NICE National Institute for Health and Care Excellence

NICE guideline

Inducing labour

NICE guideline

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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guideline replaces CG70.

This guideline is the basis of QS60.

Overview

This guideline covers the circumstances for inducing labour, methods of induction, assessment, monitoring, pain relief and managing complications. It aims to improve advice and care for pregnant women who are thinking about or having induction of labour.

In this guideline we use the terms 'woman' and 'women', based on the evidence used in its development. The recommendations will also apply to people who do not identify as women but are pregnant or have given birth.

Who is it for?

- Healthcare professionals
- Commissioners and providers
- Pregnant women, their families and carers

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in NICE's information on making decisions about your care.

Making decisions using NICE guidelines explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

1.1 Information and decision making

This section should be read in conjunction with the NICE guidelines on antenatal care, caesarean birth and intrapartum care for healthy women and babies.

1.1.1 Discuss preferences about mode of birth with women early on in their pregnancy. Take into account their individual circumstances, and discuss that options for birth can include:

- expectant management, **or**
- induction of labour, **or**
- planned caesarean birth (see the NICE guideline on caesarean birth).

Record these discussions and the woman's preferences in her notes. **[2008, amended 2021]**

1.1.2 Confirm a woman's preferences for birth at antenatal visits towards the end of pregnancy, as these may have changed since earlier discussions. **[2008, amended 2021]**

1.1.3 Explain to women that induction of labour is a medical intervention that will affect their birth options and their experience of the birth process. This could include that:

- vaginal examinations to assess the cervix are needed before and during induction, to determine the best method of induction and to monitor progress
- their choice of place of birth will be limited, as they may be recommended interventions (for example, oxytocin infusion, continuous fetal heart rate monitoring and epidurals) that are not available for home birth or in midwife-led birth units
- there may be limitations on the use of a birthing pool
- there may be a need for an assisted vaginal birth (using forceps or ventouse), with the associated increased risk of obstetric anal sphincter injury (for example, third- or fourth-degree perineal tears)
- pharmacological methods of induction can cause hyperstimulation – this is when the uterus contracts too frequently or contractions last too long, which can lead to changes in fetal heart rate and result in fetal compromise
- an induced labour may be more painful than a spontaneous labour
- their hospital stay may be longer than with a spontaneous labour. **[2021]**

1.1.4 Discuss with women being offered induction of labour:

- the reasons for induction being offered
- when, where and how induction could be carried out
- the arrangements for support and pain relief (see also recommendations on pain relief)
- the alternative options if the woman chooses not to have induction of labour, or decides at a later stage that she no longer wishes to proceed with the induction process
- the risks and benefits of induction of labour in specific circumstances, and the proposed induction methods
- that induction may not be successful, and how this would affect the woman's options (see the recommendations on unsuccessful induction). **[2008, amended 2021]**

1.1.5 When offering induction of labour:

- give women time to discuss this information with others (for example, their partners, birthing companion or family) if they wish to do so before making a decision

- encourage women to look at other information (for example, by providing written information leaflets or encouraging them to look at information on the NHS website)
- ensure women have the opportunity to ask questions, and time to think about their options
- recognise that women can decide to proceed with, delay, decline or stop an induction. Respect the woman's decision, even if healthcare professionals disagree with it, and do not allow personal views to influence the care they are given. Record the woman's decision in her notes. **[2008, amended 2021]**

1.1.6 Provide information on induction of labour in line with the NICE guideline on patient experience in adult NHS services. **[2021]**

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on induction of labour for pregnancy lasting longer than 41 weeks.

Full details of the evidence and the committee's discussion are in evidence review C: induction of labour for prevention of prolonged pregnancy.

1.2 Induction of labour in specific circumstances

Pregnancy lasting longer than 41 weeks

1.2.1 Give women with uncomplicated pregnancies every opportunity to go into spontaneous labour. **[2008]**

1.2.2 Explain to women that labour usually starts naturally before 42+0 weeks, based on the gestational age estimated by their dating scan (see table 1). **[2008, amended 2021]**

Table 1. Gestational age at which labour started, as a proportion of labours which started spontaneously

Gestational age (weeks)	Proportion of spontaneous labours that started at this gestational age	Cumulative proportion of spontaneous labours that started by this gestational age
31 weeks and under	2.4%	2.4%
32+0 to 36+6 weeks	5.3%	7.7%
37+0 to 37+6 weeks	5.1%	12.8%
38+0 to 38+6 weeks	12.1%	24.9%
39+0 to 39+6 weeks	25.4%	50.3%
40+0 to 40+6 weeks	32.5%	82.8%
41+0 to 41+6 weeks	16.2%	99.0%
42+0 weeks and over	0.9%	100%

Data from NHS Hospital Episode Statistics/Maternity Services Data set 2019-20.

