

Physiology of Labor Pain Management & Coping

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AWHONN

PROMOTING THE HEALTH OF
WOMEN AND NEWBORNS

Physiology of Labor

Characteristics of true labor

- Regular uterine contractions
- Cervical change
 - Dilation
 - Effacement



Physiology of Labor

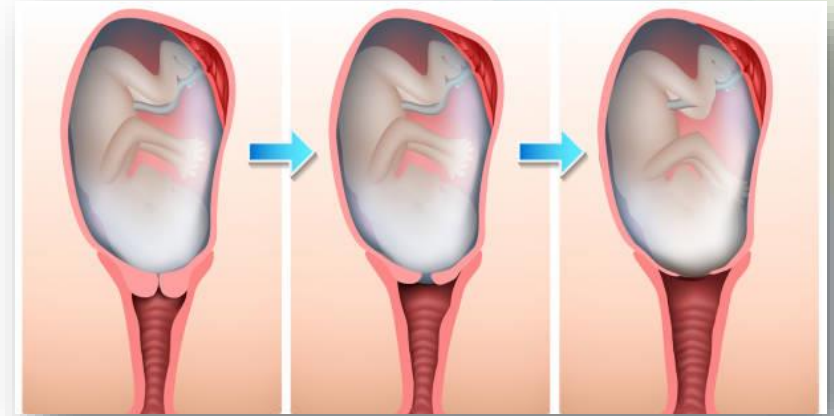
- Uterine wall -flexible
 - Myometrium
 - Upper vs lower
- Cervix
 - Connective tissue



Physiology of Labor

Labor process

- Birthing person
- Fetus



Physiology of Labor

Four P's



Passage

- Pelvis
- Cervix



Passenger

- Fetal head size
- Attitude, lie, position



Powers

- Contractions
- Pushing



Psyche

- Physical, emotional preparation
- Previous birth experience
- Culture
- Support



Assessment & Management of Labor

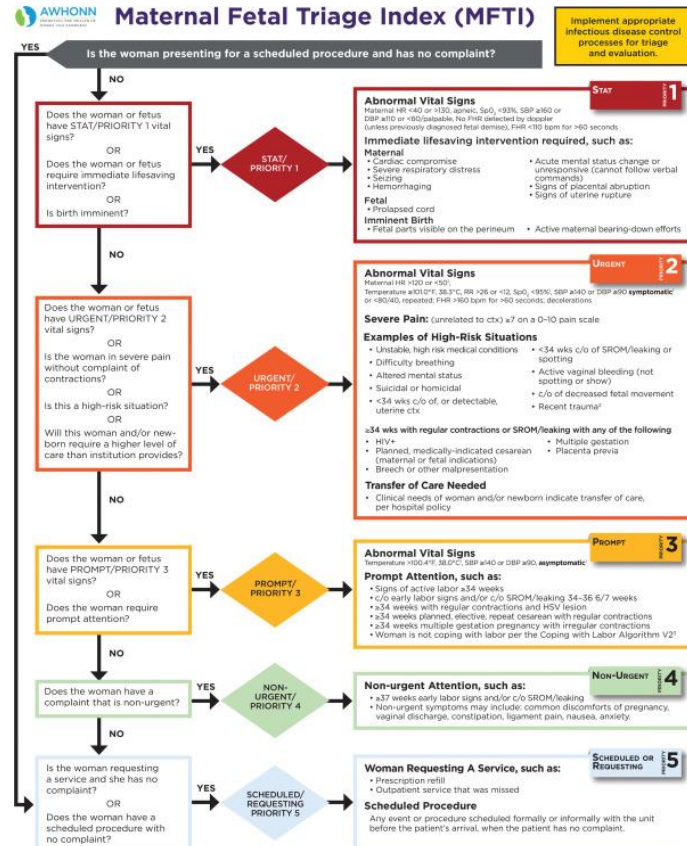
General Assessment

- Physical assessment (initial/ongoing)
- Abdominal
- Vaginal
- Psychosocial



Assessment & Management of Labor

General Assessment



Maternal Fetal Triage Index (MFTI)

- Triage tool
- Reduces delay of care & variability
- Based on birthing person/fetus condition
- Timely treatment



