

Group 1

Members: Emily Axelrod, Heba Fakir, Navneet Kaur, Amanda McNussen, Isaiah Tekalign

Question:

You are doing your OB/Gyn rotation and you notice that most of the women are giving birth in the lithotomy position at the encouragement of the physicians. You recall that one of the nurse midwives commented that other positions are less likely to lead to deliveries with forceps or a vacuum. What is the evidence on this question?

Format for Mini-CAT

Clinical Question: Please state this as briefly as possible based on the scenario provided

For women in labor, does the lithotomy position lead to more deliveries with forceps or vacuum compared to other maternal birthing positions?

PICO Question:

Identify the PICO elements (Recalling that some questions do not have all the elements)

P- women in labor

I- other birthing positions

C- lithotomy position

O- instrumental delivery (use of forceps, vacuum)

Patient	Intervention	Comparison	Outcome
Women in labor	Upright positions (sitting, standing, walking, kneeling, squatting, all fours)	Lithotomy position	Instrumentation
Nulliparous Women	Recumbent positions (semi-recumbent, lateral, supine, dorsal, bed care)	Recumbent position	Vacuum
Multiparous Women			Forceps
Pregnant Women			C-Section

Search Strategy:

Outline the terms used, databases or other tools used, how many articles returned, and how you selected the final articles to base your CAT on

Cochrane

Google Scholar

PubMed

York Library Database

Articles Chosen for Inclusion (please copy and paste the abstract with link):

1. Navneet

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD008070.pub4/epdf/full>

(Walker KF, Kibuka M, Thornton JG, Jones NW. Maternal position in the second stage of labour for women with epidural anaesthesia. Cochrane Database Syst Rev. 2018 Nov 9;11(11):CD008070. doi: 10.1002/14651858.CD008070.pub4. PMID: 30411804; PMCID: PMC6517130)

- a. **Background:** Epidural analgesia in labour prolongs the second stage and increases instrumental delivery. It has been suggested that a more upright maternal position during all or part of the second stage may counteract these adverse effects. This is an update of a Cochrane Review Published in 2017.
- b. **Objectives:**To assess the effects of different birthing positions (upright or recumbent) during the second stage of labour, on maternal and fetal outcomes for women with epidural analgesia.
- c. **Search methods:** We searched Cochrane Pregnancy and Childbirth's Trials Register, ClinicalTrials.gov, the WHO International Clinical Trials Registry Platform (ICTRP) (5 June 2018), and the reference lists of retrieved studies.
- d. **Selection criteria:**All randomised or quasi-randomised trials including pregnant women (primigravidae or multigravidae) in the second stage of induced or spontaneous labour receiving epidural analgesia of any kind. Cluster-randomised controlled trials would have been eligible for inclusion but we found none. Studies published in abstract form only were also eligible. We assumed the experimental intervention to be maternal use of any upright position during the second stage of labour, compared with the control condition of remaining in any recumbent position.
- e. **Data collection and analysis:** Two review authors independently assessed trials for inclusion, assessed risks of bias, and extracted data. We contacted study authors to obtain missing data. We assessed the quality of the evidence using the GRADE approach. We carried out a planned sensitivity analysis of the three studies with low risks of bias for allocation concealment and incomplete outcome data reporting, and further excluded one study with a co-intervention (this was not prespecified).
- f. **Main results:** We include eight randomised controlled trials, involving 4464 women, comparing upright positions versus recumbent positions in this update. Five were