1.2.3 Using the information in appendix A, explain to women that some risks associated with a pregnancy continuing beyond 41+0 weeks may increase over time and these include:

- increased likelihood of caesarean birth
- increased likelihood of the baby needing admission to a neonatal intensive care unit
- increased likelihood of stillbirth and neonatal death. **[2021]**

1.2.4 Discuss with women that induction of labour from 41+0 weeks may reduce these risks, but that they will also need to consider the impact of induction on

their birth experience (see recommendations on information and decision making) when making their decision. **[2021]**

1.2.5 Be aware that, according to the 2020 MBRRACE-UK report on perinatal mortality, women from some minority ethnic backgrounds or who live in deprived areas have an increased risk of stillbirth and may benefit from closer monitoring and additional support. The report showed that across all births (not just those induced):

- compared with white babies (34/10,000), the stillbirth rate is
  - more than twice as high in black babies (74/10,000)
  - around 50% higher in Asian babies (53/10,000)
- the stillbirth rate increases according to the level of deprivation in the area the mother lives in, with almost twice as many stillbirths for women living in the most deprived areas (47/10,000) compared with the least deprived areas (26/10,000). **[2021]**

1.2.6 If a woman chooses not to have induction of labour, discuss the woman's options from this point on with her (for example, expectant management or caesarean birth) and record the woman's decision in her notes. **[2008, amended 2021]**

1.2.7 Discuss with women who choose not to have their labour induced if they wish to have additional fetal monitoring from 42 weeks. Advise women that:

- monitoring only gives a snapshot of the current situation, and cannot predict reliably any changes after monitoring ends, but provides information on how their baby is at the moment and so may help them make a decision on options for birth
- adverse effects on the baby (including stillbirth), and when these events might happen, cannot be predicted reliably or prevented even with monitoring
- fetal monitoring might consist of twice-weekly cardiotocography and ultrasound estimation of maximum amniotic pool depth. **[2008, amended 2021]**

1.2.8 Offer women who choose to await the spontaneous onset of labour the opportunity to discuss their decision again at all subsequent reviews, if they wish to do so. **[2021]**

1.2.9 Advise women to contact their midwife or maternity unit if they change their

mind before their next appointment, or as soon as possible if they have concerns about their baby (for example reduced or altered fetal movements). [2021]

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on induction of labour for pregnancy lasting longer than 41 weeks.

Full details of the evidence and the committee's discussion are in evidence review C: induction of labour for prevention of prolonged pregnancy.

Preterm prelabour rupture of membranes

1.2.10 If a woman has preterm prelabour rupture of membranes, do not carry out induction of labour before 34+0 weeks unless there are additional obstetric indications (for example, infection or fetal compromise). Offer expectant management until 37+0 weeks. [2008, amended 2021]

1.2.11 If a woman has preterm prelabour rupture of membranes after 34+0 weeks, but before 37+0 weeks, discuss the options of expectant management until 37+0 weeks or induction of labour with her. When making a shared decision, take into consideration the following factors:

- risks to the woman (for example, sepsis, possible need for caesarean birth)
- risks to the baby (for example, sepsis, problems relating to preterm birth)
- local availability of neonatal intensive care facilities
- the woman's individual circumstances and her preferences [2008, amended 2021]

1.2.12 If a woman has preterm prelabour rupture of membranes after 34+0 weeks (but before 37+0 weeks), and has had a positive group B streptococcus test at any time in their current pregnancy, offer immediate induction of labour or caesarean birth. See the NICE guidelines on neonatal infection and preterm labour and birth. [2021]

Prelabour rupture of membrane at term

1.2.13 Offer women with prelabour rupture of membranes at term (at or after 37+0

weeks) a choice of:

- expectant management for up to 24 hours, or
- induction of labour as soon as possible.

Discuss the benefits and risks of these options with the woman, and take into account her individual circumstances and preferences. **[2008, amended 2021]**

1.2.14 For women who choose expectant management after prelabour rupture of the membranes at term (at or after 37+0 weeks), offer induction of labour if labour has not started naturally after approximately 24 hours. See the NICE guideline on intrapartum care. **[2008, amended 2021]**

1.2.15 Respect the woman's decision if she chooses to wait for spontaneous onset of labour for over 24 hours after prelabour rupture of membranes at term. Discuss the woman's options for birth from this point onwards with her. **[2021]**

1.2.16 If a woman has prelabour rupture of membranes at term (at or after 37+0 weeks) and has had a positive group B streptococcus test at any time in their current pregnancy, offer immediate induction of labour or caesarean birth. See the NICE guideline on neonatal infection for advice on intrapartum antibiotics. **[2021]**

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on induction of labour for prelabour rupture of membranes.

Previous caesarean birth

1.2.17 Advise women who have had a previous caesarean birth that:

- induction of labour could lead to an increased risk of emergency caesarean birth
- induction of labour could lead to an increased risk of uterine rupture
- the methods used for induction of labour will be guided by the need to reduce these risks (for example, by using mechanical methods). See the recommendations on methods for induction of labour

- some methods used for induction of labour may not be suitable (for example, both dinoprostone and misoprostol are contraindicated in women with a uterine scar). **[2008, amended 2021]**

1.2.18 If birth needs to be expedited, offer women who have had a previous caesarean birth a choice of:

- induction of labour, **or**
- planned caesarean birth.

