



An AOM Clinical Practice Guideline Summary

# MANAGEMENT OF PRELABOUR RUPTURE OF MEMBRANES AT TERM

This summary provides easy access to some of the most essential content of AOM CPG No. 13: Management of Prelabour Rupture of Membranes at Term, and is intended for use in conjunction with the full-length CPG. For a complete analysis of the research relevant to PROM and midwifery practice, along with all citations, readers are strongly encouraged to refer to the full CPG.

## INTRODUCTION

Prelabour rupture of membranes (PROM) is a common variant of normal in term pregnancy. Despite the rarity of major complications, PROM is associated with increased morbidity for the birthing parent and neonate. Disagreement exists among health-care providers about the optimal management of individuals with PROM, particularly the need for and timing of induction. Midwives providing care for clients with PROM aim to avoid unnecessary interventions while facilitating the best possible outcomes for clients and newborns.

## INCIDENCE OF PROM

PROM occurs in approximately 10% of all pregnancies (from 2.7 to 17%), with 60% to 80% of cases occurring at term. (1-3)

## FACTORS ASSOCIATED WITH PROM

- History of PROM (4-6)
- Cigarette smoking (5)
- Vitamin C and E supplementation (simultaneously) (7,8)

## COMPLICATIONS ASSOCIATED WITH PROM

**Table 1: Complications Associated with PROM**

	Associated complication	Overall incidence	Incidence with PROM
Birthing parent complications	Chorioamnionitis	1%-4% (9-11)	1.2%-11% (2,12,13)
	Endometritis	After vaginal delivery: < 3% (14)	3.2% (15)
Fetal/ neonatal complications	Cord prolapse	0.002% (16)	All gestations: 0.3%-1.7% (1)
	Early-onset neonatal sepsis	Canada: 0.0002% (17)	2% (confirmed) to 6% (confirmed and suspected) (18,19)

## MANAGEMENT OF PROM: EARLY INDUCTION OF LABOUR VS. EXPECTANT MANAGEMENT

### TERMPROM STUDY

The TermPROM Study is the largest to date focusing on the management of PROM. (3) Researchers sought to determine whether a policy of expectant management or induction of labour for individuals with PROM was preferable in terms of the risks of birthing parent and fetal infection as well as caesarean section, and whether one method of induction was superior to the other. Study investigators concluded that strategies of expectant management and induction were both reasonable options for birthing parents with PROM. (6)

### COCHRANE REVIEW

An updated 2017 Cochrane review examined differences in outcomes (summarized in Table 2) for individuals at  $\geq 37$  weeks' gestation with PROM, who were randomized to planned early birth (induction within 24 hours) or expectant management (no planned induction within 24 hours) groups. (20) The TermPROM Study comprises 58.5% of this updated Cochrane review.

**Table 2: Summary of Outcomes for Planned Early Birth vs. Expectant Management of PROM (20)**

Outcome	Planned early birth
Chorioamnionitis (suspected or proven)	Decreased risk (p < 0.05)
Chorioamnionitis and/or endometritis People who did not receive a digital vaginal exam before onset of active labour	No difference (p = 0.46)
Endometritis	No difference (p = 0.074)
Assisted delivery	No difference (p = 0.90)

Caesarean section	No difference (p = 0.10)
Neonatal infection (definite early-onset neonatal sepsis)	No difference (p = 0.19)
Neonatal infection (definite or probable early-onset neonatal sepsis)	Decreased risk (p < 0.05)
Neonatal infection (definite or probable early-onset neonatal sepsis) People who did not receive a digital vaginal exam before onset of active labour	No difference (p = 0.49)
Use of epidural analgesia	No difference (p = 0.65)
Use of antibiotics	Lower rate of use (p < 0.05)
Time from rupture of membranes to birth (hours)	Shorter time from ROM to birth (p < 0.05)

## Recommendations

1. For clients with PROM > 37+0 weeks, discuss the risks and benefits of both expectant management and induction of labour. In the absence of abnormal findings and when digital vaginal exams are avoided before the onset of active labour, expectant management and induction are both appropriate options. [I-A] [new 2019]
2. Inform clients with PROM who choose expectant management that they have the option to revisit their management plan and may choose induction of labour if they no longer desire expectant management. [III-A] [2019]
3. To reduce the risk of infection, avoid digital vaginal exams for clients with PROM whenever possible, until active labour or upon induction. [I-A] [2019]

## ANTEPARTUM MANAGEMENT

- Information sharing regarding signs and symptoms of PROM, as well as when and how to notify the midwife in cases of suspected PROM, will ideally occur during the prenatal period, before it presents.
- It is important for the midwife to confirm PROM so appropriate management can be planned.
- A phone assessment is a reasonable first step in assessing for PROM, followed by an in-person assessment within 24 hours from the time of membrane rupture.

