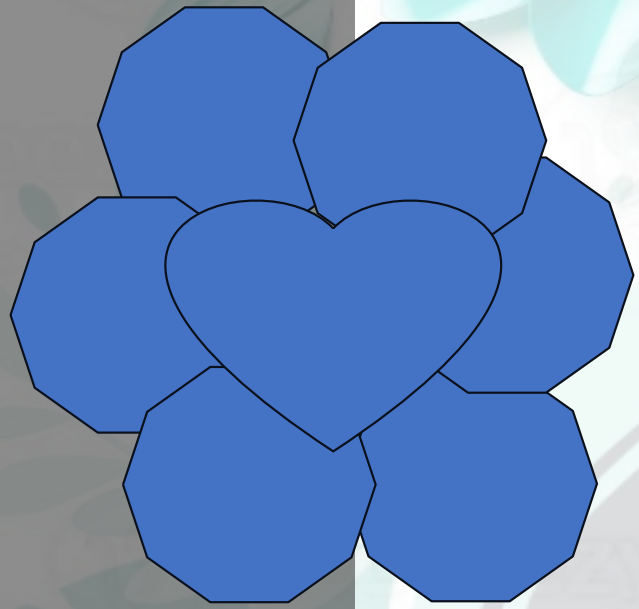


Antepartum & Antepartum Testing

CSON Instructional Module 6

OUTCOMES

Safety & Quality

- Examine physiologic & psychological changes during pregnancy
- Compute gravida, para, and estimated date of delivery
- Describe common laboratory tests & the significance of results
- Define key terms used in antepartum assessments/tests
- Identify & discuss purpose of each screening & diagnostic procedure

Clinical Judgement

- Differentiate presumptive, probable, & positive signs of pregnancy
- Relate the common discomforts of pregnancy & measures to prevent or relieve them
- Describe the preconception, initial, & subsequent prenatal assessments

Patient Centered Care

- Adaptation to pregnancy for the childbearing family
- Discuss the impact intimate partner violence has on pregnancy outcomes
- Consider the health care needs & barriers for women of disparity

Communication/Collaboration

- Explain the importance of adequate nutrition, weight gain & nutritional factors during pregnancy

Professionalism

- Explain nursing responsibilities and patient education related to each assessment/test
- Recognize unbiased attitudes towards patient decisions

PRECONCEPTION & CONCEPTION CARE

Preconception visit

- Modify behaviors / reduce risks
- Reproductive life plan developed for improved birth outcomes
- Obtain pregnancy history and family's health
- Medical history & physical exam

- Assess health problems
  - Chronic conditions & medications (prescribed, OTC & illicit)
  - Social problems or harmful habits
- Contraception - stop & track cycle
- Fertility Awareness

BARRIERS TO REACHING GOALS

Health disparities - differences in health care access & outcomes

- Teen pregnancies - mothers, fathers, infants of teen parents
- LGBTQ - lack of social support & fear provider discrimination
- Tobacco & substance abuse - maternal and neonatal risk factors
- Obesity

ANTEPARTUM PERIOD

Pregnancy Length

Counted from 1st day of last menstrual period (LMP)

- 280 days
- 40 weeks
- 10 lunar months (28 days/month)
- 9 calendar months

Divided into three 13-week trimesters

- 1st trimester - 1st day LMP through 13 weeks
- 2nd trimester - 14 weeks through 26 weeks
- 3rd trimester – 27 weeks through 40 weeks

- Gestational age = the number of completed weeks
- Term - 38-42 weeks
- Pre-term - prior to completion of 37 weeks
- Post-term - after 42 weeks

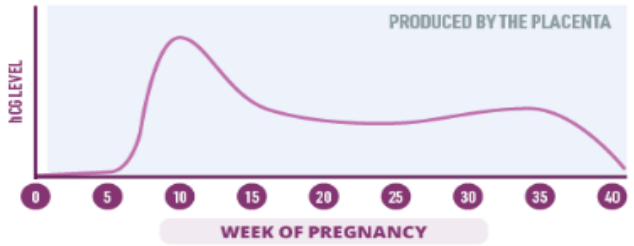
37 weeks 6 days Pre term

have to reach 38 weeks to be full term

SIX KEY HORMONES IN PREGNANCY

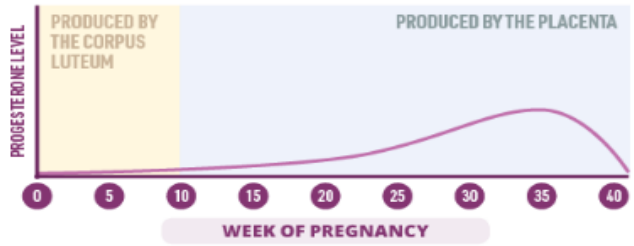
HCG

HUMAN CHORIONIC GONADOTROPIN



- Hormone detected by pregnancy tests; produced by placenta after implantation; essential in early pregnancy

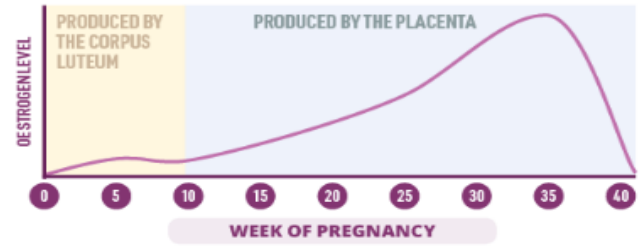
PROGESTERONE



Maintains uterine lining; relaxes smooth muscles; helps uterus grow as baby grows in pregnancy

maintains uterine lining & helping uterus growth

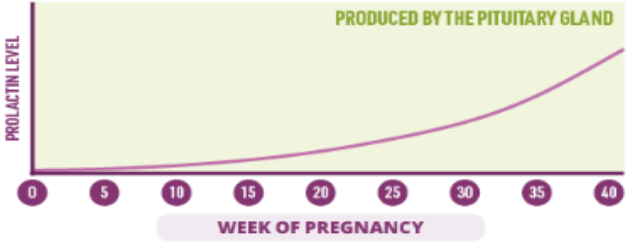
OESTROGEN



stimulates uterine growth, increases blood supply and helps fetal organs develop

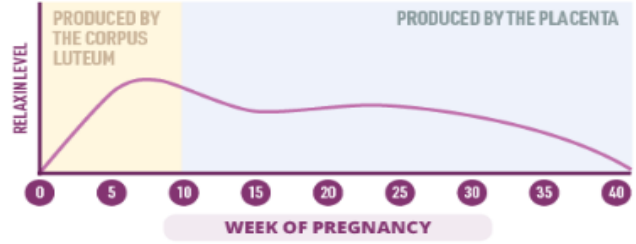
↑ blood supply

PROLACTIN



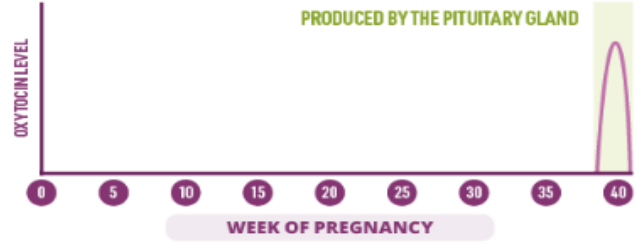
preparation for lactation; contributes to enlargement of mammary glands preps for milk production

RELAXIN



inhibits the uterine activity preventing premature birth; softens & lengthens cervix & relaxes joints

OXYTOCIN

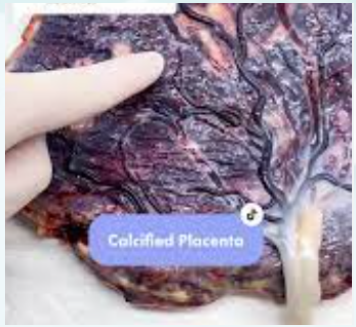


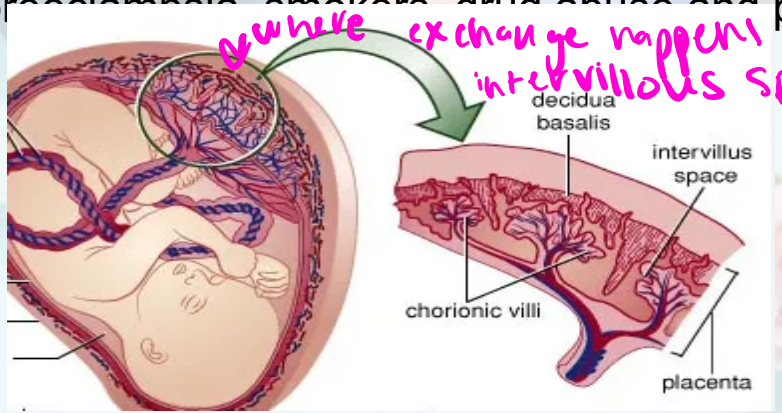
Causes uterine muscle contraction & triggers prostaglandins to increase contractions further; if labor doesn't start naturally can be used to induce; Stimulates milk ejection

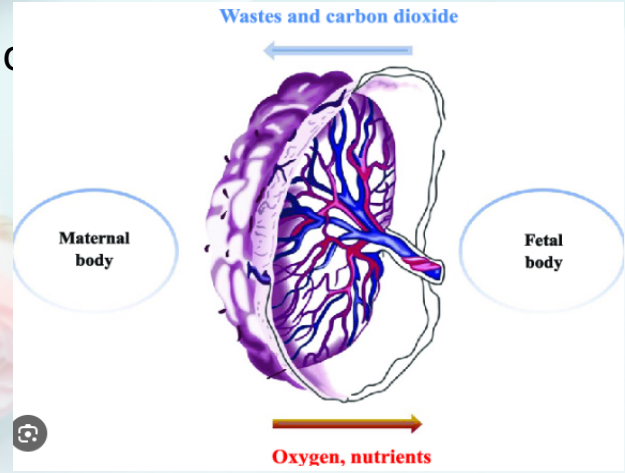
oxytocin (synthetic) can be used to induce

PLACENTA

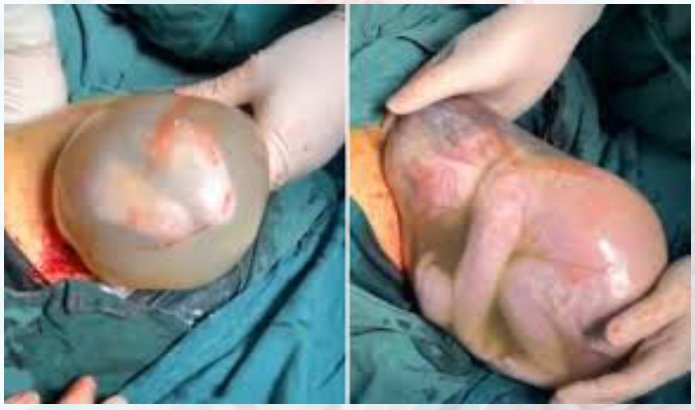
- Formed from both fetal and maternal tissue
- Exchange of substances between mother and fetus occurs in intervillous spaces of placenta
- Placental membrane separates to prevent maternal and fetal blood mixing; gasses, nutrients and electrolytes are exchanged via umbilical cord
- Viruses (such as rubella and cytomegalovirus) and drugs can cross placental membrane and enter fetal circulation
- Degenerative placenta: Infarcts & calcifications that interfere with uterine-placental-fetal oxygen exchange
- More likely in severe pr[illegible] post c[illegible]





