this & that

04

OBSTETRIC QUICK GUIDES · IF THIS, THEN THAT

NO.



Induction of Labour

& cervical ripening

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Verified against ACOG · SMFM · RCOG · SOGC — October 2026

Induction of labour and cervical ripening

At a glance: the numbers to remember

Bishop ≤6
unfavourable cervix → ripen first (NICE, ACOG)

13.1 h
balloon + misoprostol, the fastest route to birth

12–18 h
of oxytocin after ROM before calling it failed

5.6%
uterine rupture with misoprostol after caesarean

41^{+0}
offer induction in uncomplicated pregnancy (WHO, SOGC)

Where societies disagree, each position carries the society name; follow your local protocol. Doses are for singleton, term, cephalic pregnancies with a live fetus unless stated.

01 Definitions and the Bishop score

Term	Meaning
Induction of labour (IOL)	Starting uterine contractions before spontaneous labour, aiming for vaginal birth.
Cervical ripening	Softening, thinning and opening of an unfavourable cervix before or during induction, by mechanical or pharmacological means.
Unfavourable cervix	Bishop ≤6 (NICE; ACOG PB 107). SOGC: modified Bishop <7. ACOG CPG 9 (2025): no universal cut-off; 3–8 used in trials. Bishop >8 (≥9) gives a vaginal birth rate similar to spontaneous labour.
Tachysystole	ACOG: >5 contractions in 10 min, averaged over 30 min. NICE (2026): ≥5 in 10 min for ≥20 min. Hypertonus: one contraction lasting ≥2 min. Always state whether the FHR is affected.
Failed induction	ACOG CPG 8 (2024): no latent-phase progress after at least 12–18 h of oxytocin after membrane rupture, mother and fetus well. Not the same as an unripe cervix after ripening, or arrest at ≥6 cm (Section 10).

Bishop score

Score	Dilation (cm)	Effacement (%)	Station	Consistency	Position
0	Closed	0–30	−3	Firm	Posterior
1	1–2	40–50	−2	Medium	Mid
2	3–4	60–70	−1, 0	Soft	Anterior
3	≥5	≥80	+1, +2	—	—

Simplified Bishop (dilation + effacement + station, 0–9): a score >5 predicts success as well as a full Bishop >8. Ultrasound cervical length and fetal fibronectin add nothing useful. A Bishop <5 carries a 2–3-fold higher caesarean rate than spontaneous labour (Obstetric EBG).

02 When to induce



Figure 1. *Suggested timing of birth by indication (ACOG CO 831 unless stated).*

IF	THEN
Uncomplicated pregnancy, 39⁺⁰ wk	• **ACOG/SMFM:** induction may be offered to low-risk, well-dated nulliparas (ARRIVE: CS 18.6% vs 22.2%; hypertensive disorders 9.1% vs 14.1%) • **SOGC:** not routine at 39 wk, except maternal age ≥40 · **NICE:** no routine 39-week offer · **WHO:** women may consider it where it can be done safely
Uncomplicated pregnancy, 41⁺⁰ wk	• **WHO, SOGC:** offer induction at ≥41⁺⁰ · **ACOG:** may consider at 41⁺⁰–41⁺⁶; recommend by 42⁺⁰–42⁺⁶ • **NICE:** discuss that induction from 41⁺⁰ may reduce stillbirth risk; offer extra monitoring from 42 wk if she declines • INDEX: adverse perinatal outcome 1.7% vs 3.1% with induction at 41 vs 42 wk; SWEPIS stopped early: 0 vs 6 perinatal deaths
Term PROM	• **ACOG:** induce (oxytocin first choice); 12–24 h expectant care is acceptable • **NICE:** induction now or expectant care up to 24 h, then offer induction · **SOGC:** induce as soon as resources allow, or wait up to 24 h • GBS positive: induce now (NICE immediate IOL or CS; SOGC with antibiotic prophylaxis)
Suspected macrosomia, no diabetes	• NICE: discuss expectant care, induction or CS neutrally · SOGC: not an indication before 39 wk · WHO: induction not recommended • Big Baby trial (2025): induction at 38⁺⁰–38⁺⁴ did not significantly reduce shoulder dystocia (2.3% vs 3.1%, ITT)

IF	THEN
Maternal request	NICE: consider only after discussing benefits, risks and her preferences. SOGC: weigh resources and local CS rates.
Breech	NICE: induction not generally recommended; consider only if birth must be expedited, ECV failed or declined, and she declines CS.
Membrane sweep to avoid formal induction	• Offer after 39^{+0} wk (NICE) or from 38 wk (SOGC); GBS is not a contraindication • Labour within 48 h: about 36% vs 17%; formal induction ↓27% (RR 0.73); no change in CS