Assessment & Management of Labor

Stages of Labor

First Stage: Latent Phase

- Characteristics
- Nursing care
 - Encourage ambulation
 - Education



Assessment & Management of Labor

Stages of Labor

First Stage: Active Phase

- Characteristics
- Nursing support & responsibilities



Assessment & Management of Labor

Stages of Labor

Second Stage

- Characteristics
 - Starts at 10 cm dilation → birth of baby
- Nursing support & interventions
 - Laboring down
 - Pushing



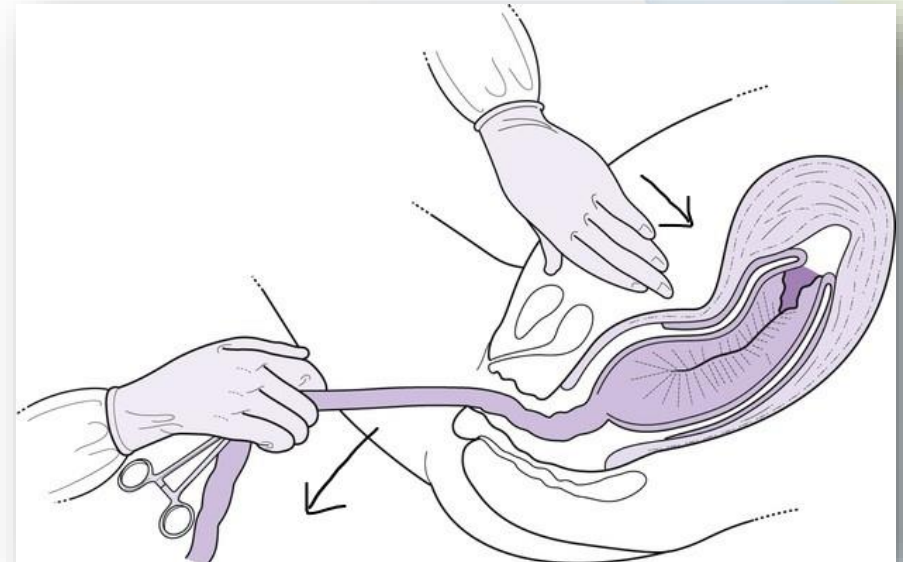
Assessment & Management of Labor

Stages of Labor

Third Stage

- Characteristics
 - Birth of baby → delivery of placenta
- Support interventions
- Nursing responsibility

AMTSL



[Source](#)



Assessment & Management of Labor

- Out with the OLD: **Friedman curve**
- In with the NEW: **Zhang**



Obstetric & Perioperative Procedures

Version (ECV)

- Indications
 - Breech or transverse (3-4%)
- Contraindications
- Complications
 - Cord compression
 - Abruptio
- Nursing responsibilities
 - Fetal monitoring and assessment
 - IV
 - Terbutaline
 - Coping



Obstetric & Perioperative Procedures

Episiotomy

Episiotomy: Surgical enlargement of the posterior wall of the vagina just prior to birth

