

Particulate matter exposure and Attention-Deficit/Hyperactivity Disorder in children: A systematic review of epidemiological studies.

Supplementary C. Quality and risk of bias assessment for each study

The Newcastle-Ottawa scale (Wells G 2013) was adopted in this review to evaluate the quality of cohort and cross-sectional study respectively.

The Office of Health Assessment and Translation (OHAT) by the National Institutes of Environmental Health Sciences National Toxicology Program (NEHS-NTP) (OHAT 2015) and Navigation Guide by the University of California (Lam et al. 2016; Woodruff and Sutton 2014) was adopted to evaluate risk of bias for each included study.

References

- Wells G, S.B., O'Connell D, Peterson J, Welch V, Losos M, Tugwell P. The Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomised studies in meta-analyses. http://www.ohri.ca/programs/clinical_epidemiology/oxford.asp; 2013
- Zhao, T., Markevych, I., Romanos, M., Nowak, D., & Heinrich, J. (2018). Ambient ozone exposure and mental health: A systematic review of epidemiological studies. *Environmental research*.
- OHAT. Handbook for Conducting Systematic Reviews. Office of Health Assessment and Translation (OHAT) Division of the National Toxicology Program National Institute of Environmental Health Sciences; 2015
- Woodruff, T.J.; Sutton, P. The Navigation Guide systematic review methodology: a rigorous and transparent method for translating environmental health science into better health outcomes. *Environ Health Perspect* 2014;122:1007-1014

1. Forns et al., 2018		
Design	Cohort study	
Participants	Human, aged 3-10 years	
Exposure	PM10, PM2.5, PMcoarse and PM2.5 absorbance.	
Comparison	29127 children followed up from 1992 through 2008	
Outcomes	Attention-Deficit/Hyperactivity Disorder	
Quality Assessment		
Newcastle-Ottawa Quality Assessment Scale-Case Cohort Study		Author's judgement
Selection	Representative of the exposed cohort	*
	Selection of the non-exposed cohort	*
	Ascertainment of exposure	*
	Demonstration that outcome of interest was not present at start of study	*
Comparability	Comparability of cohorts on the basis of the design of analysis	**
Outcome	Assessment of outcome	
	Was follow-up long enough for outcome to occur	*
	Adequate of follow up of cohorts	
Risk of Bias Assessment		
Bias Domain		Author's judgement
Key criteria	Detection bias, exposure assessment	Probably high
	Detection bias, outcome assessment	Probably high
	Confounding bias	Low risk
Other criteria	Selection bias	Probably low
	Attrition/exclusion bias	Low risk
	Selective reporting bias	Low risk
	Conflict of interest	Low risk
	Other sources of bias	Probably low

2. Markevych et al., 2018		
Design	Cohort study	
Participants	Human, aged 10-14	
Exposure	PM10	
Comparison	66,823 children followed up from 2000 through 2014	
Outcomes	Attention-Deficit/Hyperactivity Disorder	
Quality Assessment		
Newcastle-Ottawa Quality Assessment Scale-Case Control Study		Author's judgement
Selection	Representative of the exposed cohort	*
	Selection of the non-exposed cohort	*
	Ascertainment of exposure	*
	Demonstration that outcome of interest was not present at start of study	*
Comparability	Comparability of cohorts on the basis of the design of analysis	**
Outcome	Assessment of outcome	*
	Was follow-up long enough for outcome to occur	*
	Adequate of follow up of cohorts	
Risk of Bias Assessment		
Bias Domain		Author's judgement
Key criteria	Detection bias, exposure assessment	Probably high
	Detection bias, outcome assessment	Low
	Confounding bias	Probably low
Other criteria	Selection bias	Probably low
	Attrition/exclusion bias	Probably low
	Selective reporting bias	Low
	Conflict of interest	Low
	Other sources of bias	Probably low

