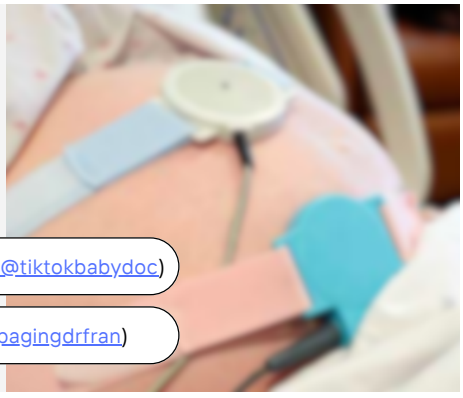
Elective Inductions at Term



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Are you interested in or have been offered an elective induction of labor (eIOL) at 39 weeks and want more information to decide if that's the right choice for you? Here is some info to help you decide!

There are many factors that go into deciding on what type of birth experience is best for you, your pregnancy, and your family. This document is a guide to the current data on eIOL at term (>39 weeks), how to bring up the possibility of an eIOL to your obstetrical care provider and important questions you should ask.

An informed decision is the best decision!

Background on Elective Inductions at Term

An eIOL is an induction of labor (IOL) without having a medical indication for delivery. They typically occur between 39+0 weeks to 40+0 weeks of pregnancy. Two things are required for an eIOL:

1. The patient has chosen its best for them and their pregnancy.
2. The obstetrical care provider offers eIOL at 39 weeks AND the facility where they manage patients has the ability to accommodate patients undergoing eIOL.

eIOL has been around for decades, but was not well accepted in the medical community because it was thought that they increased the rate of cesarean births. Also, eIOL was done as early as 37 weeks, which proved to cause problems for the baby born during this "early term" period of pregnancy.

In 2018, the ARRIVE trial was published and changed how the medical community viewed eIOL at 39 weeks. The ARRIVE trial was a large unmasked, multicenter (41 facilities across the United States consisting of university and community hospitals) trial that compared eIOL at 39 weeks with expectant management among low risk, nulliparous (first time birthing) patients. 62.7% of subjects in the induction group and 64.2 % in the expectant management group had a Bishop score < 5 when they were randomized. An unfavorable cervix generally has been defined as a Bishop score of 6 or less in most randomized trials. It showed a statistically significant decrease in cesarean birth rates, gestational hypertension/preeclampsia and need for neonatal respiratory support within the first 72 hours of life among those who were induced at 39 weeks. It did not show a significantly lower frequency of a composite adverse perinatal outcome (perinatal death or severe neonatal complications). Since the publication of the ARRIVE trial, the majority of follow up research has continued to support these findings.

Current Studies on eIOL

The majority of the studies over the last 5 years regarding elective inductions have shown consistent benefits, including a decrease in c-section rates and decrease in neonatal morbidity. There have been some studies that have not seen these same results. The majority of studies currently are regarding nulliparous patients.

Arrive Trial (NEJM 2018)

- Trial designed to test the hypothesis that eIOL at 39 weeks would result in a lower risk of a composite outcome of perinatal death or severe neonatal complications than expectant management among low-risk nulliparous subjects.
- A randomized controlled trial that took place in 41 facilities in the US between 2014 and 2017
- 22,533 eligible patients were approached to participate, 6,106 patients choose to participate
- Patients were assigned to the elective induction group or the expectant management group.
- About 60% of both groups had a Bishop score <5 (considered an "unfavorable" cervix)
- Results:
  - 18.6% of the induction group underwent a cesarean delivery, while 22.2% of the expectant management group underwent cesarean delivery.
  - 9.1% of the induction group developed a hypertensive disorder of pregnancy, versus 14.1% of the expectant management group.
  - Patients in the eIOL group spent longer time in the hospital, but their length of postpartum stay was shorter.
  - There was no difference in neonatal outcomes
- Conclusion: eIOL in low-risk nulliparous subjects did not result in a significantly lower frequency of adverse perinatal outcome, but it did result in a significantly lower frequency of cesarean delivery.

Elective induction of labor at 39 weeks compared with expectant management: a meta-analysis of cohort studies (AJOG 2019)

- A systematic review of observational studies that compared eIOL at 39 weeks among nulliparous subjects with expectant management.
- Results:
  - 6 cohort studies, which included 66,019 subjects undergoing eIOL at 39 weeks and 584,390 undergoing expectant management, met inclusion criteria.
  - eIOL at 39 weeks was associated with a significantly lower frequency of cesarean delivery (26.4% vs 29.1%) as well as of peripartum infection (2.8% vs 5.2%).
  - Neonates in the induction group were less likely to have respiratory morbidity (0.7% vs 1.5%); meconium aspiration syndrome (0.7% vs 3.0%); and neonatal intensive care unit admission (3.5% vs 5.5%).
  - There also was a lower risk of perinatal mortality (0.04% vs 0.2%).
- Conclusion: This meta-analysis of 6 cohort studies demonstrates that eIOL at 39 weeks, compared with expectant management beyond that gestational age, was associated with a significantly lower risk of cesarean delivery, maternal peripartum infection, and perinatal adverse outcomes, including respiratory morbidity, intensive care unit admission, and mortality.

