

Antepartum

Conception to at hospital to deliver

- 3 trimesters
 - First – ambivalence – scared
 - Nausea, breast tenderness, sees baby as part of herself
 - Dad is proud and accepting
 - If dad is supportive, she will have an easier time
 - Evaluate her situation, figure out her situation
- 2nd trimester
 - Nausea is done
 - More comfy
 - Baby out of pelvis, not as much bladder pressure
 - Quickening – feeling baby kick (18-20 weeks first time mom), repeat mom 14-16
 - Hear heartbeat with Doppler 12 weeks when uterus is up and above pubic bone
 - Mom view baby as something separate from self, feels it moving
 - Dad goes thru moratorium – emotional distance from pregnancy, realizes pregnancy and works through feelings, feels what mom felt in confusion of what role is
- 3rd trimester
 - Mom is waiting, excited and waiting for baby
 - More uncomfy
 - Separating self from fetus and getting ready
 - Dad is focused on role and delivery role, will he coach
 - Dad and mom have same anxieties, both nervous
 - Monitored more closely
 - Young adolescent < 16 or 35+AMA (advanced maternal age) more at risk
 - Doesn't matter so much the age of the guy

Stressors

- Sociocultural
 - Ricci pg 15, things to be aware of with pregnancy, like not touching body fluids
 - < 16 or > 35
 - Risks
 - Nutrition – not wanting to get fat, vitamins, meds, anemia
 - Substance abuse
 - STI's
 - IUGR – intrauterine growth restriction – baby that stops growing in uterus

- Poor or no prenatal care – scared to tell parents
 - CPD – head too big for pelvis – cephalopelvic disproportion
 - Why do they get pregnant so young < 16
 - Lack of knowledge
 - Antibiotics can mess up birth control
 - Self esteem
 - Trying to get/keep the guy
 - Looking for love, home or family problems, way to get out of house
 - Young may be less financially capable
 - Old > 35
 - Down syndrome or any chromosomal anomalies – old eggs (unless in vitro with not your eggs – but they can test the egg before injecting)
 - Autism
 - Quad panel – can test for downs, just a screening that gives a risk ratio, but not an actual diagnostic test
 - Gestational HTN
 - Genital anomalies
 - Lower energy level
 - Drastic lifestyle change
- Environmental
 - Smoking
 - Pregnancy is a state of vasodilation – to get blood to flow to uterus
 - Smoking causes vessels to vasoconstrict and cause hypoxia to fetus
 - Alcohol – not so bad with one night, but consistent drinking causes the problems
 - Toxins in air
 - Substance or drug abuse

Prenatal Visit

- History
 - Ob history, family, social,
 - Pregnancy status
 - Gravity - # of pregnancies
 - Parity - # of pregnancies carried past 20 weeks
 - Study terms on 2 chapters, bold terms, know them for test
 - GTPAL – know order and what they stand for – on our charts in clinical
 - Gravid – pregnancies
 - Term – 38-42 weeks
 - Preterm – before completing 37 weeks
 - Abortions – could also mean miscarriage, termination due to chromosomal anomaly, less than 20 weeks, spontaneous, induced
 - Living children

- First pregnancy – 1-0-0-0-0
 - Carries to 38 weeks – 1-1-0-0-1
 - 2nd baby – 2-1-0-0-1
 - Preg to 32 wks, baby in NICU 3 wks – 2-1-1-0-2
 - 3rd pregnancy – 3-1-1-0-2
 - Miscarriage at 12 wks – 3-1-1-1-2
 - Twins at 38 wks – 4-2-1-1-5 (twins only count in gravida and term as 1, but both as living)***
- Due date
 - EDC, EDB, EDD
 - C – conception
 - B – birth
 - D – delivery
 - How to find out when she is due
 - *** NAEGLER'S Rule – accurate 7 days plus or minus due date
 - Take FIRST day of last period, add 7 days, subtract 3 months, add a year
 - (the earlier the ultrasound, the earlier the accuracy of due date)
 - Abnormal cycle – based on 28 days, you always ovulate 14 days before you menstruate
 - Most babies will be scheduled for 42 week delivery if not ready after 40 weeks, they don't let it go past 42 wks
- We did history, went over due date, now do an exam
 - H, W, Vital signs
 - Weight – normally 25-35 pounds, skinny people may gain more because their body needs more to support the baby, big people may not gain as much
 - General appearance – do they look anemic, hair ok, falling out, look pale
 - Urine – test for protein, glucose and ketones every visit
 - Physical appearance
 - Chloasma – the mask of pregnancy
 - Neck – thyroid enlarged when pregnant is common, active during pregnancy cause it increases BMR
 - Breasts – teach self breast exam, when to do and how to teach
 - Heart – should have normal rate and rhythm, will increase 10-15 beats per minute
 - BP will fall and then increase (vasodilated) then will level off to pre-pregnancy rate at end
 - Blood volume – increases 40-45% above non-pregnancy levels, peaks at 32 wk mark
 - Lungs – normal or slightly increase, SOB at end because baby puts pressure on diaphragm and you can't completely exhale
 - Abdomen – can measure the fundal height to estimate gestational date

