
Healthy Birth Practice #2: Walk, Move Around, and Change Positions Throughout Labor

Michele Ondeck, RN, MEd, LCCE, FACCE 

ABSTRACT


Women who use upright positions and are mobile during labor have shorter labors, less intervention, fewer cesarean births, and report less severe pain, and describe more satisfaction with their childbirth experience than women in recumbent positions. The evidence for supporting physiologic childbearing for optimal birth fails to disrupt intervention intensive hospital practices that deny 60% of women mobility in labor despite calls by maternity care organizations to not restrict mobility for low risk women in spontaneous labor.

The Journal of Perinatal Education, 28(2), 81–87, <http://dx.doi.org/10.1891/1058-1243.28.2.81>

Keywords: mobility, first stage of labor, position change, upright position, physiologic childbearing

The recommendation by the World Health Organization (WHO) for mobility in labor is based on the belief that giving birth should not only be safe but also a positive experience for childbearing families (WHO, 2018). The purpose of the technical guidance in *Care in Normal Birth: A Practical Guide* is to ensure evidence-based care while highlighting the importance of woman-centered care to optimize the experience of labor and childbirth for people through a holistic, human rights-based approach (WHO, 2018). Professional organizations increasingly support *physiologic childbearing*. The first consensus statement, “Supporting Healthy and Normal Physiologic Childbirth” authored by the three midwife organizations (American College of Nurse Midwives [ACNM], Midwife Alliance of North America [MANA], and the National Association of Certified Professional Midwives [NACPM]),

defined a normal physiologic childbirth as “characterized by spontaneous onset and progression of labor; includes biological and psychologic conditions that promote effective labor; results in the vaginal birth of the infant and placenta; results in physiologic blood loss; facilitates optimal newborn transitions and supports early initiation of breastfeeding” (ACNM, MANA, & NACPM, 2012, p. 2). The American College of Obstetricians and Gynecologists (ACOG) defines physiologic birth as “spontaneous labor and birth at term without the use of pharmacologic and/or mechanical interventions for labor stimulation or pain management throughout labor and birth” (ACOG, 2014, p. 5). This definition is part of the reVITALize project, a safety and quality improvement project, to define obstetric terms for consistency. Neither definition notes that physiologic childbearing is hormonally designed primarily

 This article is an updated evidence-based review of the Lamaze International, Inc., “Healthy Birth Practice #2: Walk, Move Around, and Change Positions Throughout Labor,” published in *The Journal of Perinatal Education*, 23(4), 2014.

by four hormones: oxytocin, beta-endorphins, catecholamines, and prolactin (Buckley, 2015). The freedom to be mobile in labor is a safe and healthy coping strategy that supports normal *physiologic childbearing*. Understanding the role of the hormones of labor as well as the role of movement in the progress of labor and birth gives women more confidence in the process and in their own abilities.

Women value the ability to be mobile in labor. The *Listening to Mothers Surveys* have asked women who gave birth the previous year to respond to the statement “the process of birth should not be interfered with unless medically necessary” (Declercq et al., 2013; Declercq, Sakala, Corry, & Applebaum, 2006; Declercq, Sakala, Corry, Applebaum, & Risher, 2002; Sakala, Declercq, Turon, & Corry, 2018). The percentage of women who believe that birth should not be interfered with increased from 46% in 2002, to 59% in 2012 (Declercq et al., 2013), to 74% in 2016 in the California survey (Sakala et al., 2018). Although women reported experiencing less pain when they were able to be mobile in 2002, the follow-up survey, *Listening to Mothers III*, reported only 40% of mothers changed positions in labor and only 43% walked after admission to the hospital (Declercq et al., 2002; Declercq et al., 2013). The first state-wide survey, *Listening to Mothers in California*, reported an increase to 61% of women that did not walk after admission for labor (Sakala et al., 2018). Supporting *physiologic childbearing* is a low-technology health and wellness approach to the care of childbearing people. The aim of this article is to provide an updated review of the literature on movement during labor and a discussion of factors in the current medical and social environment that could change practice to support the adoption of freedom of movement as essential to *physiologic childbearing*.