conducted in the UK, one in France and two in Spain. The largest UK trial accounted for three-quarters of all review participants, and we judged it to have low risk of bias. We assessed two other trials as being at low risk of selection and attrition bias. We rated four studies at unclear or high risk of bias for both selection and attrition bias and one study as high risk of bias due to a co-intervention. The trials varied in their comparators, with five studies comparing different positions (upright and recumbent), two comparing ambulation with (recumbent) non-ambulation, and one study comparing postural changes guided by a physiotherapist to a recumbent position. Overall, there may be little or no difference between upright and recumbent positions for our combined primary outcome of operative birth (caesarean or instrumental vaginal): average risk ratio (RR) 0.86, 95% confidence interval (CI) 0.70 to 1.07; 8 trials, 4316 women; I² = 78%; low-quality evidence. It is uncertain whether the upright position has any impact on caesarean section (RR 0.94, 95% CI 0.61 to 1.46; 8 trials, 4316 women; I² = 47%; very low-quality evidence), instrumental vaginal birth (RR 0.90, 95% CI 0.72 to 1.12; 8 trials, 4316 women; I² = 69%) and the duration of the second stage of labour (mean difference (MD) 6.00 minutes, 95% CI -37.46 to 49.46; 3 trials, 456 women; I² = 96%), because we rated the quality of the evidence as very low for these outcomes. Maternal position in the second stage of labour probably makes little or no difference to postpartum haemorrhage (PPH), (PPH requiring blood transfusion): RR 1.20, 95% CI 0.83 to 1.72; 1 trial, 3093 women; moderate-quality evidence. Maternal satisfaction with the overall childbirth experience was slightly lower in the upright group: RR 0.95, 95% CI 0.92 to 0.99; 1 trial, 2373 women. Fewer babies were born with low cord pH in the upright group: RR 0.43, 95% CI 0.20 to 0.90; 2 trials, 3159 infants; moderate-quality evidence. The results were less clear for other maternal or fetal outcomes, including trauma to the birth canal requiring suturing (average RR 1.00, 95% CI 0.89 to 1.13; 3 trials, 3266 women; I² = 46%; low-quality evidence), abnormal fetal heart patterns requiring intervention (RR 1.69, 95% CI 0.32 to 8.84; 1 trial, 107 women; very low-quality evidence), or admission to neonatal intensive care unit (RR 0.54, 95% CI 0.02 to 12.73; 1 trial, 66 infants; very low-quality evidence). However, the CIs around some of these estimates were wide, and we cannot rule out clinically important effects. In our sensitivity analysis of studies at low risk of bias, upright positions increase the chance of women having an operative birth: RR 1.11, 95% CI 1.03 to 1.20; 3 trials, 3609 women; high-quality evidence. In absolute terms, this equates to 63 more operative births per 1000 women (from 17 more to 115 more). This increase appears to be due to the increase in caesarean section in the upright group (RR 1.29; 95% CI 1.05 to 1.57; 3 trials, 3609 women; high-quality evidence), which equates to 25 more caesarean sections per 1000 women (from 4 more to 49 more). In the sensitivity analysis there was no clear impact on instrumental vaginal births: RR 1.08, 95% CI 0.91 to 1.30; 3 trials, 3609 women; low-quality evidence.

- g. Authors' conclusions: There may be little or no difference in operative birth between women who adopt recumbent or supine positions during the second stage of labour with an epidural analgesia. However, the studies are heterogeneous, probably related to

differing study designs and interventions, differing adherence to the allocated intervention and possible selection and attrition bias. Sensitivity analysis of studies at low risk of bias indicated that recumbent positions may reduce the need for operative birth and caesarean section, without increasing instrumental delivery. Mothers may be more satisfied with their experience of childbirth by adopting a recumbent position. The studies in this review looked at leO or right lateral and semi-recumbent positions. Recumbent positions such as flat on the back or lithotomy are not generally used due to the possibility of aorto-caval compression, although we acknowledge that these recumbent positions were not the focus of trials included in this review.

2. –Amanda [A meta-analysis of the effect on maternal health of upright positions during the second stage of labour, without routine epidural analgesia - Deliktas - 2018 - Journal of Advanced Nursing - Wiley Online Library](#)
 - a. **Aim:** To detect the effect on maternal health of upright positions during the second stage of labour.
 - b. **Background:** Maternal position during labour has an important effect on maternal and foetal health.
 - c. **Design:** A meta-analysis was used based on the Cochrane Handbook.
 - d. **Data sources:** Randomized/non-randomized clinical trials were searched with English and Turkish key words in databases (CINAHL, Medline, Science Direct, Springer Link, Ovid, Cochrane Central Register of Controlled Trials, Networked Digital Library of Theses & Dissertations, Proquest, ULAKBİM (Turkish Academic Network and Information Center) and YÖK (Turkish Council of Higher Education) (1970-December 2015).
 - e. **Review methods:** According to inclusion criteria, eligible studies were identified. Data extraction was performed and the bias risks of the studies were assessed independently by two authors. The publication bias of the main outcomes was examined. The overall effect size was calculated by risk ratio with a random effects model. Statistical heterogeneity tests and sensitivity analyses were performed.
 - f. **Results:** The criteria for the meta-analysis were met by 22 articles. It was detected that the ratio of instrumental labour and episiotomy was lower but the haemorrhage ratio was higher in women. There was no statistical effect of upright position on the other maternal outcomes.
 - g. **Conclusion:** The reductions in these ratios improved comfort. Due to methodological shortcomings of the studies, the increased ratio of postpartum haemorrhage should be interpreted with caution. Researchers are recommended to conduct studies rigorously. In addition, healthcare professionals are recommended to decide the appropriate birth position by considering the individual risk factors and preferences of the women.

