Englisch

Birth and Induction of Labour

Information for expectant mothers

From preparing for birth to breastfeeding

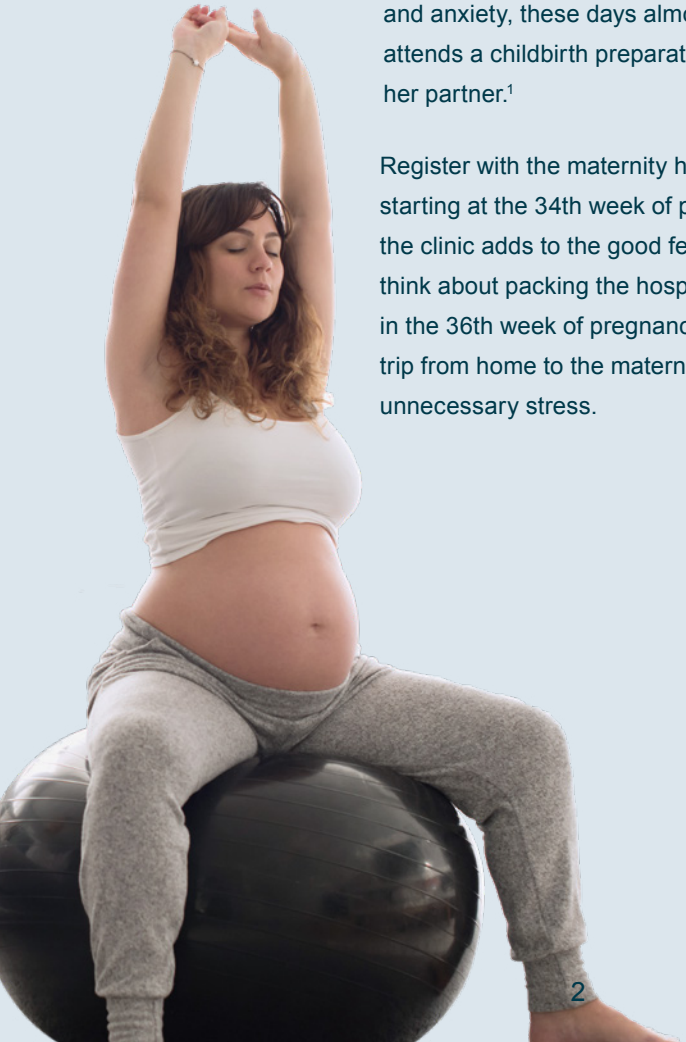
A message
from Norgine

Birth: A Miracle of Nature

Preparing for birthing is everything

A birth is something very special, something unique. But especially with the first baby, preparing for birth is also new and maybe a little scary. To overcome fear and anxiety, these days almost every pregnant woman attends a childbirth preparation course alone or with her partner.[1]

Register with the maternity hospital of your choice starting at the 34th week of pregnancy. Getting to know the clinic adds to the good feeling. It is advisable to think about packing the hospital bag early (for example, in the 36th week of pregnancy), so the final spurt -- the trip from home to the maternity clinic -- does not cause unnecessary stress.



Hospital bag checklist

For the mother

- [ ] Documents (health insurance card, identity card, maternity card, possibly the family record book)
- [ ] Comfortable outfit for the delivery room (nightgown, loose t-shirt, socks)
- [ ] A few granola bars as a snack
- [ ] A little spending money
- [ ] Comfortable sleepwear (preferably button-up for possible breastfeeding).
- [ ] Bathrobe
- [ ] Socks and slippers
- [ ] Comfortable clothes for visits and walks outdoors
- [ ] Nursing bras and pads
- [ ] Toiletry bag
- [ ] Absorbent sanitary napkins
- [ ] Towels

For the child

- [ ] Bodysuits (onesies, long- or short-sleeved depending on the weather)
- [ ] Clothing suitable for the weather (for a possible walk)
- [ ] Socks
- [ ] Cap
- [ ] Towels
- [ ] Burp cloths
- [ ] Some diapers
- [ ] Possibly already a cuddly toy or music box
- [ ] Baby blanket
- [ ] Baby carrier/stroller