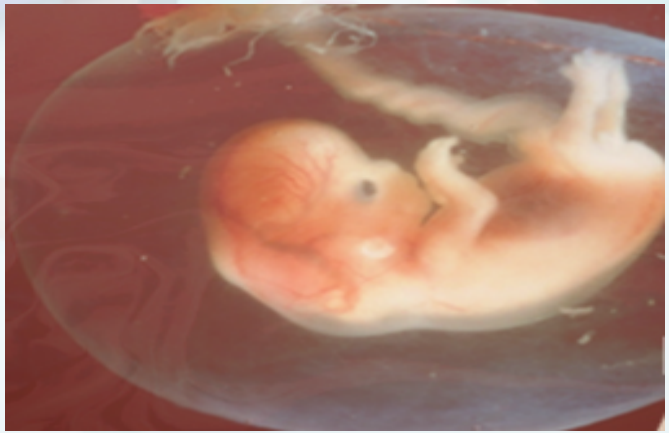


EMBRYONIC MEMBRANES & AMNIOTIC FLUID



- Two membranes (amnion and chorion) form amniotic sac
- Appear to be one membrane-usually rupture together
- Embryo and amniotic fluid are contained within amniotic sac
- Membranes stretch to accommodate growth of developing fetus and increasing amount of amniotic fluid

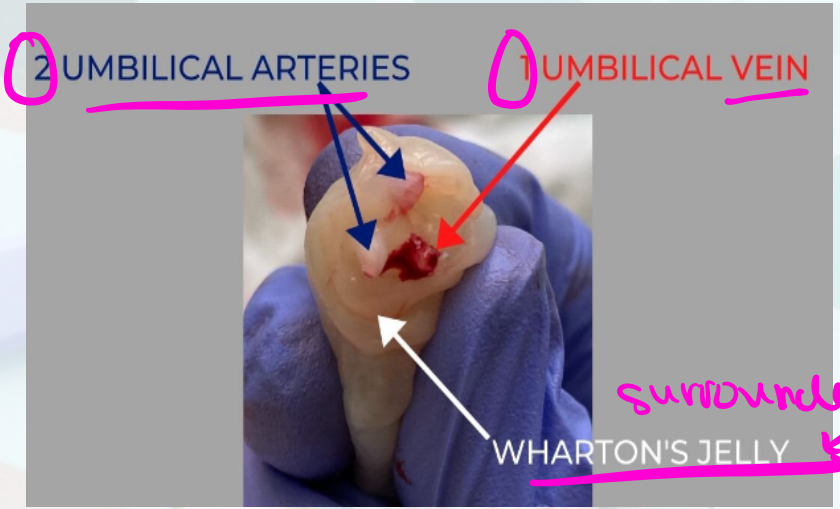
- Derived from fetal urine & fluid transported from maternal blood
- Cushions impact to maternal abdomen
- Prevents adherence of fetus to amniotic membranes
- Allows freedom of fetal movement
- Provides a consistent thermal environment
- Essential for fetal lung development
- Allows symmetric development as major body surfaces fold to midline



UMBILICAL CORD

Lifeline between fetus and placenta that consists of

- Two umbilical Arteries
- One umbilical Vein
- Vessels surrounded Wharton's Jelly (collagenous substance), which protects it from compression
- Cord usually inserted in center of placenta
  - Sometimes no known cause



surrounded by

wips provide cushion

6 key hormons (review)

HCG - defeds pregnant

Estrogen - ↑ blood supply

Relaxin - Cervix

Progesterone - Placenta lining Prolactin - lactation oxylocin - contraction causes Joints

MATERNAL CHANGES AT 8 WEEKS

↑ Estrogen levels lead to

- Blood congestion and ↑ vascularity (visible/prominent veins) in Cervix, Vagina & Vulva
  - Hegar's Sign- softening of isthmus cervix
  - Goodell Sign- softening of cervix
  - Chadwick Sign- bluish purple color of vagina

softening

color change

- Hypertrophy of uterine muscle fiber stretch in preparation for delivery ↑ in uterus growth.
  - Round Ligament Pain possible
- N/V up to 12 wks. due to estrogen and hCG levels

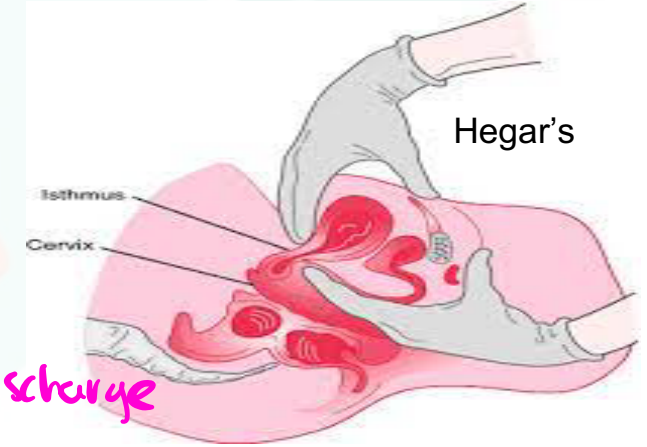
↑ Glycogen may cause Candida (yeast) to appear vaginally

- Yeast infections common in pregnancy
- Acid pH of vagina helps to ↓ bacteria growth
- Leukorrhea increases

white discharge increase

No noticeable weight gain

*change in color or odor of discharge go get seen



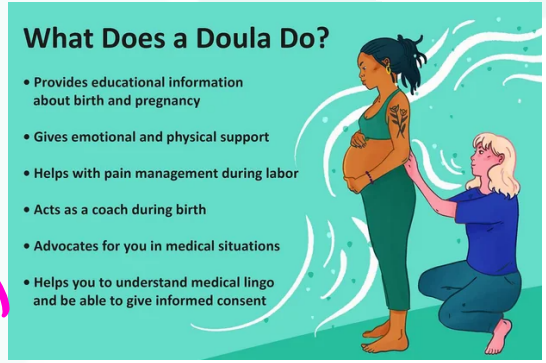
NURSING INTERVENTIONS AT 8 WEEKS

Nausea Prevention - for nausea not for everyone @ 8 weeks
- Eating dry crackers before getting out of bed in a.m.
- Eating small frequent meals; avoid fatty meals

Hyperemesis Gravidarum - need electrolyte balance
- IV hydration required for dehydration & electrolyte imbalance

Discuss to AVOID hot tubs, saunas & steam rooms
- Increased risk of neural tube defects in 1st trimester
- Hypotension and fainting

Prepare for pregnancy
- Include partner and family & discuss attitude towards pregnancy
- Provide information on childbirth classes and doula



Periodontal Care gums become tender bleed (refer to dentist)
- Refer to dentist for checkup if needed

- pica craving (non food items)

MATERNAL CHANGES AT 12 WEEKS

fundus - top of uterus.

Uterus rises *above pelvic brim*

Placenta

- Fully functioning and producing hormones
- Uterine blood flow ↑due to O2, nutrients & waste exchange between mom & fetus

Thyroid ↑ in size

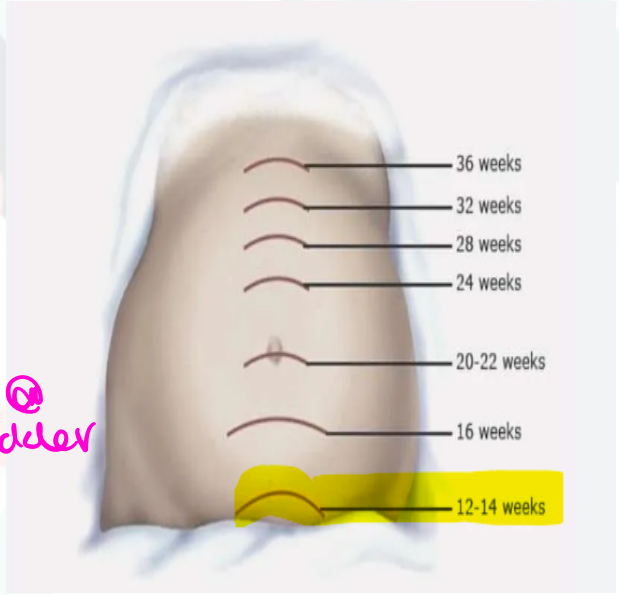
- ↑ hormone production to support & maintain pregnancy
- Hormones help with fetal growth & development

↑ Progesterone

- Bladder tone decreases & ↑ capacity
- ↑ potential for UTI's due to urinary stasis

Weight Gain: 2-4 lbs. in 1st trimester

· urine pool @ bottom of bladder



NURSING INTERVENTIONS AT 12 WEEKS

Prevention of Urinary Tract Infections-

- Adequate fluid intake of 3L/day
- Void frequently (Q2hrs while awake); before and after intercourse
- Wipe front to back

Nutrition & Exercise-

- Exercise regularly

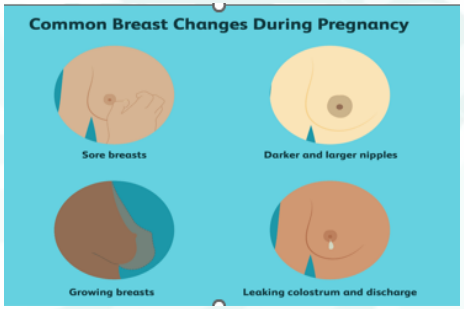
Discuss effects of pregnancy on sexual relationship

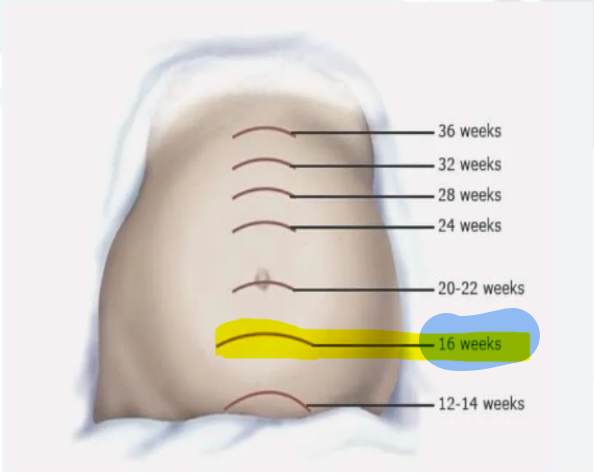
↑ libido in women

Positions in late & early pregnancy

MATERNAL CHANGES AT 16 WKS

Each centimeter = a week.
Should be 16 wks.