3. –Heba- <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003934.pub4/full>
 - a. **Background:** It is more common for women in both high- and low-income countries giving birth in health facilities, to labour in bed. There is no evidence that this is

associated with any advantage for women or babies, although it may be more convenient for staff. Observational studies have suggested that if women lie on their backs during labour this may have adverse effects on uterine contractions and impede progress in labour, and in some women reduce placental blood flow.

- b. Objectives:** To assess the effects of encouraging women to assume different upright positions (including walking, sitting, standing and kneeling) versus recumbent positions (supine, semi-recumbent and lateral) for women in the first stage of labour on duration of labour, type of birth and other important outcomes for mothers and babies.
- c. Search methods:** We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (31 January 2013).
- d. Selection criteria:** Randomised and quasi-randomised trials comparing women randomised to upright versus recumbent positions in the first stage of labour.
- e. Data collection and analysis:** We used methods described in the *Cochrane Handbook for Systematic Reviews of Interventions* for carrying out data collection, assessing study quality and analysing results. Two review authors independently evaluated methodological quality and extracted data for each study. We sought additional information from trial authors as required. We used random-effects analysis for comparisons in which high heterogeneity was present. We reported results using the average risk ratio (RR) for categorical data and mean difference (MD) for continuous data.
- f. Main results:** Results should be interpreted with caution as the methodological quality of the 25 included trials (5218 women) was variable. For Comparison 1: Upright and ambulant positions versus recumbent positions and bed care, the first stage of labour was approximately one hour and 22 minutes shorter for women randomised to upright as opposed to recumbent positions (average MD -1.36, 95% confidence interval (CI) -2.22 to -0.51; 15 studies, 2503 women; random-effects, $T^2 = 2.39$, $Chi^2 = 203.55$, $df = 14$, ($P < 0.00001$), $I^2 = 93%$). Women who were upright were also less likely to have caesarean section (RR 0.71, 95% CI 0.54 to 0.94; 14 studies, 2682 women) and less likely to have an epidural (RR 0.81, 95% CI 0.66 to 0.99, nine studies, 2107 women; random-effects, $T^2 = 0.02$, $I^2 = 61%$). Babies of mothers who were upright were less likely to be admitted to the neonatal intensive care unit, however this was based on one trial (RR 0.20, 95% CI 0.04 to 0.89, one study, 200 women). There were no significant differences between groups for other outcomes including duration of the second stage of labour, or other outcomes related to the well being of mothers and babies.

For Comparison 2: Upright and ambulant positions versus recumbent positions and bed care (with epidural: all women), there were no significant differences between groups for outcomes including duration of the second stage of labour, or other outcomes related to the well being of mothers and babies.

- g. Authors' conclusions:** There is clear and important evidence that walking and upright positions in the first stage of labour reduces the duration of labour, the risk of caesarean birth, the need for epidural, and does not seem to be associated with increased intervention or negative effects on mothers' and babies' well being. Given the great heterogeneity and high performance bias of study situations, better quality trials are still required to confirm with any confidence the true risks and benefits of upright and mobile positions compared with recumbent positions for all women. Based on the current findings, we recommend that women in low-risk labour should be informed of

the benefits of upright positions, and encouraged and assisted to assume whatever positions they choose.

