

Episiotomy for vaginal birth (Review)

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TABLE OF CONTENTS

ABSTRACT	1
BACKGROUND	2
OBJECTIVES	2
CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW	2
SEARCH METHODS FOR IDENTIFICATION OF STUDIES	3
METHODS OF THE REVIEW	3
DESCRIPTION OF STUDIES	3
METHODOLOGICAL QUALITY	3
RESULTS	3
DISCUSSION	4
AUTHORS' CONCLUSIONS	4
FEEDBACK	4
POTENTIAL CONFLICT OF INTEREST	4
ACKNOWLEDGEMENTS	4
SOURCES OF SUPPORT	5
REFERENCES	5
TABLES	6
Characteristics of included studies	6
Characteristics of excluded studies	8
ANALYSES	9
Comparison 01. RESTRICTIVE vs ROUTINE EPISIOTOMY (all)	9
Comparison 02. RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)	10
Comparison 03. RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)	12
INDEX TERMS	12
COVER SHEET	12
GRAPHS AND OTHER TABLES	14
Analysis 01.01. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 01 Number of episiotomies	14
Analysis 01.02. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 02 Number of episiotomies (primiparae)	14
Analysis 01.03. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 03 Number of episiotomies (multiparae)	15
Analysis 01.04. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 04 Assisted delivery rate	15
Analysis 01.05. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 05 Severe vaginal/perineal trauma	16
Analysis 01.06. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 06 Severe vaginal/perineal trauma (primiparae)	16
Analysis 01.07. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 07 Severe vaginal/perineal trauma (multiparae)	17
Analysis 01.08. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 08 Severe perineal trauma	17
Analysis 01.09. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 09 Severe perineal trauma (primiparae)	18
Analysis 01.10. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 10 Severe perineal trauma (multiparae)	18
Analysis 01.11. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 11 Any posterior perineal trauma	19
Analysis 01.12. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 12 Any posterior perineal trauma (primiparae)	19
Analysis 01.13. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 13 Any posterior perineal trauma (multiparae)	20

Analysis 01.14. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 14 Any anterior trauma	20
Analysis 01.15. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 15 Any anterior trauma (primiparae)	21
Analysis 01.16. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 16 Any anterior trauma (multiparae)	21
Analysis 01.17. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 17 Need for suturing perineal trauma	22
Analysis 01.18. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 18 Need for suturing perineal trauma (primiparae)	22
Analysis 01.19. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 19 Need for suturing perineal trauma (multiparae)	23
Analysis 01.20. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 20 Estimated blood loss at delivery	23
Analysis 01.21. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 21 Moderate/severe perineal pain at 3 days	24
Analysis 01.22. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 22 Any perineal pain at discharge	24
Analysis 01.23. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 23 Any perineal pain at 10 days	24
Analysis 01.24. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 24 Moderate/severe perineal pain at 10 days	25
Analysis 01.25. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 25 Use of oral analgesia at 10 days	25
Analysis 01.26. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 26 Any perineal pain at 3 months	25
Analysis 01.27. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 27 Moderate/severe perineal pain at 3 months	26
Analysis 01.28. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 28 No attempt at intercourse in 3 months	26
Analysis 01.29. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 29 Any dyspareunia within 3 months	26
Analysis 01.30. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 30 Dyspareunia at 3 months	27
Analysis 01.31. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 31 Ever suffering dyspareunia in 3 years	27
Analysis 01.32. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 32 Perineal haematoma at discharge	27
Analysis 01.33. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 33 Healing complications at 7 days	28
Analysis 01.34. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 34 Perineal wound dehiscence at 7 days	28
Analysis 01.35. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 35 Perineal infection	29
Analysis 01.36. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 36 Perineal bulging at 3 months	29
Analysis 01.37. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 37 Urinary incontinence at 3 months	30
Analysis 01.38. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 38 Any urinary incontinence at 3 years	30
Analysis 01.39. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 39 Pad wearing for urinary incontinence	31
Analysis 01.40. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 40 Apgar score less than 7 at 1 minute	31

Analysis 01.41. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 41 Admission to special care baby unit	32
Analysis 02.01. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 01 Number of episiotomies	32
Analysis 02.02. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 02 Number of episiotomies (primiparae)	33
Analysis 02.03. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 03 Number of episiotomies (multiparae)	33
Analysis 02.04. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 04 Assisted delivery rate	34
Analysis 02.05. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 05 Severe vaginal/perineal trauma	34
Analysis 02.06. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 06 Severe vaginal/perineal trauma (primiparae)	35
Analysis 02.07. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 07 Severe vaginal/perineal trauma (multiparae)	35
Analysis 02.08. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 08 Severe perineal trauma	36
Analysis 02.09. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 09 Severe perineal trauma (primiparae)	36
Analysis 02.10. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 10 Severe perineal trauma (multiparae)	37
Analysis 02.11. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 11 Any posterior perineal trauma	37
Analysis 02.12. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 12 Any posterior perineal trauma (primiparae)	38
Analysis 02.13. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 13 Any posterior perineal trauma (multiparae)	38
Analysis 02.14. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 14 Any anterior trauma	39
Analysis 02.15. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 15 Any anterior trauma (primiparae)	39
Analysis 02.16. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 16 Any anterior trauma (multiparae)	40
Analysis 02.17. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 17 Need for suturing perineal trauma	40
Analysis 02.18. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 18 Need for suturing perineal trauma (primiparae)	41
Analysis 02.19. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 19 Need for suturing perineal trauma (multiparae)	41
Analysis 02.20. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 20 Estimated blood loss at delivery	42
Analysis 02.21. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 21 Moderate/severe perineal pain at 3 days	42
Analysis 02.22. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 22 Any perineal pain at discharge	42
Analysis 02.23. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 23 Any perineal pain at 10 days	43
Analysis 02.24. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 24 Moderate/severe perineal pain at 10 days	43
Analysis 02.25. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 25 Use of oral analgesia at 10 days	43

Analysis 02.26. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 26 Any perineal pain at 3 months	44
Analysis 02.27. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 27 Moderate/severe perineal pain at 3 months	44
Analysis 02.28. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 28 No attempt at intercourse in 3 months	44
Analysis 02.29. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 29 Any dyspareunia within 3 months	45
Analysis 02.30. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 30 Dyspareunia at 3 months	45
Analysis 02.31. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 31 Ever suffering dyspareunia in 3 years	45
Analysis 02.32. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 32 Perineal haematoma at discharge	46
Analysis 02.33. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 33 Healing complications at 7 days	46
Analysis 02.34. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 34 Perineal wound dehiscence at 7 days	46
Analysis 02.35. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 35 Perineal infection	47
Analysis 02.36. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 36 Urinary incontinence at 3 months	47
Analysis 02.37. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 37 Any urinary incontinence at 3 years	48
Analysis 02.38. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 38 Pad wearing for urinary incontinence	48
Analysis 02.39. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 39 Apgar score less than 7 at 1 minute	49
Analysis 02.40. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 40 Admission to special care baby unit	49
Analysis 03.01. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 01 Number of episiotomies	50
Analysis 03.02. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 02 Number of episiotomies (primiparae)	50
Analysis 03.03. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 03 Number of episiotomies (multiparae)	50
Analysis 03.04. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 04 Assisted delivery rate	51
Analysis 03.05. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 05 Severe vaginal/perineal trauma	51
Analysis 03.06. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 06 Severe vaginal/perineal trauma (primiparae)	51
Analysis 03.07. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 07 Severe vaginal/perineal trauma (multiparae)	52
Analysis 03.08. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 08 Severe perineal trauma	52
Analysis 03.09. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 09 Severe perineal trauma (primiparae)	52
Analysis 03.10. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 10 Severe perineal trauma (multiparae)	53
Analysis 03.11. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 11 Any posterior perineal trauma	53

Analysis 03.12. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 12 Any posterior perineal trauma (primiparae)	53
Analysis 03.13. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 13 Any posterior perineal trauma (multiparae)	54
Analysis 03.14. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 14 Any anterior trauma	54
Analysis 03.15. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 15 Any anterior trauma (primiparae)	54
Analysis 03.16. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 16 Any anterior trauma (multiparae)	55
Analysis 03.17. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 17 Perineal bulging at 3 months	55
Analysis 03.18. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 18 Urinary incontinence at 3 months	55
Analysis 03.19. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 19 Admission to special care baby unit	56

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ABSTRACT

Background

Episiotomy is done to prevent severe perineal tears, but its routine use has been questioned. The relative effects of midline compared with midlateral episiotomy are unclear.

Objectives

The objective of this review was to assess the effects of restrictive use of episiotomy compared with routine episiotomy during vaginal birth.

Search strategy

We searched the Cochrane Pregnancy and Childbirth Group trials register.

Selection criteria

Randomised trials comparing restrictive use of episiotomy with routine use of episiotomy; restrictive use of mediolateral episiotomy versus routine mediolateral episiotomy; restrictive use of midline episiotomy versus routine midline episiotomy; and use of midline episiotomy versus mediolateral episiotomy.

Data collection and analysis

Trial quality was assessed and data were extracted independently by two reviewers.

Main results

Six studies were included. In the routine episiotomy group, 72.7% (1752/2409) of women had episiotomies, while the rate in the restrictive episiotomy group was 27.6% (673/2441). Compared with routine use, restrictive episiotomy involved less posterior perineal trauma (relative risk 0.88, 95% confidence interval 0.84 to 0.92), less suturing (relative risk 0.74, 95% confidence interval 0.71 to 0.77) and fewer healing complications (relative risk 0.69, 95% confidence interval 0.56 to 0.85). Restrictive episiotomy was associated with more anterior perineal trauma (relative risk 1.79, 95% 1.55 to 2.07). There was no difference in severe vaginal or perineal trauma (relative risk 1.11, 95% confidence interval 0.83 to 1.50); dyspareunia (relative risk 1.02, 95% confidence interval 0.90 to 1.16); urinary incontinence (relative risk 0.98, 95% confidence interval 0.79 to 1.20) or several pain measures. Results for restrictive versus routine mediolateral versus midline episiotomy were similar to the overall comparison.

Authors' conclusions

Restrictive episiotomy policies appear to have a number of benefits compared to routine episiotomy policies. There is less posterior perineal trauma, less suturing and fewer complications, no difference for most pain measures and severe vaginal or perineal trauma, but there was an increased risk of anterior perineal trauma with restrictive episiotomy.

BACKGROUND

Episiotomy is the surgical enlargement of the vaginal orifice by an incision of the perineum during the last part of the second stage of labour or delivery. This procedure is done with scissors or scalpel and requires repair by suturing (Thacker 1983).

A report as far back as 1741 suggested the first surgical opening of the perineum to prevent severe perineal tears (Ould 1741). World-wide, rates of episiotomy increased substantially during the first half of this century while at the same time there was an increasing move for women to give birth in hospital and for physicians to become involved in the normal uncomplicated birth process. Although episiotomy has become one of the most commonly performed surgical procedures in the world, it was introduced without strong scientific evidence of its effectiveness (Lede 1996). Reported rates of episiotomies around the world are 62.5% in USA (Thacker 1983), 30% in Europe (Mascarenhas 1992; Buekens 1985) and with higher estimates in Latin America. In Argentina episiotomy is a routine intervention in nearly all nulliparous and primiparous births (Lede 1991).

The suggested maternal beneficial effects of episiotomy are the following: (a) reduction in the likelihood of third degree tears (Ould 1741; Thacker 1983; Cunningham 1993), (b) preservation of the muscle relaxation of the pelvic floor and perineum leading to improved sexual function and a reduced risk of faecal and or urinary incontinence (Aldridge 1935; Gainey 1955), (c) being a straight, clean incision, an episiotomy is easier to repair and heals better than a laceration. For the neonate, it is suggested that the prolonged second stage of labour could cause fetal asphyxia, cranial trauma, cerebral haemorrhage and mental retardation. During delivery it is also suggested that episiotomy may reduce the possibility of fetal shoulder dystocia.

On the other hand, hypothesized adverse effects of routine use of episiotomy include: (a) extension of episiotomy either by cutting the anal sphincter or rectum or by unavoidable extension of the incision, (b) unsatisfactory anatomic results such as skintags, asymmetry or excessive narrowing of the introitus, vaginal prolapse, recto-vaginal fistula and fistula in ano (Homsí 1994), (c) increased blood loss and haematoma, (d) pain and oedema in the episiotomy region, (e) infection and dehiscence (Homsí 1994), (f) sexual dysfunction.

Other important issues to bear in mind are costs and the additional resources that may be required to sustain a policy of routine use of episiotomy.

The question of whether midline episiotomy results in a better outcome than mediolateral episiotomy has not been satisfactorily answered. The suggested advantages of performing a midline episiotomy instead of midlateral episiotomy are: better future sexual function and better healing with improved appearance of the scar. Those not favouring the use of the midline method suggest it is

associated with higher rates of extension of the episiotomy and consequently an increased risk of severe perineal trauma (Shiono 1990).

Our aim is to evaluate the available evidence about the possible benefits, risks and costs of the restrictive use of episiotomy versus routine episiotomy. Also, we evaluate the benefits and risks of performing a midline episiotomy in comparison with a mediolateral episiotomy. The implications for clinical practice and the need for further research in this area will be considered.

OBJECTIVES

To determine the possible benefits and risks of the use of restrictive episiotomy versus routine episiotomy during delivery. Also we will determine the beneficial and detrimental effects of the use of midline episiotomy in comparison with mediolateral episiotomy.

Comparisons will be made in the following categories:

- (1) Restrictive episiotomy versus routine episiotomy (all)
- (2) Restrictive episiotomy versus routine episiotomy (mediolateral)
- (3) Restrictive episiotomy versus routine episiotomy (midline)
- (4) Midline episiotomy versus mediolateral episiotomy.

Hypotheses:

- (1) Restrictive use of episiotomy compared with routine use of episiotomy during delivery will not influence any of the outcomes cited under 'Types of outcome measures'.
- (2) Midline episiotomy compared with routine episiotomy during delivery will be similar in any of the outcomes cited under 'Types of outcome measures'.

CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW

Types of studies

Any adequate randomized controlled trial that compares one or more of the following:

- (1) Restrictive use of mediolateral episiotomy versus routine use of mediolateral episiotomy.
- (2) Restrictive use of midline episiotomy versus routine use of midline episiotomy.
- (3) Use of midline episiotomy versus mediolateral episiotomy.

Types of participants

Pregnant women having a vaginal birth.

Types of intervention

Primary comparison

The main comparison is restrictive use of episiotomy versus routine use of episiotomy.

Secondary comparisons

These include:

Restrictive use of mediolateral episiotomy versus routine use of mediolateral episiotomy.

Restrictive use of midline episiotomy versus routine use of midline episiotomy.

Use of midline episiotomy versus mediolateral episiotomy.

Types of outcome measures

Maternal and neonatal outcomes are evaluated.

The maternal outcomes assessed in the comparison are sub-analysed by parity (primiparae and multiparae) and include: number of episiotomies, assisted delivery rate, severe vaginal/perineal trauma, severe perineal trauma, need for suturing, posterior perineal trauma, anterior perineal trauma, blood loss, perineal pain, use of analgesia, dyspareunia, haematoma, healing complications and dehiscence, perineal infection, and urinary incontinence.

The neonatal outcome measures are: Apgar score less than 7 at one minute and need for admission to Special Care Baby Unit.

SEARCH METHODS FOR IDENTIFICATION OF STUDIES

See: methods used in reviews.

This review has drawn on the search strategy developed for the Pregnancy and Childbirth Group as a whole. See Review Group's details for more information.

Relevant trials have been identified in the Group's Specialised Register of Controlled Trials. The term used to perform the search was 'episiotomy'. With this strategy we found 214 hits corresponding to different types of articles related to the issue of episiotomy. Most of the studies are related to comparisons of analgesics for postepisiotomy pain, evaluation of different techniques for perineal repair, comparison of operative deliveries and evaluation of predelivery perineal management.

There were only nine trials that met the stated objectives for this review but three of them were excluded because they were of poor methodological quality. In summary, there are six randomised controlled trials contributing to this review.

METHODS OF THE REVIEW

Trials under consideration were evaluated for methodological quality and appropriateness for inclusion, without consideration of their results. Included trial data were processed as described in Mulrow & Oxman 1997. In this systematic review, methodological

quality is assessed in the three dimensions described by Chalmers et al 1989: namely the control for selection bias at entry (the quality of random allocation assessing the generation and concealment methods applied), the control of selection bias after entry (the extent to which the primary analysis included every person entered into the randomized cohorts) and the control of bias in assessing outcomes (the extent to which those assessing the outcomes were kept unaware of the group assignment of the individuals examined).

DESCRIPTION OF STUDIES

See table of 'Characteristics of Included Studies'.

METHODOLOGICAL QUALITY

The method of treatment allocation in general is sound except for the Harrison 1984 trial where the method of treatment allocation is not clearly established raising concerns about possible selection bias.

Sleep 1984, House 1986, Klein 1992, Argentine 1993 and Eltorkey 1994 report random allocation and the concealment of the assignment by sealed opaque envelopes reducing the risk of selection bias at entry to the trial.

Selection bias after entry is avoided in Sleep 1984, Harrison 1984, House 1986 and Eltorkey 1994 where all the women randomized are included in the analyses. Sleep 1984 includes long term follow-up, with a loss to follow-up of about 33% of the participants. Klein 1992 shows a loss to follow-up rate of 0.71% for primary outcomes to 5% for secondary outcomes. In the Argentine 1993 trial the total number of women randomized was included in the analysis of the primary outcome with a 5% loss to follow-up at delivery, 11% at postnatal discharge and 57% at seven months postpartum. Intention to treat analysis was performed in all of the studies.

In the Sleep 1984 trial, the observer measuring the outcomes was blinded to the treatment group assignments. In the Argentine 1993 trial only the assessment of the healing and morbidity outcomes were blinded to the observer. None of the other studies (Harrison 1984, House 1986, Klein 1992, Eltorkey 1994) reported any effort to blind the observer to the treatment group allocation.

RESULTS

The restrictive use of episiotomy shows a lower risk of clinically relevant morbidities including posterior perineal trauma (relative risk (RR) 0.88, 95% confidence interval (CI) 0.84 to 0.92), need for suturing perineal trauma (RR 0.74, 95% CI 0.71 to 0.77), and healing complications at seven days (RR 0.69, 95% CI 0.56 to

0.85). No difference is shown in the incidence of major outcomes such as severe vaginal or perineal trauma nor in pain, dyspareunia or urinary incontinence. The only disadvantage shown in the restrictive use of episiotomy is an increased risk of anterior perineal trauma (RR 1.79, 95% CI 1.55 to 2.07). The secondary comparisons, for both restrictive versus routine mediolateral episiotomy and restrictive versus midline episiotomy, show similar results to the overall comparison.

See the tables and graphics included in this review.

No trial was included comparing mediolateral versus midline episiotomy, because of poor methodological quality.

DISCUSSION

The primary question is whether or not to use an episiotomy routinely. The answer is clear. There is evidence to support the restrictive use of episiotomy compared with routine use of episiotomy. This applies for the overall comparison and the comparisons of subgroups, that take parity into account.

In the light of the available evidence restrictive use of episiotomy is recommended.

What type of episiotomy is more beneficial, midline or mediolateral? To date there are only two published trials available, both of which were excluded from this review. As described in the 'Characteristics of Excluded Studies' table, these trials are of poor methodological quality, making their results uninterpretable. The evidence to support what kind of episiotomy technique to recommend, therefore, remains unanswered.

Based on this systematic review Belizan et al (personal communication) calculated money saved with a policy of selective episiotomy in comparison with a policy of routine episiotomy in two Latin American countries. Being conservative they calculated a saving between US\$ 6.50 and 12.50 every vaginal birth without episiotomy in the public sector. This figure only includes costs of suture materials. In a country as Venezuela with 574,000 births per year, from which 97 per cent are in the public sector the saving would be between US\$ 3,5 and 7 million. The same estimation made for Brazil gives a saving ranging from US\$ 15 to 30 million.

AUTHORS' CONCLUSIONS

Implications for practice

There is clear evidence to recommend a restrictive use of episiotomy. These results are evident in the overall comparison and remain after stratification according to the type of episiotomy: restrictive mediolateral versus routine mediolateral or restrictive midline versus routine midline. Until further evidence is available,

the choice of technique should be that with which the accoucheur is most familiar.

Implications for research

Several questions remain unanswered and further trials are needed to address them. What are the indications for the restrictive use of episiotomy at an assisted delivery (forceps or vacuum), preterm delivery, breech delivery, predicted macrosomia and presumed imminent tears? There is a pressing need to evaluate which episiotomy technique (mediolateral or midline) provides the best outcome.

FEEDBACK

Preston, September 2001

Summary

Results:

The relative risks reported in the results section have been calculated using a fixed effects analysis. There is significant heterogeneity in the outcomes for suturing and perineal trauma. Use of the fixed effects approach ignores this variability between studies, producing artificially narrow confidence intervals. For example, the relative risk for 'need for suturing perineal trauma' changes from 0.74(0.71,0.77) to 0.71(0.61,0.81) with a random effects model, and that for 'any anterior trauma' changes from 1.79(1.55,2.07) to 1.48(0.99,2.21).

Author's reply

A response from the reviewer will be published as soon as it is available.

Contributors

Summary of comment from Carol Preston, September 2001

POTENTIAL CONFLICT OF INTEREST

Guillermo Carroli and Jose Belizan are the authors of one of the studies included in this review.