03 Contraindications and checks

Do not induce (plan caesarean)	Proceed only with senior input
Placenta praevia or vasa praevia	One or two previous low transverse caesareans (Section 7)
Transverse or oblique lie; cord prolapse	Breech (see above), twins, high parity
Previous classical or T incision, prior uterine rupture, myomectomy entering the cavity or extensive transfundal surgery	Maternal cardiac disease, severe hypertension
Active genital herpes; HIV with viral load >1000 copies/mL	Abnormal FHR not needing immediate birth
Fetal compromise that will not tolerate labour; any other contraindication to vaginal birth	Low-lying placenta: no balloon

IF	THEN
Before any induction	• Confirm dating (early ultrasound), indication and timing; document consent and the plan • Presentation and head level; Bishop score; normal CTG; no regular contractions (NICE) • Check for a uterine scar and the placental site
Starting prostaglandin	Give it in or near the delivery suite with CTG available; CTG before and after each dose (SOGC: ≥20 min after each misoprostol dose). Not with regular contractions or oxytocin running.
After ripening, labour begins	Manage as spontaneous labour. Intermittent auscultation is acceptable if low risk and CTG normal (NICE); continuous CTG with oxytocin.

04 Choosing a method

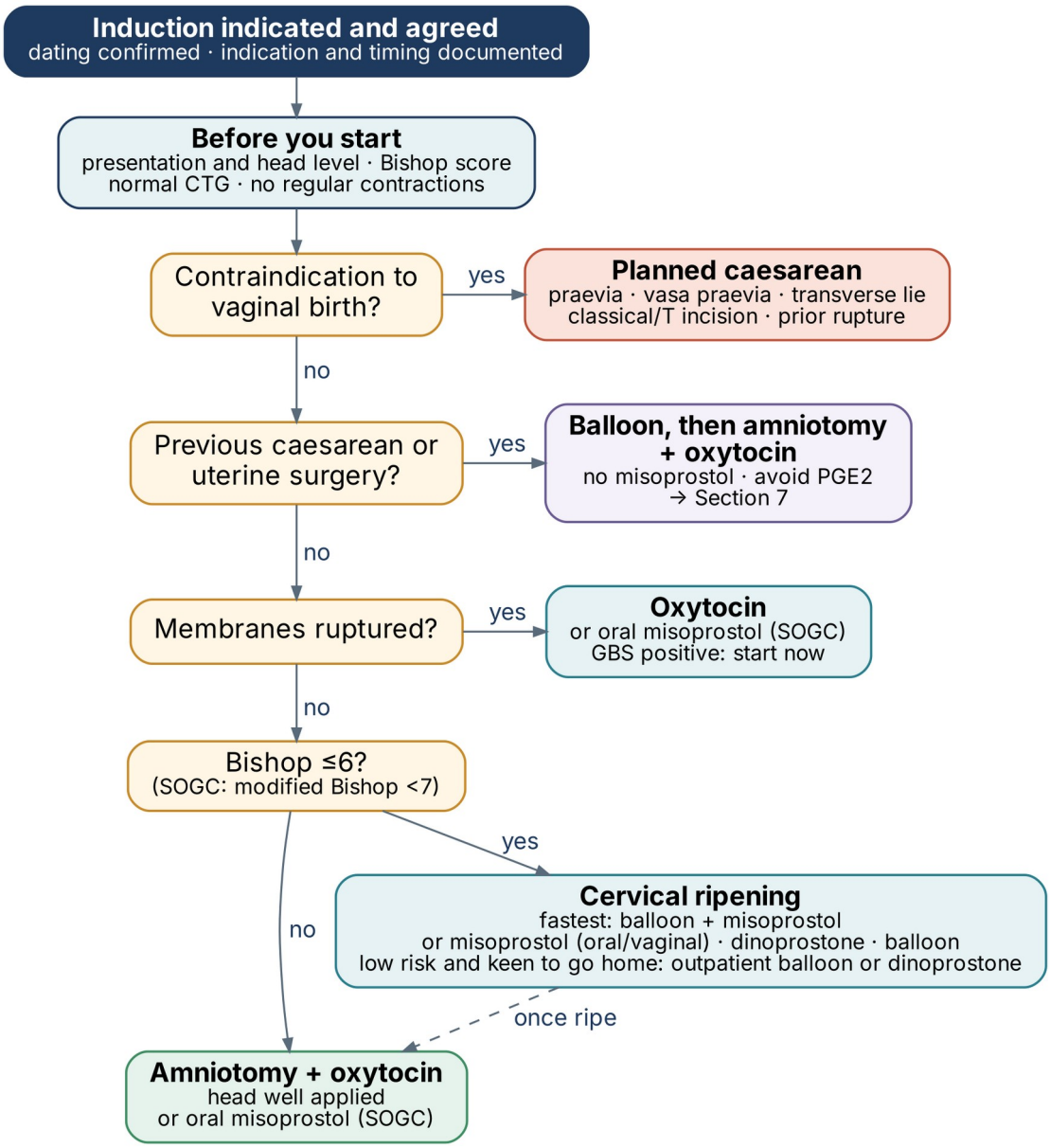


Figure 2. *From indication to method.*