Fundus *between symphysis & umbilicus*

Braxton Hicks occurs

Quickening- 1st perception of fetal movement

Weight Gain- 1 lb. per week now to delivery

Placenta is clearly defined & ↑ hormone production occurring

- ↑ in Estrogen causing blood supply to ↑
- ↑ Prolactin levels to prep breasts for lactation
  - Colostrum may be expressed
- ↑ Progesterone "hormone of pregnancy" to maintain lining of uterus & relax smooth muscles

NURSING INTERVENTIONS AT 16 WEEKS

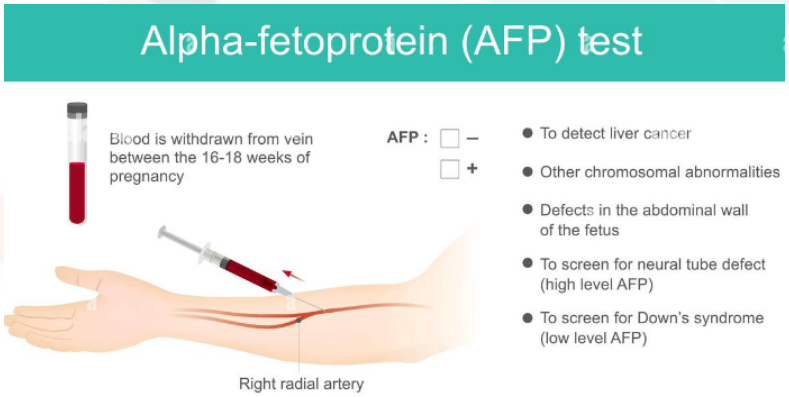
– braxton hicks –
pain in belly- ↓ if drink water
change position

– contractions –
• start @ back radiate around belly doesn't get better

Provide education on True vs False labor

Maternal serum alpha-feto protein test (performed between 15-22 wks.)
- Elevated levels are associated with neural tube defects
- Low levels associated with Down syndrome
- Abnormal levels are followed up in 2nd trimester with in-depth ultrasound

Explain purpose of additional testing if necessary:
- Genetic Carrier Testing (free cell DNA)
- CVS/Amniocentesis
- Ultrasound



MATERNAL CHANGES AT 20 WEEKS

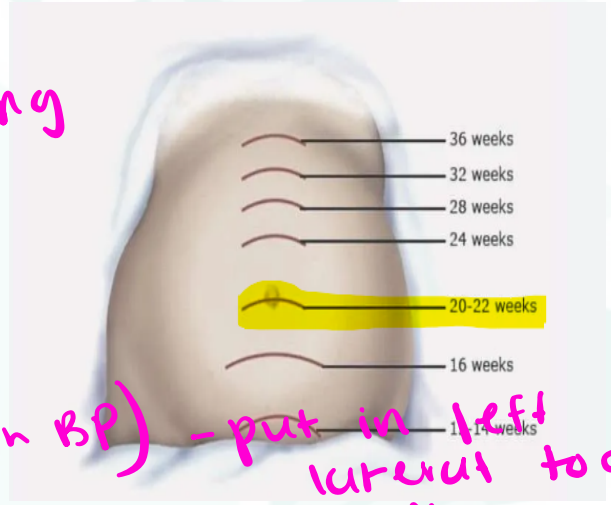
- everything growing

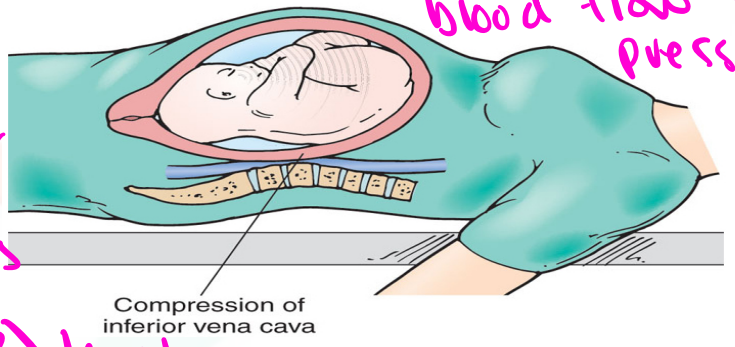
Fundus *at the umbilicus*
Breasts continue to secrete colostrum & areolas darken more
Amniotic sac now holds approximately 400 ml
Uterus enlargement
- Postural hypotension - compression of venacava way baby lays (↓ in BP) - put in left lateral to allow blood flow ↓ pressure.

↑ Blood volume
- Sinus congestion, Headache & stuffy nose
- Leg cramps & varicosities (legs, vulva & rectum)

↑ Progesterone causes gut to work less effectively
- Constipation - causes food to move slower through gut
- more pressure on bowels

↑ fiber diet, movement, hydration → teach





NURSING INTERVENTIONS AT 20 WEEKS

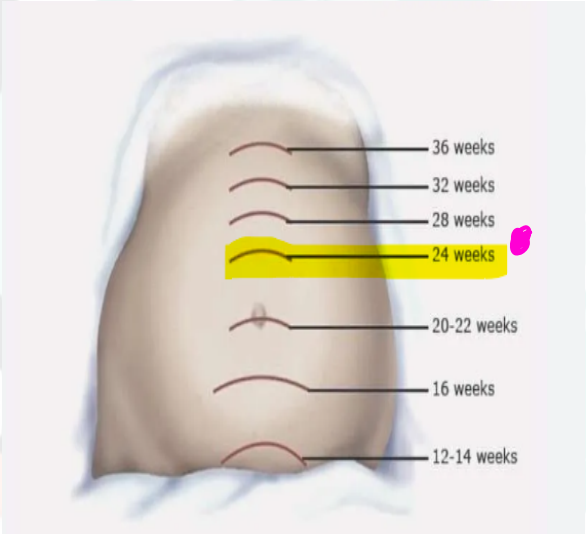
Educate Comfort Measures

- Encourage to remain active
- Sit with feet elevated when possible
- Avoid pressure on lower thighs
- Use of support stockings may be helpful
- Dorsiflex foot to relieve cramps
- Apply heat to cramped muscles
- Cool air vaporizer or saline spray for stuffiness

Avoid Constipation

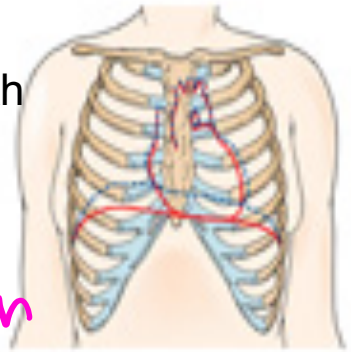
- Eat raw fruits, vegetables, cereals with bran
- Drink 3L of fluids/day
- Exercise frequently

MATERNAL CHANGES AT 24 WEEKS



Fundus rises *above the umbilicus*
Systolic murmur sometimes heard
- Heart shifts upward & laterally

Blood volume increase
- Continue transport of nutrients & O2 to placenta
- Meet demands of expanded maternal tissue in uterus & breasts
- Provide a reserve to protect from adverse effects of blood loss from childbirth



- 10-15% Heart enlargment
- shifts so baby can grow

NURSING INTERVENTIONS AT 24 WEEKS

Explain and perform glucose challenge
- Glucose Screen (1-hour Glucose screening-if abnormal-140 or greater) then 3-hour GTT

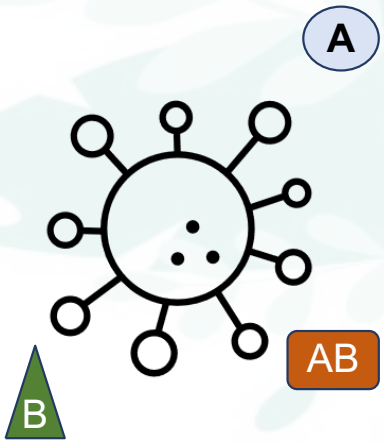
Ultrasound measurements taken & about 24-32 weeks
- Taken 2-3 weeks apart to compare against standard fetal growth curves.

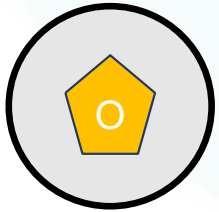
Perform Antibody screen on Rh negative patients - 24-28 weeks -
- If negative, give Rho (D) immune globulin (~28 weeks) given @ - protects next baby not current

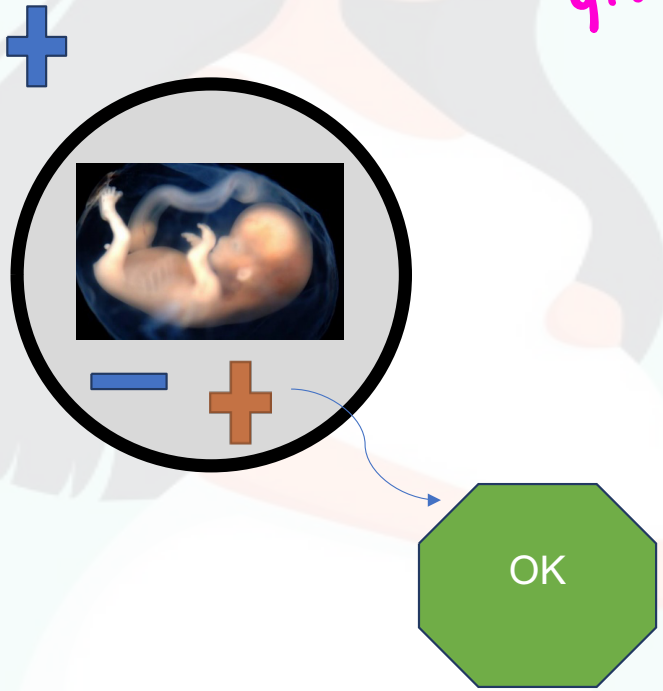
CBC, HIV and RPR (Syphilis) reassessed in 3rd trimester
- If needed, pt. will take iron pills or need iron infusions for anemia
- Treatment of care will be performed if + for Syphilis

