LANDSPÍTALI

EDUCATIONAL MATERIAL

Labour Induction

Inducing labour is an intervention in the normal birth process which affects women's birth experience. The decision to induce labour is usually made because it is considered the safer choice for the health of you and/or your baby rather than continuing the pregnancy.

Studies have shown that in making the decision to induce labour, active participation is important, so you may find it helpful to ask your obstetrician and/or midwife about the reasons for labour induction. Useful questions include:

- What are the advantages and disadvantages of inducing labour?
- How can postponing labour induction affect the birth?
- Is it dangerous for the child to postpone labour induction?
- How likely is it that a birth will be successful and conclude with a normal delivery after labour induction?

Labour inductions have increased significantly worldwide over the past decade, and Iceland is no exception. There are various reasons for this, including gestational diabetes, high blood pressure and postterm pregnancy. Close to a third of all births are the result of induced labour. If you are healthy, it is usually best for you and your child if spontaneous labour occurs at full term, which can be up to 42 weeks.

37 to 42 weeks is considered a normal duration of pregnancy. By the 41st week of pregnancy, 20-25 percent still have not given birth, but by the 42nd week, the ratio is down to about 5-6 percent.

Recent years have seen more debate about the correct time to induce labour in cases of normal pregnancy. The guidelines in Iceland are similar to those used in the other Nordic countries. Thus, pregnancies of up to 42 weeks are considered safe. The Nordic countries are in the top rank when birth outcomes are considered in an international context.

Duration of induced labour

Induced labour is intended to simulate the onset of spontaneous labour. It is difficult to say how long it will take to induce labour. It depends on factors such as pregnancy duration, previous birth history, whether Braxton Hicks contractions have occurred, and whether your water has broken. This may take several days for some, but a few hours for others. You must therefore be prepared for your induced labour to take some time.

Labour induction initiated

Usually, an obstetrician or a midwife in antenatal care will send a request to the Landspítali Labour ward, where the request is evaluated and categorised according to priority. Urgent labour inductions have first priority, and may occur at any time during the pregnancy. It is sometimes necessary to postpone an already scheduled labour induction due to circumstances in the labour ward, sometimes to a time later the same day, but usually by no more than one day.

Main reasons for labour induction

There are many possible reasons for deciding to induce labour. The principal reasons are:

- Postterm pregnancy
- Water breaking without onset of spontaneous labour
- Gestational diabetes
- Preeclampsia
- Elevated blood pressure during pregnancy
- Age of 40 years or more
- Twin pregnancy
- Growth restriction or suspected foetal distress in the child

Membrane sweep

Sometimes the membranes of the amniotic sac are separated from the uterus in an attempt to progress labour, but this is not considered actual labour induction. Membrane sweeping is not believed to be beneficial before the 41st week, although it is sometimes attempted if labour induction is imminent. For a sweep to be possible, the cervix must have begun to dilate. A midwife or a doctor performs the membrane sweep by stretching the cervix in an internal examination of the vagina. The onset increases the production of hormones in the body, which may accelerate labour.

Labour induction methods

The choice of method and the hospital ward where it takes place depend on the reason for inducing labour. Labour induction is performed at either the outpatient clinic for antenatal care (ward 22B) or the labour ward (23B).

Several methods are used to induce labour. The most commonly used methods are:

a. Oral medication
b. Insertion of a silicone catheter with a liquid-filled balloon
c. Artificial rupture of membranes
d. Induction by IV drip

The exact triggers of labour are not known. There is probably an interplay of various factors, where the hormone oxytocin plays a major role. All these methods are intended to trigger hormones in the body so that the body itself will begin to produce the hormones necessary to induce labour.

The obstetrician will decide which method of induction is selected. Important factors include whether this is the patient's first vaginal delivery. The condition of the cervix is also important; whether it has begun to soften, thin and dilate, as it does in the period leading up to labour. If small contractions have occurred during the pregnancy, it is unlikely that changes to the cervix have begun, especially if you who have not given birth before (Figure 1).

