NORAH
Lärmwirkungsstudie

Most Important Results



Here, you can find the most important items summarised. We can only briefly sketch the results – all in all, the scientific reports of NORAH comprise approx. 2,500 pages.

Quality of Life and Annoyance

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The residents of the Frankfurt airport area felt more annoyed by the arcraft noise with the same long-term energy equivalent noise level than in earlier studies. The annoyance at the examined comparison airports was also clearly above the EU-standard curves used in several national and European noise directives. As compared to the airports Cologne/Bonn and Stuttgart, people in Frankfurt felt more strongly annoyed at the same noise level. The annoyance increased at first after opening of the north-west runway in 2011 and dropped again in 2013, but remained above the level of 2011. Scientists call this a “change effect” in connection with development of the airport. They were also able to prove that aircraft noise annoys people more than road or rail noise. For more, see here.

Study on Health Risks

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The study was able to show a connection between all three examined traffic types and the occurrence of heart attack, stroke, heart insufficiency (weak heart) and depression. However, it was not consistent across noise types and pathologies. For more, see here.

Sleep Study

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Since introduction of the night core resting time in 2011, the residents near the airport wake up less frequently at night. Nevertheless, they often feel tired in the morning. Persons who have a rather critical attitude towards aircraft traffic generally sleep less well than those supporting it. The results from earlier sleep studies at the airport Cologne/Bonn can only be partially transferred to Frankfurt. For more, see here.

Blood Pressure Study

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The study could not confirm with statistical certainty that chronic aircraft noise increases blood pressure. This result partially contradicts results of earlier studies, but all in all is comparable to most of the previous research. However, it is also based on far more and more accurate blood pressure measurements and more precise acoustic and survey data than were available in earlier studies. For road and rail traffic noise, the overall group also showed no statistically significant effects on blood pressure. The blood pressure increases found are in the range of a few millimetres on the mercury column – this is less than the measuring inaccuracy of a normal blood pressure meter. Increases at this scope are irrelevant for the development of cardiovascular diseases. However, there were indications of particularly sensitive groups. For more, see here.

Children's Study

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Primary school children learn to read more slowly in areas subject to strong aircraft noise than in more quiet areas. A noise increase of 10 decibels delays learning to read by one month. Effects of aircraft noise on foundational skills of reading, such as sound processing or auditory understanding could not be documented by NORAH. Children in very noisy areas are less well in terms of health than children in more quiet locations. Their parents also stated more frequently that their child had already been diagnosed with a speech or language impairment. Teachers from areas comparatively strongly subject to aircraft noise report correspondingly that the noise disturbed lessons considerably. For more, see here.

Download results of the NORAH study

For more information, see the "NORAH Knowledge" booklets no. 4 and 10 to 13, which you can download here or order via the order form in the booklet. Of course, we also give you access to the scientific result reports, including the associated statements of the Scientific Advisory Board for Quality Assurance (German language incl. small English summaries) below.

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Do you have any questions?

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