NORAH
Lärmwirkungsstudie

Health risks

The Study on Health Risks focuses on five diseases: heart attack, stroke, weak heart (or heart insufficiency), depression and breast cancer. All five diseases are widespread in Germany. They also have another thing in common: studies have suggested in the past that all of these diseases occur with aboveaverage frequency in persons who are exposed to a lot of traffic noise every day.
The Study on Health Risks followed this suspicion. The scientists evaluated health insurance data of about one million persons in the Rhine-Main area. For this, the NORAH team cooperated with three large health insurers in the Rhine-Main area. In parallel, the NORAH acousticians calculated the stress from aircraft, road and rail noise at all addresses in the Rhine-Main area, in some cases retroactively back to 1996. A special data privacy procedure secured anonymity of the study participants. In the end, the NORAH team knew how many insured persons had one of the five diseases and how much noise there was at the place of residence of the affected person, but not where these persons lived or what their names were. Several thousand persons additionally participated in a deeper survey to help the scientists gain further insights into heart insufficiency.

Cardiovascular risk in traffic noise increased

()

NORAH
Lärmwirkungsstudie

The NORAH Study proves that traffic noise can increase the risk of developing heart attack, stroke or heart insufficiency. When only considering the long-term energy equivalent noise level, the highest risk for a weak heart came with rail noise, followed by road and aircraft noise. There were indications that the duration of stress from noise was relevant for the cardiovascular risk. Regarding stroke, the scientists were also able to find a statistically significant connection with all three examined traffic noise types – i.e. aircraft, road and rail noise. However, aircraft noise did not lead to any increase, but rather a reduction of the stroke-risk at rising long-term energy equivalent noise level. A statistically significant increase of the stroke risk from aircraft noise was only shown when considering the maximum flight noise level at night. For heart attack, a connection between road and rail noise can be documented, and for the insured persons who died during the examination period also with aircraft noise. Depending on disease, noise type and examined group of persons, the risk therefore increases by up to 3.9 percent per 10 decibels traffic noise increase.

Depression: Traffic noise increases the risk of disease

()

All three traffic noise types can contribute to developing depression. The scientists were able to calculate that the risk of a depressive episode increases by 8.9 percent on average when the aircraft noise stress increases by 10 decibels. For road noise, the risk increases by 4.1 percent per 10 decibels and for rail noise by 3.9 percent. However, these averages only partially reflect the study results. For aircraft and rail noise, the NORAH team determined that the risk seems to drop again at very high noise levels. One possible explanation of this observation would be that people who tend to develop depression more frequently move to more quiet locations.

Breast cancer: Further research required

()

A possible influence of traffic noise on the development of breast cancer was only suggested by three studies before NORAH. Therefore, there was less proof for this connection from the beginning than for cardiovascular diseases, for example. The NORAH Study was unable to confirm that road or rail noise can contribute to the development of breast cancer. For aircraft noise, however, the scientists found a small connection: in the group of persons exposed to a long-term energy equivalent noise level above 55 decibel between 11 p.m. and 5 a.m., there were more cases of breast cancer than expected. More research on this subject will be necessary: safe conclusions are not possible yet.

Further information

For more information on the Health risks study, see the "NORAH Knowledge" booklets no. 6 (Methods) and no. 12 (Results) or click here for results in detail (https://www.laermstudie.de/en/results/results-of-the-study-on-health-risks/) .

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

NORAH
Lärmwirkungsstudie

- NORAH Knowledge no. 6 PDF, 2 MB
  (https://www.laermstudie.de/media/download/norah_knowledge_06.pdf)
- NORAH Knowledge no. 12 PDF, 2 MB
  (https://www.laermstudie.de/media/download/norah_knowledge_12.pdf)

Do you have any questions?

Icon Kontakt Lärmstudie
Image not found or type unknown
Get in touch with us

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