



# Does episiotomy at vacuum delivery increase maternal morbidity?

**Yes:** Median episiotomy was associated with an increased rate of 3rd- and 4th-degree perineal laceration in both nulliparous and multiparous women, and mediolateral episiotomy was linked to increased rates of postpartum hemorrhage and analgesia use in this systematic review and meta-analysis. The overall quality of the included evidence was “low” to “very low,” however, according to the study authors.

*Sagi-Dain L, Sagi S. Morbidity associated with episiotomy in vacuum delivery: a systematic review and meta-analysis. BJOG. 2015;122(8):1073–1081.*

## ► EXPERT COMMENTARY

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Episiotomy refers to an incision into the perineal body made during the second stage of labor to expedite delivery. It comes in 2 main flavors (midline and mediolateral), and neither one is particularly palatable. Routine use of episiotomy is strongly discouraged, for several reasons:

- There is little evidence of benefit
- It is associated with an increased risk of short- and long-term complications to both the mother and neonate, including postpartum hemorrhage, severe perineal injury, and pelvic floor dysfunction.<sup>1,2</sup>

Whether to perform an episiotomy at the time of operative vaginal delivery (forceps or vacuum), however, remains controversial.

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Sagi-Dain and Sagi performed a meta-analysis of the existing literature in an effort to answer a single clinically relevant question: Should an episiotomy be performed at the time of vacuum delivery?

## Details of the study

The primary endpoint was obstetric anal sphincter injuries (OASIS), which are more commonly referred to in the United States as severe perineal injury (3rd- and 4th-degree perineal laceration). Secondary endpoints were, among others, neonatal outcomes (including Apgar scores, neonatal trauma, shoulder dystocia, neonatal resuscitation, and admission to the neonatal intensive care unit) and maternal complications (including postpartum hemorrhage, perineal infection, urinary retention, urinary/fecal incontinence, prolonged hospital stay, and analgesia use).

Of 812 original research reports initially identified that examined the effect of episiotomy at vacuum delivery on any measure of maternal or neonatal outcome, 15 articles encompassing 350,764 deliveries were included in the final analysis. Of these, 14 were observational cohort studies (13 retrospective and 1 prospective) plus

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## FAST TRACK

In the absence of large, prospective trials to offer a definitive answer, it is best to avoid episiotomy at vacuum delivery



1 case-control analysis; no randomized trials were identified.

Overall, episiotomy was performed in 64.3% (SD, 18.8%; range, 28.7%–86.0%) of vacuum deliveries and was more common in nulliparous (58.7%; SD, 17.8%) than in multiparous women (34.2%; SD, 14.6%;  $P = .035$ ). The investigators found that US and Canadian studies reported using mainly median episiotomy, whereas European, Scandinavian, and Australian studies used mainly mediolateral episiotomy.

Overall, OASIS occurred in 8.5% (SD, 10.6%; range 1.0%–23.6%) of vacuum deliveries, with a higher rate occurring in nulliparous compared with multiparous women (9.6% [SD, 6.2%] vs 1.7% [SD, 1.3%], respectively;  $P = .031$ ).

Median (midline) episiotomy at the time of vacuum delivery was associated with a significant increase in OASIS in both nulliparous (odds ratio [OR], 5.11; 95% confidence interval [CI], 3.23–8.08) and multiparous women (OR, 89.4; 95% CI, 11.8–677.1). A similar increase in OASIS was seen when a mediolateral episiotomy was performed at vacuum delivery in multiparous women (OR, 1.27; 95% CI, 1.05–1.53), although no statistically significant relationship was evident between mediolateral episiotomy at vacuum delivery and OASIS in nulliparous women (OR, 0.68; 95% CI, 0.43–1.07). Mediolateral episiotomy also was linked to increased rates of postpartum hemorrhage (OR, 1.82; 95% CI, 1.16–2.86) and analgesia use (OR, 2.10; 95% CI, 1.39–3.17).

### Strengths and limitations

Meta-analysis (systematic review) is not synonymous with a review of the literature. It has a very specific methodology and should be treated as original research, albeit *in silico*. Meta-analyses use precise statistical methods to combine and contrast results from a number of independent

### WHAT THIS EVIDENCE MEANS FOR PRACTICE

Episiotomy at the time of vacuum delivery does not appear to be of benefit, and it more likely than not increases maternal morbidity. This is especially true of median episiotomy (the type used most commonly in the United States), which increases the risk of OASIS at the time of vacuum delivery 5-fold in nulliparous and 89-fold in multiparous women.

Confidence in these conclusions is guarded. Based on the small number of reports, the lack of randomized trials, and the significant heterogeneity between the studies, the authors rated the overall quality of evidence as “low” to “very low” using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) working group criteria. Additional large prospective clinical trials are needed to definitively answer the question of whether episiotomy at vacuum delivery increases maternal morbidity.

Until such studies are available, however, it would be best if obstetric care providers avoid episiotomy at the time of vacuum delivery. On a personal note, I look forward to the day when a medical student turns to an attending and asks: “What is an episiotomy?” And the attending responds: “I don’t know. I’ve never seen one.” Only then will I be ready to retire.

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original research reports. The current study is an exemplary illustration of just how such an analysis should be conducted. As prescribed by the Meta-analysis Of Observational Studies in Epidemiology (MOOSE) guidelines,<sup>3</sup> it included all study designs, both published and unpublished data, and was not limited to English language reports.

In addition, if results were unclear or data were missing, the investigators contacted the authors directly to verify the information. Prior published statistical analyses were disregarded, and the investigators conducted an independent evaluation of the pooled data using each patient as a separate data point. Data classification and coding were clearly described; the analysis was performed independently by 2 separate investigators; and a detailed assessment of data quality, heterogeneity, and sensitivity testing was included. 📌

### References

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