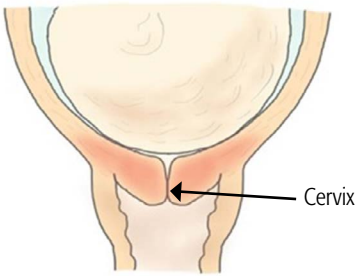

Figure 1. A long, thick cervix that has not yet begun to dilate. Labour has not begun.

Labour induction in ward 22B, the outpatient clinic for antenatal care

Oral medication

If the pregnancy has mostly been normal, the induction will begin at the outpatient clinic for antenatal care. In that case, the reason for inducing labour could be:

- Postterm pregnancy
- Gestational diabetes
- High blood pressure during pregnancy
- Elevated bile acid levels
- Age of 40 years or more

Upon arrival at the clinic, the midwife performs an external examination to assess the position and size of the baby. Vital signs are measured, uterine contractions are assessed, and fetal electrocardiogram monitoring is performed for at least 20 minutes to assess the baby's wellbeing. The midwife then performs a vaginal internal examination to assess the condition of the cervix. If there has been a significant change in the cervix, labour induction will probably take place in the maternity ward.

If everything is as it should be after the midwife's examination, oral medication containing the substance misoprostol, which simulates the hormone prostaglandin, produced by the body during spontaneous labour, is administered. Prostaglandins cause the cervix to begin to shorten and dilate, eventually leading to uterine contractions.

After taking one tablet at the clinic, parents usually go back home or to Landspítali's patient hotel, located across from the gynecology/obstetrics building, for those who live outside the capital area. Occasionally, further outpatient monitoring or transfer to the maternity ward is required. Hospital staff can assist in applying for a stay at the patient hotel, if necessary.

After returning home

You will need to continue taking your medicine at home. You take one tablet orally every two hours, until the onset of contractions or labour pain. A total of no more than eight tablets are taken over these first 24 hours at home.

The response to treatment is individual. It is normal to experience contractions or period pain within a few hours, which gradually increase and turn into labour pain. In rare cases, symptoms of uterine hyperstimulation may occur.

Contact Landspítali's labour ward immediately by calling +354 543 3049 if you experience the following symptoms:

- Vaginal haemorrhage
- Diarrhoea
- Skin rash
- Nausea
- Vomiting
- Stomach pains
- Headache
- Dizziness
- A body temperature of over 37.8°C
- Onset of labour pain
- Water breaks

112 is called in cases of emergency

If labour has not begun 24 hours after commencing treatment with oral medication, a return visit must be made the following morning to 23B, the labour ward, where the next steps are decided.

- If the condition of the cervix is unchanged, treatment with oral medication at home is resumed for the next 24 hours.
- If there has been a change in the condition of the cervix, it is assessed whether an artificial rupture of membranes can be performed to induce labour.
- If labour has not started after 48 hours, the method of induction is reevaluated.

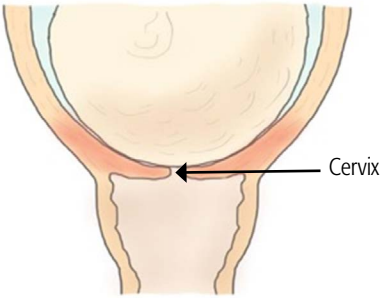

Figure 2. The cervix has begun to thin and dilate.

Labour induction at 23B, the labour ward

Oral medication

A hospital stay during labour induction is sometimes recommended, for instance when the mother has had a disease prior to or during the pregnancy, or if the baby is at an increased risk of distress in relation to the birth.

The main reasons for labour induction in the labour ward are:

- Preeclampsia
- Significant elevation of blood pressure
- Previous caesarean delivery
- Twin pregnancy
- Growth retardation in the baby
- Suspected foetal distress

In the maternity ward, tablets containing misoprostol are administered orally every two hours. The drug simulates the hormone prostaglandin, which is produced by the body during spontaneous labour. Prostaglandins cause the cervix to shorten and dilate, eventually leading to uterine contractions. The status of the baby, and how it responds to the labour induction, is closely monitored through ECG monitoring every four hours or more, see Figure 3.

