NORAH
Lärmwirkungsstudie

Children

NORAH – Klassenraum Kinderstudie
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How does aircraft noise affect children's development and quality of life? The Children's Study dealt with these questions in the scope of NORAH. For this, the scientists of the NORAH team performed tests, surveys and measurementsin 29 schools and 85 classes, with the participation of 1,243 children, 1,185 parents and 85 teachers in the Rhine-Main area. The study focused on learning to read, health and well-being of the children at school, as well as noise exposure when studying at home and at school. It thus directly connects to earlier studies in other locations and tries to answer questions that are still open.

Aircraft noise reduces learning performance

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In areas strongly exposed to aircraft noise, primary school children learn to read more slowly than children in quieter areas. Among the examined second-grade children, an increase of the long-term energy equivalent noise level by 10 decibels delayed learning to read by one month. The connection is linear: the stronger the exposure, the stronger the impairment of development. Direct effects of aircraft noise on foundational skills of reading such as acoustic processing or auditory understanding could not be proven by NORAH in contrast to this.

School and health quality of life slightly impaired

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All in all, the quality of life of the examined children in the Rhine-Main area is high – most second-graders feel very well, are healthy and like going to school. Children in areas strongly exposed to noise feel a little less well in terms of health than children in more quiet areas, however. Additionally, the respondent parents in areas comparably strongly exposed to noise stated more often that their children took prescription medicines or had been diagnosed with a speech or language impairment. The affected children did not differ in their reading performance from the other children, however.

Aircraft noise disturbs lessons

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Teachers from areas comparably strongly exposed to aircraft noise report correspondingly that the noise considerably disturbs lessons. Lessons are interrupted in diverse manners by aircraft noise, and the children's attention is often distracted. More than one-third of the children from these schools sometimes have trouble understanding the teacher due to aircraft noise.

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The NORAH Children's Study was presented to the public in autumn 2014. It has already led to a resolution of the state government of Hessen to improve sound insulation of schools that are subject to high exposure to aircraft noise.

Further information

For more information on the Children study, see the "NORAH Knowledge" booklets no. 1 (Methods) and no. 4 (Results). More information on the results of the NORAH study can be found in NORAH Knowledge 14. Or click here for results in detail (https://www.laermstudie.de/en/results/results-of-the-child-study/) .

- NORAH Knowledge no. 1 PDF, 2 MB (https://www.laermstudie.de/media/download/norah_knowledge_01.pdf)
- NORAH Knowledge no. 4 PDF, 2 MB (https://www.laermstudie.de/media/download/norah_knowledge_04.pdf)
- NORAH Knowlede no. 14 PDF, 2 MB (https://www.laermstudie.de/media/download/norah_knowledge_14.pdf)

Do you have any questions?

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