



437 Team: Obstetrics and Gynecology

Post Term Pregnancy

Objectives:

- Identify the normal duration of gestation
- List the complications of prolonged gestation
- Describe the evaluation and evidence-based management options for prolonged gestation

References:

- Kaplan USMLE step 2 CK - Obstetrics and Gynecology
- Online Meded videos
- Team 435

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Definition:

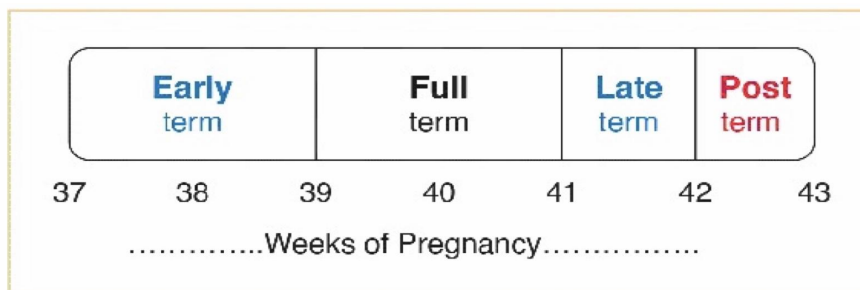
The most precise definition of post - term pregnancy is pregnancy that continues for ≥ 40 weeks or > 280 days post conception (6% of all pregnancies). Because the date of conception is infrequently known, a **practical definition is pregnancy that continues ≥ 42 weeks or ≥ 294 days after the first day of the last menstrual period.**

Nulliparous pregnant women are at higher risk to reach post term pregnancy

- Generally, 50% of patients deliver by 40 weeks, 75% by 41 weeks, and 90% by 42 weeks.
- These statistics assume ovulation occurred on day 14 of a 28 - day menstrual cycle (because up to 50% of patients have cycles longer than 28 days, these numbers are probably overstated).

Etiology:

- ❑ Most common cause of Postterm pregnancy is **Inaccurate estimation of gestational age** because we don't know when the pregnancy actually started
- ❑ The most common cause of true postdates cases are **idiopathic** (no known cause).
- ❑ It does occur more commonly in young primigravidas and rarely with placental sulfatase deficiency.
- ❑ Pregnancies with anencephalic fetuses are the longest pregnancies reported.



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Figure I-8-7. Four Categories of Term Pregnancy

Post-term Pregnancy and Placental Function

With post-term pregnancy, **perinatal mortality is increased two- to three fold**. This is a direct result of **changes on placental function** over time.

- **Macrosomia syndrome.** In most patients, **placental function continues** providing nutritional substrates and gas exchange to the fetus, resulting in a healthy but **large** fetus (weight of more than 4.5 kg). **Cesarean rate is increased** owing to prolonged or arrested labor. Shoulder dystocia is more common with risks of fetal hypoxemia and brachial plexus injury. **Do not deliver earlier, and c-section is not required.**
- **Dysmaturity syndrome.** In a **minority** of patients, **placental function declines** as infarction and aging leads to placental scarring and loss of subcutaneous tissue. This reduction of metabolic and respiratory support to the fetus can lead to the **asphyxia** that is responsible for the increased perinatal morbidity and mortality. **Cesarean rate is increased** owing to nonreassuring fetal heart rate patterns. Oligohydramnios results in umbilical cord compression. Hypoxia results in acidosis and in utero meconium passage.

Maintained	Deteriorates
Macrosomia (80%)	Dysmaturity (20%)
Difficulty labor and delivery	Placental insufficiency
↑ C section (Forceps, vacuum extractor, shoulder dystocia, birth trauma)	↑ C section (acidosis, meconium aspiration, oxygen deprivation)

Table I-8-5. Placental Function in Post-term Pregnancy

Meconium aspiration syndrome (MAS) pathophysiology: ANS maturity lead to pass of stool then fetus aspire.

❑ **Results in:** Severe respiratory distress, Mechanical obstruction, Chemical pneumonitis.

❑ **Prevention**

Current recommendations reflect the understanding that MAS has its origin in utero, often prior to labor. Randomized studies have shown that most interventions in the neonatal period do not lead to a change in the perinatal outcome.

- **Amnioinfusion** may be helpful to prevent umbilical cord compression but makes no difference in preventing MAS; **do not routinely performed.**
- **Suctioning of fetal nose and pharynx** makes no difference in preventing MAS; **do not routinely perform**
- **Laryngoscopy visualization** of vocal cords is only indicated if the neonate is depressed; **perform selectively.**

Management Of Post-term Pregnancy

is based on two factors.