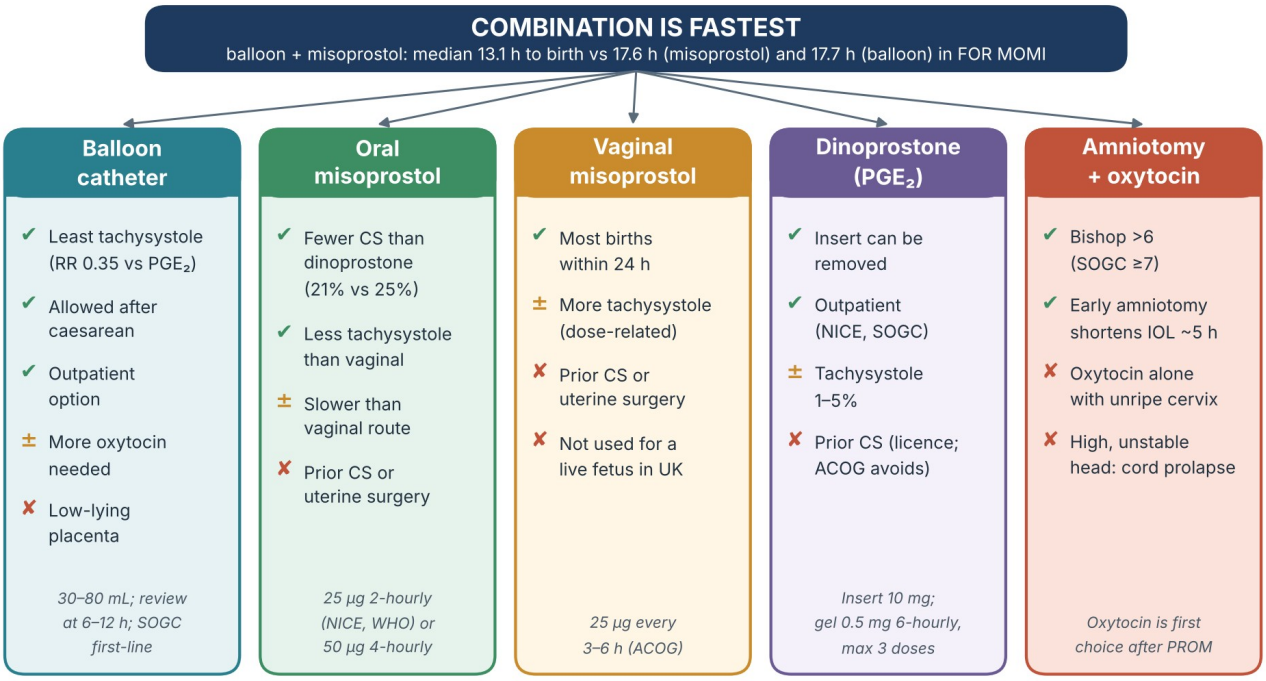


Figure 3. *The main methods: strengths, limits and doses.*

IF	THEN
Unfavourable cervix, intact membranes, no scar	• **ACOG CPG 9:** pharmacological, mechanical or combination methods (strong); combination suggested to shorten admission-to-birth (conditional) • Best evidence for combination: 30 mL Foley + vaginal misoprostol 25 µg (network meta-analysis); balloon + misoprostol ranked best for CS and birth >24 h • **NICE:** offer vaginal dinoprostone or oral misoprostol 25 µg; consider a balloon if prostaglandins are unsuitable or she prefers it • **SOGC:** balloon first-line when feasible; prostaglandin and balloon may be used together
Need to avoid tachysystole (FGR, abnormal Doppler, scar)	Prefer a balloon: tachysystole RR 0.35 vs PGE_2, 0.39 vs vaginal misoprostol.
Favourable cervix (Bishop >6; SOGC ≥7)	Amniotomy + oxytocin; SOGC also allows oral misoprostol.
Cervix still unripe after one course	Do not repeat the same agent in sequence: it lengthens induction without lowering CS (Obstetric EBG). Add a second method or move to amniotomy + oxytocin when feasible (Section 10).
Methods without support	Oral, IV or extra-amniotic PGE_2, $PGF_2\alpha$, mifepristone (live fetus), hyaluronidase, oestrogen, relaxin, nitric oxide donors, castor oil, acupuncture, homeopathy (NICE; Obstetric EBG). Sublingual misoprostol: not for routine use (ACOG).