  Take into account the woman's circumstances and preferences and record the discussions and plan in the woman's notes. **[2008, amended 2021]**

1.2.19 Advise women that they can choose not to have induction of labour or caesarean birth, even when it may benefit their or their baby's health **[2008, amended 2021]**

Maternal request

1.2.20 Consider requests for induction of labour only after discussing the benefits and risks with the woman, taking into account the woman's circumstances and preferences. **[2008, amended 2021]**

Breech position

1.2.21 Induction of labour is not generally recommended if a woman's baby is in the breech position. **[2008, amended 2021]**

1.2.22 Consider induction of labour for babies in the breech position if:

- birth needs to be expedited, **and**
- external cephalic version is unsuccessful, declined or contraindicated, **and**
- the woman chooses not to have a planned caesarean birth.

  Discuss the benefits and risks associated with induction of labour with the woman. **[2008, amended 2021]**

Fetal growth restriction

1.2.23 Do not induce labour if there is fetal growth restriction with confirmed fetal compromise. Offer caesarean birth instead. **[2008, amended 2021]**

Suspected fetal macrosomia

1.2.24 Using the information in appendix B, discuss with women without diabetes and with suspected fetal macrosomia that:

- the options for birth are expectant management, induction of labour or caesarean birth (see the NICE guideline on caesarean birth)
- there is uncertainty about the benefits and risks of induction of labour compared to expectant management, but:
  - with induction of labour the risk of shoulder dystocia reduced compared with expectant management
  - with induction of labour the risk of third- or fourth-degree perineal tears is increased compared with expectant management
  - there is evidence that the risk of perinatal death, brachial plexus injuries in the baby, or the need for emergency caesarean birth is the same between the 2 options
- they will also need to consider the impact of induction on their birth experience and on their baby (see recommendation 1.1.3).

  Discuss the options for birth with the woman, taking into account her individual circumstances and her preferences, and respect her decision. Support recruitment into clinical trials, if available. **[2021]**

1.2.25 For guidance on suspected fetal macrosomia in women with pre-existing or gestational diabetes see the NICE guideline on diabetes in pregnancy. **[2021]**

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on induction of labour for suspected fetal macrosomia.

Full details of the evidence and the committee's discussion are in evidence review A: induction of labour for suspected fetal macrosomia.

History of precipitate labour

1.2.26 Do not routinely offer induction of labour to women with a history of precipitate labour to avoid a birth unattended by healthcare professionals. [2008]

Intrauterine fetal death – all women

1.2.27 In the event of an intrauterine fetal death, offer support to help women and their partners and family cope with the emotional and physical consequences of the death. Offer them information about specialist support. [2008]

1.2.28 In the event of an intrauterine fetal death, if the woman appears to be physically well, her membranes are intact and there is no evidence of infection or bleeding, discuss the options for birth (expectant management, induction of labour or caesarean birth) and respect the woman's decision. [2008, amended 2021]

1.2.29 In the event of an intrauterine fetal death, if there is evidence of ruptured membranes, infection or bleeding, offer immediate induction of labour or caesarean birth. [2008, amended 2021]

1.2.30 If a woman with an intrauterine fetal death chooses an induced labour, follow the recommendations on monitoring of uterine contractions (preferably using manual assessment) and provide one-to-one midwifery care of the woman during labour and birth. [2021]

Intrauterine fetal death – women with a non-scarred uterus

1.2.31 If a woman with an intrauterine fetal death chooses an induced labour, offer:

- oral mifepristone 200 mg followed by vaginal dinoprostone or oral or vaginal misoprostol. Base the choice and dosage of drug used on clinical circumstances and national protocols, **or**
- a mechanical method of induction. **[2008, amended 2021]**

  In November 2021, some uses of mifepristone, dinoprostone and misoprostol were off label. See NICE's information on prescribing medicines.

Intrauterine fetal death – women who have had a previous caesarean birth

1.2.32 Advise women who have intrauterine fetal death, and who have had a previous lower segment caesarean birth, that:

- induction of labour could lead to an increased risk of uterine rupture
- the methods used for induction of labour will be guided by the need to reduce these risks (for example, by using mechanical methods). See the recommendations on methods for induction of labour.
- some methods used for induction of labour may not be suitable (for example, both dinoprostone and misoprostol are contraindicated in women with a uterine scar). **[2021]**

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on induction of labour for intrauterine fetal death after previous caesarean birth.

Full details of the evidence and the committee's discussion are in evidence review D: induction of labour for intrauterine fetal death after previous caesarean birth.

1.3 Methods for induction of labour

Membrane sweeping

1.3.1 Explain to women:

- what a membrane sweep is

- that membrane sweeping might make it more likely that labour will start without the need for additional pharmacological or mechanical methods of induction
- that pain, discomfort and vaginal bleeding are possible from the procedure. **[2008, amended 2021]**

1.3.2 At antenatal visits after 39+0 weeks, discuss with women if they would like a vaginal examination for membrane sweeping, and if so obtain verbal consent from them before carrying out the membrane sweep. **[2008, amended 2021]**

1.3.3 Discuss with women whether they would like to have additional membrane sweeping if labour does not start spontaneously following the first sweep. **[2008, amended 2021]**

