Reviewer’s report

Title: Non-occupational exposure to paint fumes during pregnancy and risk of congenital anomalies: a cohort study

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Reviewer: Martine Vrijheid

Reviewer’s report:

This is a clearly presented manuscript with an important research question – solvent exposure has been found to increase risk of congenital anomalies in occupational studies but home exposure to these compounds has not been studied before. The limitations in the exposure assessment in this study (pregnancy week 30 interview questions to assess trimester 1 exposure) are clearly discussed. There are a few shortcomings, mainly in the discussion section, that do need clarification:

1. One main potential limitation is not discussed: the study appears to include only anomalies that occurred in live births. This means that a large potential case group is not included, i.e. congenital anomalies occurring in stillbirths, abortions, and those detected by prenatal diagnosis and subsequently terminated. It would be good to see some discussion of this. What effect may the exclusion of this case group have on the risk estimates?

2. The anomaly subgroups used are very broad; obviously the numbers are too small to examine more specific groups. However, it is clear that this may lead to dilution of effects by mixing very diverse outcomes. This issue should be discussed.

3. On page 11 misclassification of the diagnosis is discussed. Please clarify what type of misclassification is meant here – anomalies wrongly classified as other anomalies, or anomalies not classified at all?

4. It is unclear why the authors did not include some general measure of socio-economic status as in their a-priori confounders, e.g. maternal education, although I admit that the confounding effects are likely to be small.

5. Recall bias – the authors state that misclassification due to recall problems would have been non-differential. Again, what about prenatally diagnosed cases – mothers may already know at week 30 that their child will be born with an anomaly?

Level of interest: An article of importance in its field

Quality of written English: Acceptable
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.