





SUPPORTING HEALTHY AND NORMAL PHYSIOLOGIC CHILDBIRTH: A CONSENSUS STATEMENT BY ACNM, MANA, AND NACPM*

In 1996, the World Health Organization called for the elimination of unnecessary intervention in childbirth, ¹ yet currently there are few resources to assist maternity care providers in achieving this goal. The purpose of this consensus statement is to explicitly identify key benchmarks of safe, healthy, and normal physiologic childbirth. This statement will assist maternity care providers, women, policymakers, and payers to protect, promote, and support human childbearing physiology and to avoid overuse of interventions, thus achieving better care, better health, and lower costs.

This consensus statement represents the work of a task force comprised of representatives from three U.S. midwifery organizations whose members are experts on supporting women's innate capacities to birth, and was externally reviewed by maternity care organizations and leaders. The specific aims of the consensus statement are to

- Provide a succinct definition of normal physiologic birth;
- Identify measurable benchmarks to describe optimal processes and outcomes reflective of normal physiologic birth;
- Identify factors that facilitate or disrupt normal physiologic birth based on the best available evidence;
- Create a template for system changes through clinical practice, education, research, and health policy; and
- Ultimately improve the health of mothers and infants, while avoiding unnecessary and costly interventions.

This statement is placed in the context of the current, widespread application of technological interventions that lack scientific evidence to a primarily healthy birthing population.² The use of obstetric interventions in labor and birth has become the norm in the United States. More than half of all pregnant women receive synthetic oxytocin to induce or augment labor,³ which demands additional interventions to monitor, prevent, or treat side effects. Nationally, one third of women deliver their babies via cesarean,⁴ a major abdominal surgery with potential for serious short- and long-term health consequences. For the mothers these consequences include, but are

^{*} Note. ACNM=American College of Nurse-Midwives, <u>http://www.midwife.org/</u>; MANA=Midwives Alliance of North America, <u>http://mana.org/</u>; NACPM=National Association of Certified Professional Midwives, <u>http://www.nacpm.org/</u>.

This document is intended for health care professionals and policymakers. A companion document for consumers is in development.

not limited to, postoperative infections, chronic pain, future cesarean births, and placental complications that can lead to hemorrhage, hysterectomy, and rarely, death.^{5,6} Infant risks include respiratory distress,⁷ and in subsequent pregnancies maternal risks include increased likelihood of preterm birth and associated morbidity and mortality.⁸⁻¹² Regardless of intervention or outcome, childbearing care perceived by the woman as disrespectful or traumatic is more likely to be associated with maternal psychological morbidity and potential for disrupted mother-infant attachment.¹³⁻¹⁶

Defining the normal physiology of childbirth

This statement is grounded in scientific evidence and based on definitions drawn from the 2012 version of the *Oxford English Dictionary*, in which "normal" refers to typical or usual--a standard, and "physiology" refers to the functional processes of an organism, organ, or system. Thus, normal human physiology provides a framework to understand the optimal functioning of childbirth. For the purposes of this statement, birth includes the three stages of labor, the newborn transition, and the first hour after birth.

A normal physiologic labor and birth is one that is powered by the innate human capacity of the woman and fetus. This birth is more likely to be safe and healthy because there is no unnecessary intervention that disrupts normal physiologic processes .¹⁷ Some women and/or fetuses will develop complications that warrant medical attention to assure safe and healthy outcomes. However, supporting the normal physiologic processes of labor and birth, even in the presence of such complications, has the potential to enhance best outcomes for the mother and infant.¹⁸⁻²¹

Normal physiologic childbirth

- is characterized by spontaneous onset and progression of labor;
- includes biological and psychological conditions that promote effective labor;
- results in the vaginal birth of the infant and placenta;
- results in physiological blood loss;²²
- facilitates optimal newborn transition through skin-to-skin contact and keeping the mother and infant together during the postpartum period; and
- supports early initiation of breastfeeding.¹

The following factors disrupt normal physiologic childbirth:

- induction or augmentation of labor;²³⁻²⁵
- an unsupportive environment, i.e., bright lights, cold room, lack of privacy, multiple providers, lack of supportive companions, etc.;^{26,27}
- time constraints, including those driven by institutional policy and/or staffing;²⁸
- nutritional deprivation, e.g., food and drink;²⁹
- opiates, regional analgesia, or general anesthesia;^{30,31}
- episiotomy;^{32,33}
- operative vaginal (vacuum, forceps) or abdominal (cesarean) birth;^{6,34}
- immediate cord clamping;³⁵⁻³⁷
- separation of mother and infant;³⁸ and/or
- any situation in which the mother feels threatened or unsupported.³⁹

