

Results and discussion

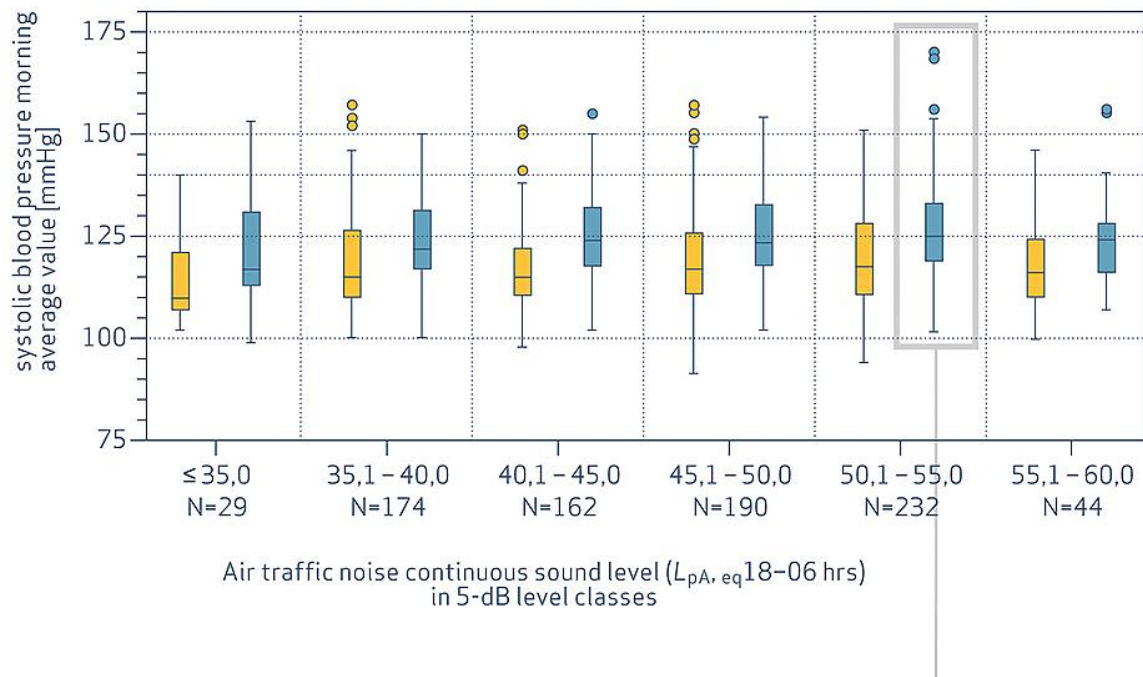


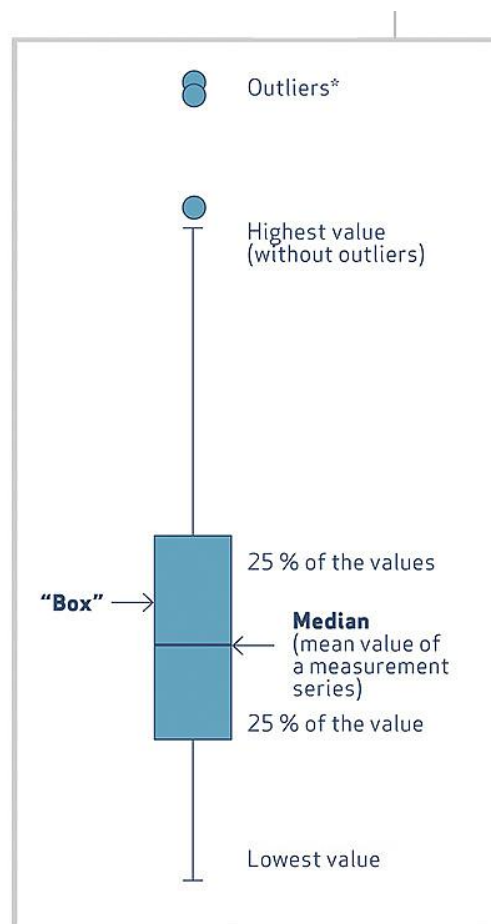
Air traffic noise and blood pressure

At the start of their work, the scientists formulated their research question in the form of a so-called zero hypothesis, i.e. the assumption: "There is no association between air transportation noise and blood pressure." With the aid of the measurement data, they then examined whether this assumption can be rejected. But all of the relationships found between chronic air transportation noise and the mean blood pressure values were weak and not statistically significant. This is why the main analysis of the study could not verify a association between the two. From a scientific point of view, however, this does not mean that there is no such association. In sensitivity analyses, the scientists found indications that the increase in blood pressure in certain groups of persons is more pronounced in association with air transportation noise.

These are people with medium noise sensitivity, older people, men, and people who already suffered from hypertension. These results were also not statistically significant.

Blood pressure in the morning for men and women





(*) Outliers:
Outliers are exactly defined: if the distance of a measurement value from the box exceeds a certain value (1.5 times the box length), it is regarded as an outlier.

The graphic shows the distribution of the mean values from the three-week measurement series (mornings) of the upper blood pressure value (“systolic”) in relation to air traffic noise, separately for women (orange) and men (blue). Even with increasing noise, the values remain in the same range. At all times at least 75% of the mean values are below the limit value for the normal systolic blood pressure of 140 mmHg (L Glossary), which is only exceeded in a few cases. The air traffic noise data refer to the continuous sound level between 18:00 and 06:00 hrs over a period of 12 months before the respective measurements of the individual participants. The data are from the observation period 1 (July 2012 to June 2013).

Rail traffic noise and blood pressure

The study was unable to establish an association between rail noise and the parameters heart rate and pulse pressure. But the scientists did find indications that younger people tend to react more strongly to rail transportation noise.

Road traffic noise and blood pressure

The scientists were unable to establish an association between road transportation noise and the parameters heart rate and pulse pressure. In some of the subgroups they identified a somewhat stronger association between noise exposure and blood pressure. This included men, older persons, especially noise-sensitive persons and those who had already suffered from hypertension. These effects are, however, even lower than those for air transportation noise, and also not statistically significant.

Residential duration

()

Does it make any difference how long a person has been living at his/her current address? To find this out, the participants were divided into three groups of equal size:

- up to 13 years inclusively living at the same address
- 14 to 26 years living at the same address
- 27 years and more living at the same address

The result: people living for up to 13 years at the same address tended to react more strongly to the noise exposure due to air or rail traffic. Both blood pressure and heart rate were on average higher than in people who have been living longer at the same address. The difference, however, is not statistically significant.

Differences after a year

()

The study participants repeated the blood pressure measurements after a year. The NORAH team wanted to find out how the blood pressure developed in the study period in relation to the air traffic noise in the respective previous 12-month periods. But even when the air transportation noise in the residential environment of a participant increased or decreased in the course of a year, this had no verifiable influence on blood pressure.

Do you have any questions?

Icon Kontakt Lärmstudie

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