

# LABOR Induced/Augmented

This plan of care concerns the induction of labor for maternal health problems, fetal compromise, or postmaturity (medically indicated inductions), and the augmentation of labor in uterine dysfunction. For optimal use of this plan of care, combine it with the previous plans of care in this chapter, concerning the normal stages of labor and dysfunctional labor, as appropriate.

## CLIENT ASSESSMENT DATA BASE

### Circulation

BP elevation (possibly anxiety or pregnancy-induced hypertension [PIH]); decrease (suggests supine hypotension or dehydration)

### Food/Fluid

Maternal weight loss of 2.5–3 lb (may be associated with postmaturity or fetal weight loss)

### Neurosensory

Deep tendon reflexes may be brisk 3+ with PIH; presence of clonus indicates severe excitability.

### Pain/Discomfort

Uterine palpation may reveal dysfunctional contractile pattern.

### Safety

May experience SROM without contractions.

Elevated temperature (infection in presence of prolonged rupture of membranes).

FHR may be greater than 160 bpm if preterm, hypoxic, or septic.

Fetal size may indicate weight loss; fetal demise.

Greenish amniotic fluid (fetal distress in vertex presentation).

Presenting part below the pelvic inlet.

Fundus may be lower than anticipated for term, with intrauterine growth retardation/restriction (IUGR) associated with maternal vascular involvement.

History/presence of Rh isoimmunization, chorioamnionitis, diabetes, PIH not controlled by medical therapy, chronic hypertension, postmaturity, cyanotic maternal cardiac disease, or renal disease; or previous cesarean delivery with low transverse incision (vertical incision is contraindication).

### Sexuality

Precipitous (or rapid) labor with previous pregnancy; client lives a distance from the hospital.

Cervix may be ripe (approximately 50% effacement and 2–3 cm dilated).

Uterine inertia may occur.

Bloody show may be present with dilation.

Increased vaginal bleeding (placenta previa or abruptio placentae are contraindications).

May be 42 weeks' gestational age or more.

## DIAGNOSTIC STUDIES

**Complete Blood Count with Differential (CBCD):** Determines presence of anemia and infection, as well as level of hydration.

**Blood type and Rh factor,** if not previously done.

**Urinalysis:** Reveals urinary tract infection, protein, or glucose.

**Lecithin to Sphingomyelin Ratio:** Determines fetal maturity.

**Nitrazine Paper and/or Fern Test:** Confirms rupture of membranes.

**Scalp pH:** Indicates degree of fetal hypoxia/fetal metabolic reserves.

**Ultrasonography:** Determines gestational age, fetal size, presence of fetal heart motion, and location of the placenta.

**Pelvimetry:** Identifies deformities of the pelvis, CPD, or fetal malposition (all of which are contraindications for induction/augmentation).

**Nonstress Test (NST) or Contraction Stress Test (CST):** Evaluates fetal/placental functioning.

## NURSING PRIORITIES

1. Promote maternal and fetal well-being.
2. Provide client/couple with information about induction and augmentation of labor.
3. Provide emotional support.
4. Promote comfort.

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### NURSING DIAGNOSIS:

**Knowledge deficit [Learning Need], regarding procedure, possible outcomes**

### May Be Related To:

Lack of exposure/unfamiliarity with information resources, misinterpretation of information

### Possibly Evidenced By:

Verbalization of questions/concerns, exaggerated behaviors

### DESIRED OUTCOMES/EVALUATION CRITERIA—CLIENT WILL:

Verbalize understanding of procedures/situation.

Participate in decision-making process.

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## ACTIONS/INTERVENTIONS

## RATIONALE

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### Independent

Review the need for induction or augmentation of labor. Discuss Bishop score.

Informed consent and cooperation depend on the client's understanding of the situation and choices. Bishop score is a numerical score assigned to cervical characteristics (position, consistency, ripeness, effacement, dilation) and fetal station that predicts whether induction will be successful.