The mechanisms and outcomes of physiologic childbirth

Normal physiologic labor and birth has positive short- and long-term health implications for the mother and infant. Optimal physiologic function of the neuroendocrine system enhances the release of endogenous oxytocin and beneficial catecholamines in response to stress.^{40,41} These hormones promote effective labor patterns and protective physiologic responses, including enhanced endorphin levels, facilitation of cardio-respiratory transition and thermoregulation of the newborn, successful lactation, and enhanced bonding behavior between the mother and infant.^{38,42-44} When there is optimal physiologic functioning, women are less likely to require interventions to artificially augment labor, which can potentially interfere with their ability to cope with pain.⁴⁴⁻⁴⁷ When labor progresses spontaneously there is a reduced likelihood of fetal compromise or need for instrumental/surgical intervention.⁴⁸

For most women, the short-term benefits of normal physiologic birth include emerging from childbirth feeling physically and emotionally healthy and powerful as mothers. Their infants will benefit from the ability of their mothers to respond to their needs and from the lack of exposure to medications that can affect neurological behavior. Long-term outcomes include beneficial effects for the woman's physical and mental health and capacity to mother, enhanced infant growth and development, and potentially diminished incidence of chronic disease.⁴⁹⁻⁵⁶ Together, these outcomes are beneficial to the family and society through enhanced family functioning and cost effective care. Importantly, a focus on these aspects of normal physiologic birth will help to change the current discourse on childbirth as an illness state where authority resides external to the woman to one of wellness in which women and clinicians share decisions and accountability.⁵⁷

Factors that influence normal physiologic childbirth

There are multiple factors that influence the ability of a woman to give birth without intervention. These include the following:

For the woman:

- Her individual health status and physical fitness;
- Autonomy and self-determination in childbirth;⁵⁸
- Personal knowledge and confidence about birth, including cultural beliefs, norms, and practices and education about the value of normal physiologic birth;⁵⁹
- Fully informed, shared decision-making; and
- Access to health care systems, settings, and providers supportive of and skilled in normal physiologic birth.⁶⁰

For the clinician:

- Education, knowledge, competence, skill, and confidence in supporting physiologic labor and birth, including helping women cope with pain;
- Commitment to working with women through education to enhance their confidence in birth and diminish their fear of the process;
- Commitment to shared decision making; and
- Working within an infrastructure supportive of normal physiologic birth.⁶⁰

For the birth setting and environment:

- Access to midwifery care for each woman;¹⁸
- Adequate time for shared decision making with freedom from coercion;
- No inductions or augmentations of labor without an evidence-based clinical indication;²⁴
- Encouragement of nourishment (food and drink) during labor as the woman desires;⁶¹
- Freedom of movement in labor and the woman's choice of birth position;
- Intermittent auscultation of heart tones during labor unless continuous electronic monitoring is clinically indicated;⁶²
- Maternity care providers skilled in non-pharmacologic methods for coping with labor pain for all women;⁶³
- Care that supports each woman's comfort, dignity, and privacy; and
- Respect for each woman's cultural needs.

Recommendations for policy, education, and research to promote normal physiologic childbirth include, but are not limited to, the following:

- Introduction of policies into hospital settings to support normal physiologic birth;
- Comprehensive examination and dissemination of the evidence and care practices supportive of normal physiologic birth;
- Midwifery care as a key strategy to support normal physiologic birth
- Increasing the midwife workforce and enhancing regulations and funding strategies to support their practice;
- Competency-based, inter-disciplinary education programming for maternity health care clinicians and students on the application of care that promotes normal physiologic birth; and (see the Normal Birth Summit Statement)
- Development of a future research agenda on short and long-term effects of normal physiologic birth.^{2,64}

Approved by the Boards of Directors of ACNM, MANA and NACPM, April 2012 Released May 14, 2012