BLOOD TYPE & RH FACTOR

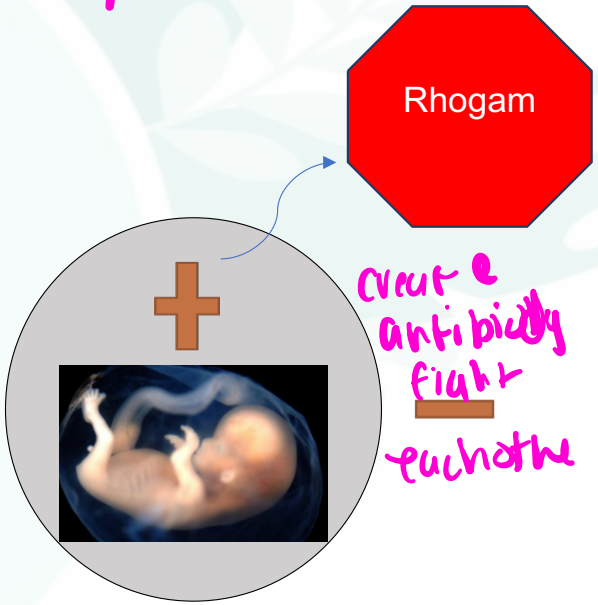
https://youtu.be/e2KK86bekNw



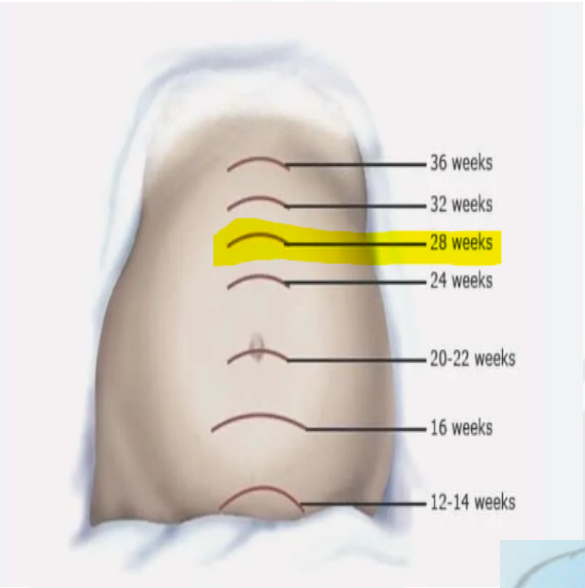


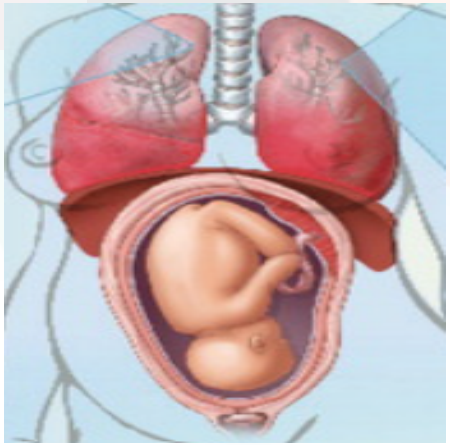


any invasive procedure give Rogam if neg Rh factor



MATERNAL CHANGES AT 28 WEEKS





Fundus *halfway between umbilicus and xiphoid*

Breathing

- Thoracic breathing replace abdominal breathing
- ↑ Chest circumference & Respiratory rate

Estrogen ↑ vascular engorgement

- Upper respiratory tract edema

Progesterone ↑

- Muscle relaxation thus ↓ airway resistance

Fetal outline is palpable

Introspective: Concentrate on the unborn baby

Uterus displaces stomach liver & intestines

- Heartburn begins
- Hemorrhoids may develop
- Constipation, flatulence, & bloating

NURSING INTERVENTIONS AT 28 WEEKS

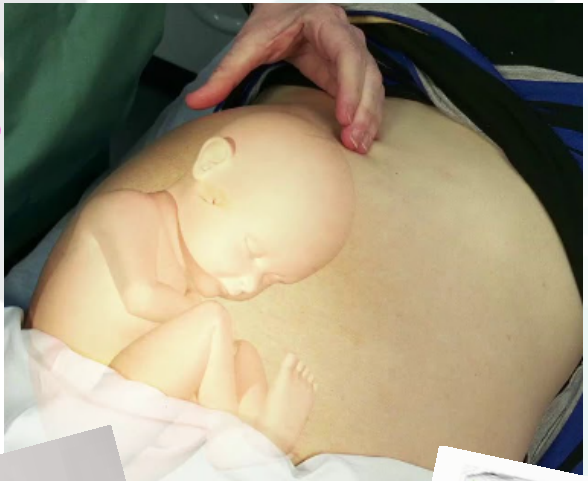
Educate treatment of hemorrhoids
- Suggest sitz baths and stool softeners
- Topical anesthetic agents

dont strain as much

Avoid heartburn
- Avoid fatty foods
- Small frequent meals
- Avoid lying down after meals
- Take antacids as prescribed
- Avoid sodium bicarbonate

Comfort measures
- Elevate legs when sitting
- Assume side lying position when resting

Discuss delivery
- Expectations for delivery & caring for infant



lay on left side to prevent pressure

MATERNAL CHANGES AT 32 WEEKS

Fundus *reaches the xiphoid process*

↑ Progesterone

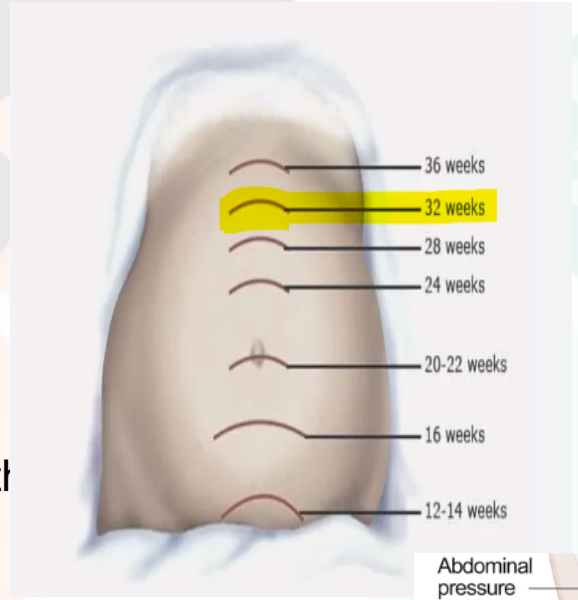
- Urinary frequency returns
- Bladder tone ↓ and capacity ↑
- Renal pelvis dilates
- Urinary stasis - promotes bacteria growth

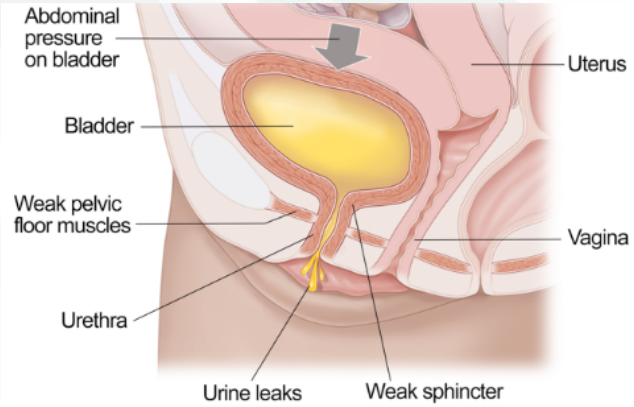
Swollen ankles may develop

Sleeping problems

- Dyspnea develops
- Nocturia

Breast are full and tender



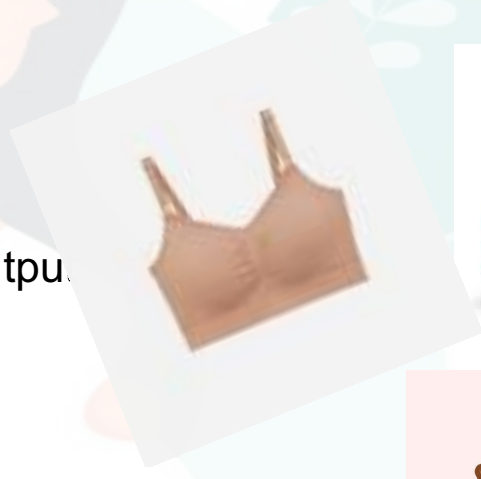


NURSING INTERVENTIONS AT 32 WEEKS

Educate measures to decrease edema
- Elevate legs 1-2 times per day for 1hr
- Left lateral position- ↑ Cardiac output & urine outpu

Comfort measures
- Wear well-fitting supportive bra
- Use semi-fowler position

Prepare for delivery
- Review signs of labor
- Discussion plans for other children (if any) and transportation
- Assess partner's role in childbirth

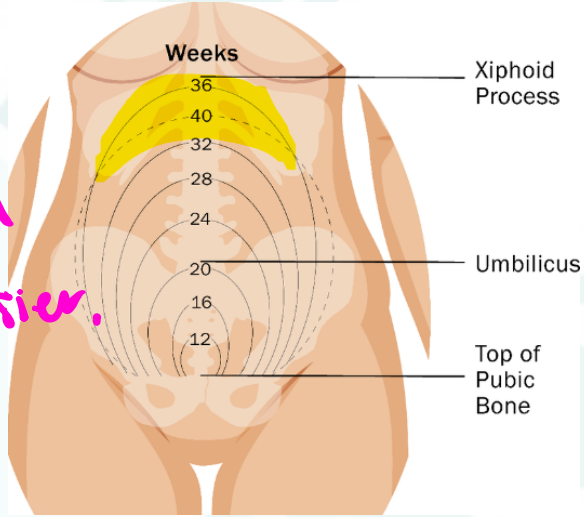


MATERNAL CHANGES AT 36-40 WEEKS

Fundus *below xiphoid process again*
- Lightening occurs (baby drops) uterus drops
- Urinary frequency increases even more

↑ Progesterone & Relaxin
- Relaxation of the ligaments & joints
- Diastasis Recti - abdominal midline muscle separates 3rd trimester

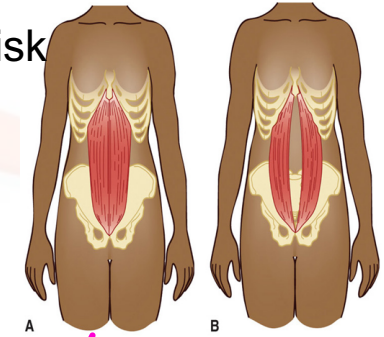
lung capacity ↑ can breath easier.



Musculoskeletal discomforts
- Postural changes progress
- Increased backaches
- Altered posture – the center of gravity shifts - ↑ fall risk
- Lordosis - a shift in the center of gravity
- Altered gait - “Pregnant Waddle

Mother is eager for birth
- Burst of energy

Braxton Hicks intensify



- calcium demand increase
- baby stones calcium & iron

NURSING INTERVENTIONS AT 36-40 WEEKS

Safety Measures
- Wear low-heeled shoes or flats
- Avoid heavy lifting
- Sleep on side to relieve bladder pressure

Prepare for delivery
- Teach pelvic tilt exercises
- Pack a suitcase
- Tour labor and delivery
- Discuss postpartum circumstances

? - circumcison - Bottle
pacifier - Breast feeding

Educate on Group B Streptococcus Screening performed at **35-36 Weeks**
- If + = required antibiotics (Pen G) during labor & Q4 hours until delivery
- Status unknown = assume positive and treat
- Scheduled c-section with intact membranes = no treatment nec.

* if allergic clyndamicin.
preventative maintanence.
goal 2 doses in before baby born

if GBS - monitored closer BS uncontrolled temp instability feeding (48hr obs)
obs

↑ Blood Volume = initial increase in BP but then drops to normal.

Empathy Belly

* nothing greater than a 30 point increase per person "normal" BP not standard BP.

Empathy Belly

PREGNANCY CONFIRMATION

signs you think yourself

make HCP think its possible

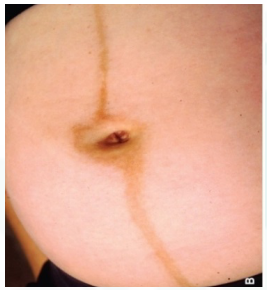
visual or audible proof.

