

## Pollution Impact of Oil, Gas and petrochemical Industries on Reproductive System

System	Diseases	Methods	Results	References
reproductive	<ul style="list-style-type: none"> <li>spontaneous abortion</li> <li>Identifying subclinical spontaneous abortion by assessment of B-human chorionic gonadotrophin (B-hCG)</li> </ul>	Standardised questionnaires, administered by trained interviewers, collected information on reproductive history, pregnancy outcomes, employment history, occupational exposure, smoking habits, alcohol consumption, indoor air pollution, and demographic variables.	The estimated ORs of associations between middle and high levels of exposure to petrochemicals and spontaneous abortion are 2.7 (95% CI 1.9 to 3.9) and 3.2 (95% CI 1.8 to 5.7), respectively, suggesting an exposure-response relation.	(1)
reproductive	<ul style="list-style-type: none"> <li>miscarriage</li> </ul>	questionnaire	The miscarriage rate was slightly elevated in the exposed area (OR = 1.15, 0.75-1.76, 95% confidence interval). While a statistically significant increase in miscarriages was found for a small subset of women who worked for one of the petrochemical companies during pregnancy (OR = 6.6, 2.3-19.2),	(2)
reproductive	<ul style="list-style-type: none"> <li>congenital heart defects (CHDs)</li> <li>neural tube defects (NTDs)</li> <li>oral clefts</li> <li>preterm birth</li> <li>term low birth weight.</li> </ul>	examined associations between maternal residential proximity to NGD and birth outcomes in a retrospective cohort study of 124,842 births between 1996 and 2009 in rural Colorado. used information available in the publically accessible Colorado Oil and Gas Information System (COGIS) . Live birth data were obtained from the Colorado Vital Birth Statistics (CDPHE,	Prevalence of CHDs increased with exposure tertile, with an odds ratio (OR) of 1.3 for the highest tertile (95% CI: 1.2, 1.5); NTD prevalence was associated with the highest tertile of exposure (OR = 2.0; 95% CI: 1.0, 3.9, based on 59 cases), compared with the absence of any gas wells within a 10-mile radius. Exposure was negatively associated with preterm birth and positively associated	(3)

		Denver, CO).	with fetal growth, although the magnitude of association was small. No association was found between exposure and oral clefts.	
<b>reproductive</b>	<ul style="list-style-type: none"> <li>preterm birth</li> </ul>	a retrospective cohort study using electronic health record data on 9384 mothers linked to 10946 neonates in the Geisinger Health System from January 2009-January 2013	there was an association between unconventional natural gas development activity and preterm birth that increased across quartiles, with a fourth quartile odds ratio of 1.4 (95% CI: 1.0-1.9).	(4)

## References:

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2. AXELSSON G, MOLIN I. Outcome of pregnancy among women living near petrochemical industries in Sweden. *International journal of epidemiology*. 1988;17(2):363-9.
3. McKenzie LM, Guo R, Witter RZ, Savitz DA, Newman LS, Adgate JL. Birth outcomes and maternal residential proximity to natural gas development in rural Colorado. *Environmental health perspectives*. 2014;122(4):412.
4. Casey JA, Savitz DA, Rasmussen SG, Ogburn EL, Pollak J, Mercer DG, et al. Unconventional natural gas development and birth outcomes in Pennsylvania, USA. *Epidemiology (Cambridge, Mass)*. 2016;27(2):163.