Aneurin Bevan University Health Board (ABUHB)

Induction of Labour (IOL) Guideline

Contents

This document uses the term woman but recognises that not all people having babies within Aneurin Bevan University Health Board, identify as women, and therefore applies to all people who are pregnant.

1. Introduction

Induction of labour (IOL) is the process of artificially stimulating/ ripening the uterus/cervix to start labour, with the aim of achieving a vaginal birth. This can be achieved through pharmacological or mechanical methods. The primary goal is to ensure the safety and well-being of both mother and baby when continuing the pregnancy poses a greater risk than induction. This guideline aims to standardise the approach to IOL, ensuring evidence-based and consistent care by outlining the indications, methods, and management of IOL to ensure safe and effective care for pregnant individuals.

2. Rationale for the Guideline

The purpose of this guideline is to provide a standardised approach to the induction of labour within Aneurin Bevan Health Board (ABHUB). It aims to:

- Ensure the safety and well-being of both mother and baby.
- Promote evidence-based practices in the management of IOL.
- Reduce variability in clinical practice and improve outcomes.
- Provide clear protocols for healthcare professionals to follow.

To be read in conjunction with:

- Protocol for Outpatient Induction of Labour OP IOL guideline
- Booking of IOL SOP
- Labour Ward Guidelines
- Management of spontaneous preterm pre-labour rupture of membranes <34 weeks gestation (PPROM)
- ABUHB Integrated Care Pathway for Termination of Pregnancy for Fetal Abnormality
- All Wales Midwifery-Led Care Guideline 6th Edition
- Guideline for the Management of Term Pre-labour Rupture of Membranes

3. Abbreviations

ARM: Artificial Rupture of Membranes
BMI: Body Mass Index
BP: Blood Pressure
BS: Bishop Score
cCTG: Computerised Cardiotocography
CS: Caesarean Section
EFM: Electronic Fetal Monitoring
EFW: Estimated fetal weight based on ultrasound scan
FHR: Fetal Heart Rate
GA: Gestational Age
GDM: Gestational Diabetes Mellitus
ICP: Intra-hepatic cholestasis of pregnancy (previously called OC obstetric cholestasis)
IOL: Induction of Labour
IUGR: Intrauterine Growth Restriction
IV: Intravenous
IVF: Invitro Fertilisation
LGA: Large for Gestational Age based on estimated fetal weight on ultrasound scan (>90th percentile on customised growth chart)
NICU: Neonatal Intensive Care Unit
PET: pre-eclampsia
PGE2: Prostaglandin E2.
Propess®: The trade name for the drug dinoprostone 10 mgs, used for the initiation of cervical ripening
Prostin®: The trade name for the drug dinoprostone 1, 2 and 3mg vaginal gel/tablets
PIH: Pregnancy-Induced Hypertension
ROM: Rupture of Membranes
SGA: Small for Gestational Age based on estimated (<10th percentile on customised growth chart)
SVD: Spontaneous Vaginal Delivery
US: Ultrasound
VE: Vaginal Examination

4. Indications for IOL

Clinical Condition	Recommended Gestation for IOL	RAG Rating	Related Guidelines
IVF Not a reason for IOL alone	≥40	G	
Mental illness/ Severe anxiety (Unmedicated)	Individualised consultant plan	G	
Pelvic girdle pain	≥39	G	
Postdates	≥41+5	G	All Wales Midwifery-Led Care Guideline 6th Edition

Previous traumatic birth	Individualised consultant plan	G	
GDM low risk - Diet / metformin controlled - Stable blood glucose - Normal AFI and normal growth	40 – 40+4	A	All Wales - Strategy for Screening and Management of Gestational Diabetes
Maternal age **> 40 years** at conception	39 - 40	A	
Macrosomia	≥39	A	Management of Pregnancy with Large for Dates Fetus Guideline
Mental illness/ Severe anxiety (Medicated)	Individualised consultant plan	A	
Mild Intrahepatic cholestasis of pregnancy Peak bile acids 19 - 39	39-40	A	Guideline for Intrahepatic Cholestasis (ICP) in Pregnancy
Moderate Intrahepatic cholestasis of pregnancy Peak bile acids 40-99	38-39	A	Guideline for Intrahepatic Cholestasis (ICP) in Pregnancy
Proteinuria (PCR≥ 30)	≥40	A	Hypertension in Pregnancy Guideline
Term Pre-labour rupture of membranes	≥37 (offer IOL at diagnosis or delay up to 24 hrs)	A	Guideline for the Management of term pre-labour rupture of membranes
Abnormal dopplers	Individualised consultant plan	R	
GDM complicated - Fetal macrosomia - Insulin - Poor controlled blood sugar - IUGR	38 – 39	R	All Wales - Strategy for Screening and Management of Gestational Diabetes
IUGR/ SGA	Consider ≥37	R	Guideline for the Management of the Small For Gestational Age Fetus (SGA)
Multiple pregnancy - DCDA - MCDA (NO TTTS) - MCDA (TTTS)	≥37 ≥36 Individualised consultant plan	R	Multiple Pregnancies Management Guideline
Oligohydramnios	Individualised consultant plan	R	
PIH Mild to Moderate	38-39	R	Hypertension in Pregnancy Guideline

