PICO Worksheet and Search Strategy

Define your question using **PICO**: Population, Intervention, Comparison, and Outcome.

Population: Women in second stage of labor

Intervention: An upright birthing position

Comparison: Lithotomy birthing position

Outcome: Better maternal and fetal outcome.

Write out your question:

Does maintaining an upright position during the second stage of labor positively affect maternal and fetal outcomes?

List the main topics and terms from your question that you can use to search.

Second stage labor
Upright position or patient positioning or birthing positions
Fetal outcome
Pregnancy outcome

Check any limit that may pertain to your search:
__ Age __ Language __ Year of publication_____

Type of study/publication you want to include in your search:
_X_ Systematic Review or Meta-Analysis
_X_ Clinical Practice Guidelines
_X_ Critically Appraised Research Studies
_X_ Individual Research Studies
__ Electronic Textbooks

Check the databases you searched:
_X_ Cochrane
__ Joanna Briggs
__ DARE
_X_ Clinical Evidence
_X_ AHRQ Evidence Reports
__ Guidelines Clearinghouse
__ ACP Journal Club
__ Evidence-Based Journals
_X_ CINAHL
__ PubMed Clinical Queries
__ UpToDate
__ MD Consult

What information did you find to help answer your question?

1) Cochrane

Authors: Gupta, JK; Hofmeyr, GJ
Title: Position in the second stage of labour for women without epidural anaesthesia.
Source: Cochrane Database of Systematic Reviews. 1, 2006.
Conclusions: The tentative findings of this review suggest several possible benefits for upright posture, with the possibility of increased risk of blood loss greater than 500 ml. Women should be encouraged to give birth in the position they find most comfortable. Until such time as the benefits and risks of various delivery positions are estimated with greater certainty, when methodologically stringent trials' data are available, women should be allowed to make informed choices about the birth positions in which they might wish to assume for delivery of their babies.

2) Clinical Evidence –

OPTION: Upright Position During Delivery
One systematic review found limited evidence that any upright position for delivery marginally reduced episiotomies compared with supine or lithotomy positions but this was offset by an increase in second degree tears. Rates of assisted vaginal delivery were slightly reduced in the upright group.
Benefits: We found one systematic review comparing any upright position for delivery (birthing chairs, stools, cushions, and squatting) versus supine or lithotomy positions. It found that the upright position significantly reduced the episiotomy rate compared with supine or lithotomy positions but this was offset by an increase in second degree tears There was a marginal but significant reduction in assisted vaginal deliveries in the upright group and no significant difference in rates of third and fourth degree tears
Harms: The review found that women delivering in the upright position were slightly more at risk of blood loss estimated to be greater than 500 ml and there was a non-significant increase in blood transfusion
Comment: The findings of this systematic review should be interpreted with caution because of the variable qualities of the trials and diversity of the treatment interventions (squatting, kneeling, Gardosi cushion, birthing chair). The reviewers state that the main outcome measures may have been affected because of participants being excluded from some of the trials after randomisation, and several women allocated to deliver in the upright position had difficulty complying. Further, well designed trials are needed, with particular attention given to methodological and clinical heterogeneity, observer bias, intention to treat analysis, and standardised objective measurements of blood loss.

3) AHRQ Evidence Reports –

The Use of Episiotomy in Obstetrical Care: Evidence Report/Technology Assessment, No. 112

> If the professional community accepts that routine episiotomy is not an effective means to reduce perineal injury, then that attitude should enable them to redouble efforts to understand fully various other approaches to attending the second stage of labaor that can promote maternal and infant safety, minimize perineal trauma, and maximize maternal comfort. These steps might include giving attention to maternal position, avoiding fundal pressure, reducing coached pushing, providing perineal support, and employing “hands poised” versus “hands on” techniques to support the perineum.

4) National Guidelines Clearinghouse: Nothing specific to second stage labor

5) Evidence-Based Journals: Nothing

6) CINAHL:

Downe S. Gerrett D. Renfrew MJ. “A prospective randomised trial on the effect of position in the passive second stage of labour on birth outcome in nulliparous women using epidural analgesia.”
Midwifery. 2004 Jun; 20(2): 157-68.

