3. Physiologic (Spontaneous) Onset of Labor versus Scheduled Birth

A new report, ***Hormonal Physiology of Childbearing: Evidence and Implications for Women, Babies, and Maternity Care*** (2015), synthesizes an extensive literature about hormonally-driven processes of parturition and the early postpartum period. The following information is drawn from this report.

Many women and babies experience scheduled birth – induced labor and/or prelabor cesarean – annually in the United States.[1] This fact sheet highlights key benefits of the spontaneous, physiologic onset of labor at term, including fully experiencing beneficial hormonal actions of late pregnancy and early labor, and identifies practices that support hormonal physiology when scheduled birth is medically necessary.

Benefits of hormonal preparations of late pregnancy and of physiologic onset of labor

Hormonal processes that lead up to the physiologic onset of labor prepare mother and fetus/newborn for upcoming tasks and phases. For example:

- Increases in oxytocin[2] and prostaglandin[3] receptors, at the physiologic onset of labor prime the uterus to promote effective contractions in labor.
- Increases in brain-based (central) receptors for beta-endorphins prepare endogenous pain-relieving pathways (to date, found in animal studies).[4]
- Elevations in mammary and central oxytocin and prolactin receptors prepare for breastfeeding and maternal-infant biological bonding.[5]
- Rising cortisol supports maturation of the fetal lungs and other organs. Prelabor preparations in oxytocin and catecholamine systems promote fetal protective processes in labor and optimal newborn transition.[6]

Practices that support beneficial hormonal action when scheduled birth is necessary

When scheduled birth and other interventions are medically necessary, childbearing women and newborns can benefit from support of physiologic processes as far as safely possible. Ways to foster these processes include:

- Induce labor or schedule cesarean as close as is safely possible to the physiologic onset of labor.
- Begin with least invasive/lowest dose interventions to minimize hormonal disruption.
- Maintain a calm, low-stress environment in labor, as high levels of stress may interfere with labor progress via several hormone pathways.[7]
- Promote skin-to-skin contact between mother and baby immediately after birth to optimize maternal and newborn oxytocin levels,[8] support breastfeeding success,[9] enhance maternal-infant bonding behavior,[10] and likely reduce postpartum hemorrhage risks.

Precautionary Point: Developmental and epigenetic principles suggest that perinatal manipulations and exposures could have long-lasting programming effects.[11] Animal research finds effects on offspring hormonal systems through to adulthood from newborn synthetic oxytocin administration.[12, 13] While this research is still developing, a precautionary approach to exposures in essentially healthy women and babies is prudent.

Access *Hormonal Physiology of Childbearing: Evidence and Implications for Women, Babies, and Maternity Care* (2015) by Dr. Sarah J. Buckley and related material, including individual fact sheets and the full set, at ChildbirthConnection.org/HormonalPhysiology.

Selected references – see report for additional documentation:

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