## Recommendation

4. Initial assessment for PROM may take place by phone or in person.
  - a. If no abnormal signs or symptoms are present during history-taking by phone for suspected PROM, conduct an in-person assessment to confirm PROM. Following the phone assessment, make a management plan within 24 hours after membrane rupture. Ensure that the client is aware of when and how to contact the midwife to arrange an earlier assessment in the event that abnormal signs develop: presence of meconium in amniotic fluid, frank vaginal bleeding, fever > 38 °C, foul-smelling amniotic fluid or decreased fetal movement. [III-A] [2011]
  - b. If abnormal signs or symptoms are present during history-taking related to PROM, an immediate in-person assessment is warranted. [III-A] [2011]

## DIAGNOSIS OF PROM

Three main methods are currently used to confirm PROM: a sterile speculum exam, a nitrazine test and/or a fern test. All three methods are evidence-based and are considered appropriate diagnostic methods for PROM at term within the midwifery context.

### Recommendations

5. Diagnosis of PROM may be performed with one or more of the following: a sterile speculum exam, a nitrazine test and/or a fern test. Results should be interpreted in combination with a client's history of PROM. [II-2-B] [2011]
6. When results from any of the tests are uncertain, multiple methods (a sterile speculum exam, a nitrazine test and/or a fern test), as well as the midwife's clinical judgment, should be used to obtain a clearer clinical picture. Decision-making may be supported by ultrasound evaluation of the amniotic fluid volume in instances when PROM results are uncertain, following other diagnostic tests. [III-B] [2011]

## PRACTICAL ASPECTS OF PROM MANAGEMENT

No ideal regimen for fetal and birthing parent monitoring during expectant management of PROM was identified. However, a number of studies outlined the various monitoring protocols used for participants in their respective expectant management groups. Examples of these monitoring protocols (for both the fetus and birthing parent) include:

- Checking temperature regularly (21–24)
- Checking the colour and odour of amniotic fluid (21)
- Checking fetal heart rate every 4 hours (22,23,25)
- Conducting a daily non-stress test (22,24)
- Evaluating uterine tenderness daily (24)
- Monitoring uterine contractions (26)
- Conducting a complete blood count daily (24)

### Recommendations

7. Ensure that clients with PROM who choose expectant management are aware of when and how to contact their midwife for support should complications develop. [III-A] [2011]
8. For clients with PROM who choose expectant management, the midwife should conduct a daily in-person assessment in the client's home, at a clinic or in the hospital. This should include: monitoring vital signs of the birthing parent and the fetus and examining the amniotic fluid, as well as a discussion of the client's emotional well-being. If the midwife notes any contraindications to expectant management during the physical exam, or if any other emotional or psychological concerns arise, they may offer induction of labour. [III-B] [2011]

## PROM AND GBS

No prospective studies have been designed to examine a) the ideal time to start intrapartum antibiotic prophylaxis (IAP) or b) the ideal time to induce labour for those with GBS and PROM.

The most relevant published evidence to date is from the TermPROM Study that found a non-significant trend suggesting that GBS carriers were at lower risk of early-onset group B streptococcal disease (EOGBSD) if they were induced with oxytocin rather than managed expectantly (OR 0.29, 95% CI 0.08-1.05,  $p = 0.06$ ). (27)

One 1999 publication re-analyzed previously published data on EOGBSD in neonates and found an increasing risk of EOGBSD with increasing length of rupture of membranes\* (see Table 3). (28)

**Table 3: ORs for EOGBS Stratified by Duration of Amniotic Membrane Rupture\* (28)**

Duration of ROM (h)	OR (95% CI)	P All groups	References
≤ 18	1.0	0.0025	(29)
>18	5.92 (2.1-16.1)		
≤ 18	1.0	< 0.001	(30)
> 18	7.23 (4.42-12.0)		
< 20	1.0	< 0.001	(31)
≥ 20	26.2 (10.7-63.9)		

\*Regardless of whether rupture of membranes occurred during labour or prior to labour

## Recommendations

9. Inform clients of the research gaps regarding the most effective approach to preventing EOGBSD in infants born to GBS carriers who experience term PROM. [III-B] [2011]
10. Offer a choice between expectant management and immediate induction of labour with oxytocin to clients with a positive GBS swab result at term who experience PROM for < 18 hours and have no other risk factors [III-B]. [2011]
11. Recommend induction of labour with oxytocin to GBS-positive clients with PROM ≥ 18 hours [III-B]. IAP should be offered upon initiation of induction. [2011]
12. Offer GBS-positive clients with PROM who choose expectant management a range of options for prophylactic antibiotic administration:
  - a. IAP in active labour [II-2-B] [2011]
  - b. IAP in the latent phase [III-C] [2011]
  - c. IAP upon initiation of induction of labour [III-B] [2011]

## EXPECTANT MANAGEMENT: HOME OR HOSPITAL

Very little research is available that compares the outcomes of expectant management in the home versus in the hospital.

