this & that

12

OBGYN QUICK GUIDES · IF THIS, THEN THAT

NO.

Second Stage of Labour

& operative vaginal birth

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Assessment & management

Verified against ACOG · SMFM · RCOG/NICE · SOGC · WHO — October 2026

Second stage of labour & operative vaginal birth

At a glance: the numbers to remember

3 h / 2 h
ACOG: pushing before calling arrest, nullipara / multipara

1 h / 2 h
NICE nullipara: reassess at 1 h of pushing; senior review if birth not imminent at 2 h

≤1/5
head palpable abdominally before any OVD

3 pulls
no imminent birth → stop (RCOG, FIGO)

1 dose
co-amoxiclav after OVD (UK, FIGO; ANODE 11% vs 19%)

Scope: term, singleton, cephalic presentation, from full dilation to birth of the baby. Shoulder dystocia and the third stage are not covered. Where societies disagree, each position carries the society name; follow your local protocol. Abbreviations are listed in Section 13.

01 Definitions

	ACOG / SMFM	NICE NG235	WHO 2018	FIGO 2025
Second stage	Full dilation (10 cm) to birth	Same	Same	Same
Passive phase	Not used; push at full dilation	Full dilation without pushing; up to 2 h (nullipara) or 1 h (multipara) with epidural	Delayed pushing recommendation retired 2025	No routine delay
Active phase	Pushing	Baby visible, or pushing (involuntary or directed) at full dilation	—	—
Prolonged / delay	>3 h pushing (nullipara), >2 h (multipara); no separate epidural limit; individualise if progressing	Nullipara: birth expected within 3 h of active start; senior review if not imminent at 2 h. Multipara: within 2 h; review at 1 h	Usually ≤3 h (first birth), ≤2 h (later births)	Assisted birth for delay: nullipara >2 h (no epidural) or >3 h (epidural); multipara >1 h or >2 h
Arrest	Can be called earlier if no rotation or descent despite adequate contractions and pushing (good practice point)	"Diagnose delay" after reassessment shows no progress	—	—

- Zhang 95th centiles for the whole second stage: nullipara 3.6 h with epidural, 2.8 h without; multipara (parity 1) 1.6 h and 1.1 h (ACOG CPG 8).
- Median second stage: ≈50 min (nullipara) and ≈20 min (multipara) (Williams).
- The start of the second stage is only as accurate as the VE that found full dilation; time pushing, not time since an examination you did not do.

02 Head position & station

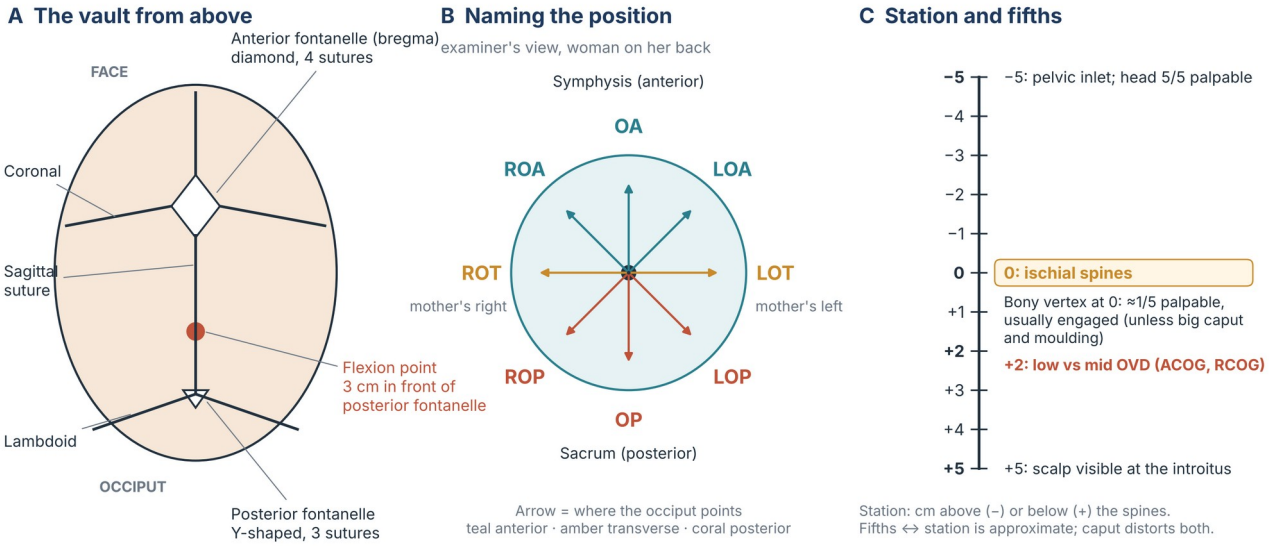


Figure 1. *Reading the head: sutures and fontanelles, naming the position by where the occiput points, and station against the ischial spines.*

IF	THEN
Before every VE	• Palpate the head above the brim in fifths: 5/5 free; ≤2/5 engaged • **≤1/5 palpable** before any assisted birth; ≥2/5 → do not proceed (RCOG); 0/5 preferred (Dewhurst) • Flat or scaphoid lower abdomen, limbs felt anteriorly: think OP (Dewhurst, Williams)
Abdomen and VE disagree (head ≥2/5 palpable, scalp low)	Believe the abdomen: that is caput and moulding, not descent. Scan and get a senior review (Section 6).