- Back – many women have pre-existing back problems, scoliosis, back surgery, note it, anesthesiologist will need to know about anything
 - Pelvis – PAP (atypical cells) and HPV probe (will tell us if you are at high or low risk for cancer) (also possible Chlamydia and gonorrhea)
 - Check cervical length (cone biopsy – removal of section of cervix)
 - Assess size of pelvis
 - Rectum – lesions, warts, (can use an acid)
 - Pelvis shapes – know that 1 and 3 are good for birthing vaginally (gynecoid and anthropoid) look in text at pics
 - Depends on inlet and outlet room
- Routine screening
 - CBECAUSE – also tells platelets
 - Type and screen – in case they need blood and RH factors, if RH negative then they get Rhogam
 - Rubella – we need to know if mom is immune (changing it to 3 instead of 2 vaccinations) can cause terrible anomalies
 - STS, VDRL, RPR – for syphilis
 - GC – Q-tip in cervix, they send to lab to test, usually if you have gonorrhea u have Chlamydia too
 - HBsAG – Hep B surface antigen – if mom has an active hep infection, Hep C antibodies – (standard at Geisinger because of prevalent drug use in the area)
 - HIV – not optional any more, if mom's take certain drugs, the baby may NOT be positive
 - U/A – glucose, ketones and protein
 - Pap
 - Toxicology – any woman with a substance abuse history gets a urine toxicology screen, but we need consent (depending on where you work)
 - 1st trimester – test for 2 hormones – optional, but offered to everyone
 - Finger pick for Beta HCG (human chorionic gonadotrophin)
 - PAPP-A
 - Tests for baby's nuchal fold on back of neck – could indicate down syndrome or other anomaly – mom's may or may not want to know if baby is downs
 - P. 20 in manual shows semesters
 - RH – is she sensitized to RH + blood
 - Ultrasound – earlier the better, but multiple can indicate different dates, more important to do if higher risks
 - CBS – (diagnostic) sample of the chorionic villi to get genetic info, Huntington's, downs
 - MMS – 15-22 wks, triple screen or quad panel (these are risk screenings not diagnostic tests, they only indicate risks and possibilities) – tests for downs (trisomy 21), trisomy 18 (not compatible with life) and spina bifida or spinal malformations (neural tube defects)

**

- Multiple marker – they look at 3 hormones, quad they look at 4
 - Quad – AFP, B hCG (the hormone present when you are pregnant) , estriol, inhibin-A (hormone added in quad, makes less false positives)
- If she had the first trimester test, then only have the AFP to determine neural tube defects
- 24-28 wks
 - Drink a coke syrupy stuff, then they test sugar
 - > 135 is abnormal and requires further testing
 - Anemia – plasma volume increases greater than your cell volume, produces a diluted effect – physiologic anemia pregnancy
 - 28 wks – rhogam – given to EVERY mom that is RH negative, some moms will argue if the baby’s father is RH negative, but you never know if she’s telling the truth about who the daddy is
 - Amniocentesis – (diagnostic) done for genetic material
 - Ultrasound – around 20 wks, for fetal anatomy, mouth, palette, fingers, toes, kidneys, placenta, heart
- Only 2 diagnostic tests are CBS and amniocentesis
- 3rd trimester
 - Kick count – helping mom know baby is ok, at 28 wks teach her how to know baby is ok, mom should start feeling movement, and baby should kick 10 times in 1-2 hours, if amount of time for baby to kick changes, call dr
 - If no movement for 12 hrs, that is an alarm sign! Baby is in trouble, fetal movement indicates oxygenation and happy baby
 - 35-36 wks – strep culture, looking for group B (in vagina and rectal area), not an STI, just a bacteria that can be present and if baby is exposed at birth, it can cause sepsis and death to baby if contracted during birth, if she is positive, she will be treated when she is in labor and admitted to hospital, IV ampicillin or clindamycin, no antibiotics ahead of time cause it could go away and then come back when she is ready to deliver
 - Non-stress
 - Biophysical profile
 - Amniocentesis again – lung maturity, to see that there is certain proteins at a certain ratio to ensure the baby’s lungs are good
 - ***need to know the diagnostic tests!!!

