



## **Elective Induction: Current Research and Resources**

By: Lauren Korfine, September 2011

The year 2009 attained the dubious honor of being the 13<sup>th</sup> consecutive year that the cesarean section rate in the US has increased, coming in at a record high of 32.9% according to the Center for Disease Control's preliminary data. According to the World Health Organization, this number is more than twice the optimal rate of cesarean birth (15%) and represents an increased risk of [negative outcomes](#) for women and babies including infection, breastfeeding challenges, longer recovery time, and postpartum pain.

[Many factors](#) are contributing to the climbing c-section rate in our country (including fewer hospitals offering and supporting vaginal birth after a previous cesarean, an increase in older women having first babies, and increased number of multiple births). It has become increasingly clear, however, that the rising rates of labor induction (a practice that increases c-section risk) are contributing very powerfully to the cesarean rate and that a critical examination of labor induction practices and consequent reduction in these rates could have a very beneficial influence on the c-section crisis.

### **How have induction rates changed over time?**

The particular blend of physiology and magic that sets the wheels of labor into motion largely remains one of maternity care's great mysteries. The initiation of labor represents an unpredictable moment in time – some signal comes from the baby, some signal comes from the mother, and labor gets underway. The unpredictable nature of this moment has increasingly created anxiety in many care providers, and consequently, in many women. Corresponding with this increased anxiety has been a fairly dramatic increase in the number of labors that are induced (i.e., initiated using medicines and/or procedures that cause contractions) over the last 2 decades (e.g., Zhang, Joseph, & Kramer, 2010). According to the National Center for Health Statistics, 23.1% of all labors were induced in 2008 compared with 9.5% in 1990 – this is a more than two-fold increase.

### *Why is labor sometimes induced?*

Medical indications for induction are not always clear and straightforward, but the following situations comprise some of the reasons a care provider would consider induction:

- If a woman's water is broken for longer than a particular amount of time (which varies by care-giver)

- If there is a uterine infection
- If a woman has preeclampsia (determined by significantly elevated blood pressure, protein in the urine, and swelling)
- If the baby is not thriving
- If the pregnancy has gone past a certain gestation (again, this varies among care providers) and the placenta shows signs of not being as effective

### *Inductions for non-medical reasons*

Induction of labor has clearly been on the rise. Is it the case that women are experiencing way more complications that require their babies to be born before labor begins on its own? One recent retrospective study of over 7,800 births from a large hospital (Ehrenthal et al., 2010 ) found that of the 43.6% of labors that were induced during the time period of the study (2003-2006), 39.9% were *elective inductions*, that is, inductions that are carried out *without any medical indications for induction*. This means that none of the medical situations mentioned above was present in these cases – someone (the mother or the provider) simply decided to induce labor.

These data are consistent with other research indicating that the *elective* induction rate is rising. Therefore, it is not necessarily the case that women are presenting with more medical concerns that would necessitate rapid delivery of the baby, *but rather that induction is increasingly being used in situations in which it is medically unnecessary*.

### *Early elective inductions*

A new study (Murthy et al., 2011) has demonstrated a concerning trend in early term induction, that is, induction in women at 37-38 weeks of gestation. Using data from the National Center for Health Statistics, this study found that early term *elective* induction increased from 1.8% in 1991 to 7.6% in 2006 (an over 400% increase). The data suggest that the rate of induction in the absence of medical indication is increasing, *even for women who have yet to reach 40 weeks gestation*.

Similarly, looking at the distribution of births by gestational age over time reveals a substantial trend towards more babies getting born earlier and fewer babies being born later – a trend that is necessarily due to increased early induction. These data, taken from the [National Center for Health Statistics web site](#) illustrate that between 1990 and 2008, the number of babies born at 42 weeks and higher dropped from 11.5% to 5.8%, and that the number of babies born between 37 & 38 weeks increased from 19.4% to 27.8%. The likelihood that this trend would present itself on its own is slim.

### **Why is this a concern? What are the risks of elective induction?**

*“However, we must remember that incautious use and timing of interventions—particularly in elective cases—can lead to unnecessarily poorer outcomes for women and newborns.”* (Signore, 2010)

Clearly, elective induction rates are rising – something that has recently been the topic of considerable discussion. Abundant research has consistently demonstrated negative outcomes associated with elective induction, most importantly, an almost doubling of the cesarean section risk (e.g., Ehrenthal, 2010). The most recent of these (Vardo et al., 2011) found that elective induction in first time mothers at term was associated with a substantial increase in risk of cesarean section (replicating past estimates), as well as increased epidural use, postpartum hemorrhage, and oxygen required for the baby at delivery, compared with women who went into labor spontaneously. Induction was also associated with longer hospital stays.

Importantly, increased rates of induction and cesarean section have *not* been associated with improved outcomes for babies. Glantz (2011) points out, “*A corollary to the medical dictum ‘First do no harm’ might be ‘Second, do some good.’ In obstetrics, this applies to the mother and also to the infant. It is difficult to justify high rates of obstetrical interventions (especially elective) in a low-risk population of pregnant women in the absence of demonstrable neonatal benefits, given that these interventions have finite maternal risks.*”

The studies showing increased elective induction during the early term (37-39 weeks) discussed above are particularly concerning. Inducing labor that early increases the risks of iatrogenic (or intervention-caused) prematurity. For example, a baby that nature would select to gestate for 42 weeks getting induced at 37 weeks is being born *five* weeks early – not three. Early term prematurity can be associated with a number of challenges, including breathing problems, breastfeeding challenges, and suboptimal hearing, vision, and organ development (see the [March of Dimes](#) web site). In fact one study (Bailit et al., 2010) found that infant outcomes improved with each week of gestation until 39 weeks.