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TABLES

Characteristics of included studies

Study	Argentina 1993
Methods	Generation of randomization by computer from a random sample generator programme, organised in balanced blocks of 100, with stratification by centre and by parity (nulliparous and primiparous). Allocation concealment by sequentially numbered, sealed, opaque envelopes, divided according to parity.
Participants	2606 women. Uncomplicated labour. 37 to 42 weeks' gestation. Nulliparous or primiparous. Single fetus. Cephalic presentation. No previous caesarean section or severe perineal tears.
Interventions	Selective: Try to avoid an episiotomy if possible and only do it for fetal indications or if severe perineal trauma was judged to be imminent. Routine: Do an episiotomy according to the hospital's policy prior to the trial.
Outcomes	Severe perineal trauma. Middle/upper vaginal tears. Anterior trauma. Any posterior surgical repair. Perineal pain at discharge. Haematoma at discharge. Healing complications, infection and dehiscence at 7 days. Apgar score less than 7 at 1 minute.
Notes	MEDIOLATERAL EPISIOTOMIES
Allocation concealment	A – Adequate

Characteristics of included studies (Continued)

Study	Eltorkey 1994
Methods	Random generation: not stated. Allocation concealment: sealed opaque envelopes.
Participants	200 primigravid women with live, singleton fetus, cephalic presentation of at least 37 weeks of gestational age, having a spontaneous vaginal delivery. Not suffering from any important medical or psychiatric disorder.
Interventions	Elective group: the intention was to perform an episiotomy unless it was considered absolutely unnecessary. Selective group: the intention was not to perform an episiotomy unless it was absolutely necessary for maternal or fetal reasons.
Outcomes	First, second, third and fourth degree tears, anterior trauma, need for suturing, and neonatal outcomes: Apgar score at first and seventh minute and stay in neonatal intensive care unit.
Notes	MEDIOLATERAL EPISIOTOMY
Allocation concealment	A – Adequate

Study	Harrison 1984
Methods	Generation method of randomization not established. Concealment allocation method not established. 'Allocated randomly'.
Participants	181 women primigravid, vaginal delivery, at least 16 years old, no less than 38 weeks' gestational age, not suffering from any important medical or psychiatric conditions or eclampsia.
Interventions	One group were not to undergo episiotomy unless it was considered to be medically essential by the person in charge, that is the accoucheur could see that a woman was going to sustain a greater damage or if the intact perineum was thought to be hindering the achievement of a safe normal or operative delivery. Another group were to undergo mediolateral episiotomy.
Outcomes	Severe maternal trauma. Any posterior perineal trauma. Need for suturing perineal trauma.
Notes	MEDIOLATERAL EPISIOTOMIES
Allocation concealment	B – Unclear

Study	House 1986
Methods	Generation method of randomization not established. Concealment method of allocation by envelopes.
Participants	Number of participants not established. There is only information for 165 women available to follow-up but it lacks information in those women lost to follow-up either because one of the authors was not available, or because of the early discharge scheme. Women were at least 37 weeks' gestational age, cephalic presentation and vaginal delivery.
Interventions	One group, episiotomy was not performed specifically to prevent laceration. Another group were to receive standard current management whereby perineal damage was avoided by control of the descent of the head and supporting the perineum at crowning. An episiotomy was made if there was fetal distress or for maternal reasons to shorten the second stage such as severe exhaustion, inability to complete expulsion or unwillingness to continue pushing. Episiotomy was performed if the perineum appeared to be too tight or rigid to permit delivery without laceration, or if a laceration appeared imminent.
Outcomes	Second degree tear. Third degree tear. Need for perineal suturing. Any perineal pain at 3 days. Healing at 3 days. Tenderness at 3 days. Perineal infection at 3 days. Blood loss during delivery.
Notes	MEDIOLATERAL EPISIOTOMIES
Allocation concealment	A – Adequate

Study	Klein 1992
Methods	Generation method of randomization not established. Concealment of allocation by opaque, sequentially numbered envelopes.
Participants	1050 women enrolled at 30 to 34 weeks' gestation, from which 703 were randomized. Parity 0, 1 or 2. Between the ages of 18 and 40 years. Single fetus. English or French spoken. Medical or obstetrical low risk determined by the physician. Randomization took place if the women were at least 37 weeks' gestation, medical conditions developing late in pregnancy, fetal distress, caesarean deliveries and planned forceps.
Interventions	"Try to avoid an episiotomy": the restricted episiotomy instruction. "Try to avoid a tear": the liberal episiotomy instruction.
Outcomes	Perineal trauma including 1st, 2nd, 3rd, 4th degree and sulcus tears. Perineal pain at 1, 2, 10 days. Dyspareunia. Urinary incontinence and perineal bulging. Time on resumption and pain of sexual activity. Pelvic floor function. Admission to special care baby unit.
Notes	MIDLINE EPISIOTOMIES
Allocation concealment	A – Adequate

Study	Sleep 1984
Methods	Generation method of randomization not established. Concealment of allocation by opaque sealed envelopes.
Participants	1000 women randomized with spontaneous vaginal deliveries, live singleton fetus, at least 37 completed weeks of gestational age, cephalic presentation. From the 1000 original women randomized in the original trial, 922 were available for follow-up and 674 of them responded to a postal questionnaire which are the women included in the analysis.
Interventions	"Try to avoid episiotomy": the intention should be to avoid an episiotomy and performing it only for fetal indications (fetal bradycardia, tachycardia, or meconium stained liquor). "Try to prevent a tear": the intention being that episiotomy should be used more liberally to prevent tears.
Outcomes	Severe maternal trauma: extension through the anal sphincter or to the rectal mucosa or to the upper third of the vagina. Apgar score less than 7 at one minute. Severe or moderate perineal pain 10 days after delivery. Admission to special care baby unit in first 10 days of life. Perineal discomfort three months after delivery. No resumption of sexual intercourse three months after delivery. Any dyspareunia in 3 years. Any incontinence of urine at 3 years. Urinary incontinence severe to wear a pad at 3 years.
Notes	MEDIOLATERAL EPISIOTOMIES
Allocation concealment	A – Adequate

Characteristics of excluded studies

Study	Reason for exclusion
Coats 1980	The allocation was quasi random and prone to cause selection bias. As it is described in the article "Women who were admitted to the delivery suite were randomly allocated into two groups by the last digit of their hospital numbers". In addition, when the staff performed an incision which was inappropriate to the treatment allocation, the woman was removed from the trial. This withdrawal of women as opposed to the principle of 'intention to treat analysis' increases the risk of selection bias.
Henriksen 1992	The allocation was quasi random. As is explained in the article the "deliveries were assisted by midwives on duty when they arrive on the labour ward". This method of allocation is very prone to selection bias.

Characteristics of excluded studies (*Continued*)

Werner 1991 There is no reference about the method of randomization used. The effects are not shown in a quantitative format making the data uninterpretable.

ANALYSES

Comparison 01. RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Number of episiotomies	6	4850	Relative Risk (Fixed) 95% CI	0.38 [0.35, 0.41]
02 Number of episiotomies (primiparae)	6	2810	Relative Risk (Fixed) 95% CI	0.43 [0.40, 0.47]
03 Number of episiotomies (multiparae)	4	2040	Relative Risk (Fixed) 95% CI	0.27 [0.23, 0.31]
04 Assisted delivery rate	4	3656	Relative Risk (Fixed) 95% CI	0.79 [0.56, 1.11]
05 Severe vaginal/perineal trauma	3	4284	Relative Risk (Fixed) 95% CI	1.11 [0.83, 1.50]
06 Severe vaginal/perineal trauma (primiparae)	3	2331	Relative Risk (Fixed) 95% CI	1.15 [0.84, 1.58]
07 Severe vaginal/perineal trauma (multiparae)	3	1973	Relative Risk (Fixed) 95% CI	1.14 [0.52, 2.48]
08 Severe perineal trauma	5	3850	Relative Risk (Fixed) 95% CI	0.80 [0.55, 1.16]
09 Severe perineal trauma (primiparae)	5	2390	Relative Risk (Fixed) 95% CI	0.84 [0.56, 1.25]
10 Severe perineal trauma (multiparae)	3	1460	Relative Risk (Fixed) 95% CI	0.71 [0.28, 1.82]
11 Any posterior perineal trauma	4	2079	Relative Risk (Fixed) 95% CI	0.88 [0.84, 0.92]
12 Any posterior perineal trauma (primiparae)	4	1157	Relative Risk (Fixed) 95% CI	0.86 [0.82, 0.91]
13 Any posterior perineal trauma (multiparae)	2	922	Relative Risk (Fixed) 95% CI	0.91 [0.83, 0.99]
14 Any anterior trauma	4	4342	Relative Risk (Fixed) 95% CI	1.79 [1.55, 2.07]
15 Any anterior trauma (primiparae)	3	976	Relative Risk (Fixed) 95% CI	1.24 [0.96, 1.60]
16 Any anterior trauma (multiparae)	2	922	Relative Risk (Fixed) 95% CI	1.61 [1.19, 2.18]
17 Need for suturing perineal trauma	5	4133	Relative Risk (Fixed) 95% CI	0.74 [0.71, 0.77]
18 Need for suturing perineal trauma (primiparae)	5	2441	Relative Risk (Fixed) 95% CI	0.73 [0.70, 0.76]
19 Need for suturing perineal trauma (multiparae)	3	1692	Relative Risk (Fixed) 95% CI	0.78 [0.72, 0.83]
20 Estimated blood loss at delivery	1	165	Weighted Mean Difference (Fixed) 95% CI	-58.00 [-107.57, -8.43]
21 Moderate/severe perineal pain at 3 days	1	165	Relative Risk (Fixed) 95% CI	0.71 [0.48, 1.05]
22 Any perineal pain at discharge	1	2422	Relative Risk (Fixed) 95% CI	0.72 [0.65, 0.81]
23 Any perineal pain at 10 days	1	885	Relative Risk (Fixed) 95% CI	1.00 [0.78, 1.27]
24 Moderate/severe perineal pain at 10 days	1	885	Relative Risk (Fixed) 95% CI	1.04 [0.67, 1.62]
25 Use of oral analgesia at 10 days	1	885	Relative Risk (Fixed) 95% CI	1.47 [0.63, 3.40]
26 Any perineal pain at 3 months	1	895	Relative Risk (Fixed) 95% CI	0.98 [0.62, 1.55]

27 Moderate/severe perineal pain at 3 months	1	895	Relative Risk (Fixed) 95% CI	1.51 [0.65, 3.49]
28 No attempt at intercourse in 3 months	1	895	Relative Risk (Fixed) 95% CI	0.92 [0.61, 1.39]
29 Any dyspareunia within 3 months	1	895	Relative Risk (Fixed) 95% CI	1.02 [0.90, 1.16]
30 Dyspareunia at 3 months	1	895	Relative Risk (Fixed) 95% CI	1.22 [0.94, 1.59]
31 Ever suffering dyspareunia in 3 years	1	674	Relative Risk (Fixed) 95% CI	1.21 [0.84, 1.75]
32 Perineal haematoma at discharge	1	2296	Relative Risk (Fixed) 95% CI	0.96 [0.65, 1.42]
33 Healing complications at 7 days	1	1119	Relative Risk (Fixed) 95% CI	0.69 [0.56, 0.85]
34 Perineal wound dehiscence at 7 days	1	1118	Relative Risk (Fixed) 95% CI	0.48 [0.30, 0.75]
35 Perineal infection	2	1298	Relative Risk (Fixed) 95% CI	1.02 [0.48, 2.16]
36 Perineal bulging at 3 months	1	667	Relative Risk (Fixed) 95% CI	0.84 [0.50, 1.40]
37 Urinary incontinence at 3 months	2	1569	Relative Risk (Fixed) 95% CI	0.98 [0.79, 1.20]
38 Any urinary incontinence at 3 years	1	674	Relative Risk (Fixed) 95% CI	0.95 [0.77, 1.16]
39 Pad wearing for urinary incontinence	1	674	Relative Risk (Fixed) 95% CI	1.16 [0.71, 1.89]
40 Apgar score less than 7 at 1 minute	3	3799	Relative Risk (Fixed) 95% CI	1.09 [0.78, 1.51]
41 Admission to special care baby unit	3	1898	Relative Risk (Fixed) 95% CI	0.74 [0.46, 1.19]

Comparison 02. RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Number of episiotomies	5	4152	Relative Risk (Fixed) 95% CI	0.34 [0.31, 0.36]
02 Number of episiotomies (primiparae)	5	2454	Relative Risk (Fixed) 95% CI	0.40 [0.37, 0.43]
03 Number of episiotomies (multiparae)	3	1698	Relative Risk (Fixed) 95% CI	0.20 [0.17, 0.24]
04 Assisted delivery rate	3	2964	Relative Risk (Fixed) 95% CI	0.75 [0.50, 1.15]
05 Severe vaginal/perineal trauma	2	3586	Relative Risk (Fixed) 95% CI	1.16 [0.80, 1.69]
06 Severe vaginal/perineal trauma (primiparae)	2	1975	Relative Risk (Fixed) 95% CI	1.18 [0.78, 1.78]
07 Severe vaginal/perineal trauma (multiparae)	2	1631	Relative Risk (Fixed) 95% CI	1.21 [0.49, 2.96]
08 Severe perineal trauma	4	3152	Relative Risk (Fixed) 95% CI	0.55 [0.30, 1.01]
09 Severe perineal trauma (primiparae)	4	2034	Relative Risk (Fixed) 95% CI	0.54 [0.27, 1.09]
10 Severe perineal trauma (multiparae)	2	1118	Relative Risk (Fixed) 95% CI	0.61 [0.19, 1.97]
11 Any posterior perineal trauma	3	1381	Relative Risk (Fixed) 95% CI	0.85 [0.80, 0.91]
12 Any posterior perineal trauma (primiparae)	3	801	Relative Risk (Fixed) 95% CI	0.80 [0.75, 0.87]
13 Any posterior perineal trauma (multiparae)	1	580	Relative Risk (Fixed) 95% CI	0.94 [0.83, 1.05]

14 Any anterior trauma	3	3644	Relative Risk (Fixed) 95% CI	1.86 [1.59, 2.17]
15 Any anterior trauma (primiparae)	2	620	Relative Risk (Fixed) 95% CI	1.25 [0.94, 1.65]
16 Any anterior trauma (multiparae)	1	580	Relative Risk (Fixed) 95% CI	1.63 [1.13, 2.35]
17 Need for suturing perineal trauma	5	4133	Relative Risk (Fixed) 95% CI	0.74 [0.71, 0.77]
18 Need for suturing perineal trauma (primiparae)	5	2441	Relative Risk (Fixed) 95% CI	0.73 [0.70, 0.76]
19 Need for suturing perineal trauma (multiparae)	3	1692	Relative Risk (Fixed) 95% CI	0.78 [0.72, 0.83]
20 Estimated blood loss at delivery	1	165	Weighted Mean Difference (Fixed) 95% CI	-58.00 [-107.57, -8.43]
21 Moderate/severe perineal pain at 3 days	1	165	Relative Risk (Fixed) 95% CI	0.71 [0.48, 1.05]
22 Any perineal pain at discharge	1	2422	Relative Risk (Fixed) 95% CI	0.72 [0.65, 0.81]
23 Any perineal pain at 10 days	1	885	Relative Risk (Fixed) 95% CI	1.00 [0.78, 1.27]
24 Moderate/severe perineal pain at 10 days	1	885	Relative Risk (Fixed) 95% CI	1.04 [0.67, 1.62]
25 Use of oral analgesia at 10 days	1	885	Relative Risk (Fixed) 95% CI	1.47 [0.63, 3.40]
26 Any perineal pain at 3 months	1	895	Relative Risk (Fixed) 95% CI	0.98 [0.62, 1.55]
27 Moderate/severe perineal pain at 3 months	1	895	Relative Risk (Fixed) 95% CI	1.51 [0.65, 3.49]
28 No attempt at intercourse in 3 months	1	895	Relative Risk (Fixed) 95% CI	0.92 [0.61, 1.39]
29 Any dyspareunia within 3 months	1	895	Relative Risk (Fixed) 95% CI	1.02 [0.90, 1.16]
30 Dyspareunia at 3 months	1	895	Relative Risk (Fixed) 95% CI	1.22 [0.94, 1.59]
31 Ever suffering dyspareunia in 3 years	1	674	Relative Risk (Fixed) 95% CI	1.21 [0.84, 1.75]
32 Perineal haematoma at discharge	1	2296	Relative Risk (Fixed) 95% CI	0.96 [0.65, 1.42]
33 Healing complications at 7 days	1	1119	Relative Risk (Fixed) 95% CI	0.69 [0.56, 0.85]
34 Perineal wound dehiscence at 7 days	1	1118	Relative Risk (Fixed) 95% CI	0.48 [0.30, 0.75]
35 Perineal infection	2	1298	Relative Risk (Fixed) 95% CI	1.02 [0.48, 2.16]
36 Urinary incontinence at 3 months	1	895	Relative Risk (Fixed) 95% CI	1.00 [0.76, 1.30]
37 Any urinary incontinence at 3 years	1	674	Relative Risk (Fixed) 95% CI	0.95 [0.77, 1.16]
38 Pad wearing for urinary incontinence	1	674	Relative Risk (Fixed) 95% CI	1.16 [0.71, 1.89]
39 Apgar score less than 7 at 1 minute	3	3799	Relative Risk (Fixed) 95% CI	1.09 [0.78, 1.51]
40 Admission to special care baby unit	2	1200	Relative Risk (Fixed) 95% CI	0.74 [0.46, 1.19]

Comparison 03. RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Number of episiotomies	1	698	Relative Risk (Fixed) 95% CI	0.67 [0.59, 0.78]
02 Number of episiotomies (primiparae)	1	356	Relative Risk (Fixed) 95% CI	0.70 [0.61, 0.81]
03 Number of episiotomies (multiparae)	1	342	Relative Risk (Fixed) 95% CI	0.65 [0.50, 0.86]
04 Assisted delivery rate	1	692	Relative Risk (Fixed) 95% CI	0.87 [0.49, 1.55]
05 Severe vaginal/perineal trauma	1	698	Relative Risk (Fixed) 95% CI	1.03 [0.63, 1.69]
06 Severe vaginal/perineal trauma (primiparae)	1	356	Relative Risk (Fixed) 95% CI	1.10 [0.67, 1.81]
07 Severe vaginal/perineal trauma (multiparae)	1	342	Relative Risk (Fixed) 95% CI	0.94 [0.19, 4.61]
08 Severe perineal trauma	1	698	Relative Risk (Fixed) 95% CI	1.03 [0.63, 1.69]
09 Severe perineal trauma (primiparae)	1	356	Relative Risk (Fixed) 95% CI	1.10 [0.67, 1.81]
10 Severe perineal trauma (multiparae)	1	342	Relative Risk (Fixed) 95% CI	0.94 [0.19, 4.61]
11 Any posterior perineal trauma	1	698	Relative Risk (Fixed) 95% CI	0.92 [0.87, 0.99]
12 Any posterior perineal trauma (primiparae)	1	356	Relative Risk (Fixed) 95% CI	0.99 [0.93, 1.05]
13 Any posterior perineal trauma (multiparae)	1	342	Relative Risk (Fixed) 95% CI	0.86 [0.76, 0.97]
14 Any anterior trauma	1	698	Relative Risk (Fixed) 95% CI	1.41 [0.95, 2.09]
15 Any anterior trauma (primiparae)	1	356	Relative Risk (Fixed) 95% CI	1.22 [0.69, 2.18]
16 Any anterior trauma (multiparae)	1	342	Relative Risk (Fixed) 95% CI	1.57 [0.91, 2.71]
17 Perineal bulging at 3 months	1	667	Relative Risk (Fixed) 95% CI	0.84 [0.50, 1.40]
18 Urinary incontinence at 3 months	1	674	Relative Risk (Fixed) 95% CI	0.95 [0.68, 1.32]
19 Admission to special care baby unit	1	698	Relative Risk (Fixed) 95% CI	Not estimable

INDEX TERMS**Medical Subject Headings (MeSH)**

*Episiotomy

MeSH check words

Female; Humans; Pregnancy

COVER SHEET

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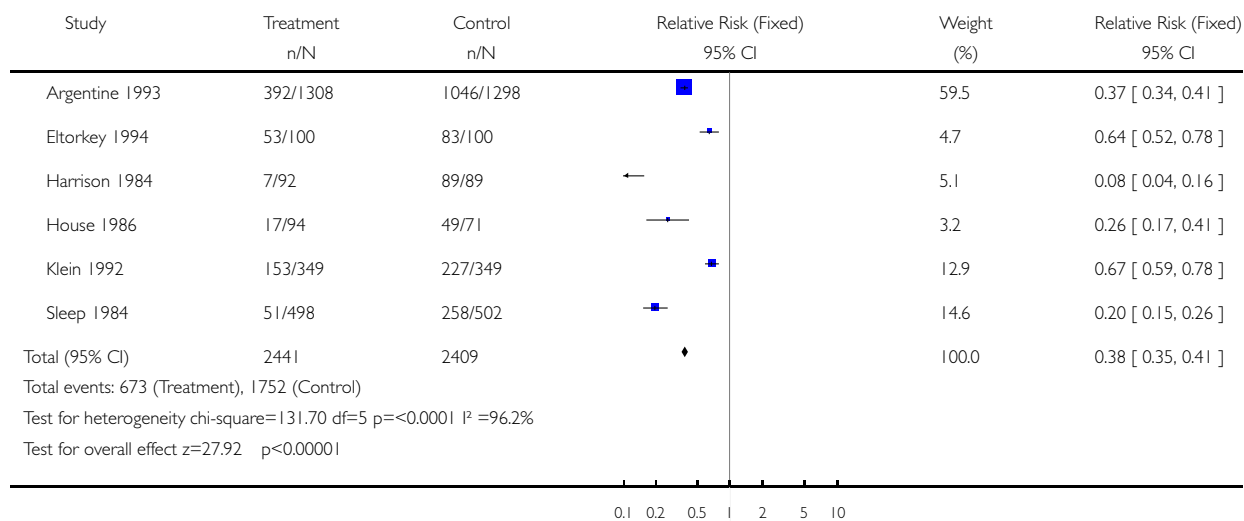
GRAPHS AND OTHER TABLES

Analysis 01.01. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 01 Number of episiotomies

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 01 Number of episiotomies

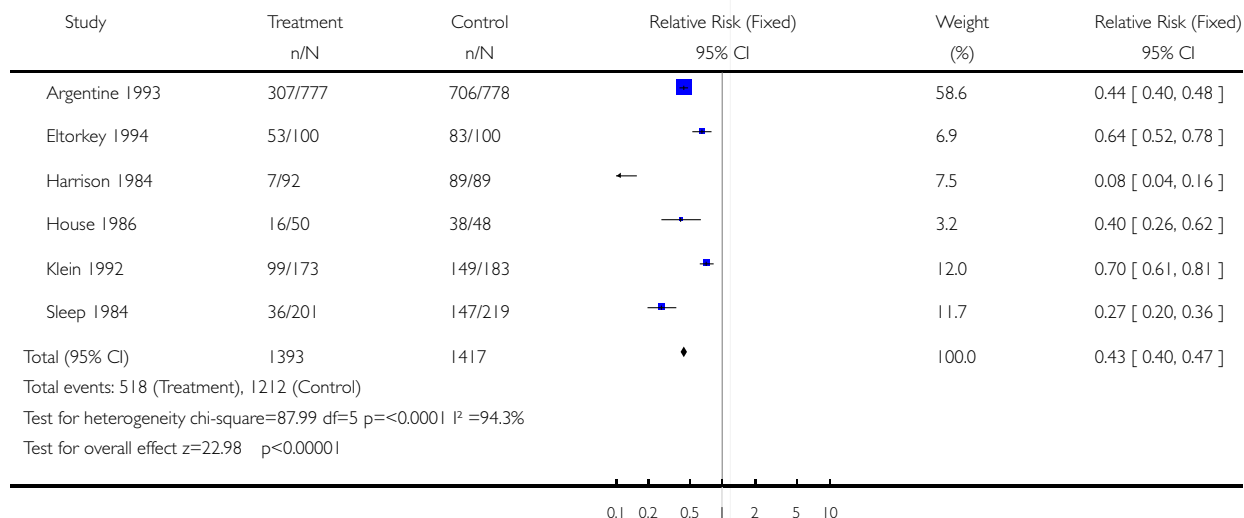


Analysis 01.02. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 02 Number of episiotomies (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 02 Number of episiotomies (primiparae)

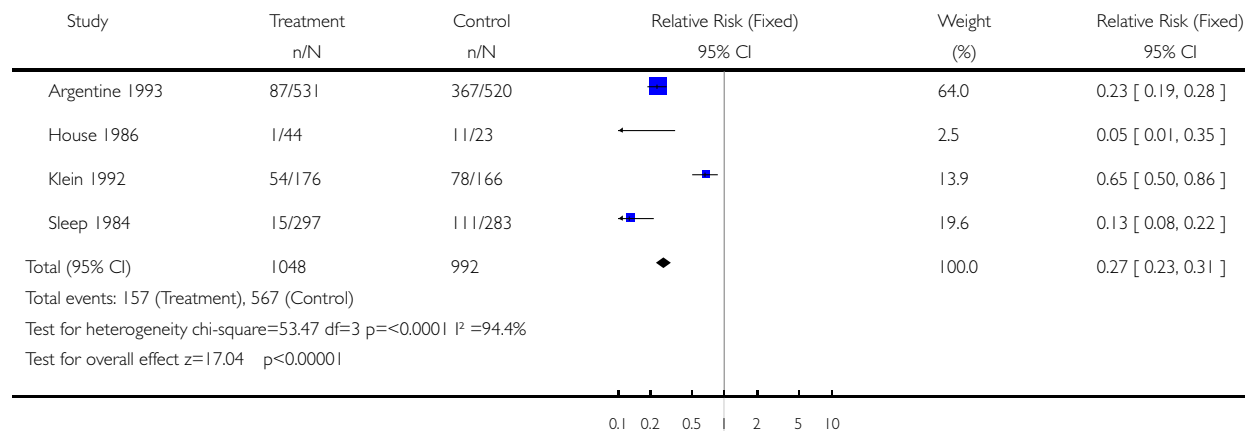


Analysis 01.03. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 03 Number of episiotomies (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 03 Number of episiotomies (multiparae)