4. Isaiah-https://onlinelibrary.wiley.com/doi/full/10.1111/jocn.15376?casa_token=ghi-f4F9XKUAAA-AA%3Ads64TiMJnmJN6T78qOXWVf8s1jpDZ_eZw6_v8_1AJjOX-CrFaEwL6vp9cmCpXfuGYqioTauEQDgzT_w
 - a. Abstract
 - b. **Aims and objectives:** To assess the effects of flexible sacrum positions on mode of delivery, duration of the second stage of labor, perineal trauma, postpartum hemorrhage, maternal pain, abnormal fetal heart rate patterns and Apgar scores based on published literature.
 - c. **Background:** Maternal positions served as a nonmedical intervention may facilitate optimal maternal and neonatal outcomes during labor. Flexible sacrum positions are conducive to expanding pelvic outlet. Whether flexible sacrum positions have positive effects on maternal and neonatal well-being is a controversial issue under heated discussion.
 - d. **Design:** We performed a systematic review and meta-analysis based on PRISMA guidelines.
 - e. **Methods:** Randomised controlled trials (RCTs) comparing any flexible sacrum position with non-flexible sacrum position in the second stage of labor were included. PubMed, EMBASE, Cochrane Library, CINAHL, CNKI (China National Knowledge Infrastructure), SinoMed and Wanfang databases were searched from inception to 11 March 2019 for published RCTs. Risk of bias was assessed by the Cochrane criteria, and random-effects meta-analyses were conducted by RevMan 5.3.
 - f. **Results:** Sixteen studies (3,397 women) published in English were included. Flexible sacrum positions in the second stage of labor could reduce the incidence of operative delivery, instrumental vaginal delivery, cesarean section, episiotomy, severe perineal trauma, severe pain and shorten the duration of active pushing phase in the second stage of labor. However, flexible sacrum positions may increase the incidence of mild perineal trauma. There was no significant difference in the duration of the second stage of labor, maternal satisfaction and other outcomes.
 - g. **Conclusions:** Flexible sacrum positions are superior in promoting maternal well-being during childbirth. However, several results require careful interpretation. More rigorous original studies are needed to further explore their effects.
 - h. **Relevance to clinical practice:** The results support the use of flexible sacrum positions. Flexible sacrum positions are recommended to apply flexibly or tailor to individual woman's labor progress.
5. – Emily [https://www.ejog.org/article/S0301-2115\(20\)30591-1/fulltext](https://www.ejog.org/article/S0301-2115(20)30591-1/fulltext)

- a. **Objectives:** The influence of squatting during delivery on maternal and fetal outcomes remains unclear. We performed a systematic review and meta-analysis to evaluate the benefits and risks of adopting a squatting position during the second stage of labor.
- b. **Study design:** Search Strategy: A systematic search in the three major electronic databases (CENTRAL, PubMed and Embase) was performed, from their respective inception dates to the 14th of December 2019, using 'squatting', and a combination of keywords to identify delivery.
- c. **Eligibility criteria:** Randomized controlled trials comparing squatting position to any supine position during the second stage of labor.
- d. **Statistical analyses:** Risk ratio for dichotomous outcomes, mean difference for continuous outcomes, with 95 % confidence intervals. Fixed-effects meta-analysis (Mantel-Haenszel method) or random-effects model (inverse variance method), for low and high heterogeneity between trials, respectively. PROSPERO Registration number: CRD42018093244
- e. **Results:** Seven randomized controlled trials (n = 1219) were included. Three studies were assessed as low risk of bias, three others as moderate and one study as high risk of bias. The main limitation is the lack of reporting on the methods to achieve randomization and concealment of allocation in most of the studies. There was no difference in the duration of the second stage of labor (mean -11.09 min; 95 %CI -38.85 to 16.68). In the squatting group, the risk of caesarean section was increased (RR 2.26, 95 %CI 1.07–4.80) and the risk of instrumental delivery was decreased (RR 0.60, 95 %CI 0.45–0.81), which results in a similar probability of spontaneous delivery. There were no differences regarding the other maternal and fetal outcomes.
- f. **Conclusions:** The available evidence does not show the squatting position during childbirth to be beneficial. As there is no evidence for or against squatting, women should be able to choose the position they prefer.