EVIDENCE BASIS FOR MOVEMENT IN LABOR

Prior research includes the Cochrane Database Systematic Review, “Mothers’ position during first stage of labor,” concluding “women should be informed of the benefits of upright positions, encouraged and supported to take up whatever positions they

choose, they should not have their freedom of movement options restricted unless clinically indicated and they should avoid spending long periods supine” (Lawrence et al., 2013). The researchers examined 25 randomized or quasi-randomized trials of 5,218 women. The reported findings use average risk ratio (RR) for categorical data and mean difference (MD) for continuous data. In the comparison of upright and ambulant positions versus recumbent positions during the first stage, the conclusion is that labor is shorter by approximately 1 hour and 22 minutes for women randomized to upright as opposed to recumbent positions (average MD -1.36, 95% confidence interval [CI] -2.22 to -0.51; 15 studies, 2,503 women; random-effects, $T^2 = 2.39$, $\chi^2 = 203.55$, $df = 14$, $p < .00001$, $I(2) = 93\%$). Women who were upright were also less likely to have cesarean surgery (RR 0.71, 95% CI [0.54–0.94]; 14 studies, 2,682 women) and less likely to have an epidural (RR 0.81, 95% CI [0.66–0.99]; 9 studies, 2,107 women) (Lawrence et al., 2013).

The authors questioned the methodological quality of the trials citing the data is from studies conducted over a 50-year period in 13 different countries where many cultural changes in the management of labor, as well as an increase in the use of technology, and women’s expectations about birth have occurred. Only one of the studies reported examined results of upright positioning on the baby. It concluded lower admissions to a neonatal intensive care unit (RR 0.20, 95% CI 0.04–0.89, 200 women) for upright and ambulant women. In the studies that included women with epidural anesthesia there were no differences in the duration of labor in groups that compared upright and ambulant position versus recumbent. A meta-analysis of strategies to relieve pain during labor reviewed randomized controlled trials (RCT) that compared nonpharmacological methods based on gate control that included ambulation and position change with usual care, finding they were associated with a reduction in epidural anesthesia and an increase in maternal satisfaction (Chaillet, Belaidi, Crochetiere, & Ray, 2014). Usual care was associated with more interventions including cesarean birth compared to strategies that used central nervous system control such as education, attention deviation, and labor support (Chaillet et al., 2014). ACOG in collaboration with the ACNM issued a committee opinion on obstetric practice, *Approaches to Limit Interventions During Labor and Birth*, addressing maternal position during

The recommendation by the World Health Organization for mobility in labor is based on the belief that giving birth should not only be safe but also a positive experience for childbearing families.

labor by summarizing the evidence and concluding that “Frequent position changes during labor to enhance maternal comfort and promote optimal fetal positioning can be supported as long as adopted positions allow appropriate maternal and fetal monitoring and treatments and are not contraindicated by maternal medical or obstetric complications” (ACOG, 2017).

While there is a lack of well conducted studies, it seems logical that the actual benefits of mobility in the first stage of labor could be greater than reported by the authors of the Cochrane review and others (Hollis Martin, & Martin, 2013). Participants in RCT are assigned to a group and must remain in that group whether they walk or not. This is the nature of RCTs, which must be analyzed according to “intent to treat.” This makes it harder to find a significant difference in clinical trials related to mobility in labor (Goer, 2013). While no studies related to maternal activity in labor report longer labors, a validated system to measure elected activity of laboring women and report on effects of postures on length of first stage, pain experience, birth satisfaction, and neonatal condition is necessary.

BARRIERS TO MOBILITY IN LABOR

Outdated labor management protocols that use partograms to measure the process of labor based on the Friedman curve rather than current evidence from the Consortium on Safe Labor data are among those practices targeted in the Obstetric Care Consensus report on Safe Prevention of the Primary Cesarean-Delivery, guidelines published by ACOG and the Society for Maternal-Fetal Medicine (SMFM) that were reaffirmed in 2016 (ACOG & SMFM, 2014). The consensus report concludes that cesarean birth results in more risk than vaginal birth. Mortality from cesarean birth occurs in 2.7% of births compared to 0.9% of vaginal births (ACOG & SMFM, 2014). Additionally, the associated increase of morbidity to mothers who undergo cesarean surgery raises the risk of admission to neonatal intensive care units and perinatal death. The report did not address mobility in the first stage of labor, but the leading factors that have led to the rise in the U.S. cesarean rate are (a) labor dystocia, (b) abnormal or indeterminate fetal heart rate tracings, and (c) fetal malpresentation, all which can be potentially positively affected by mobility in labor. Current evidence that women are not mobile in labor and that the U.S. cesarean birth rate of 32% has decreased by less than 1% since