What to feel and record

Feature	How to feel it	What it means
Position	Follow the sagittal suture to a fontanelle. Posterior: small, Y-shaped, 3 sutures. Anterior: large diamond, 4 sutures	Name the position by where the occiput points (Figure 1). Most heads enter OT and rotate to OA
Ear (sutures hidden by caput)	Feel the pinna and the ear canal; the free edge of the pinna points to the occiput	Confirms position; the pinna can fold, so check the canal. A readily felt ear means substantial descent
Flexion	Posterior fontanelle central = flexed. Anterior fontanelle easily felt or central = deflexed	Flexed OA presents 9.5 cm (suboccipitobregmatic); deflexed OP 11.5 cm (occipitofrontal); brow 13–13.5 cm (mentovertical) → caesarean
Station	Leading bony part, not caput, in cm above (−) or below (+) the ischial spines; ACOG scale −5 to +5 since 1989 (Williams)	0 = spines; +5 = scalp visible at the introitus. Bony vertex at 0 usually means engaged, unless caput and moulding are marked
Caput	Boggy scalp oedema over the vertex; grade 0, +, ++, +++ (WHO LCG)	+++ → alert a senior (WHO). Growing caput without descent suggests obstruction (Dewhurst)
Moulding	+ sutures apposed; ++ overlapping, reducible; +++ overlapping, not reducible (WHO LCG, Dewhurst)	+++ → senior review; suggests disproportion
Asynclitism	Sagittal suture toward the sacrum (anterior asynclitism: anterior parietal presents) or toward the symphysis (posterior asynclitism)	Moderate degrees are normal; severe asynclitism is a common cause of disproportion (Williams) and a harder OVD (Dewhurst)

Record in one line, e.g. **LOP, station +2, caput +, moulding +, no asynclitism, 0/5 palpable**. Describe an assisted birth by position and station (e.g. LOP at +3), not just 'mid' or 'low' (Dewhurst).

Ultrasound when unsure

IF	THEN
Position unsure, especially before assisted birth	• Digital VE misjudges position in 20–70% (Obstetric EBG); 27% before instrumental birth, mostly by ≥90° (Akmal 2003) • **Transabdominal scan** above the symphysis: occiput and spine anterior = OA; orbits anterior = OP; midline echo transverse = OT (ISUOG 2018) • INSTRUMENT RCT: wrong position 1.6% vs 20.2% with scan, no delay to birth, no difference in morbidity (Ramphul 2014) • **RCOG:** scan if unsure after clinical examination; advised before Kielland's rotation (2023). **ACOG:** not required
Station unsure	• **Transperineal scan:** angle of progression (AoP) and head–perineum distance (HPD) (ISUOG) • AoP ≈116° ≈ station 0. AoP ≥120° → ≈90% spontaneous or easy vacuum birth in OA (Kalache 2009) • HPD ≈35–36 mm ≈ station 0. Before vacuum, HPD >35 mm → caesarean 22% vs 3.9% (Kahrs 2017); HPD ≥40 mm → difficult OVD (Kasbaoui 2017) • An adjunct to clinical assessment: no outcome benefit shown yet (ISUOG)

03 Pushing, position & monitoring

IF	THEN
Full dilation, no epidural	• Push with the urge; directed or spontaneous pushing give similar outcomes (Cochrane) • No urge after 1 h → reassess (NICE)
Full dilation with epidural, no urge, head not visible	• **ACOG:** start pushing now (strong recommendation) • **NICE:** may delay pushing up to 2 h (nullipara) or 1 h (multipara) • **SOGC:** delay if no urge, especially if station above +2 or not OA • Cahill 2018 (n = 2414): spontaneous birth 85.9% vs 86.5% (no difference); immediate pushing → second stage 32 min shorter, chorioamnionitis 6.7% vs 9.1%, PPH 2.3% vs 4.0%
Choosing a position, no epidural	Any upright or lateral position she chooses; avoid lying flat on the back (NICE). Upright: fewer assisted births (RR 0.75) and episiotomies, more blood loss >500 mL (RR 1.48) (Cochrane).
Choosing a position, with epidural	Lateral or recumbent: spontaneous birth 41% vs 35% upright (BUMPES). NICE: lying on the side may increase spontaneous birth.
Pain returns as the head descends	Keep the epidural running. Stopping it late does not reduce instrumental birth and triples inadequate analgesia (RR 3.68; Cochrane, Shen 2017).
Monitoring	• IA at least every 5 min after a contraction, for ≥1 min, with maternal pulse (NICE, FIGO); ACOG 5–15 min • VE hourly in the active second stage: position, descent, caput, moulding (NICE) • Bladder: encourage voiding; catheter if distended (it blocks descent)
Someone suggests fundal pressure	**Do not.** No benefit; cervical tears RR 4.90, levator injury (Cochrane, Obstetric EBG). WHO recommends against it.

