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Subject: Benzene & NHL Low Dose Study
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Hello All:

I was researching NHL causative toxins and came across this study. When researching the SEM it does not show any causal relationship between benzene and NHL.

[Resolving uncertainty in the spatial relationships between passive benzene exposure and risk of non-Hodgkin lymphoma](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4946246/pdf/nihms-798468.pdf)

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page 8 regarding benzene low level exposure and NHL causation:

5. Discussion

This study extends our existing understanding of the relationship between proximity to benzene release sites and NHL risk by utilizing TRI data to weight our measure of exposure by both proximity to release sites and amount of release. In addition, we utilized a method for estimating the level of benzene exposure in a given geographic space and fit statistical models to examine associations between exposure periods, lag times, and lymphoma incident cases. For all models, we evaluated the goodness-of-fit and assessed the optimal scaling factor parameter to measure exposure in addition to the effects of time lag variations on goodness-of-fit.

Across our models, we consistently found that census tracts that were considered higher-exposure zones exhibited higher risk of NHL than lower-exposure zones, and that a statistically significant effect was noted even at very low exposure levels— **far below occupational exposure levels**. This consistency across conditions suggests that the effect of passive benzene exposure on lymphoma risk was independent of both time lag and scaling factor. Although the results are similar to our previous findings [27], the added magnitude component strengthens the argument that passive exposure is associated with NHL risk, not only as a result of distance from release sites, but also as a function of amount of benzene released from these facilities over time.--

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