reaching its peak continue to be barriers to *physiologic childbearing* (Hamilton et al., 2018; Sakala et al., 2018).

The recommendation from WHO for freedom of mobility in labor and upright positions has been integrated with the recommendations for augmentation of labor (WHO, 2014). The guideline determined it to be a strong recommendation based on very low-quality evidence. Although the evidence does not suggest that mobility and upright position in labor reduce the use of oxytocin augmentation, it is based on the clinical benefits in terms of reducing cesarean birth. WHO noted that in many settings, traditional practices of enforcing bed rest for all women in labor are more common than allowing women’s choices to be informed by their knowledge of the benefits of mobility and upright positions (WHO, 2014). The Cochrane review of “Continuous support of women during childbirth” summary states, “Modern obstetric care frequently means women are required to experience institutional routines. These may have adverse effects on the quality, outcomes and experience of care during labor and childbirth. Supportive care during labor may enhance physiological labor processes, as well as women’s feelings of control and confidence in their own strength and ability to give birth” (Bohren, Hofmeyr, Sakala, Fukuzawa, & Cuthbert, 2017, p. 2).

OVERCOMING BARRIERS TO MOBILITY IN LABOR

The *California Maternal Quality Care Collaborative Toolkit to Support Vaginal Birth and Reduce Primary Cesareans* and the *WHO Recommendations: Intrapartum Care for a Positive Childbirth Experience* both address respecting individual values, choices and preferences, and cultural values of all peoples (CMQCC, 2016a; WHO, 2018). A barrier to promoting mobility in labor is the lack of the understanding of *physiologic childbearing* by both women and their care providers. Upright/changing positions frequently not only helps women cope with the pain of labor, but the use of gravity brings the

Women should be informed of the benefits of upright positions, encouraged and supported to take up whatever positions they choose, they should not have their freedom of movement options restricted unless clinically indicated and they should avoid spending long periods supine.

baby down, and movement of the bones of the pelvis helps the baby find the best fit (Simkin, Hanson, & Ancheta, 2017). To achieve optimal care, a term derived from midwifery, the barriers to receiving and providing that care need to be overcome (Goer & Romano, 2012). Freedom of movement is one practice in achieving optimal care in labor. Traditionally, childbirth educators have discussed the three Ps: the power of the uterine contractions; the passenger, which is the size and position of the fetus's presenting part; and the passageway of the women as the keys to progress in labor. When the three Ps work well, the labor progresses; when they don't, labor dystocia is more likely to occur. Goer and Romano in *Optimal Care in Childbirth* suggest an alternative list of Ps. Those four factors that must be present to support the laboring women's autonomy and mobility are permission, physical environment, practices, and people (Goer & Romano, 2012).

Women need to perceive they have *permission* to move and select the position of their choosing without providers limiting choice unless an actual medical indication occurs. Informed choice is part of a shared decision-making process between a woman and her care provider to review the risks, benefits, and alternatives of a recommended practice—in this case, a restriction in mobility with which the care provider desires the women to comply. Researchers in *Listening to Mothers* found that mothers want to be actively involved in decisions about their care including the potential risks and benefits of interventions (Declercq et al., 2013). Women also need to perceive that they have *permission* to avoid *practices* that interfere with mobility. Examples of those practices are (a) intravenous catheters that could be reserved for delivery of medications, allowing women to have oral fluids and calories and when needed inserted in the arm rather than the hand so not to restrict mobility and (b) continuous fetal surveillance only when medically indicated, allowing the use of telemetry, intermittent auscultation, or a handheld Doppler device. Evidence-based non-pharmacological *practices* that are known to reduce labor pain need to be recognized and encouraged as adjuncts to mobility; those practices in a Cochrane