IF	THEN
Prophylactic oxygen or betamimetics in a normal second stage	Do not use: more low cord pH with oxygen; more forceps with betamimetics (Obstetric EBG).

04 How long is too long?

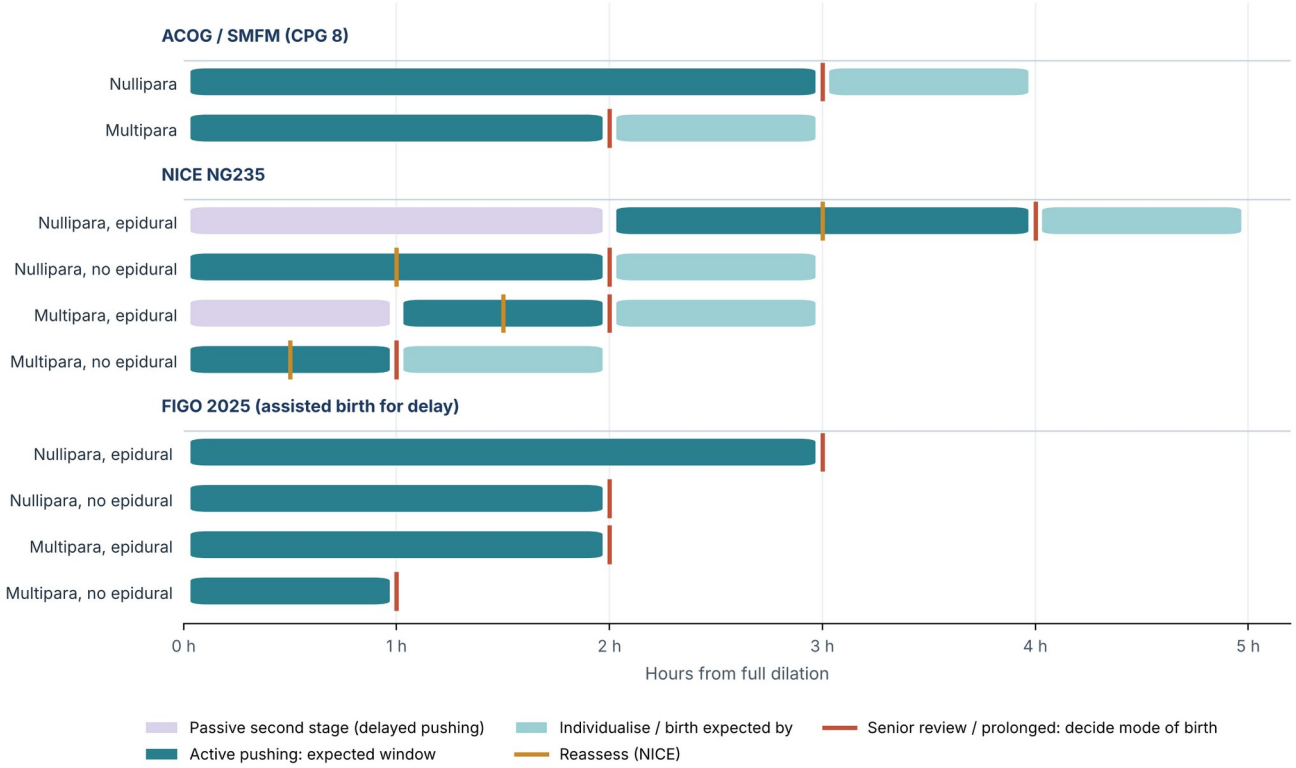


Figure 2. *Expected durations and decision points from full dilation, by society. ACOG pushing starts at full dilation.*

IF	THEN
Nullipara pushing 3 h (ACOG) and still descending, mother and fetus well	Individualise: a further hour halved CS in an RCT (19.5% vs 43.2%; Gimovsky 2016) without clear extra neonatal harm. Senior review hourly.
NICE nullipara: 1 h of active pushing	Reassess; offer VE; consider amniotomy if membranes intact. No progress → diagnose delay → senior review.
NICE nullipara: 2 h of active pushing, birth not imminent	Senior review for place and mode of birth.
NICE multipara: 30 min / 1 h of active pushing	Reassess at 30 min; senior review if birth is not imminent at 1 h.
No rotation or descent despite good contractions and pushing	Do not wait for the clock: arrest can be called earlier (ACOG good practice point).
Pushing <2 h, mother and fetus well, progress continuing	No operative birth for time alone (SOGC).
Longer second stage	More chorioamnionitis, PPH, OASI and operative birth; neonatal risk rises mainly when FHR is abnormal (Obstetric EBG). Weigh against a second-stage caesarean.