Presumptive Signs	Probable Signs	Positive Signs
Amenorrhea	Uterine enlargement	Fetal heart sounds - 10-12 wks
Fatigue	Chadwick's sign- *bluing of the vagina*	Fetal movement - observed / palpated
Nausea & vomiting	Goodell's sign- *softening of the cervix*	Ultrasound visualization of the fetus – Cardiac movement at 4-8 wks – Transvaginal US - detect sac at 4.5-5wks.
Urinary frequency	Hegar's sign- *softening of the cervical isthmus*	
Breast increase size & fullness	Ballottement - rebounding of baby on HCP hand	
Areolas darken	Braxton Hicks contractions	
Pronounced nipples	Positive pregnancy test	
Linea nigrea - darken tint of belly.		
Melasma		
Quickening - fetal movement @ different times ↓ and baby		

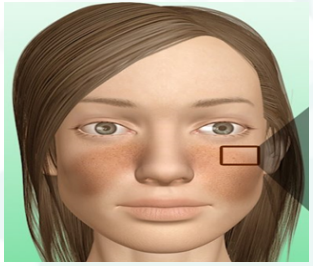
Prim - 18-20 wk Multi - 14-16 wks (can feel baby)

first time

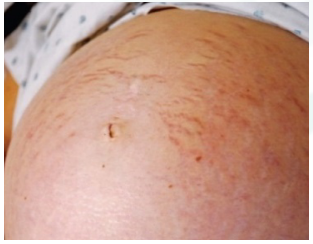
PRESUMPTIVE SIGNS OF PREGNANCY



Linea nigra



Melasma



Striae

- ↑ Circulation to skin
  - Hot flashes & facial flushing
  - Perspiration ↑
  - ↑ Sebaceous glands activity - oily skin and acne
- ↑ Estrogen & Progesterone
  - Melasma - mask of pregnancy "Pregnancy Glow"
- Linea nigra - darker vertical line umbilicus to the mons pubis
  - Striae gravidarum - stretch marks to the breast, hips, abdomen, buttocks
  - Hair and Nails - rapid growth during pregnancy

(facial flushing)

PROBABLE SIGNS OF PREGNANCY

Serum or Urine hCG

- hCG production begins at implantation
- Detected 7-8 days after conception

Higher levels - multiples, ectopic, molar pregnancy, genetic abnormality

Lower levels – miscarriage

Medications - anticonvulsants, diuretics, tranquilizers

- False positive or negative

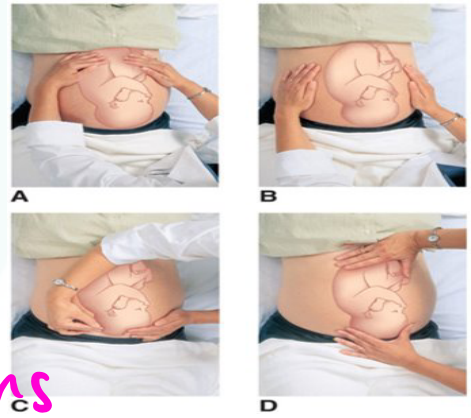
POSITIVE SIGNS OF PREGNANCY

Fetal heart rate - normal Range: 110-160 norm
- Doppler – detectable @ 10-12 weeks gestation
- Fetoscope- detectable at 15-20 weeks gestation

Ultrasound Transvaginal vs Transabdominal
- High frequency sound waves obtain images of maternal structures, placenta, amniotic fluid and fetus

Leopold's Maneuver - feel for baby outline.
- External palpation of uterus to determine
- Identify Presenting parts & outline of fetus
- Point of maximum impulse (PMI)

↑ find back (hardest spot) best place to hear from ♡ rate

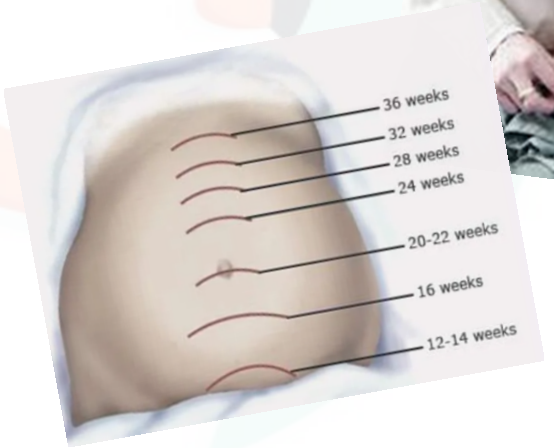


approx. 7 months

Outline can be 28 weeks fully evident

1ST PRENATAL VISIT ASSESSMENT & INTERVENTIONS

- Medical History
  - Psychosocial, Obstetrical, Gynecologic & Contraceptiv
  - Head to Toe Assessment of all system
  - Reproductive exam
  - Breast & Pelvic exam
- Calculate EDB & fundal height
- Vital signs – height, weight & BMI
- Fetal Heart Tones
  - Doptone used at 10-12 weeks
  - Fetoscope- detectable at 15-20 weeks gestation
- Future office visits – based on risk assessment



1ST VISIT PREGNANCY VITAL SIGNS

Blood Pressure

- ↑ 1st trimester due to peripheral vascular resistance
- Systolic - slight to no increase, no more than 30 mm Hg
- Diastolic - slight decrease, 24-32 weeks 10-20 mm Hg
- Gradual return to pre-pregnancy by the term
- Average range 90-140 / 60-90

Maternal Position - impacts blood pressure

- Supine - Vena cava compression
- Left lateral - position of choice

Pulse - average 60-90 bpm (↑10-20 beats around 32 weeks)

Respirations -16-24 breaths/min.

INITIAL LABWORK

CBC with differential
- Hgb and Hct - monitor anemia

Pap smear – screening tool for cervical cancer
- Cultures for Chlamydia & Gonorrhea
- Assess for herpes, human papillomavirus

Blood type, and Rh factor, & Antibody screen

HIV , Hepatitis B (HBsAg), RPR /VDRL (Syphilis)

Rubella (titer should be at least 1:8)
- if non-immune will give a booster shot AFTER delivery

TB screening

↑ in WBC - building immunity for pregnancy

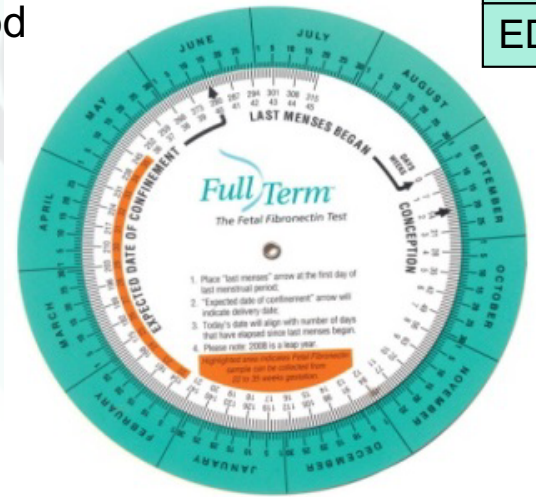
Passes intervillia space

CALCULATING DATE OF BIRTH

Nageles Rule

- EDC - estimated date of confinement
- EDD - estimated date of delivery
- EDB - estimated date of birth
- LMP - last menstrual period

Formula for Nagele's Rule			
LMP	April 27		4/27
Subtract 3 months	**– 3 months**		
	January 27		1/27
Add 7 days	**+ 7 days**		
EDD	February 3	➡	2/3



DETERMINE GRAVIDA PARA

Two Digits – G/P only records the gravida and para

Gravida - # of pregnancies, regardless of duration, including a pregnancy in progress

- Nulligravida – never been pregnant
- Primigravida – pregnant for the first time
- Multigravida – has been pregnant more than once

Para - # of pregnancies that have reached 20 weeks or more, ***multiple birth counts as 1 Para***

- Nullipara – never completed a pregnancy @ 20 weeks or greater
- Primipara – has only completed 1 pregnancy @ or > 20 weeks
- Multipara- has completed a pregnancy > 20 weeks more than once

Age of Viability - 20 weeks - fetal lungs mature enough for fetal survival outside the uterus

Ab - any pregnancy loss occurring < 20 weeks is counted as an abortion

(twins Ex.)

≠ 20 wks viability outside of uterus

DETERMINE GTPAL

Five Digits

GTPAL

- Gravida - # pregnancies
- Term - # pregnancies delivered between ***38-40 weeks***
- Pre-term - # pregnancies delivered ***prior*** to completion of the 37 week
- Abortions - # miscarriages, spontaneous or induced abortions ***(<20wk)***
- Living - # children surviving birth (***twins/multiples count individually***)

What is my GTPAL?

GTPAL*M* - the *M* **= # of multiple gestational pregnancies**

How many times pregnant w/ multiples

GRAVIDA / PARA EXAMPLES

I am 39 weeks with my 4th pregnancy
I lost my first baby at 9 weeks
My second baby was born at 27 weeks and lived 3 weeks
My third baby was born at 36 weeks and is 2 years old

What is my Gravida / Para?
What will be my Gravida / Para *after* delivery?
What is my GTPALM ?
What will be GTPALM / *after* delivery?

GRAVIDA / PARA EXAMPLES

I am 40 weeks with my 5th pregnancy
I lost my first baby at 13 weeks
My second babies were twins at 25 weeks and lived 3 days
My third baby was born at 38 weeks and is 3 years old
My fourth baby was born at 36 weeks and is 18 months

What is my Gravida / Para? G5P3

What will be my Gravida/Para *after* this delivery? G5P4

What is my GTPALM ? G5T1P2A1L4M1

What will be my GTPALM *after* this delivery?

G5T2P2A1L5M1

why blood looks diluted (hemodilution)

↓ Plasma increase is larger than what the RBC increases by.

↑ Plasma volume exceeds the increase in RBC's

LAB VALUES

↑ increase risk of anemia

Laboratory Value	Non-Pregnant	Pregnant
Red Blood Cell count (million/mm³)	4.0-5.2	2.71-4.55 (↓ slightly because of hemodilution)
Hemoglobin (g/dL)	12-16	10.5-11 (consider anemia if < 11.0 in 1st or 3rd trimester or < 10.5 in 2nd trimester)
Hematocrit, packed cell volume (%)	35.4-44.4	28-41
White blood cell (mm³)	5000-10,000	5000-15,000 ↑ build immunity
Platelets (mm³)	165,000-415,000	146,000-429,000
Prothrombin Time (seconds)	12.7-15.4	9.5-13.5
Activated partial thromboplatin time (seconds)	26.3-39.4	22.6-38.9
D-dimer (µg/dL)	0.22-0.74	0.05-1.7
Blood glucose, fasting (mg/dL)	70-100	95 or lower
Creatinine (mg/dL)	0.5-0.9	0.4-0.9
Creatinine clearance, 24 hour urine (mL/min)	91-130	50-166
Fibrinogen (mg/dL)	233-496	244-696

WEIGHT GAIN DURING PREGNANCY

go back & listen to Rick

Pre-Pregnancy Wt	BMI	Recommended Wt Gain	2nd & 3rd Trimester-Rate Wt Gain (lbs./wk.)
Underweight	< 18.5	28 - 40 lbs.	1 - 1.3 lbs.
Normal Weight	18.5 - 24.9	25 - 35 lbs.	0.8 - 1 lbs.
Overweight	25.0 - 29.9	15 - 25 lbs.	0.5 - 0.7 lbs.
Obese	≥ 30.0	11 - 20 lbs.	0.4 - 0.6 lbs.