Signs shortly before birth

There are very typical signs that indicate the birth is imminent:[2]

Onset of labour

Ejection of the mucus plug from the cervix

Bleeding

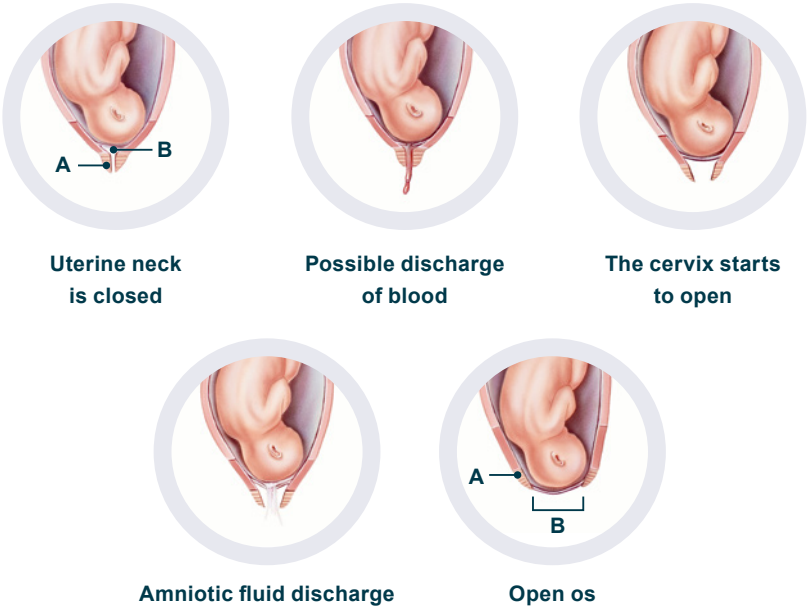
Discharge of amniotic fluid (in gushes or droplets)

Contractions are not all there is

Other physical signs of childbirth

In addition to the onset of regular contractions, childbirth also requires shortening of the uterine neck, which in turn opens the cervical os. Without this change, the contractions (labour) cannot propel the baby down through the birth canal.[3]

The ripeness of the uterine neck and the cervical os are determined using the so-called Bishop score. It assesses and evaluates the consistency and width of the cervical os, the position and shortening of the uterine neck, and the position of the child in the pelvis.[4]



A Cervix (uterine neck)
B Cervix (cervical os)

The birth proceeds in phases

The process of childbirth can be divided into three distinct phases:[2]

Opening phase

The opening contractions mark the beginning of this phase. It ends with the complete opening of the cervical os.

Exit phase

This phase begins when the os has fully opened and ends with the birth of the child.

Postpartum phase

This phase completes the birth. It ends with the complete expulsion of the afterbirth (placenta).

On the due date: nothing happens

Reasons for postterm pregnancies

As the due date approaches, both the anticipation and the readiness for the birth increase. However, often nothing has happened by the expected date, but instead the child is still days or even weeks away. The exact reasons for postterm pregnancies have not yet been conclusively clarified.[5]

The following factors are believed to affect postterm pregnancies:[5]

- **First birth**
- **The baby is a boy**
- **Error calculating the birth date**
- **Postterm birth of a previous child**

About

40%

of children are born after the calculated date.[5]

On schedule or late

Do not lose patience

In particular, women waiting for their first child often find their patience tested. They often give birth a few days later.[6]

Even though it is difficult at the time, being impatient is not a good bet. Constantly thinking about and hoping for the baby is more likely to lead to cramping.[6] Instead, the expectant mother should try to consciously enjoy the last days of pregnancy and do things that she can no longer do easily, at least during the first pregnancy, such as going out with friends or putting her feet up and reading.

Distraction and relaxation are good!