Indications

- Routine use –no data
- Emergent vaginal delivery
- Shoulder dystocia

Complications

- Increased 3° & 4° lacs
- Delayed healing
- ↑ blood loss
- ↑ pain

Nursing responsibilities

- Positioning
- Spontaneous pushing



Obstetric & Perioperative Procedures

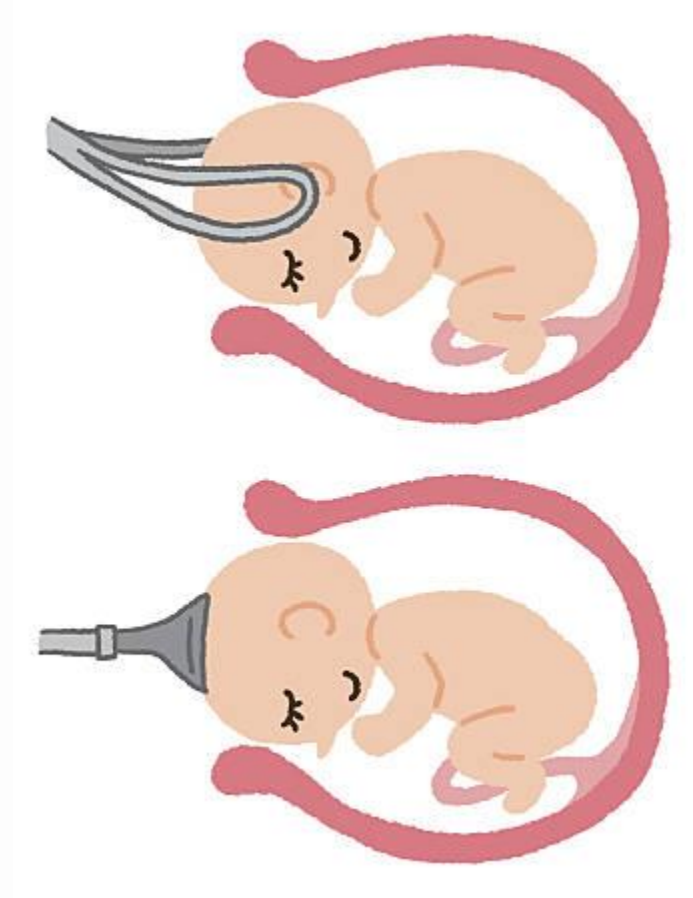
Operative Vaginal Delivery

Indications

- Fetal distress
- Maternal fatigue

Contraindications

- VE prior to 34 weeks – risk of IVH



[istockphoto.com](https://www.istockphoto.com)



Obstetric & Perioperative Procedures

Operative Vaginal Delivery

Nursing responsibilities

- Empty bladder
- Adequate pain relief
- Documentation

Complications

- Obstetric hemorrhage
- Laceration
- Fetal skull abrasions/lacs
- Cephalohematoma
- Subgaleal hemorrhage/hematoma



Obstetric & Perioperative Procedures

Cesarean Birth

Indications

- Contraindication to vaginal birth
- Fetal distress

Complications



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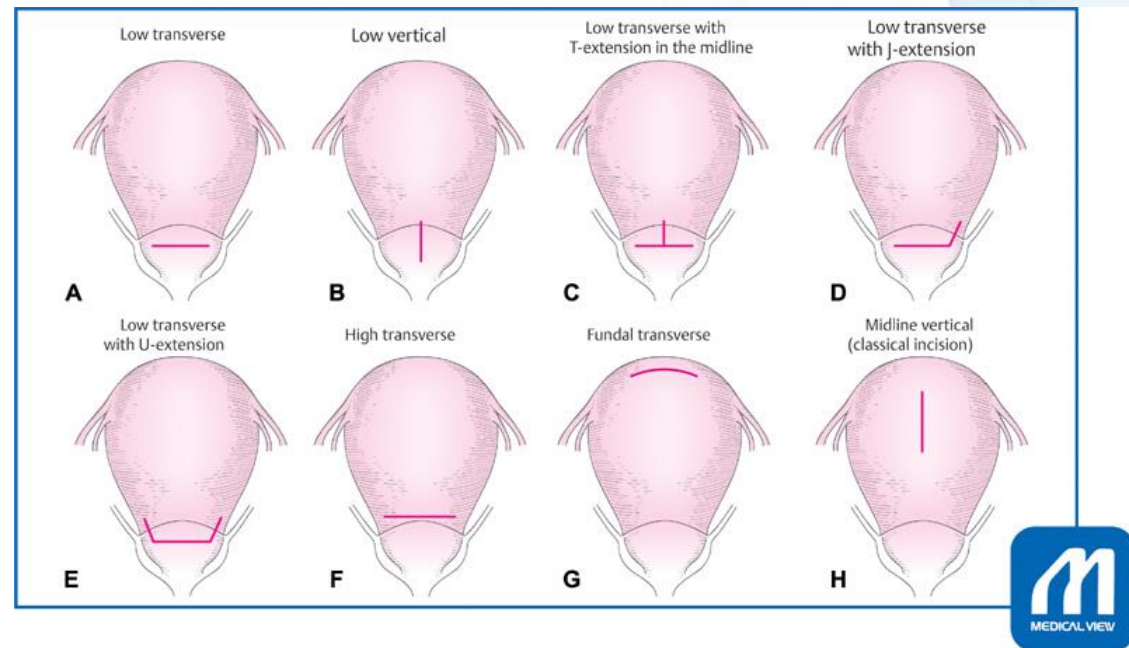


Obstetric & Perioperative Procedures

Cesarean Birth

Types of Incisions

- Pfannenstiel skin incision/low transverse (uterus)
- Vertical – “Classical”



Obstetric & Perioperative Procedures

Cesarean Birth

Post-anesthesia Care

- Levels of PACU

Nursing Interventions/support

- Pharmacological/non-pharm interventions
- Maintain normothermia
- Breastfeeding support