PIH Severe	≥37	R	Hypertension in Pregnancy Guideline
PPROM	37 (consider from 34 if known GBS positive)	R	Labour Ward Guideline Management of spontaneous preterm pre-labour rupture of membranes <34 weeks gestation (PPROM)
Pre-existing diabetes Type 1 or 2	37 – 38+6	R	Management of Pregnancy in women with pre-existing Type 1 and 2 Diabetes
Pre-eclampsia	Aim ≥37 If <37 weeks - decision by consultant obstetrician	R	Hypertension in Pregnancy Guideline
Reduced fetal movements at term	≥39	R	All Wales - Altered Fetal Movements Guideline
Static growth Over 3 weeks	≥34	R	Guideline for the Management of the Small For Gestational Age Fetus (SGA)
Severe Intrahepatic cholestasis of pregnancy Bile acids 100 or more at any time	35-36	R	Guideline for Intrahepatic Cholestasis (ICP) in Pregnancy
Tailing growth	Individualised consultant plan	R	Guideline for the Management of the Small For Gestational Age Fetus (SGA)
VBAC (not an indication for IOL alone)	41+5	R	Labour Ward Guideline Management of women with previous Caesarean Section
Intrauterine fetal demise	Refer to IUD pathway		ABUHB Integrated Care Pathway For Termination of Pregnancy for Fetal Abnormality

The goal of this rating system is to create consistency in bookings to allow for timely IOL for the right women and babies at the right time, with the appropriate management, to achieve the best possible outcomes for our service users. It also aims to balance the workload for clinicians, ensuring they can provide safe care.

GREEN category: Women should be offered outpatient IOL if they meet all other requirements outlined in the AWNLP. They will need 12-hourly CTG monitoring as per usual management unless otherwise indicated.

AMBER category: Women should be offered IOL on GUH B/3 and will require 12-hourly CTG monitoring unless otherwise indicated.

RED category: Women should be offered IOL on GUH B/3, with mechanical forms of induction considered first-line. If prostaglandins are used, this group will require 6-hourly CTG monitoring unless otherwise indicated.

5. Contraindications

Absolute Contraindications:

- **Placenta praevia**: Risk of severe haemorrhage.
- **Vasa praevia**: Risk of fetal haemorrhage.
- **Transverse or oblique lie**: Malpresentation that requires caesarean delivery.
- **Umbilical cord prolapse**: Emergency requiring immediate delivery.
- **Genital herpes primary infection in third trimester**: Risk of neonatal herpes infection. (Please note primary herpes infection 1st/2nd trimester OR recurrent herpes are not contra-indications to vaginal delivery/IOL)
- **Previous classical caesarean section or major uterine surgery**: Increased risk of uterine rupture.
- **Severe maternal cardiac disease** (individualized care per maternal medicine/tertiary cardiac ANC)
- **Severe fetal compromise:** Abnormal CTG/ Evidence of chronic hypoxia

Relative Contraindications:

- **Multiple gestation**: Requires careful consideration and monitoring.
- **Polyhydramnios**: Increased risk of cord prolapse.

6. Booking of IOL

- If considering IOL please discuss with a consultant before final decision unless inducing for otherwise uncomplicated postdates or SROM.
- All women at point of booking should be offered attendance to the virtual ABUHB IOL workshop.

- Check IOL booking on Badgernet tab to find appropriate date - no more than 4 pre-planned IOL's to be booked per day and only 2 RED cases where possible. Process for Booking IOL on Badgernet

- Make sure current location of care is changed to Grange university hospital on pregnancy summary page

- Open booking form and complete - B3 must be selected as the ward location of IOL

- Provide as much information as possible on booking form. In the instance that there is not capacity to admit patients there should be enough information for the Triage Consultant to appropriately make clinical decisions and prioritise cases.

- Please refer to SOP for outpatient IOL Guideline for suitability and management of OP IOL.

- All women on the midwifery led care (MLC) pathway who meet the criteria for pathway C in the AWMLC guidelines (6th edition) should be offered OP IOL as the default position. Care providers should document the reason why out-patient IOL is not being given.

- OP IOL can be offered to women on the MLC who meet the criteria for the All-Wales Place of Birth Assessment Criteria Pathway B if their reason for being on pathway B is one of the criteria listed below. However, all other women in Pathway B and Pathway A are not suitable for an offer of out-patient induction of labour. Equally, if women have more than one indicator on Pathway B, they are not considered suitable for an offer of out-patient induction of labour.

  All Wales Midwifery-Led Care Guideline

Criteria for women who can be offered out-patient induction if they are following Pathway B include:

- Women who have well controlled asthma
- Women who have previously had a baby considered small for gestational age (SGA), but have had normal and reassuring growth scans this pregnancy by 36 weeks (in line with Gap and Grow parameters)
- Women who have previously had a baby considered large for gestational age (LGA) but have had normal and reassuring growth scans in this pregnancy, and a normal glucose tolerance test (GTT).
- Women who have had a previous 3rd degree tear
- Multi-parous women with BMI between 35-39.9, who have had a previous unassisted vaginal birth, a normal GTT and normal and reassuring growth scans.

Declined offers of IOL/ Cancelled bookings

- If the offer of IOL is declined and there are still concerns about fetal or maternal wellbeing, refer the patient to triage for assessment and review by a senior obstetrician. This should include a clear follow-up plan in ANC, triage, or for scans as needed.
- If bookings are cancelled, please ensure they are cancelled formally on badgernet.

Delay in IOL due to acuity

- Please ensure full documentation in booking form
- If the ward is unable to accommodate a patient booked for IOL due to acuity:
    - Ensure all options including feasibility of admission on AN bay of B3 have been explored. Consider transfer to alternative unit per acuity and clinical need
    - MDT discussion Band 7 ward MW and triage consultant
    - Triage/WR consultant to prioritise patients booked for IOL based on clinical details in IOL form
    - Please contact patient to apologise if unable to accommodate IOL on date booked. Offer CTG in closest peripheral hospital or GUH triage per clinical indication and consider stretch and sweep per patient wishes
    - Re-arrange IOL for following day or next available per clinical indications

Membrane Sweeping

- Performed during a vaginal examination. It involves a healthcare provider inserting a finger into the cervix and making a sweeping motion to separate the membranes of the amniotic sac from the cervix. This action releases hormones called prostaglandins, which can help initiate labour.