Explain the expected procedures to client/couple: Use of prostaglandin gel; continuous monitoring of contractions and FHR; BP checked frequently; administration of oxytocin may result in increased discomfort because contractions will become more intense and onset of labor will be more rapid; analgesics may need to be administered after 5 cm dilation, or when good labor pattern is established.

Anxiety is allayed when client/couple know what is happening and what to expect. Cooperation and involvement are also enhanced.

Review amniotomy procedure (artificial rupture of membranes [AROM]); explain that it is no more uncomfortable than sterile vaginal examination.

Amnihook is guided into the vagina by the examiner's fingers during the sterile vaginal examination. Membranes, which do not contain nerves, are hooked or nicked to rupture, stimulating labor. When used alone or in conjunction with oxytocin, amniotomy can be a successful means of inducing labor. However, amniotomy generally commits the client to delivering within 24 hr.

Demonstrate and explain use of equipment (i.e., external or internal fetal monitor and IV infusion pump). Point out safety features and alarms.

Instruct client/partner in basic interpretation of fetal monitor, differentiating changes in pattern that occur on movement.

Explain oxytocin infusion.

Discuss possibility of failed induction and/or operative intervention if fetal distress occurs.

Knowledge can alleviate anxiety, enhance coping with false alarms, and give a sense of control over the situation.

Encourages involvement, gives a sense of control, and lessens anxiety regarding normal variations of tracing.

Oxytocin may be used prior to amniotomy or may be implemented after a trial of amniotomy that fails to induce labor.

Depending on the degree of cervical ripening and the client's response to procedures, induction may not be successful. If membranes are ruptured, and induction fails, a cesarean birth is indicated. If severe fetal distress is apparent, or if uterine hyperstimulation places client at risk for uterine rupture, induction may be discontinued and cesarean delivery performed. Providing this information to the client/couple in advance can prepare them psychologically and may diminish disappointment.

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**NURSING DIAGNOSIS:****May Be Related To:****Possibly Evidenced By:****DESIRED OUTCOMES/EVALUATION CRITERIA—CLIENT WILL:****Fear/Anxiety [specify level]**

Situational "crisis," perceived threat to client/fetus, unanticipated deviation from expectations

Identification of specific concerns, increased tension, apprehension, feelings of inadequacy, decreased self-awareness, sympathetic stimulation

Use support systems effectively.

Report anxiety diminished and/or managed.  
Appear relaxed.

Accomplish successful labor.

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**ACTIONS/INTERVENTIONS****RATIONALE**

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**Independent**

Assess psychological and emotional status.

Any interruption of the normal progression of labor can contribute to feelings of anxiety and failure. These feelings can interfere with client cooperation and hamper the induction process.

Encourage verbalization of feelings.

Client may be frightened or may not clearly understand the need for inducing labor. A sense of failure at being unable to “labor naturally” may occur. Note: In cases of fetal demise, going through labor is especially disturbing and requires extensive support. (Refer to CP: Perinatal Loss.)

Use positive terminology; avoid use of terms that indicate abnormality of procedures or processes.

Helps client/couple accept the situation without self-recrimination.

Listen to client’s comments that may indicate loss of self-esteem.

Client may believe that any intervention to aid the labor process is a negative reflection on her own abilities.

Provide opportunities for client input into decision-making process.

Enhances client’s sense of control even though much of what is happening may be beyond her control.

Encourage use/continuation of breathing techniques and relaxation exercises.

Helps to reduce anxiety and enables client to participate actively.

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**NURSING DIAGNOSIS:****Injury, risk for maternal****Risk Factors May Include:**

Adverse effects/response to therapeutic interventions

**Possibly Evidenced By:**

[Not applicable; presence of signs/symptoms establishes an *actual* diagnosis]

**DESIRED OUTCOMES/EVALUATION CRITERIA—CLIENT WILL:**

Develop/maintain a good labor pattern; i.e., contractions 2–3 min apart, lasting 40–50 sec, with uterine relaxation to normal tone between contractions.