Vaginal prep prior to cesarean

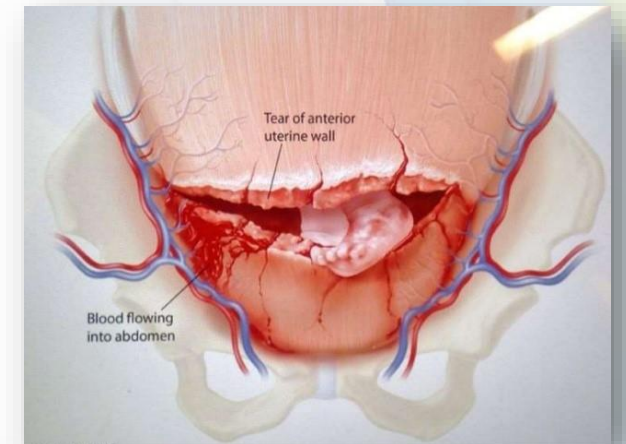
- Best-practice - ↓ wound infection



Obstetric & Perioperative Procedures

Vaginal Birth after Cesarean Birth (VBAC) or Trial of Labor after Cesarean (TOLAC)

- Indications & Contraindications
- Complications
 - Uterine rupture
- Nursing Interventions/support
 - Signs of uterine rupture



[Source](#)



Obstetric & Perioperative Procedures

Amnioinfusion

- Indications
 - Problems with ↓ amniotic fluid
 - FHR variables
 - Oligohydramnios
- Contraindications
 - Vaginal bleeding
 - Uterine anomalies
 - Active infection (HIV, HSV)
 - TOLAC



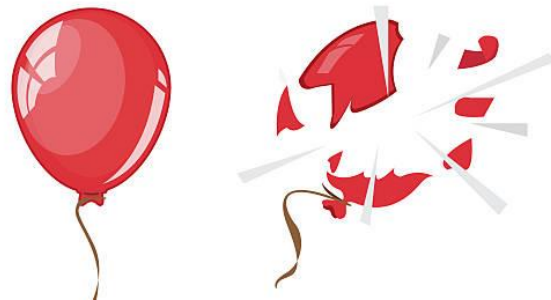
Obstetric & Perioperative Procedures

Amnioinfusion

Procedure

- IUPC placed
- Fluid infused into uterus (LR or NS)
- Assess fluid return

Complications – Overdistension



Nursing care

- Uterine resting tone
- Observe fluid return
- Assess birthing person/fetal response
- Documentation



Pain Management & Coping



Supporting physiologic birth

Labor support = an intentional act of caring to assist birthing people during labor and birth

Continuous labor support

- ↓ length of labor
- ↑ rate of spontaneous vaginal birth
- ↓ C/S rates
- Improved neonatal outcomes
- ↓ assisted vaginal delivery
- Less pain medication use
- Greater satisfaction with birth

**not rocket science



(Heelan-Fancher & Edmonds, 2021; Zielinski et al., 2016; AWHONN, 2022)



LABOR SUPPORT FOR INTENDED VAGINAL BIRTH

EVIDENCE-BASED CLINICAL PRACTICE GUIDELINE

TABLE 3 COMPONENTS OF CONTINUOUS LABOR SUPPORT

Physical (Comfort)

- Repositioning
- Birth ball
- Peanut ball
- Rebozo
- Ambulation/movement
- Aromatherapy
- Heat/cold
- Soothing touch
- Massage, counterpressure
- Environmental control (adjusting room temperature, removing distracting noise, using music)
- Encouragement of fluid intake and output
- Breathing and relaxation techniques

Partner

- Educating the partner on labor and birth process
- Engaging the partner in providing comfort techniques

Informational

- Explaining procedures and assisting in making informed decisions
- Giving advice/information on coping methods
- Giving updates on progress of labor
- Bridging communication gaps
- Educating about the labor process

Emotional

- Continuous presence
- Reassurance
- Praise
- Affirmations

Advocacy

- Helping the pregnant person articulate their wishes to others
- Reviewing birth plan (if written)
- Ensuring shared decision making and consent for all procedures



Supporting Physiologic Birth

Interventions →

- Can be overused or unnecessary
- Can disrupt normal physiologic childbirth
- May start the cascade of further interventions
- Do not always improve health outcomes
- Think...don't automate!