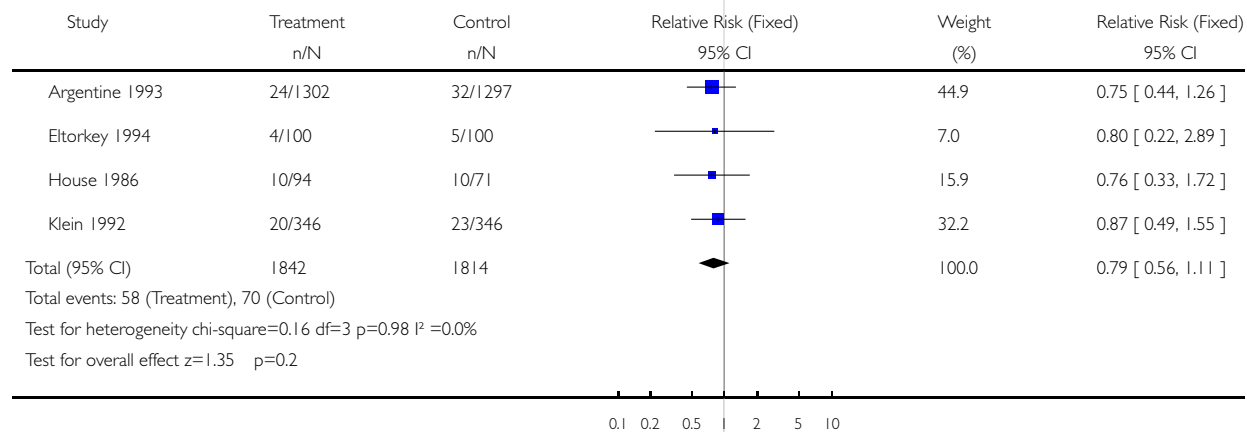


Analysis 01.04. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 04 Assisted delivery rate

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 04 Assisted delivery rate

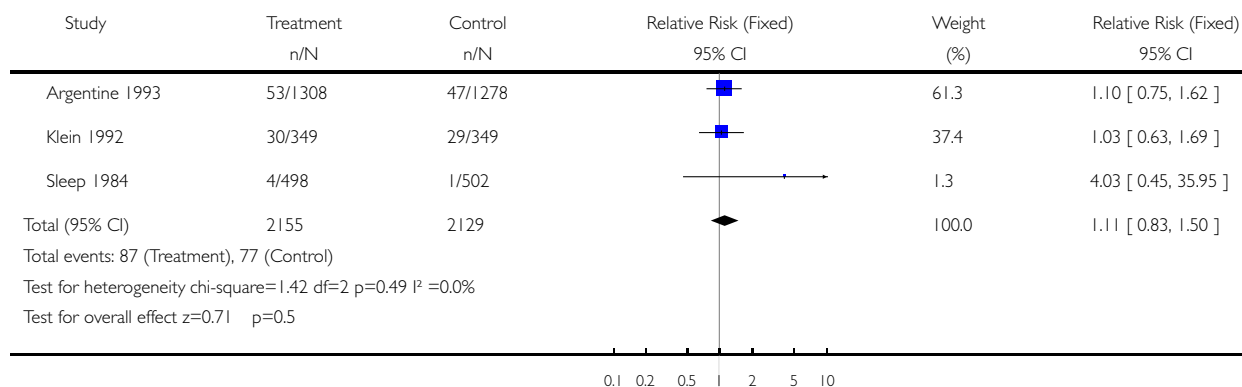


Analysis 01.05. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 05 Severe vaginal/perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 05 Severe vaginal/perineal trauma

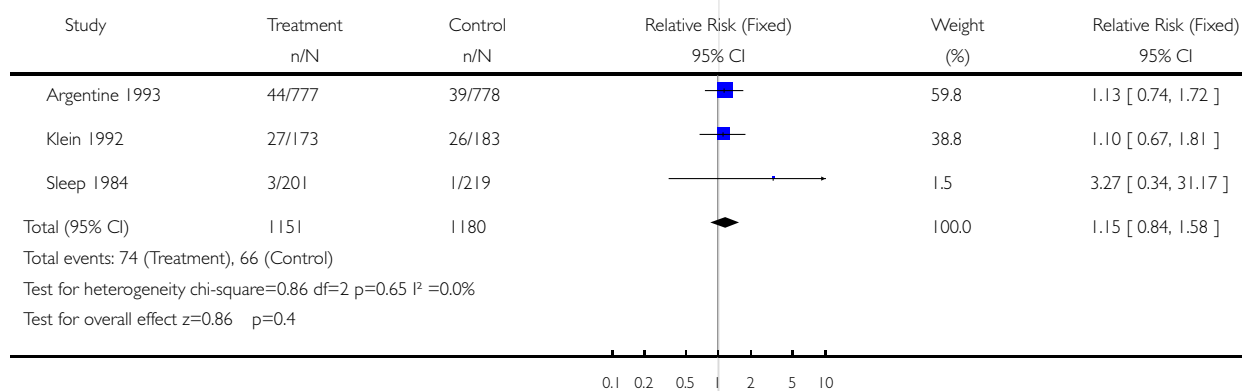


Analysis 01.06. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 06 Severe vaginal/perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 06 Severe vaginal/perineal trauma (primiparae)

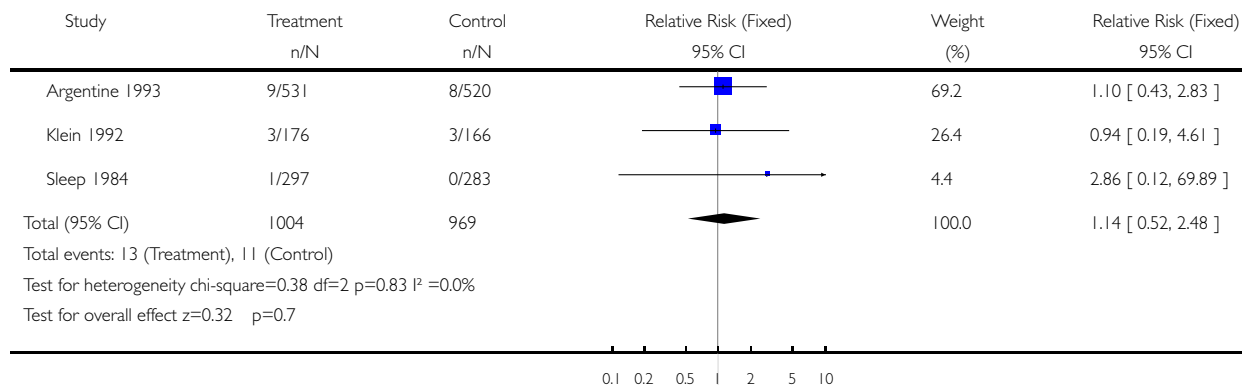


Analysis 01.07. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 07 Severe vaginal/perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 07 Severe vaginal/perineal trauma (multiparae)

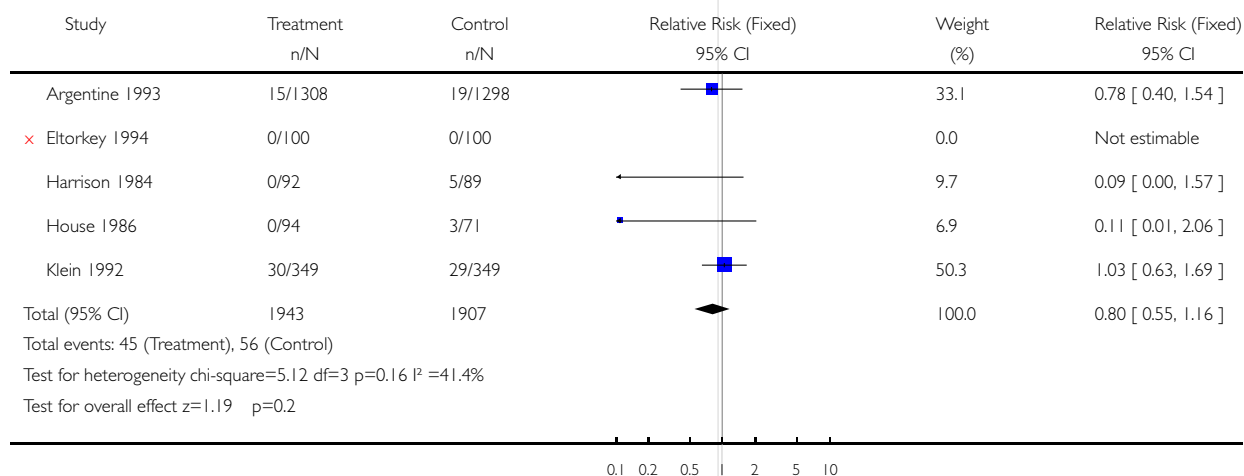


Analysis 01.08. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 08 Severe perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 08 Severe perineal trauma

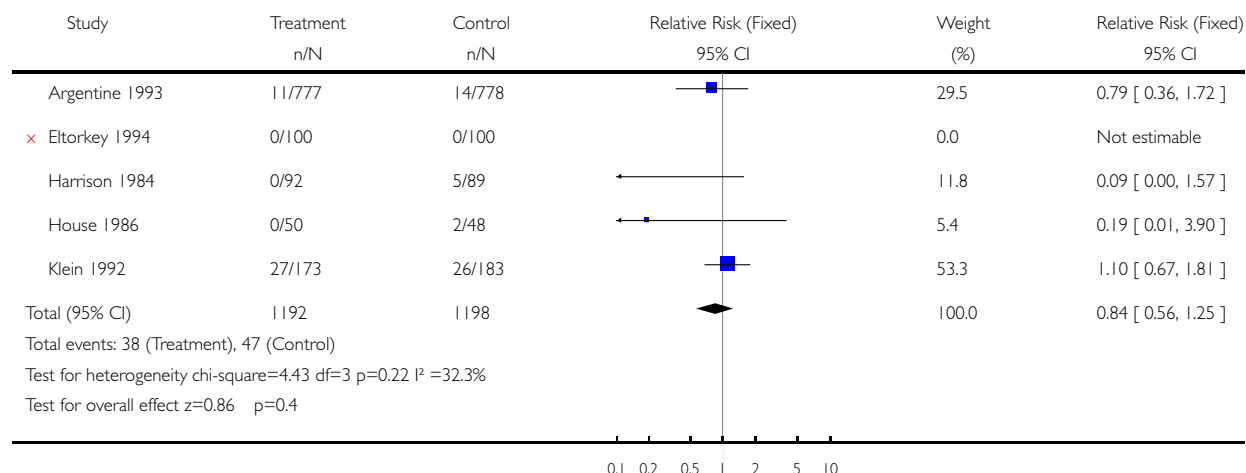


Analysis 01.09. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 09 Severe perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 09 Severe perineal trauma (primiparae)

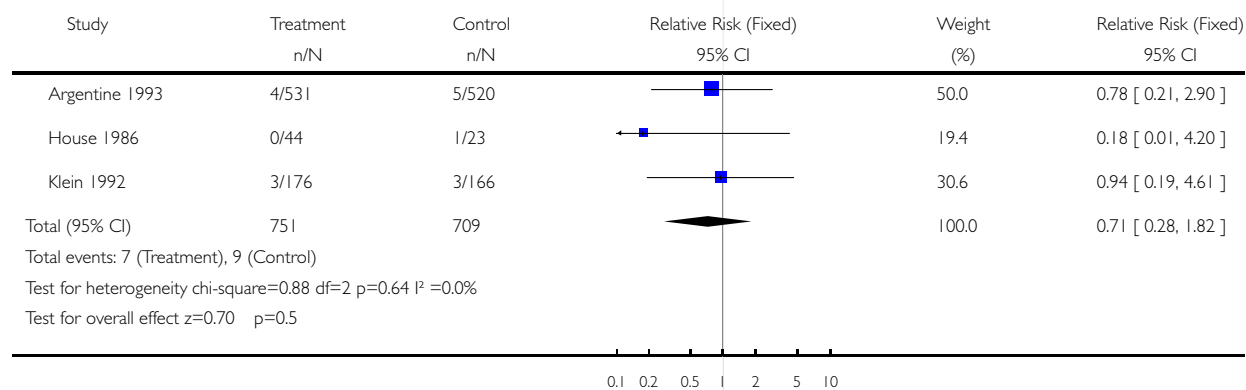


Analysis 01.10. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 10 Severe perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 10 Severe perineal trauma (multiparae)

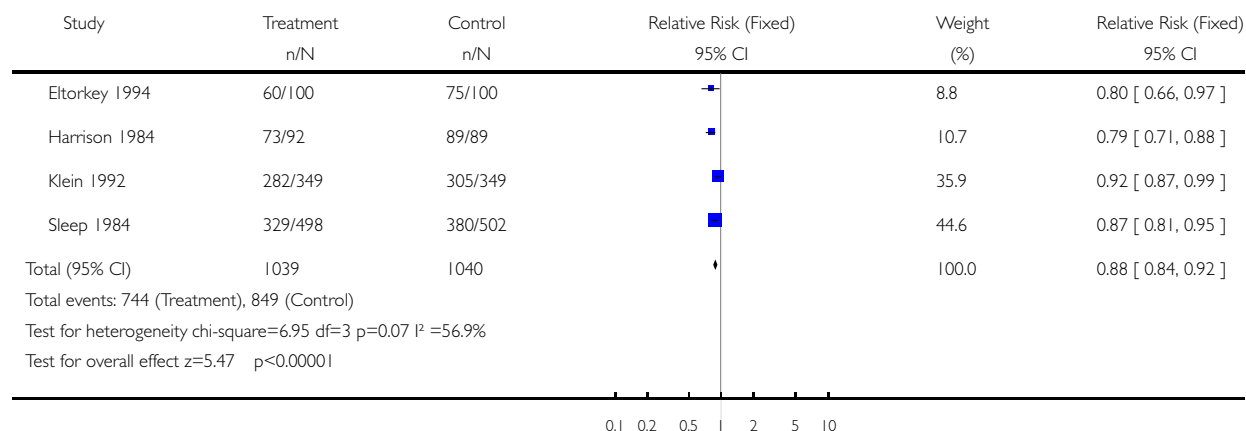


Analysis 01.11. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 11 Any posterior perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 11 Any posterior perineal trauma

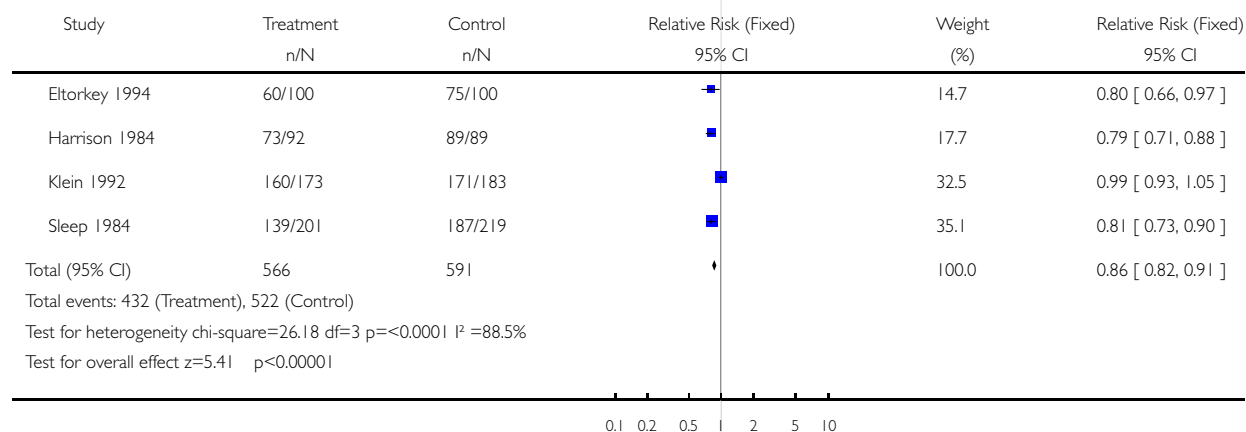


Analysis 01.12. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 12 Any posterior perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 12 Any posterior perineal trauma (primiparae)

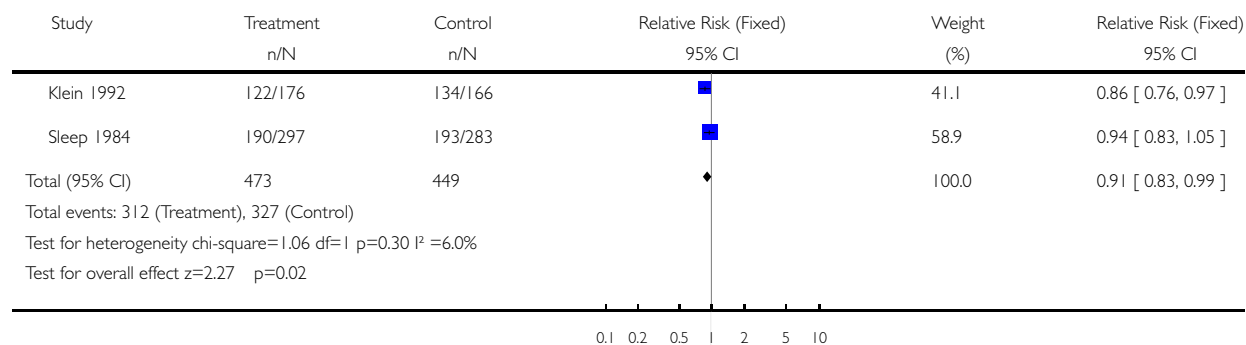


Analysis 01.13. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 13 Any posterior perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 13 Any posterior perineal trauma (multiparae)

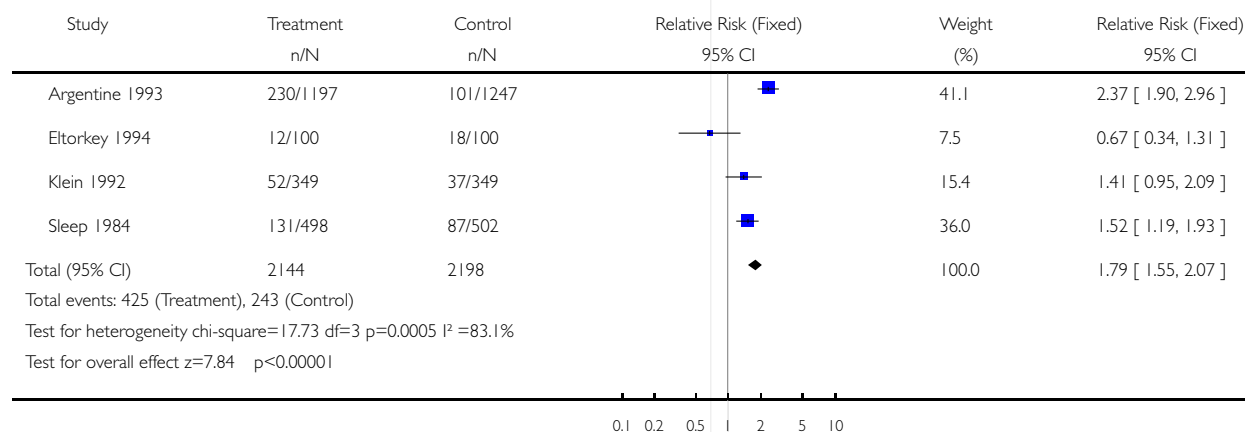


Analysis 01.14. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 14 Any anterior trauma

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 14 Any anterior trauma

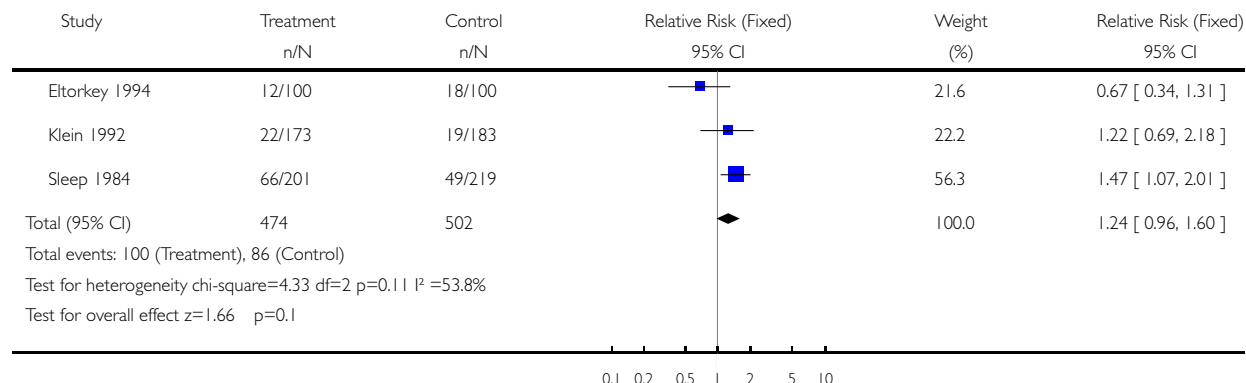


Analysis 01.15. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 15 Any anterior trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 15 Any anterior trauma (primiparae)

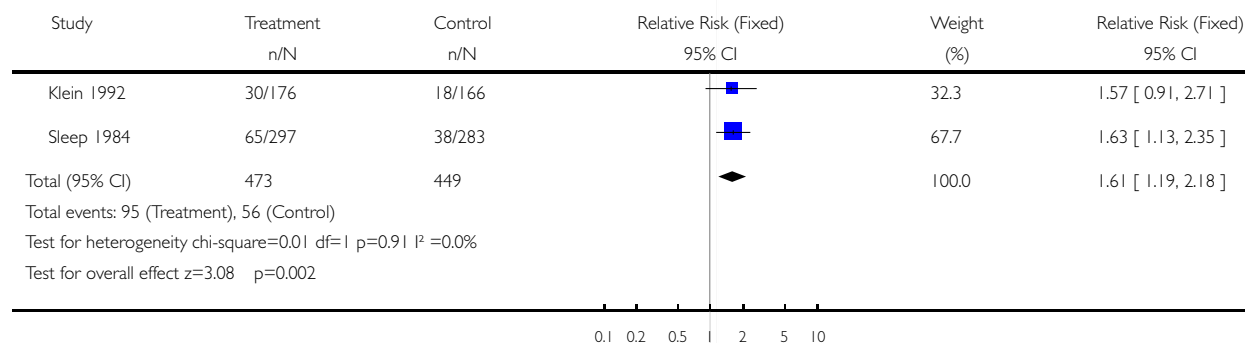


Analysis 01.16. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 16 Any anterior trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 16 Any anterior trauma (multiparae)

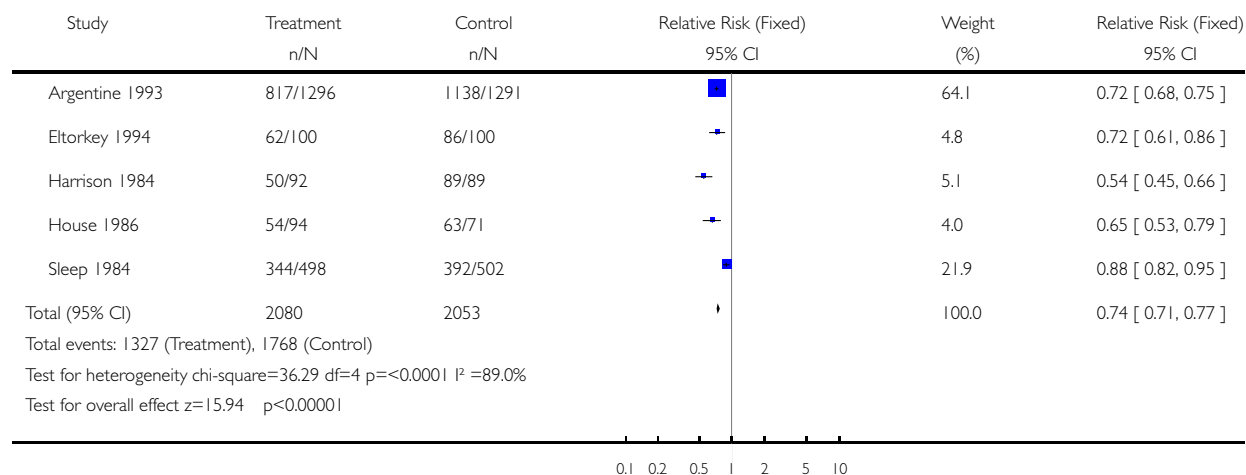


Analysis 01.17. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 17 Need for suturing perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 17 Need for suturing perineal trauma