Recommended total weight gain based on pre-pregnancy on BMI

- Obesity – risk for AP, IP & PP complications
- Underweight – risk for SGA / preterm delivery

Pattern of weight gain

- 1st Trimester - 2 to 4 lbs..
- 2nd & 3rd Trimester - average 1 lb. per week weight gain
- Total weight gain during pregnancy 25-35 lbs..

LGA - large for gestational age

Poor wound healing

* underweigh gains more preterm or underweight.

DAILY FOOD GUIDE

Increase caloric and protein intake

- 3 servings/day –Dairy – Calcium- milk, cheese and yogurt
- 1000 mg / day5 servings/day –Protein - meats, eggs, and legumes
- 5 servings/day –Vegetables - green, deep yellow good source of Vitamin C
- 6 servings/day – Grains - bread and cereal
- 4 servings/day – Fruit

Prenatal vitamin - Folic acid 600 mcg. Daily

Drinking 8-10 glasses of water

Consider cultural food patterns in the choices given

? why are you eating each one

Calcium ↑ musculoskeletal change

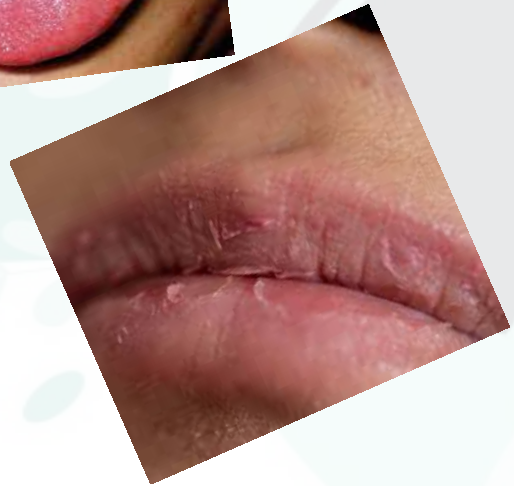
Protein
calcium > what do you need to eat?

WARNING / DANGER SIGNS

- Pre-eclampsia
  - Visual disturbances & severe headache
  - Swelling of the face, fingers, or sacrum
  - Epigastric Pain
  - Severe hypertension
- Hyperemesis gravidarum/ Dehydration
  - Prolonged nausea and vomiting
  - Diarrhea
- Fetal distress or Death
  - Change in fetal movement or FHR
- Urinary Tract Infection
  - Fever, chills, dysuria, frequency, and urgency
  - Odorous discharge
- PROM/ SROM / Preterm labor
  - Fluid, or bleeding from the vagina
  - Abdominal pain, cramping or backache
- Placenta Previa/Abruption
  - Vaginal bleeding
- Signs & symptoms of Hypo/Hyperglycemia

pyelonephritis, appendicitis Lobd Back or pelvic pain

SUBSEQUENT PRENATAL VISITS



- Vital signs
- Urine dip
- Weight Gain – graph weight gain
  - Note symptoms of malnutrition
- Fundal height cm = # of weeks gestation
- Fetal assessment
  - Fetal heart rate (FHR) 110 - 160
  - Fetal activity
- Education
  - Importance of prenatal care
  - Anticipatory guidance according to trimester
- Pelvic exam assessing for cervical change start at 36 weeks

COMMON TESTS

Urinalysis & UDS (Urine drug screen)

- Albumin - Trace normal finding
  - Preeclampsia
- Glucose - 1 + normal finding
  - Gestational diabetes
- Protein - Trace normal finding
  - < 1+ mild preeclampsia
  - 2+ to 3+ severe preeclampsia

- Big tell of preeclampsia

Progesterone Level- Placenta begins manufacturing at approximately 8 weeks.

- *Low levels of progesterone* are associated with spontaneous abortions and ectopic pregnancy

TORCH (Toxoplasma gondii, Other viruses, Rubella, Cytomegalovirus, Herpes Simplex)

- Toxoplasma- concern is with cats; parasitic disease
- Rubella- rare but can lead to birth defects for future pregnancies if not vaccinated
- CMV- type of herpes spread through saliva & body fluids
- Herpes- assess for outbreaks present and need for treatment

ASSESSING THE FETUS

Testing is voluntary and can be refused

Unbiased, nondirective counseling about benefits and limitations of each test should be provided

Women make decisions based on personal beliefs, values, traditions and culture

Decisions may be made with assistance from others important to them

Informed consent is needed for any invasive procedure

ULTRASOUND

Specialized or target-
- When specific target or organ requires more detailed imaging

Confirm fetal heart rate activity

Verify gestational dates

Locate and/or grade the placenta

Determine fetal presentation

Estimate amniotic fluid volume (AFI)

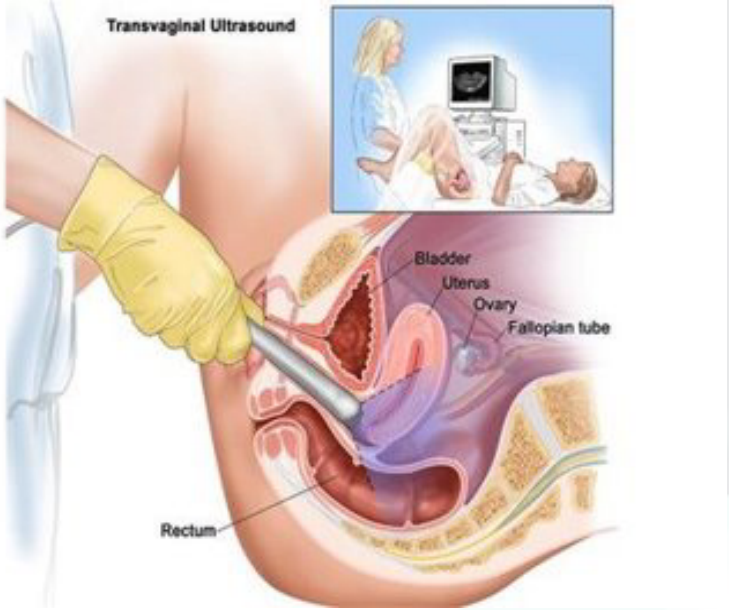
Diagnose multiple gestation

Evaluate interval fetal growth

Evaluate the cervix

Guide amniocentesis/CVS - get samples not just look at

TRANSVAGINAL ULTRASOUND



Usually done 1st trimester

Useful in obese patients

Does *not require* the woman to have full bladder

Woman placed in lithotomy position an

- Sterile covered probe/transducer inserted into vagina

Can also be used to evaluate cervical status

TRANSABDOMINAL ULTRASOUND

Transducer is moved over maternal abdomen to create an image

Warm gel to at least room temperature

Remove gel from abdomen when procedure is complete

Document teaching and toleration

No complications

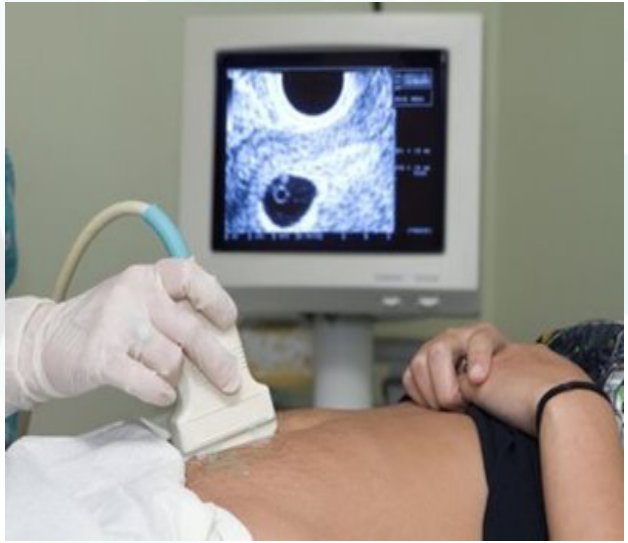
First 20 weeks:

- *Requires* full bladder to help support uterus for imaging:
- Allow patient to empty bladder when scan complete
- Place pillows under neck & knees for uterus placement

- pushes uterus up

3rd Trimester

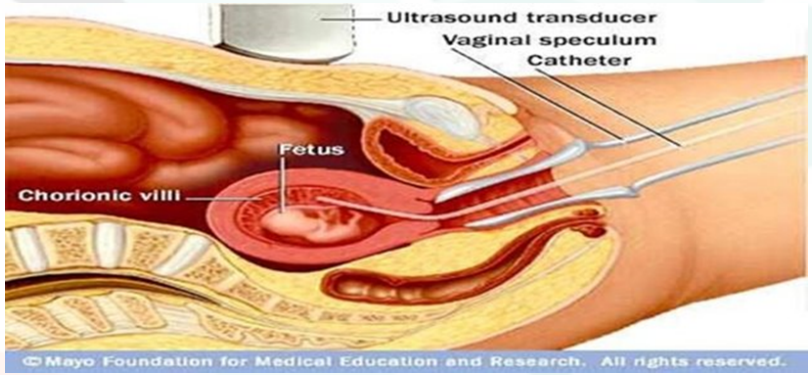
- Patient is supine with hip wedge to displace uterus to left



CHORIONIC VILLUS SAMPLING:

Aspiration of small amount of placental tissue (chorion) -Thin sterile catheter/syringe inserted through abdominal wall or cervix under US guidance for chromosomal, metabolic or DNA testing

Results obtained usually in 1 wk..



