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## Promoting Healthy Physiologic Birth – Audience Q&A Responses from Dr. Sarah Buckley

### Note:

- ❖ Page numbers refer to printed page numbers in the Full Report: <http://transform.childbirthconnection.org/reports/physiology/>
- ❖ Superscript numbers refer to the citations listed on pages 174-223.
- ❖ Cross-references in parentheses eg (3.1.1) highlight further discussion in other sections. Find these sections via the index page i

### Does pitocin to induce labor have any effect on the body's natural production of labor hormones? In present or future births?

Thanks for your question, which is discussed on page 60, re the effects of synthetic oxytocin (synOT, Pitocin) on maternal OT.

*In contrast to many other hormone systems, OT release from the brain is generally not controlled by feedback from OT levels in the body or bloodstream<sup>52, 157, 196</sup> (3.1.1). Thus, according to current understanding, administration of synOT in labor and birth, even at high doses, is unlikely to directly reduce the release of central, endogenous OT from the pituitary. (This is difficult to measure because current testing cannot distinguish physiologic OT and synOT in the bloodstream.)*

There is more detail on page 60/61.

Page 61 also discusses OT receptor desensitization, which is an important effect of synOT that I did not have time to discuss.

*In relation to effects in future pregnancies, from p 69  
In the only identified study that assessed the possible impacts of synOT exposure into future childbearing, multiparous women who had received synOT in a previous labor were found to have a longer active labor, compared with those who were previously unexposed to synOT. Effects were even greater for women with a higher number of previous treated labors.<sup>573</sup>*

(Continued)

**We often talk about hormonal interference of medical interventions, but what about social interference: family members engaging in conversation with a laboring mother, doulas or midwives or nurses engaging in conversation, asking the mother questions or expecting her to make decisions, etc. Do we know the potential impact of hypnosis visualization scripts on the normal hormone processes?**

Thanks for your question. We did not find studies looking at hormonal impacts from social interactions or hypnosis. However, there is a detailed discussion on Childbirth and Stress on page 127. If these factors influence subjective stress, fear, anxiety, you would expect them to have an impact.

Eg page 128

*These studies support a hormonal model of labor progress whereby excessive fear and anxiety may potentially elevate maternal E and NE levels, activating both alpha- and beta-adrenoceptors. Effects therefore may include beta-mediated slowing of labor, and alpha-mediated reduction in fetal blood supply (5.1.4), both found in these human studies.*

Also see the discussion, Labor and birth stress in animals, p 129

Also discussion page 100 about Beta-Endorphins and alteration in consciousness in labor, which could be affected by social interactions

*High levels of BEs also inhibit the transmission of visual and acoustic information<sup>767</sup> and may contribute to the altered state of consciousness that is reported with physiologic labor and birth.<sup>768, 769</sup> Although not specifically researched, this altered state might benefit the laboring mother by protecting her from external disturbances and directing her attention to sensations in her body, giving physical feedback in relation to her baby's position, so that she is more likely to move to facilitate optimal positioning. (See 5.1.4 for comments about E-NE aspects of this altered state of consciousness.)*

**How does prolactin connect to fatherhood?**

Thanks for your question, which is discussed on page 141 and citations

*Prolactin has also been named the "hormone of paternity" because of its association with paternal behaviors in species from birds and fish to humans.<sup>1035</sup> Human studies show elevations in PRL in association with fatherhood<sup>1036-1039</sup> (6.1.4). Animal studies also show PRL elevation in individuals who are in contact with, and/or caring for, unrelated infants (alloparenting).<sup>1040, 1041</sup>*

(Continued)

## How to address counseling to clients when these natural processes are not working as expected

Thanks for your question, which is discussed in the recommendations on page 165

*All women should have access to care that safely supports physiologic childbearing and to care environments that promote such care and protect women from the harm of unneeded disturbance of physiologic processes, as described in this report. Where childbearing deviates from optimal hormonal physiology, or extra assistance or interventions are required, women should be fully supported to maximize hormonal physiology.*

## Thank you to Dr. Buckley for this powerful presentation! We know that the impact of racism can cause some of the hormonal changes you described. Have you looked at the impact this may have on pregnancy and birth for women of color?

Thanks for your question. We did not find studies looking at hormonal impacts from racial or social experiences or background. However, effects of racism may be mediated by stress and stress hormones in pregnancy, and there is a detailed discussion of Prenatal care and stress on page 126. We also discuss this in our recommendations, page 165.

*Provide prenatal care that reduces stress and anxiety in pregnant women.*

*RATIONALE: Significant levels of stress and anxiety in pregnancy are detrimental to maternal and fetal physiology; they may adversely impact maternal well-being, gestational length, and fetal and child development. Some aspects of prenatal care, including fetal testing, may contribute to, or fail to reduce, maternal stress and anxiety.*

*Reduction of stress and anxiety in pregnancy may have significant and long-term benefits to offspring, and therefore substantial public health benefits. Evolving evidence suggests that some forms of relaxation and relaxation training may improve not only physiologic and hormone stress markers but also meaningful outcomes in mothers and babies. (See 5.2.1.)*