

MidwifeThinking

Dr Rachel Reed

Induction of Labour: balancing risks

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In [Australia 26%](#) of labours are induced. The most common reason for induction is a ‘prolonged pregnancy’. That’s an awful lot of babies outstaying their welcome and requiring eviction. I am not going to get stuck into the concept of a ‘due date’ and how accurate or not they are, otherwise this will be a very long post. I also think the EDD (estimated date of delivery) is here to stay – it is deeply embedded in our culture and health care system. You can read about the history of timelines in birth [here](#). This post will focus on induction for prolonged pregnancy and the complexities of risk.

A quick word about risk

I don’t particularly like the concept of ‘risk’ in birth. There are all kinds of problems associated with providing care based on risk rather than on individual women. However, risk along with ‘due dates’ is here to stay, and women often want to know about risks. Risk is a very personal concept and different women will consider different risks to be significant to them. Everything we do in life involves risk. So when considering whether to do X or Y there is no ‘risk free’ option. All women can do is choose the option with the risks they are most willing to take. However, in order to make a decision women need adequate information about the risks involved in each option. If a health care provider fails to provide adequate information they could be faced with [legal action](#). Induction for prolonged pregnancy is not right or wrong if the choice is made by a woman who has an understanding of all the options and associated risks. As a midwife I am ‘with woman’ regardless of her choices. It is my job to share information and support decisions – not to judge.

What is a prolonged pregnancy?

Before we go any further lets get some definiti

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d pregnancy’ is one that has continued beyond 42 weeks ie. is
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eeks which is before a prolonged pregnancy has occurred.

The idea of a prolonged pregnancy also assumes that we all gestate our babies for the same length of time. It seems that genetic differences may influence what is a ‘normal’ gestation time for a particular woman. [Morken, Melve and Skjaerven \(2011\)](#) found “a familial factor related to recurrence of prolonged pregnancy across generations and both mother and father seem to contribute.” Therefore, if the women in your family gestate for 42 weeks so might you. The baby and placenta signal to the mother’s body that baby is mature and ready to be born ([Mendelson 2009](#)) – this starts the complex cascade of physical changes that results in the labour process. How long it takes for an individual baby to become mature varies.

The risks associated with waiting

In theory after term ie. 42 weeks the placenta starts to shut down. There is no evidence to support this notion. There is also a good physiological explanation of the development and ageing of the placenta [here](#), which concludes that: “*There is, in fact, no logical reason for believing that the placenta, which is a fetal organ, should age while the other fetal organs do not...*” I have seen signs of placental shut down (ie. calcification) in placentas at 37 weeks and I have seen big juicy healthy placentas at 43 weeks. There is also the idea that the baby will grow huge and the skull will calcify making moulding (when the bones in the baby’s skull adjust), and therefore birth difficult. Again there is no evidence to support this theory and babies are pretty good at finding their way out of their mothers expandable pelvis.

The concerns around waiting beyond 41 weeks gestation focus on the potential death of the baby (perinatal death). A [Cochrane review](#) summarises the quantitative research examining induction vs waiting at 41 weeks or more: “*There were fewer baby deaths when a labour induction policy was implemented after 41 completed weeks or later.*” However, it goes on to say: “*...such deaths were rare with either policy...the absolute risk is extremely small. Women should be appropriately counselled on both the relative and absolute risks.*” Hands up all the women who had a discussion with their care provider about the relative and absolute risks of waiting vs induction... hmmm thought so.

Essentially according to the available research, if you are induced at 41 weeks your baby is less likely to die during, or soon after birth. However, the chance of your baby dying is small either way – less than 1%... or 30 out of every 10,000 for those waiting vs 3:10,000 for those induced.

Reviews can only be as good as the research they review and there are some concerns about the quality of the research. The [World Health Organization](#) recommends induction after 41 weeks based on this review but acknowledges the evidence is “*low-quality evidence. Weak recommendation*”. You can find further critical analysis of the data [here](#). Another review of the literature in the Journal of Perinatal Medicine ([Mandruzzato et al. 2010](#)) concluded: “*It is not possible to give a specific gestational age at which an otherwise uncomplicated pregnancy should be induced.*”

One of the main problems with quantitative research is that it rarely answers the question ‘why’, and rather focuses on ‘what’ (happens). For example, congenital abnormalities of the baby and placenta are associated with post-term pregnancy and this may account for the increased risk rather than the length of gestation ([Mandruzzato et al. 2010](#)). Quantitative research also takes a general perspective rather than addressing the risk for an individual woman in a particular situation.

