Aircraft Noise and Health Impacts

Aircraft Noise and Health Impacts – Executive Summary

Aircraft noise, including from small aircraft and helicopters, has measurable health consequences for nearby communities. Studies consistently link exposure to increased risks of cardiovascular disease, sleep disturbance, and impaired learning in children.

Intro Paragraph

Aircraft noise exposure has been shown to impair children's cognitive development, learning, and overall well-being. In the U.S., multiple studies have documented measurable declines in reading and math performance among students attending schools near airports. Research also highlights effects on memory, motivation, and speech development, underscoring the importance of noise mitigation in educational and residential areas close to aviation activity.

Repetitive noise from small aircraft and helicopters has been shown to impact human health in multiple ways. Research has identified associations with cardiovascular disease, sleep disturbance, mental health effects, and reduced cognitive performance in children. These studies underscore the importance of understanding community exposure to aviation noise, particularly for residents and schools located close to small airports or helicopter routes.

Table: Studies on Aircraft Noise and Health

Year	Source / Report	Population Focus	Key Findings	Direct Link
2000s	FICAN (Federal Interagency Committee on Aviation Noise)	U.S. schoolchildren	More than 20 studies confirm aircraft noise impairs reading, memory, speech development, and motivation	https://www.faa.gov/fican/findings_classroom_learning.pdf
2000–2009	Cross-sectional analysis of ~6000 U.S. schools near airports	Schools exposed to ≥55 dB daytime noise	Significantly lower math & reading scores; noise insulation improved performance	https://rosap.ntl.bts.gov/view/dot/50406
2025	Meta-analysis of environmental noise & cognition	Children & adolescents	Environmental noise (including aircraft) linked to cognitive decline; standardized mean difference ~ -0.54	https://pmc.ncbi.nlm.nih.gov/articles/PMC11944768/
2025	CAA UK – "Aircraft Noise and Health Effects" Update (May 2025)	Adults & children	Latest findings on cardiovascular disease, sleep disturbance, and children's health	https://www.caa.co.uk/publication/download/25077?utm_source=chatgpt.com

2024	CAA UK Update (Nov 2024)	Adults & communities	Annoyance, sleep disturbance, children's learning effects	https://www.caa.co.uk/publication/download/23301?utm_source=chatgpt.com
2024	BU/OSU Study – *Environment International*	U.S. adults	Aircraft noise ≥45 dB associated with higher BMI and cardiometabolic risks	https://www.sciencedaily.com/releases/2024/06/240603172239.htm?utm_source=chatgpt.com
2010s	RANCH Study (Europe)	Children aged 9–10	Aircraft noise exposure → poorer reading comprehension and memory; 5 dB = 2-month reading delay	https://pmc.ncbi.nlm.nih.gov/articles/PMC5437751/?utm_source=chatgpt.com
2022	NYC Quasi-Experimental Study	Children & adults	Noise increase linked to insomnia, CVD, mental health emergencies; strongest in ages 5–17	https://pmc.ncbi.nlm.nih.gov/articles/PMC9062823/?utm_source=chatgpt.com
2000s	HYENA Study (Europe)	Adults	Night aircraft noise linked to ↑ heart disease & stroke risk (OR ~1.25 per 10 dB)	https://uecna.eu/key-issues/effects-of-aircraft-noise-on-human-health-wellbeing/?utm_source=chatgpt.com
2025	UCL Study – Reported in Media	Adults near airports	Airport noise associated with stiffer, thicker heart muscle → ↑ heart attack & stroke risk	https://nypost.com/2025/01/08/health/how-living-near-an-airport-can-negatively-affect-your-health/?utm_source=chatgpt.com
2020	Norway Helicopter Study	Residents near airports	Helicopter noise more annoying than fixed-wing at same sound levels	https://ntrs.nasa.gov/api/citations/20205003350/downloads/ROQMII_VFS76_v7.pdf?utm_source=chatgpt.com