review were relaxation, massage, acupuncture, and immersion in water (Jones et al., 2012). Additionally, in a RCT, warm showers were an effective nonpharmacological pain reduction method as well as being cost-effective, convenient, and used the upright posture (Lee, Liu, Lu, & Gau, 2012). Many other practices that provide movement, such as lunges, slow dancing, and stair climbing, are utilized by nurses, midwives, childbirth educators, and doulas. Although these practices have not been researched for their efficacy, they can be used safely with support. A comprehensive resource of birth tools from ACNM can be helpful to care providers and women (ACNM, n.d.).

The *physical environment* needs to support *physiologic childbearing* in both the physical space and in the culture of the environment (Stark, Remyne, & Zwelling, 2016). An atmosphere of calm reduces stress hormones. Hospitals can be busy, noisy places. Closed doors, dim lighting, and a woman's own choices of comfort items from home such as socks and pillows can be comforting. In a pilot study conducted at two Canadian hospitals, laboring women were randomly assigned to a regular labor room or to an "ambient room." The intention of the "ambient room" was to create an environment of calm to promote relaxation including tools that assisted mobility. The results were that the laboring women spend 50% less time in bed and used less augmentation of labor with oxytocic infusions (Hodnett, Stremler, Weston, & McKeever, 2009). Case studies illustrate laboring women use of birth balls as a tool to facilitate movement in labor based on evidence that their use for rocking movements significantly reduced pain scores in active labor (Traavoni, Abdolahain, Haghani, & Neysanu, 2011). Birthtools.org includes more than a dozen case studies of practices to promote physiologic labor and reduce cesareans that were successfully implemented in hospitals (ACNM, n.d.).

The most important P is *people*. The health-care providers that care for laboring women need to believe in the physiologic process: nonjudgmental, supportive, and accommodating behaviors by care providers that first respect women's choices, second aid in her achieving her wishes, and third advocate to other health-care providers on her behalf. One way to gauge a woman's intent for vaginal birth is to access her choices for labor by reviewing her birth plan. Sample birth plans are widely available online and most are positive tools for shared decision-making (Yarrington, Radoff, & Zera, 2018). Labor algorithm

Supportive care during labor may enhance physiological labor processes, as well as women's feelings of control and confidence in their own strength and ability to give birth.

tools to access coping during labor and support physiologic birth are useful for care providers (Chance, Jones, & Gardner, 2018; CMQCC, 2016b). The simple question “How are you coping with your labor?” and observation provide cues for the care provider. The fear of labor is a significant inhibitor of progress in labor. A study of 2,206 women, who wished to give birth vaginally, were enrolled in a fear of childbirth assessment (Wijma Delivery Expectancy questionnaire). The results determined that labor averaged 47 minutes longer in women who scored high in the assessment (Adams, Eberhard-Gran, & Eskild, 2012). A partnership between family medicine, midwives, obstetricians, nurses, and women advocates, the National Partnership for Maternal Safety issued a *Consensus Bundle on Safe Reduction of Primary Cesarean Births—Supporting Intended Vaginal Births* (Lagrew et al., 2018). In prevention of cesarean birth, care providers are urged to offer “every patient,” “standard techniques of pain management and comfort measures that promote and prevent dysfunctional labor” and “utilize standard evidence-based labor algorithms, policies, and techniques” (Lagrew et al., 2018, p. 215).

Hospitals, like care providers and childbearing families, are *people* too. Efforts such as the National Partnership to reduce unnecessary primary cesarean births as a preventable cause of maternal morbidity and mortality are more successful when multidisciplinary teams work with their administrations (Lagrew et al., 2018). Hospital policies and guidelines to support physiologic birth by themselves do not lead to cesarean rate reductions. The beliefs of the physician or midwife and the woman’s labor and delivery nurse factor in cesarean birth outcomes. There is a need for research to identify the beliefs of maternity care providers that contribute to vaginal birth. Changing the culture of all team members to truly value *physiologic childbearing* is a continuous quality improvement process (CMQCC, 2016a).