Anyhow – to pretend there are no risks associated with prolonged pregnancy (in general) is not helpful for women trying to make decisions about their options. These general risks should be part of the information a woman uses to decide what is best for her.

The risks associated with induction



It can be difficult to untangle and isolate the risks involved with induction because usually more than one risk factor is occurring at once (eg. syntocinon, CTG, epidural). I did attempt to create a mind map but it ended up looking like a spider had spun a web while under the influence. So I have stuck to a written version:

Risks associated with the actual procedure of induction

The induction process is a fairly invasive procedure which usually involves some or all of the following (you can read more about the process of induction [here](#)). There are a number of minor side effects associated with these medications/procedures (eg. nausea, discomfort etc.) There are also some major risks:

- Prostaglandins ([prostin E2](#) or [cervidil](#)) to ripen the cervix: hyperstimulation resulting in fetal distress and c-section.
- Rupturing the membranes: fetal distress and c-section ([see previous post](#))
- IV [syntocinon](#) / pitocin: Mother – rupture of uterus; [post partum haemorrhage](#); water intoxication leading to

convulsions, coma and/or death. Baby – hypoxic brain damage; neonatal jaundice; neonatal retinal haemorrhage; death. There is also research suggesting that there may be a link between the use of syntocinon/pitocin for induction and ADHD ([Gregory et al. 2013](#); [Kurth & Haussmann 2011](#))

The most extreme of these risks are rare, but fetal distress and c-section are fairly common. The potential effects of uterine hyperstimulation on the baby are well known ([Simpson & James 2008](#))- which is why continuous fetal monitoring is recommended during induction. This may also explain the association between induction and cerebral palsy ([Elkamil et al. 2010](#))

Risks associated with factors that commonly occur during an induction



The Cochrane review (above) and 2 more recent reviews ([Mishanina et al. 2014](#); [Wood et al. 2014](#)) found reduced rates of c-section for women who were induced. This is an interesting finding and does not fit with my observations. I don't have room in this post to provide a full critique of this research – you can find one by Sara Wickham [here](#).

One major problem with the reviews is that the findings did not distinguish between first time mothers and women who have birthed before. And they are a different kettle of fish. A [research study](#) by Ehrental et al. (2010) found an increased c-section rate of 20% for women being induced with their first baby. They concluded that: *“Labor induction is significantly associated with a cesarean delivery among nulliparous women at term... reducing the use of elective labor induction may lead to decreased rates of cesarean delivery for a population.”* Another study by [Selo-Ojeme et al \(2011\)](#) found induction increased the chance of a c-section x3 for first time mothers. The researchers recommend that *“Nulliparous [first baby] women should be made aware of this, as well as potential risks of expectant management during counselling.”* It is now well established that there are significant risks associated with c-section for both mother and baby. [Childbirth Connection](#) provide an extensive and evidence based list.

Induced labour is usually more painful than a physiological labour. Syntocinon (aka pitocin) produces strong contractions often without the gentle build up and endorphin release of natural contractions. In addition unlike natural oxytocin, syntocinon does not cross the blood-brain barrier to create the spaced-out, relaxed feelings that help women to cope with pain (see [previous post](#)). Not surprisingly, first time mothers are more than 3x more likely to opt for an epidural ([Selo-Ojeme et al. 2011](#)) during an induction. A [Cochrane review](#) found that: *“Women who used epidurals were more likely to have a longer delivery (second stage of labour), needed their labour contractions stimulated with oxytocin, experienced very low blood pressure, were unable to move for a period of time after the birth (motor blockage), had problems passing urine (fluid retention) and suffered fever and association between epidural analgesia and instrumental birth.”* The review also found an increased risk of instrumental delivery, and c-section for fetal distress with an epidural.

There are significant risks associated with ventouse and forceps birth, both for the mother and baby – RANZCOG lists them [here](#). And the risks of c-section available via the link ‘Childbirth Connection’ above. The study by Selo-Ojeme et al. (2011) also found induction = increased risk of uterine hyperstimulation; ‘suspicious’ fetal heart rate tracings; and haemorrhage following birth. Not surprisingly *‘babies born to mothers who had an induction were significantly more likely to have an Apgar score of <5 at 5mins and an arterial cord pH of <7.0’* (basically not in a good way on arrival). Another recent study by [Elkamil et al \(2011\)](#) *‘found that labour induction at term was associated with excess risk of bilateral spastic CP [cerebral palsy].’* Remember we are inducing labour to prevent harm to the baby...