Pharmacological and mechanical methods for inducing labour

1.3.4 Explain to women that a vaginal examination to assess the readiness of the cervix (recorded as the Bishop score) will help to decide which method of induction they will be offered first, and obtain consent to carry this out. **[2021]**

1.3.5 Discuss with women the risks and benefits of different methods to induce labour. Include that:

- both dinoprostone and misoprostol can cause hyperstimulation (see information on hyperstimulation rates in appendix C)
- when using pharmacological methods of induction, uterine activity and fetal condition must be monitored regularly
- if hyperstimulation does occur, the induction treatment will be stopped by giving no further medication, or by removal of vaginally administered products when possible
- there are differences in the ease with which different vaginal products can be removed (for example, dinoprostone controlled-release vaginal delivery systems can be more easily removed than gel or vaginal tablets)
- hyperstimulation can be treated with tocolysis, but hyperstimulation caused by misoprostol may be more difficult to reverse
- mechanical methods are less likely to cause hyperstimulation than pharmacological methods. **[2021]**

1.3.6 Follow the manufacturers' guidance on the use of dinoprostone and misoprostol preparations for the induction of labour, including when to remove dinoprostone controlled-release vaginal delivery systems. [2021]

1.3.7 For women with a Bishop score of 6 or less, offer induction of labour with dinoprostone as vaginal tablet, vaginal gel or controlled-release vaginal delivery system or with low dose (25 microgram) oral misoprostol tablets. [2021]

1.3.8 For women with a Bishop score of 6 or less, consider a mechanical method to induce labour (for example, a balloon catheter or osmotic cervical dilator) if:

- pharmacological methods are not suitable (for example, in women with a higher risk of, or from, hyperstimulation, or those who have had a previous caesarean birth), **or**
- the woman chooses to use a mechanical method.

See the NICE interventional procedures guidance on double balloon catheters for induction. [2021]

1.3.9 For women with a Bishop score of more than 6, offer induction of labour with amniotomy and an intravenous oxytocin infusion. [2021]

1.3.10 Advise women that they can have an amniotomy and can choose whether or not to have an oxytocin infusion, or can delay starting this, but that this may mean labour takes longer and there may be an increased risk of neonatal infection. [2021]

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on methods for induction of labour.

Full details of the evidence and the committee's discussion are in evidence review B: methods for induction of labour.

1.4 Methods that are not recommended for induction of labour

Pharmacological methods

1.4.1 Be aware that the available evidence does not support the use of the following methods for induction of labour:

- oral dinoprostone
- intravenous dinoprostone
- extra-amniotic dinoprostone or PGF_2
- intracervical dinoprostone
- vaginal PGF_2
- intravenous oxytocin alone
- hyaluronidase
- corticosteroids
- oestrogen
- relaxin
- mifepristone (except in combination for intrauterine fetal death, see recommendation 1.2.31)
- vaginal nitric oxide donors. **[2008, amended 2021]**

Non-pharmacological methods

1.4.2 Be aware that the available evidence does not support the following methods for induction of labour:

- herbal supplements
- acupuncture
- homeopathy

- castor oil
- hot baths
- enemas
- sexual intercourse. [2008]

1.5 Assessment before induction, monitoring and pain relief

Assessment before induction

1.5.1 Ensure the position of the baby and the woman's condition are suitable for induction by:

- abdominally assessing the level and stability of the fetal head in the lower part of the uterus at or near the pelvic brim
- carrying out an ultrasound scan if there are any concerns about the position of the baby (for example, if it might be in the breech position)
- assessing and recording the Bishop score
- confirming a normal fetal heart rate pattern using antenatal cardiotocography interpretation
- confirming the absence of significant uterine contractions (not Braxton-Hicks) using cardiotocography. **[2008, amended 2021]**

1.5.2 Ensure facilities are available for cardiotocography wherever induction of labour is started. **[2008, amended 2021]**

Monitoring

Note that the summaries of product characteristics for different preparations of dinoprostone contain different monitoring requirements. Always use the NICE guidance on dinoprostone in conjunction with the relevant summary of product characteristics.

1.5.3 When uterine contractions begin after administering dinoprostone or

misoprostol, assess fetal wellbeing and uterine contractions with intrapartum cardiotocography interpretation and:

- if the cardiotocogram is confirmed as normal, review the individual circumstances and, if considered low risk, use intermittent auscultation unless there are clear indications for further cardiotocography
- if the fetal heart rate is abnormal or there are excessive uterine contractions:
  - continue or restart continuous cardiotocography
  - do not administer any more doses, and
  - remove any vaginal pessaries or delivery systems if possible.

  Follow the advice on monitoring during labour in the NICE guideline on intrapartum care. **[2008, amended 2021]**

1.5.4 Offer to reassess the wellbeing of the woman and baby and the Bishop score at appropriate intervals to monitor progress, depending on the method of induction being used, and the clinical condition of the woman. **[2008, amended 2021]**

1.5.5 Once active labour is established, carry out maternal and fetal monitoring as described in the NICE guideline on intrapartum care. **[2008]**

Pain relief

1.5.6 Explain to women that induced labour may be more painful than spontaneous labour. **[2008]**

1.5.7 Discuss the available pain relief options in different settings with women. **[2008]**

1.5.8 During induction of labour, provide women with the pain relief appropriate for them and their pain as described in the NICE guideline on intrapartum care. This can include simple analgesia, labour in water and epidural analgesia. **[2008, amended 2021]**

1.6 Outpatient induction

Note that the summaries of product characteristics for different preparations of dinoprostone contain different monitoring requirements. Always use the NICE guidance on dinoprostone in conjunction with the relevant summary of product characteristics.