05 Delay in the second stage

IF	THEN
Delay diagnosed	• Obstetrician assesses in person: fetal wellbeing, maternal vs fetal heart rate, contractions, position, station, caput, moulding, signs of obstruction (NICE) • Ultrasound for position if unsure (digital VE ≈80% accurate vs >99% by scan; Obstetric EBG) • Support, analgesia, empty bladder, change position • Obstetric review every 15–30 min once delay is diagnosed (NICE)
Contractions inadequate, nullipara, no obstruction	• **Oxytocin** after obstetric assessment; increase no more often than every 30 min, aim 3–4 in 10 min (NICE) • NICE: do not use oxytocin routinely in the second stage with an epidural
Contractions inadequate, multipara	Senior decision only; obstruction and malposition first. Uterine rupture risk (Dewhurst).
Head >1/5 palpable, or above the spines, or marked caput and moulding	Disproportion until proven otherwise → caesarean birth; no instrumental attempt.
Second-stage arrest, OVD criteria met	ACOG suggests assessing for operative vaginal birth before caesarean (conditional recommendation). FIGO: offer assisted birth rather than second-stage CS where appropriate.
Persistent OT or OP → Section 6	Consider manual rotation before choosing an instrument.

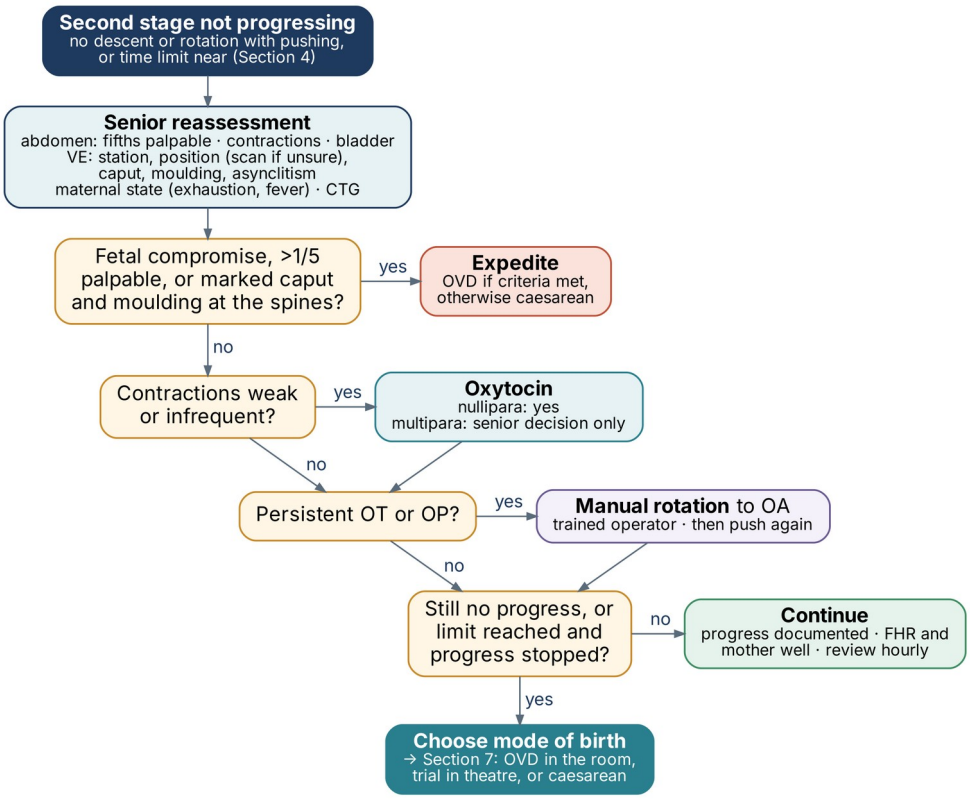


Figure 3. *Second stage not progressing: reassess, correct what can be corrected, then choose the mode of birth.*

06 Malposition: OT and OP

IF	THEN
Persistent OP	• 2–10% of term cephalic births; more prolonged second stage, CS, OVD, OASI, PPH and neonatal morbidity (Williams) • Maternal position changes do not correct it
OT or OP at full dilation, head engaged, trained operator	• **Manual rotation** to OA between contractions: flex, slightly destation (do not disengage), rotate; hold during pushes • Success ≈72–89%; complications uncommon (cervical tears, FHR change) • Evidence mixed: PROPOP operative birth 29.4% vs 41.2%; TURN-OUT 62% vs 71% (NS); Cochrane 2025 RR 0.92 (0.81–1.04), low certainty • ACOG: may reduce CS and OVD; SOGC: reduces assisted birth
Rotation fails or not possible	• Rotational vacuum (Kiwi OmniCup at the flexion point), Kielland's forceps (experienced operator or direct supervision; RCOG 2023 addendum), or OP delivery by forceps or vacuum • Kielland's: stop if rotation is not easy with gentle pressure; scan position first
Mid-cavity malposition	Trial of instrumental birth in theatre with regional anaesthesia and CS ready (Section 7).
Scalp at the introitus but head 2/5 or more palpable	Caput and moulding, not descent. Caesarean (Williams).