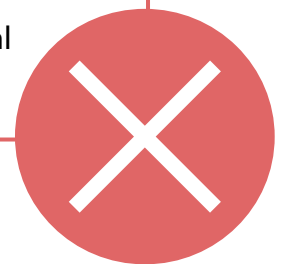
1. **Confidence in dates.** Identify how much confidence can be placed on the gestational age being truly > 42 weeks.
2. **Favorableness of the cervix.** Assess the likelihood of successful induction of labor by assessing cervical dilation, effacement, position, consistency, and station.

The Bishop score is a numerical expression of how favorable the cervix is and the likelihood of successful labor induction.



A **favorable or ripe cervix** is dilated, effaced, soft, and anterior.
A Bishop score ≥ 6 is an accurate predictor of successful vaginal delivery with induction of labor.

An **unfavorable cervix** is closed uneffaced, firm, and posterior.
A Bishop score < 3 is a predictor of unsuccessful vaginal delivery with induction of labor.



Parameter\Score	0	1	2	3
Position	Posterior	Intermediate	Anterior	-
Consistency	Firm	Intermediate	Soft	-
Effacement	0-30%	31-50%	51-80%	>80%
Dilation	0 cm	1-2 cm	3-4 cm	>5 cm
Fetal assessment	-3	-2	-1,0	+1,+2

Table I-8-4. Bishop Scoring Method

Patients can be classified into three groups :

Dates sure, favorable cervix

A → Management is aggressive. There is no benefit to the fetus or mother in continuing the pregnancy. Induce labor with IV oxytocin and artificial rupture of membranes.

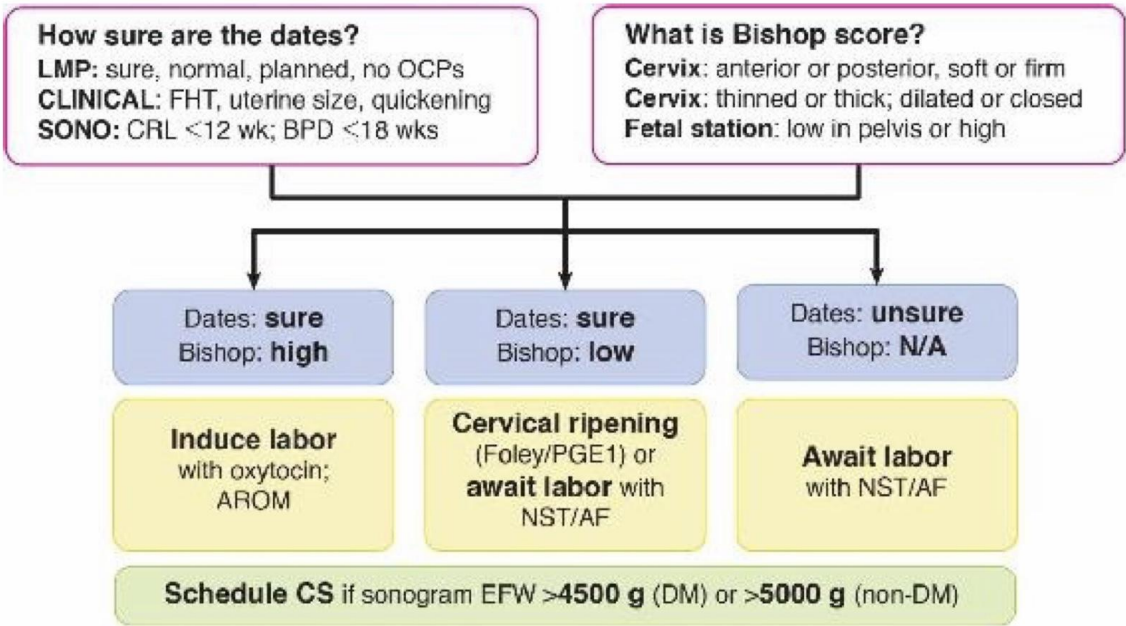
Dates sure, unfavorable cervix

B → Management is controversial. Management could be aggressive, with mechanical cervical ripening using a Foley balloon catheter placed through the cervical canal, or with oral / vaginal / cervical prostaglandin to soften the cervix. Either method is followed by IV oxytocin. You can go with C-section.