Accomplish delivery without complications.

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**ACTIONS/INTERVENTIONS****RATIONALE**

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**Independent**

Review prenatal record for history of previous pregnancies and outcomes, prenatal laboratory studies, pelvic measurements, allergies, weight gain, vital signs, last menstrual period, and EDB.

Provides information needed in formulating plan of care. Alerts nurse to the possibility of existing or developing problem(s).

Obtain history regarding insertion of laminaria tent or prostaglandin vaginal suppository preparations (e.g., p-gel).

Insertion of laminaria tent or prostaglandin preparations the evening before the induction softens the cervix and facilitates labor induction. Note: Development of adverse reactions, such as hypertonicity/hyperactivity of the uterus or nausea/vomiting, requires discontinuation/removal of the prostaglandin gel.

Perform sterile vaginal examination to determine readiness or ripeness of cervix and fetal station. Repeat as indicated by client's reaction and contraction pattern.

Check BP and pulse per protocol after induction begins and before increasing oxytocin.

Evaluate monitor tracing closely. Note rate and reactivity of FHR.

Palpate fundus to evaluate frequency and duration of contractions. Observe for overstimulation of uterus (tetanic contraction). Note intensity and resting tone between contractions per palpation or via IUPC, if used.

Document vital signs, medications, oxytocin onset and dosage increases, change of position, oxygen administration, and times of sterile vaginal examinations on monitor tracing.

Monitor intake and output. Measure urine specific gravity as indicated. Palpate bladder.

Note reports of abdominal cramping, dizziness, headache, and nausea/vomiting; presence of lethargy, confusion, hypotension, tachycardia, and cardiac dysrhythmia (irregularities).

Provide perineal care, as indicated. Monitor temperature every 2 hr. Note color and odor of vaginal drainage.

A soft, partially effaced (more than 50%) and/or dilated (at least 3 cm) "ripe" cervix is a good indication that induction will be successful. A firm, thick "unripe" cervix with little or no dilation may require two or three trials before induction is successful. Time of amniotomy (AROM) depends on fetal station. Repeat examinations determine labor progress, but to avoid infection, they should be limited as much as possible after membranes are ruptured.

Assesses maternal well-being and detects development of hypotension/hypertension. With initiation of oxytocin infusion, BP may be decreased. As time passes, BP may increase up to 30% above baseline. Oxytocin is given slowly in increasing amounts based on maternal and fetal response. Approximately 40 min of infusion is necessary to reach therapeutic blood levels of oxytocin. It is rapidly metabolized and excreted by the kidneys, so constant infusion should be maintained in order to achieve regular, consistent contractions of good quality to dilate the cervix effectively.

Careful monitoring is essential to determine client/fetal response to procedure, to identify adverse reactions, and to produce an effective labor pattern.

External uterine monitoring indicates the frequency, not intensity, of contractions. Rapid labor/delivery may occur, increasing risk of cervical and soft tissue trauma. Overstimulation causes fetal hypoxia, uterine rupture, and premature separation of placenta. If contraction lasts more than 90 sec, occurs more than 2–3 min apart, or if uterus is not completely relaxed between contractions, oxytocin should be discontinued.

Monitor tracing is a legal document, showing progress of induction, fetal/maternal response, and actions taken by healthcare staff.

Decreased output with increased specific gravity reflects fluid deficit. Urine retention may impede labor and fetal descent. In addition, oxytocin infusions of 20 ml/min or above may result in decreased urinary output because of antidiuretic effect of medication.

Water intoxication may develop dependent on rate and type of fluid administration/oxytocin infusion above 20 ml/min.

Reduces risk of infection and/or provides early detection of developing infection. Presence of meconium staining indicates fetal distress.

## Collaborative

Review prenatal laboratory work. Perform nitrazine paper or fern test, if indicated.

Assist with application of prostaglandin preparations.