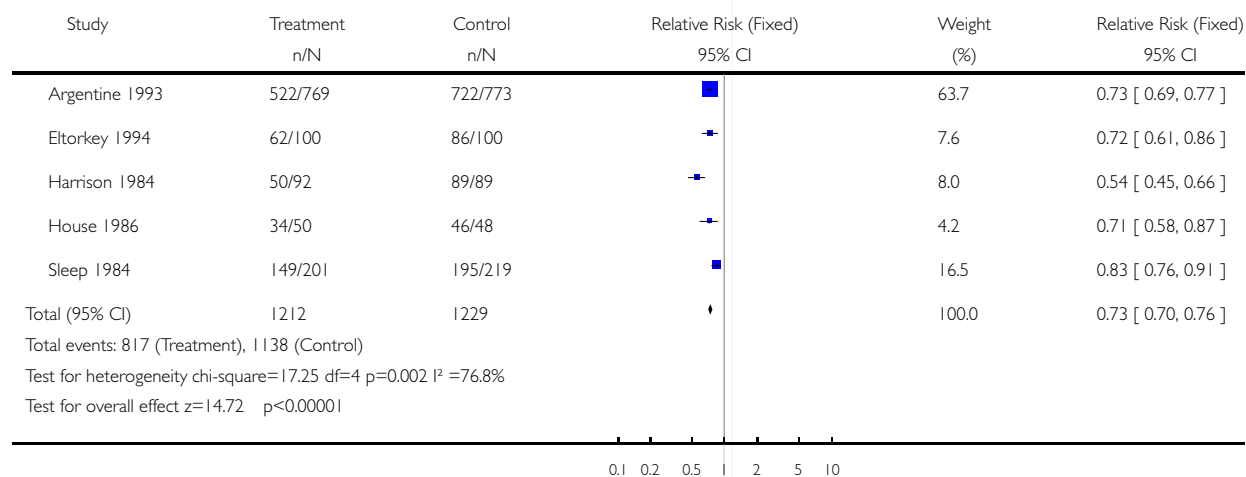


Analysis 01.18. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 18 Need for suturing perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 18 Need for suturing perineal trauma (primiparae)

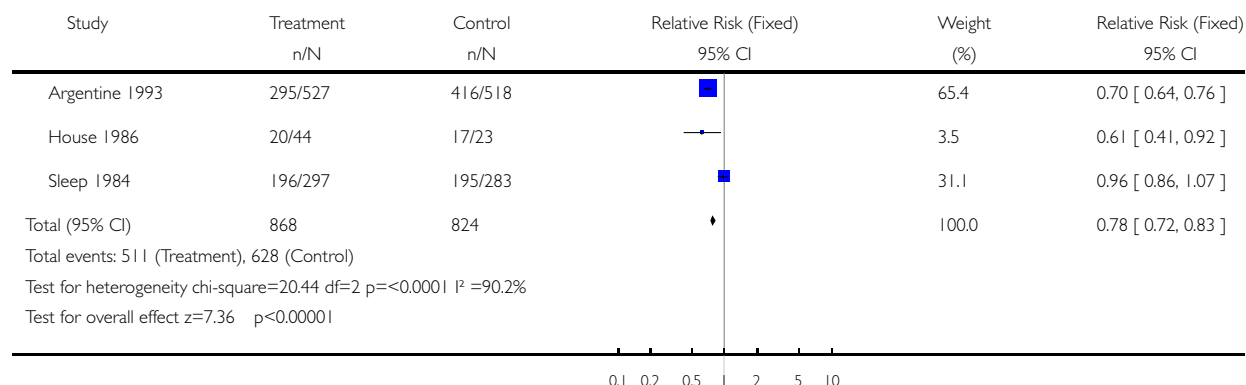


Analysis 01.19. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 19 Need for suturing perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 19 Need for suturing perineal trauma (multiparae)

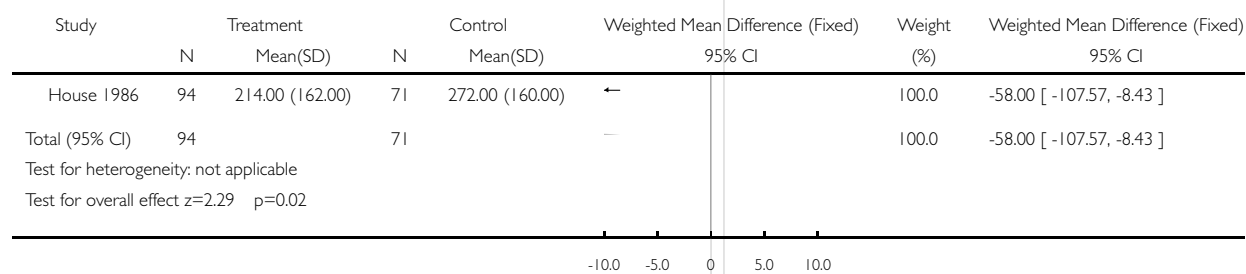


Analysis 01.20. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 20 Estimated blood loss at delivery

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 20 Estimated blood loss at delivery

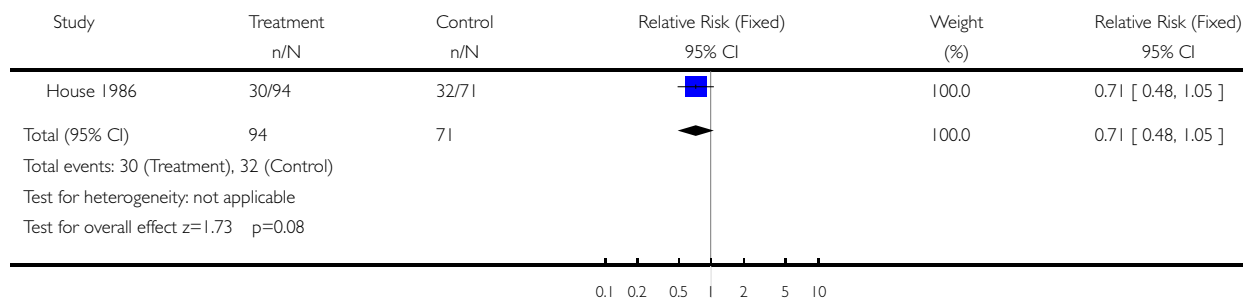


Analysis 01.21. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 21 Moderate/severe perineal pain at 3 days

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 21 Moderate/severe perineal pain at 3 days

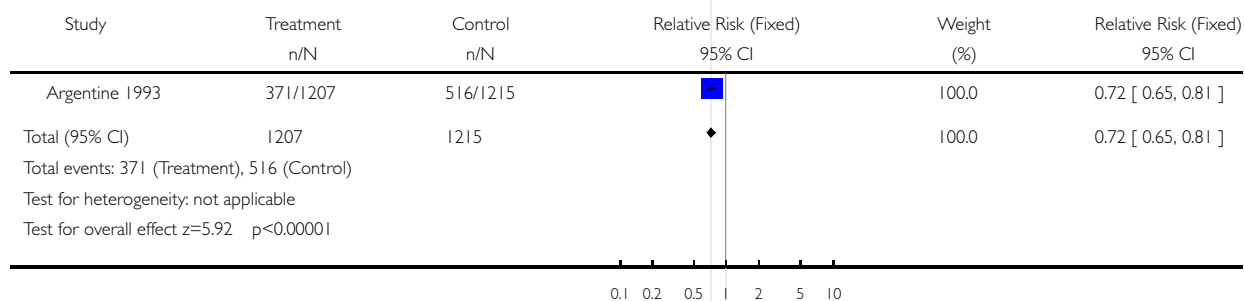


Analysis 01.22. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 22 Any perineal pain at discharge

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 22 Any perineal pain at discharge

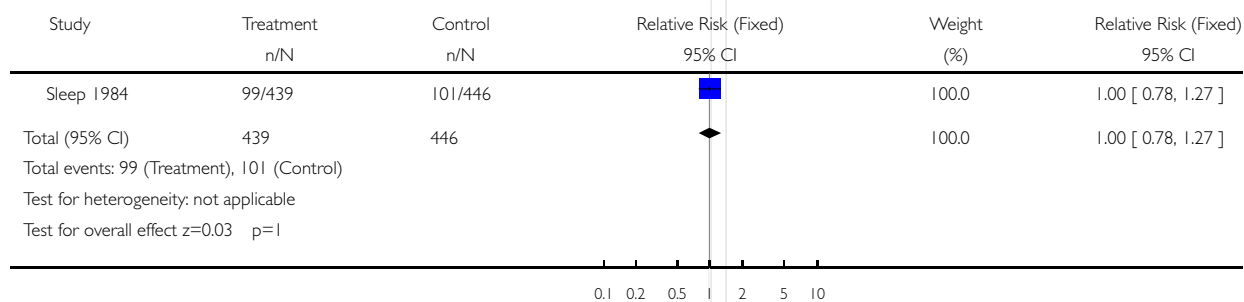


Analysis 01.23. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 23 Any perineal pain at 10 days

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 23 Any perineal pain at 10 days

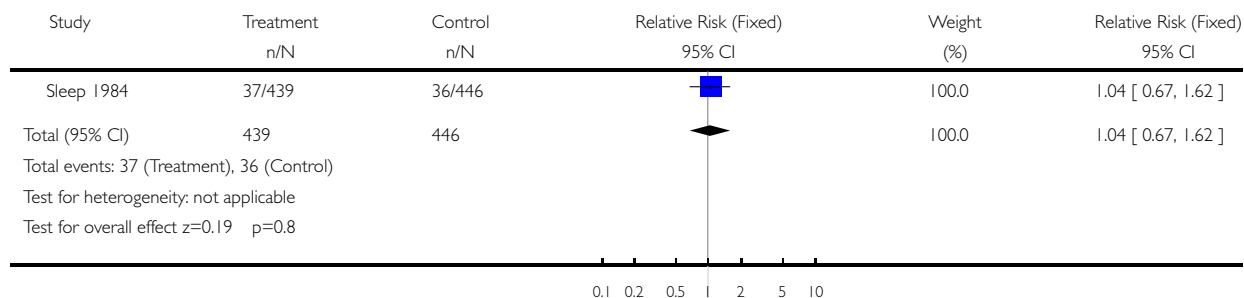


Analysis 01.24. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 24 Moderate/severe perineal pain at 10 days

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 24 Moderate/severe perineal pain at 10 days

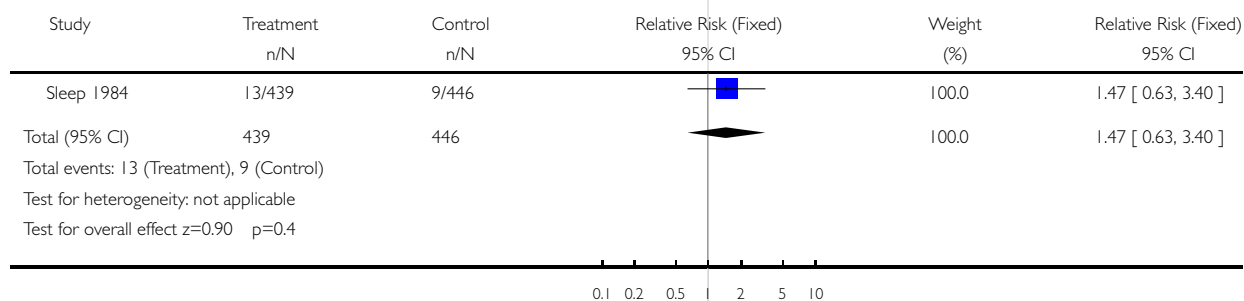


Analysis 01.25. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 25 Use of oral analgesia at 10 days

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 25 Use of oral analgesia at 10 days

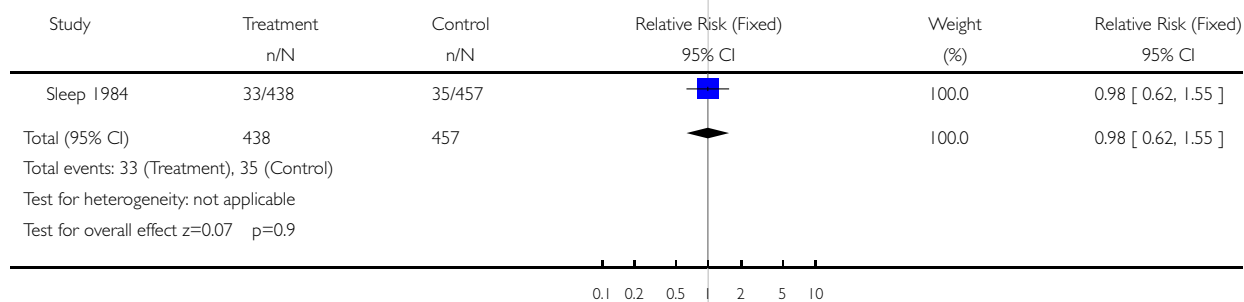


Analysis 01.26. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 26 Any perineal pain at 3 months

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 26 Any perineal pain at 3 months

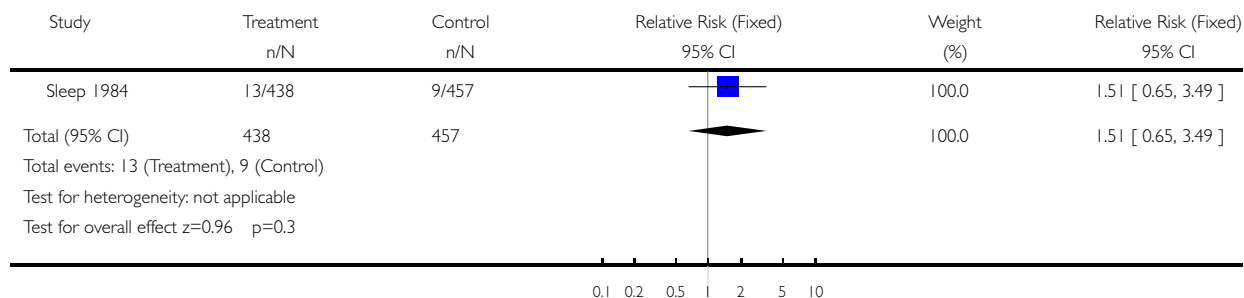


Analysis 01.27. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 27 Moderate/severe perineal pain at 3 months

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 27 Moderate/severe perineal pain at 3 months

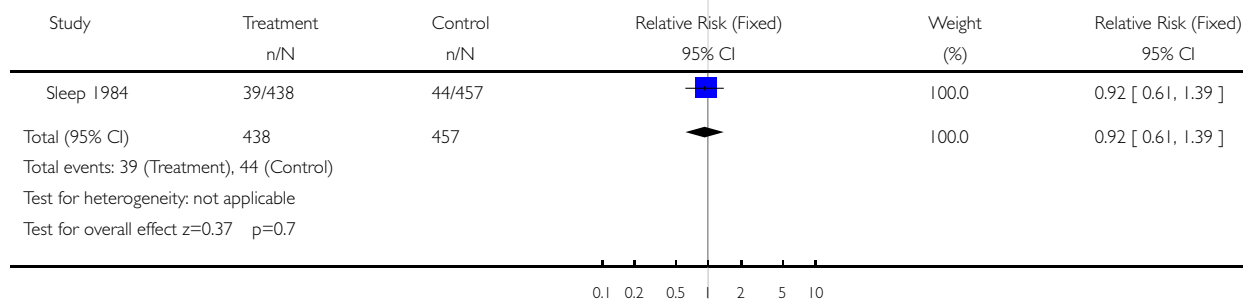


Analysis 01.28. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 28 No attempt at intercourse in 3 months

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 28 No attempt at intercourse in 3 months

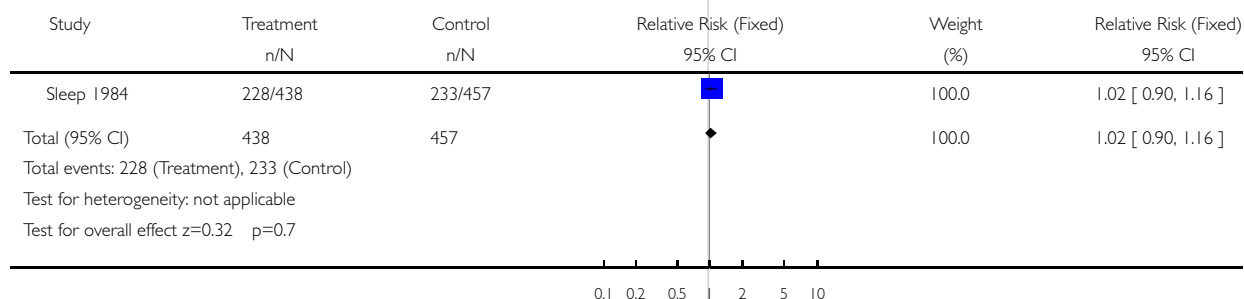


Analysis 01.29. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 29 Any dyspareunia within 3 months

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 29 Any dyspareunia within 3 months

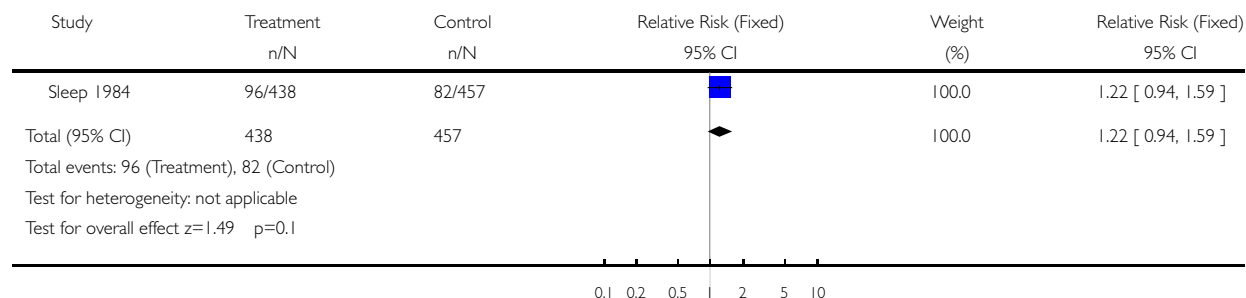


Analysis 01.30. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 30 Dyspareunia at 3 months

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 30 Dyspareunia at 3 months

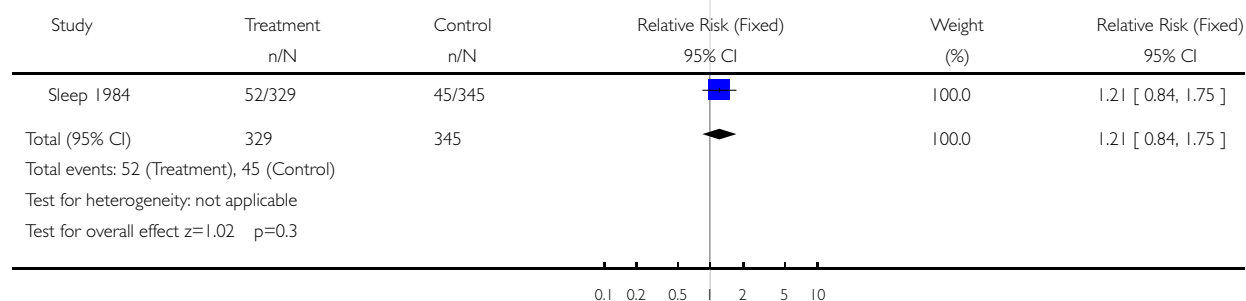


Analysis 01.31. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 31 Ever suffering dyspareunia in 3 years

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 31 Ever suffering dyspareunia in 3 years

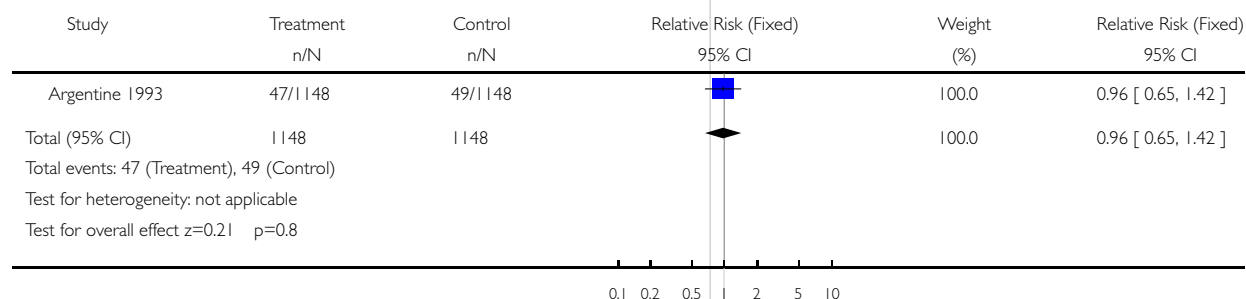


Analysis 01.32. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 32 Perineal haematoma at discharge

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 32 Perineal haematoma at discharge

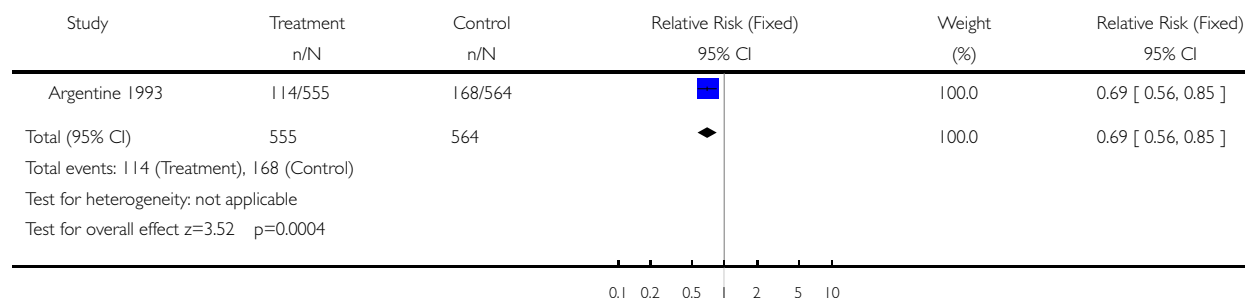


Analysis 01.33. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 33 Healing complications at 7 days

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 33 Healing complications at 7 days

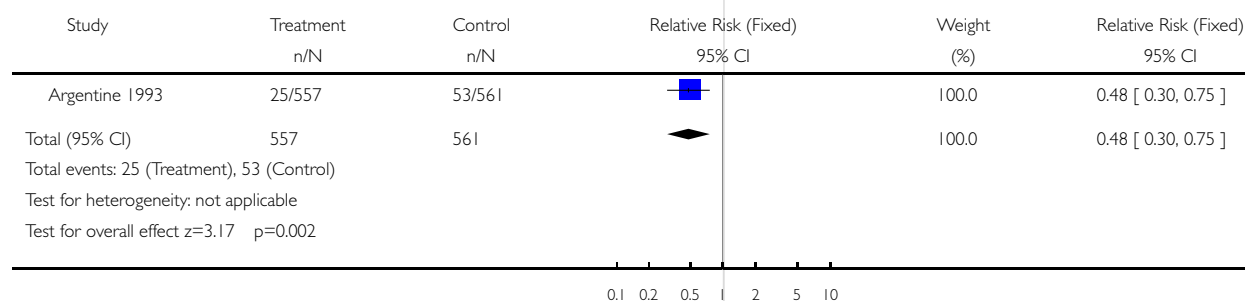


Analysis 01.34. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 34 Perineal wound dehiscence at 7 days

