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Hepatitis C in haemophilia patients in the Netherlands

In his World Report (June 25, p 2165),[1] Grainger Laffan states that thousands of Dutch haemophiliacs may have contracted hepatitis C in the Netherlands during the 1980s, and that the Dutch Government has been reluctant to trace and inform those affected. As representatives of haemophilia treaters and haemophilia patients in the Netherlands, we would like to comment on several aspects of this misleading and alarming message.

We have a well documented group of 1600 haemophilia patients in the Netherlands, not thousands. Thanks to large cohort studies in haemophilia patients in the Netherlands,[2,3] we have been aware for more than 10 years that many haemophiliacs have contracted the hepatitis C virus, of which most have chronic hepatitis C. All patients with haemophilia in the Netherlands are regularly seen in haemophilia treatment centres by their physicians, who are well aware of the possible infectious complications. As medical doctors, we have a responsibility towards our patients with respect to the complications of haemophilia treatment. This is not only a case for the Dutch Government.

Nearly all haemophilia patients have been tested and, if necessary, treatment for hepatitis C has been discussed with the patients. Antiviral treatment has been started according to local or international guidelines. In addition, several studies of antiviral treatment have been done in the Netherlands in haemophilia patients.[3,4] Also the patient organisation the Netherlands Haemophilia Society informs its members regularly about hepatitis C by mailings, brochures, and meetings chaired by world experts on hepatitis C treatment.

Although we recognise that hepatitis C caused by contaminated blood or blood products in the 1980s is still a major health problem and may need more attention from governments, a more thoughtful and balanced account of haemophilia patients in the Netherlands would have been more appropriate.

We declare that we have no conflict of interest.

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Aircraft and road traffic noise and children's cognition

Stephen Stansfeld and co-workers (June 4, p 1942)[1] report a cross-national study of the effects of aircraft and road traffic noise on children's cognition. They found that chronic exposure to aircraft noise impaired reading comprehension and that this effect was still significant after adjustment for socioeconomic differences and other possible confounding factors. The study contains many improvements over earlier work on the topic. However, some of the findings are difficult to interpret (eg, the better memory in the high road traffic group) and it is possible that other factors should have been considered in the analyses.

One variable that has been omitted is intelligence. This was measured in the Spanish and UK children but not those in the Netherlands. It is possible, therefore, to reanalyse the data from more than 2000 children to determine whether the noise effects are still apparent when intelligence is covaried. In addition to adjustment for intelligence, it is important to do analyses that use intelligence as the dependent variable. Unfortunately, any association between noise and intelligence (eg, noise being associated with lower intelligence) could be interpreted in two ways: noise may influence intelligence, or children of lower intelligence are more likely to live in high noise areas.

Another issue that should have been examined in more detail is the relation between chronic and acute noise exposure. One interpretation of earlier research on chronic and acute effects of noise is that it is the match between regular exposure and exposure at testing that is crucial: children from quiet areas perform best when testing is in quiet, whereas children from noisy areas perform best when testing occurs in noise.[2] Indeed, state-dependent memory is a much more robust effect than noise-induced memory changes,[3] and this mechanism could underlie both effects of the aircraft noise and traffic noise if one assumes that the acute traffic noise exposure was more similar to the chronic exposure than the acute aircraft exposure was to the regular exposure. At the moment this is speculation because Stansfeld and colleagues do not report the acute noise levels nor do they examine the interaction between acute and chronic exposure. It is also unlikely that measures taken at the front of the class are accurate indicators of individual exposure at the rear.

Given these potential problems, one recommendation should be that future studies measure individual noise exposure more precisely, test the children individually, and do this in both noise and quiet.

I declare that I have no conflict of interest.

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	β (SE)	95% CI	p
Road traffic noise and intelligence (n=1183)			
Model 1	−0·019 (0·027)	−0·072 to 0·033	0·471
Model 2	−0·018 (0·026)	−0·068 to 0·032	0·473
Aircraft noise and intelligence (n=1183)			
Model 1	−0·003 (0·018)	−0·037 to 0·032	0·872
Model 2	0·003 (0·017)	−0·029 to 0·036	0·847
Aircraft noise and reading comprehension: sample with IQ data (n=1162)			
Model 1	−0·009 (0·003)	−0·016 to −0·003	0·005
Model 1*	−0·009 (0·003)	−0·015 to −0·004	0·001
Model 2	−0·009 (0·003)	−0·014 to −0·003	0·002
Model 2*	−0·009 (0·003)	−0·014 to −0·004	0·001

Model 1 adjusted for centre, age, and sex. Model 2 adjusted for road traffic noise (or aircraft noise), centre, age, sex, socioeconomic status, mother's education, long-standing illness, main language spoken at home, parental support for schoolwork, and classroom window insulation. *Additionally adjusted for intelligence.

***Table:* Aircraft and road traffic noise, intelligence, and reading comprehension**

Authors' reply

Andy Smith makes two important points about our study of aircraft and road traffic noise and children's cognition. First, that our results might be explained by the different geographical distribution of children's intelligence by noise exposure level. We included a brief measure of intelligence—the figure analogies subtest from the non-verbal battery of the Cognitive Abilities Test[1]—in Spain and the UK. After discussion, we were reluctant to include this as a covariate because of the colinearity of intelligence with our other cognitive measures and because we expected that our school-matching procedure might partly control for intelligence as well as socioeconomic status. Reading comprehension and intelligence were correlated (r=0·37), as were recognition memory and intelligence (r=0·19).

In further analyses, exposure to neither aircraft noise nor road traffic noise is associated with intelligence (table). The association between aircraft noise and reading comprehension is not altered by further adjustment for intelligence (table). Neither is the association between road traffic noise and episodic memory (results not reported). Surely if intelligence were the general explanation, we should have found "noise effects" for all our cognitive measures rather than the specific effects on reading and recognition we found for aircraft noise and the effects of recall memory we found for road traffic noise exposure? Additionally, running the analyses excluding pupils with learning difficulties does not alter the results.

Second, Smith ingeniously suggests that our results could be explained by state-dependent effects whereby the testing situation may be more typical of everyday conditions for road traffic noise than for aircraft noise. Therefore performance would be better in road traffic noise where acute and chronic noise exposure match, and would deteriorate for exposure to aircraft noise where acute noise exposure may differ from chronic noise exposure. We strove to test naturalistically in this study: children were tested in their own classrooms—ie, in their usual learning environments and with usual noise exposure. Varying patterns of overflights leading to acute changes in aircraft noise exposure could influence learning and be one mechanism for the effects of chronic aircraft noise on cognition. Nevertheless, we did adjust our analyses for acute noise exposure that was measured at two microphone points in the classroom during testing. Adjustment for acute noise in this study did not influence aircraft noise effects on reading, and acute noise exposure was not associated with impairment of reading comprehension in a previous study around Heathrow.[2] Therefore, although this is plausible, we think it is unlikely to be the explanation for the noise effects on performance in this community-based study.

We agree that future studies should measure individual noise exposure more precisely, but individual cognitive testing is not always cost effective in epidemiological studies. Longitudinal studies examining change in cognitive performance with change in noise exposure seem to be the next obvious step in taking this research further.

We declare that we have no conflict of interest.

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