When is it Recommended?

- Typically offered to women who are close to or past their due date (usually after 40 weeks) or in the week prior to booked IOL.
- Used to reduce the need for medical IOL.
- Recommended if there are no complications with the pregnancy.

Important steps

- Ensure the procedure is fully explained and obtain consent specifically for stretch and sweep.
- Inform the woman that she may experience some of the following:
    - Some discomfort or cramping
    - Small amount of bleeding or a mucous discharge known as a "show."
    - Labour may start within 48 hours, but it can take longer or may not start at all.

Risks and Considerations:

- Generally safe with no significant risks if performed by a trained professional.
- Not recommended if:
    - The placenta is low-lying.
    - The baby is not in a head-down position.
    - There is a vaginal infection.
    - The waters have already broken.

Aftercare:

- Auscultate FH
- Monitor for signs of labour, such as regular contractions or water breaking.

- Contact the healthcare provider if there is heavy bleeding, severe pain, or any concerns.

Alternatives:

- Waiting for labour to start spontaneously.
- Medical induction if there are concerns for the mother or baby.

7. Pre-IOL Assessment

- **Comprehensive maternal and fetal assessment:**
    - Review of maternal medical history
    - Full set of maternal observations (heart rate, BP, RR, temperature, oxygen saturations) plotted on Badgernet and MEWS score calculated. Escalate concerns per MEWS chart if needed
    - Relevant bloods to be taken
    - Ultrasound to confirm fetal position if unsure on palpation or malposition suspected
- **Confirmation of gestational age:**
    - Based on dating scan
- **Evaluation of cervical status using the Bishop score:**
    - A score of 7 or more indicates a favourable cervix

SCORE	**0**	**1**	**2**	**3**
Position of Cervix	Posterior	Mid	Anterior	-
Consistency	Firm	Medium	Soft	-
Length	>4 cm	2 - 4 cm	1 - 2 cm	<1 cm
Dilatation	<1 cm	1 - 2 cm	3 - 4 cm	>4 cm
Station	- 3	- 2	- 1 / 0	+ 1

- **Informed consent:**
    - Discuss risks, benefits, and alternatives with the patient using BRAIN acronym. See appendix A.

8. Methods of IOL

For women with a Bishop score of 6 or less, consider a mechanical method to induce labour (for example, DILAPAN or Intracervical Balloon Catheter/ Cervical Ripening Balloon) if:

- **Patient has had a previous LSCS**
- **Baby is SGA <10th%ile**
- **Baby has abnormal umbilical artery dopplers (irrespective of EFW)**

- **Mechanical methods should be considered first line for woman in the RED category in the presence of appropriately trained clinician** (pharmacological methods can be used)
- **Patient chooses to use a mechanical method.**
-

Pharmacological Methods include:

- **Prostaglandins:**
  - Dinoprostone (PGE2) gel or pessary
  - Misoprostol (PGE1) tablets (used in cases of IUD. See Bereavement guideline)
- **Oxytocin infusion:**
  - Administered intravenously, starting at a low dose and titrated according to uterine response

Mechanical Methods:

- **Dilapan-S®:**
  - Hygroscopic dilators inserted into the cervix to absorb moisture and expand, gradually dilating the cervix
- **Intracervical Balloon Catheter**
- **Membrane sweeping:**
  - Performed during a vaginal examination to release prostaglandins

Induction Methods

Method	Cautions	Contraindications	Side Effects	Administration	Post administration	Removal
Dinoprostone (PROPESS®)	Effect of oxytocin enhanced History of asthma, epilepsy, glaucoma/ raised intra-ocular pressure, hypertension, risk factors for disseminated intravascular coagulation, uterine rupture and uterine scarring	Active cardiac disease Active pulmonary disease Abnormal CTG, suspected chronic hypoxia Fetal malpresentation Grand multiparas Placenta praevia or unexplained vaginal bleeding during pregnancy	Uterine tachysystole/ hyperstimulation, nausea, vomiting, diarrhoea	Inserted into the posterior fornix of the vagina	Minimum of 30-minute CTG with confirmation of fetal wellbeing The woman should be advised to inform the midwife if she has any of the following: • Contractions. • Vaginal bleeding. • Reduced fetal movements. • If it falls out or drops in vagina. • If membranes rupture. • If there are any other concerns. Red category women should have repeat CTG's every 6 hours Maternal observations will vary, dependent on the reason for admission. Green and Amber category woman should have repeat CTG's every 12 hours Maternal observations will vary dependent on reason for admission. Red category women should have continuous CTG on MDU once regular contractions are established.	Remove after 24 hours unless otherwise indicated