A [recent study](#) (Reddy et al., 2011) indicates that this practice of inducing labor during the early term (37-38 weeks) without medical indication is not simply unnecessary, but may carry with it risks to the baby that are not inconsequential. The researchers, from the National Institutes of Health, examining records from 46 million births from 1996-2006, compared babies born during week 37 to those born at week 40. They found that infants born during the early term (37 weeks) were twice as likely to die during the first year of life than those born at 40 weeks. Of course this sample included births that occurred spontaneously as well as those that were induced. And in a number of cases, the cause of death was likely associated with the reason the baby was born early (e.g., congenital birth defects). *However, if being born during the 37<sup>th</sup> week of gestation is associated with an (even small) increased risk of death to the baby, mothers considering elective induction during the early term would likely want to know that as they make their decisions.*

### **What are the reasons for the increase in elective induction?**

Empirical research findings are clear and consistent; indicating that in the absence of actual medical indication, induction of labor is a procedure that carries considerable risk without any measurable benefit. The obvious question then, is what are the reasons for the increase in elective inductions in this country over the last two decades?

Abundant conjecture in popular media and internet outlets imply that the soaring induction rates are due to maternal insistence largely based on convenience (e.g., wanting to choose the day the baby is born, being “tired of being pregnant,” wanting to choose a provider who may be going out of town or not on call for some time, having work commitments, etc.). There are voices, however, asserting that this trend is entirely due to physician insistence that babies be born by a particular gestational age (e.g., 40 weeks) for various idiosyncratic reasons (e.g., concerns that the placenta may not continue to function, or that the baby may get too big).

The truth, as it is usually found to be, is likely to be more complicated than either of these positions imply. That women are increasingly asking to be induced for reasons of convenience and provider choice may be true. However, that they would insist on following through with an induction just in order to be attended by Dr. So-and-So *if they were given the information that they may be doubling their risk of c-section, and increasing the risk that their babies would need resuscitation*, would be unlikely. Pregnant women are notorious for worrying about the health and well-being of their babies. And most women prefer to avoid cesarean birth if they can.

The only thorough data to bear directly on this question thus far come from the [Listening to Mothers II Study](#). Of the 646 women in that sample to experience a medical (vs. self-initiated) induction, 25% of them gave the reason that their care provider was “concerned that they were overdue,” whereas only 19% had a medical indication. An additional 17% reported that their induction was due to their care provider having concerns about the size of the baby, suggesting that the 36% of women who underwent medical induction for non-medically necessary reasons did so *at the suggestion of their care providers*.

On the other hand, 19% of these women cited wanting “to get pregnancy over with,” 8% listed wanting “to control the timing of birth,” and another 8% indicated wanting “to give birth with a specific provider,” as their reasons for medical induction. Putting these numbers together reveals that 35% of the medical inductions in this sample came at the request of the mothers for non-medical reasons.

### **What are women and their care providers to do?**

The evidence suggests that, on average, care providers are becoming increasingly uncomfortable waiting for labor to begin on its own, and increasingly comfortable providing inductions to women who ask for them, even in the absence of medical indication. Providers may feel that agreeing to perform elective inductions is empowering to women by supporting them to make decisions about their births. It is important to remember, however, that giving women choices without giving them full information is not safe practice. Additionally, it offers the illusion of empowerment without trusting women to be fully empowered with the information that might encourage them to make a different choice.

Several areas of medicine are moving towards a model of [shared decision making](#). In shared decision making, people play a very active role in the decisions regarding their health care. Central to this model is the notion that people need to be fully informed in order to be active participants in these decisions. In the case of a decision about elective induction, shared

decision making would require a care provider to provide information about the risks of induction in the absence of medical indication, particularly in the early term.

In the absence of the adoption of shared decision making models for maternity care, women need to inform themselves. If they are being offered an induction, they need to understand the reasons why. They need to know what the risks would be compared with the risk of staying pregnant and waiting for labor to initiate on its own. If an induction is necessary, women need to be informed about ways to increase the likelihood of labor proceeding smoothly. [The following are helpful fact sheets to aid in this process ([http://www.injoyvideos.com/mothersadvocate/pdf/healthybirth\\_1.pdf](http://www.injoyvideos.com/mothersadvocate/pdf/healthybirth_1.pdf) ; <http://www.nice.org.uk/nicemedia/live/12012/41272/41272.pdf> )]

Big changes are in sight in the culture of health care and the provider / patient relationship. It is the nature of these changes that will ultimately help to reduce the induction (and therefore) cesarean section rates. The force behind it all is high quality information -- delivered into the hands of the people -- coupled with a system that trusts women to make good choices and therefore encourages active participation in one's own care.

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Links:

[http://www.hencigoer.com/articles/elective\\_induction/](http://www.hencigoer.com/articles/elective_induction/)

<http://californiawatch.org/health-and-welfare/early-elective-births-increase-so-do-health-risks-mother-child-7689>

<http://www.theunnecesarean.com/blog/2008/11/24/article-unnecessary-inductions-trends-studies-and-guidelines.html>

<http://www.effectivehealthcare.ahrq.gov/ehc/products/135/354/induction%20of%20labor%20clinical%20guide.pdf>

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