1.6.1 Consider outpatient induction of labour with vaginal dinoprostone preparations or mechanical methods in women who wish to return home, and who have no co-existing medical conditions or obstetric complications. Discuss with the woman the benefits and risks of returning home, and respect her decision. **[2008, amended 2021]**

1.6.2 Carry out a full clinical assessment of the woman and baby (see recommendations 1.5.1 and 1.5.2) and ensure safety and support procedures are in place. **[2008, amended 2021]**

1.6.3 For induction being undertaken on an outpatient basis, agree a review plan with the woman before she returns home. **[2008, amended 2021]**

1.6.4 Ask women to contact their midwife, maternity unit or obstetrician:

- when contractions begin, **or**
- if there are no contractions (in an agreed timeframe, depending on the method used), **or**
- if her membranes rupture, **or**
- if she develops bleeding, **or**
- if she has any other concerns, such as reduced or altered fetal movements, excessive pain or uterine contractions, side-effects or loss of the pessary. **[2008, amended 2021]**

1.7 Prevention and management of complications

Uterine hyperstimulation

1.7.1 If uterine hyperstimulation occurs during induction of labour:

- carry out a fetal assessment
- do not administer any more doses of medicines to induce labour and remove any vaginal pessaries or delivery systems if possible
- consider tocolysis. **[2008, amended 2021]**

Unsuccessful induction

1.7.2 If induction is unsuccessful, discuss this with the woman and provide support. Fully reassess the woman's condition and the pregnancy in general, and assess fetal wellbeing using antenatal cardiotocography interpretation. **[2008, amended 2021]**

1.7.3 If induction is unsuccessful, discuss and agree a plan for further management with the woman, including whether she would like further attempts at induction, taking into account the clinical circumstances and her preferences. **[2008, amended 2021]**

1.7.4 If induction is unsuccessful, the subsequent management options include:

- offering a rest period if clinically appropriate and then re-assessing the woman
- expectant management
- further attempts to induce labour
- caesarean birth. See the NICE guideline on caesarean birth. **[2008, amended 2021]**

Cord prolapse

1.7.5 Take the following precautions to avoid the adverse effects of cord prolapse, which may occur if labour is induced:

- before induction, abdominally assess the level and stability of the fetal head in the lower part of the uterus at or near the pelvic brim (see the recommendations on assessment before induction)
- during the preliminary vaginal examination, obstetricians and midwives should palpate for umbilical cord presentation and avoid dislodging the baby's head

- carry out continuous cardiotocography during induction after the membranes have ruptured, if the presenting part is not stable and not well-applied to the cervix. In this situation, discuss the risks and benefits of induction of labour with the woman, and if necessary consider caesarean birth. If the presenting part stabilises and the cardiotocogram is normal, use intermittent auscultation unless there are clear indications for further cardiotocography. **[2008, amended 2021]**

Placenta praevia, low-lying placenta or a previous history of antepartum haemorrhage

1.7.6 Check that there is no evidence of a low-lying placenta on previous scans before membrane sweeping and before induction of labour. **[2008, amended 2021]**

Uterine rupture

1.7.7 If uterine rupture is suspected during induced labour, carry out an immediate category 1 caesarean birth. See the NICE guideline on caesarean birth. **[2008, amended 2021]**

Terms used in this guideline

This section defines terms that have been used in a particular way for this guideline. For other definitions see the NICE glossary and the Think Local, Act Personal Care and Support Jargon Buster.

Bishop score

The Bishop score is a numerical value obtained by doing a vaginal examination, and is based on the dilation, effacement (or length), position and consistency of the cervix and the station of the head with respect to the ischial spines of the pelvis. A score of 8 or more generally indicates that the cervix is ready to dilate, (previously the terms 'ripe' or 'favourable' were widely used) and when there is a high chance of spontaneous labour, or response to interventions made to induce labour. For the purposes of this guideline, a Bishop score of less than or equal to 6, or a score greater than 6, was used to help determine choice of pharmacological or mechanical methods to induce labour.

Dinoprostone

Dinoprostone is the international non-proprietary name for prostaglandin E2. Previous versions of this guideline referred to prostaglandin E2, or PGE2, but in order to ensure uniformity with the

naming conventions in the BNF, this version refers to this medication as dinoprostone.

Expectant management

A management approach, also called 'watch and wait', when no medical or surgical treatment is given. The aim is to allow labour to begin naturally.

Hyperstimulation

This is overactivity of the uterus as a result of induction of labour. It is variously defined as uterine tachysystole (more than 5 contractions per 10 minutes for at least 20 minutes) and uterine hypersystole/hypertonicity (a contraction lasting at least 2 minutes). These may or may not be associated with changes in the fetal heart rate pattern (persistent decelerations, tachycardia or increased/decreased short term variability).