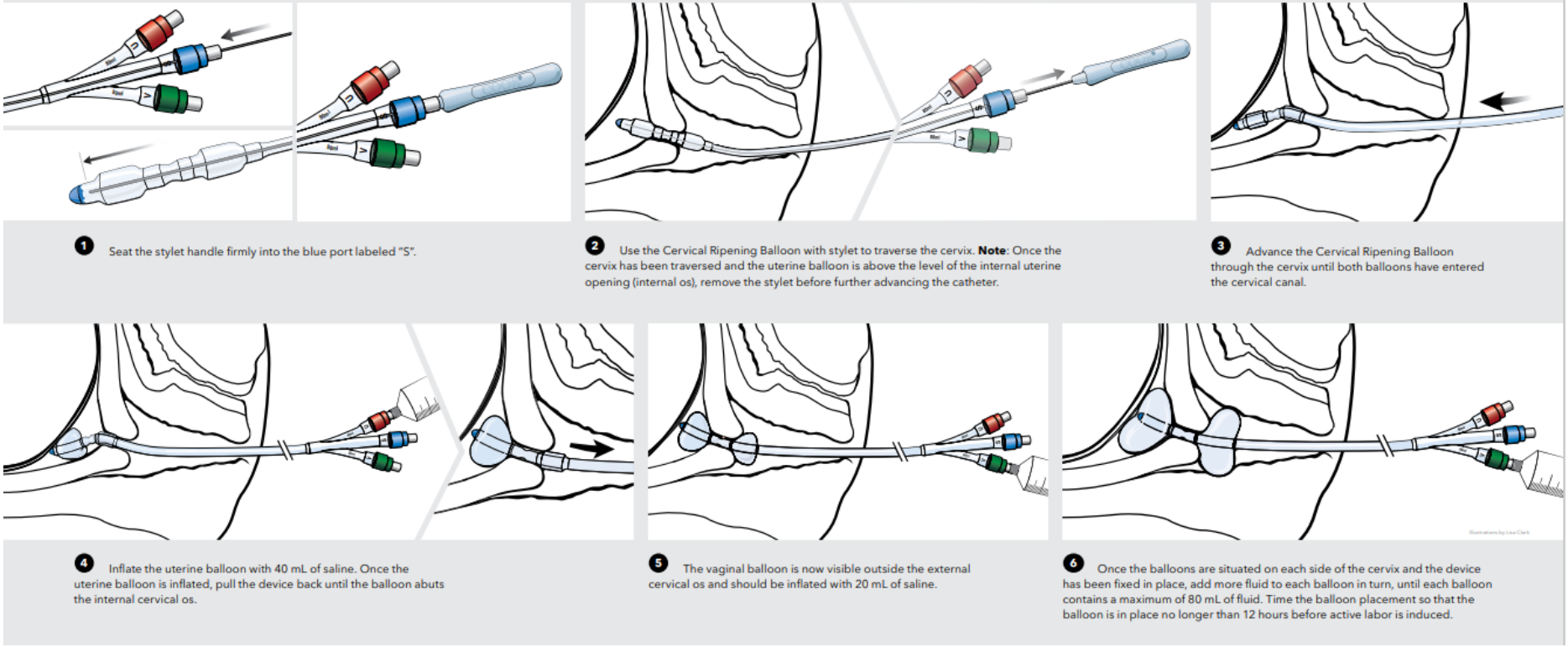
Dinoprostone (PROSTIN® 1mg, 2mg, 3mg)	See PROPESS® Not advised for use with VBAC and SGA Max two doses 6 hours apart. Obstetric review required for further prescription	See PROPESS®	See PROPESS®	Inserted into the posterior fornix of the vagina See Section 10.2 PROM/ SROM ≥37 weeks	See PROPESS® Red category women should have continuous CTG on MDU once regular contractions are established or ROM/PROM is reported.	The **PROSTIN®** will dissolve and does not require removal
DILAPAN-S®	Please see 'ABUHB Standard Operating Procedure - Guideline for Induction of Labour with Dilapan-S' for more details	Current clinically apparent vaginal tract infections		Moisten the DILAPAN-S® rods to with sterile saline/water to lubricate pre application Insert speculum and clean the vagina and cervix. Visualize the cervix and straighten the cervical canal Use sponge forceps to grasp the handle of the DILAPAN-S® rod and insert through the external cervical os gradually and without undue force. **It is important that the rod traverses the internal os.** Do not insert DILAPAN-S® rod past the handle. The border of the collar	Minimum of 30-minute CTG with confirmation of fetal wellbeing The woman should be advised to inform the midwife if she has any of the following: • Contractions. • Vaginal bleeding. • Reduced fetal movements. • If it falls out or drops in vagina. • If membranes rupture. • If there are any other concerns. All women should have repeat CTG's every 12 hours, unless otherwise indicated. Maternal observations will vary dependent on reason for admission. Red category women will have continuous CTG on MDU once regular contractions are	Remove 15- 24hrs. All rods must be removed after 24hrs. Grasp the handle or marker string of the rod(s) and carefully remove. **Do not twist or grasp the collar**. Ensure all inserted rods are removed If the cervix remains unfavourable, a second series of rods can be inserted to continue cervical ripening for up to an additional 24 hours

				should rest at the external os. See schematic. More than one DILAPAN-S® rod may be inserted The number of rods will depend on clinical judgement (typically 3-5 rods). Note the number of rods placed and write on green band and proforma.	established after onset of labour or ROM/PROM is reported.	
Intracervical Balloon Catheter/ Cervical Ripening Balloon (CRB) Trial from May 2025	Not to be used with SROM/PROM due to risk of cord entanglement with uterine balloon. Not to be used with prostaglandins	Patient receiving prostaglandins SROM/ PROM Abnormal CTG, suspected chronic hypoxia Fetal malpresentation Grand multiparas Placenta praevia or unexplained vaginal bleeding during pregnancy	Maternal discomfort during/ post application Device expulsion Spotting caused by cervical irritation	Insert speculum to visualise cervix and clean Using the mouldable stylet seat the stylet handle into the **blue** port labelled **"S"** Once the uterine balloon has entered the cervix remove the stylet before advancing further Advance CRB until both balloons are through the cervical canal Inflate the uterine balloon with 40mls of	Minimum of 30-minute CTG with confirmation of fetal wellbeing The woman should be advised to inform the midwife if she has any of the following: • Contractions. • Vaginal bleeding. • Reduced fetal movements. • If it falls out or drops in vagina. • If membranes rupture. • If there are any other concerns. All women should have repeat CTG's every 12 hours, unless otherwise indicated.	Recommended for removal 12 - 24 hours. Must be removed at 24 hours. If the CRB has not self-expelled, deflate balloons through the corresponding vales marked **"V"** and **"U"** in 20ml increments Remove device in case of SROM to facilitate active labour management