Complications to baby

- Limb reduction defects
- Culture failure rate in growing chromosomes
- Subchorionic hematomas
- Infections
- Spontaneous rupture of membranes

Advantage: Can be done earlier than amniocentesis (normally performed between 10-13 weeks)

CHORIONIC VILLUS SAMPLING

Nurse Responsibility

- Obtain consent
- If patient is Rh negative-give Rho (D) Immune Globulin
- Place patient in lithotomy position
- Warn patient of sharp pain with catheter insertion

Patient Teaching post procedure

- report cramping, heavy bleeding, clot or tissue passage, leakage of fluid
- Notify if temperature greater than 100.4
- Rest for 24 hours
- avoid exercise, heavy lifting and sexual intercourse for several days

AMNIOCENTESIS

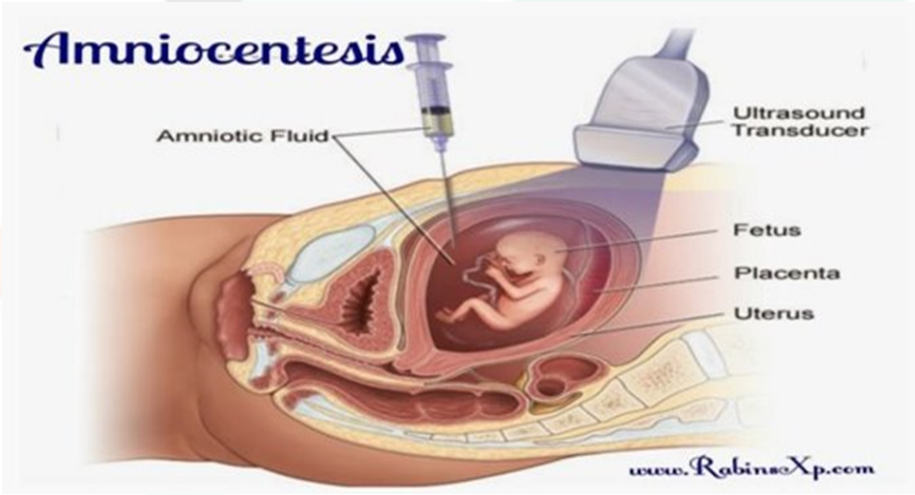
Needle inserted into uterine cavity to obtain amniotic fluid; guided by US

Early vs Late in Pregnancy

- ***Early***- bladder should be full to push the uterus up in the abdomen for easier access
- ***Late***- bladder should be empty so it will not be punctured

Risks

- 1% spontaneous abortion
- fetal injury
- Infection



AMNIOCENTESIS

Purpose

- Genetic testing (usually between 15 and 20-weeks gestation)
- Assessment of hemolytic disease in fetus-
  - Elevated bilirubin levels indicate fetal hemolytic disease
- Assessment for intrauterine infection
  - Meconium in amniotic fluid may cause fetal distress
- Determination of Down Syndrome
  - Takes 10-14 days for cultures to develop for
  - Pt could be well into 2nd trimester so choice for abortion is dangerous

Primary method of evaluating Fetal Lung Maturity

- Lecithin-to-Sphingomyelin (L/S) ratio-2:1 or greater indicates adequate surfactant and mature fetal lungs
- Lamellar Bodies (storage form of surfactant)
  - IDM have delayed fetal lung maturation

AMNIOCENTESIS: POST PROCEDURE CARE

Nurse Responsibility

- Obtain baseline VS & FHR
- Only to be performed when the uterus rises above the symphysis (12-13 weeks) and when amniotic fluid is formed
- Administer Rho (D) Immune Globulin (RhoGAM) for Rh neg patients
- Provide emotional support
- Monitor FHR for 1 hr.

Post procedure teaching:

- Report cramping, heavy bleeding, clot or tissue passage, leakage of fluid or temperature greater than 100.
- Rest for 24 hours and avoid exercise, heavy lifting and sexual intercourse for several days
- Report a change in fetal movements

FETAL MOVEMENT COUNTING (FETAL KICK COUNTS)

Fetal movement counting is a method to evaluate fetal well-being

Hypoxic fetus

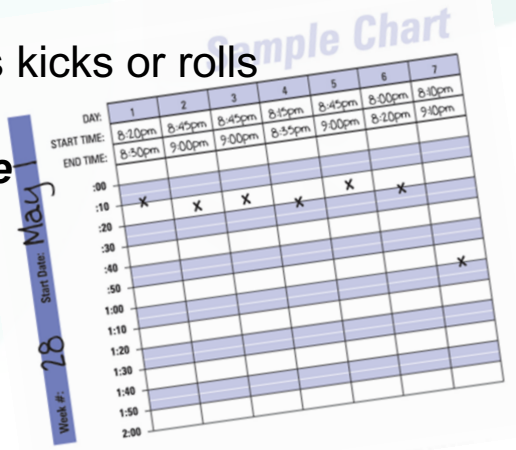
- activity is reduced to conserve oxygen and
- eventually stillbirth may occur

Steps:

- Rest in a quiet location and count distinct fetal movements such as kicks or rolls
- Maternal perception of 10 distinct movements in a 1-2-hour
  - period is reflective of nonhypoxic fetus ***at that moment in time***
- Count is discontinued once 10 movements are perceived
- Fetal movement is then recorded

Perception of decreased fetal movement should be reported

Remember baby does sleep!



NON-STRESS TEST PROCEDURE

An NST evaluates the ability of the fetal heart to accelerate either spontaneously or in association with fetal movement.

Nurse Responsibility

- Place patient in comfortable position with lateral tilt;
- Place ultrasound and tocodynamometer - at PMI point.
- Advise Pt to push button when she feels baby move so fetus response can be observed
- Monitor fetus for minimum of 20 minutes; can be extended for another 20 minutes to account for normal fetal sleep-wake cycles
- Fetal heart rate and uterine activity is recorded and interpreted

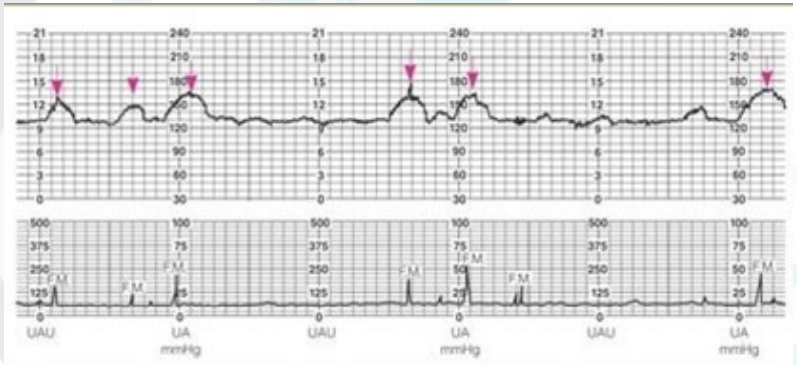
Stimulation may be required to provoke a fetal response if not active

- Patient can eat a snack, drink water/juice or gently palpate abdomen
- Artificial larynx placed near fetal head
  - Stimulation applied for 1 to 2 seconds-can be repeated up to 3 times

NON-STRESS TEST INTERPRETATION

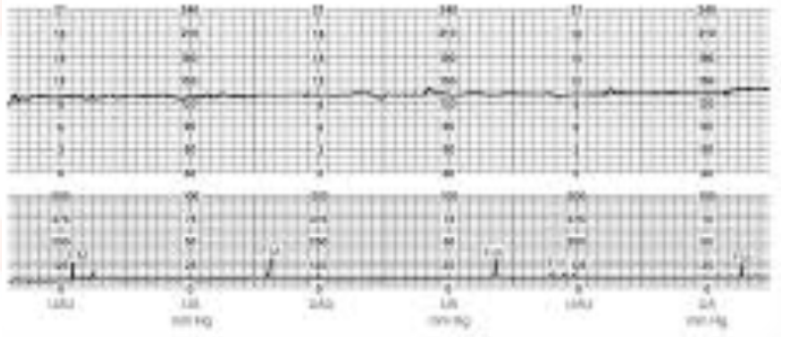
Reactive

- FHR increases 15 beats above baseline for 15 seconds 2-3 times in 20 minutes for fetus over 32 weeks (15 x15)
- FHR increases 10 beats above baseline for 10 seconds 2-3 times in 20 minutes for fetus less than 32 weeks (10 x10)



Non-Reactive

- Fewer than two accelerations during 40-minute period
- Decelerations that persist for 1 minute or longer during an NST have been associated with increased cesarean birth rates and stillbirth



CONTRACTION STRESS-TEST (CST)

Tool to assess fetal well-being and uteroplacental function by monitoring fetal heart rate in response to contractions

- Late decelerations- Brief interruptions of oxygen transfer during contractions in compromised fetus

Performed in hospital environment

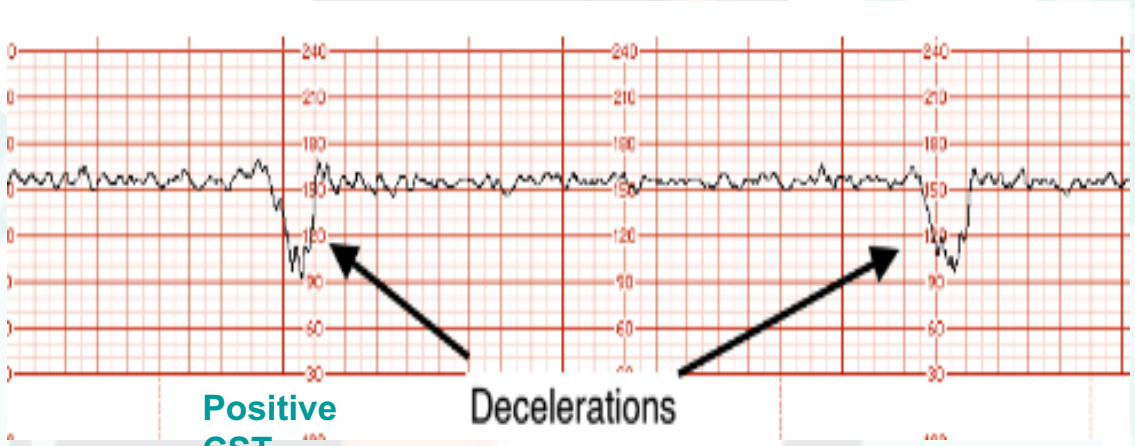
Complete without artificial stimulation if contractions are occurring spontaneously

- If adequate contractions are not present, oxytocin or nipple stimulation is required

Nurse Responsibility

- Explain procedure and obtain informed consent
- Monitor FHR and fetal activity for 20 minutes
- A recording of at least 3 contractions in 10 minutes must be obtained
- Duration of each contraction should be 40 seconds or longer and palpable to nurse

CONTRACTION STRESS-TEST (CST)



Interpretation

Negative- No late decelerations

Positive- Late decelerations are present with a minimum of 50% of the contractions, even when fewer than 3 contractions occur in 10 minutes

- Linked to an increased incidence of fetal growth restriction, late decelerations in labor, meconium-stained fluid, low 5-minute Apgar scores and stillbirth
- Discuss further testing or expedited delivery

BIOPHYSICAL PROFILE (BPP)

Combines electronic fetal monitoring (EFM-NST) with Ultrasound assessment of fetal biophysical characteristics

- Fetal movement- 3 or more discrete body or limb movements
- Fetal tone- one or more fetal extremity extension with return to fetal flexion or opening and closing of the hand
- Fetal breathing movement- One or more episodes of rhythmic breathing movements of 30 seconds within timeframe
- Amniotic fluid amount- Pocket of amniotic fluid measuring at least 2 cm in two planes perpendicular to each other
- NST-reactive

BIOPHYSICAL PROFILE (BPP)

Biophysical Profile Scoring

- Occurs over a 30-minute period
- **2** points given for normal on each parameter; **0** points for abnormal