The time spent in the labour ward can take its toll, as it is difficult to predict how long the process will be. If the condition is assessed as normal, it is usually safe to take short walks inside the hospital or in its immediate vicinity.

Figure 3. Electrocardiogram (ECG) monitoring foetal heart rate

Insertion of a silicone catheter with a liquid-filled balloon

Labour can be induced by inserting a soft silicone tube in the vagina and inflating a balloon at the end of it with saline, see Figure 4. This pressure releases the hormone prostaglandin from the endometrium, membranes or cervix, inducing uterine contractions which contribute to the softening and dilation of the cervix.

Main reasons for labour induction with a silicone catheter:

- Previous cesarean section or uterine scarring
- Growth retardation in the baby
- Minimal change in the cervix after attempting to use tablets to induce labour

Oral medication to induce labour is not recommended when there is uterine scarring from a caesarian delivery. This is due to a slightly heightened risk of uterine rupture.

This method is also recommended where severe growth retardation in the baby has been identified, in which case this treatment is considered to have a milder effect on the baby.

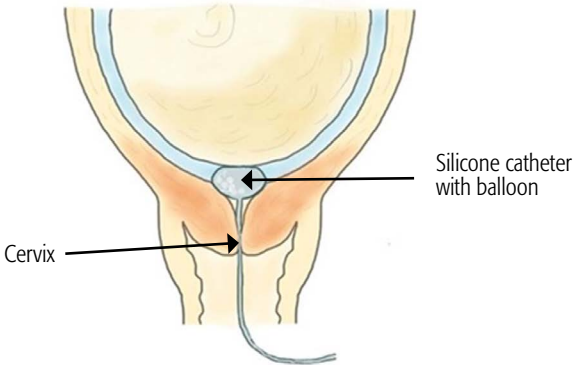

Figure 4. Labour induction with a silicone catheter.

Upon arrival at the ward, an examination and foetal ECG monitoring is carried out. A doctor examines the cervix before inserting the catheter through it. When the catheter is positioned correctly, saline is injected to inflate a balloon positioned at the end of it, see Figure 4. This treatment is usually performed on an examination table, where the feet can be placed in supports. This helps with relaxing the pelvic floor muscles. Sometimes pain relief, such as laughing gas (nitrous oxide), is administered when the catheter is inserted.

An internal examination or ultrasound is performed to make sure that the balloon is correctly positioned. The balloon must apply pressure to the cervix from above, like the child's head does. Once the catheter has been fitted, it is pulled until there is adequate resistance, after which it is plastered to the thigh.

Following another foetal ECG monitoring, you are free to move at will.

While the catheter is inserted, discomfort like period pain may be felt, but it usually causes little or no inconvenience. Sometimes it can be helpful to sit on a yoga ball or stay upright to create pressure on the cervix. Pain medication is administered as necessary.

The catheter can be fitted for up to 24 hours. It can be removed earlier, or it will slip out by itself when the cervix begins to dilate, usually at 3-4 cm. When the catheter has fallen out, the balloon can be ruptured to continue the induction.

Labour induction with artificial rupture of membranes

Occasionally, an internal examination reveals that the cervix has begun to develop and dilate. This occurs especially if you have previously given birth vaginally. In such cases, it is recommended to induce labour through artificial rupture of membranes. Artificial rupture of membranes can also be a natural continuation of labour induction that began with oral medication or the insertion of a silicone catheter when there has been a change in the cervix but insufficient progress of labour.

The first step is to perform an external examination, measure vital signs, and use ECG to monitor the health of the baby. If everything is normal, the midwife will carry out an internal examination and puncture the membranes using a delicate plastic instrument with a point that is similar to a crochet pin, see Figure 5. This action is very similar to internal examination. Sometimes it takes more than one attempt to rupture the membranes. With the membranes ruptured, amniotic fluid begins to escape and the midwife may have to support the cervix with her fingers for a brief time to ensure that the baby's head follows. Following the artificial rupture of membranes, ECG monitoring is repeated to assess the baby's response.