Dates unsure

C → Management is conservative. Perform twice weekly NSTs and AFIs (US) to ensure fetal well - being and await spontaneous labor. If fetal jeopardy is identified, delivery should be expedited.

The earliest week to induce labor is 41 weeks . And if the patient reached week 42, labor induction is required



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Figure I-8-8. Diagnosis and Management for Post-Dates Pregnancy

Teaching case (video case)

A 35-year-old, G1P0 woman, presents to your office for a routine prenatal exam. She is 5 days past her due date that was determined by her last menstrual period and a second trimester ultrasound. While reviewing her chart, you note that she has gained 32 pounds during this uncomplicated pregnancy with 1/2 pound weight gain since last week's visit.

Her BP is 110/65. She has no glycosuria or proteinuria. The fundal height measures 38 cm and fetal heart tones are auscultated at 120 bpm in the left lower quadrant. The fetus has a cephalic presentation and an estimated weight of 8 lbs. Just before you go into the room, your nurse pulls you to the side, and tells you, "She has a lot of questions!" Once you walk into the room, the patient expresses her disappointment that she has not had the baby yet.

She assumed that she would be having the baby on her due date. She asks you about potential harm to her and the baby from going past her due date, and she would like to know her options.



1. What would you tell this patient is the normal duration of pregnancy and what is the usual time for the onset of spontaneous labor?

The **normal** duration of pregnancy is 280 days (40 0/7 weeks) from the first date of the last menstrual period.

Preterm pregnancy	defined as a gestational age less than 37 0/7 weeks
Early Term pregnancy	defined as a gestational between 37 0/7 weeks and 38 6/7 weeks
Full Term pregnancy	defined as a gestational age between 39 0/7 weeks and 40 6/7 weeks
Late Term pregnancy	defined as a gestational age between 41 0/7 weeks and 41 6/7 weeks
Post term pregnancy	defined as a gestational age of 42 0/7 weeks or greater

- ❖ In the United States, approximately 12% of pregnancies deliver preterm
- ❖ Approximately 80% of pregnancies are delivered at a term gestation
- ❖ Postterm pregnancy is estimated to have an incidence of 6%.
- ❖ Accurate gestational age assignment with first trimester ultrasound results in a decreased incidence of post term pregnancy.

2. What are the risks associated with postterm pregnancy?

Antenatal concerns:

- Macrosomia: estimated prevalence of 25% in prolonged pregnancy.
- Post maturity syndrome.
- Oligohydramnios: Decrease placental flow → Deprioritize blood to the kidney → Preserve blood to the brain → decrease urine production.
- Perinatal death (stillbirth): rate increases steadily after 37 weeks, approaching 1 in 300 at **42 weeks**.

Intrapartum concerns:

- Labor dystocia.
- Infant birth trauma.
- Maternal perineal trauma.
- Cesarean delivery, which increase the risk of: Bleeding, Thromboembolic events and Visceral injury.
- Postpartum hemorrhage
- Meconium passage indicates fetal stress, 80% due to long delivery and neonate will be normal, they don't need c- section since it may also lead to aspiration syndrome
 - failed labor, preform c-section
 - Infection

Neonatal concerns:

- Meconium aspiration syndrome.
- Hypoglycemia.
- Hyperbilirubinemia

3. What are the features of postmaturity syndrome?

- Although the true incidence of the fetal postmaturity syndrome is unknown, it has been estimated to occur in 10% of pregnancies between 41 and 43 weeks.
- The syndrome results from **placental insufficiency** due to aging and infarction.
- Typical features of postmaturity syndrome include: (looks like an old man)
 - Loss of subcutaneous fat resulting in a long thin body.
 - Long fingernails.
 - Dry, peeling, wrinkled skin.
 - Abundant hair.
- Postmature infants have an increased risk of perinatal mortality, as compared to other post term infants.

4. What management plan would be appropriate for this patient?

- Labor Induction:
 - Appropriate at 41 0/7 weeks regardless of cervical status between 41 0/7 to 41 6/7
 - Is associated with a decreased risk of perinatal mortality, cesarean delivery, and cost.
 - Pre-induction cervical ripening maybe required if the cervix is unfavorable.
- Expectant Management:
 - Should include antenatal testing (ultrasound, Non stress test)beginning between the 41 and 42 weeks.
 - Induction is indicated if there is evidence of non-reassuring fetal testing.
 - Expectant management should be pursued no longer than 43 weeks, and only with antepartum testing.
 - DM patients are recommended with c-section, since they have higher risk of macrosomia and labor dystocia