Membrane sweeping

Membrane sweeping involves the examining finger passing through the cervix to rotate against the wall of the uterus, to separate the chorionic membrane from the decidua of the uterus. If the cervix will not admit a finger, massaging around the cervix in the vaginal fornices may achieve a similar effect.

MBRRACE-UK

Mothers and babies: reducing risk through audits and confidential enquiries across the UK (MBRRACE-UK) is a series of audits carried out with the aim of identifying causes of maternal and perinatal death and morbidity and making recommendations to inform maternity care and so reduce these poor outcomes.

Osmotic cervical dilator

A medical device used to dilate the uterine cervix by swelling as it absorbs fluid from surrounding tissue.

Precipitate labour

A labour that is very quick and short, and the baby is born less than 3 hours after the start of uterine contractions.

Suspected fetal macrosomia

A baby that is believed to be large for its gestational age, defined for the purposes of this guideline as an estimated fetal weight above the 95th percentile, at or after 36 weeks of pregnancy.

Unsuccessful induction

Unsuccessful induction is defined as labour not starting after one cycle of treatment.

Recommendations for research

The guideline committee has made the following recommendations for research.

Key recommendations for research

1 Prevention of prolonged pregnancy

At what gestational age should induction of labour be offered in the subgroups of women who may be more likely to experience adverse outcomes if pregnancy continues? **[2021]**

For a short explanation of why the committee made the recommendation for research, see the rationale section on induction of labour for pregnancy lasting longer than 41 weeks.

Full details of the evidence and the committee's discussion are in evidence review C: induction of labour for prevention of prolonged pregnancy.

2 Prevention of prolonged pregnancy

Based on individual patient data meta-analysis, what is the optimal timing of induction of labour? **[2021]**

For a short explanation of why the committee made the recommendation for research, see the rationale section on induction of labour for pregnancy lasting longer than 41 weeks.

Full details of the evidence and the committee's discussion are in evidence review C: induction of labour for prevention of prolonged pregnancy.

3 Preterm prelabour rupture of membranes

What are the relative risks and benefits of induced labour versus expectant management in women whose membranes have ruptured spontaneously between 34 and 37 weeks? **[2008]**

Why this is important

Intrauterine sepsis is more likely to develop in pregnancies that continue after the membranes have ruptured, putting both the woman and the baby at risk. In some such pregnancies, labour begins spontaneously at a variable interval after the membranes have ruptured, avoiding the need for induction. The value of antibiotic therapy and the administration of corticosteroids to the woman is unclear in this situation. A randomised study of active versus expectant management, taking account of time since membrane rupture, gestational age and maternal therapy, would be valuable.

4 Intrauterine fetal death after previous caesarean birth

How should labour be induced in women with intrauterine fetal death who have had a previous caesarean birth, and who choose to be induced? [2021]

For a short explanation of why the committee made the recommendation for research, see the rationale section on induction of labour for intrauterine fetal death after previous caesarean birth.

Full details of the evidence and the committee's discussion are in evidence review D: induction of labour for intrauterine fetal death after previous caesarean birth.

5 Membrane sweeping

What are the effectiveness and acceptability of, and maternal satisfaction with, the following:

- multiple versus once-only membrane sweeping, at varying gestational ages, depending on parity
- membrane sweeping versus cervical massage? [2008]

Why this is important

Membrane sweeping is considered to be a relatively simple intervention that may positively influence the transition from maintenance of pregnancy to the onset of labour, reducing the need for formal induction of labour. However, there are disadvantages, such as possible vaginal bleeding and discomfort. Research into when and how frequently membrane sweeping should be carried out to maximise its effectiveness and acceptability would be of value.

6 Vaginal dinoprostone

What are the effectiveness, safety and maternal acceptability of:

- different regimens of vaginal dinoprostone, stratified by: clinical indications; cervical and membrane status; parity; and previous caesarean birth
- different management policies for unsuccessful induction of labour with vaginal dinoprostone (additional dinoprostone, oxytocin, elective caesarean birth or delay of induction, if appropriate). [2008]

Why this is important

Despite extensive studies carried out over the past 30 years to determine the most effective ways of inducing labour with vaginal dinoprostone, uncertainties remain about how best to apply these agents in terms of their dosage and timing. It would be particularly useful to understand more clearly why vaginal dinoprostone is unsuccessful in inducing labour in some women.

7 Setting for induction of labour

Is it safe, effective and cost effective to carry out induction of labour in an outpatient setting? What are the advantages and disadvantages of such an approach, taking into account women's views? [2008]

Why this is important

In line with the way healthcare has developed in many areas of acute care, there is an increasing desire to reduce the time women spend in hospital. Several units are already exploring outpatient induction of labour policies and there is a need to study this approach in order to determine relative risks and benefits, as well as acceptability to women.

Rationale and impact

These sections briefly explain why the committee made the recommendations and how they might affect practice.