Summary of the Evidence:

Author (Date)	Level of Evidence	Sample/Setting (# of subjects/ studies, cohort definition etc.)	Outcome(s) studied	Key Findings	Limitations and Biases
Lawrence A, Lewis L, Hofmeyr GJ, Styles [10/9/2013]	Systemic Reviews	<p>Women in the 1st stage of labor (Nulliparous and Multiparous)</p> <p>25 included trials (5218 women)</p>	<ul style="list-style-type: none"> • Maternal Outcomes (Duration of 1st Stage of Labour, Mode of Birth, 2ndry Maternal Outcomes) • Fetal & Neonatal Outcomes (Fetal Distress Requiring Immediate Birth, Use of Neonatal Mechanical Ventilation, 2ndry Neonatal Outcomes) 	<p>Upright and ambulant positions versus recumbent positions and bed care, the first stage of labour was approximately one hour and 22 minutes shorter for women randomised to upright as opposed to recumbent positions.</p> <p>Women who were upright were also less likely to have caesarean section and less likely to have an epidural. Babies of mothers who were upright were less likely to be admitted to the neonatal intensive care unit, however this was based on one trial. There were no significant differences between groups for other outcomes including duration of the second stage of labour, or other outcomes related to the well being of mothers and babies.</p>	<p>Allocation bias= method of sequence generation was often not mentioned in the included studies Boyle 2002, Gau 2011, Miquelutti 2007 and Vallejo 2001, a computer-generated list of random numbers was used; MacLennan 1994 used variable blocks with stratification; six of the included studies utilised a quasi-randomised design, where the allocation to groups was according to hospital or case-note number or by alternate allocation (Calvert 1982; Chan 1963; Chen 1987; Mathew 2012; Taavoni 2011; Williams 1980); for the remaining 14 studies, the method of sequence generation was not stated. The methods used to conceal group allocation from those recruiting women to the trials were also frequently not</p>

					<p>described. Eight studies referred to group allocation details being contained in envelopes. In the studies by Boyle 2002, Collis 1999, Gau 2011, MacLennan 1994, and Miquelutti 2007 the envelopes were described as sealed and opaque, and in the other studies envelopes were described as plain, numbered or sealed (Ben Regaya 2010, Frenea 2004; McManus 1978).</p> <p>Blinding women and their clinical carers to group allocation was not feasible, which might have introduced bias and should be kept in mind when interpreting the results.</p> <p>Attrition Bias= Some studies failed to report on the outcomes of the total population recruited. An example of incomplete data is method of birth. The study by Miquelutti 2007 reported data for the number of women having spontaneous vaginal birth, but not for operative vaginal births or caesarean</p>
--	--	--	--	--	---

					<p>births. The study by Taavoni 2011 reported intention-to-treat data for the number of women having caesarean births, but no data were reported for the number having spontaneous vaginal or operative vaginal births.</p> <p>Selective Reporting= Several studies had limited outcomes to report, or claimed evidence of an outcome with little or no data to support it. For example, Bundsen 1982 concluded that telemetric monitoring (ambulation) had great value both psychologically and for medical reasons, but the only data provided was for the numbers of vacuum extractions and caesarean sections in each group.</p>
<p>Ayse Deliktas, Kamile Kukulcu [09/07/2017]</p>	<p>Meta-analysis</p>	<p>- 22 articles included: 19 RCT and 3 non-randomized clinical trials - 12 sets of data from primiparous and 6 from multiparous mothers,</p>	<p>- Instrumentation birth - Caesarean birth - Episiotomy - Postpartum haemorrhage</p>	<p>- Instrumentation birth Recumbent position: 147/1,000 Upright position: 100/1,000 - Caesarean birth Recumbent position: 17/1,000 Upright position: 17/1,000 - Episiotomy</p>	<p>Nine studies conducted using randomized numbers generated by a computer or by shuffling envelopes were associated with a low level of bias in the process of random sequence generation. We</p>

		<p>remaining included both</p> <ul style="list-style-type: none"> - spontaneous labor in 6 studies, remaining included both spontaneous and induced - 9 cases of sitting in an obstetric birth chair, 5 cases of squatting, and 8 of adopting an upright position in bed. <p>Recumbent position included supine and traditional position</p>		<p>Recumbent position: 319/1,000 Upright position: 258/1,000</p> <p>- Postpartum haemorrhage</p> <p>Recumbent position: 222/1,000 Upright Position: 299/1,000</p> <p>It was detected that the ratio of instrumental labour and episiotomy was lower but the haemorrhage ratio was higher in women. There was no statistical effect of upright position on the other maternal outcomes.</p>	<p>found that 10 studies had high levels of bias due to the use of odd-even numbers, hospital numbers, registration numbers or assignment according to other variables. Some studies had a low level of bias by means of allocation concealment with opaque, sealed envelopes. It was determined that studies without allocation concealment had a high level of bias. Due to the nature of the intervention, it was decided that blinding was not applicable to women and healthcare professionals. However, it should be noted that the lack of blinding may result in bias. Some articles presented the number of caesarean deliveries but not the number of spontaneous deliveries (Gupta, Brayshaw, & Lilford, 1989) and in others, the number of second-degree lacerations was given but not the number of cases without</p>
--	--	--	--	---	--