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 34 Perineal wound dehiscence at 7 days

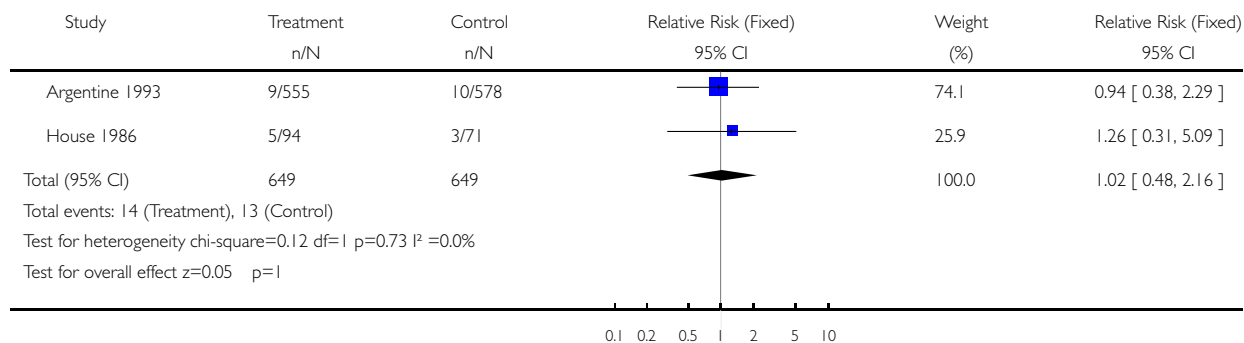


Analysis 01.35. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 35 Perineal infection

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 35 Perineal infection

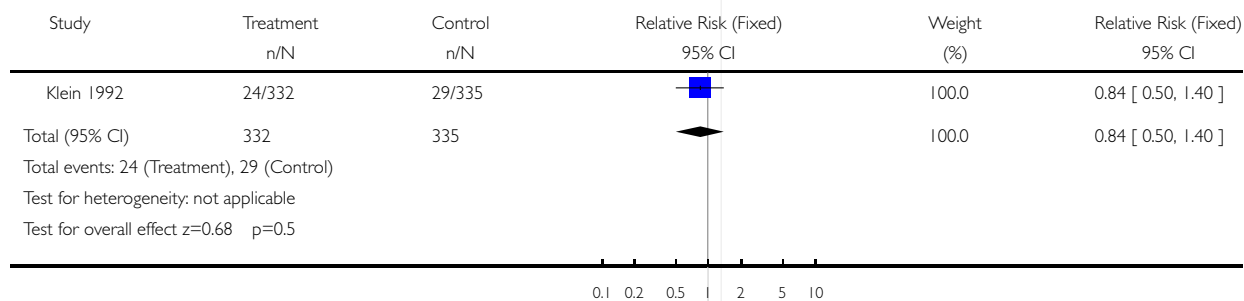


Analysis 01.36. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 36 Perineal bulging at 3 months

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 36 Perineal bulging at 3 months

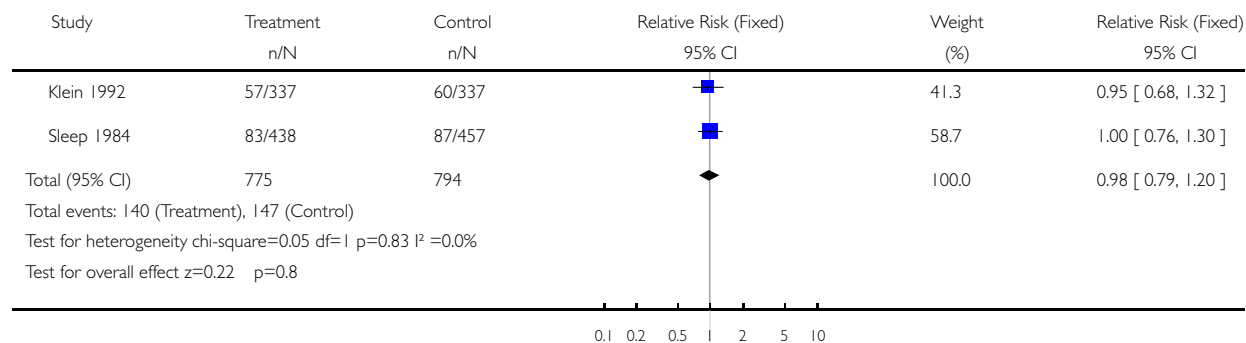


Analysis 01.37. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 37 Urinary incontinence at 3 months

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 37 Urinary incontinence at 3 months

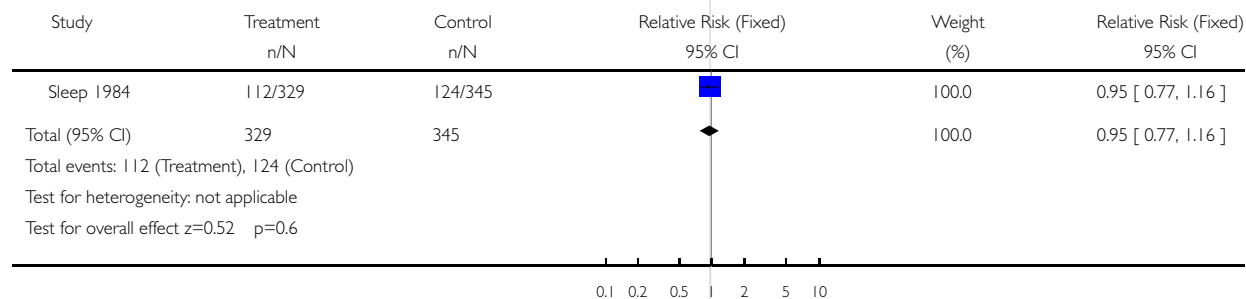


Analysis 01.38. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 38 Any urinary incontinence at 3 years

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 38 Any urinary incontinence at 3 years

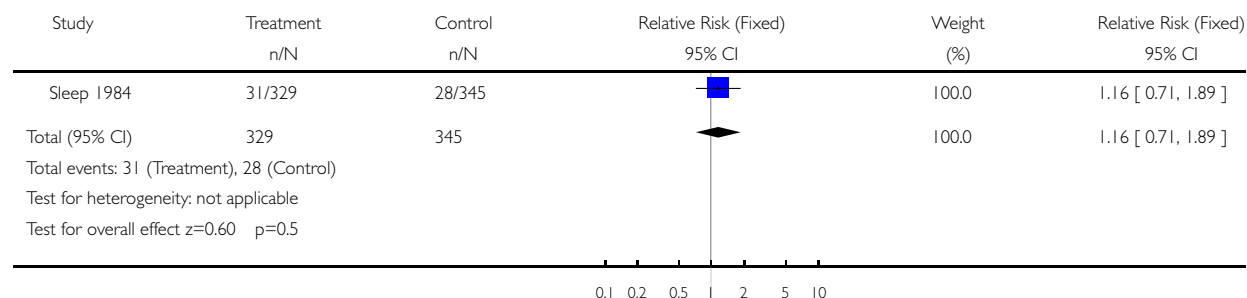


Analysis 01.39. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 39 Pad wearing for urinary incontinence

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 39 Pad wearing for urinary incontinence

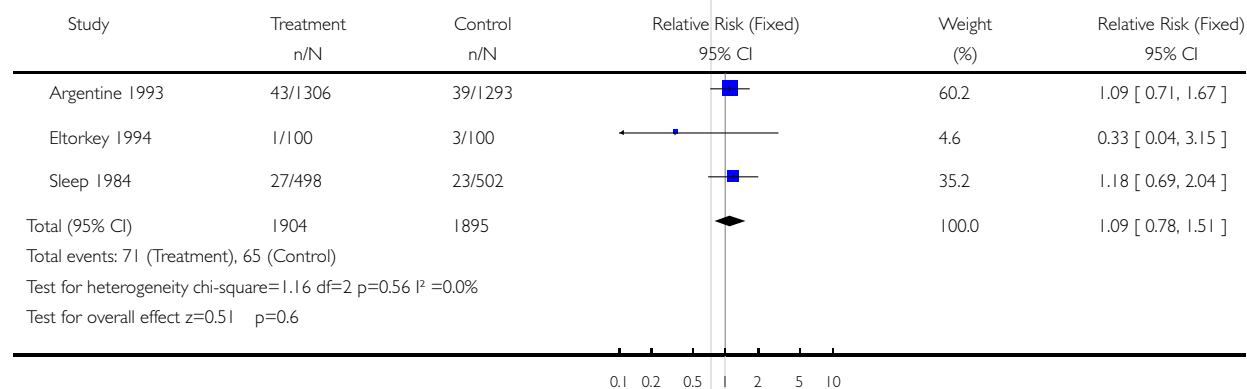


Analysis 01.40. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 40 Apgar score less than 7 at 1 minute

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 40 Apgar score less than 7 at 1 minute

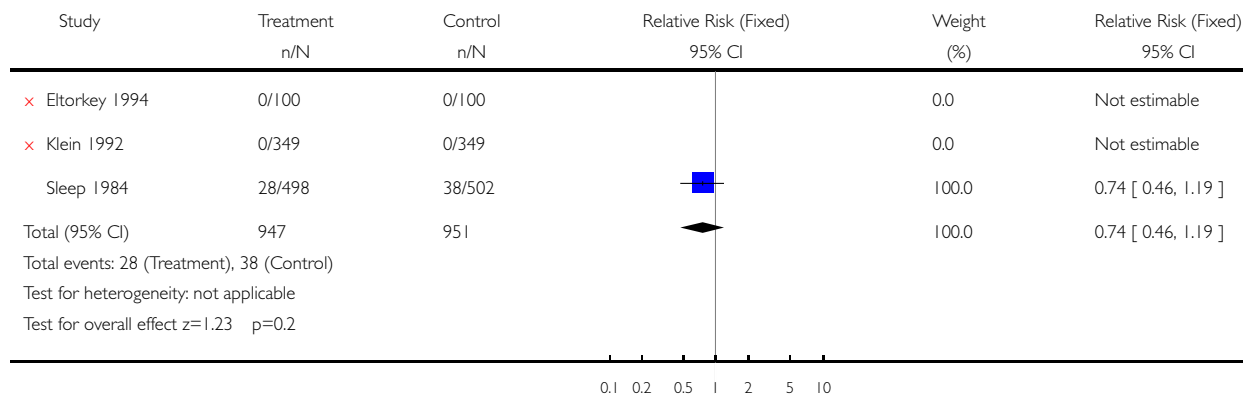


Analysis 01.41. Comparison 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all), Outcome 41 Admission to special care baby unit

Review: Episiotomy for vaginal birth

Comparison: 01 RESTRICTIVE vs ROUTINE EPISIOTOMY (all)

Outcome: 41 Admission to special care baby unit

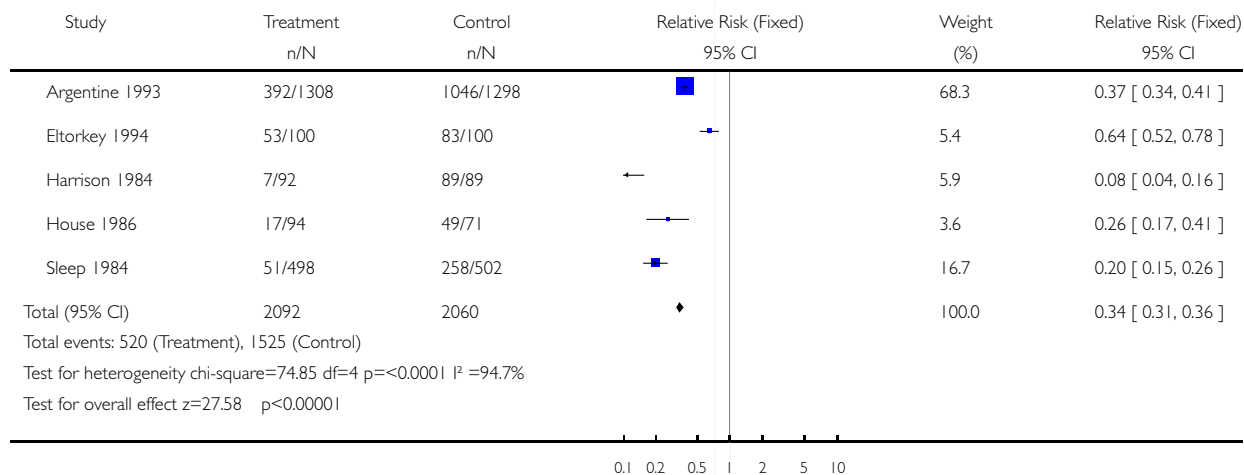


Analysis 02.01. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 01 Number of episiotomies

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 01 Number of episiotomies

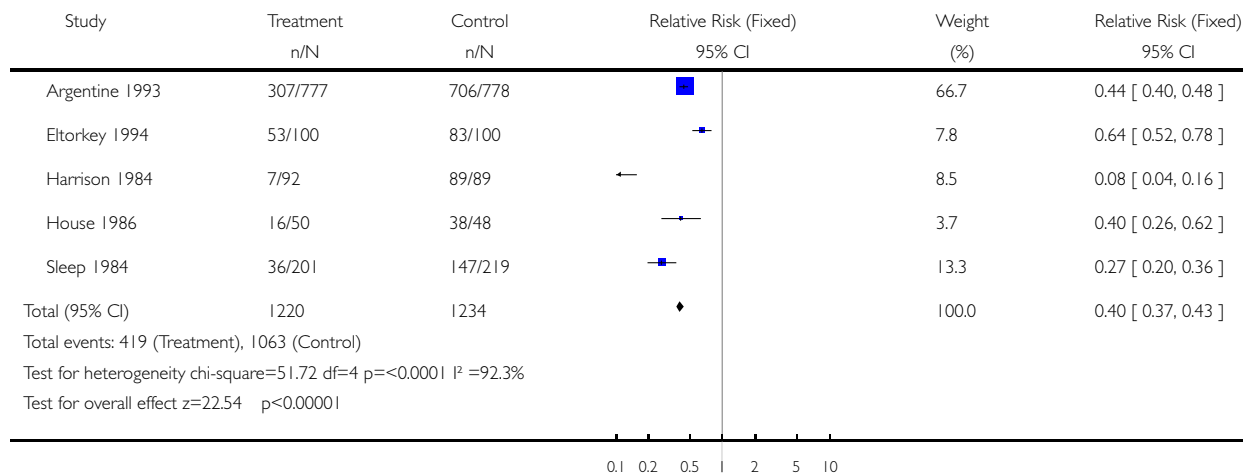


Analysis 02.02. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 02 Number of episiotomies (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 02 Number of episiotomies (primiparae)

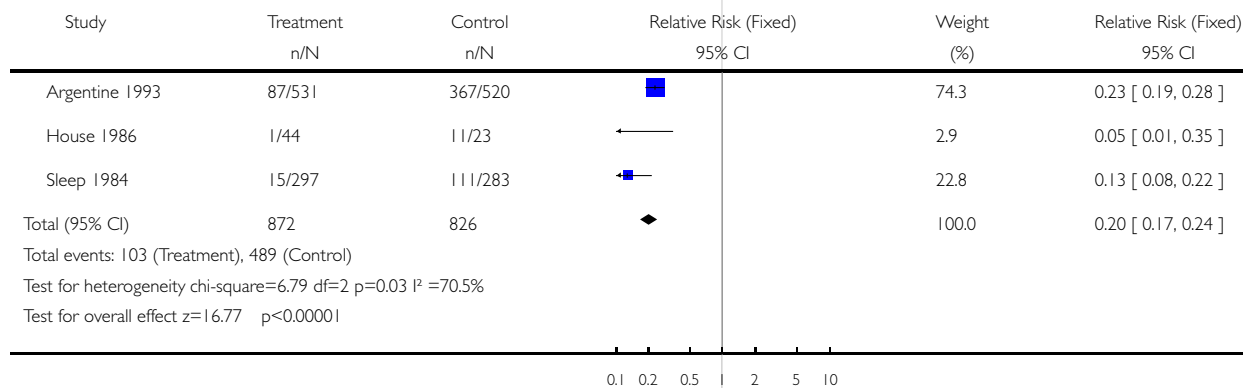


Analysis 02.03. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 03 Number of episiotomies (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 03 Number of episiotomies (multiparae)

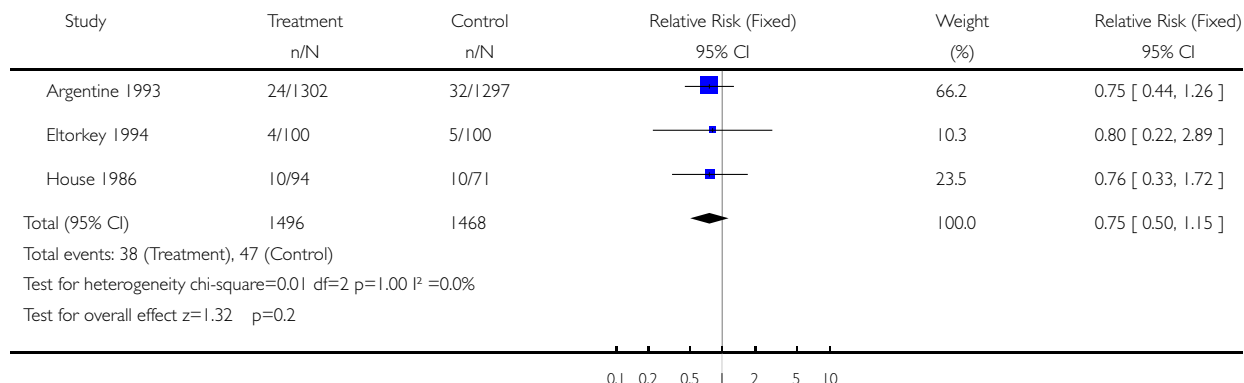


Analysis 02.04. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 04 Assisted delivery rate

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 04 Assisted delivery rate

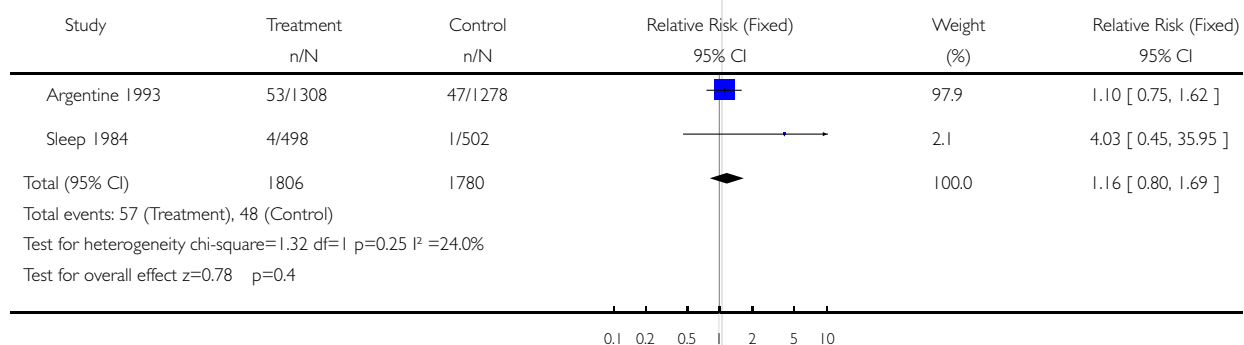


Analysis 02.05. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 05 Severe vaginal/perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 05 Severe vaginal/perineal trauma

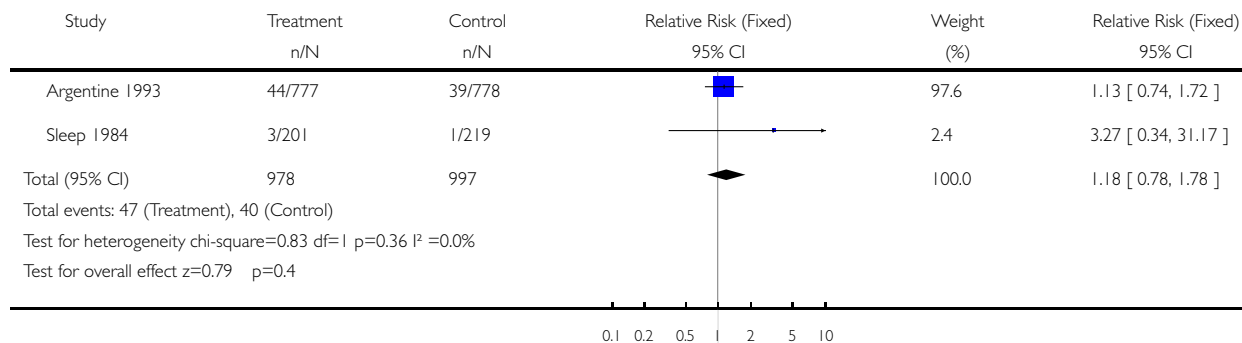


Analysis 02.06. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 06 Severe vaginal/perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 06 Severe vaginal/perineal trauma (primiparae)

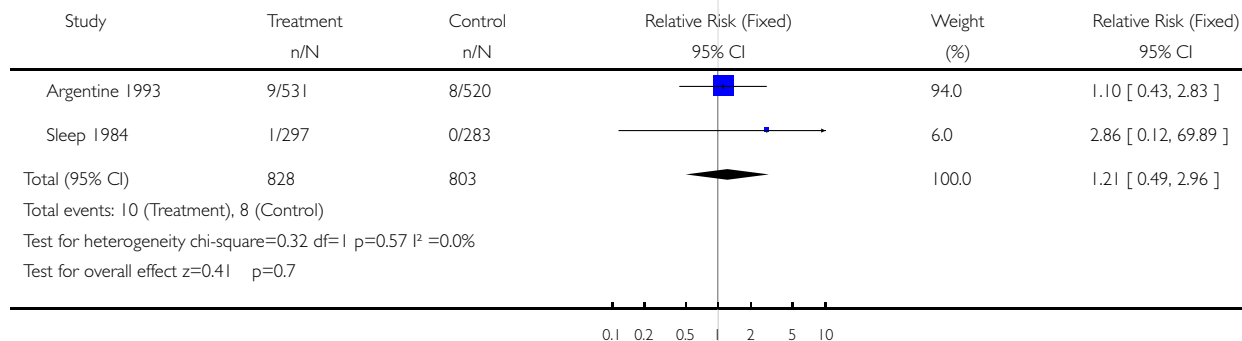


Analysis 02.07. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 07 Severe vaginal/perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 07 Severe vaginal/perineal trauma (multiparae)

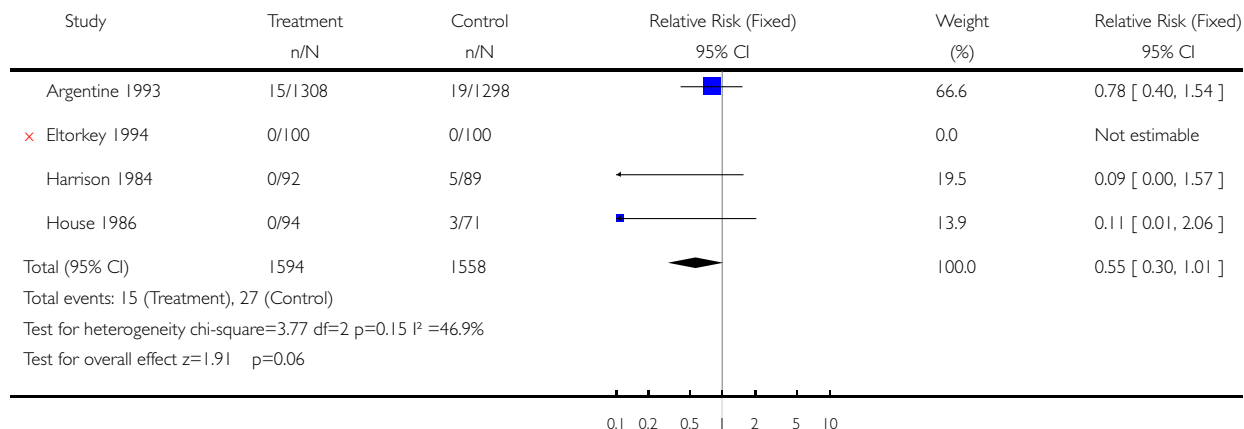


Analysis 02.08. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 08 Severe perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 08 Severe perineal trauma