REFERENCES

- 1. World Health Organization. *Care in Normal Birth: A Practical Guide*. World Health Organization; 1996.
- 2. Sakala C, Corry MP. Evidence-based maternity care: what it is and what it can achieve. New York, NY: Milbank Memorial Fund; 2008.
- 3. Declercq ER, Sakala C, Corry MP, et al. Listening to mothers II: Report of the Second National U.S. Survey of Women's Childbearing Experiences. New York: Childbirth Connection; 2006.
- 4. Martin JA, Hamilton BE, Ventura SJ, et al. Births: preliminary data for 2010. *Natl Vital Stat Rep.* 2011; 60(2):1-25.
- 5. Guise JM, Eden K, Emeis C, et al. Vaginal birth after cesarean: new insights. Evidence report/technology assessment no.191. Rockville, MD: Agency for Healthcare Research and Quality; 2010.
- 6. Koroukian SM. Relative risk of postpartum complications in the Ohio Medicaid population: vaginal versus cesarean delivery. *Med Care Res Rev.* 2004; 61(2):203-224.
- 7. Hansen AK, Wisborg K, Uldbjerg N, et al. Elective caesarean section and respiratory morbidity in the term and near-term neonate. *Acta Obstet Gynecol Scand*. 2007; 86(4):389-394.
- 8. Bager P, Wohlfahrt J, Westergaard T. Caesarean delivery and risk of atopy and allergic disease: meta-analyses. *Clin Exp Allergy*. 2008; 38(4):634-642.
- 9. Galyean AM, Lagrew DC, Bush MC, et al. Previous cesarean section and the risk of postpartum maternal complications and adverse neonatal outcomes in future pregnancies. *J Perinatol.* 2009; 29(11):726-730.
- 10. Kennare R, Tucker G, Heard A, et al. Risks of adverse outcomes in the next birth after a first cesarean delivery. *Obstet Gynecol*. 2007; 109(2 Pt 1):270-276.
- 11. Osborne C, Ecker JL, Gauvreau K, et al. First birth cesarean and risk of antepartum fetal death in a subsequent pregnancy. *J Midwifery Womens Health*. 2012; 57(1):12-17. doi:10.1111/j.1542-2011.2011.00142.x; 10.1111/j.1542-2011.2011.00142.x
- 12. Richter R, Bergmann RL, Dudenhausen JW. Previous caesarean or vaginal delivery: which mode is a greater risk of perinatal death at the second delivery? *Eur J Obstet Gynecol Reprod Biol*. 2006; 132(1):51-7.
- 13. Beck CT. Birth trauma: in the eye of the beholder. *Nurs Res.* 2004; 53(1):28-35.
- 14. Beck CT, Watson S. The impact of birth trauma on breastfeeding: a tale of two pathways. *Nurs Res.* 2008; 57(4):228-236.
- 15. Beck CT. The anniversary of birth trauma: failure to rescue. *Nurs Res.* 2006; 55(6): 381-390.
- 16. Beck CT. Post-traumatic stress disorder due to childbirth: the aftermath. *Nurs Res*, 2004; 53(4):216-224.
- 17. Romano AM, Lothian JA. Promoting, protecting, and supporting normal birth: A look at the evidence. *J Obstet Gynecol Neonatal Nurs*. 2008; 37(1):94-105. doi:10.1111/j.1552-6909.2007.00210.x
- 18. Hatem M, Sandall J, Devane D, et al. Midwife-led versus other models of care for childbearing women. *Cochrane Database Syst Rev.* 2008; Oct 8(4):CD004667.
- 19. Cragin L, Kennedy HP. Linking obstetric and midwifery practice with optimal outcomes. *J Obstet Gynecol Neonatal Nurs*. 2006; 35(6):779-785.