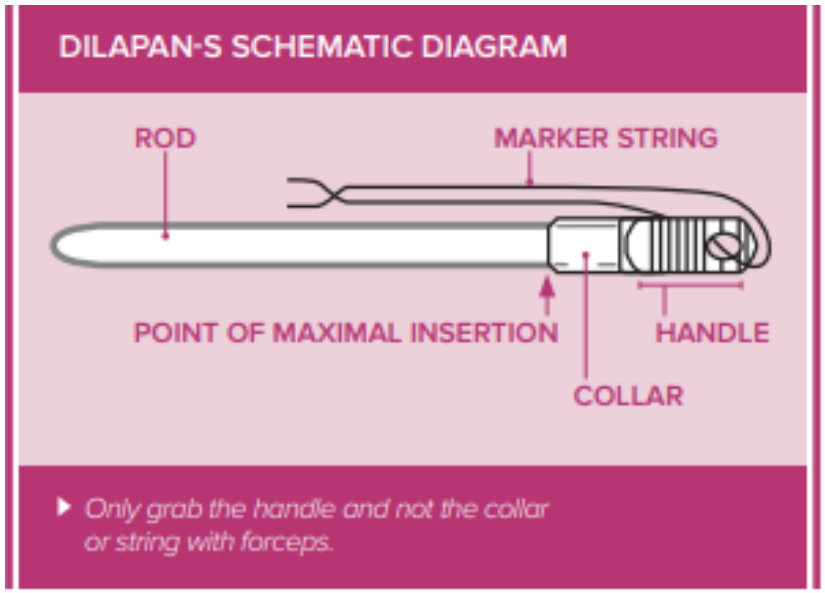
		Previous classical uterine incision or major uterine scar Active genital herpes Any contraindications to labour induction Presenting part above pelvic inlet Polyhydramnios		sterile saline using a standard 20ml luer-lock syringe through the red Check-Flo valve marked **"U"** Once inflated, gently pull the device back until the uterine balloon sits against the internal os The vaginal balloon, now visible, should be inflated with 20mls of sterile saline through the green Check-Flo valve marked **"V"** Once the balloons are fixed in place remove speculum Add more fluid to each balloon in turn, in 20ml increments up to a maximum of 80mls per balloon See reference images below **DO NOT OVERINFLATE BALLOONS**	Maternal observations will vary dependent on reason for admission. Red category women will have continuous CTG on MDU once regular contractions are established after onset of labour or ROM/PROM is reported.	

Syntocinon Transfusion (OXYTOCIN)	Cannot be commenced within 30 minutes of PROPESS® removal Cannot be commenced within 6 hours of PROSTIN® administration Avoid large infusion in women with existing cardiac disease Use cautiously with VBAC or history of uterine surgery Suspected chorioamnionitis (consultant decision) Meconium (consultant decision)	Previous classical uterine incision or major uterine scar Abnormal CTG, suspected chronic hypoxia Severe cardiac disease Severe PET	Arrhythmias; headaches; nausea; vomiting; uterine hyperstimulation	Intravenous administration via infusion pump See section 13 for preparation and dose increments table	Continuous CTG monitoring Oxytocin has antidiuretic properties, therefore accurate fluid balance monitoring is essential Women should be made aware that oxytocin may increase pain and should be aware of analgesic options available	Discontinue if there are signs of fetal compromise, other clinical indications, or upon maternal request. If adequate contractions have not been achieved at 20 mls/hr discuss with Senior Obstetrician. Syntocinon should not be titrated above 20mls/hr without senior obstetric review and plan.