How well each method works

Comparison	Vaginal birth / speed	Caesarean	Tachysystole	Source
Oxytocin vs expectant care	Not delivered in 24 h: 8% vs 54%	RR 1.17	—	Cochrane
Oxytocin alone vs vaginal PGE_2 (unripe)	Not delivered in 24 h: 70% vs 21%	No difference	—	Cochrane
Oral vs vaginal misoprostol	Birth in 24 h 49% vs 61%	No difference	3.9% vs 5.7%	Cochrane 2021

Comparison	Vaginal birth / speed	Caesarean	Tachysystole	Source
Oral misoprostol vs dinoprostone	Similar	21% vs 25% (RR 0.84)	RR 0.49 with FHR change	Cochrane 2021
Misoprostol vs dinoprostone (IPD)	Vaginal birth 77.6% vs 77.4%	—	—	IPD 2024
Balloon vs vaginal PGE_2	Similar	No difference	RR 0.35; serious neonatal morbidity RR 0.48	Cochrane 2023
Balloon vs vaginal misoprostol	Slower	RR 1.28 (more with balloon)	RR 0.39	Cochrane 2023
Balloon + misoprostol vs either alone	Median 13.1 h vs 17.6 h and 17.7 h	No difference	—	FOR MOMI
Outpatient vs inpatient balloon	Vaginal birth 67.8% vs 70.2%	—	—	IPD 2025
Elective induction overall	Vaginal birth: multiparas 97%, nulliparas 76%	—	—	Williams

05 Regimens

Agent	Regimen	Avoid if	Watch for · next step
Balloon catheter	Single Foley or double balloon (no advantage, costlier); 30–80 mL saline above the internal os; digital insertion is fine. >30 mL shortens time to birth by about 2 h. Traction optional. Reassess at 12 h (no advantage beyond 6 h, ACOG)	Low-lying placenta or praevia; ruptured membranes (insufficient data, ACOG)	Discomfort. Expulsion → amniotomy + oxytocin. Oxytocin may run alongside
Oral misoprostol	ACOG: 20–25 µg every 2 h or 50–100 µg every 4 h (static dosing preferred). NICE/WHO: 25 µg every 2 h. UK licence: max 200 µg/24 h	Previous CS or uterine surgery; abnormal CTG; regular contractions; with oxytocin	Tachysystole. Oxytocin ≥4 h after the last dose (ACOG, UK licence; SOGC ≥2 h)
Vaginal misoprostol	25 µg every 3–6 h (ACOG); WHO 25 µg every 6 h. 50 µg every 6 h in some settings	As above. NICE: not for a live fetus	Dose-related tachysystole (BMI ≥30: 22% on 50 µg vs 10% on 25 µg). Oxytocin ≥4 h after
Dinoprostone insert	10 mg in the posterior fornix; ACOG up to 12 h, UK licence up to 24 h; lie down 2 h	Previous CS (licence; ACOG avoids); unexplained bleeding; ≥6 previous term births; caution with ROM, asthma, glaucoma (manufacturer)	Tachysystole 1–5%: pull the tape. Oxytocin ≥30 min after removal
Dinoprostone gel	0.5 mg intracervical every 6 h, max 3 doses (1.5 mg/24 h); lie down 30 min	As above	Oxytocin 6–12 h after the last dose (SOGC ≥6 h)
Oxytocin	Section 6	Unripe cervix as the sole agent	Water intoxication with high doses and hypotonic fluid

06 Amniotomy and oxytocin

IF	THEN
Favourable cervix, or after ripening	**Amniotomy + IV oxytocin** (NICE offer at Bishop >6; SOGC at ≥7). ACOG CPG 8: amniotomy recommended during induction; early amniotomy shortens induction by about 5 h.

IF	THEN
Doing the amniotomy	• Head well applied; avoid if high and unstable (cord prolapse); fundal or suprapubic pressure can help • FHR before and straight after; note liquor colour • Amniotomy alone: WHO not recommended; NICE allows her to delay oxytocin, but labour may be longer and neonatal infection risk higher
Choosing a regimen	Low-dose or high-dose are both reasonable (ACOG CPG 8). Use one unit protocol and a safety checklist.
Adequate contractions	3–5 in 10 min, or ≥200 Montevideo units by IUPC. ACOG: no maximum dose established; likelihood of vaginal birth falls above 36 mU/min but half still deliver at 72 mU/min (Williams).
High doses for a long time	Concentrate the solution rather than raise the volume; use isotonic fluid (antidiuretic effect from about 20 mU/min).
Membranes ruptured, no labour	Oxytocin is the usual agent (ACOG); oral misoprostol is an alternative (SOGC, WHO). Start promptly if GBS positive.

