



An AOM Clinical Practice Guideline Summary

MANAGEMENT OF THE UNCOMPLICATED PREGNANCY BEYOND 41+0 WEEKS' GESTATION

This summary provides easy access to some of the most essential content of AOM CPG No. 10: Management of the Uncomplicated Pregnancy Beyond 41+0 weeks' gestation and is intended for use in conjunction with the full-length CPG. For a complete analysis of the research relevant to Postdates and midwifery practice, along with all citations, readers are strongly encouraged to refer to the full CPG.

INTRODUCTION

Postdates' pregnancy is defined as lasting 40+0 weeks plus one or more days (i.e. anytime past the estimated date of birth), and 'prolonged' pregnancy is any pregnancy after 42+0 weeks (or synonymous with postterm).

Postdates pregnancies are generally a healthy occurrence associated with good outcomes for clients and infants. However, midwives pay special attention to pregnancies beyond 41 weeks as they have been associated with increased risks of caesarean section, postpartum hemorrhage, meconium stained amniotic fluid (MSAF), meconium aspiration syndrome (MAS), shoulder dystocia and stillbirth.

Important aspects of midwifery management of postdates include:

- Determining an accurate estimated date of birth (EDB)
- Offering clients options to promote spontaneous labour before 41 weeks' gestation
- Discussing if and when to offer induction of labour for clients with postdates pregnancies
- Establishing a plan with clients for optimal timing and frequency of fetal monitoring for clients with postdates pregnancies

Midwives providing care for pregnancy at 41+ weeks' gestation aim to avoid unnecessary intervention while facilitating the best possible outcomes for clients and their infants. Discussing and implementing a plan for management of pregnancy at 41+ weeks is part of the informed choice process.

INCIDENCE

In Ontario in 2000, 46.4% of births occurred at 37 to 39 weeks, 45.2% occurred at 40-41 weeks and 1.0% occurred at ≥ 42 weeks. By 2018-2019, 63.4% of births occurred at

37-39 weeks, 36.2% occurred during the 40th and 41st week and 0.4% occurred ≥ 42 weeks. (1) The percentage of births occurring beyond 40 weeks has significantly declined.

CONTRIBUTING FACTORS

A number of factors have been linked to incidence of pregnancy extending beyond 41 weeks, including: previous postterm pregnancy (2), parental or sibling history of postterm pregnancy (2-4) male fetal sex (2,5,6),

higher body mass index (BMI) (7), advanced maternal age (2,8) lower parity (8), and depression/anxiety. (9)

COMPLICATIONS

Complications of pregnancy extending beyond 41 weeks may include:

- caesarean section (10)
- uterine rupture, postpartum hemorrhage, hysterectomy (11-14)
- meconium aspiration syndrome (MAS), meconium stained amniotic fluid (MSAF) and macrosomia (12,15-20)
- shoulder dystocia (12,19,21)
- stillbirth and neonatal mortality (22)

TABLE 1: Absolute risk of stillbirth and neonatal death by gestational age (weeks)

Complication	Studies	Number of events	Number of pregnancies	Absolute risk (per 1000 births)
Stillbirth				
38+ ⁰⁻⁶	12	3,516	8,032,865	0.4
39+ ⁰⁻⁶	12	3,620	6,784,040	0.5
40+ ⁰⁻⁶	12	3,426	4,687,330	0.7
41+ ⁰⁻⁶	12	2,407	2,273,471	1.1
42+ ⁰⁻⁶	12	1,335	700,610	1.9
≥ 43	6	276	82,039	3.3
Stillbirth (low-risk population only*)				
38+ ⁰⁻⁶	5	1,520	4,689,811	0.3
39+ ⁰⁻⁶	5	1,511	3,763,774	0.4
40+ ⁰⁻⁶	5	1,266	2,359,848	0.5
41+ ⁰⁻⁶	5	821	1,009,544	0.8
42+ ⁰⁻⁶	5	307	243,823	1.3
≥ 43	2	13	3,212	4
Neonatal Mortality**				
38+ ⁰⁻⁶	5	428	1,210,730	0.4
39+ ⁰⁻⁶	5	560	2,029,277	0.3
40+ ⁰⁻⁶	5	669	2,197,643	0.3
41+ ⁰⁻⁶	5	347	1,127,117	0.3
42+ ⁰⁻⁶	4	44	70,322	0.6
≥ 43	4	4	6,370	0.6