07 Operative vaginal birth

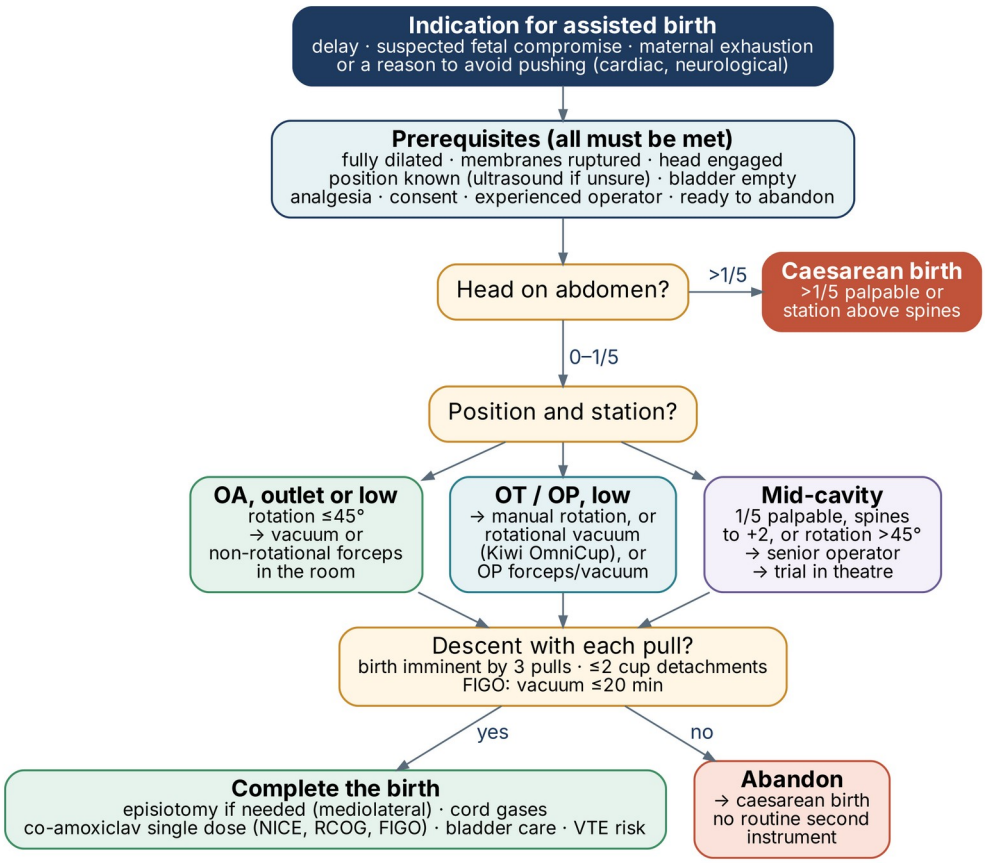


Figure 4. *Assisted vaginal birth: prerequisites, choosing the place and method, and when to stop.*

Classification

Type	ACOG PB 219	RCOG GTG 26	Practical meaning
Outlet	Scalp visible without separating labia; skull on pelvic floor; rotation ≤45°	Same	Usually straightforward; in the room
Low	Leading point ≥+2 cm, not on pelvic floor; rotation ≤45° or >45°	Same; subdivided by rotation ≤45° or >45°	Room or theatre by risk
Mid	Above +2 cm, head engaged	Head ≤1/5 palpable; leading point at spines to +2 cm	Senior operator; theatre trial
High	Not included	Not acceptable	Caesarean

Choosing the instrument

Outcome	Vacuum	Forceps
Failure to deliver	More (forceps RR 0.65 for failure)	Fewer
3rd/4th-degree tears	7.5%; about 2× spontaneous birth	14% (RR 1.89 vs vacuum); about 6× spontaneous birth
Vaginal wall tears	8%	26%
Neonatal	Cephalhaematoma, subgaleal haemorrhage (≈1 in 300), retinal haemorrhage, jaundice	Facial nerve palsy, facial injury (RR 5.10), skull fracture
Intracranial haemorrhage	≈1 in 860	≈1 in 664 (CS in labour 1 in 907; abnormal labour is the shared risk)
Gestation	ACOG: discouraged <34 wk; RCOG: avoid <32 wk, caution 32–36 wk; RANZCOG: not <34 wk	Usable preterm
Rotation	Rotational cup (Kiwi) at flexion point; traction, not rotation	Kielland's for skilled operators

Both instruments are acceptable; choose by position, station, gestation and your own skill (ACOG, FIGO, SOGC).