Technique for cervical dilation

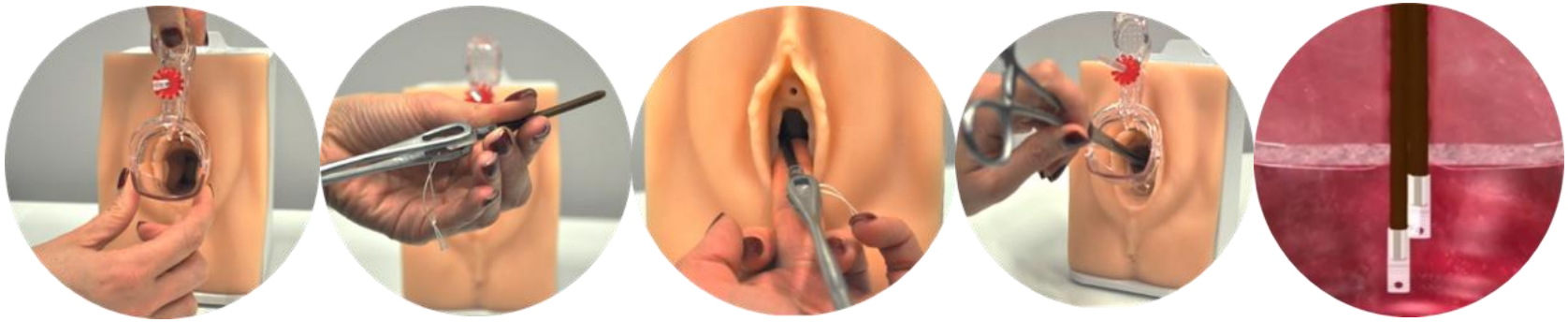


1. Seat the stylet handle firmly into the blue port labeled "S".
2. Use the Cervical Ripening Balloon with stylet to traverse the cervix. **Note**: Once the cervix has been traversed and the uterine balloon is above the level of the internal uterine opening (internal os), remove the stylet before further advancing the catheter.
3. Advance the Cervical Ripening Balloon through the cervix until both balloons have entered the cervical canal.
4. Inflate the uterine balloon with 40 mL of saline. Once the uterine balloon is inflated, pull the device back until the balloon abuts the internal cervical os.
5. The vaginal balloon is now visible outside the external cervical os and should be inflated with 20 mL of saline.
6. Once the balloons are situated on each side of the cervix and the device has been fixed in place, add more fluid to each balloon in turn, until each balloon contains a maximum of 80 mL of fluid. Time the balloon placement so that the balloon is in place no longer than 12 hours before active labor is induced.



Required Equipment for Dilapan Insertion

- Two sponge holders
- Speculum
- Sterile water/ saline
- Sterile gloves
- DILAPAN-S® rods



DILAPAN-S®

Dilapan-S® is an osmotic dilator, produced from a patented hydrogel, which absorbs fluid from the cervical canal and therefore increases in volume. This changes the cervical consistency allowing it to soften, open and get ready for labour gently and naturally.

The thin 4 mm dilator can expand up to 15 mm over 12 hours. This allows it to dilate and soften the cervix gradually. Usually, a set of 4–5 dilators are used to ripen the cervix sufficiently (Dilapan 2019).

Dilapan-S can be used on a large majority of our service users. Any woman who has a clinically apparent genital tract infection should not be offered Dilapan-S; this does not include GBS.

	Expected Dilation (in mm)	
Time in situ (hours)	One DILAPAN-S (3 mm)	One DILAPAN-S (4 mm)
2	7.2 - 8.3	7.8 - 10.0
4	8.4 - 9.5	10.0 - 11.2
6	9.0 - 10.0	10.1 - 12.5
24	9.6 - 11.3	12.7 - 14.6

Multiple modes of action mimic the physiological processes of the labour:

1. Mechanical: It absorbs fluids from surrounding tissue expanding in size. Controlled pressure on the cervical wall dilates the cervix
2. Biophysical: Partial reversible osmotic dehydration softens the tissue
3. Physiological: Promotion of endogenous prostaglandins release causing collagen degradation and tissue restructuring

The unique combination of efficacy, safety and patient satisfaction

Efficacy

- Significant Bishop score increase with cervical ripening achieved in 90% (Saad et al 2019)
- Vaginal delivery rate over 70-78% (Saad et al 2019; Gupta et al 2022)
- Suitable and licenced for all patients requiring IOL (Dilapan-S)

Safety

- No hyperstimulation or fetal pathology during cervical ripening (Saad et al 2019, Drunecky et al 2015, Gupta 2017, Gypta 2018, Reinhard 2016, Crosby 2017).
- No infectious complications (Crosby 2017)
- No limitation related to the mother's gestational age and/or comorbidities
- One contraindication: clinically apparent genital tract infection
- High Patient satisfaction
- Low rate of uterine contractions during cervical ripening (Saad et al 2019, Gupta 2017, Reinhard 2016)
- Up to 90% of women can relax or sleep during cervical ripening (Saad et al 2019)
- Minimising vaginal examinations during cervical ripening

Cost-effectiveness

- One-time application in >90% of women and no need for continuous CTG monitoring (Dilapan-S)
- Out-patient regimen (home cervical ripening) with Dilapan-S for low-risk groups of patients incurs 11% cost savings (Avritscher et al 2023)
- Potential prevention of LSCS in VBAC (Maier 2017)
- London maternity unit's cost analysis found potential annual savings of £213,969 compared to using Propess (Johnson 2021)

Training

- All clinicians who will be performing Dilapan-S insertions must attend a 30 minute training session and pass a competency assessment. It is important to also train community midwives and antenatal educators to allow them to pass on information to women antenatally.
- This training will incorporate inclusion criteria, insertion training and removal training. It will also include how to counsel women for the use of Dilapan-S to induce labour.
- Training is provided by Advanced Global Health (UK Dilapan-S distributor). Virtual training webinars are held every 2 months – staff can register to attend here. It is recommended that staff attend additional sessions on an annual basis to maintain their skills and knowledge.
- Alternatively, a dedicated training session can be arranged by contacting AGHealth at info@aghealth.co.uk.
- Training resources including posters, instructional guide, and video will be provided.

See induction methods table for further information

Artificial rupture of membranes (ARM):

- Performed on MDU
- Amniotomy should be performed before oxytocin is commenced
- CTG should be performed for a minimum of 30 minutes before ARM, or until fetal wellbeing established, during ARM and for a further minimum of 30 minutes following or until fetal wellbeing is established.
- A plan for use of oxytocin must be documented in the maternity records.
- Consider options of oxytocin commencement immediately following ARM or mobilisation (up to 2 hours of mobilisation in primiparous women and 4 hours of mobilisation in multiparous women) providing there are no maternal or fetal concerns and a normal CTG throughout ARM. This is an individual patient centred decision. If there are any concerns continuous CTG monitoring should continue.

