypes, regularly playing evening concerts can result in mood decline, sleepiness, sleep deterioration, and in the long term – psychological exhaustion or professional burnout. Musicians are a professional group particularly vulnerable to mental health problems – anxiety, depression, professional burnout, and sleep disorders occur in them significantly more frequently than in the general population. One of the causes may be precisely this chronic discordance between natural biological rhythm and professional demands.

Although the topic of chronotype's impact on human functioning is well-known in psychology, in the context of professional music it remains almost completely unexplored. Previous work has focused mainly on pianists and did not allow for generalization of results to all representatives of this profession. Therefore, within this project, we want to examine a broad spectrum of performers playing various instruments in real concert conditions.

The project consists of two parts. The first is observation of musicians during actual rehearsals and concerts at different times of day. Through collaboration with philharmonic orchestras, we record performances using individual microphones, which allows objective assessment of performance quality (intonation, rhythmic precision). Simultaneously, musicians complete brief questionnaires about their state (sleepiness, mood, performance anxiety) and self-assessment of their performance. The second part is a long-term study throughout the entire artistic season, in which we examine how chronotype mismatch with performance times affects musicians' mental health and quality of functioning in the long term.

We predict that musicians will rate their performances at non-optimal times more poorly and may also show objectively less precision in execution. However, some of them may develop compensatory strategies – for example, more intensive work on repertoire or stress management techniques. We also want to examine which personality traits help musicians cope with performances at biologically non-optimal hours. This could be psychological resilience, self-efficacy, or specific personality patterns.

The results may help develop personalized preparation strategies for performances, especially for musicians whose chronotype doesn't match evening concerts. This could mean better preparation techniques, stress management strategies, or mental health support programs tailored to individual needs. The project has significance not only for musicians, but for all professions requiring work at hours inconsistent with natural biological rhythm – from shift workers to stage performers. Ultimately, better understanding of how our internal biological clock affects professional functioning may contribute to improving quality of life and mental health for people working at "wrong" hours.