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Blood pressure

The Blood Pressure Study had more than 1,000 participants from the environment of the Frankfurt airport, including 844 who could be included in the evaluation. For three weeks, the participants measured their own blood pressure in the mornings and evenings. These measurements were repeated one year later. The values were automatically submitted to the NORAH team by mobile phone via a safe line and saved on a data server.

Low effects of aircraft, road and rail traffic noise

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No statistically significant interrelation could be found between the long-term energy equivalent aircraft noise level from 6 p.m. to 6 a.m. and the following parameters relevant for the cardiovascular system: blood pressure, heart frequency and blood pressure amplitude (the difference between the upper and lower value of a blood pressure measurement). The same is true for road and rail traffic noise: again, the NORAH team could not document any statistically clear relationship for any measured value. The study included many other factors, such as age, gender, social status, medication, being overweight or smoking. Even though many of these factors have been controlled by statistical procedures, no significant connection could be documented between flight noise and blood pressure. The NORAH team also examined other day and night periods than

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from 6 p.m. to 6 a.m. and always came to similar results.

Some people react more strongly

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There are indications that the increase of blood pressure in connection with traffic noise is stronger in some groups. Differences in noise sensitivity, age, gender, time of residence and hypertension play a role here. However, this was not the same for the three noise types. A significant connection between chronic noise exposure and blood pressure could not be documented in the respective partial groups either.

Method strengths

All in all, the results of the NORAH blood pressure study are comparable to most prior research. Only few prior studies had shown indications of a connection between aircraft noise and blood pressure. These took place using a much smaller data basis. The method of the NORAH Studies has several strengths by comparison with these examinations:

- Self-measurement of the blood pressure according to a consistent, specified procedure instead of self-reported diagnoses or health insurance data; this leads to reliable measured values without influences from the examined persons
- Daily measurements for three weeks and repetition after twelve months instead of individual values or pointed measurements as in other studies
- Consideration of three traffic noise types
- Address-specific assignment of the calculated noise exposure, sorted by noise type and time of the day
- Very precise level data going back one year
- Consideration of many health-related and social parameters
- Recording the applied prescription and nonprescription medicines of the last seven days

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Further information

For more information on the Blood pressure study, see the "NORAH Knowledge" booklets no. 8 (Methods) and no. 11 (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-blood-pressure-study/) .

- NORAH Knowledge no. 8 PDF, 2 MB (https://www.laermstudie.de/media/download/norah_knowledge_08.pdf)
- NORAH Knowledge no. 11 PDF, 3 MB (https://www.laermstudie.de/media/download/norah_knowledge_11.pdf)
- NORAH Knowlede no. 14 PDF, 2 MB (https://www.laermstudie.de/media/download/norah_knowledge_14.pdf)

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