- 20. Murphy PA, Fullerton JT. Development of the optimality index as a new approach to evaluating outcomes of maternity care. *J Obstet Gynecol Neonatal Nurs*. 2006; 35(6):770-778.
- 21. Low LK, Seng JS, Miller JM. Use of the optimality index-United States in perinatal clinical research: a validation study. *J Midwifery Womens Health*. 2008; 53(4):302-309.
- 22. Dixon L, Fullerton JT, Begley C, et al. Systematic review: the clinical effectiveness of physiological (expectant) management of the third stage of labor following a physiological labor and birth. Int J Childbirth. 2011; 1(3):179-195.
- 23. Clark SL, Simpson KR, Knox GE, et al. Oxytocin: new perspectives on an old drug. *Am J Obstet Gynecol*. 2009; 200(1):35.e1-35.e6.
- 24. Mozurkewich E, Chilimigras JL, Berman DR, et al. Methods of induction of labour: a systematic review. *BMC Pregnancy Childbirth*. 2011; 11(84):1-19.
- 25. Smyth RM, Alldred SK, Markham C. Amniotomy for shortening spontaneous labour. *Cochrane Database Syst Rev.* 2007; Oct 17(4):CD006167.
- 26. Hodnett, ED, Downe, S, Walsh, D, et al. Alternative versus conventional institutional settings for birth. *Cochrane Database Syst Rev.* 2010; Sep (9):CD000012.
- 27. Hodnett ED, Gates S, Hofmeyr, GJ, et al. Continuous support for women during childbirth. *Cochrane Database Syst Rev.* 2011; Feb 16(2):CD003766.
- 28. Zhang J, Troendle J, Reddy UM, et al. Contemporary cesarean delivery practice in the United States. *Am J Obstet Gynecol*. 2010; 203(4):326.e1-326.e10. doi:10.1016/j.ajog.2010.06.058
- 29. Singata M, Tranmer J, Gyte GM. Restricting oral fluid and food intake during labour. *Cochrane Database Syst Rev.* 2010; Jan 20(1):CD003930.
- 30. Bricker L, Lavender T. Parenteral opioids for labor pain relief: a systematic review. *Am J Obstet Gynecol*. 2002; 186(Suppl 5):S94-109.
- 31. Anim-Somuah M, Smyth RM, Jones L. Epidural versus non-epidural or no analgesia in labour. *Cochrane Database Syst Rev.* 2011; Dec 7(12):CD000331.
- 32. Carroli, G., & Mignini, L. Episiotomy for vaginal birth. *Cochrane Database Syst Rev.* 2009; Jan 21(1):CD000081.
- 33. Viswanathan M, Hartmann K, Palmieri R, et al. *The Use of Episiotomy in Obstetrical Care: A Systematic Review*. Evidence reports/technology assessments, No. 112. Rockville,MD: Agency for Healthcare Research and Quality; 2005.
- 34. Demissie K, Rhoads GG, Smulian JC, et al. Operative vaginal delivery and neonatal and infant adverse outcomes: population based retrospective analysis. *BMJ*. 2004;329(7456):24-29.
- 35. Hutton EK, Hassan ES. Late vs early clamping of the umbilical cord in full-term neonates: systematic review and meta-analysis of controlled trials. *JAMA*. 2007;297(11):1241-1252.
- Erickson-Owens DA, Mercer JS, Oh W. Umbilical cord milking in term infants delivered by cesarean section: a randomized controlled trial. *J Perinatol*. 2011; Nov 17. doi: 10.1038/jp.2011.159. [Epub ahead of print]
- 37. Mercer JS, Vohr BR, Erickson-Owens DA, et al. Seven-month developmental outcomes of very low birth weight infants enrolled in a randomized controlled trial of delayed versus immediate cord clamping. *J Perinatol.* 2010;30(1):11-16.
- 38. Moore E, Anderson G, Bergman N. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev.* 2007;Jul 18(3):CD003519.