Caution when "helping"

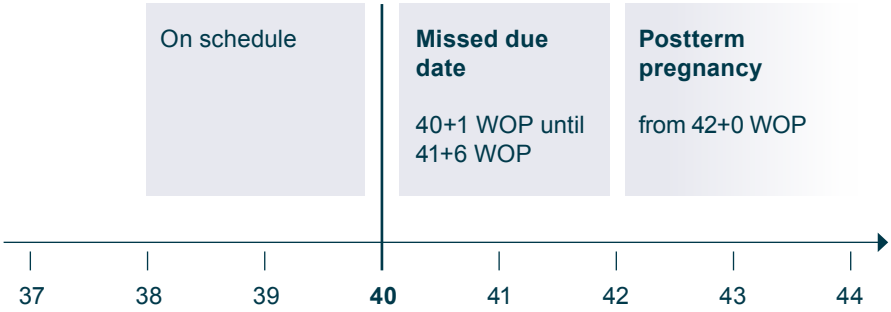
Patience is the order of the day!

Don't forget

Terminology and its meaning

The point in time that the pregnancy has reached and the time at which certain events occur is abbreviated in technical language as “week + day WOP” (**WOP = week of pregnancy**). Thus, a regular pregnancy lasts 40+0 WOP. Children born from two weeks before the expected date of birth, that is, in WOP 38 and 39, arrive on schedule.

In ordinary usage, in the first two weeks after exceeding the calculated date of birth, one speaks of “missed delivery date” and in the period thereafter of “**postterm pregnancy**”.[4]



Experts recommend the following guideline for inducing labour in cases of missed due dates and postterm pregnancies:[4]

From 41+0 WOP	=	Induction of labour **can** be offered.
From 41+3 WOP	=	Induction of labour **should** be offered.
From 42+0 WOP	=	**Induction of labour is strongly recommended.**

Induction of labour: when is it necessary?

Inducing labour needs to be well thought out

Overall, vaginal birth is preferred over cesarean section because it is considered more beneficial for both mother and child.[7] Even though the surgery-related risk is steadily decreasing for cesarean sections, vaginal births continue to be associated with a lower risk for the mother.[8]

Induction of labour is designed to encourage the body to start birth. Induction is a balancing of risk between the artificial start of vaginal birth and the risks, if any, to the mother and baby of continuing the pregnancy. The decision should always be well justified.[4]

The expectant mother is involved in this decision-making process and decides together with the physician to perform the induction.[4]

The individual situation of the expectant mother is also taken into account here:[4]

- **Age and/or overweight**
- **Smoker**
- **First birth**
- **Position of the child**
- **Ripeness of the neck and opening of the os**
- **Child weight**

Possible reasons for inducing labour:[4]

At a glance:

- **Date of delivery missed or postterm**
- **Premature rupture of membranes**
- **Gestational diabetes**
- **Abnormal amounts of amniotic fluid**
- **Below-average growth of the child**
- **Intrahepatic pregnancy cholestasis**
- **Hypertension during pregnancy**
- **Suspicion of a child being too big**

- **Missed due date or postterm pregnancy**
  As mentioned earlier, the period from 40+1 WOP to 41+6 WOP is defined as a missed due date. From 41+0 WOP, induction of labour may be recommended, and from 41+3 WOP, induction of labour should be recommended.[4]
  The postterm period begins at 42+0 WOP. From this point on, induction of labour is strongly recommended.[4]

- **Premature rupture of membranes**
  Preterm premature rupture of membranes occurs before 37+0 WOP and carries the risk of infection for mother and child. If there is no evidence of such an infection, induction of labour should be recommended no later than 37+0 WOP.[4] If the membranes rupture prematurely after 37+0 WOP, the birth should be induced no later than after 24 hours.[4]

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- **Gestational diabetes**
  If gestational diabetes is present, good medication or dietary management of the diabetes should be sought. Then there is no reason for inducing labour before the calculated date of delivery. Gestational diabetes that is well controlled by diet is not in itself an indication for induction of labor. In case of insulin-dependent gestational diabetes, induction of labour should be offered from 40+0 weeks' gestation.[4]

- **Abnormal amniotic fluid**
  If isolated the amount of amniotic fluid deviates from the norm, there is no reason to induce labour. However, increased amniotic fluid may also occur in association with other risks, so it should be investigated closely and deeper.[4]

