

Health impacts of new vehicle noise limits

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Current situation

Road traffic is the largest environmental noise source today. It continues growing, having a significant impact on health and quality of life in Europe. Around 200 million people, 40% of the EU27 population, are regularly exposed to more than 55 dB L_{DEN} due to road traffic noise, above which serious health effects can occur according to the World Health Organisation^[1]. An estimated 55 million people are highly annoyed and 27 million people are highly sleep disturbed^[2], causing negative health effects including:

- Cardiovascular disease and high blood pressure, in some cases leading to mortality;
- Stress, annoyance and related illness;
- Cognitive impairment for children;
- Loss of concentration, leading to more accidents and injuries.

Annoyance and sleep disturbance generally reduce the quality of life and can also affect work productivity^[3].

Need for new vehicle noise limits and impact on health

Noise legislation for road vehicles has been introduced to reduce adverse health effects and to reduce annoyance. However, despite 40 years of EU legislation, road vehicles have not become significantly quieter. Consequently at least 1 million healthy life years are lost each year in the EU27 countries due to traffic noise. In monetary terms the estimated health cost is around 60 billion Euros each year.

Given the significant increase in traffic volume, the current noise reception limits are insufficient to resolve many existing and newly arising noise situations. New limits for vehicle noise in two steps proposed by the European Commission are expected to reduce overall traffic noise levels by up to 3 dB in the long term. Potential third step limits would bring the overall traffic noise levels down by another 2 dB (in total 5 dB). This reduction will take effect gradually, depending on the rate of replacement of vehicles and tyres, and must be in combination with quieter tyres.

The second step noise limits would result in 25% less highly annoyed people and 15% less highly sleep disturbed people. Further third step limits would result an estimated 39% less highly annoyed people and 29% less highly sleep disturbed people. Over the whole period until 2030, savings on health costs are estimated at 79 billion Euros for the second step limits and at least 89 billion Euros for a third step limit.

References

[1] Burden of disease from environmental noise, Report by the WHO and the European Commission, 2011.

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[3] P A Morgan, L Morris and M Muirhead: Estimating the productivity impacts of noise, TRL Report CPR1080 for DEFRA, 2011.

[4] F. de Roo, M. Dittrich, C. Bosschaart, B. Berry: Reduction of vehicle noise emission - Technological potential and impacts, Report for Transport and Environment and the Netherlands Ministry of Infrastructure and Environment, TNO report nr TNO-DV 2012 C100, April 2012.

