LETTER

Authors' response

We would like to thank Dr Aarstad¹ for his interest in our work. We noted in the 'Results' section² that the rates of cell phone use increased during the time of our study. For instance, the percentage of mothers using a cell phone during pregnancy increased from 21% to 46% from the birth years 1998 to 2001. And as stated in our conclusion, we do not rule out the possibility that uncontrolled confounding may play a role in our observed associations.

Examination of heterogeneity over time within social–occupational status is presented in table 1. Problems may decline over time but appear to be rather similar across social–occupational groups. The estimate is largest in the 'high' group which comprises nearly 65% of the study population and not as suggested by Dr Aarstad among the 'low' group (3%). This seems to indicate that 'early adopters' of new technology are more likely to be those who have greater income and access to new technology. It should be noted that although the association by birth year moves towards the null among the 'high' group, which is driving the overall association, the association is more constant for the 'medium' group and may be moving away from the null in the 'low' group, which would mean that the

association is *not* declining in the lower social–occupational groups.

We measured cell phone use during pregnancy at a time when cell phones were getting smaller but had limited range and battery life. The common practice at the time was to power off the phone to conserve the battery, thus removing exposure to radiofrequency fields. We believe that the question of 'percentage of time turned on' during pregnancy correctly reflects the manner in which cell phones were being used at *that* time. We also specifically asked to report only call times exclusive of text messaging. Although the correlation between time of having the cell phone on and subsequent behavioural problems in offspring is not a strong argument for causality, it should not be entirely disregarded either.

Recently, another study has also provided some support for an association between cell phone use and behavioural problems.³ We postulated that exposure to cell phones may be a correlate and not a cause of behavioural problems and have attempted to address it with the available data. While we did not find support for inattention as a likely explanation, such a possibility still remains.

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Competing interests None.

Ethics approval This study was conducted with the approval of the Danish Data Protection Agency UCLA Office for the Protection of Human Subjects.

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Table 1 Association of prenatal and postnatal exposure to cell phone use and overall behavioural problems by birth year and by parents' social–occupational status

	1998–2001		1998		1999		2000		2001		p for heterogeneity over time	df
	No. (%)	aOR (95% CI)	No.	aOR (95% CI)	No.	aOR (95% CI)	No.	aOR (95% CI)	No.	aOR (95% CI)		
All social–occupational levels*	40 862 (100%)	1.6 (1.4 to 1.9)	6 775	2.2 (1.7 to 3.0)	11 290	1.8 (1.5 to 2.3)	13 115	1.4 (1.1 to 1.7)	9 682	1.3 (1.1 to 1.6)	0.06	3
High social–occupational level†	26 709 (65.3%)	1.5 (1.3 to 1.7)	4 361	2.3 (1.5 to 3.6)	7 420	1.8 (1.3 to 2.4)	8 559	1.3 (1.0 to 1.8)	6 369	1.2 (0.9 to 1.6)	0.07	3
Medium social–occupational level†	11 027 (27.0%)	1.7 (1.5 to 2.1)	1 835	2.3 (1.4 to 3.8)	3 181	1.8 (1.3 to 2.6)	3 536	1.5 (1.1 to 2.1)	2 475	1.9 (1.3 to 2.8)	0.77	3
Low social–occupational level† ‡	1 358 (3.3%)	1.6 (1.1 to 2.5)	642	1.4 (0.8 to 2.6)	1 4	1.4 (0.8 to 2.6)	716	2.6 (1.3 to 5.3)	2 6	2.6 (1.3 to 5.3)	0.20	1
DK/missing	1 768 (4.4%)	—	335	—	291	—	604	—	538	—	—	—

Reference group is 'no exposure' to cell phone use.

*Adjusted for sex of child, mother's age at birth, mother's and father's history of psychiatric, cognitive or behavioural problems as a child, mother's prenatal stress, child breastfed up to 6 months of age and combined social–occupational status of parents.

†Adjusted for sex of child, mother's age at birth, mother's and father's history of psychiatric, cognitive or behavioural problems as a child, mother's prenatal stress, child breastfed up to 6 months of age and stratified for combined socio–occupational status of parents.

‡Cell counts by birth year were less than 5, thus 1998 and 1999 and 2000 and 2001 were combined to estimate adjusted ORs (aORs).

df, degrees of freedom; DK, don't know.