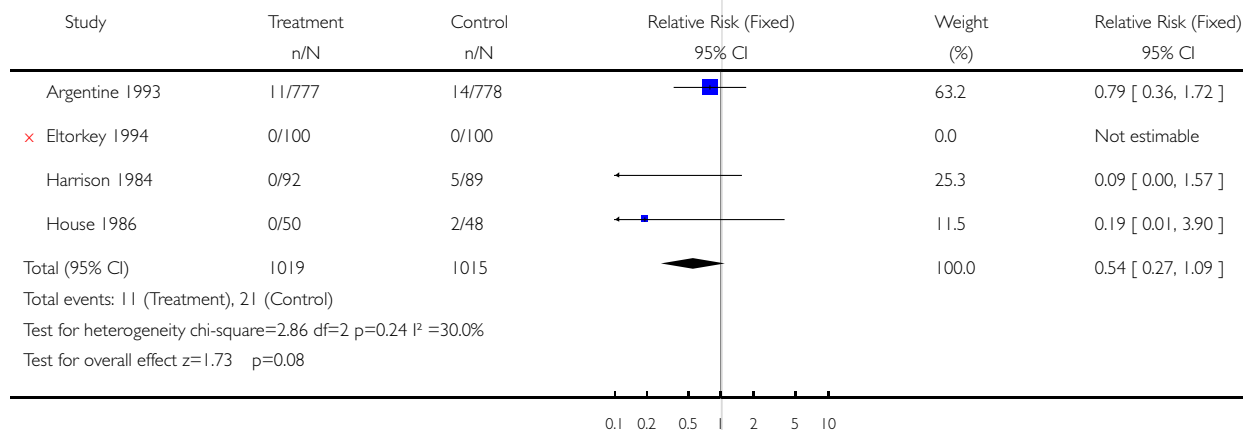


Analysis 02.09. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 09 Severe perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 09 Severe perineal trauma (primiparae)

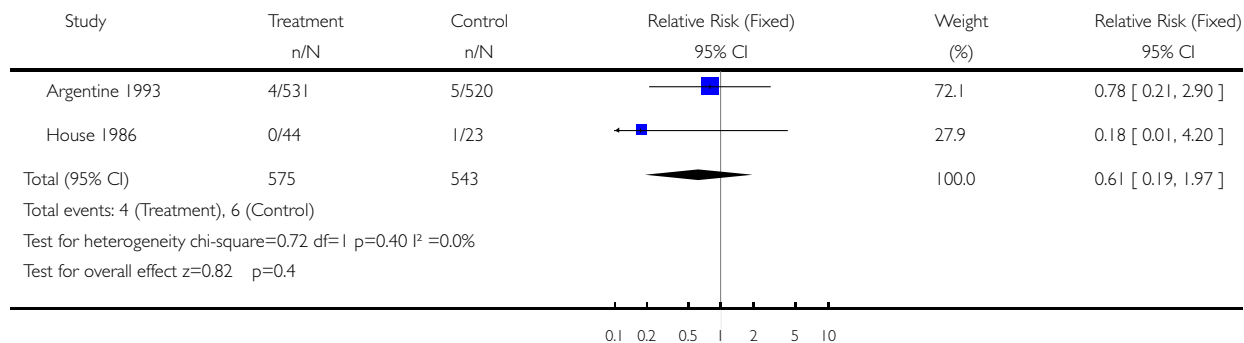


Analysis 02.10. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 10 Severe perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 10 Severe perineal trauma (multiparae)

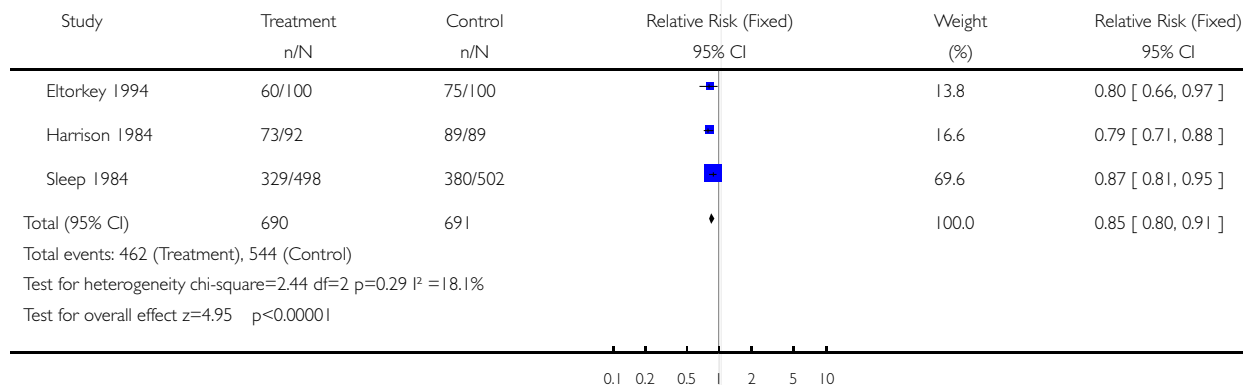


Analysis 02.11. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 11 Any posterior perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 11 Any posterior perineal trauma

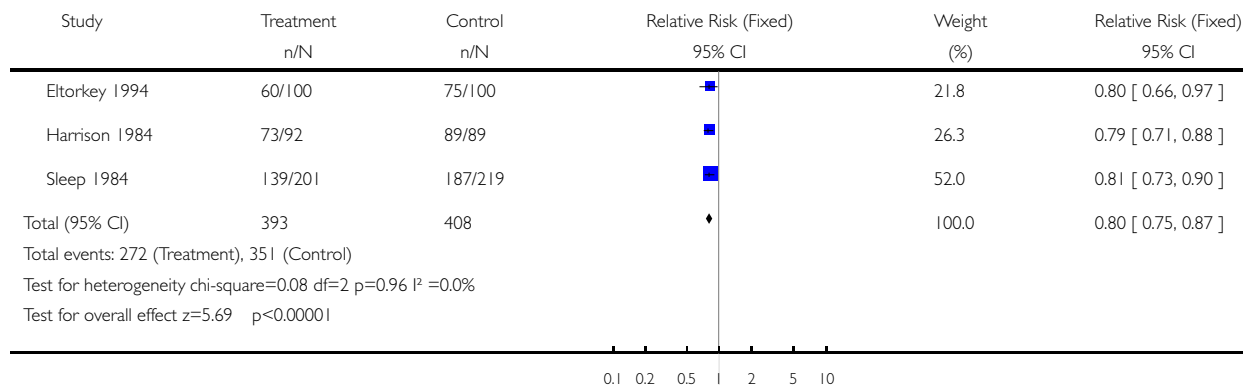


Analysis 02.12. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 12 Any posterior perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 12 Any posterior perineal trauma (primiparae)

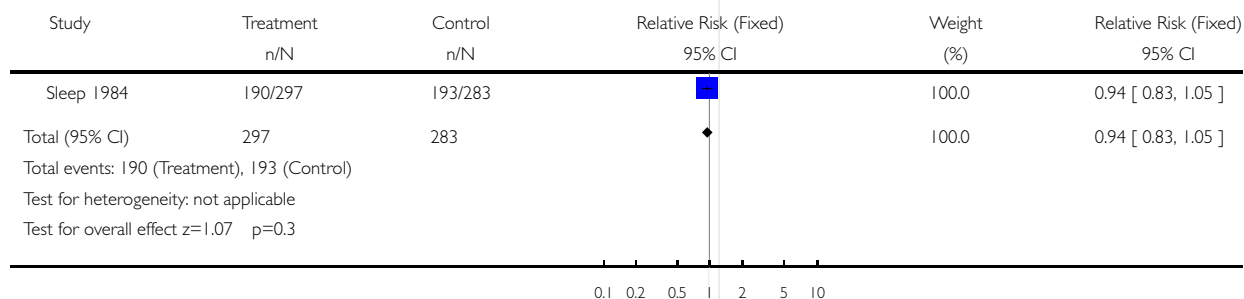


Analysis 02.13. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 13 Any posterior perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 13 Any posterior perineal trauma (multiparae)

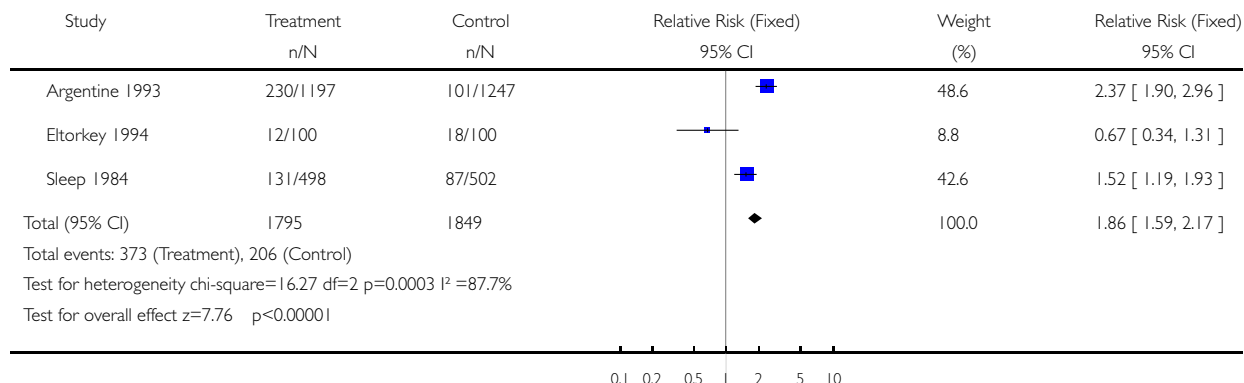


Analysis 02.14. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 14 **Any anterior trauma**

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 14 Any anterior trauma

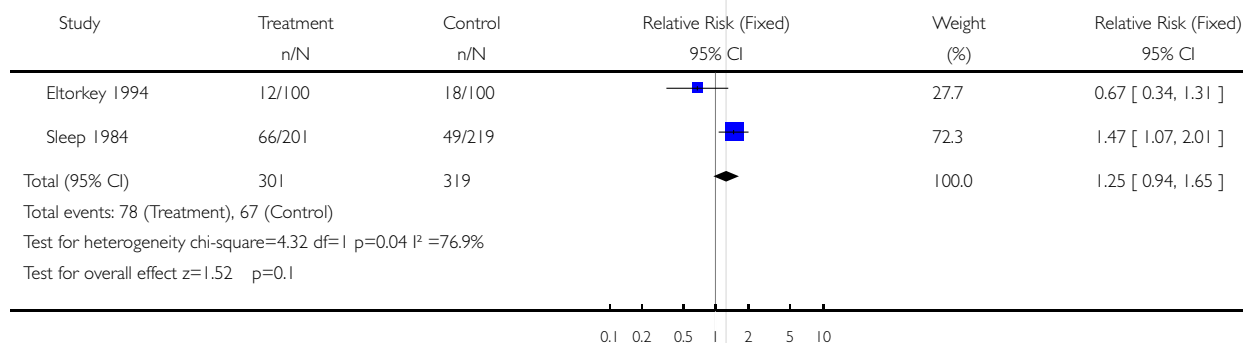


Analysis 02.15. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 15 **Any anterior trauma (primiparae)**

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 15 Any anterior trauma (primiparae)

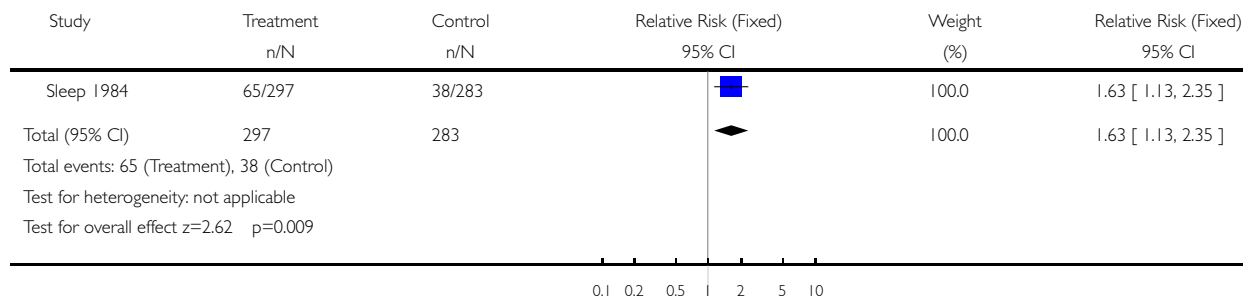


**Analysis 02.16. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 16
Any anterior trauma (multiparae)**

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 16 Any anterior trauma (multiparae)

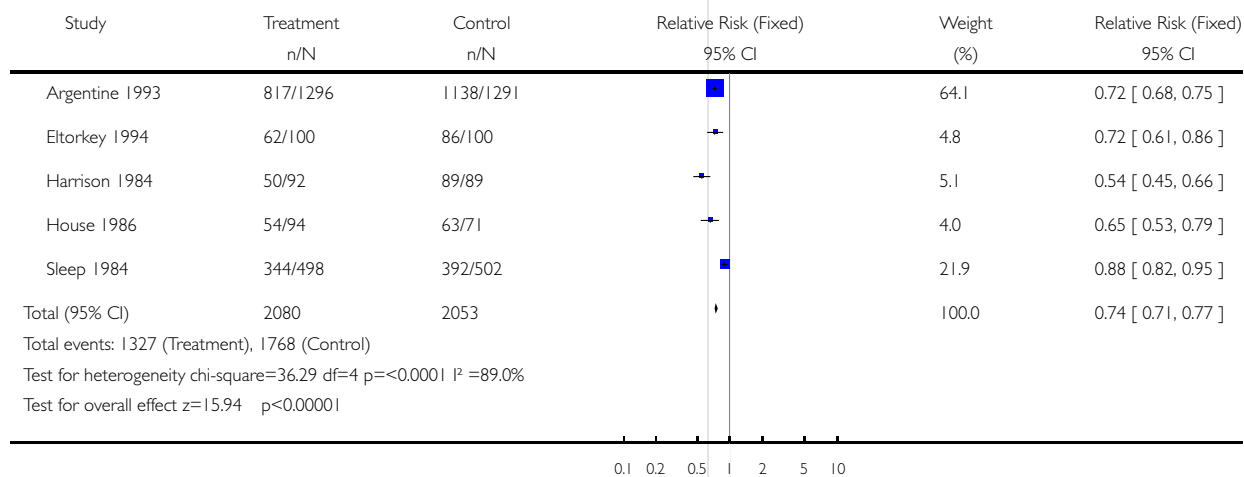


**Analysis 02.17. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 17
Need for suturing perineal trauma**

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 17 Need for suturing perineal trauma

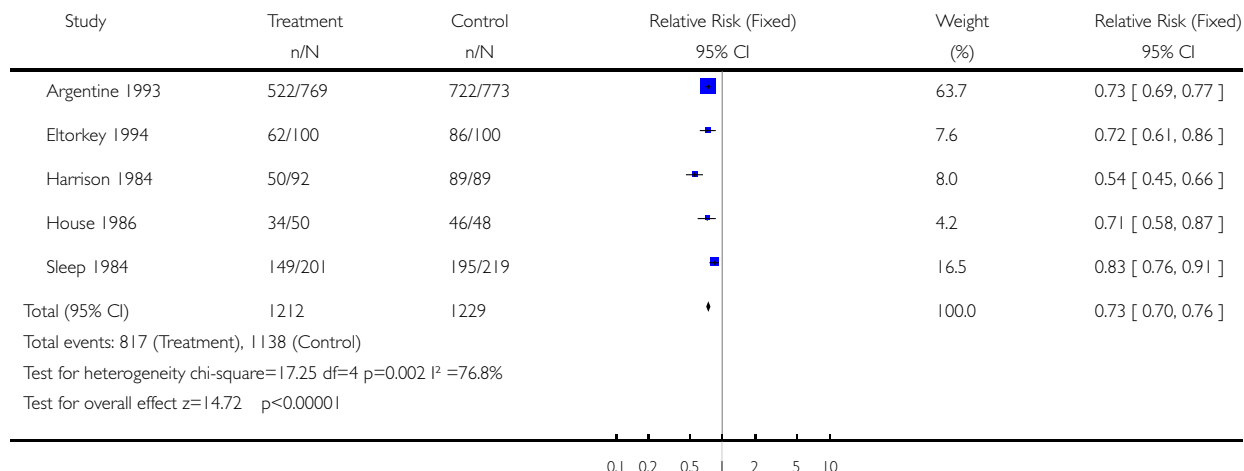


Analysis 02.18. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 18 Need for suturing perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 18 Need for suturing perineal trauma (primiparae)

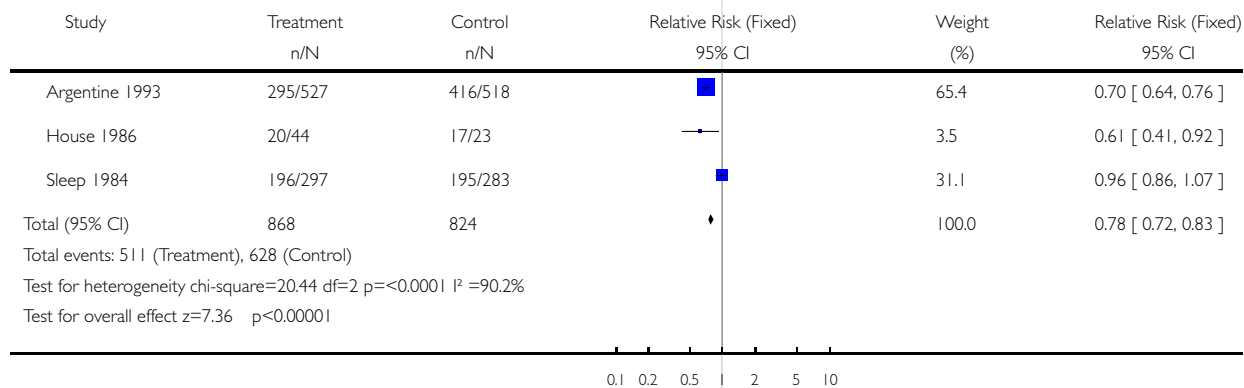


Analysis 02.19. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 19 Need for suturing perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 19 Need for suturing perineal trauma (multiparae)

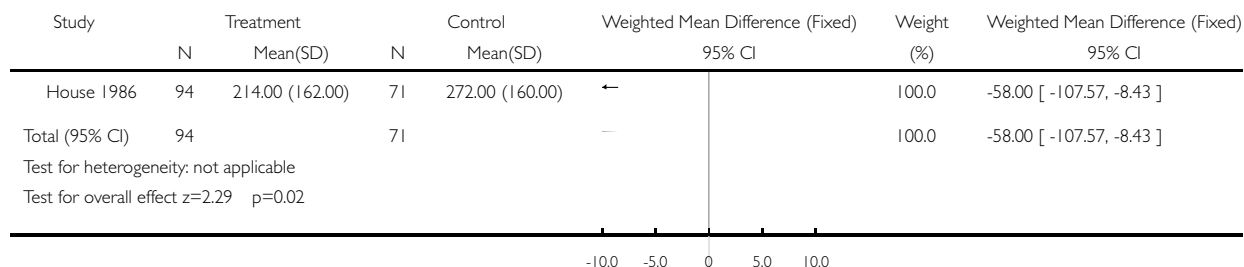


Analysis 02.20. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 20 Estimated blood loss at delivery

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 20 Estimated blood loss at delivery

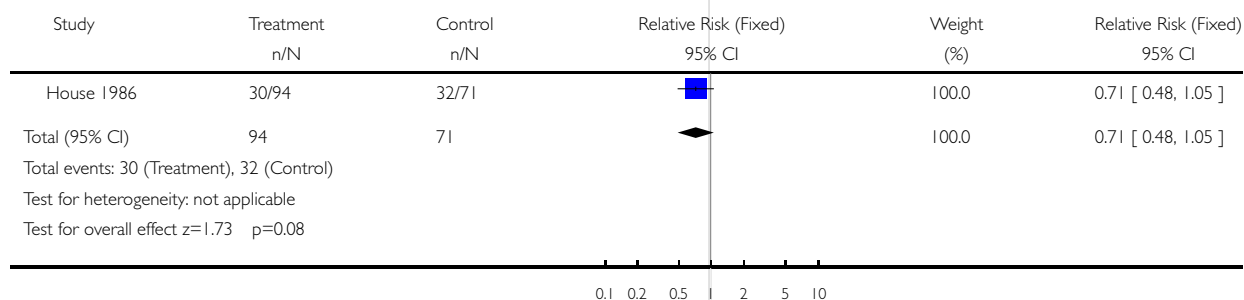


Analysis 02.21. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 21 Moderate/severe perineal pain at 3 days

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 21 Moderate/severe perineal pain at 3 days

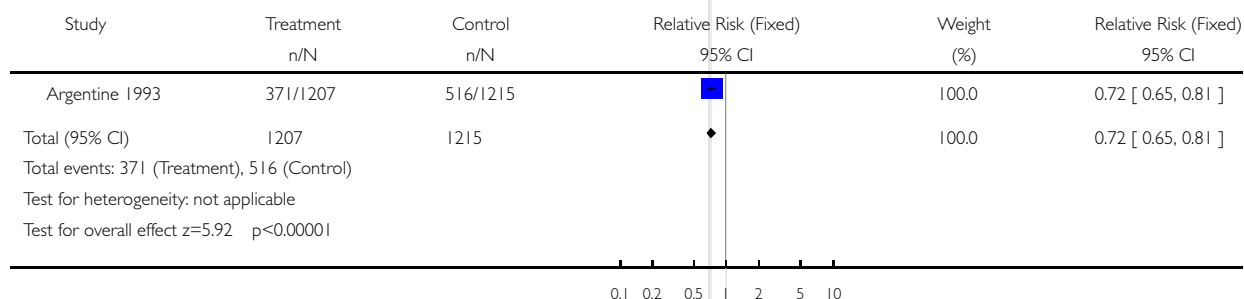


Analysis 02.22. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 22 Any perineal pain at discharge

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 22 Any perineal pain at discharge

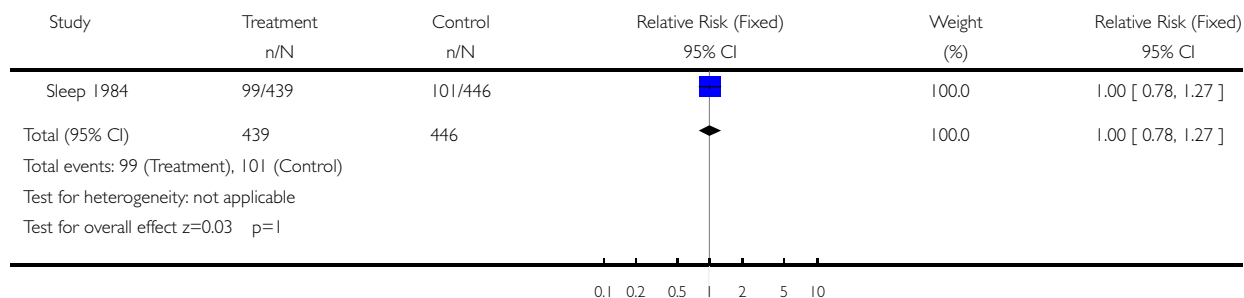


Analysis 02.23. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 23
Any perineal pain at 10 days

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 23 Any perineal pain at 10 days