Comparison of Maternal Labor-Related Complications and Neonatal Outcomes Following Elective Induction of Labor at 39 Weeks of Gestation vs Expectant Management: A Systematic Review and Meta-analysis

- A systematic review and meta-analysis of 14 studies to investigate maternal labor-related complications following induction of labor at 39 weeks of gestation compared with expectant management.
- These studies reported outcomes of women with a singleton pregnancy, including 86,555 women who were induced at 39 weeks of gestation. There were 12 retrospective cohort studies, 1 cross-sectional study, and 1 randomized clinical trial.
- Multiparous and nulliparous patients were included.
- Results included
  - eIOL was associated with a 37% reduced likelihood of 3rd or 4th-degree perineal injury
  - eIOL was also associated with a reduced likelihood of operative vaginal birth
  - eIOL was associated with a 34% reduced likelihood of macrosomia and a 38% reduced likelihood of low 5-minute Apgar score
  - Among nulliparous women only, induction at 39 weeks of gestation was associated with a decreased likelihood of emergency cesarean section and NICU admission. Among this group, elective induction at 39 weeks of gestation was associated with an increased likelihood of shoulder dystocia.
- Conclusions: In this study, eIOL was associated with improved maternal labor-related and neonatal outcomes. However, among nulliparous subjects, IOL was associated with shoulder dystocia. These results suggest that eIOL may be safe and beneficial for some patients; however, potential risks should be discussed with nulliparous patients.

Analysis of Obstetric Outcomes by Hospital Location, Volume, and Teaching Status Associated With Non–Medically Indicated Induction of Labor at 39 Weeks

- A retrospective cohort study of singleton births looking at whether obstetric outcomes of nulliparous subjects with low-risk pregnancies managed with non–medically indicated eIOL compared with expectant management differ among hospitals by location, obstetric volume, and teaching status.
- The data source used for this study was the California Vital Statistics Birth Certificate Data.
- Inclusion criteria were singleton births with gestational ages 39 0/7 to 41 6/7 weeks at birth among nulliparous individuals.
- The analysis was then stratified by 3 different hospital characteristics: location (urban vs rural), obstetric volume, and teaching (academic vs community) status.
- There were 455,044 births to individuals meeting the inclusion criteria.
- Results:
  - There were significantly lower odds of cesarean birth after non–medically indicated IOL in all settings except in low-volume hospitals where there was no difference.
  - Chorioamnionitis and postpartum hemorrhage were lower with IOL among nearly every hospital when stratified by hospital characteristics.
  - Neonatal outcomes were improved in all settings with IOL compared with expectant management.
  - Among urban hospitals, there were lower odds of numerous maternal outcomes, including severe maternal morbidity, chorioamnionitis, postpartum hemorrhage, operative vaginal birth, and obstetric anal sphincter injury. There were also notable decreases in the odds of adverse neonatal outcomes, including NICU admission 24 hours or more postpartum and respiratory distress syndrome
  - The odds of cesarean birth were lower with non–medically indicated IOL among medium and high volume hospitals
  - The odds of cesarean birth were lower with non–medically indicated IOL among both community and teaching hospitals.
- Conclusions: Non-medically indicated IOL at 39 weeks reduced cesarean births even in different hospital settings (e.g., urban and rural). There were overall improved neonatal outcomes, including NICU admission and respiratory distress syndrome, and other perinatal outcomes, including postpartum hemorrhage and chorioamnionitis. These findings suggest that the benefit associated with IOL for low-risk pregnancies was consistent even among a wide range of hospitals. These findings align with other studies assessing non–medically indicated induction of labor compared with expectant management.

Outcomes of Elective Induction of Labor at 39 Weeks from a Statewide Collaborative Quality Initiative

- This article evaluates the impact of adopting a practice of eIOL at 39 weeks among nulliparous, term, singleton, vertex (NTSV) pregnancies in a statewide collaborative.
- A review of data registry comparing patients who underwent eIOL versus expectant management
- 27,313 NTSV (nulliparous, term, singleton, vertex) pregnancies were entered into the collaborative's data registry. A total of 1,558 women underwent eIOL and 12,577 were expectantly managed.
- Results
  - eIOL was associated with a higher cesarean birth rate (30.1 vs. 23.6%, $p < 0.001$). When compared with a propensity score-matched cohort, elective induction was not associated with a difference in cesarean birth rate (30.1 vs. 30.7%, $p = 0.697$).
  - Time from admission to delivery was longer for the eIOL cohort compared with the unmatched cohort
  - Expectantly managed women were less likely to have a postpartum hemorrhage or operative delivery
  - Women who underwent an eIOL were less likely to have a hypertensive disorder of pregnancy
- Conclusion: eIOL at 39 weeks may not be associated with a reduced NTSV cesarean delivery rate.