Pain Management & Coping

- Decisions about pain management influenced by:
 - Culture
 - Background
 - Fear of potential complications
 - Education
- Experience with pain varies
 - Influenced by physiologic and psychological process of birth
 - Pain perception

“Women who are not given a choice in pain relief are three times more likely to recall a negative birth experience.” (Hale et al, 2020)

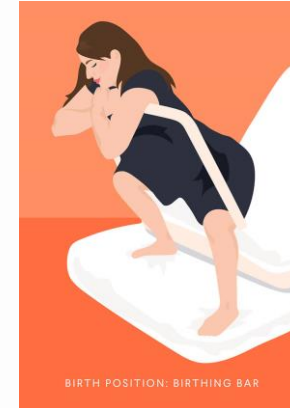


Pain Management & Coping

Non-Pharmacologic Methods

- Relaxation
- Breathing
- Positioning
- Coaching
- Hydrotherapy
- Peanut ball
- Birth ball
- Effleurage

What are your favorites?



[Source](#)



Pain Management & Coping

Pharmacologic Methods



Inhaled Nitrous Oxide (50/50)

- Tasteless, odorless, colorless, nonflammable gas
- Rapid onset of action and fast clearance via the respiratory system
- Provides analgesia:
- Does not eliminate pain completely
- Freedom of movement
- Patient controlled
- Combine w/ nonpharmacologic techniques
- Can be used during placement of regional anesthesia or for anxiety with procedures
- **Contraindications:** Excessive sedation; B12 deficiency

(Hale et al., 2020)



Pain Management & Coping

Pharmacologic Methods: Narcotics

- Bind to opioid receptors
- Maternal effects
- Fetal effects
- Neonatal effects



Pain Management & Coping

Pharmacologic Methods: Regional

Epidural/Patient controlled epidural anesthesia (PCEA)

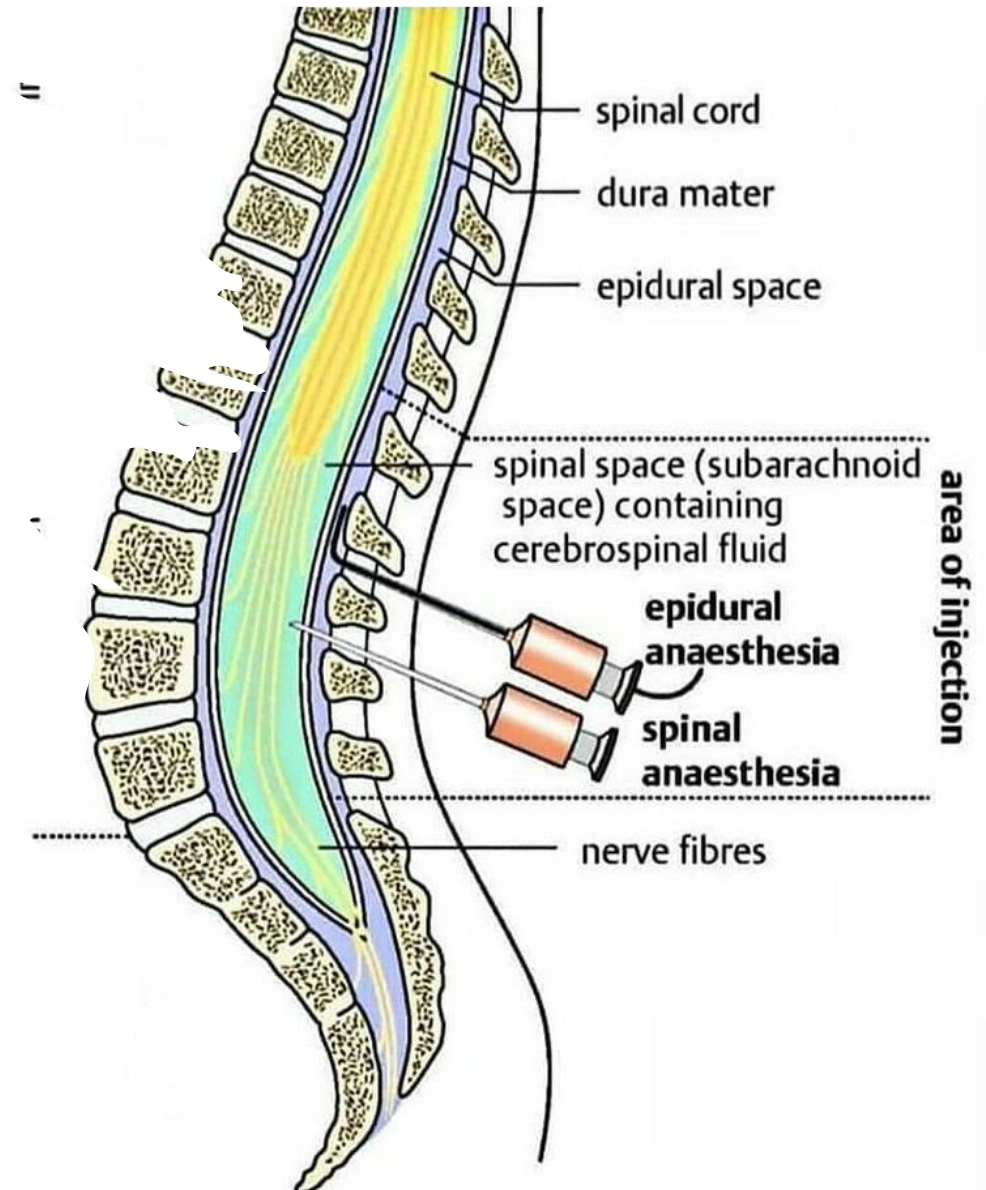
- Catheter placed in epidural space
- Continuous infusion with option for intermittent pre-set doses given by patient