A secondary analysis of the TermPROM Study found the following (32):

- Participants managed at home were more likely to have neonates with infection
- Primiparas managed at home were more likely to receive antibiotics
- GBS-negative participants managed at home were more likely to deliver by caesarean section

It is important to note that in this study a) participants were not randomly allocated to management in the home or hospital, b) this analysis did not control for digital vaginal exams (which are a strong predictor of infection), and c) it is unclear whether or not the participants allocated to expectant management at home received care similar to that offered by Ontario midwives.

One prospective study was identified that examined outcomes of primiparas with PROM who were expectantly managed in the home or in clinic. No differences were observed in birthing parent or neonatal infection rates between both groups. (33)

## Recommendations

13. For clients who choose expectant management following PROM at term, remaining at home during the latent period is recommended, provided that daily in-person assessments take place and that the client is aware of how and when to contact the midwife. In-person assessments should include: monitoring vital signs of the birthing parent and the fetus and examining the amniotic fluid, as well as a discussion of the client's emotional well-being. [III-B] [2011]

## TIMING OF INDUCTION FOR PROM: WHEN IS THE LATENT PERIOD TOO LONG?

There is no definitive length of the latent period at which the risks of PROM significantly increase. Approximately 75% of individuals with PROM will give birth within 24 hours, 90% within 48 hours and 95% by 72 hours. (2,9,23,24)

Table 4 includes the absolute risks of birthing parent and neonatal infection (stratified by length of the latent period) based on two secondary analyses of the TermPROM Study data. (12,27)

**Table 4: Length of latent period and absolute risk of infection**

Latent period (hours)	Maternal Infection	Neonatal Infection
< 12	1.3%	–
12 to < 24	1.5%	0.77%
24 to < 48	2.3%	0.82%
≥ 48	1.35%	0.54%

## Recommendations

14. In the absence of signs of infection in the birthing parent or the fetus, inform clients who are GBS negative and who choose expectant management that it is reasonable to wait for up to 96 hours before induction of labour. [I-A] [2011]
15. As part of an informed choice discussion regarding expectant management and the length of the latent period, inform clients that chorioamnionitis and neonatal infection rates increase ≥ 24 hours after PROM. [II-2-B] Inform clients that avoiding vaginal exams until the onset of active labour appears to mitigate this risk, and it is therefore an important part of an expectant management approach. [I-A] [new 2019]
16. Inform clients who choose expectant management beyond 96 hours that no available research quantifies any potential increase in the risk of infection in the birthing parent or the neonate. [III-B] [2019]

## INTRAPARTUM MANAGEMENT

- Baths: Two studies were identified that examined whether or not a warm bath during labour increases the risk of infection in the birthing parent with PROM or the neonate. Neither study found differences in birthing parent or neonatal infection rates between those with PROM who had or did not have a bath. (34,35)
- Fetal monitoring and PROM: No research literature was found to suggest that PROM or prolonged PROM in the absence of any evidence of fetal compromise is an indication for continuous electronic fetal monitoring

## Recommendation

17. In the absence of meconium staining of the amniotic fluid and any signs of infection in the birthing parent or the fetus, it is appropriate for midwives to use intermittent auscultation as a method of intrapartum fetal monitoring for clients with PROM. [III-B] [2011]

# POSTPARTUM MANAGEMENT

PROM is associated with neonatal infection, however, the presence of chorioamnionitis and frequency of digital vaginal exams have been found to strengthen this association. Monitoring for neonatal infection is an important part of routine care for clients who experience PROM at term, regardless of whether they choose expectant management

## Recommendation

18. The healthy infant born to clients with PROM who are GBS negative may be assessed by the midwife as usual, based on clinical signs and symptoms of infection. (III-A) [2011]

## CONCLUSION

Although PROM is a common event in pregnancy, amid a growing body of evidence there continues to be debate regarding how best to manage individuals with PROM  $\geq 37+0$  weeks' gestation. Clients must consider the slightly increased risk of infection in the birthing parent and the newborn with expectant management versus the risks associated with induction of labour. However, the evidence suggests that little to no difference in infection rates exists between both management options when vaginal exams are avoided before the onset of active labour. This evidence may be shared with clients as part of an informed choice discussion to help support decision-making that best reflects the client's individual values and preferences.

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