SUMMARY

There is an optimal way to give birth through the support of *physiologic childbearing* (ANCM, 2012; Buckley, 2015; Lothian, 2009; Goer & Romano, 2012). No study has ever shown that walking in labor is harmful in healthy women with normal labors. The call for mobility in labor by this Lamaze birth practice is an evidence-based conclusion and the recommendation of the WHO (2018), the National Partnership for Maternal Safety (2018),

ACOG (2017), ACNM (2012), and The Association of Women’s Health, Obstetric and Neonatal Nurses (2018). Current practice is intervention intensive and continues to affect the high U.S. cesarean rate of 32% and contributes to the increase in maternal morbidity and mortality in the United States (Hamilton et al., 2018). Efforts to reduce cesarean rates must include efforts to support *physiologic childbearing* of which the women’s ability to be mobile is a basic right. A clear set of priorities developed by a multi-stakeholder, multidisciplinary National Advisory Council provides a “Blueprint for advancing high-value maternity care through *physiologic childbearing*” (Avery et al., 2018). The Blueprint’s six improvement strategies build on a growing consensus “offering specific improvement strategies, recommendations, and action steps that are directly tied to the current health policy and practice environment” (Avery et al., 2018, p. 32). The Blueprint is a pathway to reduce unintended harm like the consequences of restriction of mobility increasing cesarean birth.

IMPLICATIONS FOR EVIDENCE-BASED PRACTICE

The philosophies and preferences of maternity care providers—doctors, midwives, nurses, doulas, and childbirth educators—influence the recommendations they make to laboring women. While there is evidence that walking and upright positions reduce the duration of the first stage of labor, there is a need for better quality studies to demonstrate the significance to providers and direct them on more precise recommendations for ambulation and movement. Large numbers of childbearing people who are at low risk of perinatal complications are needed to detect what positions lead to good or poor outcomes. People who are studied in RCT can be much different than most childbearing people. There is insufficient understanding of what facilitates or inhibits a woman’s use of physiological birth positioning and directing the choice of mobility and position change could change women’s inherent choices. A new approach to research, the casual inference

Upright/changing positions frequently not only helps women cope with the pain of labor, the use of gravity brings the baby down, and movement of the bones of the pelvis helps the baby find the best fit.

framework, has been used to address similar challenges based on principles in epidemiology and use preexisting databases of collected health-care information to understand choices and outcomes (Snowden & Tilden, 2018). Based on the current evidence, we can encourage women to choose the positions of their choice. The broader research priority is summarized in the Blueprint to “conduct priority research to advance the science of *physiologic childbearing* and its impact on maternal and child health outcomes” (Avery et al., 2018, p. 132).