*Low-risk pregnancies were defined as those "in which a healthy woman with apparently uncomplicated pregnancy enters labour with a low risk of developing intrapartum complications" (22)

** Any newborn death before 28 days of age was classed as a neonatal death (22)

DETERMINING GESTATIONAL AGE

Pregnancy dating using ultrasound vs. last menstrual period

A 2015 Cochrane review investigated the use of routine ultrasound at <24 weeks vs. selective ultrasound at <24 weeks and reported on the rate of induction for postterm pregnancies, rather than simply the rate of postterm pregnancies. (23) The meta-analysis included moderate certainty of evidence from eight RCTs and found that routine ultrasound <24 weeks gestation likely reduces the risk of postdates inductions, RR 0.59 (95% CI 0.42-0.83, $p = 0.003$) compared to selective use of ultrasound <24 weeks. Observational studies support these findings, suggesting that there are fewer pregnancies classified as postdates when early ultrasound is used for pregnancy dating compared to LMP alone. (24-32) Estimated due dates by LMP were 0.2 days to 2.5 days later than US estimates (25,26,33), with the majority (65.1% to 80.8%) of estimates falling within 7 days (\pm) of the US estimate of gestational age. (28,32)

Optimal timing of ultrasound

There were no RCTs that directly reported on optimal timing of ultrasound for gestational age estimation (and the number of pregnancies going beyond 41 weeks, when gestational age was estimated at different timepoints). However, moderate certainty of evidence from one RCT ($n=196$) was identified that reported on a proxy outcome: change in the rate of postterm inductions. Results from this study show that first trimester ultrasound likely reduces the rate of postterm inductions compared to second trimester ultrasound, RR 0.37 (95% CI 0.13-1.01, $p = 0.05$). (34) This could result in approximately 82 fewer postterm inductions per 1000 clients (ranging from 113 fewer to 1 more).

Observational studies support this finding, showing an increase in postterm pregnancies when later ultrasounds (>24 weeks, 21-28 weeks or 29+ weeks) are used for gestational dating. (28,35)

Recommendation

1. Midwives should offer clients an ultrasound before 24 weeks – optimally in the first trimester – in order to obtain the most accurate estimate of gestational age. Review the following as part of an informed choice discussion with clients:
 - Ultrasound dating will not prevent a pregnancy from progressing beyond its due date, but it decreases the chance that the pregnancy will be inaccurately classified as postdates.
 - First-trimester ultrasound provides the most accurate estimate of gestational age.
 - For clients who are late to care, an ultrasound estimate of gestational age during the second or third trimester may still be more accurate than an estimate of gestational age determined by LMP alone. [2021]

Strong recommendation: moderate certainty of evidence

This recommendation recognizes that an accurate estimate of gestational age allows for optimal decision making on managing a postdates pregnancy, and may reduce the need for unnecessary intervention.

Good Practice Statement

2. For clients who choose not to have an ultrasound, take the most accurate menstrual history possible to obtain a more precise estimate of pregnancy length. Corroborate or reassess estimated dates based on physical assessments. Review the following with clients:
 - First day of last menstrual period
 - Average cycle length
 - Ovulation date, implantation date, or conception date, if known [2021]

Good practice statement

This good practice statement recognizes the client as the primary decision-maker and acknowledges that some clients may prefer not to have an ultrasound.

PREVENTING POSTDATES PREGNANCIES

Membrane sweeping

We conducted six meta-analyses (including 17 RCTs) to determine the effectiveness of membrane sweeping on time to spontaneous labour, rates of spontaneous labour,

incidence of pregnancies >41 and >42 weeks, gestational age at birth, prelabour rupture of membranes and chorioamnionitis.

TABLE 2: Outcomes of membrane sweeping

Outcomes	Membrane sweeping	Findings
Time to spontaneous onset of labour	Probably slightly reduces	MD -0.97 days (95% CI -1.47 to -0.46, p = 0.01) (36-40)
Rate of spontaneous labour	Probably increases rates	RR 1.18 (95% CI 1.04-1.34, p = 0.01) (39,41-48)
Pregnancies beyond 41 weeks	Reduces	RR 0.53 (95% CI 0.40-0.69, p <0.00001) (41,44,46,49)
Prelabour rupture of membranes	Probably slightly increases	RR 1.21 (95% CI 0.96-1.51, p = 0.10) (36,37,41-45,47,49-51)
Chorioamnionitis	Probably increases	RR 1.49 (95% CI 0.74-3.00, p = 0.27) (37,39,44,49,51)
Bleeding	May result in bleeding	(36,38,41,43,45,47,49,51,52)

Research Gap

Researchers have yet to identify the optimal timing for membrane sweeping between 38-41 weeks in order to promote spontaneous labour. Future research is required to understand the optimal timing of membrane sweeping to promote spontaneous labour.