> OBJECTIVE: To determine whether the rate of instrumental birth in nulliparous women using epidural analgesia is affected by maternal position in the passive second stage of labour. DESIGN: A pragmatic prospective randomised trial. SETTING: Consultant maternity unit in the Midlands. PARTICIPANTS: One hundred and seven nulliparous women using epidural analgesia and reaching the second stage of labour with no contraindications to spontaneous birth. INTERVENTIONS: The lateral versus the

supported sitting position during the passive second stage of labour. MEASUREMENTS: Mode of birth, incidence of episiotomy, and perineal suturing. FINDINGS: Recruitment was lower than anticipated (107 vs. 220 planned). Lateral position was associated with lower rates of instrumental birth rate (lateral group 33%; sitting group 52%; p=0.05, RR 0.64, CI for RR: 0.40-1.01; Number-needed-to-treat (NNT)=5), of episiotomy (45% vs. 64%; p=0.05, RR 0.66, CI for RR: 0.44-1.00, NNT=5), and of perineal suturing (78% vs. 86%; p=0.243, RR 0.75, CI for RR 0.47-1.17). The odds ratio for instrumental birth in the sitting group was 2.2 (CI 1.00-4.6). Logistic regression of potential confounder variables was undertaken, due to a large variation in maternal weight between the randomised groups. Of the nine possible confounders tested, only position of the baby's head at full dilation affected the risk of instrumental birth significantly (p=0.4, OR 2.7 where the fetal head was in the lateral or posterior position). Maternal weight did not appear to have any effect. The odds ratio for instrumental delivery for women randomised to the sitting position was slightly higher within the logistic regression model (adjusted OR 2.3). KEY CONCLUSIONS: Women randomised to the lateral position had a better chance of a spontaneous vaginal birth than those randomised to the supported sitting position. Position of the babies head at full dilation had an additional effect on mode of birth. These effects are not conclusively generalizable. RECOMMENDATIONS FOR PRACTICE: The lateral position is likely to be at best beneficial, and at the worst no less harmful than the sitting position for most women and their babies who meet the criteria set for this study. Conclusive evidence for or against the technique should be established using larger trials.

Keen R. DiFranco J. Amis D. “Care practices that promote normal birth #5: non-supine (e.g., upright or side-lying) positions for birth... including commentary by Albers L.” Journal of Perinatal Education. 2004 Spring; 13(2): 30-4.

In this position paper--one of six care practice papers published by Lamaze International and reprinted here with permission--the benefit of non-supine positions for birth is discussed and presented as an evidence-based practice that helps promote, protect, and support normal birth. The paper is written for childbearing women and their families. Upright and gravity-neutral positions facilitate rotation and descent of the baby and result in reduced duration of second stage, a reduction in episiotomies, and fewer abnormal fetal heart rate patterns. The accompanying commentary--written by a leading proponent of maternity care--supports these benefits. Lamaze International recommends that laboring women not push until they feel an urge to do so, and that they choose positions for birth that are most comfortable for them.

Roberts JE. The "push" for evidence: management of the second stage. Journal of Midwifery & Women's Health. 2002 Jan-Feb; 47(1): 2-15.

Recognition that the available evidence does not support arbitrary time limits for the second stage of labor has led to reconsideration of the influence of maternal bearing down efforts on fetal/newborn status as well as on maternal pelvic structural integrity. The evidence that the duration of 'active' pushing is associated with fetal acidosis and denervation injury to maternal perineal musculature has contributed to the delineation of at least two phases during second stage, an early phase of continued fetal descent, and a phase of "active" pushing. The basis for the recommendation that the early phase of passive descent be prolonged and the phase of active pushing shortened by strategies to achieve effective, but non-detrimental pushing efforts is reviewed. The rational includes an emphasis on the obstetric factors that are optimal for birth and conducive to efficient maternal bearing down. Explicit assessment of these obstetric factors and observation of maternal behavior, particularly evidence of an involuntary urge to push, should be coupled with the use of maternal positions that will promote fetal descent as well as reduce maternal pain. The use of epidural analgesia for pain relief can also be accompanied by these same principles, although further research is needed to verify the strategies of "delayed pushing" and maintenance of pain relief along with a reconceptualization of the second stage of labor.

Shermer RH. Raines DA. “Positioning during the second stage of labor: moving back to basics.” JOGNN: Journal of Obstetric, Gynecologic, and Neonatal Nursing. 1997 Nov-Dec; 26(6): 727-34.

The advantages of an upright position during labor are presented, with historic, physiologic, and psychosocial aspects discussed. The influences of modern obstetric practices such as electronic fetal monitoring and anesthesia practices are discussed with findings related to the use of upright positions from the Association of Women's Health, Obstetric, and Neonatal Nursing National Research Utilization Project on Second Stage Labor Management integrated. Recommendations for facilitating upright positions on the labor and delivery unit are presented.

Reflection:

All of the sources discuss the advantages of maternal positioning, sometimes specifically mentioning the “upright” position. This search points out that you may not find that one perfect review or article that exactly answers your question, but you can glean pieces of the answer from several different sources and articles. In the CINAHL search, articles were limited to “evidence-based” sources, so you will find more reliable information because at least some level of review was undertaken to determine the validity of the findings.