Conduct and stopping rules

IF	THEN
Before you start	• Prerequisites met (Figure 4); position confirmed, by scan if unsure • Consent, documented indication, time of decision; SMFM checklist • Paediatrician present; regional block for mid-cavity or rotational births, pudendal + infiltration for low
Higher chance of failure: BMI >30, EFW >4 kg, OP, mid-cavity, head 1/5 palpable	Trial in theatre, with category 1 CS (≤30 min) immediately available (RCOG, SOGC, RANZCOG).
Vacuum technique	• Cup centre on the flexion point: sagittal suture ≈3 cm in front of the posterior fontanelle • 0.2 bar, check no maternal tissue trapped, then 0.7–0.8 bar (500–600 mmHg) • Traction with contractions along the pelvic axis; finger on the cup edge to feel detachment
No descent with a pull, birth not imminent after 3 pulls, or 2 cup detachments	**Stop** → caesarean (RCOG; FIGO also caps vacuum at 20 min). RANZCOG allows up to 3 detachments. ACOG sets no number but expects descent with traction.

IF	THEN
Thinking of switching instrument after failure	Not routinely (ACOG, FIGO, SOGC). Sequential vacuum then forceps: ICH RR 3.9, facial nerve RR 13.3, seizures RR 13.7 vs spontaneous birth (Gardella). Justify and document.
Vacuum applied >5 min	Cephalhaematoma ≈28%; prolonged vacuum is linked to ICH. Reassess (ACOG).
Episiotomy for OVD	• Not routine (ACOG, SOGC, FIGO); use judgement • If needed: mediolateral, ≈60° from the midline as the head distends the perineum (RCOG, FIGO); more often needed with forceps and in a first birth

After an assisted birth

IF	THEN
Any OVD	• **Co-amoxiclav 1.2 g IV single dose** within 6 h (NICE, RCOG, FIGO): infection 11% vs 19% (ANODE) • ACOG: not routinely; reasonable with episiotomy, consider with OASI • Penicillin allergy: local alternative
Then	• Paired cord gases; examine for OASI (rectal examination) • Bladder: time and volume of first void; catheter if regional block or retention • VTE risk assessment; analgesia; debrief before discharge (SOGC)
Neonate after vacuum	Watch for subgaleal haemorrhage: boggy swelling crossing sutures, pallor, tachycardia; tell the neonatal team the number of pulls and detachments.

08 Caesarean at full dilation & the impacted head

IF	THEN
Caesarean decided in the second stage	• Consultant involvement (NICE NG192); category 1 within 30 min, category 2 within 75 min • More endometritis than first-stage CS (4.3% vs 1.5%; ACOG) and more extensions and haemorrhage
Head deep in the pelvis (impacted)	• Up to 1 in 10 unplanned caesareans; about 2% of these babies die or are seriously injured (RCOG SIP 73, 2025) • Senior surgeon; anticipate: assistant ready to elevate the head vaginally before the hysterotomy
Disimpaction options	• Vaginal push: assistant flexes and elevates the head with the hand, after uterine relaxation • Pull: reverse breech extraction (fewer extensions and less blood loss in reviews; very low certainty); Patwardhan method • Tocolysis to relax the uterus (agent and dose per local protocol) • Balloon devices (Fetal Pillow): research only (NICE HTG744, RCOG SIP 73)
Extension needed	J-shaped or inverted-T extension; document; counsel on future pregnancies (Dewhurst).

09 The perineum

IF	THEN
Crowning, spontaneous birth	• **Warm compress** on the perineum (NICE: offer; ACOG): OASI RR 0.46 (Cochrane) • Perineal massage with lubricant if she prefers: OASI RR 0.49 • Manual perineal protection and controlled birth of the head (RCOG OASI Care Bundle: OASI 3.3% → 3.0%)
Episiotomy at spontaneous birth	• Not routine (NICE, ACOG, WHO, SOGC); not routinely after a previous 3rd/4th-degree tear (NICE) • Indications: suspected fetal compromise, assisted birth • Mediolateral from the fourchette, usually right, 45–60° to the vertical (NICE); tested analgesia first unless an emergency
After every vaginal birth	Systematic perineal and rectal examination; classify any tear (RCOG GTG 29).
Classifying the tear	Use the RCOG / Sultan grades in Figure 5. Unsure if 3a or 3b → classify as 3b.
OASI found	• Repair in theatre with regional anaesthesia by a trained operator • EAS: overlap or end-to-end (full thickness); end-to-end for partial; IAS separately; 3-0 PDS or 2-0 polyglactin • Antibiotics (RCOG: broad-spectrum; ACOG: single dose reasonable), laxatives ≈10 days, physiotherapy, review at 6–12 weeks