Oxytocin regimens

Regimen	Start (mU/min)	Increase (mU/min)	Interval (min)	Note
Low dose	0.5–2	1–2	15–40	Less tachysystole
High dose	4–6	3–6	15–40	Shorter induction; after tachysystole restart at half the dose and increase by 3 (Williams)

Typical infusion: 10 units in 1000 mL = 10 mU/mL. Run by pump, piggybacked close to the cannula.

07 Induction after caesarean (TOLAC)

IF	THEN
Previous classical or T incision, prior rupture, extensive transfundal surgery	Not a TOLAC candidate: planned caesarean (ACOG PB 205).
One or two low transverse caesareans, induction indicated	• Offer a choice of induction or planned caesarean (NICE); counsel with numbers below • Induction lowers VBAC success: 51% vs 65% with no prior vaginal birth, 83% vs 88% with one (Grobman 2007) • RCOG GTG 45: rupture risk 2–3-fold and CS 1.5-fold higher than with spontaneous VBAC labour
Choosing the method	• **Balloon first** (SOGC first-line; NICE mechanical), then amniotomy + oxytocin • **No misoprostol** after caesarean or major uterine surgery (ACOG Level A, NICE, SOGC, WHO, FIGO) • PGE_2: ACOG insufficient evidence, avoided by extrapolation (CPG 9); UK licence contraindication
Uterine rupture risk	• Repeat CS without labour 0.16% · spontaneous labour 0.4–0.5% · augmented 0.9% · oxytocin induction 0.8–1.1% · prostaglandin ± oxytocin 1.4–2.5% · misoprostol 5.6% (vs 0.2%) • Balloon after one low transverse CS: comparable to spontaneous labour

IF	THEN
Oxytocin in TOLAC	Allowed; no upper limit established but rupture risk rises with dose (ACOG). Continuous CTG.
Unfavourable cervix, no previous vaginal birth, 39–40 wk	Higher risk of rupture, sepsis and hysterectomy with induction; discuss repeat caesarean (Obstetric EBG).
Signs of rupture	Abnormal FHR (commonest), new pain, bleeding, loss of station, haematuria, maternal instability → category 1 caesarean.

08 Outpatient ripening

IF	THEN
Low risk, wants to go home	• **ACOG:** safe and effective in low-risk patients (conditional); best evidence for dinoprostone or a single balloon • **NICE:** consider dinoprostone or a mechanical method if no medical or obstetric complications · **SOGC:** balloon or PGE_2; misoprostol inpatient only • **WHO:** not routinely recommended; consider within an organised programme with rapid return
Not suitable	Any maternal or fetal indication for monitoring (hypertension, FGR, abnormal Doppler, diabetes on insulin), previous CS, non-cephalic presentation, no transport, misoprostol (NICE, SOGC).
Before discharge	Normal CTG for 1–2 h after the agent; written instructions; agreed review time (Obstetric EBG, NICE).
Return at once if	Regular contractions, ruptured membranes, bleeding, reduced fetal movements, severe pain, the device falls out, or no contractions by the agreed time.
What to expect	Vaginal birth 67.8% outpatient vs 70.2% inpatient (balloon, IPD 2025); lower with outpatient balloon in women with obesity. About 4 fewer hours on the labour ward.

09 Tachysystole

IF	THEN
Tachysystole, FHR normal	Reduce oxytocin; no further prostaglandin; reposition; keep watching.
Tachysystole with abnormal FHR	• Stop oxytocin; **remove the dinoprostone insert**; left lateral; IV fluid bolus; continuous CTG • Gel cannot be removed effectively; misoprostol cannot be retrieved, so its effect may last longer (NICE) • No routine maternal oxygen (ACOG CPG 10)
Not resolving	Acute tocolysis (ACOG; NICE: consider tocolysis). **Terbutaline 0.25 mg SC** is the usual choice; repeat once after 15 min if needed. Avoid with maternal tachycardia or cardiac disease.