STI's

TORCH disease

Study guide on p. 23-24

- Toxoplasmosis – from cats, litter box feces, uncooked raw meats, gardening poop in yard – wear gloves (how to get it)*
 - Parasitic infections that causes flulike s/s
 - Pregnant moms shouldn't clean litter boxes, being exposed to the feces
 - Handwashing and gloves can prevent it
 - If infected in tri 1 it can cause a miscarriage
 - Toxo IGG* and IGM* – can have a titer done to check, IGG means you HAD and infection in past, IGM means you have it now, if people present with flu s/s (IGG – 2nd G means GONE – the infection is already gone)
 - If IGG is + you won't really be affected because you have already been exposed and have an immunity to it
 - If they have it later on in preg it can cause LBW, neuro damage, jaundice and anemia
 - Prevention is the key

STI's worksheet – study guide online

Others

- Gono – (not part of the torch, that is toxoplasmosis)
 - Transmitted in sexual contact, oral, genital, rectal
 - Trans to baby by direct contact with gonococcal organism
 - Risk factors - < 20 y/o, early onset of sexual activity, multiple partners and unsafe)
 - S/s – green/yellow purulent discharge, red swollen labia, dysuria (difficulty and painful urination) and lower back pain
 - Diagnosed – cervical swab culture
 - Treatment – Rocephin injection 125 mg IM (best treatment)
- Varicella (chicken pox – Varicella zoster virus, shingles, member of herpes family)
 - Biggest problem – if mom contracts the virus within 5 days before birth or 2 days after, baby is at risk for getting an active chicken pox infection
 - Diagnose – Varicella IGG, it should be up, if she has an elevated IGM, then she has it now
 - If she has it earlier, it can cause IUGR in tri 2
 - Treatment for baby – antiviral drugs for baby to prevent severity, acyclovir
 - Treatment for mom – VZIG – immune globulin may decrease severity of disease in baby
- Hep B
 - Contracted from any blood or body fluid, blood, sweat tears, vaginal secretions
 - S/S early – rash, urticaria (hives and itching), nausea, vomiting, headache, fever, mild abdominal pain
 - S/S later – clay colored stools, dark urine, increasing abdominal pain, jaundice (indications liver involvement)
 - Given routinely – Birth and 6 months
 - Treatment – positive mom at birth, baby will get HBIG at birth too
 - 5-10% of those who get it may not have s/s, but will be carriers

- Treatment – diet and lifestyle modifications
- HIV – if they take antiviral drugs during pregnancy they can nearly negate any affect on the child, 99% negative babies
 - ELISA test – if positive then a Western Blot will tell us for sure if it is positive
 - HIV 1 and 2 if positive will be followed by Western Blot
- Parvovirus – slapcheek disease, looks
 - Contraction during pregnancy can cause miscarriage or fetal hydrops (hemolytic disorder – which leads to anemia, because there is no hemoglobin and no RBC's and they get hypoxic and die)
 - 30% transmission to fetus during pregnancy
 - 9% of babies that get parvo are going to die
 - Most common cause of death - Cardiac failure from anemia
 - Diagnostic – parvo IGG will test to see if you've had it, cause if you've had it you'll build up immunizations and you won't get it again
 - Respiratory transmission of the virus
 - Treatment – none listed
- Hep A
 - Contraction – fecal/oral route, food to mouth, if person doesn't wash hands
 - Treatment – none, diet/lifestyle change
 - s/s – nausea and vomiting
- Syphilis – trepanema pallidum
 - Contraction – during intercourse through microscopic abrasions
 - Transmission to baby – Can cross the placenta at any time during pregnancy
 - Primary, secondary, tertiary and latent (part of 3rd)
 - Symptoms
 - Primary – canker like lesions 5-90 days after initial infection
 - Secondary – 6 wks to 6 months after canker, a widespread maculopapular rash, mostly on palms of hands and soles of feet
 - If untreated at this time (latent phase), they will develop tertiary syphilis
 - Tertiary – neurological damage, cardiovascular and musculoskeletal organ system complications
 - Diagnosis tests – RPR (rapid plasma reagent), STS, VDRL
 - Treatment – penicillin, easily treated, you just have to recognize that you have it
- Rubella (German Measles) – it is a live virus, you should not get it while you are pregnant, if you are vaccinated, wait 1-3 months after getting the vaccine
 - Diagnosis – check titer, if no IGG, they will get MMR after birth*
 - s/s – lymph node enlargement
 - tri 1 – severe fetal anomalies
 - tri 2 or 3 – still may have malformations
 - Teaching – avoid exposure to pregnant women
- CMV – cytomegalovirus