- **Below-average growth of the child**
  In up to 70% of cases, these are simply constitutionally small children with no further risk. In other cases, the insufficient growth may pose a significant risk, which is why more detailed investigations must take place.[4]

- **Intrahepatic pregnancy cholestasis**
  If intrahepatic pregnancy cholestasis (acute liver disease with impaired bile outflow during pregnancy) is present, induction of labor should be recommended from 38+0 WOP. In the case of very high bile acid levels, induction of labour may even be useful between 34+0 and 36+6 WOP.[4]

- **Hypertension during pregnancy**
  In the case of gestational hypertension, termination of the pregnancy should be recommended from 37+0 WOP. In the case of chronic high blood pressure, termination of the pregnancy should be recommended from 38+0 WOP.[4]

- **Suspicion of a too large child**
  If the child is too large, complications may arise during the birth, especially in the child's shoulder area. Therefore, if a very large children is suspected, induction of labour is recommended from 39+0 WOP.[4]

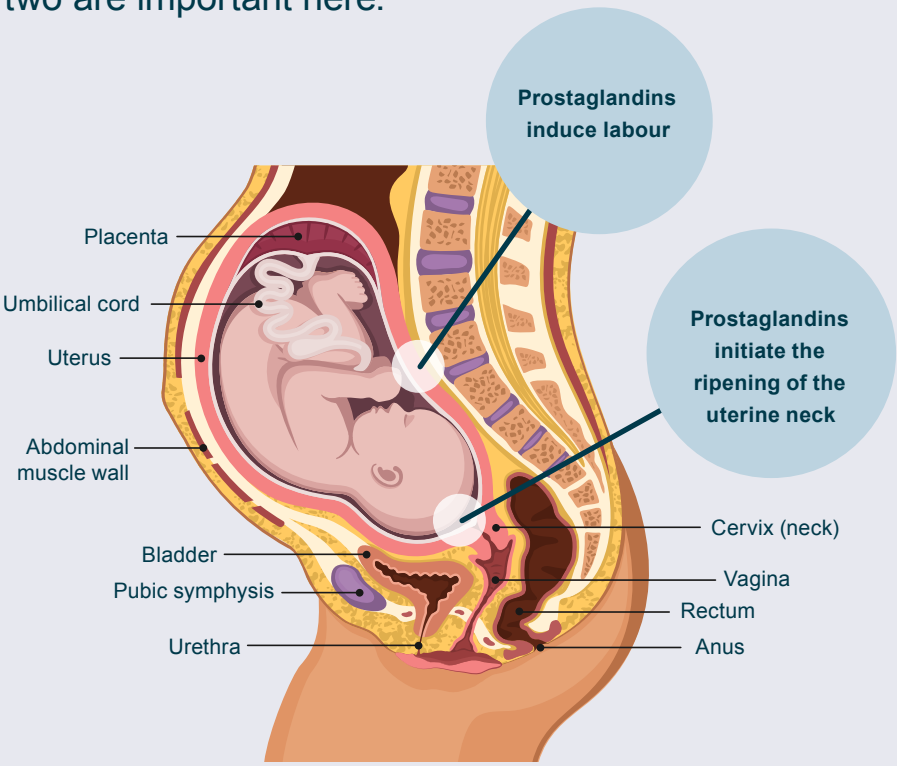
Options: From tablet to catheter

Medicinal methods

Medication can prepare the uterus and cervix for birth and induce labour. The human hormones prostaglandin and oxytocin, for example, are produced artificially for this purpose. Prostaglandins are used when the neck has not yet retracted and, therefore, the os is not yet ripe.[4] In this situation, a distinction is made between products that are swallowed as tablets and those that are inserted through the vagina. The ecbolic (labour-inducing) drug oxytocin can be used when the os is ripe and the contractions are to be increased.[4]

Medicinal methods

Prostaglandins act in various ways of which two are important here:[4,9]



Prostaglandins as tablets

Labour can be induced by taking tablets containing low doses of misoprostol. Misoprostol is a well-studied and approved agent for labour induction.[4]