Induction of labour for pregnancy lasting longer than 41 weeks

Recommendations 1.1.3 and 1.1.6, and recommendations 1.2.3 to 1.2.5, 1.2.8 and 1.2.9

Why the committee made the recommendations

Based on their knowledge and experience the committee made recommendations on the advice that should be provided to all women in early pregnancy about mode of birth, the process of inducing labour, and the impact this may have on their place of birth, mode of birth and on their experience of birth. The committee also made recommendations about how these discussions may need to be revisited in later pregnancy, or if women decline induction.

There was evidence that caesarean birth, perinatal mortality and neonatal intensive care unit admission are reduced by earlier induction of labour (at 41+0 weeks) compared to later induction (at 42+0 weeks or after). However, there was not enough evidence, so the committee made a recommendation for research to identify the optimal timing of induction more precisely.

The committee were aware that data from the 2020 MBRRACE-UK report on perinatal mortality had shown that babies born to certain groups of women may be at higher risk of stillbirth and chose to highlight this in the guideline. As there was no evidence, the committee made a recommendation for research to identify the optimal timing of induction in groups of women who may be at higher risk of stillbirth.

How the recommendations might affect practice

The recommendations decrease the gestational age at which induction of labour is discussed to prevent prolonged pregnancy, and may increase the number of women who undergo induction. The recommendations on monitoring may also increase the number of women who decline induction and then choose to have additional monitoring. Both these factors may increase resource use in the NHS.

Return to recommendations 1.1.3 and 1.1.6

Return to recommendations 1.2.3 to 1.2.5, 1.2.8 and 1.2.9

Induction of labour for prelabour rupture of the membranes

Recommendations 1.2.12, 1.2.15 and 1.2.16

Why the committee made the recommendations

The committee were aware of the recommendations in the NICE guideline on neonatal infection that advised immediate induction of labour or caesarean birth after preterm prelabour rupture of the membranes between 34+0 weeks and 37+0 weeks in women with a positive group B streptococcus test, and so added this recommendation to this section of the guideline.

Based on their knowledge and experience of the risks of group B streptococcal infection to the baby after rupture of the membranes, the committee agreed that with prelabour rupture of the membranes after 37+0 weeks in women with a positive group B streptococcus test, immediate induction of labour or caesarean birth would also be recommended.

In women who did not have a positive group B streptococcus test, but who had prelabour rupture of the membranes after 37+0 weeks, the committee were aware that expectant management for 24 hours was an option as the risk of infection to the baby was low. However, after that period, induction should be advised as the committee were aware that prolonged pregnancy at term after rupture of the membranes can increase risks to the baby, and they therefore advised that birth options should be discussed with women who choose not to have induction of labour after 24 hours.

How the recommendations might affect practice

The recommendations will reinforce current practice.

Return to recommendations

Induction of labour for suspected fetal macrosomia

Recommendations 1.2.24 and 1.2.25

Why the committee made the recommendations

There was some evidence of both benefits and harms for induction of labour and for expectant management in women without diabetes with suspected fetal macrosomia, but there was uncertainty around this evidence, particularly relating to the risk of perineal tears. As there was not enough evidence to recommend one method over another, the committee recommended that women should be provided with information about different modes of birth so they can make an informed decision, and that recruitment into relevant clinical trials should be supported.

How the recommendations might affect practice

Currently, there is variation in clinical practice and so the recommendations may mean an increase in consultation time to counsel women appropriately in some areas. This is not expected to lead to a substantial resource impact at national level.

Return to recommendations

Induction of labour for intrauterine fetal death after previous caesarean birth

Recommendations 1.2.30 and 1.2.32

Why the committee made the recommendations

In the absence of evidence, the committee made recommendations based on their knowledge and experience and also made a recommendation for research on intrauterine fetal death after previous caesarean birth. The committee agreed that the different options for birth should be discussed with women after intrauterine fetal death if they have had a previous caesarean birth, and their choice should be respected. They also agreed that women with IUFD should be cared for on a one-to-one basis and monitored.

The committee explained that, after intrauterine fetal death, women with a scarred uterus are at increased risk of uterine rupture. This should be taken into account when considering options for birth and if induction is carried out, uterine contractions should be carefully monitored.

The committee discussed that mifepristone 600 mg daily for 2 days is approved for the induction of labour following intrauterine fetal death when prostaglandin or oxytocin cannot be used, but that no evidence for its safety or efficacy in women with a previous caesarean birth had been identified

and so they were unable to recommend it. The committee discussed that in women with intrauterine fetal death and no previous caesarean birth a lower dose of mifepristone was used to sensitise the myometrium to prostaglandin-induced contractions, followed by a prostaglandin (dinoprostone or misoprostol). However, the committee were aware that both dinoprostone and misoprostol are contraindicated after previous caesarean birth and so made a recommendation to state this.

The committee recognised that mechanical methods of induction may be safe to use in women with a previous caesarean birth, and so they advised that these could be considered. This also brought the recommendations for induction after a previous caesarean birth for women with live babies or after intrauterine fetal death, in line with each other.

How the recommendations might affect practice

Currently, there is variation in the management of women after an intrauterine fetal death who have had previous caesarean birth, so the recommendations may mean an increase in consultation time to counsel women appropriately in some areas, and an increase in monitoring to reduce the risk of uterine rupture. This is not expected to lead to a substantial resource impact at national level.

