

# Outlook



The NORAH Sleep Study investigated how people slept in the Rhine-Main region during the investigation period, how aviation noise influenced their sleep, and how they themselves assessed the quality of their sleep. The scientists also developed a method, which could make it possible in the future to carry out studies with more participants than has hitherto been the case. The sleep study also raised new questions, which will have to be clarified by future studies.

## What effects does accelerated heartbeat at night have for health?

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With the new “vegetative-motor” method used by NORAH, the focus of the scientists was brought back to the fact that nocturnal overflights can, in many cases, increase the heartbeat of sleepers. It even happens that people appear to continue sleeping peacefully, but still show a physical reaction. The sleep study was able to document these direct reactions. It cannot, however assess whether these reactions can have a negative impact on health in the long term and, for example, increase the risk for cardiovascular diseases. Further studies in the future will have to clarify this.

## How often does aviation noise cause waking up?



Even though the “vegetative-motor” method within the framework of NORAH promises a lot of potential for future sleep studies, researchers still attach great importance to the “wake-up reaction” – the transition from a deeper sleep phase to the lightest phase or to waking up. The question as to how frequently aviation noise triggers such a wake-up reaction is not easy to answer. This is because even in a quiet environment sleepers can wake up “spontaneously” during the night. This is why scientists in noise impact studies such as NORAH have to try and find out which wake-up reactions of their study participants can be attributed to noise, and which are just part of the normal sleep pattern. Thanks to the curfew on scheduled flights between 11 pm and 5 am during the NORAH study, the scientists were able to analyze much more precisely than in earlier studies how the timing of wake-up reactions changes with and without aviation noise. Nonetheless, further studies could contribute towards a better understanding of how often we wake up spontaneously at night without any external influences, and how flexible the body is in adapting its wake-up reactions to noise influences.

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## Do you have any questions?

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