9. Process of IOL

- Admit to ward
- Initiate the IOL pathway, ensuring all necessary risk assessments are completed before starting any procedure.
- Document the IOL plan clearly and prescribe prostaglandins correctly. If the clinical situation has changed since the IOL plan was made, seek an obstetric review. **Do not accept verbal orders**.
- Perform and document an antenatal assessment, including risk assessment, MEWS, urinalysis, and abdominal palpation.

- Conduct a CTG for 30 minutes or until fetal wellbeing is confirmed using Dawes-Redman analysis if there is NO uterine activity. If uterine activity is present use the CTG without the DR analysis setting.
- If initial assessments and CTG are satisfactory, and after obtaining consent, perform a vaginal examination. Document a modified Bishop's score.
- A green band should be attached to the woman following PROPESS®/ dilapan and intracervical ripening balloon insertion and only removed when the prior has been removed or visualised i.e. in the case that it has fallen out.
- Refer to a senior obstetrician if there is uncertainty regarding presentation by abdominal palpation, SROM, abnormal CTG, or concerns about the fetal heart.
- If the woman experiences coordinated uterine activity, perform a CTG to assess fetal wellbeing.
- A senior obstetric review should occur every 24 hours, with a clear plan for continued care.
- If the woman has not gone into labour/it is not possible to perform an artificial rupture of membranes after completing her planned regime, she will require a senior obstetric review (please ensure fetus is cephalic)
    - A full mechanical regime comprises 1 cervical ripening balloon for up to 24 hours OR 3-5 dilapan rods for up to 24 hours. Consider further mechanical methods or pharmacological methods individualized to patient situation and risk factors (refer to IOL in specific circumstances below)
    - A full pharmacological regime comprises a propess and 2 prostins (unless previous caesarean or specific clinical situations as below in section 10). All patients require a vaginal examination 6 hours after a second prostin. Consider a 24-hour rest period before administration of a 3rd prostin in multiparous patients individualized to patient situation and risk factors.
- Any delays during the IOL procedure (from start to birth) should be clearly documented in the pathway and escalated to the appropriate clinician for guidance. Complete a DATIX report per health board trigger list.
- If delays are necessary due to workload, an obstetric review will take place to revise the care plan, considering the clinical situation and risk factors.

10. IOL in specific clinical situations:

10.1 VBAC

- Patient's Obstetrician to decide on timing of induction (consider 41+5 IOL) and regime for IOL
- Patient to be fully informed of risks including scar dehiscence and rupture – ensure this is documented on Badgernet
- Consider Dilapan-S / Intracervical ripening balloon as first line management
- Consider PROPESS® with informed consent – include counselling on increased risk of scar rupture and as second line
- **Prostin is contra-indicated in anyone with a previous caesarean**
- Once contracting commence continuous fetal monitoring and transfer the patient to the labour ward

10.2 PROM/ SROM ≥37 weeks

- Offer ALL women with confirmed pre-labour SROM induction of labour as soon as possible versus expectant management (See Guideline for the Management of term prelabour rupture of Membranes) Limit unnecessary vaginal examinations where possible to prevent further risk of infection
- If decision for expectant management recommend IOL by 24 hours after SROM
- Women with BS ≤ 6 should be offered a single 2mg PROSTIN® gel. **Unless had previous caesarean –** plan by senior (ideally consultant) obstetrician; aim oxytocin as primary agent; if needed propess only after counselling of increased risk of uterine rupture for up to 12 hrs.
- If there is likely to be a significant delay of >6hrs at the discretion of a senior obstetrician (consultant if possible) a second PROSTIN® gel 2mg can be considered if BS remains <7
- Women with a BS ≥7 should be transferred to labour ward, when possible, for ongoing induction with oxytocin.
- GBS positive – immediate intrapartum antibiotics and IOL on labour ward with oxytocin as soon as reasonably possible.
- Meconium-stained liquor – senior obstetric plan on labour ward with continuous fetal monitoring.

Immediate review by Senior Obstetrician	Expectant Management
Chorioamnionitis - Maternal pyrexia - Maternal tachycardia - Leukocytes - Uterine tenderness - Offensive smelling discharge - Fetal tachycardia Antenatal history of GBS Meconium-stained liquor Signs of fetal compromise Any other obstetric risk factors Maternal request (depends on labour ward occupancy)	Woman supported to go home with information sheet and thermometer to record temperature To check temperature at home 4 hourly during waking hours If temperature ≥38 or ≥37.5 on two consecutive readings 2 hour apart and feeling unwell to return to hospital IOL after 24 hours Prophylactic antibiotics if risk factors present as per guideline

10.3. PPROM IOL (refer to PPROM guideline for diagnosis and management of PPROM)

- Consider Magnesium Sulphate if <34 weeks in preterm labour (See Labour Ward guideline for administration and regime)
- Inform SCBU if <37 weeks
- After discussion with consultant, consider IOL at 37 weeks (or from 34 weeks if known GBS colonisation)

- Consider PROSTIN gel **unless previous caesarean**. If previous caesarean, consider propess after counselling patient of increased risk of uterine rupture compared with spontaneous labour.
- Give prophylactic antibiotics in labour
- Avoid ventose delivery before 34 weeks
- All transfers– inform the consultant

11. Monitoring and Management

- **Maternal Monitoring**:
    - **Vital Signs**: Regular assessment of blood pressure, pulse, temperature, and respiratory rate including fluid balance.
    - **Uterine Activity**: Monitor for frequency, duration, and intensity of contractions. Watch for signs of tachysystole/ hyperstimulation (more than 5 contractions in 10 minutes).
    - **Signs of Complications**: Be vigilant for symptoms of uterine rupture, such as severe abdominal pain, abnormal fetal heart rate patterns, PVB and loss of uterine tone.
- **Fetal Monitoring**:
    - See page 7 under titles GREEN, AMBER and RED.