Spinal

- Local anesthetic/analgesic injected into the subarachnoid space

Combined spinal & epidural (CSE)

- Injection of anesthetic/analgesic agent into subarachnoid space followed by placement of an epidural catheter in epidural space



Pain Management & Coping

Pharmacologic Methods: Regional

Complications

- Hypotension
- Unintentional intravascular injection
- High neuraxial block
- Epidural hematoma
- Meningitis



Pain Management & Coping

Pharmacologic Methods: Regional

Nursing Responsibilities

- ✓ Before procedure:
 - Patient education about pain relief options
 - Assess fetal status and maternal baseline vitals & labor progress
- ✓ During procedure
 - Positioning
 - Monitor fetal status and VS
- ✓ After procedure
 - Monitor and evaluate effectiveness
 - Continuous FHM
 - VS, LOC, perception & level of pain relief
 - Dermatome assessment
 - Communicate clinical assessments and change in patient status
- ✓ Pause or stop infusion
- ✓ Remove catheter



Pain Management & Coping

Pharmacologic Methods: Regional

Monitor for signs of **LAST**

- Ringing in the ears
- Metallic taste
- Hypertension
- Restlessness
- Perioral numbness
- Seizures
- Arrhythmias

• Treatment

- Control symptoms
- IV lipid emulsion



Pain Management & Coping

Pharmacologic Methods: General Anesthesia

Indications

- Emergent C/S
- Epidural or Spinal anesthesia contraindicated

Complications

- Birthing person
- Fetus
- Nursing Responsibilities

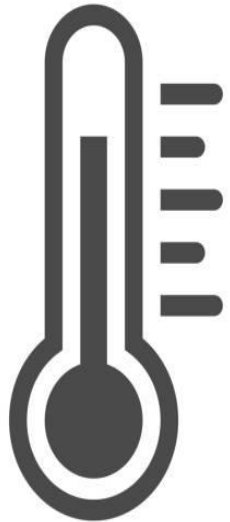


Pain Management & Coping

Pharmacologic Methods: General Anesthesia

Malignant Hyperthermia

- Treatment
 - Stop triggering medication
 - Administer dantrolene (Dantrium, Ryanodex)
 - Flush anesthetics
 - Lower body temperature –ice!
 - Correct electrolyte imbalance, arrhythmias



Pain Management & Coping

Substance Use Disorder

- Treatment is no different than any other condition
- Important:
 - Identify people with SUD
 - Care considerations
- Clients with SUD:
 - Higher instances of trauma
 - Labor considerations
 - ↑ opiate tolerance
 - ↑ sensitivity to painful stimuli
 - Higher doses
 - AVOID partial antagonists

(AWHONN, 2023)



Pain Management & Coping

People with Substance Use Disorder

Pain during labor:

- All the non-pharmacological options
- Best pharmacologic options:
 - Epidural or spinal anesthesia
 - Short-acting IV opioid analgesics
 - Morphine, hydromorphone, fentanyl
 - AVOID partial antagonist meds: butorphanol, nalbuphine, pentazocine
 - Can precipitate acute opioid withdrawal



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