Recommendation

- Midwives should discuss the risks and benefits of membrane sweeping and offer it between 38 and 41 weeks' gestation to promote the spontaneous onset of labour and reduce the risk of pregnancy progressing beyond 41 weeks. [2021]

Strong recommendation: moderate certainty of evidence

This recommendation recognizes midwives' commitment to physiologic birth and low intervention approaches to promote spontaneous labour.

Acupuncture

Two RCTs and one observational study compared the use of acupuncture vs. usual care to promote spontaneous labour in participants < 41 weeks gestation. (53-55) Results show that acupuncture:

- May result in slightly lower **mean gestational age at delivery**, MD -2.00 days (95% CI -2.56 to -1.44, p <0.00001) [one observational study; *low certainty of evidence*] (53)
- Probably makes little to no difference in **time to**

- birth**, MD 0.43 days (95% CI -1.85-1.00, p = 0.56) [two RCTs; *moderate certainty of evidence*] (54,55)
- Probably makes little to no difference in **rates of spontaneous labour**, RR 0.91 (95% CI 0.65-1.27, p = 0.57) [one RCT; *moderate certainty of evidence*] (55) though observational data suggests that it may increase rates of spontaneous labour, RR 1.42 (95% CI 1.21-1.66, p <0.0001). (53)

No harms of acupuncture were noted.

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Acupressure

Two RCTs were identified that compared the use of acupressure vs. usual care to promote spontaneous labour in participants <41 weeks gestation. (56,57)

Results show that acupressure:

- Likely makes little to no difference in **gestational age at birth**, MD 0.2 days (95% CI -0.97-1.37, p = 0.74) [one RCT; *moderate certainty of evidence*] (56)
- Likely makes little to no difference in **time to birth**, MD 10.72 hours (95% CI -14.89-36.33, p = 0.41) [one RCT; *moderate certainty of evidence*] (57)
- Likely makes little to no difference in **rates of spontaneous labour**, RR 1.22 (95% CI 0.64-2.35, p = 0.55) [one RCT; *moderate certainty of evidence*] (56)

No harms of acupressure were noted.

Evening primrose oil

One RCT and one observational study were identified that compared the use of oral evening primrose oil to placebo or no treatment in participants <41 weeks' gestation.

(58,59)

Results show that oral evening primrose oil:

- Likely makes little to no difference in **time to birth**, MD -0.06 (95% CI -0.71-0.59, p = 0.86) [one RCT; *moderate certainty of evidence*] (59)
- Likely makes little to no difference in **Bishop score**, MD -0.75 (95% CI -1.66-0.16, p = 0.10) [one RCT; *moderate certainty of evidence*] (59)
- Likely has no cases of **side effects** [one RCT; *moderate certainty of evidence*] (59)

Data from one observational study however, finds that evening primrose oil may make a statistically significant improvement on Bishop score in nulliparous clients (p = 0.001). (60) One observational study also shows that evening primrose makes little to no difference in **gestational age at birth**. (58) No harms of using evening primrose oil were noted.

Homeopathy

There is insufficient evidence on the use of homeopathy for the prevention of postdates pregnancies.

Recommendation

4. There is insufficient evidence to support the use of acupuncture, acupressure, evening primrose oil or homeopathy for the prevention of postdates pregnancies.

- Research evidence on these interventions is limited, though no harms have been noted. [2021]

No recommendation: very low certainty to moderate certainty of evidence

Research Gap

Studies are lacking on the efficacy of acupuncture, acupressure, evening primrose oil or homeopathy for the promotion of spontaneous labour.