For some, an artificial rupture of membranes is enough to induce labour. That is why there is always a wait of at least two hours to see whether the body responds and labour begins. Contractions often begin shortly after the artificial rupture of membranes is performed, although they can occasionally stop again.

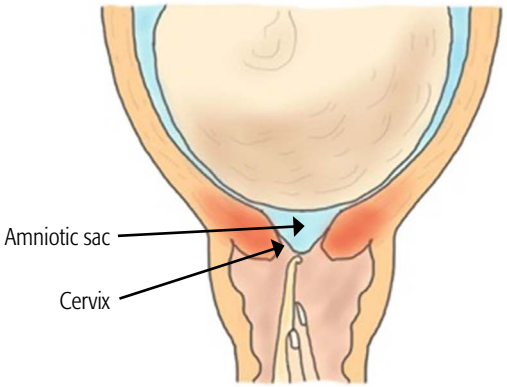

Figure 5. Membranes ruptured using a delicate instrument.

IV drip to stimulate childbirth

To stimulate contractions, medication can be administered intravenously. This medicine is called syntocinon and simulates the hormone oxytocine, which is produced by the body and induces labour. At the labour ward, intravenous medication is almost never used for childbirths unless your water has broken.

The dosage required to induce labour varies. Small doses are administered at first and then increased until regular contractions commence and dilation begins. The contraction patterns produced by the IV drip are in many ways different from those in spontaneous labour so there is increased risk of the baby displaying signs of distress. The baby's heart rate is therefore monitored continuously from the time that the administration of the medicine begins.

If the baby shows signs of distress, the drip can be turned off or a medication to relax the uterus immediately given. The blood levels of the hormone soon decrease, and the baby has time to recover. The midwife is present during the administration of the medicine to monitor your and your baby's health. Cervical dilation is also assessed approximately every four hours after the onset of labour. Once childbirth is underway, the IV drip can sometimes be reduced or stopped.

If there is no change in the cervix after 12 hours from the start of treatment, the obstetrician will assess the next step. In most cases, contractions eventually begin, but sometimes they are not enough to complete the dilation. If this situation arises, the treatment can be interrupted and resumed in a few hours. Delivery by caesarean section is also possible. The choice is made by the obstetrician and the midwife in consultation with the parent.

Figure 6. ECG monitor used in the bath.

During induction, it is recommended to use ECG to monitor the baby's wellbeing. The ECG monitor can be connected wirelessly, allowing for free movement. The sensors are waterproof so a bath can be used for pain relief.

When preparing for labour induction, it is important to assume that the hospital stay may last several days. It's a good idea to bring something along for entertainment, such as a book, cards, knitting supplies and tasty snacks. You can get food from the Landspítali hospital kitchen and choose between different dishes.

You can expect this process to be difficult for you, and it is recommended that you express your feelings and concerns to your midwife and obstetrician when they arise and take part in the decision-making process. Although it can often take some time to induce labour, the chances of a normal childbirth are high.

Telephone numbers

Antenetal care, prenatal diagnosis and emergency services	543 3253
Labour ward	543 3049

PUBLISHED BY:
LANDSPÍTALI
CENTER OF PATIENT EDUCATION
DECEMBER 2024
FRÆ-1090

PERSONS RESPONSIBLE:
HEAD MIDWIVES OF THE MATERNITY WARD, ANTENATAL CARE, PRENATAL DIAGNOSIS AND EMERGENCY SERVICES, AND HEAD PHYSICIAN OF PREGNANCY, DELIVERY AND POSTPARTUM CARE.

DESIGN:
LANDSPÍTALI HOSPITAL'S GRAPHIC DESIGNER
PHOTO:
LANDSPÍTALI'S PHOTOGRAPHER
ILLUSTRATIONS:
PUBLISHED WITH THE PERMISSION OF THE ARTIST, ELINE SKÍRNISDÓTTIR VIK