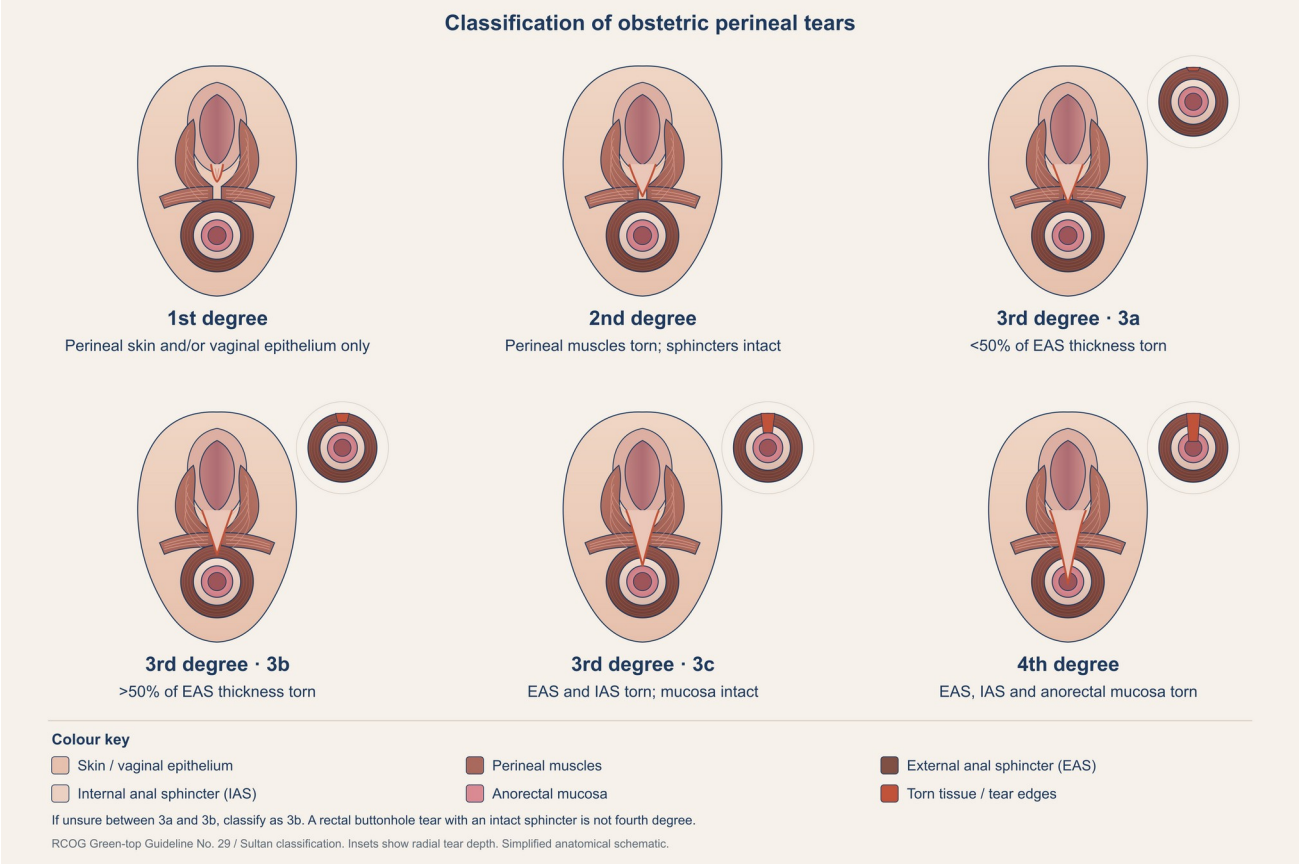


Figure 5. *Degrees of perineal tear (RCOG Green-top 29 / Sultan). Insets show how deep the tear runs through the sphincter complex.*

10 Special situations

IF	THEN
Abnormal FHR in the second stage	Fetal condition deteriorates faster than in the first stage (Dewhurst). Stop pushing briefly, intrauterine resuscitation (No. 11), then expedite if it does not resolve; FBS is rarely appropriate at full dilation.
Maternal condition where pushing is unsafe (cardiac disease, cerebrovascular malformation, severe PE)	Passive descent with good analgesia, then assisted birth to shorten pushing.
Previous caesarean	Same limits; low threshold for review if pain between contractions, bleeding, loss of station or new FHR changes (scar rupture).
Suspected macrosomia, diabetes, long second stage	Higher risk of shoulder dystocia, especially with mid-cavity OVD: senior operator, team ready (Obstetric EBG).
Preterm birth	Vacuum not below 32–34 weeks (Section 7); forceps if assistance is needed.
Fever ≥38 °C in the second stage	Treat as intra-amniotic infection (No. 11); expedite if progress is slow.