MANAGING POSTDATES PREGNANCIES

In 2014-2015, 24% of all births in Ontario were induced, compared with 29% of all births in 2018-2019, indicating that inductions are increasing. (61) Among birthing parents who were induced in 2018-2019, 21.5% had a caesarean section compared with 11.7% of those who had spontaneous labour. Postdates was indicated as the primary reason for induction in 85% of inductions during the 41st week and 87% of inductions at ≥ 42 weeks. Inductions where postdates is the primary indication account for 21% of all inductions at or beyond term. (62)

Induction during the 41st week vs. Expectant Management

Six RCTs were identified that examined the effects of induction of labour between 41+0 weeks to 41+6 weeks vs. expectant management until 42+0 to 42+6 weeks. (93-98) Meta-analyses show that induction during the 41st week:

TABLE 3: Outcomes of Induction at 41+0 to 41+6 weeks compared to Expectant management until 42+6 weeks

Outcome	Induction in 41st week...	Findings
Perinatal death	Likely reduces rates	RR 0.26 (95% CI 0.08-0.88, p = 0.03) (63-68)
Admission to the NICU	Probably reduces rates	RR 0.83 (95%CI 0.71-0.97, p = 0.02) (63-67)
Meconium aspiration syndrome	Probably reduces rates	RR 0.71 (95% CI 0.47-1.07, p = 0.10) (63-68)
Caesarean section	Probably reduces rates	RR 0.90 (95% CI 0.82-0.99, p = 0.02) (63-68)
Operative vaginal birth	May make little to no difference in rates	RR 1.02 (95%CI 0.93-1.12, p = 0.63) (63,64,66,67)
Epidural use	Slightly increases	RR 1.10 (95%CI 0.03-1.17, p = 0.005) (63,64)
Postpartum haemorrhage	Makes little to no difference	RR 1.00 (95% CI 0.85-1.18, p = 0.98) (63,64,67)

Data from observational studies on induction during the 41st week vs. expectant management supports these RCT findings, except in the case of caesarean section, where data from four observational studies shows little to no difference in caesarean section rates, and operative vaginal birth, where data from two observational studies suggests an increased risk of operative vaginal birth. (69-72)

Induction during the 42nd week vs. Expectant Management

Five RCTs were identified that examined the effects of

induction of labour \geq 42 weeks vs. expectant management until the 43rd week or beyond. (73-77) Meta-analyses for induction during the 42nd week can be seen in Table 4.

Data from observational studies is more conflicting, indicating that there may be an increased risk of perinatal death, caesarean section and operative vaginal delivery with induction between 42+0 to 42+6 weeks vs. expectant management. (78-80)

TABLE 4: Outcomes of Induction at 42+0 to 42+6 weeks vs. Expectant Management

Outcomes	Induction in 42nd week vs. EM	Findings
Perinatal death	Probably reduces rates	RR 0.42 (95% CI 0.05-2.80, p = 0.38) (73,81)
NICU admission	May reduce rates	RR 0.72 (95% CI 0.16-3.35, p = 0.68) (75,77,81)
Meconium aspiration syndrome	Likely reduces rates	RR 0.61 (95% CI 0.18-2.04, p = 0.43) (75,76)
Caesarean section	Likely makes little to no difference	RR 0.97 (95% CI 0.72-1.31, p = 0.84) (73-77)
Operative vaginal delivery	Likely makes little to no difference	RR 0.94 (95% CI 0.65-1.38, p = 0.76) (73,77,81)

Recommendation

5. For pregnancies at 41 weeks' gestation, midwives should offer induction of labour (IOL) between 41+0 and 42+0 weeks.
 - Prior to 41 weeks, discuss the risks and benefits of IOL between 41 and 42 weeks.
 - Offer clients with uncomplicated postdates pregnancies full support in choices that enable them to maximize their chances of spontaneous labour, including supporting their decision to choose expectant management up to and beyond 41+0 weeks' gestation.
 - For clients who choose expectant management after 42 weeks, discuss that evidence suggests that perinatal morbidity and mortality increase with gestational age, although absolute risks remain low. [2021]

Strong recommendation: moderate certainty of evidence

This recommendation recognizes the client as the primary decision maker, as well as the evidence that induction during the 41st week (41+0 to 41+6) reduces perinatal mortality, though the absolute risks of perinatal death during this time remain low.