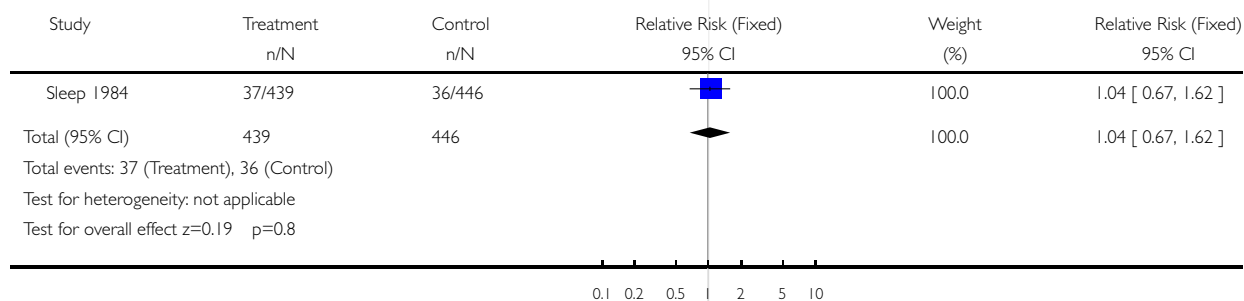


Analysis 02.24. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 24
Moderate/severe perineal pain at 10 days

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 24 Moderate/severe perineal pain at 10 days

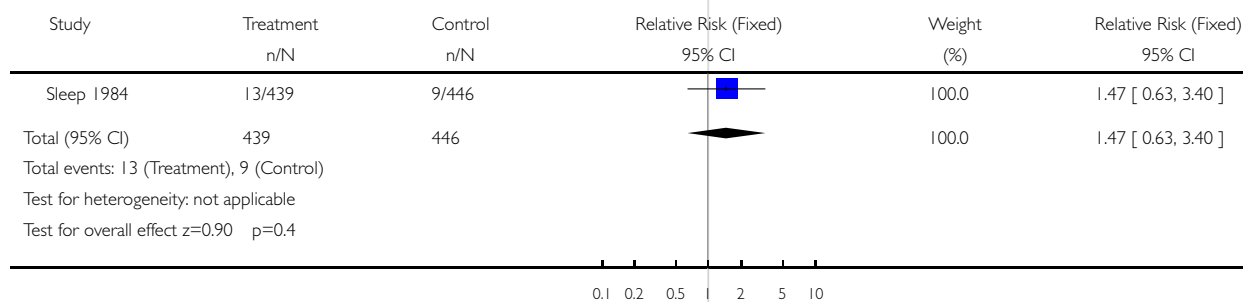


Analysis 02.25. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 25
Use of oral analgesia at 10 days

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 25 Use of oral analgesia at 10 days

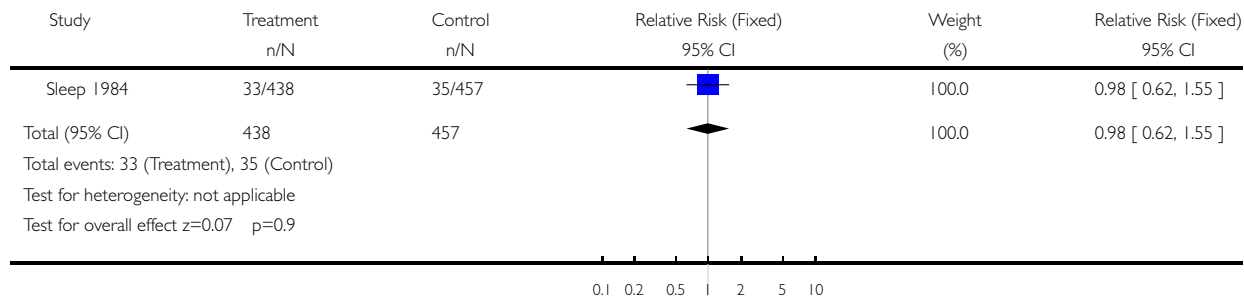


Analysis 02.26. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 26
Any perineal pain at 3 months

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 26 Any perineal pain at 3 months

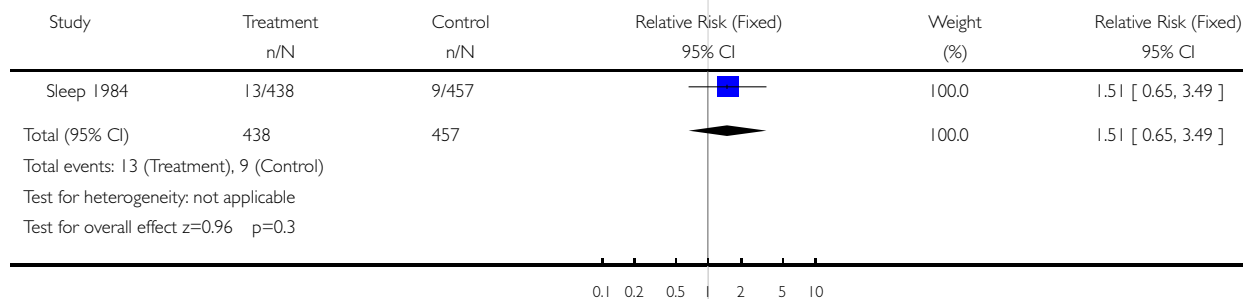


Analysis 02.27. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 27
Moderate/severe perineal pain at 3 months

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 27 Moderate/severe perineal pain at 3 months

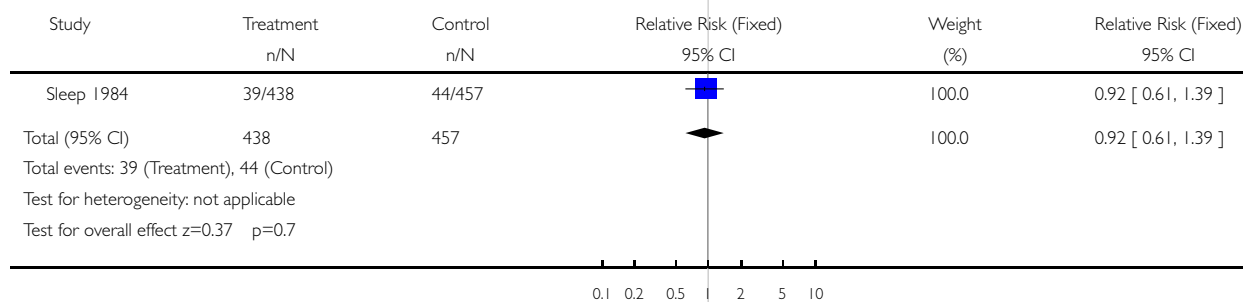


Analysis 02.28. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 28
No attempt at intercourse in 3 months

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 28 No attempt at intercourse in 3 months

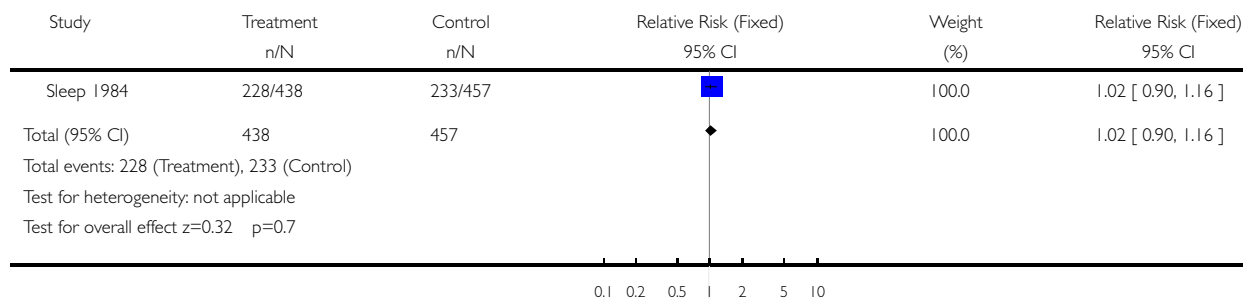


**Analysis 02.29. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 29
Any dyspareunia within 3 months**

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 29 Any dyspareunia within 3 months

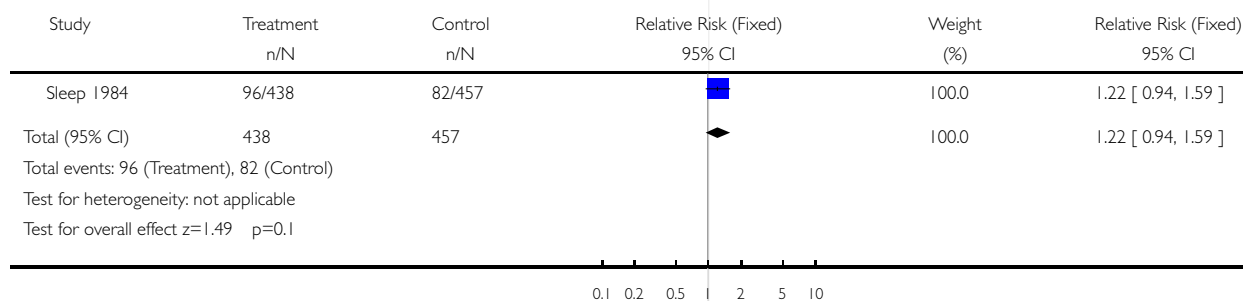


**Analysis 02.30. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 30
Dyspareunia at 3 months**

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 30 Dyspareunia at 3 months

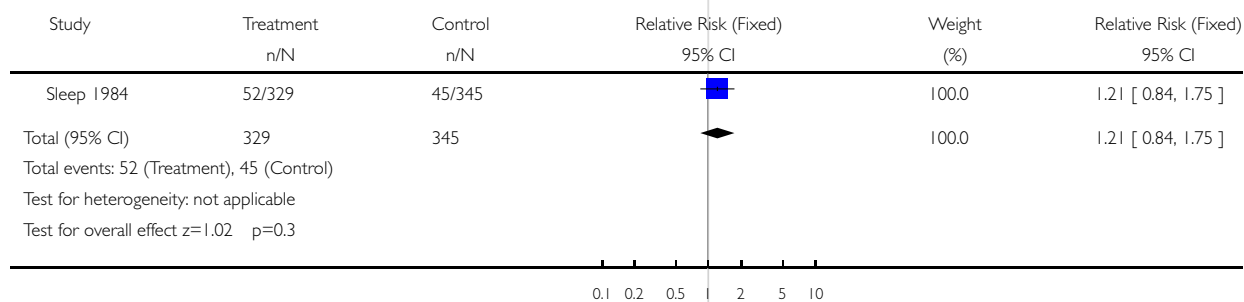


**Analysis 02.31. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 31
Ever suffering dyspareunia in 3 years**

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 31 Ever suffering dyspareunia in 3 years

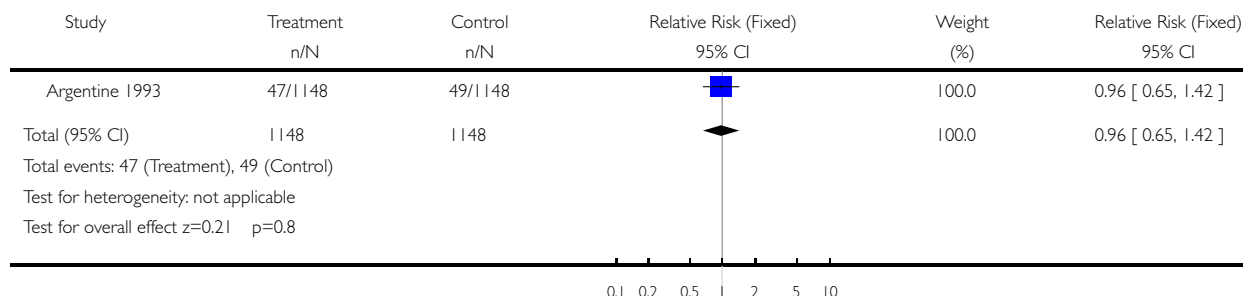


Analysis 02.32. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 32 Perineal haematoma at discharge

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 32 Perineal haematoma at discharge

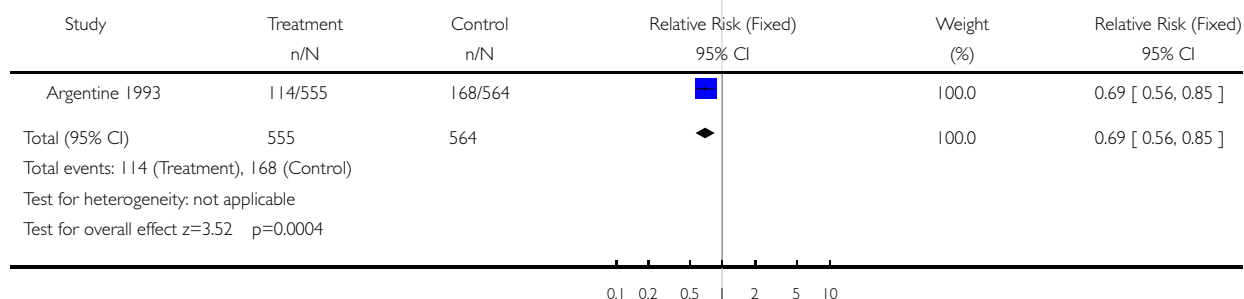


Analysis 02.33. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 33 Healing complications at 7 days

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 33 Healing complications at 7 days

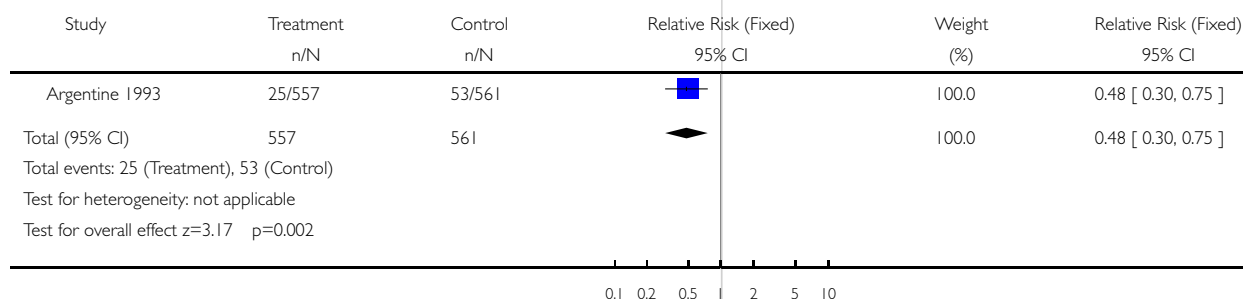


Analysis 02.34. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 34 Perineal wound dehiscence at 7 days

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 34 Perineal wound dehiscence at 7 days

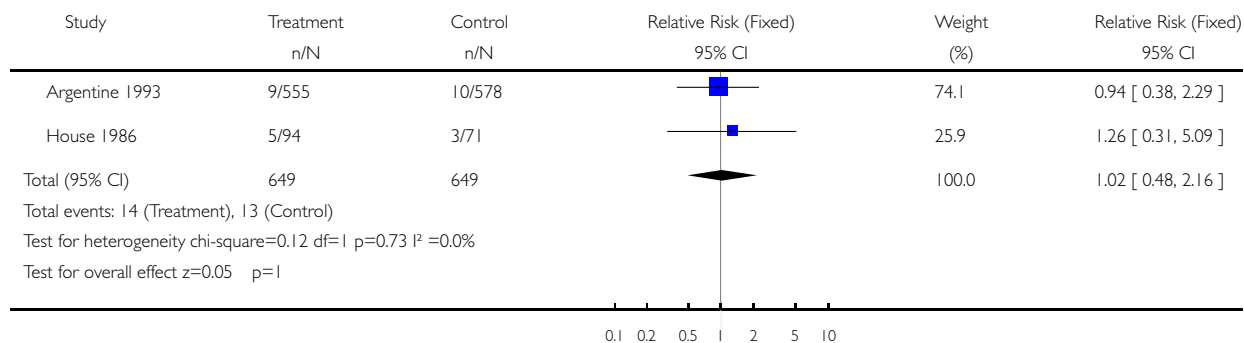


Analysis 02.35. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 35 Perineal infection

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 35 Perineal infection

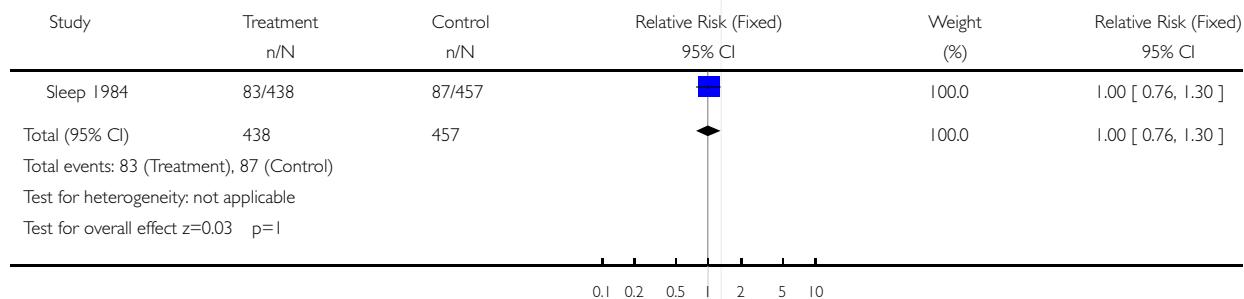


Analysis 02.36. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 36 Urinary incontinence at 3 months

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 36 Urinary incontinence at 3 months

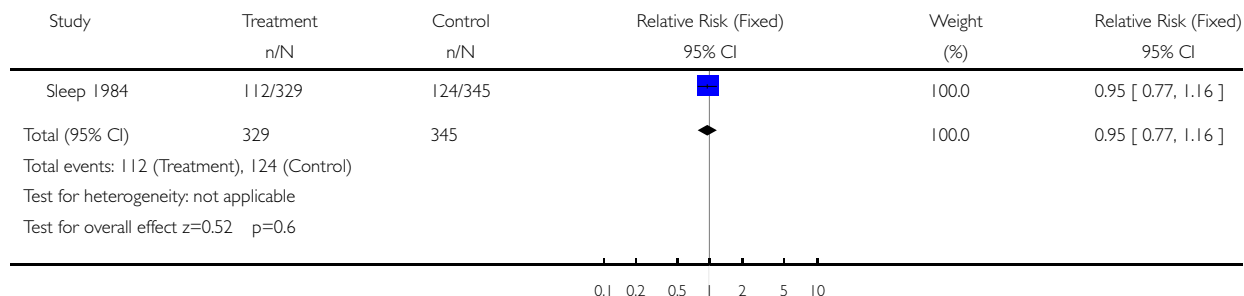


Analysis 02.37. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 37
Any urinary incontinence at 3 years

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 37 Any urinary incontinence at 3 years

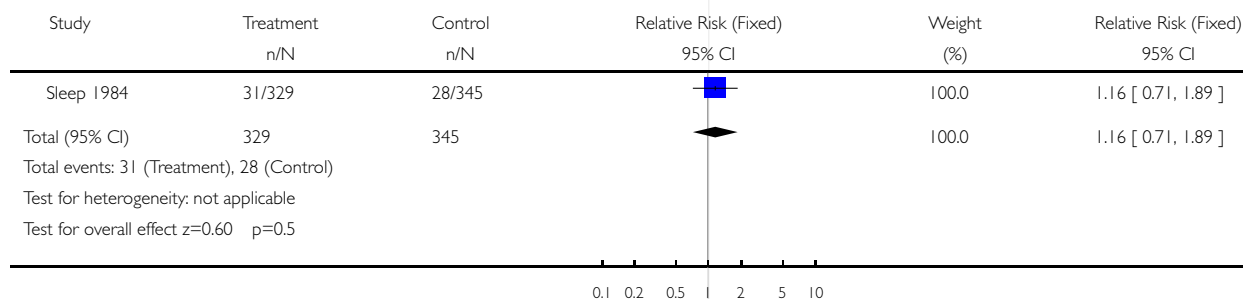


Analysis 02.38. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 38
Pad wearing for urinary incontinence

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 38 Pad wearing for urinary incontinence

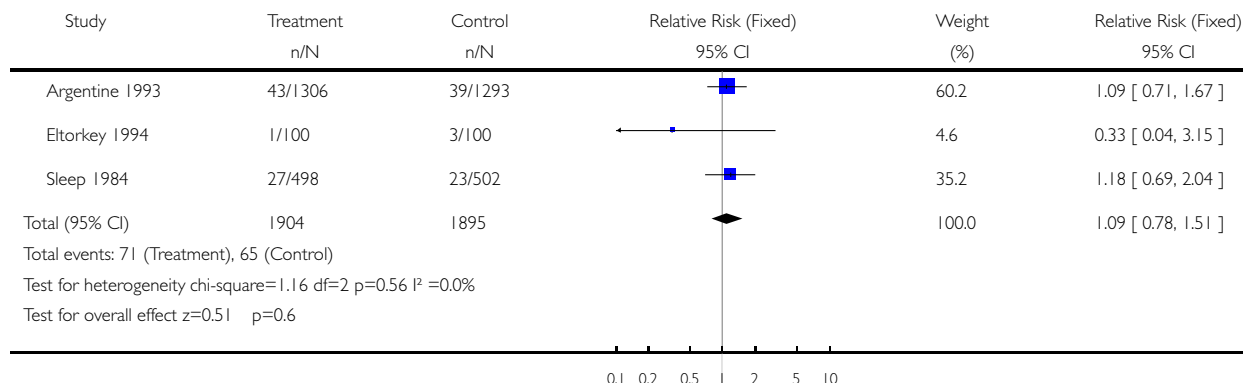


Analysis 02.39. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 39 Apgar score less than 7 at 1 minute

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 39 Apgar score less than 7 at 1 minute

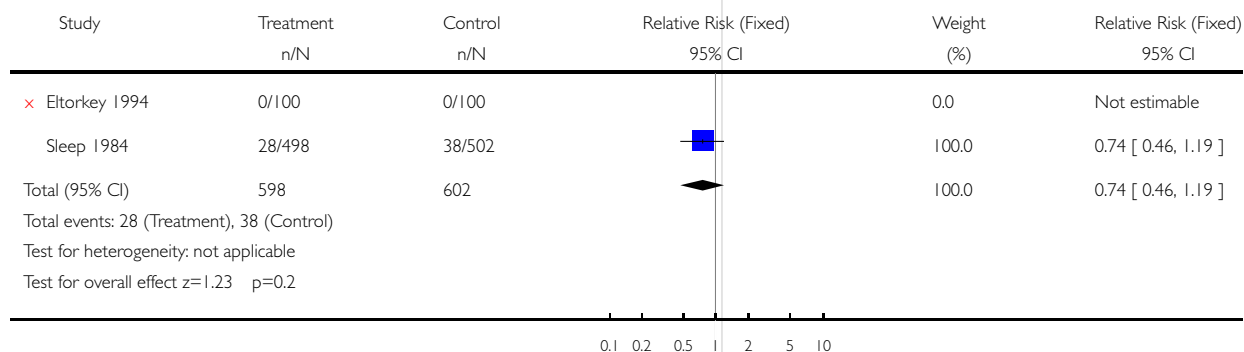


Analysis 02.40. Comparison 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral), Outcome 40 Admission to special care baby unit

Review: Episiotomy for vaginal birth

Comparison: 02 RESTRICTIVE versus ROUTINE EPISIOTOMY (mediolateral)