					<p>perineal trauma or first-degree lacerations (Gupta et al., 1989). There was postrandomization loss of data in some studies, but the bias level was specified as low because intention-to-treat analysis was conducted after the data loss. It was found that the previously specified primary and secondary results were provided in all the studies being evaluated in terms of bias at the reporting stage. Some studies did not specify their method in detail and did not provide necessary information about how the intervention was implemented, how the results were evaluated and which criteria were used. Therefore, these studies were considered to have a high level of bias in the "other" category of bias. Additionally, postpartum haemorrhage was evaluated visually and this measurement</p>
--	--	--	--	--	---

					error was noted as having a high risk of bias (Table 2).
--	--	--	--	--	--

<p>Yu Zang MSc, RN,Hong Lu PhD, RN,Yang Zhao MSc, RN,Jing Huang BSc, RN,Lihua Ren PhD, RN,Xia Li BSc, RN</p> <p>[06/12/2020]</p>	<p>Systematic Review and Meta Analysis</p>	<p>Randomized controlled trials (RCTs) comparing any flexible sacrum position with non-flexible sacrum position in the second stage of labor were included. PubMed, EMBASE, Cochrane Library, CINAHL, CNKI (China National Knowledge Infrastructure), SinoMed and Wanfang databases were searched from inception to 11 March 2019 for published RCTs. Risk of bias was assessed by the Cochrane criteria, and random-effects meta-analyses were conducted by RevMan 5.3.</p>	<p>Whether flexible sacrum positions have positive effects on maternal and neonatal well-being.Comparing any flexible sacrum position with non-flexible sacrum position in the second stage of labor.</p>	<p>Sixteen studies (3,397 women) published in English were included. Flexible sacrum positions in the second stage of labor could reduce the incidence of operative delivery, instrumental vaginal delivery, cesarean section, episiotomy, severe perineal trauma, severe pain and shorten the duration of active pushing phase in the second stage of labor. However, flexible sacrum positions may increase the incidence of mild perineal trauma. There was no significant difference in the duration of the second stage of labor, maternal satisfaction and other outcomes. Flexible sacrum positions are superior in promoting maternal well-being during childbirth. However, several results require careful interpretation. More rigorous original studies are needed to further explore their effects. The results support the use of flexible sacrum positions. Flexible sacrum positions are recommended to</p>	<p>This study has several limitations. First, some crucial obstetric outcomes, such as medical interventions for failure to progress, blood transfusion requirements, mother's pain and satisfaction, are lacking or insufficient in the included studies. Thus, some results should be interpreted with caution. Second, we did not conduct a further meta-analysis on a certain kind of flexible sacrum position versus a non-flexible sacrum position, so the evidence we provided was limited. Third, we only searched the published literature written in English and Chinese, which may lead to some publication bias. Last but not least, the number of women included in some outcomes is relatively small, especially for fetal and neonatal outcomes, and half of the included studies have been published for more than</p>
--	--	--	---	---	--

				<p>apply flexibly or tailor to individual woman's labor progress.</p>	<p>20 years, so the conclusions should be applied carefully. Two reviewers (YZ and JH) conducted critical appraisal independently by using Cochrane criteria. The risk of each dimension was divided into three levels: low, unclear and high risk. The discrepancies were resolved by discussion and, if necessary, we consulted a third reviewer (HL). Intraclass correlation coefficient (ICC) was used to evaluate the consistency between the two reviewers by SPSS 20.0 statistical software. Risk of bias of included studies was assessed by using Cochrane criteria. There was a relatively higher consistency between the two reviewers and ICC of seven dimensions ranged from 0.830–1.000.</p>
<p>Dokmak, F, Michalek IM, Boulvain, M, Desseauve D</p>	<p>Systematic Review and Meta Analysis</p>	<p>Pregnant women during the second stage of labor</p>	<p>Maternal Outcomes: Primary-Duration of the second stage of labor.</p>	<p>The studies found no statistically significant difference in the duration of the second stage of</p>	<p>It is difficult to standardize the squatting position and to have a uniform duration of standing</p>