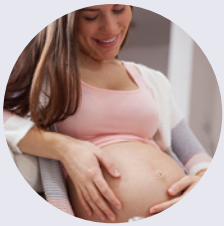
Prostaglandins via the vagina

Prostaglandins administered through the vagina contain the active ingredient dinoprostone. Different options are available:[4] vaginal tablet, vaginal gel, vaginal insert (similar to a tampon). This agent and the various options are also well studied through clinical trials. The options further differ as to how deeply they are introduced. For example, the vaginal insert is inserted deep into the posterior vagina and offers the advantage that the release of the active ingredient can be interrupted when the vaginal insert is pulled.[10]

Oxytocin by infusion

If the os is ripe and contractions need to be intensified, the woman is usually given the active ingredient oxytocin directly into the bloodstream via the vein.[11] The slow and finely dosed intravenous infusion allows the frequency and duration of contractions to be well controlled.

Mechanical methods



Initiation can also use “mechanical” means without medication. In this case, an attempt is made to stimulate the cervix in such a way that the body's own hormones (prostaglandins) are released, which supports the opening of the os and trigger contractions. The following methods exist:

Membrane sweep

An attempt is made to detach the lower end of the amniotic sac from the uterus by penetrating through the vagina with 1-2 fingers.

Balloon catheter

A balloon catheter is a small tube with one or two small balloons at the tip. This catheter is inserted into the uterus through the vagina and then filled with a saline solution. The balloons exert pressure on the cervix. This can stimulate the release of endogenous hormones that “ripen” the os and induce labour. The effectiveness of the catheter is comparable to medicinal induction by prostaglandins.[4]

Amniotomy

An amniotomy is the opening of the amniotic sac. This method is no longer recommended as a stand-alone measure.[4]

Alternative methods

Most of the following methods are used based on past experience. For these methods, data are available from clinical studies, but no statement on their safety or efficacy can be made because of the small number of cases.[4]