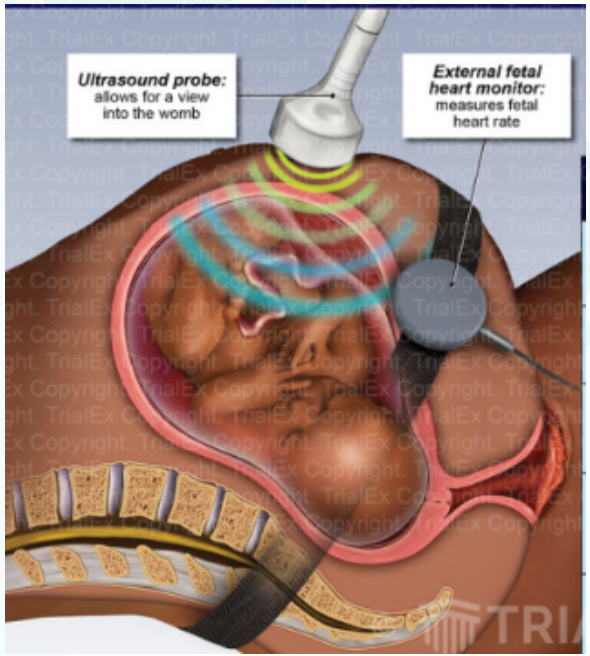
A total of **8/10** or **10/10** is reassuring

A score of **6/10** is equivocal and may indicate the need for delivery depending on gestational age

> leave up to physician

A score of **4/10** means delivery is recommended because of a strong correlation with chronic asphyxia

A score of **2/10** or less prompts immediate delivery



ADAPTATION TO PREGNANCY

Pregnancy is a developmental task associated with growth & development not a life crisis

Acquire skills related to pregnancy, childbirth, newborn, & parenthood

Realign finances, responsibilities, & relationships preparing for newborn’s arrival

Adjust sexual expression to accommodate pregnancy

Expand communication to meet emotional needs

FAMILY ADAPTATION TO PREGNANCY

Factors Influencing Family Adaptation

- Age- Adolescent vs Adult
- Primigravida vs Multigravida
- Social support
- Socioeconomic
- Pregnancy complications
- Psychosocial issues/ Mental health
- Substance abuse
- IPV

1ST TRIMESTER MATERNAL RESPONSE

Uncertainty - no obvious change, seek confirmation, look forward to changes

- Primary focus is on self - dealing with nausea, vomiting, fatigue, and mood swings
- Fetus seems vague

Ambivalence – whether planned or unplanned conflicting feelings about pregnancy

- 1st pregnancy - worries about added responsibilities, being a good pare
- 2nd pregnancy - how will this pregnancy affect the other children & partr
    - - Worry will "I love this baby as much as my first baby

Financial worries about increased responsibilities

Career concerns

Maternal Task of Pregnancy: Role Play: hold, feed other infants, practice

2nd TRIMESTER MATERNAL RESPONSE

Physical evidence of pregnancy
- Fetal growth & movement
- Quickening occurs - pregnancy becomes real

Fetus becomes the primary focus
- Nickname the fetus
- Talking to the fetus
- Rubbing their abdomen
- Ambivalence begins to wane

Perception of her body image occurs gradually

Positive or negative - physical changes and signs and symptoms she has experienced

Maternal Task of Pregnancy: Fantasy- daydream about infant and behaviors

3rd TRIMESTER MATERNAL RESPONSE

Negative body image – resentment

Introverted and Vulnerable

Becomes Self-absorbed

- Worries about baby, day-dream, fantasize, or have nightmares about the baby or birth
- Trouble concentrating, focusing, or making decisions
- Anxious to see her baby, tired of being pregnant, and she prepares for the birth

"Nesting" - a sudden burst of energy

Ignore partner - strain relationships - increased risk of infidelities

Increasing dependence - Partner easy to reach at all time

Maternal Task of Pregnancy: Role Fit- sets role expected to be a "Good Mot

Ambivalence should be resolved by the 3rd trimester

PATERNAL RESPONSE TO PREGNANCY

Announcement Phase – accepts the biological fact of pregnancy

- Confirmation of pregnancy - joy or dismay depending on planned or unplanned
- Ambivalence is common in the early stages of pregnancy
- Couvade syndrome – experience pregnancy-like symptoms for days or weeks

Moratorium Phase - period of adjustment to the reality of the pregnancy

- Accepts pregnancy
- Introspective - puts pregnancy thoughts aside & engages in discussions about parenting
- Phase can be short or last into the 3rd trimester depending on the father's readiness

Focusing Phase – active involvement in the pregnancy

- Negotiates the role he will play in labor and delivery and parenthood
- Concentrate on the pregnancy experience and sees himself as a father

SIBLING ADAPTATION

Birth of a new infant can be major crisis for the sibling

Influenced by the sibling's age & developmental level & Parent’s attitude

- Child experiences loss, jealousy, feels “replaced”
- Younger - loss of “baby” role
- Older - increased responsibility
- Adolescents - embarrassed

Prepare the child for arrival of new baby

- Talk about expected baby arrival
- Hear heartbeat
- Feel baby move
- Sibling classes
- Attend birth

CULTURE IN THE CHILDBEARING FAMILY

Culture is a way of life for a group of people, that often dictates healthcare beliefs families

- Spirituality influences sexual attitudes, behaviors, modesty, and touch
- Who makes decisions for the family?

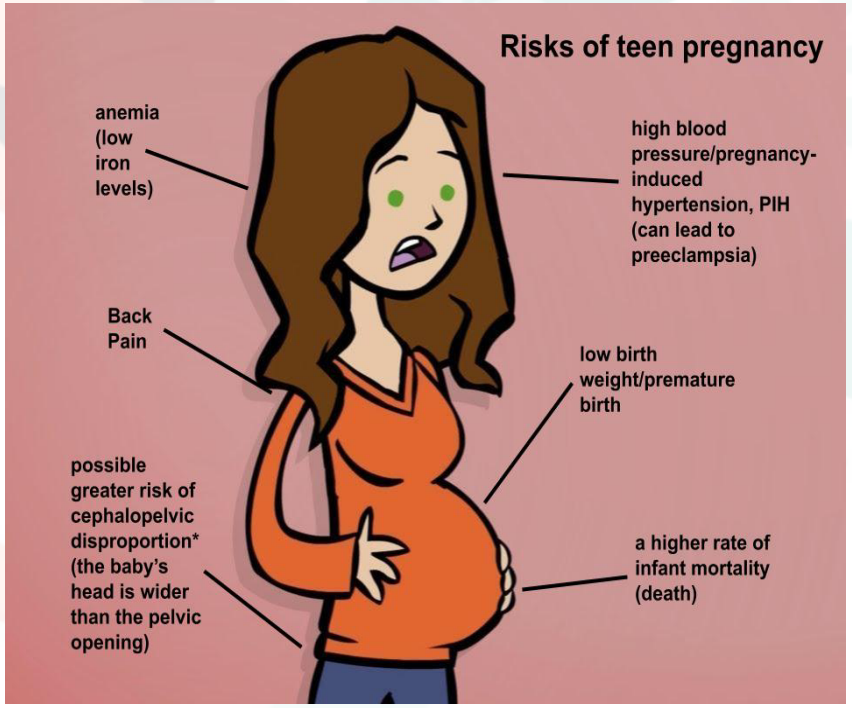
Barriers to culturally sensitive care

- Obstetrical care can be confusing to other ethnic backgrounds
- Verbal/non-verbal communication - language barrier, avoiding eye contact out of respect or dishonesty
- Acknowledge how racial difference affect the quality of healthcare
- Worldview- How is human life/illness perceived?
- Decision Making- Who decides?

ADOLESCENT PREGNANCY

Risk complications:

- Pregnancy Induced hypertension
- Poor nutrition - anemia
- Preterm labor & birth
- Depression
- Substance abuse
- Intimate partner violence
- Death
- Preterm / LBW infant



ADOLESCENT FATHERS

Impact of teen pregnancy

- May accept responsibility
- “Phantom father” - absent or rarely involved
- Conflicting roles of adolescent and fatherhood
- Large number live in poverty and lack job skills
- Education may be interrupted to find a job
- Transition between childhood and adulthood
- Lack patience to parent well

INTIMATE PARTNER VIOLENCE

Actual or threatened

- Physical- slapping, punching, kicking, & pushing escalate
- Sexual- Rape
- Emotional- continuous mental abuse, threat, coercion, isolation
- Reproductive Coercion- interfere with choice of contraception/pregnancy

Homicide

- Most likely cause of death in pregnant or recently pregnancy women

Reporting

- Only 20% of pregnant women report physical or sexual abuse

Serious impact on maternal and fetal well-being

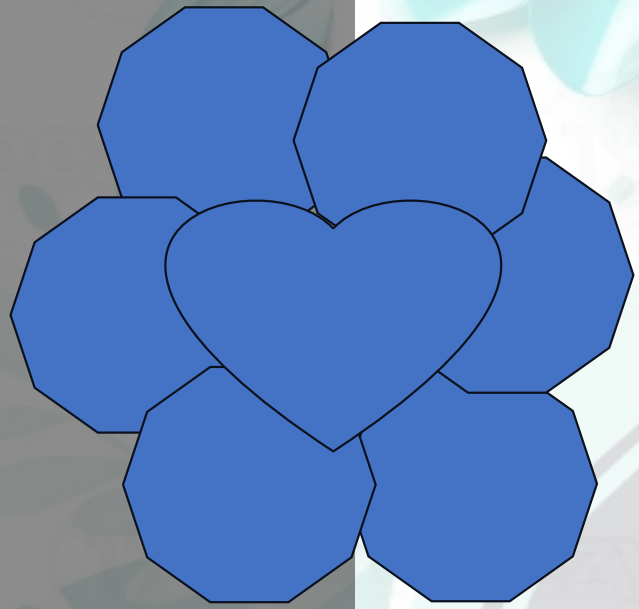
- Maternal - Uterine Ruptured, Placental Abruption
- Fetal - Prematurity, Low birth weight

ABC'S VICTIM OF ABUSE GUIDELINES

3 Simple Screening Questions

- Have you been hit, slapped, kicked or physically hurt during the last year?
- Have you been hit, slapped, kicked or physically hurt during this pregnancy?
- Has anyone forced you to have sexual activities?

- A – Alone- Interview alone, reassure not alone
- B – Belief- Let them know you believe them, Abuse not her fault
- C – Confidentiality- Explain mandatory reporting laws if applicable
- D – Documentation- verbatim, descriptive injuries, photos
- E – Education- community resources, restraining orders
- S – Safety- most dangerous time is when women decide to leave, danger plan



QUESTIONS??????

REFERENCES

ATI Nursing Education. (2016). *RN Maternal-Newborn Nursing 10th Edition Content Mastery Series Review Module.* Assessment Technologies Institute, LLC.

Durham, R., & Chapman, L. (2014). Maternal-Newborn Nursing: The Critical Components of Nursing Care 2nd Edition. Philadelphia: F. A. Davis Company.

Elsevier. (2017). *HESI Comprehensive Review for the NCLEX-RN Examination 5th Edition.* St. Louis: Elsevier.

Murray, S., McKinney, E., Holub, K., & Jones, R. (2019). *Foundations of Maternal-Newborn and Women's Health Nursing 7th Edition.* St. Louis, Missouri: Elsevier.

Sheila C. Whitworth, M. T. (2017). *Davis Essential Nursing Content + Practice Questions: Maternal-Newborn.* Philadelphia: F. A. Davis Company.

Silvestri, L. A. (2017). *Saunders Comprehensive Review for NCLEX-RN Examination 7th edition.* St. Louis, Missouri: Elsevier.