- s/s herpes-like infection, may be asymptomatic, tired, fatigue
- Transmission – sexually or through respiratory tract
- Problem – can be deactivated, you may EVEN be able to get it again, you will NOT develop immunity, if you have it, you have it for life, but it can manifest itself at any time
- Diagnosis – IGM will be elevated if you currently have it
- Treatment – none, just monitor baby closely
- Prevention – stay away from kids with colds or kids in daycare, hand washing, hand to mouth transmission

Herpes

- Seen the Valtrex commercials
- Try not to pass it to your partner
- Virus – Herpes Simplex Virus 1, Herpes Simplex Virus 2
- Herpes Simplex Virus 1 – around mouth
- Herpes Simplex Virus 2 – genital
- Can be passes from mouth to genital and back and forth
- HSV 1 – Can be transmitted even when blisters are not visible
- You have it your whole life, and is brought about by stress or pregnancy
- Diagnostic testing – flaming blisters and itching in perineal area, wife and husband say no cheating, culture may come up negative, look at HSV IGG and IGM
 - IGG – had in past
 - IGM – have it now
 - IGM will not be elevated after only a few days of breakout
 - HSV 1 can cause HSV 2 to rise, cold sores follow nerve tracks and is painful, always on the outside of the mouth not the inside
 - Primary HSV 1 genitally has less breakouts and less painful
 - HSV 2 – can occur monthly and cause often breakouts
- Primary (first infections) Herpes 2 in tri 1 can cause miscarriage (HSV 1 is not as virulent)
- Risks – if mom has HSV 1 or 2 in genital area, it can pass to baby, daily Valtrex from 36 weeks +, to reduce risk of outbreak during birth, not FDA approved for pregnant mothers (not prescribed for HSV 1, because it is less common)
- C-section if current breakout and birthtime
- Testing – get fluid from lesion for viral culture, that will determine HSV 1 or 2, cotton swab on fluid of lesion, if lesions are crusted and gone, do bloodwork, type 1 might show a rise in type 2, repeat again in a few months to determine which it was
- Valtrex gets rid of the pain and blisters
- 90% of people probably have type 1 – get it from aunts and uncles kissing you or sharing cups as a baby
- Active herpes outbreak, baby can get it and die from it, can get the lesions anywhere there I a

Hep C

- Not as readily transmitted, maybe from a blood transfusion or needles, drug users
- Woman with blood transfusion got it, but husband never did
- No vaccine currently
- Treatment – Can take antivirals to relieve some symptoms for 6-12 months of treatment
- Pregnant woman – can they deliver vaginally?
 - Let them deliver as long as their Hep C copies or count is less than 800 thousand
 - Greater than 800 thousand, encourage c section
- Affects liver and can cause cirrhosis if liver is affected and not treated
- Hep B is transmitted more readily, but has no treatment

Chlamydia

- Little or no symptoms at all
- Bacterial infection
- Cervical culture, swab in cervix for C and Gono
- Asymptomatic – no symptoms, unlike Gono, no purulent discharge, it takes years to travel from vagina, just a bacterial infection transmitted with intercourse, if even untreated for a year it could cause problems
- Diseases – PID and fertility problems
- Diagnosis – she and all partners need to be notified, it is a rampant infection
 - She would see 5-6 + Chlamydia per week
- Treatment – Zpac or **azithromycin**, 1 x 2g dose (don't need to know dose)
 - Reportable by CDC, must notify partners
- Easily treated

HPV, Condylomata

- Symptoms – lesion found with genital warts, caused by HPV (cervical cancer virus, but a different strain), flat, granular, fleshy papules, tops look like cauliflower, could be just a few or could be from top of vag to anus, she saw
- Treatments – TCA – tri_____ acid, need several treatments, cryotherapy, freeze them off, topical creams – prodoferin and aldera (3 x wk night to morning), gets rid of the warts and the dns virus in that area, won't get warts in the same spot again, the TCA is very uncomfortable and burns and hurts and is very excoritating to the skin (treat the warts not the disease)
- Gardasil immunization only covers 4 strains
- Men are carriers, but very uncommonly manifests itself in them, you won't see it on them, but they can carry it and pass it to women
- Can also get the warts on your vocal cords from having oral sex with someone with warts
- So if you have HPV it CAN lead to genital warts or cervical cancer (cervical cancer also comes from smoking)
- Many young people in the world that are having sex without condoms have it, ¼
- You can only get this from sexual intercourse

