

What are the risks and benefits of elective induction for uncomplicated term pregnancies?

EVIDENCE-BASED ANSWER

Elective induction of labor for term, singleton, uncomplicated pregnancies appears safe for both the mother and infant

(strength of recommendation [SOR]: **B**). The benefit of elective induction for nonmedical reasons is unclear (SOR: **B**).

CLINICAL COMMENTARY

Elective inductions can add costs and legal risks

Family physicians cherish having long, collaborative relationships with patients. But when they practice obstetrics, this desire can result in feeling pressured to grant requests by pregnant patients for elective inductions. As indicated in this Clinical Inquiry, elective inductions may be relatively safe in some situations, but they always

incur added costs. The cost of cervical ripening, extra monitoring, and medications to promote uterine contractions fall to the medical system. There also may be added legal risk to the provider. Eventually, some elective induction will have a bad outcome and there will be no way to defend the decision to induce as medically necessary.

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Evidence summary

Induction of labor is a viable therapeutic option when the benefits of timely delivery outweigh the risks of unnecessary cesarean section or prematurity. Two large retrospective studies support the concept that cesarean section rates and admissions to neonatal intensive care units are higher with elective induction as opposed to expectant management (**TABLE**).^{1,2} A large population-based study suggests that the higher cesarean section rates in elective induction is present only among nulliparous women; in multiparous women, the rate is the same as expectant management.³ Contrasting these results are those

of a large systematic review, which found lower cesarean section rates in electively induced women. Two more recent studies, a retrospective cohort study⁴ and a randomized controlled trial,⁵ found a much lower incidence of cesarean section and operative vaginal deliveries among induced vs expectantly managed women at term.

Recommendations from others

A 1999 American College of Obstetricians and Gynecologists (ACOG) practice bulletin states that labor may be induced for logistic reasons such as psychosocial factors and distance from hospital, as long as 1 of these 4 criteria is met: (1) fetal heart

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TABLE

Summary of evidence regarding induction of labor

STUDY	METHODS	CESAREAN DELIVERY RATE	OPERATIVE VAGINAL DELIVERY	PERINATAL COMPLICATIONS
Cammu, 2002 ¹	Matched cohort study. 7683 women in IND group, 7683 women in EM group. 38–41 0/7 weeks gestation.	9.9% vs 6.5% ($P=.001$); NNH=30.	31.67% vs 29.1% ($P=.001$); NNH=39.	NICU admission 10.7% vs 9.4% (RR=1.03 < 1.14 < 1.25; $P=.001$).
Bouvain, 2001 ²	Retrospective cohort study. 7430 women between 38 and 40 6/7weeks. 531 women in induced group vs 3353 women in spontaneous labor group.	Induction of labor was found to be associated with higher risk of cesarean delivery (7.7% to 3.6%) (RR=2.4; 95% CI, 1.1–3.4).	IND vs spontaneous labor 28.1% vs 30.1% (RR=1.0; 95% CI, 0.9–1.2); not statistically significant.	NICU admission 4.1% vs 2.8% (RR=1.6; 95% CI, 1.0–2.4).
Dublin, 2000 ³	Population-based cohort study. 2886 induced vs 9648 spontaneous labor. 37–41 weeks gestation.	In nulliparous women 19% of IND group had cesarean delivery vs 10% nulliparous of women in spontaneous labor group (NNH=11). No association was seen in multiparous women.	18.6% vs 15.5% (RR=1.2; 95% CI, 1.02–1.32).	Shoulder dystocia 3.0% vs 1.7% (RR=1.32; 95% CI, 1.02–1.69); NNH=77.
Nicholson, 2004 ⁴	Retrospective cohort study. 100 women in active management (AM) group, 300 selected subjects in standard management (SM) group. 38 to 41 0/7 weeks gestation.	AM group vs SM group had higher rates of induction (63% vs 23.7%; risk ratio=2.66 [95% CI, 2.07–3.43]). AM group vs SM group had a lower cesarean delivery rate (4% vs 16.7%; risk ratio=0.24; 95% CI, 0.09–0.65; NNT=7).	AM group vs SM group 16% vs 15.3%. Not statistically significant.	No significant differences.
Nielson, 2005 ⁵	116 women (45 nulliparous) randomized at ≥ 39 wks to expectant management or induction with oxytocin and/or amniotomy.	6.9% (8/116) IND group vs 7.3% (8/110) in EM group. Not statistically significant.	6.9% (8/116) IND group vs 8.2% (9/116) EM group. Not statistically significant.	No mention.
Sanchez-Ramos, 2003 ⁶	Systematic review of 16 randomized controlled trials (6588 women). Included women at 41 weeks gestation.	20.1% in IND group vs 22.0% in EM group. NNT=52; odds reduction of 12% (95% CI, 0.78–0.99). Statistically significant.	No mention.	Perinatal mortality rate: 0.09% IND group vs 0.33% EM group. Not statistically significant.

IND, induction; EM, expectant management; AM, active management; SM, standard management; NICU, neonatal intensive care unit; RR, relative risk; CI, confidence interval; NNT, number needed to treat; NNH, number needed to harm.

tones have been documented for 20 weeks by nonelectronic fetoscope or for 30 weeks by Doppler; (2) it has been 36 weeks since a positive serum or urine human chorionic gonadotropin pregnancy test was performed; (3) ultrasound measurement of crown-rump length, obtained at 6 to 12 weeks, supports a gestational age of at least 39 weeks; (4) ultrasound obtained at 13 to 20 weeks confirms the gestational age of at least 39 weeks determined by clinical history and physical examination. The ACOG recommendation (which dates back to 1989) is for induction of low-risk pregnancy at the 43rd week of gestation.⁷

The Royal College of Obstetricians and Gynaecologists recommends that women with uncomplicated pregnancies be offered induction of labor beyond 41 weeks.⁸ The Department of Obstetrics and Gynecology and Reproductive Biology at Harvard Medical School recommends routine induction of labor be recommended at 41 weeks' gestation.⁹

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