Midwifery management of induction of labour

Ontario midwifery scope of practice includes managing induction of labour, provided a midwife has the knowledge, skills, experience and community-based health infrastructure required to do so. A recent retrospective cohort study in Ontario shows no statistically significant difference in the odds of caesarean section (OR 0.94, 95% CI 0.75-1.71) or neonatal morbidity and mortality (OR 0.73, 95% CI 0.28-1.91) when postdates induction is managed by a midwife, compared to an obstetrician. (82) The odds of interventions such as assisted vaginal delivery and episiotomy were lower for nulliparous clients in

midwifery care. Both multiparous and nulliparous clients are less likely to use pharmaceutical pain relief under midwifery management.

There are unique aspects of midwifery care that have been shown to result in lower rates of intervention during labour. Clients who received midwifery-led continuity models of care were less likely to receive interventions and experienced greater levels of satisfaction compared with other models of care. (83) Continuous support during labour has also been shown to reduce intervention. (84) Both of these aspects are maintained with midwifery management of postdates induction.

Summary Statement

Midwifery management of postdates induction has excellent outcomes for clients. There is no difference in rates of caesarean section and neonatal morbidity and mortality when compared to obstetrical care, and there are lower rates of assisted vaginal delivery and episiotomy for nulliparous clients. Both multiparous and nulliparous clients are less likely to use pharmaceutical pain relief.

Provided midwives have the knowledge, skills, experience and community-based health infrastructure to do so, midwifery management of postdates induction is appropriate. [new 2021]

Research Gap

There are currently no studies reporting on impact of birthplace (home, birth centre or hospital) on postdates pregnancies. Further research is required to understand whether any differences exist in outcomes of postdates pregnancies according to birthplace.

Fetal Surveillance

In the meta-analyses on induction vs. expectant management, all but two studies included some form of fetal monitoring for the expectant management groups, confirming that fetal monitoring in pregnancies beyond term is standard practice. (64,85) Across the six RCTs

on induction during the 41st week (41+0 to 41+6) compared to the 42nd week (42+0 to 42+6), there were 13 perinatal deaths in the expectant management groups, six of which occurred in one study without fetal monitoring. Of the five RCTs comparing induction during the 42nd week to expectant management, two reported on perinatal death.

There were three deaths in the expectant management groups in these studies, two of which occurred in the study with no fetal monitoring. There are low rates of perinatal mortality across the expectant management groups with fetal monitoring in RCT evidence.

Unfortunately, there is limited evidence on the optimal starting time and frequency for fetal surveillance beyond term and there are no studies comparing the efficiencies of different methods. Two new observational studies were identified that partially address timing. One retrospective cohort study (*very low certainty of evidence*) with 4094 participants, shows reduced rates of neonatal death in postterm pregnancies in those who receive a routine scan at 41 weeks (including fetometry and AFI measurement) compared to only an indicated scan on risk of severe adverse fetal outcomes (RR 0.61, 95 % CI 0.17-2.26, $p = 0.46$), though we are uncertain of these findings. (86) Another retrospective cohort study (*very low certainty of evidence*) with 1071 participants shows little to no difference in NICU admissions in the groups that received antenatal testing at term (NST and potentially

AFI and BPP) at 40 weeks vs. those who received monitoring at ≥ 41 weeks, though we are uncertain of these findings. (87)

Despite limited evidence, it is clear that fetal surveillance for pregnancies that progress beyond term is standard practice. There are low perinatal mortality and morbidity rates in the RCTs where fetal surveillance is used during the 41st and 42nd week, and newer (*very low certainty*) observational evidence further suggests that routine monitoring during the 41st week may have good outcomes. Standard practice in Ontario may vary, but typically includes:

- US (BPP), q 2-3 days, starting around 41+0 weeks until birth or IOL
- If clients choose expectant management beyond 42 weeks, fetal surveillance may include US q 2-3 days, daily fetal movement counting and/or NST. Visit client at least twice a week starting during the 42nd week until labour.
- If US is not available, consider alternatives including NST

Recommendation

6. For those choosing expectant management, offer ultrasound twice weekly, starting between 41 and 42 weeks and continuing until birth to assess fetal well-being.

- For ultrasound assessments, BPP, AFI or maximum fluid pool depth can be used according to the care provider and community standards.
- In communities where ultrasound is unavailable, NST may be offered. [2021]

Strong recommendation: very low certainty

This recommendation recognizes the limited direct evidence on the optimal method and timing of fetal surveillance. It also recognizes indirect evidence showing that fetal surveillance is effective; as well as community standards of offering ultrasound twice weekly where available.

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