

# Routine Antibiotic Use Reduces Mothers' Infection Risk From C-Section

January 22 2010, By Christe Bruderlin-Nelson

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Having a baby by Caesarean section is becoming increasingly common, despite the higher risks associated with the surgery compared to a vaginal birth. One important concern is the risk of infection, which is between five and 20 times greater for women who undergo scheduled or emergency Caesarean section.

In fact, “the single most important risk factor for postpartum maternal infection is [Caesarean section](#),” according to a new [Cochrane review](#). The researchers looked at 86 studies involving more than 13,000 women to determine whether the use of antibiotics to prevent infection was beneficial.

According to review findings, giving prophylactic — or preventive — antibiotics to women undergoing Caesarean section reduced the incidence of fever by 45 percent, [wound infection](#) by 39 percent, inflammation of the uterine lining by 38 percent and serious infectious complications for the mother by 31 percent.

“The most salient points [of the review] are that antibiotic prophylaxis is effective in preventing infectious complications post-Caesarean section, whether elective or emergency,” said lead review author Fiona Smaill, M.D, at McMaster University in Ontario, Canada

Smaill said the review did not consider specific types of antibiotics or length of treatment.

“Unfortunately this study does not tell us what impact the use of antibiotics, particularly if given before delivery, has on the infant,” said Christian Pettker, an assistant professor in obstetrics, gynecology and reproductive sciences at Yale University. Very few studies in the review looked at infant outcomes. For example, none of the studies looked at infant oral thrush, an infection of the mouth seen in [newborn infants](#) or in infants on [antibiotic treatment](#). There were no adverse effects seen in the few studies that did address the issue.

“The absence of infant outcomes,” Smaill said, “makes it difficult for women to assess the benefits versus risks. While overall any risk to the infant is likely to be minor, many women are concerned about any antibiotic exposure.”

The new review appears in the latest issue of The Cochrane Library, a publication of The Cochrane Collaboration, an international organization that evaluates medical research. Systematic reviews like this one draw evidence based conclusions about medical practice after considering both the content and quality of existing trials on a topic.

The review found benefits for antibiotic prophylaxis whether the physician administered antibiotics before or after clamping the umbilical cord. The review did not reveal which timing was better: providing the medication before or after surgery. “Both work,” Smaill said. “In general, however, prophylaxis for any other surgery is given before the incision.” She said that other studies have suggested it is better to give prophylactic medications before the Caesarean.

Pettker discussed concerns about whether the increased use of antibiotics before delivery would influence antibiotic resistance to bacteria in the hospital setting. “The Caesarean rate is rising worldwide,” she said. “In the United States, the Caesarean delivery rate is above 30 percent. Giving antibiotics to 30 percent of our obstetric population will

no doubt influence the rate of resistance.” Pettker said that giving the antibiotic before surgery might also lead to increasing resistance in the infant population.

Smaill said that while antibiotic resistance is complex, “in general, the judicious use of [antibiotics](#) where there is evidence of their effectiveness probably plays a minor role, if any, in the spread of antibiotic resistance.”

However, Pettker also said we should not rely on them as the only measure to prevent infection at Caesarean. “It is important for us to continue to follow other ways to prevent infections at Caesarean deliveries and to investigate other novel preventive tools. Adherence to proper sterile techniques, reductions of operative times, and proper uses of other evidence based techniques — such as spontaneous removal, rather than manual removal, of the placenta — are important tools for preventing infections as well.”

**More information:** Smaill FM, Gyte GML. Antibiotic prophylaxis versus no prophylaxis for preventing infection after cesarean section. Cochrane Database of Systematic Reviews 2010, Issue 1.

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