

## Public Comments from Andrea Portt

I am writing out of concern for the memo prepared by the EPA questioning the causal relationship between particulate matter and health outcomes. Particulate matter is a well-established harmful air pollutant, with negative effects found even in well-off populations and in a variety of different climates. Therefore, the effects are not expected to be solely due to socioeconomic or weather variables.

Below are titles and authors of a pair of excellent articles that found associations between particulate matter exposure and migraine attacks, despite controlling for weather and/or socioeconomic variables.

Thank you for your continued commitment to environmental health,

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Zock J-P, Verheij R, Helbich M, et al. The impact of social capital, land use, air pollution and noise on individual morbidity in Dutch neighbourhoods. *Environ Int.* 2018;121:453-460. doi:10.1016/j.envint.2018.09.008.

Lee H, Myung W, Cheong H-K, et al. Ambient air pollution exposure and risk of migraine: Synergistic effect with high temperature. *Environ Int.* 2018;121:383-391. doi:10.1016/j.envint.2018.09.022.