IF	THEN
No terbutaline: salbutamol	• **Salbutamol 100 µg slow IV**, or **100 µg by inhaler** (NHS Swansea Bay protocol); effect usually within 5 min • Inhaled salbutamol has not been tested in trials for tachysystole; if it fails, move to GTN or IV salbutamol rather than repeating puffs • Avoid with cardiac disease, maternal tachycardia or hyperthyroidism; watch glucose in diabetes
No terbutaline: glyceryl trinitrate (GTN)	• **GTN 400 µg sublingual spray** (one puff), or **50–200 µg IV bolus**; acts within minutes and wears off quickly • Check BP first; avoid if hypotensive, bleeding or hypovolaemic, or on a PDE-5 inhibitor. Expect headache and flushing • Unlicensed for this use; record the decision and her consent
Only GTN patches available	• **Not suitable for acute tachysystole.** Transdermal GTN takes too long to act and cannot be titrated or switched off quickly; it was studied as maintenance tocolysis in preterm labour (10 mg/24 h), where it did not prolong pregnancy (Cochrane 2014) • Ask pharmacy to stock sublingual GTN spray or IV GTN for labour ward use
Persistent bradycardia or abnormal FHR	Expedite birth; think of uterine rupture or abruption.
Resolved, tracing reassuring	Restarting oxytocin is reasonable (ACOG). Many units restart at half the previous rate.

