



## Update on the Reproductive Effects of Smoking from *The Health Consequences of Smoking: A Report of the Surgeon General, 2004* Medical Perspectives on Prematurity

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### Background

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The harmful effects of smoking on overall health, including reproduction, have been documented in previous Surgeon General's reports on smoking, most recently in 2001.<sup>1,2</sup> The newest report, *The Health Consequences of Smoking: A Report of the Surgeon General—2004*<sup>3</sup> reexamined the evidence by applying standardized language to draw conclusions about causality.

The report concludes that, "smoking harms nearly every organ of the body and generally diminishes the overall health of smokers" and establishes some new associations demonstrating the contribution of smoking to certain diseases, including additional cancers (including cervical cancer), abdominal aortic aneurysm, pneumonia, cataracts, and periodontitis.<sup>3</sup> In the area of reproductive effects, this report reinforces much of what has already been established and provides a clearer, consistent way to describe the risks associated with smoking during pregnancy.

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### Reproductive Effects of Smoking<sup>3</sup>

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The report found that "the evidence is **sufficient to infer a causal [cause-effect] relationship**"<sup>3</sup> between maternal smoking and the following:

- Fetal growth restriction and low birth weight
- Preterm delivery and shortened gestation
- Premature rupture of the membranes, placenta previa, and placental abruption
- Sudden infant death syndrome (covers smoking during and after pregnancy)
- Reduced fertility in women
- Reduced risk for preeclampsia. *This decreased risk does not outweigh the adverse outcomes of prenatal smoking.*

The report found that "the evidence is **suggestive but not sufficient to infer a causal relationship**"<sup>3</sup> between maternal smoking and the following:

- Spontaneous abortion
- Ectopic pregnancy
- Oral clefts

The report found that "the evidence is **inadequate to infer the presence or absence of a causal relationship**"<sup>3</sup> between maternal smoking and the following:

- Congenital malformations in general
- Physical growth and neurocognitive development of children

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### Implications

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Overall, the report further supports and clarifies the effects of smoking on pregnancy and birth outcomes.

- It provides a strong reference for the association between smoking during pregnancy and adverse pregnancy complications listed under "sufficient to infer a causal relationship."
- For the other factors where evidence was found to be "suggestive but not sufficient" or "inadequate to infer," more studies are needed before drawing definitive conclusions for these possible adverse effects of smoking.

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### References

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<sup>1</sup> U.S. Department of Health and Human Services. *The Health Benefits of Smoking Cessation*. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 1990.

<sup>2</sup> U.S. Department of Health and Human Services. *Women and Smoking: A Report of the Surgeon General*. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2001.

<sup>3</sup> U.S. Department of Health and Human Services. *The Health Consequences of Smoking: A Report of the Surgeon General*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2004.

These Surgeon General's Reports can be found online at: <http://www.cdc.gov/tobacco/sgr/index.htm>