<p>[09/15/2020]</p>			<p>Secondary- mode of birth, pain,use of analgesia, perineal trauma, blood loss.</p> <p>Neonatal outcomes: Apgar score,admission to neonatal intensive care unit, perinatal death.</p>	<p>labor, spontaneous vaginal deliveries, pain intensity, the risk of and tears, episiotomy, paraurethral tears, hemorrhage or blood loss. There was no significant difference in 1 and 5-minutes Apgar scores, admission to neonatal intensive care unit or perinatal death. The risk of cesarean section was higher in the squatting position than in supine position, and the risk of using forceps or vacuum was lower in squatting position.</p>	<p>in that position. Differences between studies may contribute to the observed statistical heterogeneity. There was a relatively small number of studies and pooled sample size and the studies were largely of poor quality. Only randomized controlled trials were included in this review, but there is a lack of reporting on the methods to achieve randomization and concealment of allocation in most of the studies. Additionally, it is impossible to conduct a double-blind, randomized trial to assess the possible benefits of giving birth in a squatting position. This increases the risk of both performance and detection bias. The low numbers of studies included did not allow for the detection of a publication bias. There is the possibility of such bias in this context, as small trials not showing a</p>
---------------------	--	--	--	---	---

					beneficial effect may not be published because they were against the opinions of that time on the value of upright or squatting position.
Walker KF, Kibuka M, Thornton JG, Jones [2018]	Meta-Analysis	<p>At term women with singleton pregnancies in the second stage of labor receiving epidural analgesia.</p> <p>4,464 women from the UK, France, and Spain – all from 8 RCTs</p>	<p><u>Maternal outcomes:</u> operative birth (C-section, instrumental vaginal); duration of second stage of labor; C-section; instrumental vaginal birth; trauma to birth canal requiring suturing; blood loss</p> <p><u>Infant outcomes:</u> abnormal fetal heart rate patterns; low cord pH; admission to NICU</p>	<p>Overall, the researchers found little or no difference in the different birthing positions (recumbent versus upright) with regards to the type of birth (C-section versus instrumental vaginal). They did note that maternal satisfaction with regard to the childbirth experience was somewhat lower in the upright group. Lastly, they found less babies were born with low cord pH in the upright position.</p> <p>However, when analyzing <u>only</u> the high-quality studies, the researchers did note that chances of operative birth were increased in women in the upright positions.</p>	<p>The quality of evidence was assessed using the GRADE approach:</p> <p>One study (Walker 2012) was found to be at high-risk for bias due to a co-intervention of varying the time of active pushing. The control group was told to start pushing as soon as they reach the second stage, whereas, the experimental groups were asked to delay pushing for up to 120 minutes unless they felt an urge to push.</p> <p>Four studies (Golar, Karraz, Simarro, Theron) were unclear or at high-risk for selection and attrition bias. Theron had a sample size of 77</p>

					<p>participants, and Golara had a sample size of 66 participants – the target sample size was 300.</p> <p>Boyle, Golara, Simarro, Theron did not report their funding source. Boyle and Karraz also included data on the first stage of labor.</p> <p>Some limitations of the review included unclear results for some maternal and fetal outcomes, such as trauma to the birth canal requiring suturing, abnormal fetal heart rate patterns requiring intervention, admission to NICU due to very low-quality evidence.</p>
--	--	--	--	--	--

Conclusion(s):

Our studies found that there was little to no difference in maternal and outcomes with respect to different birthing positions (upright, squatting) as compared to the lithotomy position.

However, the study by Lawrence A et al (2013) on Maternal positions and mobility during first stage labour found that upright and ambulant positions v recumbent positions and bedcare decreased the 1st stage of labour by ~1 hr and 22 mins. They were also less likely to have C-sections. There was no significant differences between groups for other outcomes.

Clinical Bottom Line:

Please include an assessment of the worth to practice

Since there is no strong evidence for or against squatting position, women should be allowed to adopt the position of their choice during pushing efforts, with neutral counseling from the caregivers