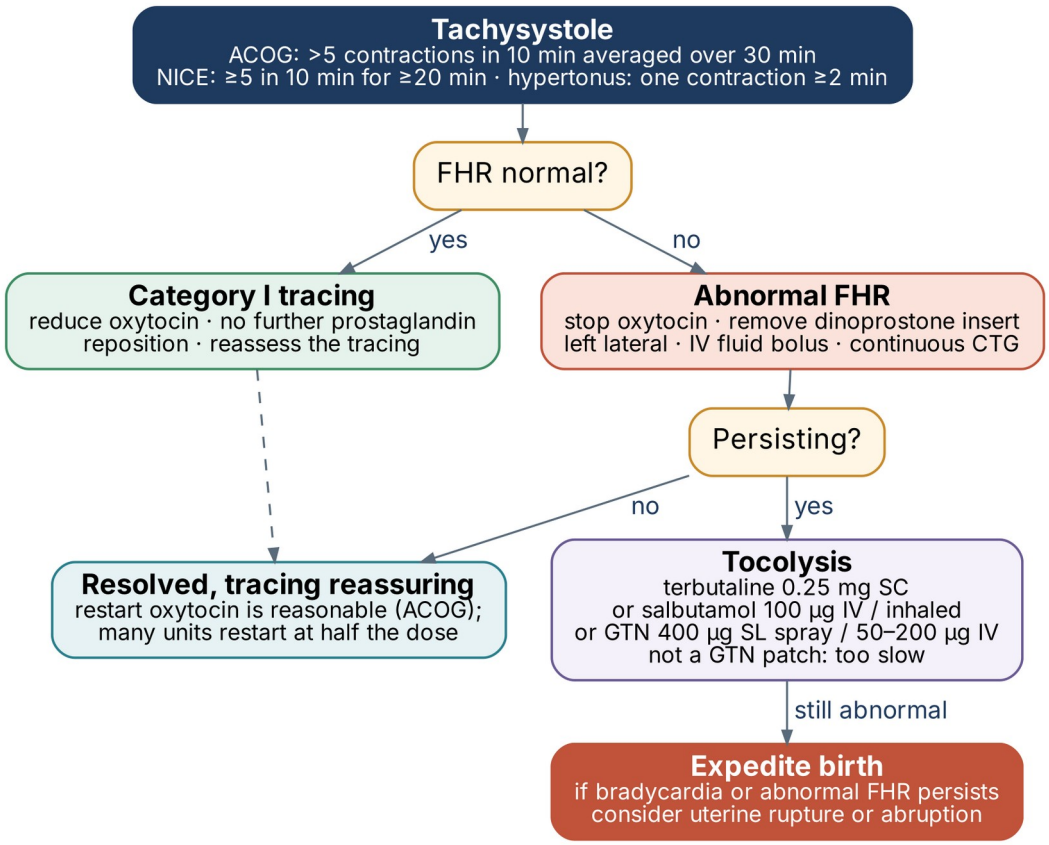


Figure 4. *Responding to excessive uterine activity during induction.*

10 Failed induction

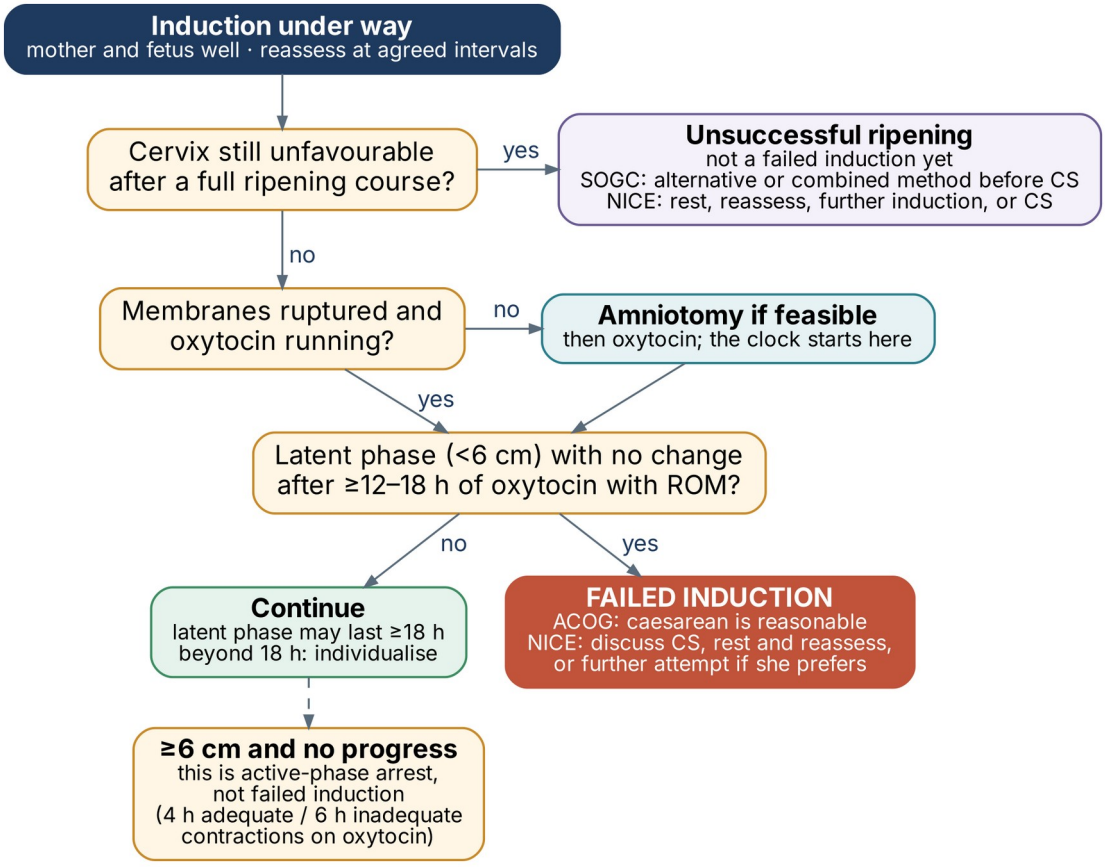


Figure 5. *Unripe cervix, failed induction and active-phase arrest are different problems.*

IF	THEN
Definition	• **ACOG CPG 8 (2024):** no latent-phase progress after at least 12–18 h of oxytocin after membrane rupture, with reassuring maternal and fetal status; continuing beyond 18 h can be individualised. It replaces the older ≥24 h wording (OCC 1, 2014) • **Obstetric EBG:** allow 18–24 h of oxytocin with ruptured membranes; not reaching the active phase in 24 h is not by itself a reason for CS • **NICE:** labour has not started after one cycle of treatment (unsuccessful induction)
Before you call it	• Has ripening finished and the cervix changed? • Are membranes ruptured? If not and feasible, rupture them • Is oxytocin titrated to adequate contractions (≥200 MVU)? • Mother and fetus well? An urgent indication lowers the threshold for CS
Cervix still unripe after a full ripening course	Not yet a failed induction. Add or switch method (SOGC: alternative or combined method before CS), allow a rest period and reassess, or offer CS after discussion (NICE).
Failed induction confirmed	• **ACOG:** caesarean is reasonable • **NICE:** discuss with her; options are a rest and reassessment, expectant care if the indication allows, further induction, or CS • Fully reassess with CTG before any further attempt

IF	THEN
Reached ≥6 cm and stopped	This is active-phase arrest: no change despite 4 h of adequate or 6 h of inadequate contractions on oxytocin, with ROM (ACOG). Manage as labour dystocia, not failed induction.
Counselling	Inductions lasting >24 h carry a CS rate of about 50% (Obstetric EBG), but a long latent phase does not worsen neonatal outcome while the FHR stays reassuring.

11 Do not

- Induce before 39^{+0} wk without an indication, or without confirmed dating.
- Use misoprostol, or other prostaglandins outside local policy, after a caesarean or uterine surgery.
- Start prostaglandin with regular contractions or oxytocin running; start oxytocin within 4 h of misoprostol or 30 min of removing the insert.
- Use oxytocin alone to induce with an unripe cervix, or amniotomy alone as the induction method (WHO).
- Rupture membranes with a high, unstable presenting part.
- Give sublingual misoprostol, or vaginal doses above 25 µg as routine.
- Repeat the same ripening agent in sequence instead of adding a method or moving to oxytocin.
- Diagnose failed induction before membranes are ruptured and oxytocin has run for at least 12–18 h.
- Send women home on misoprostol (NICE, SOGC), or offer outpatient ripening when monitoring is indicated.
- Rely on a GTN patch to treat acute tachysystole.
- Use castor oil, nitric oxide donors, hyaluronidase, mifepristone (live fetus), or breast stimulation in high-risk women.