The experience of labor



Once again the Cochrane review states: “*Women’s experiences and opinions about these choices have not been adequately evaluated.*” This is becoming a theme across Cochrane reviews. However, one thing is certain – choosing induction will totally alter your birth experience and the options open to you. Women need to know that agreeing to induction means agreeing to continuous monitoring and an IV drip, which will limit movement. Induced contractions are usually more painful than natural contractions and the inability to move and/or use warm water (shower or bath) reduces the ability to cope. The result is that an epidural may be needed. An induced birth is not a

physiological birth and requires monitoring (vaginal exams) and time frames. Basically you have bought a ticket on the intervention rollercoaster. For many women this is fine and worth the risk, but I encounter too many women who are unprepared for the level of intervention required during an induction.

There have been some attempts to find out about women’s experience of induction. [Heimstad et al. \(2007\)](#) conducted a survey of women randomised to immediate induction at 41 weeks or waiting with regular ‘fetal surveillance’. They found that women preferred induction. However, these were women who were allocated an option rather than chose one. Another survey by [Childbirth Connection](#) asked mothers about their experience of induction (not necessarily for prolonged pregnancy) – 17% of those induced felt they were under pressure to do so by health care professionals. The quotes from women make interesting reading too. A study by [Hildingsson et al. \(2011\)](#) found that labour induction was associated with a less positive birth experience, and women who were induced were more likely to be frightened that their baby would be damaged during birth. However, again this research was not limited to induction for prolonged pregnancy therefore the women may have had genuine pregnancy complications requiring induction. A more recent UK study by [Henderson and Redshaw \(2013\)](#) found that “*women who were induced were generally less satisfied with aspects of their care and significantly less likely to have a normal delivery. In the qualitative analysis the main themes that emerged concerned delay, staff short-ages, neglect, pain and anxiety in relation to getting the induction started and once it was underway; and in relation to failed induction, the main themes were plans not being followed, wasted effort and pain, and feeling let down and disappointed.*”

Alternatives to waiting or medical induction



Before labour begins the uterus and cervix need to make physiological changes ready to respond to contractions. It is now thought that the baby is the controller of the labour ‘on’ switch. So, the baby signals to the mother that he/she is ready, oxytocin is released and the uterus responds. In comparison to other mammals, humans have the most variable gestation lengths. This suggests that other factors such as environment and emotions (eg. anxiety) also influence the start of labour. This would make sense considering what we know about the function of oxytocin (see [previous post](#)). It is also something most midwives are aware of – a stressed out mother is more likely to go post term than a relaxed and chilled out mother. Having said that, post term is probably the normal gestation length for many women regardless of what is going on. Creating anxiety and stress around due dates and impending induction is probably counter productive to labour.

There are a number of ‘alternative’ or ‘natural’ induction methods available (BellyBelly covers most of them [here](#)). However, an induction is an induction. Trying to force the body/baby to do something it is not ready to do is an intervention whether it is with medicine, herbs, therapies, techniques... or anything else. Interventions of any kind can have unwanted effects and consequences. However, ‘interventions’ (massage, acupuncture, etc.) that are aimed at relaxing the mother and fostering trust, patience and acceptance may assist the body/baby to initiate labour if the physiological changes have already taken place.

In Summary

A significant minority of babies will not be born by 41 weeks gestation. Whilst the definition of a prolonged pregnancy is 42 weeks+, induction is usually suggested during the 41st week. Women need to be given adequate information about the risks and benefits involved with either waiting or inducing in order to make the choice that is *right for them*. There is no risk free option. The risk of perinatal death is extremely small for both options. I know women who have lost a baby in the 41st week of pregnancy, and women who have lost a baby as a result of the induction process. For first time mothers the induction process poses particular risks for themselves and their babies. Each individual woman must decide which set of risks she is most willing to take – and be supported in her choice.

Further resources

Maternity Choices [information sheet](#) for parents.

Sara Wickham – [post-term pregnancy and induction of labour resources](#)

Sara Wickham – [ten things I wish every women knew about induction of labour](#)

[Tara's story \(44 weeks\)](#)

A news article: ['I was pregnant for 10 months'](#)

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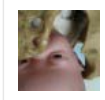


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218 Responses to *Induction of Labour: balancing risks*



Cassandra says:

September 17, 2010 at 12:58 am

I'm really loving your blog. I'm so glad you decided to start one up. The way you present information is awesome and I love how you add in subtle touches of humor. I hope you find immense popularity!

[Reply](#)



midwifethinking says:

September 17, 2010 at 2:44 pm

Thanks – I'm pleased you like it.