Rates of IOL at 39 Weeks and Cesarean Delivery Following Publication of the ARRIVE Trial: JAMA 2023

- This trial evaluated if the publication of the ARRIVE trial was associated with observable obstetric practice changes in the US. They hypothesized the rate of eIOL at 39 weeks would increase and cesarean delivery would decrease for low-risk nulliparous patients after publication and dissemination of the ARRIVE trial.
- Cross-sectional study that followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline.

- 2,860,942 births were included (1,889,599 births [66%] from the pre-ARRIVE period and 971,343 births [34%] from the post-ARRIVE period).
- Results:
  - There was an immediate increase in eIOL rate after the dissemination period; with a 39-week induction rate of 15.0% vs an expected 13.8% based on pre-ARRIVE trends and
  - CD rates were significantly lower than expected (24.7% vs 25.1%).
- Conclusion: These findings suggest that the publication of the ARRIVE trial was associated with an increase in eIOL at 39 weeks and a reduction in CD rates for low-risk nulliparous patients across the US.

Additional Studies:

- Elective Labor Induction at 39 Weeks Compared With Expectant Management: Factors Associated With Adverse Outcomes in Low-Risk Nulliparous Women: Obstetrics & Gynecology 2020
- Elective Induction of Labour at 39 Weeks Compared With Expectant Management in Nulliparous Persons Delivering in a Community Hospital: JOGC 2022
- Elective induction of labor at 39 weeks among nulliparous women: The impact on maternal and neonatal risk: PLOS ONE 2018
- Maternal and perinatal outcomes after elective induction of labor at 39 weeks in uncomplicated singleton pregnancy: a meta-analysis: Ultrasound in ObGyn 2018

What ACOG says about eIOL

ACOG's practice advisory "Clinical Guidance for Integration of the Findings of The ARRIVE Trial: Labor Induction Versus Expectant Management in Low-Risk Nulliparous Women" says that based on the findings demonstrated in the ARRIVE trial, it is reasonable for obstetricians and health-care facilities to offer eIOL to low-risk nulliparous women at 39 weeks' gestation. However, consideration for enactment of eIOL should not only take into account the trial findings, but may also be conditional upon the values and preferences of the pregnant patient, the resources available (including personnel), and the setting in which the intervention will be implemented. A collaborative discussion with shared-decision making should take place with the pregnant patient. Further risks & benefits are discussed here.

Why eIOL happens after 39 weeks

Studies show that NICU admissions and need for respiratory support is lowest at or after 39 weeks. Therefore, elective inductions without any medical indications are not performed before 39 weeks.

Failed Induction Criteria

Current guidance from the ACOG and the SMFM recommends that if the maternal and fetal status allow, cesarean births for failed induction of labor in the latent phase can be avoided by allowing longer durations of the latent phase (up to 24 hours or longer) and requiring that oxytocin be administered for at least 12–18 hours after membrane rupture before deeming the induction a failure.

Common Reason for eIOL

There are many reasons why people prefer an eIOL:

- Childcare reasons
- Partner/spouse availability
- Work scheduling and FMLA
- Patient anxiety or concerns over going past 39 weeks
- You live far away from the hospital
- Having a fast labor in a prior pregnancy
- You simply prefer it!

How to Bring up eIOL to your obstetrical provider

We recommend discussing your birthing preferences with your obstetrical provider early and often; sometimes it is an evolving topic that involves several discussions. If you know going into pregnancy that you are interested in an eIOL, we recommend you discuss this early on in your pregnancy in the rare case you may need to find a new obstetrical care provider because they or the hospital where they deliver do not offer eIOL at 39 weeks. Entering the third trimester is another good time to discuss your preferences, and ask the questions below so you can make an informed decision. Suggested ways to bring the topic up with your provider include:

- Do you offer elective inductions? If not, how late in pregnancy would you allow me to go before recommending that I be induced?
- I've read some things about elective inductions, and would like to discuss this possibility with you
- I have some questions about the timing of the end of my pregnancy. I'm interested in an elective induction, can we discuss that process?
- Due to (insert reason here), I'd like to schedule an elective induction. Could we go over how that works at the hospital I'll be delivering at?

Questions to Ask

- How does scheduling of inductions work at the hospital? Do I have any control over the date/time for my scheduled eIOL?
- How often are eIOL bumped or rescheduled? How does that process work?
- Who will be managing my induction?
- What methods are available to ripen my cervix? How do you choose what is best? When do you typically start the augmentation of labor part of the induction?
- What is the average length of time for an elective IOL if my cervix is unfavorable?
- Can I take a break during my induction?
- Am I able to eat and drink during my induction?
- Can I get an epidural at any point during my eIOL? Is anesthesia available 24/7?
- How often will you check my cervix?
- Are internal monitors routinely placed?
- What are other pain management options throughout the induction process?
- At what point do you consider breaking my water if it doesn't happen spontaneously?
- Can I opt to go home if it looks like my induction isn't progressing?
- What can I do to increase my chances of a successful induction?
- Do you follow the current ACOG recommendations for failing an IOL before recommending a cesarean?

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