12 Where the guidelines differ

Topic	ACOG / SMFM	NICE	SOGC	WHO
Elective 39 wk	May offer to low-risk nulliparas (ARRIVE)	Not addressed	Not routine; offer if age ≥40	May consider where safe
Uncomplicated, late term	Consider 41^{+0}–41^{+6}; by 42 wk	Discuss from 41^{+0}	Offer at ≥41^{+0}	Recommend at ≥41^{+0}
Unfavourable cervix	No fixed cut-off (CPG 9)	Bishop ≤6	Modified Bishop <7	—
First-line ripening	Prostaglandin, balloon or combination	Dinoprostone or oral misoprostol; balloon 'consider'	Balloon when feasible	Oral or vaginal misoprostol, PGE_2, balloon
Misoprostol	Oral 25 µg 2-hourly or 50–100 µg 4-hourly; vaginal 25 µg 3–6-hourly	Oral 25 µg only	Oral solution 20–25 µg titrated	Oral 25 µg 2-hourly; vaginal 25 µg 6-hourly
Balloon + oxytocin	Listed combination	Silent	Prostaglandin + balloon allowed	Recommended (2022)
Outpatient	Dinoprostone or balloon, low risk	Dinoprostone or mechanical	Balloon or PGE_2; no PGE_1	Not routine
Membrane sweep	—	After 39^{+0}	From 38 wk	Recommended
Failed induction	≥12–18 h oxytocin after ROM	Labour not started after one cycle	Try another method before CS	—
After caesarean	No misoprostol; PGE_2 avoided; balloon, oxytocin	Mechanical preferred; prostaglandins off-licence	Balloon first; no PGE_1	No misoprostol

Topic	ACOG / SMFM	NICE	SOGC	WHO
Term PROM	Induce; may wait 12–24 h	Induce or wait up to 24 h	Induce or wait up to 24 h	Induce

A dash means no verified position. RCOG has no current induction guideline (UK practice follows NICE NG207; RCOG GTG 45 covers birth after caesarean). SOGC dosing details sit behind a paywall; SOGC cells rest on its recommendation boxes.

13 Sources

Textbooks

- Cunningham FG et al. Williams Obstetrics, 26th ed. Ch. 26 Induction and Augmentation of Labor.
- Berghella V (ed). Obstetric Evidence Based Guidelines, 4th ed. Ch. 23 Induction of Labor (Tables 23.1–23.4). Maternal-Fetal Evidence Based Guidelines, 4th ed. (timing by condition).

Guidelines checked (October 2026)

- ACOG Clinical Practice Guideline No. 9, Cervical Ripening in Pregnancy (2025; replaces PB 107). ACOG CPG No. 8, First and Second Stage Labor Management (2024; replaces OCC 1). ACOG CPG No. 10, Intrapartum FHR Monitoring (2025).
- ACOG Committee Opinion 831, Medically Indicated Late-Preterm and Early-Term Deliveries (2021). ACOG PB 146, Late-Term and Postterm Pregnancies (2014, reaffirmed). ACOG PB 205, VBAC (2019). ACOG PB 217, PROM (2020). ACOG/SMFM ARRIVE Practice Advisory (2018).
- NICE NG207, Inducing Labour (2021; updated 2022, 2023, 2026). RCOG GTG 45, Birth after Previous Caesarean (2015).
- SOGC Guideline 432a, b, c: Cervical Ripening and Induction of Labour (2023).
- WHO recommendations for induction of labour (2011); induction at or beyond term, mechanical methods, and outpatient settings (2022). FIGO misoprostol chart (2023).
- Acute tocolysis: Kulier 1998 Cochrane (betamimetics for fetal distress); Cochrane 2014 nitric oxide donors for preterm labour; NHS Swansea Bay hyperstimulation guideline (2022). Trials and reviews: ARRIVE (2018); INDEX and SWEPIS (2019); FOR MOMI (2016); Big Baby (2025); Cochrane oral misoprostol (2021), mechanical methods (2023), membrane sweeping (2020); Landon 2004, Lydon-Rochelle 2001, Grobman 2007 (TOLAC).

Decision aid only: it does not replace clinical judgement or local protocols. Verify drug doses against your formulary.