12. Complications and Management

- **Tachysystole/ Hyperstimulation/ Hypertonus:**
    - CTG monitoring until fetal wellbeing established and above conditions resolved
    - Remove/ ask woman to remove PROPESS® (If removed by the woman it must be visualised by clinician before green band removed)
    - Administer tocolytics if necessary (e.g., terbutaline)
    - Monitor for improvement which should be seen within 10-15 minutes of intervention
    - Escalate further if no improvement with intervention
    - Consider expediting delivery on review if no further improvement or significant CTG concerns
- **Unsuccessful induction:**
    - Reassess and consider alternative methods or expediting delivery
- **CTG concerns:**
    - Continuous monitoring in the appropriate area and appropriate interventions (e.g., intrauterine resuscitation, expedited delivery)

- **Maternal complications:**
    - Monitor and manage any arising maternal health issues (e.g., infection, haemorrhage)
    - Escalate appropriately to senior Obstetrician

13. Syntocinon Induction/ Augmentation

- **Preparation and Administration**
    - Added to Normal Saline even in hypertensive women
    - 30 IU of Oxytocin is added to 500ml of Normal Saline 1ml/hour = 1 milliunits per minute
    - Administration is via appropriate pump and giving set
    - Escalation of the tabulated dose in 30-minute intervals permits the optimum dose to be reached in a reasonable period by titration against contractions.
    - When achieved effective uterine contractions, consider reducing the dose of Syntocinon
    - Contractions should not be more than 3-4 in 10 minutes and should not last longer than 60 seconds.
    - The uterus should relax adequately between contractions

Time after starting (Minutes)	Oxytocin dose (mU/ min) Dilution 30iu Oxytocin in 500mls normal saline	Volume infused (mls/hr)
0	1	1
30	2	2
60	4	4
90	8	8
120	12	12
150	16	16
180	20	20
210	24	24
240	28	28
270	32	32

If adequate contractions have not been achieved at 20 mls/hr discuss with Registrar and/or Consultant. Syntocinon should not be titrated above 20mls/hr without senior obstetric review and plan.

14. Audit and Review

- **Regular Audit**: Ongoing audit through the maternity dashboard and PREM data.
- **Guideline Review**: Update the guideline based on the latest evidence, audit findings, and feedback from healthcare professionals 3 yearly at a minimum.

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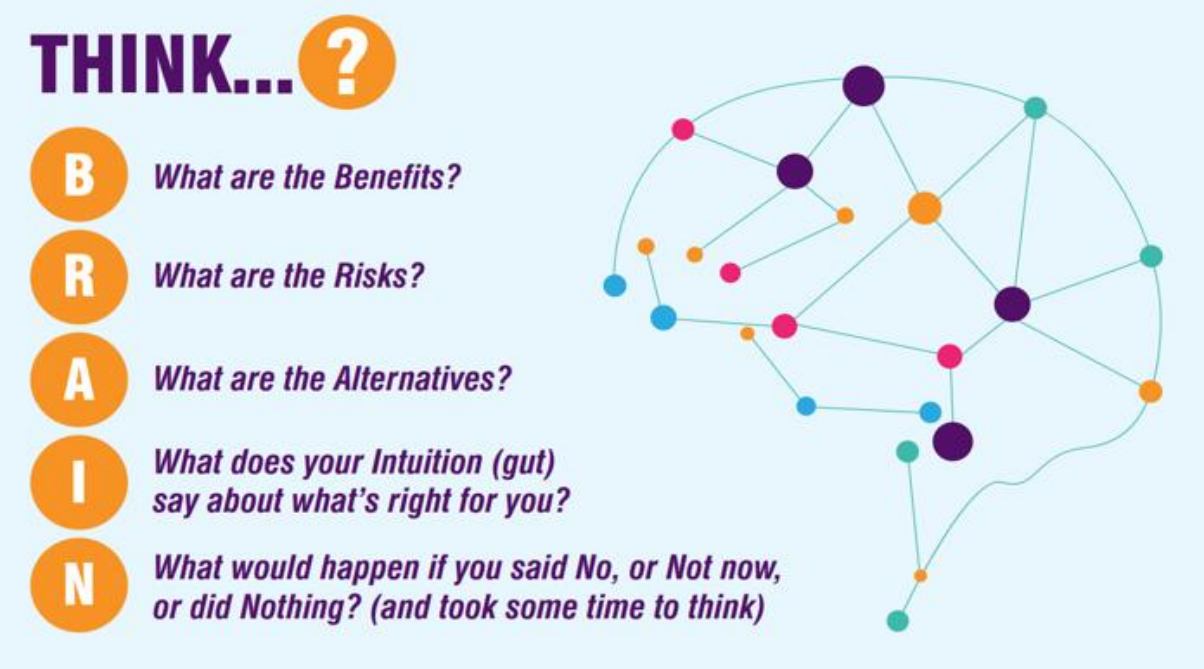
Appendix A – BRAIN Acronym


THINK...?
B
What are the Benefits?
R
What are the Risks?
A
What are the Alternatives?
I
What does your Intuition (gut) say about what's right for you?
N
What would happen if you said No, or Not now, or did Nothing? (and took some time to think)

Appendix B – Non-pharmaceutical IOL (Dilapan SOP)

Timings for insertion and removal are a suggestion not a requirement