NORAH
Lärmwirkungsstudie

Overview of the NORAH Study



What impact does traffic noise have on the quality of life, health and development of children? These were the three main questions at the centre of the NORAH Study. NORAH (Noise-Related Annoyance, Cognition, and Health) is the most extensive study on the subject of noise impact so far. The scientists (https://www.laermstudie.de/en/norah-study/scientists/) involved in the study come from a wide range of different disciplines: medicine, psychology, social science, physics and acoustics. They were working together to find answers to questions which have remained unanswered in noise impact research up to then. To do this they calculated the past and current, address-specific exposure to aviation, road and rail noise in a large area (https://www.laermstudie.de/en/norah-study/investigation-fields/) around the Frankfurt Airport. The researchers compared these values with data on the health, quality of life and development of a total of more than one million persons in the region. In addition to this, the scientists were surveying several thousand people in the areas around the airports Berlin Brandenburg, Cologne/Bonn and Stuttgart.

Five sub-studies on the impact of traffic noise

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Gemeinnützige Umwelthaus GmbH - Rüsselsheimer Str. 100 - 65451 Kelsterbach - Germany
Tel. +49 6107 98868-0 - Fax. +49 6107 98868-19

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In addition to the calculation of noise data (https://www.laermstudie.de/en/norah-study/acoustics-database/) important for the overall study, NORAH was also engaged in five sub-studies on the impact of aviation, road and rail noise on people:

- The Quality of Life Study (https://www.laermstudie.de/en/results/results-of-the-quality-of-life-study/) carried out surveys to investigate which noise burdens have how sharp an impact on the experienced noise annoyance and quality of life.
- The Study on Health Risks (https://www.laermstudie.de/en/results/overview-of-results/health-risks/) examined whether disorders such as cardiovascular disorders or depression occur more frequently in people exposed to noise.
- The Blood Pressure Study (https://www.laermstudie.de/en/results/overview-of-results/blood-pressure/) examined the link between blood pressure and noise exposure.

  In the Sleep Study the scientists examined the sleep quality of the study subjects in terms of the sound pressure in the bedroom.
- The Child Study (https://www.laermstudie.de/en/results/results-of-the-child-study/) looked at the intellectual development of primary school children as well as their reading abilities and their general quality of life under noise exposure.

Extending the state of research

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NORAH is not the first study on the effects of exposure to noise, but is built on the state of research up to now. All five sub-studies extend and deepen the insights from older studies. There are already, for example, indications of a connection between traffic noise exposure and the occurrence of cardiovascular disorders. How much noise from which source and at which duration has which consequences, and whether some people are more at risk than others is still, however, largely unknown. NORAH, therefore, provided more precise results than the older studies. The basic fact that loud noise can make people ill in the long term is undoubted.

Long-term observations

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As noise exposure only has effects on health over a long period of time, NORAH was also designed as a so-called longitudinal study. This means that the scientists not only examined the current status, but accompanied the study subjects over a research period of three years. A precise reconstruction of the noise exposure in the last 18 years for some of the participants could even identify longer-term effects.

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Do you have any questions?

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Gemeinnützige Umwelthaus GmbH
Rüsselsheimer Str. 100
65451 Kelsterbach
Germany
Tel. +49 6107 98868-0
Fax +49 6107 98868-19
norah@umwelthaus.org