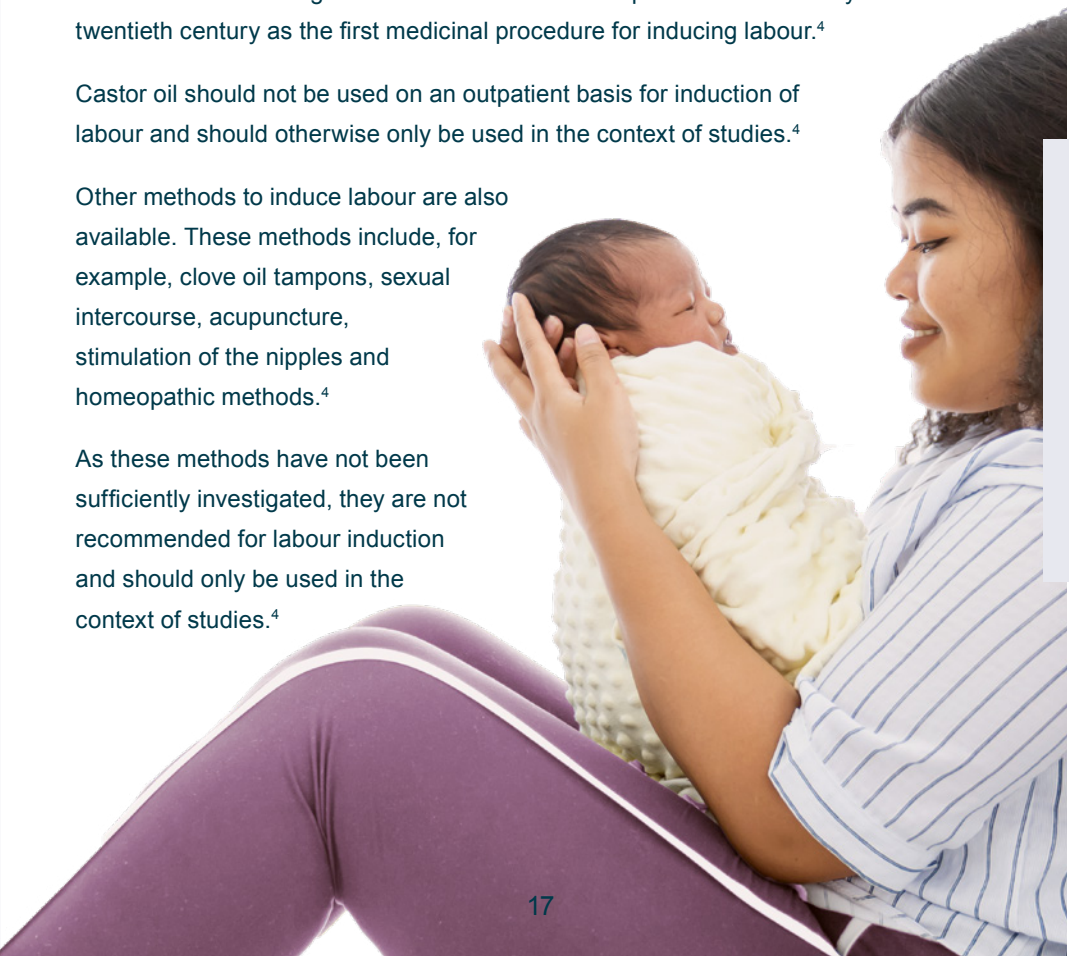
Castor oil

Castor oil is a laxative. Apart from the laxative effect, it can also induce labour. The “labour-stimulating cocktail” with castor oil was practiced in the early twentieth century as the first medicinal procedure for inducing labour.[4]

Castor oil should not be used on an outpatient basis for induction of labour and should otherwise only be used in the context of studies.[4]

Other methods to induce labour are also available. These methods include, for example, clove oil tampons, sexual intercourse, acupuncture, stimulation of the nipples and homeopathic methods.[4]

As these methods have not been sufficiently investigated, they are not recommended for labour induction and should only be used in the context of studies.[4]



Done!
The child is here

Puerperium (lying in)

During pregnancy, the woman's body has undergone unimaginable changes. These do not go away again overnight. The body simply needs a certain amount of time for this - the puerperium.[12]

The postpartum period covers a period of 6 to 8 weeks after the birth.[13] During this time, there are:[13]

- the so-called lochia (dead material and wound tissue is washed out of the uterus and should be absorbed with pads – not tampons)
- ‘afterpains’ (the uterus contracts back to its original size by means of contractions, which are experienced differently)
- possibly any emotional challenges, such as the so-called baby blues (usually a temporary low mood) or serious psychological problems (e.g. depression).

Skin contact with the baby

Immediately after the birth of a healthy baby, there is usually the opportunity to enjoy extensive skin-to-skin contact with the baby.
You can arrive together and, as a mother, develop a sense of when the baby is hungry or ready to breastfeed.[14]

Breastfeeding

An important aspect of caring for the baby after birth is breastfeeding. This is not only about satisfying hunger but also about satisfying the baby's need for warmth and affection.[15]

To support this, many maternity clinics make sure that mother and baby stay together day and night after the birth if possible (24-hour-rooming-in).[14]

Breast milk is considered the best food for almost all infants.[15]
It offers very decisive advantages over bottled milk, for example:[15]

- **It always has the right temperature.**
- **It is adapted to the nutritional needs of the child.**
- **It is free of charge.**
- **It is always available immediately.**
- **It protects the baby from pathogens and allergies later on.**

Tips for relaxed breastfeeding and sufficient milk production as well as help in understanding your child's signals are usually available directly at the clinic if required.[14] Breastfeeding cafés or parent-child groups are often offered after hospitalisation for those interested.[14]

It is recommended to breastfeed exclusively for the first 6 months.
From the 7th month, complementary foods can be gradually added.[14]

Rough guidelines for healthy weight development of the baby:[15]

- **Normal: up to 7% weight loss in the first 3 days**
- **Reaching birth weight within 10 days**
- **1st and 2nd month of life: weekly weight gain of 170-330 g**
- **3rd and 4th month of life: weekly weight gain of 110–330 g**
- **Doubling the weight after 3-5 months**
- **Tripling the weight towards the end of the 1st year of life**

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