Assist with amniotomy. Place client in low semi-Fowler's position with knees bent as for vaginal examination.

Start primary IV line with large-gauge indwelling catheter.

Assist as necessary with insertion of IUPC, if used.

Dilute and administer oxytocin (Pitocin) in electrolyte solution with a two-bottle IV system, piggy-backing oxytocin close to IV site, according to unit policy and procedures.

Observe safety precautions related to the use of infusion and to proper labeling of oxytocin solution.

Obtain/monitor electrolytes, as indicated.

Discontinue oxytocin, as indicated, and increase infusion of plain IV solution. Notify physician.

Administer 1–2 g MgSO<sub>4</sub> slowly, as necessary, or terbutaline (Brethaire) subcutaneously (SQ).

Evaluates maternal and fetal status, and determines whether membranes have ruptured.

Facilitates cervical ripening; may stimulate labor and/or enhance effectiveness of oxytocin infusion.

AROM may stimulate labor without need of drug infusion (successful in approximately 80% of clients at term), or it may be done in conjunction with oxytocin administration. Amniotomy is contraindicated if presenting part is high.

Large-gauge catheter is preferred in case of the need for surgical intervention, blood transfusion, or emergency fluid/drug administration.

Internal monitoring accurately quantitates intensity and frequency of contractions and helps identify overstimulation and possible uterine rupture caused by overadministration of oxytocin.

The synthetic hormone oxytocin stimulates the uterine smooth muscle, increasing the excitability of the muscle cells, which increases the strength of contractions. Oxytocin can be discontinued if necessary, and the primary site can be quickly cleared and available for other infusions when solution is infused close to IV site. In addition, water intoxication can result from excessive or rapid fluid administration, especially when D<sub>5</sub>W is used instead of electrolyte solutions (e.g., lactated Ringer's).

Errors or fluctuations in rate of administration may cause undermedication or overmedication, resulting in inadequate contractions or uterine rupture. Drug delivery is verified by closely monitoring the pump and the decreasing level of fluid. Note: Confusing solutions in two-bottle system could result in drug overdose.

Water retention may occur during oxytocin infusion resulting in hyponatremia or hyponatremia.

Hyperstimulation of the uterus (intrauterine pressure greater than 75 mm Hg) can lead to abruptio placentae, uterine tetany, and possible rupture.

Although the circulatory half-life of oxytocin is 3–9 min, uterine activity from effects of oxytocin administration may last 20–30 min after infusion is stopped. MgSO<sub>4</sub> or terbutaline may be indicated to relieve oxytocin-induced uterine tetany.

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### NURSING DIAGNOSIS:

#### Risk Factors May Include:

### Gas Exchange, risk for impaired fetal

Altered blood flow to placenta or through umbilical cord (prolapse)

**Possibly Evidenced By:**

[Not applicable; presence of signs/symptoms establishes an *actual* diagnosis]

**DESIRED OUTCOMES/EVALUATION CRITERIA—FETUS WILL:**

Display FHR within normal limits, free of late decelerations.

**CLIENT WILL:**

Engage in behaviors that enhance fetal safety.

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## **ACTIONS/INTERVENTIONS**

## **RATIONALE**

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### **Independent**

Note fetal maturity based on client's history, EDB, and uterine measurements.

Gestational age of fetus should be 36 wk or more for induction or augmentation of labor to be performed, unless maternal condition warrants intervention before this time.

Perform Leopold's maneuvers and sterile vaginal examination. Note presentation and station of fetus.

Determines whether fetus is in vertex presentation and rules out CPD. If presenting part is too high (22 cm), amniotomy may need to be postponed owing to risk of prolapsed cord.

Position client on back with head of bed elevated and a pillow or wedge placed under one hip, preferably the right, so that client tilts to side.

Aids in obtaining an adequate external fetal monitor strip to evaluate contraction pattern and FHTs. Wedge relieves pressure of fetus on vena cava and enhances placental circulation.