REFERENCES

- Adams, S. S., Eberhard-Gran, M., & Eskild, A. (2012). Fear of childbirth and duration of labor: A study of 2206 women with intended vaginal delivery. *British Journal of Obstetrics and Gynecology*, *119*(10), 1238-1246. doi:10.1111/j.1471-0528.2012.03433.x
- American College of Nurse Midwives. (n.d.). *Birth-Tools.org: Tools for optimizing the outcomes of labor safely*. Retrieved from <http://www.birthtools.org/Browse-Tools>
- American College of Nurse Midwives, Midwives Alliance of North America, & National Association of Certified Professional Midwives. (2012). *Supporting healthy and normal physiologic childbirth: A consensus statement by ACNM, MANA, and NACPM*. Retrieved from <http://mana.org/pdfs/Physiological-Birth-Consensus-Statement.pdf>
- American College of Obstetricians and Gynecologists. (2014). *reVITALize obstetric data definitions*. Retrieved from <https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize-Obstetric-Data-Definitions>
- American College of Obstetricians and Gynecologists. (2017). Approaches to limit intervention during labor and birth. Committee opinion no. 687. *Obstetrics and Gynecology*, *129*(2), e20-e28. doi:10.1097/AOG.0000000000001905
- American College of Obstetricians and Gynecologists & Society for Maternal-Fetal Medicine. (2014). Obstetric Care Consensus No. 1: Safe prevention of the primary cesarean delivery. Retrieved from <https://www.acog.org/Clinical-Guidance-and-Publications/Obstetric-Care-Consensus-Series/Safe-Prevention-of-the-Primary-Cesarean-Delivery>
- Association of Women's Health Obstetric and Neonatal Nurses. (2018). Continuous labor support for every woman. *JOGNN*, *47*, 73-74. <https://doi.org/10.1016/j.jognn.2017.11.010>.
- Avery, M. D., Bell, A. D., Bingham, D., Corry, M. P., Delbanco, S.F., Gullo, S.L., . . . Shah, N.T., (2018). Blueprint for advancing high-value maternity care through physiologic childbearing. *The Journal of Perinatal Education*, *27*(3), 130-134. doi:10.1891/1058-1234.27.3.130
- Bohren, M. A., Hofmeyr, G. J., Sakala, C., Fukuzawa, R. K., & Cuthbert, A. (2017). Continuous support for women during childbirth. *Cochrane Database of Systematic Reviews Issue*, *7*, CD003766. doi:10.1002/14651858.CD003766.pub6
- Buckley, S. J. (2015). *Hormonal physiology of childbearing: Evidence and implications for women, babies, and maternity care*. Washington, DC: Childbirth Connection Programs, National Partnership for Women & Families. Retrieved from <http://transform.childbirthconnection.org/reports/physiology/>
- California Maternal Quality Care Collaborative. (2016a). *Toolkit to support vaginal birth and reduce primary cesareans*. Retrieved from <https://www.cmqcc.org/VBirthToolkit>
- California Maternal Quality Care Collaborative. (2016b). *Toolkit to support vaginal birth and reduce primary cesareans. Appendix F. Coping with Labor Algorithm*. Retrieved from <https://www.cmqcc.org/resource/appendix-f-coping-labor-algorithm>
- Chaillet, N., Belaid, L., Crochetiere, C., & Roy, L. (2014, April 25). Non-pharmacological approaches for pain relief during labor can improve maternal satisfaction and reduce obstetric interventions. *Birth*, *122*-137. doi:10.1111/birt.12103
- Chance, K. D., Jones, S. J., & Gardner, C. L. (2018). Intrapartum nurse perception of labor support after implementation of the coping with labor algorithm. *The Journal of Perinatal Education*, *27*(3), 151-162. doi:10.1891/1058-1243.27.3.152
- Declercq, E. R., Sakala, C., Corry, M. P., & Applebaum, S. (2006). *Listening to mothers II: Report of the second national U.S. survey of women's childbearing experiences*. Retrieved from www.nationalpartnership.org/research-library/maternal-health/listening-to-mothers-ii-2006.pdf
- Declercq, E. R., Sakala, C., Corry, M. P., Applebaum, S., & Herrlich, A. (2013). Major survey findings of listening to mothers III: Pregnancy and birth. *The Journal of Perinatal Education*, *23*(1), 9-10. doi:10.1891/1058-1234.23.1.9
- Declercq, E. R., Sakala, C., Corry, M. P., Applebaum, S., & Risher, P. (2002). *Listening to mothers: Report of the first national U.S. survey of women's childbearing experiences*. Retrieved from www.natComplementaryionalpartnership.org/research-library/maternal-health/listening-to-mothers-i_2002.pdf
- Goer, H. (2013, December 19). Cochrane systematic review supports Lamaze healthy birth practice #2- Walk, Move around and change positions in labor. Science & Sensibility Blog [Web log post]. Retrieved from <http://scienceandsensibility.org/?p=770>
- Goer, H., & Romano, A. M. (2012). *Optimal care in childbirth: The case for a physiologic approach*. Seattle, WA: Classic Day.
- Hamilton, B. E., Martin, J. A., Osterman, M. H. S., Driscoll, A. K., & Rossen, L. M. (2018, May). *Births: Provisional data for 2017. Vital statistics rapid release* (Vol. 4). Hyattsville, MD: National