Outcome: 40 Admission to special care baby unit

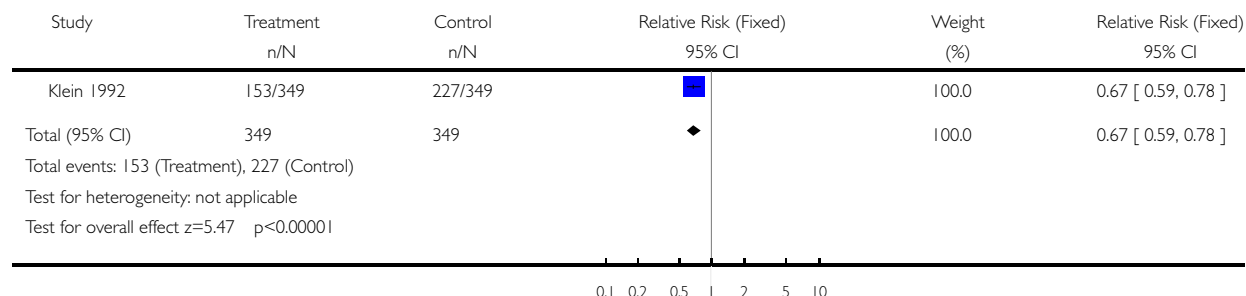


Analysis 03.01. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 01 Number of episiotomies

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 01 Number of episiotomies

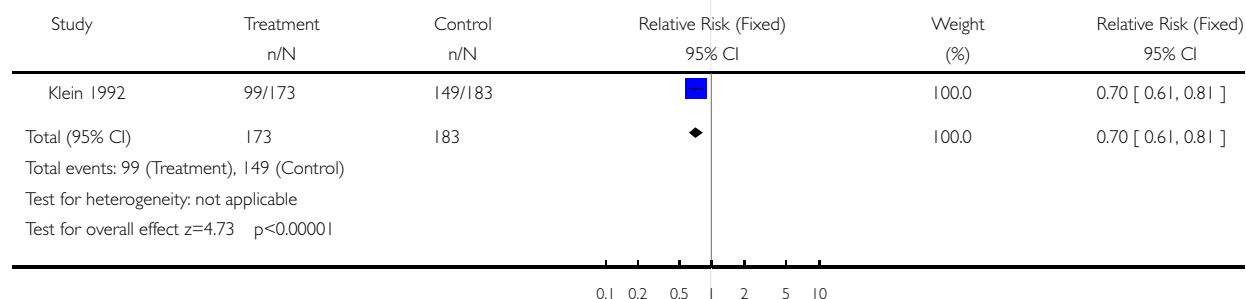


Analysis 03.02. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 02 Number of episiotomies (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 02 Number of episiotomies (primiparae)

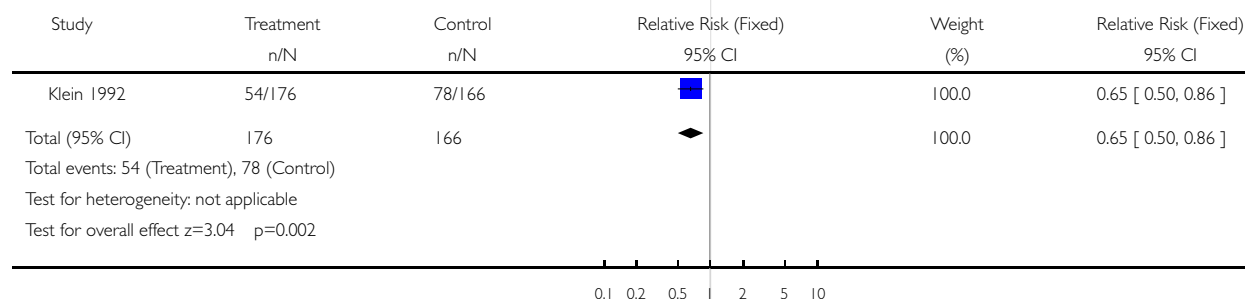


Analysis 03.03. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 03 Number of episiotomies (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 03 Number of episiotomies (multiparae)

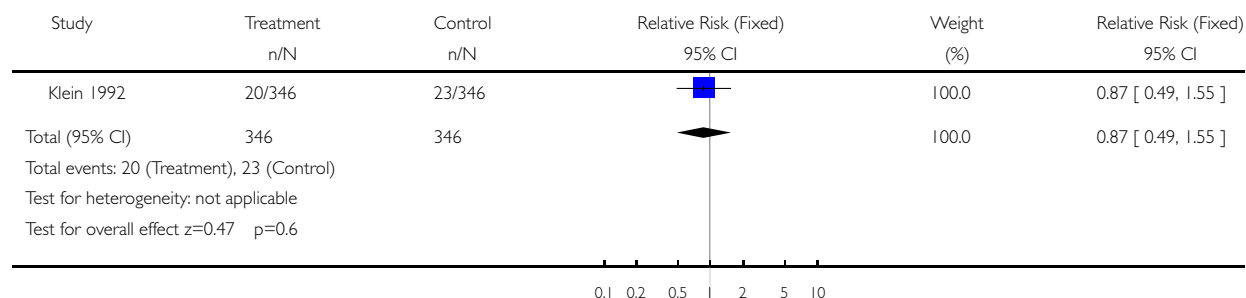


Analysis 03.04. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 04 Assisted delivery rate

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 04 Assisted delivery rate

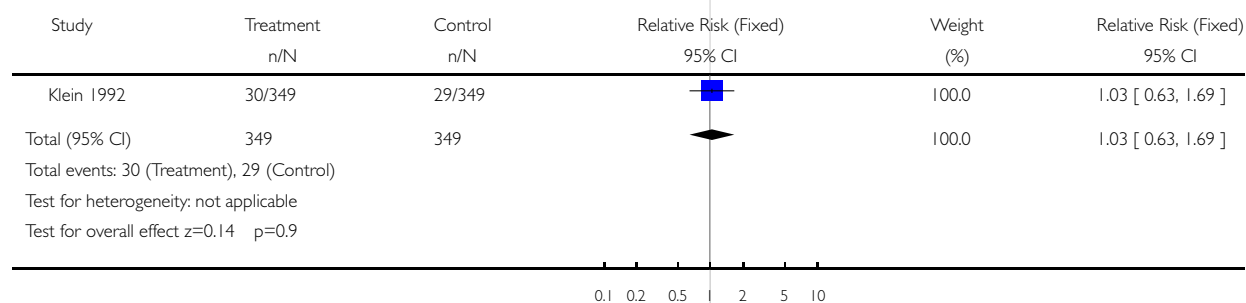


Analysis 03.05. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 05 Severe vaginal/perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 05 Severe vaginal/perineal trauma

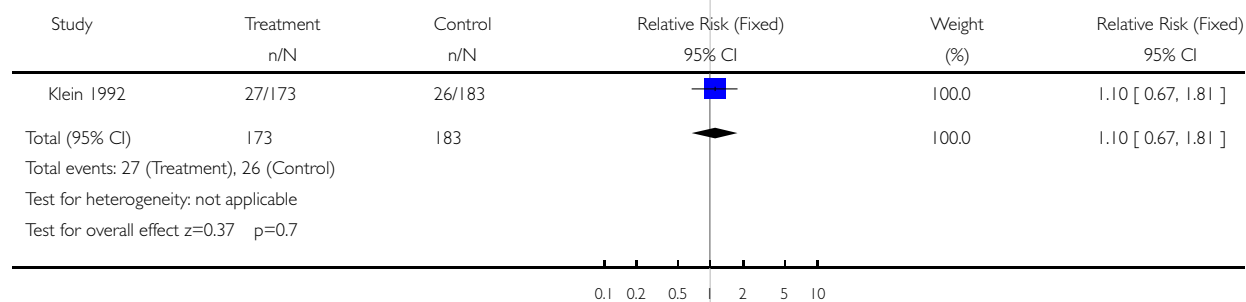


Analysis 03.06. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 06 Severe vaginal/perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 06 Severe vaginal/perineal trauma (primiparae)

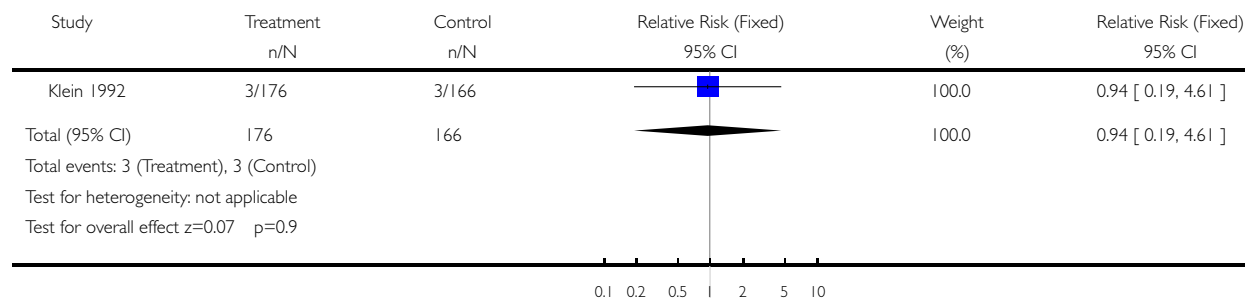


Analysis 03.07. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 07 Severe vaginal/perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 07 Severe vaginal/perineal trauma (multiparae)

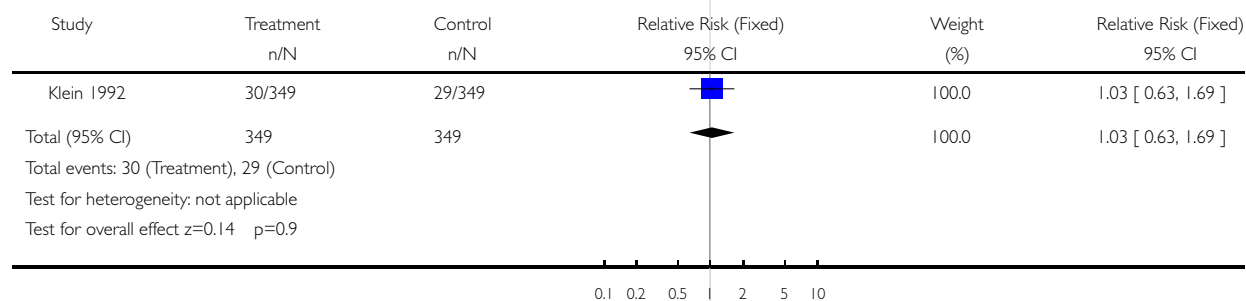


Analysis 03.08. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 08 Severe perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 08 Severe perineal trauma

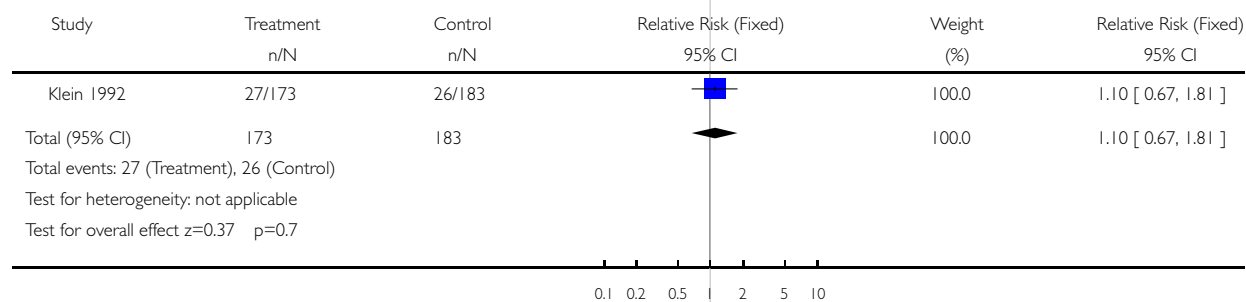


Analysis 03.09. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 09 Severe perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 09 Severe perineal trauma (primiparae)

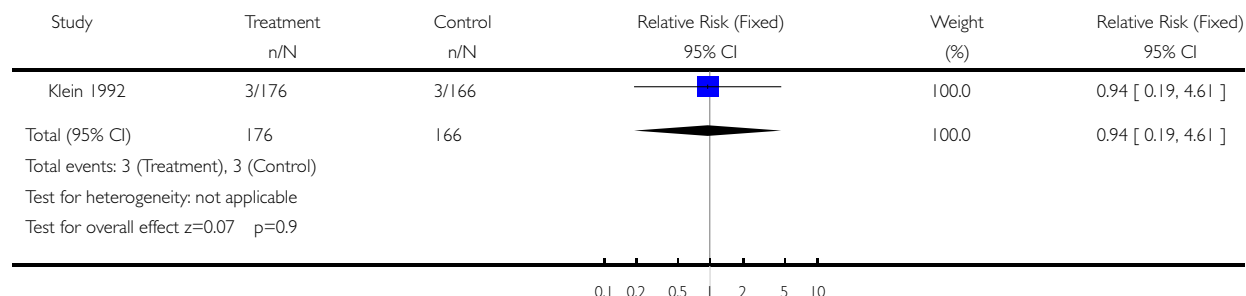


Analysis 03.10. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 10 Severe perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 10 Severe perineal trauma (multiparae)

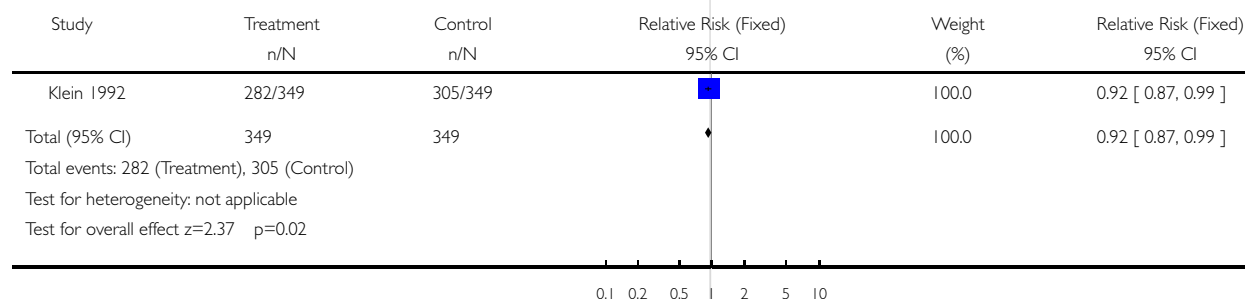


Analysis 03.11. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 11 Any posterior perineal trauma

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 11 Any posterior perineal trauma

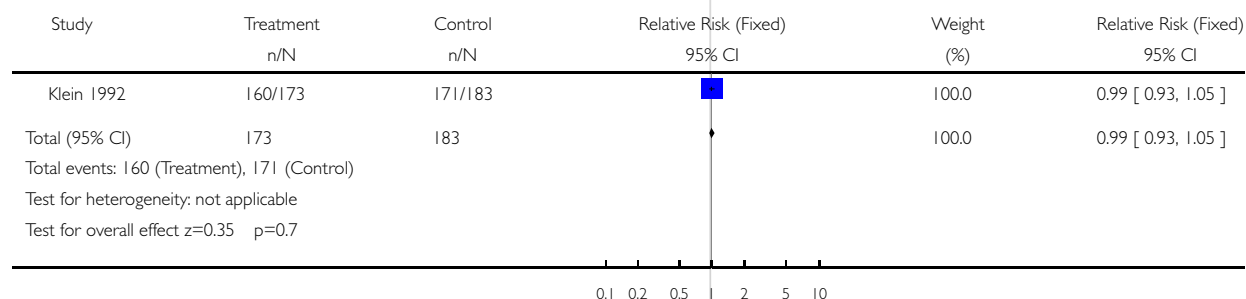


Analysis 03.12. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 12 Any posterior perineal trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 12 Any posterior perineal trauma (primiparae)

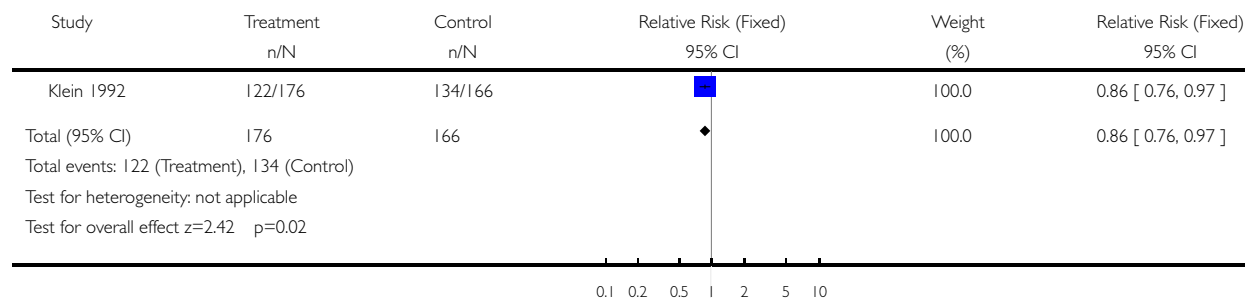


Analysis 03.13. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 13 Any posterior perineal trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 13 Any posterior perineal trauma (multiparae)

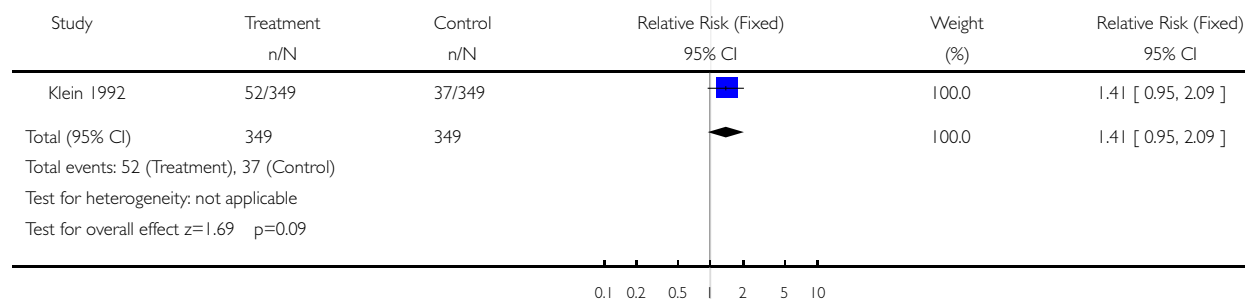


Analysis 03.14. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 14 Any anterior trauma

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 14 Any anterior trauma

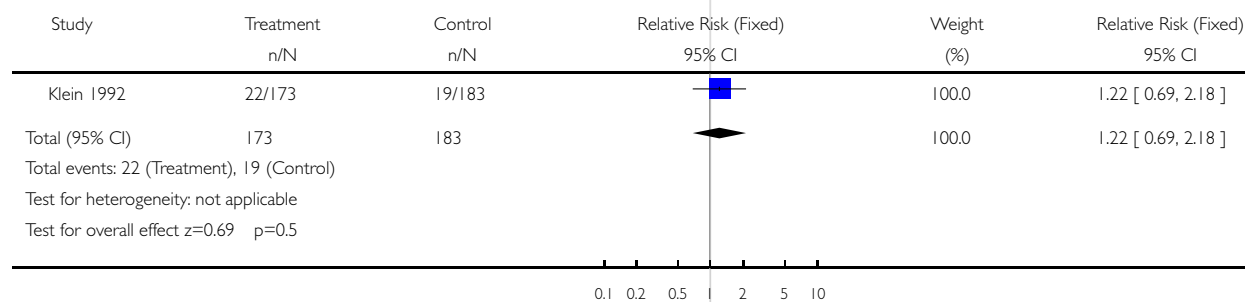


Analysis 03.15. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 15 Any anterior trauma (primiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 15 Any anterior trauma (primiparae)

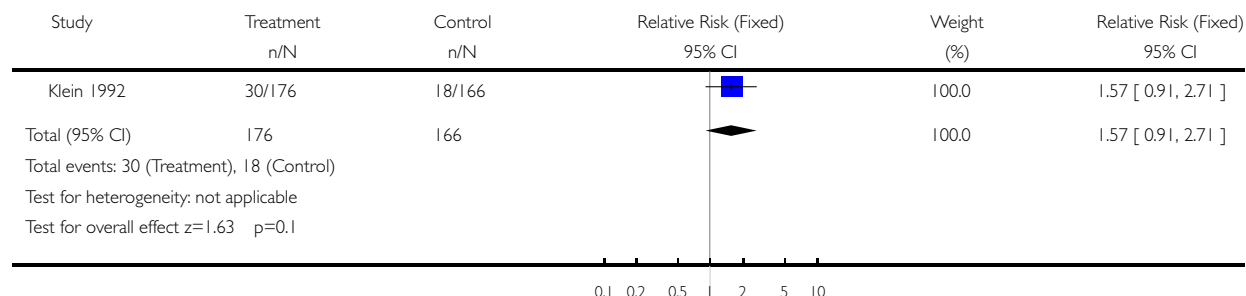


Analysis 03.16. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 16 Any anterior trauma (multiparae)

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 16 Any anterior trauma (multiparae)

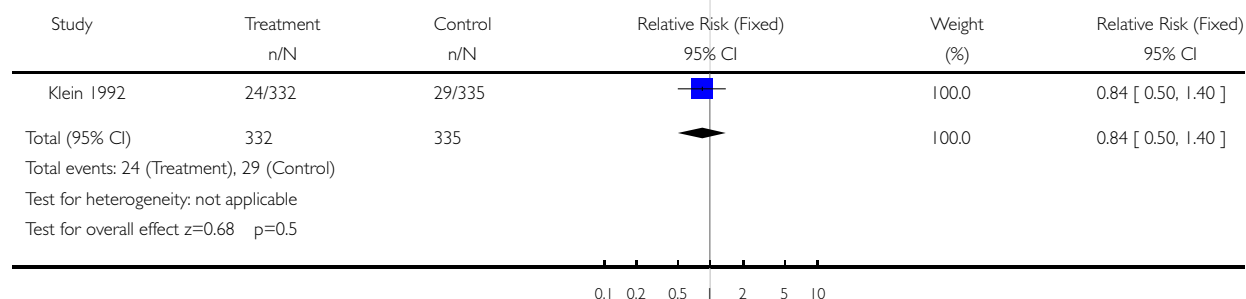


Analysis 03.17. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 17 Perineal bulging at 3 months

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 17 Perineal bulging at 3 months

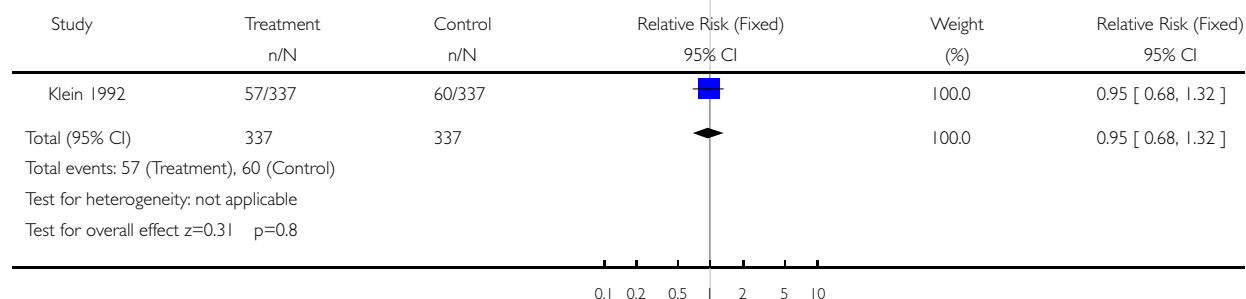


Analysis 03.18. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 18 Urinary incontinence at 3 months

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 18 Urinary incontinence at 3 months



Analysis 03.19. Comparison 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline), Outcome 19 Admission to special care baby unit

Review: Episiotomy for vaginal birth

Comparison: 03 RESTRICTIVE versus ROUTINE EPISIOTOMY (midline)

Outcome: 19 Admission to special care baby unit

Study	Treatment n/N	Control n/N	Relative Risk (Fixed) 95% CI	Weight (%)	Relative Risk (Fixed) 95% CI
× Klein 1992	0/349	0/349		0.0	Not estimable
Total (95% CI)	349	349		0.0	Not estimable
Total events: 0 (Treatment), 0 (Control)					
Test for heterogeneity: not applicable					
Test for overall effect: not applicable					
			0.1 0.2 0.5 1 2 5 10		