

Publication**Annoyance from road traffic, trains, airplanes and from total environmental noise levels****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 3484086**Author(s)** Ragettli, Martina S; Goudreau, Sophie; Plante, Céline; Perron, Stéphane; Fournier, Michel; Smargiassi, Audrey**Author(s) at UniBasel** [Ragettli, Martina](#) ;**Year** 2016**Title** Annoyance from road traffic, trains, airplanes and from total environmental noise levels**Journal** International journal of environmental research and public health**Volume** 13**Number** 1**Pages / Article-Number** 90

There is a lack of studies assessing the exposure-response relationship between transportation noise and annoyance in North America. Our aims were to investigate the prevalence of noise annoyance induced by road traffic, trains and airplanes in relation to distance to transportation noise sources, and to total environmental noise levels in Montreal, Canada; annoyance was assessed as noise-induced disturbance. A telephone-based survey among 4336 persons aged >18 years was conducted. Exposure to total environmental noise (A-weighted outdoor noise levels-LAeq24h and day-evening-night equivalent noise levels-Lden) for each study participant was determined using a statistical noise model (land use regression-LUR) that is based on actual outdoor noise measurements. The proportion of the population annoyed by road traffic, airplane and train noise was 20.1%, 13.0% and 6.1%, respectively. As the distance to major roads, railways and the Montreal International Airport increased, the percentage of people disturbed and highly disturbed due to the corresponding traffic noise significantly decreased. When applying the statistical noise model we found a relationship between noise levels and disturbance from road traffic and total environmental noise, with Prevalence Proportion Ratios (PPR) for highly disturbed people of 1.10 (95% CI: 1.07-1.13) and 1.04 (1.02-1.06) per 1 dB(A) Lden, respectively. Our study provides the first comprehensive information on the relationship between transportation noise levels and disturbance in a Canadian city. LUR models are still in development and further studies on transportation noise induced annoyance are consequently needed, especially for sources other than road traffic.

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