- Center for Health Statistics. Retrieved from <https://www.cdc.gov/nchs/data/vsrr/report004.pdf>
- Hodnett, E. D., Stremler, R., Weston, J. A., & McKeever, P. (2009). Re-conceptualizing the hospital labor room: A pilot trial. *Birth*, 36(2), 159-166. doi:10.1111/j.1523-536X.2009.00311.x
- Hollis Martin, C.J., & Martin, C. (2013). A narrative review of maternal activity during labor and its effects upon length of first stage. *Complementary Therapies in Clinical Practice*, 19, 44-49 doi:10.1016/j.ctcp.2012.09.0011
- Jones, L., Othman, M., Dowswell, T., Alfieri, Z., Gates, S., Newburn, M., . . . Neilson, J. (2012). Pain management for women in labor: An overview of systematic reviews. *Cochrane Database of Systematic Reviews*, (3), CD009234.pub2. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/14651858.D009234.pub2/full>
- Lagrew, D. C., Low, L. K., Brennan, R., Corry, M. P., Edmonds, J. K., Gilpin, B. G., & Jaffer, S. (2018). National Partnership for Maternal Safety: Consensus bundle on safe reduction of primary cesarean birth - supporting intended vaginal birth. *Journal of Obstetric, Gynecologic and Neonatal Nurses*, 47, 214-226. doi: 10.1016/j.jognn.2018.01.08
- Lawrence, A., Lewis, L., Hofmeyr, G. J., & Styles, C. (2013). Maternal positions and mobility during first stage labour. *Cochrane Database of Systematic Reviews*, (10), CD003934. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/14651858.pub4/full>
- Lee, S. L., Liu, C. Y., Lu, Y. Y., & Gau, M. L. (2012). Efficacy of warm showers on labor pain and birth experiences during the first labor stage. *Journal of Obstetric, Gynecologic and Neonatal Nurses*, 42(1), 19-28. doi:10.1111/j.1552-6909.2012.01424.x
- Lothian, J. (2009). Safe, healthy birth: What every pregnant women needs to know. *The Journal of Perinatal Education*, 18(3), 48-54. doi:10.1624/105812409X461225
- Sakala, C., Declercq, E. R., Turon, J. M., & Corry, M. P. (2018). *Listening to mothers in California: A population-based survey of women's childbearing experiences, full survey report*. Retrieved from <https://www.chcf.org/wp-content/uploads/2018/09/ListeningMothersCAFullSurveyReport2018.pdf>
- Simkin, P., Hanson, L., & Ancheta, R. (2017). *The labor progress handbook: Early interventions to prevent and treat dystocia* (4th ed.). Hoboken, NJ: John Wiley & Sons. ISBN-10:111917046X
- Snowden, J. M., & Tilden, E. L. (2018). *Casual inference — A better research method for studying labor & birth*. Retrieved from www.scienceandsensibility.org. <https://www.scienceandsensibility.org/p/bl/et/blogid=2&blogaid=1087>
- Stark, M. A., Remyne, M., & Zwelling, E. (2016). Importance of the birth environment to support physiologic birth. *Journal of Obstetric, Gynecologic and Neonatal Nurses*, 45, 285-294. doi:10.1016/j.jognn.2015.12.008
- Traavoni, S., Abdollahian, A. S., Haghani, H., & Neysani, L. (2011). Effect of birth ball usage on pain in the active phase of labor: A randomized controlled trial. *Journal of Nurse-Midwifery & Women's Health*, 56(2), 137-140. doi:10.1111/j.15412011.201000013x
- World Health Organization. (2014). *Augmentation of labor*. Retrieved from http://apps.who.int/iris/bitstream/10665/112825/1/9789241507363_eng.pdf
- World Health Organization. (2018). *WHO recommendations: Intrapartum care for a positive childbirth experience*. Retrieved from <https://www.who.int/reproductivehealth/publications/intrapartum-care-guidelines/en/>
- Yarrington, C. D., Radoff, K. R., & Zera, C. A. (2018). Online birth plans and anticipatory guidance: A critical review using web analytics and crowdsourcing. *The Journal of Perinatal Education*, 27(1), 32-37. doi: 10.1891/1058-1234.27.1.32

DISCLOSURE

The author has no relevant financial interest or affiliations with any commercial interests related to the subjects discussed within this article.

MICHELE ONDECK is a past-president of Lamaze International and a co-director of Healthy Birth Global, a Lamaze-accredited childbirth educator program.