- 39. Beck CT. Birth trauma and its sequelae. J Trauma Dissociation . 2009;10(2), 189-203.
- 40. Bacigalupo G, Riese S, Rosendahl H, et al. (1990). Quantitative relationships between pain intensities during labor and beta-endorphin and cortisol concentrations in plasma decline of the hormone concentrations in the early postpartum period. *J Perinat Med.* 1990;18(4):289-296.
- 41. Hoffman DI, Abboud TK, Haase HR, et al. Plasma beta-endorphin concentrations prior to and during pregnancy, in labor, and after delivery. *Am J Obstet Gynecol*. 1984;150(5 Pt 1):492-496.
- 42. Fourer M. Creating birth space to enable undisturbed birth. In Fahy K, Fourer M, Hastie, C, eds. *Birth Territory and Midwifery Guardianship. Theory for Practice, Education and Research.* New York, NY: Elsevier; 2008:57-77.
- 43. Unväs-Moberg K. *The Oxytocin Factor. Tapping the Hormone of Calm, Love, and Healing.* Cambridge, MA: Da Capo Press; 2003.
- 44. Taylor S, Klein L, Lewis B, et al. Biobehavioural responses to stress in females: tendand-befriend, not fight-or-flight. *Psychological Rev.* 2000;107:411-429.
- 45. Neal JL, Lowe NK, Patrick TE, et al. What is the slowest-yet-normal cervical dilation rate among nulliparous women with spontaneous labor onset? *J Obstet Gynecol Neonatal Nurs*. 2010;39(4):361-9.
- 46. Lowe NK. The nature of labor pain. *Am J Obstet Gynecol*. 2002;186(5 Suppl Nature):S16-S24.
- 47. Simkin P, Bolding A. (2004) Update on nonpharmacologic approaches to relieve labor pain and prevent suffering. *J Midwifery Womens Health*. 2004;49:489-504.
- 48. Dunne C, Da Silva O, Schmidt G, et al. Outcomes of elective labour induction and elective caesarean section in low-risk pregnancies between 37 and 41 weeks' gestation. *JOGC*. 2009;31(12):1124-1130.
- 49. Cardwell CR, Stene LC, Joner G, et al. Caesarean section is associated with an increased risk of childhood-onset type 1 diabetes mellitus: a meta-analysis of observational studies. *Diabetologia*. 2008;51:726-735.
- 50. Schlinzig T, Johansson S, Gunnar A, et al. Epigenetic modulation at birth altered DNA-methylation in white blood cells after caesarean section. *Acta Paediatr.* 2009;98: 1096-1099.
- 51. Toyokawa S, Uddin M, Koenen KC, et al. How does the social environment "get into the mind"? Epigenetics at the intersection of social and psychiatric epidemiology. *Soc Sci Med.* 2012;74:67-74.
- 52. Heim C, Binder EB. Current research trends in early life stress and depression: review of human studies on sensitive periods, gene-environment interactions, and epigenetics. *Exp Neurol.* 2012;233(1):102 -111.
- 53. Maghzi AH, Etemadifar M., Heshmat-Ghahdarijani K, et al. Delivery may increase the risk of multiple sclerosis. *Mult Scler*. 2012;18(4):468-471.
- 54. Xu XF, Du LZ. Epigenetics in neonatal diseases. *Chin Med J.* 2010;123(20):2948-2954.
- 55. Hyde M, Mostyn A, Modi N, et al. The health implications of birth by caesarean section. *Biol Rev.* 2012;87(1), 229 -243.
- 56. Kapellou O. Effect of caesarean section on brain maturation. *Acta paediatr*. 2011;100(11):1416 -1422.

- 57. Kennedy HP, Nardini K, McLeod-Waldo R, et al. Top-selling childbirth advice books: a discourse analysis. *Birth*. 2009;36(4):318-324.
- 58. Klein MC, Liston R, Fraser WD. Attitudes of the new generation of Canadian obstetricians: how do they differ from their predecessors? *Birth*. 2011;38(2):1-11.
- 59. van der Hulst LAM, Van Teijlingen ER, Bonsel GK. Does a pregnant woman's intended place of birth influence her attitudes toward and occurrence of obstetric interventions? *Birth.* 2004;31(1):28-33.
- 60. Kennedy HP, Grant J, Walton C, et al. Normalizing birth in England: a qualitative study. *J Midwifery Womens Health*. 2010;55(3): 262-269.
- American College of Nurse-Midwives. Providing oral nutrition to women in labor. Clinical bulletin. <u>http://www.midwife.org/siteFiles/education/Oral_Nutrition_to_Women_in_Labor_5_0</u> 8.pdf. Published March, 2008. Accessed May 4, 2012.
- 62. American College of Nurse-Midwives. Intermittent auscultation for intrapartum fetal heart rate surveillance. Clinical bulletin. http://onlinelibrary.wiley.com/doi/10.1016/j.jmwh.2007.03.021/abstract?userIsAuthenti cated=true&deniedAccessCustomisedMessage= . Pulished March, 2007. Accessed May 4, 2012.
- 63. Simkin PP, O'Hara M. Nonpharmacologic relief of pain during labor: systematic reviews of five methods. *Am J Obstet Gynecol*. 2002;186(5 Suppl Nature):S131-S159.
- 64. Childbirth Connection. Blueprint for action: steps toward a high-quality, high-value maternity care system. <u>http://transform.childbirthconnection.org/blueprint/</u>. Accessed May 4, 2012.