Return to recommendations

Methods for induction of labour

Recommendations 1.3.4 to 1.3.10

Why the committee made the recommendations

The committee agreed that, in their experience, women value being informed about the reason why certain treatments are offered, and that it should be made clear to women that the possible methods for induction of labour will depend primarily on the readiness of their cervix, which is assessed with a vaginal examination and recorded as the Bishop score.

There was good evidence that vaginal dinoprostone was effective at promoting vaginal birth within 24 hours for women with a Bishop score of 6 or less, without significantly increasing the risk of adverse outcomes for the woman or her baby. When the different preparations of vaginal dinoprostone were compared, there was little evidence to demonstrate that one preparation was superior to another. Therefore, the committee agreed that it was appropriate to offer a choice of preparation, depending on availability and the woman's preference. There was some evidence that

dinoprostone preparations could lead to hyperstimulation with fetal heart rate changes.

Misoprostol was as effective as dinoprostone at promoting vaginal birth within 24 hours. There was evidence showing a risk of hyperstimulation with misoprostol, although this was predominantly with higher doses and vaginal preparations, and the committee took into consideration previous MHRA warnings relating to the misoprostol vaginal insert about this risk. The committee noted that, for the low dose oral preparations of misoprostol, the risk of hyperstimulation appeared to be the same or lower than with the dinoprostone vaginal preparations. Therefore, the committee agreed that misoprostol could be an alternative to dinoprostone for induction of labour, particularly for women who would prefer an oral preparation.

There was evidence that there was no increased risk of hyperstimulation when using mechanical methods for induction of labour (including osmotic cervical dilators and balloon catheters). Balloon catheters were also effective at promoting vaginal birth within 24 hours and did not appear to markedly increase the risk of other adverse outcomes. There was no evidence for the effectiveness of osmotic cervical dilators at promoting vaginal birth within 24 hours, but they too did not appear to markedly increase the risk of other adverse outcomes. Therefore, the committee agreed that these mechanical methods could be considered for induction of labour for women, particularly when there is a concern about hyperstimulation.

There was very little evidence for women with a Bishop score of more than 6. However, the committee noted that amniotomy and intravenous oxytocin was the most effective method to promote vaginal birth within 24 hours across the whole population. This was in keeping with their clinical experience, so they agreed that this should be the first choice for induction of labour for women in this group.

How the recommendations might affect practice

Most hospitals use the recommended methods for induction of labour already, so these recommendations will not result in a significant change of practice. The advice specific to women with a Bishop score of more than 6 should provide more individualised care and standardise practice for this subgroup of women.

Return to recommendations

Context

Induced labour may be recommended in circumstances when it appears that the benefits outweigh the risks for the mother and baby of continuing with the pregnancy, but with the aim of still enabling a vaginal birth. However, induction has an impact on the birth experience of women as it:

- removes the satisfaction of achieving the more natural birth that many woman hope for
- is generally more painful than spontaneous labour
- is more likely to lead to additional interventions such as assisted or operative birth, including caesarean birth, and
- is more likely to need epidural analgesia.

Induction of labour is a common procedure, with approximately a third of all women in the UK undergoing induction, and there are a variety of methods available using both pharmacological treatments and mechanical methods. The choice of method depends on the readiness of the woman's cervix (assessed using a vaginal examination, and categorised using the Bishop score), whether the membranes have ruptured, and the woman's preferences. The options available should be discussed and this discussion should include:

- an awareness of the efficacy and possible adverse effects for the woman and her baby associated with each method, and
- the likelihood that additional interventions (such as emergency caesarean birth) might be needed if the induction is not successful.

Women can choose not to have induction of labour, and appropriate care should then be offered to optimise the outcome of the pregnancy while respecting the woman's wishes.

The aim of this guideline is to give advice to healthcare professionals providing obstetric services, and to pregnant women, on the information and support women and their families and birth partners should be offered when making decisions about induction of labour. It also aims to define the circumstances when induction of labour may be appropriate, and identify the most effective way to induce labour, including choice of method, setting, timing, monitoring and pain relief.

Finding more information and committee details

You can see everything NICE says on this topic in the NICE Pathway on induction of labour.

To find NICE guidance on related topics, including guidance in development, see the NICE webpage on intrapartum care.

For full details of the evidence and the guideline committee's discussions, see the evidence reviews. You can also find information about how the guideline was developed, including details of the committee.

NICE has produced tools and resources to help you put this guideline into practice. For general help and advice on putting our guidelines into practice, see resources to help you put NICE guidance into practice.

Update information

November 2021: We have reviewed the evidence and made new recommendations on the induction of labour for prevention of prolonged pregnancy, induction of labour in suspected fetal macrosomia, induction of labour for intrauterine fetal death after previous caesarean birth and pharmacological and mechanical methods to induce labour. These recommendations are marked **[2021]**.

We have also made some changes without an evidence review. These recommendations are marked **[2008, amended 2021]**.

Recommendations marked **[2008]** last had an evidence review in 2008. In some cases minor changes have been made to the wording to bring the language and style up to date, without changing the meaning.

Changes to the 2008 recommendations, showing the original and updated wording for comparison, are listed in supplement 6.

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