11 Do not

- Apply fundal pressure.
- Stop the epidural to improve pushing.
- Attempt OVD with the head >1/5 palpable, above the spines, or position unknown.
- Call station from the caput: measure the leading bony part.
- Continue after 3 pulls without imminent birth, or after 2 cup detachments (RCOG).
- Switch instruments routinely after a failed attempt.
- Use vacuum below 32 weeks (RCOG) or 34 weeks (ACOG, RANZCOG).
- Perform routine episiotomy, or a midline one.
- Perform an operative birth for time alone when progress continues and mother and fetus are well.
- Give oxytocin to a multipara in the second stage without senior assessment.
- Use a balloon disimpaction device outside research.

12 Where the guidelines differ

Topic	ACOG / SMFM	NICE / RCOG	WHO / FIGO	SOGC
When to push (epidural)	At full dilation (strong)	May delay ≤2 h nullipara, ≤1 h multipara	FIGO: no routine delay; WHO delay recommendation retired	Delay if no urge, above +2 or not OA
Prolonged second stage	>3 h / >2 h pushing; individualise	Review at 2 h / 1 h pushing; birth expected within 3 h / 2 h	FIGO: >2–3 h / >1–2 h by epidural; WHO usually ≤3 h / ≤2 h	No OVD before 2 h pushing if well
Oxytocin in second stage	—	Not routine with epidural; obstetrician assesses first	—	For inadequate labour
Vacuum gestation	Discouraged <34 wk	Avoid <32 wk; caution 32–36	—	—
Stop rules	No fixed number; expect descent	3 pulls; 2 detachments	FIGO: 3 pulls, 2 pop-offs, 20 min	—

Topic	ACOG / SMFM	NICE / RCOG	WHO / FIGO	SOGC
Antibiotic after OVD	Not routine; consider with episiotomy/OASI	Co-amoxiclav single dose	FIGO: co-amoxiclav 1.2 g (strong)	—
Episiotomy with OVD	Restrictive	Mediolateral 60° considered	Not routine; mediolateral 60° if used	Restrictive mediolateral
Station and position	Station in cm, −5 to +5; scan not required	Fifths and cm; ≤1/5 for assisted birth; scan if unsure	WHO LCG: fifths only; caput and moulding 0 to +++	—
Impacted head devices	—	Research only	FIGO 2021: Fetal Pillow where available	—

13 Abbreviations

Abbr.	Meaning	Abbr.	Meaning	Abbr.	Meaning
ACOG	American College of Obstetricians and Gynecologists	**HTG**	NICE HealthTech guidance	**PDS**	polydioxanone suture
ANODE	antibiotics after OVD trial (Lancet 2019)	**IA**	intermittent auscultation	**PE**	pre-eclampsia
AoP	angle of progression (ultrasound)	**IAS**	internal anal sphincter	**PPH**	postpartum haemorrhage
BMI	body mass index	**ICH**	intracranial haemorrhage	**PROPOP**	prophylactic manual rotation RCT (2021)
BUMPES	epidural and position trial (BMJ 2017)	**ISUOG**	Int. Society of Ultrasound in Obstetrics and Gynecology	**RANZCOG**	Royal Aust. & NZ College of O&G
CPD	cephalopelvic disproportion	**IV**	intravenous	**RCOG**	Royal College of Obstetricians and Gynaecologists
CPG	ACOG Clinical Practice Guideline	**L / R**	left / right, e.g. LOA, ROT, LOP	**RCT**	randomised controlled trial
CS	caesarean section	**LCG**	WHO Labour Care Guide	**RR**	relative risk
CTG	cardiotocography	**NG**	NICE guideline	**SIP**	RCOG Scientific Impact Paper
EAS	external anal sphincter	**NICE**	National Institute for Health and Care Excellence	**SMFM**	Society for Maternal-Fetal Medicine
EBG	Evidence Based Guidelines (Berghella)	**NS**	not significant	**SOGC**	Society of Obstetricians and Gynaecologists of Canada
EFW	estimated fetal weight	**OA**	occiput anterior	**TURN-OUT**	sham-controlled manual rotation RCT (2021)
FBS	fetal blood sampling	**OASI**	obstetric anal sphincter injury	**VE**	vaginal examination
FHR	fetal heart rate	**OP**	occiput posterior	**VTE**	venous thromboembolism
FIGO	Int. Federation of Gynecology and Obstetrics	**OT**	occiput transverse	**WHO**	World Health Organization
GTG	RCOG Green-top Guideline	**OVD**	operative vaginal delivery (assisted birth)		
HPD	head–perineum distance (ultrasound)	**PB**	ACOG Practice Bulletin		

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