Apply electronic fetal monitor (EFM) 15–20 min before induction procedure.

Determines fetal well-being and provides baseline assessment of FHR and uterine activity.

Monitor FHR, as indicated, in conjunction with amniotomy.

Determining FHR prior to and following procedure provides information to ensure fetal well-being. Acceleration for a short period after amniotomy is normal; however, signs of distress may indicate fetal hypoxia from compression of cord or late decelerations.

Note time of rupture of membranes and character and consistency of fluid.

To reduce risk of ascending infection, a mature fetus should be delivered within 24 hr of rupture of membranes. Note: If fetus is not mature, measures may be taken to avoid delivery as long as possible unless signs of infection/distress are noted.

Have client void before administration of oxytocin and before application of fetal electrode.

A full bladder can interfere with fetal position and placement of monitor.

Assess reaction of FHR to contractions, via continuous EFM, noting bradycardia and late/variable decelerations; or sustained tachycardia.

Proper assessment is needed to avoid hypoxia. Normal range for FHR is 120–160 bpm. To ensure fetal well-being, oxytocin may need to be discontinued and different measures taken, depending on interpretation of EFM tracing.

### **Collaborative**

Review results of ultrasonography and amniocentesis, pelvimetry, and L/S ratio.

Determines fetal age and presentation; helps identify CPD and potential needs of fetus/neonate during and following delivery.

Apply fundal pressure, as indicated.

Assist as needed in application of internal fetal electrode.

Procedure is controversial but may be tried for firm positioning of presenting part on cervix to prevent cord prolapse during amniotomy.

Internal fetal electrode should be used for more accurate observation, especially if signs of fetal distress or meconium are present.

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**NURSING DIAGNOSIS:**

**May Be Related To:**

**Possibly Evidenced By:**

**DESIRED OUTCOMES/EVALUATION  
CRITERIA—CLIENT WILL:**

**Pain [acute]**

Altered characteristics of chemically stimulated contractions, psychological concerns

Verbalizations, increased muscle tone, distraction behaviors (restlessness, moaning, crying), facial mask of pain

Participate in behaviors to diminish pain sensations and enhance comfort.

Appear relaxed between contractions.

Report pain is reduced/manageable.

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**ACTIONS/INTERVENTIONS**

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**RATIONALE****Independent**

Establish a rapport that enables client/partner to feel comfortable asking questions.

Discuss anticipated changes/difference in labor pattern and contractions.

Review/provide instruction in simple breathing techniques.

Encourage client to use relaxation techniques. Provide instruction as necessary.

Provide comfort measures (e.g., effleurage, back rub, propping with pillows, applying cool washcloths, offering ice chips/lip balm).

Encourage and assist client with change of position, and readjust EFM.

Answers to questions can alleviate fear and promote understanding.

Helps prepare client because induction procedures and use of oxytocin can result in rapid onset of strong, frequent contractions, which often interfere negatively with the client's ability to use learned coping techniques, which a slower buildup in the contractile pattern would allow.

Encourages relaxation and gives client a means of coping with, and controlling the level of, discomfort.

Relaxation can aid in reducing tension and fear, which magnify pain and hamper labor progress.

Promotes relaxation, reduces tension and anxiety, and enhances client's coping and sense of control.

Prevents/limits muscle fatigue; enhances circulation.

Review analgesics that are available and appropriate for client, and explain their time factors and restrictions.

Give encouragement; keep client informed of progress.

### **Collaborative**

Administer analgesic medications once dilation and contractions are established.

Enhances client's control of situation and provides information necessary for making an informed choice. If client is medicated before she is 5 cm dilated, labor progress may be slowed; if delivery is imminent (within 2–4 hr), medication may depress the newborn, although use of naloxone (Narcan) at time of delivery improves neonates' respiratory function.

Reassures client/couple. Provides positive reinforcement for efforts and promotes focus on the future.

Relieves pain; promotes relaxation and coping with contractions, allowing client to remain focused on work of labor.