

Publication

Benefits of smoking bans on preterm and early-term births : a natural experimental design in Switzerland

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Birth outcomes are relevant for future children's health. Capitalising on a natural experimental design in Switzerland, we evaluated how regional smoking bans introduced at different time points affected birth outcomes, including preterm and early-term births.; We used birth registry data of all singleton neonates born in Switzerland (2007-2012). We developed canton-specific interrupted time-series followed by random meta-analysis to evaluate the benefits of smoking bans on preterm (<37 gestational weeks) and early-term (37-38 gestational weeks) births. Heterogeneity across type of ban and contextual characteristics was explored through metaregression. A time-to-event approach was used for evaluating duration of pregnancy under the smoking bans and effects, taking into account individual maternal factors.; We observed a decrease in the risk of preterm birth of 3.6% (95% CI, -9.3% to 2.5%), and early-term birth of 5.0% (95% CI -7.5% to -2.5%). Results showed a clear dose-response relationship. Greater risk reductions were obtained for preterm births in areas with more comprehensive bans (-6.8%; 95% CI -12.1% to 0.1%), and for pregnancies with the longest gestational time under smoking bans (HR, 0.991; 95% CI 0.984 to 0.997 per 10% increase in duration). Benefits were unequal across outcomes and characteristics of cantons and mothers.; Smoking bans resulted in improved birth outcomes in Switzerland with cantons that adopted more comprehensive smoking bans achieving greater benefits. Early-term births constitute a previously ignored though important group.

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