Substance Abuse

- Alcohol
 - Fetal alcohol spectrum disorder (FASD)
 - *Cranial facial abnormalities – long forehead brim, side nose (the abnormalities don't go away, it stays)
 - IQ deficiencies, ADD
- Nicotine
 - Babies shake after birth
 - LBW (low birth weight) – the more mom smokes, the more oxygen deprivation the baby is and the smaller the baby is
 - Umbilical cord in smoking moms is pinky sized, non-smokers it is thumb sized, less Wartman's jelly
 - Leads to SIDS
 - Second hand smoke to kids
 - Causes all sorts of infections
 - Baby will get nicotine from breastmilk and gets vasoconstricted
- Caffeine
 - 1 cup a day is ok and won't cause any problems
 - > 3-4 cups caffeine per day can cause IGR (intrauterine growth restriction)
 - Causes irregular heartbeats in mom and baby, PVC (premature ventricular contraction)
 - Baby is more affected by caffeine at the end of the pregnancy
 - Baby will go thru same withdrawal we would
- Marijuana
 - Need to get tox screens, but need permission
 - Can cause IUGR, LBW, pre-term birth, CNS brain damage, but doesn't really cause birth anomalies
- Cocaine
 - Crack is most commonly used form
 - Readily passes placenta
 - Stimulant – BP goes sky high, extreme and rapid, abrupt HTN can cause placental abruption (placenta peels away from uterine wall) mom can bleed out and mom and baby can die, can happen after only 1 time, doesn't even
- Heroin
 - Wait list to get into clinics, pregnant people on top of list
 - IUGR
 - Increase rate of stillborn babies, but not congenital anomalies
 - Within 48 hours of birth, 75% of babies will go through withdrawal
- Methadone – synthetic form of heroin
 - Takes a week to withdraw
 - Withdraw
 - Jittery or hyperactive

- Shrill, high pitched, persistent cry
 - Frequent yawning or sneezing
 - Poor feeders, don't suck well
 - Tachypnea
 - Diarrhea
 - Diaphoresis (Sweating)
 - Hypo or hyperthermia
 - Irritable and don't sleep, don't stimulate
- Watch visitors, they have an open IV line
- Methamphetamines
 - Not too much known, affects seem to be dose related, higher doses, higher risks
 - Symptoms – IUGR, LBW, stillborn
- Sedatives
 - CNS depressant, causes same symptoms in baby
 - Symptoms – baby will be dependant on the drugs

Morphine for babies to help come down off drugs

- P. 27 Abstinence score/Finnigan score
- Higher the score, the worse the baby's withdraw symptoms are, then the higher the dose of morphine to help withdraw the baby slowly
- Synthetic opiate, same class of drug
- Baby is in hospital for a very long time before they can go home, days, weeks

Common Discomforts of Pregnancy

- Tri 1 – uterus getting bigger and pressure on the
 - Epistaxis – nosebleeds
 - * Most are related to progesterone and estrogen increase and change of hormones in first tri
 - Food moves slower, vitamins and iron causes constipation
 - Fiber, water, activity to help with constipation
 - Nausea, vomiting – hormone HCG (Human Chorionic Gonadotrophin) causes nausea, high HCG with twins Ricci p. 309 for discomforts and how to help patients
- Tri 2 (best trimester)
 - Backache – more curvature at bottom of spine
 - Leg cramps – worse venous return
 - Hemorrhoids – vasodilatation around rectum and uterus pressure
 - Gas
- Tri 3
 - SOB – baby is pushing up on diaphragm
 - Relaxes esophageal sphincter (hormones)

- BV – will seep out into interstitial spaces (edema)
- Braxton Hicks – doesn't affect cervix (false labor)
- More common for ppl with previous babies for cervix to be dilated early, but is normal
- Urinary frequency – baby's head is descending and pressing on bladder

Nutrition p. 277 Ricci

- Risk Factors
 - If pre-pregnancy weight is > 10% or weight gain < 15
 - Start small you have risk, don't gain enough
 - LBW or IUGR
 - Tri 1 – 3-4 lbs (but not if you have morning sickness, you may lose weight)
 - Tri 2 and e – 1 lb per week
 - Total 25-35, overweight ppl may not gain as much
- Nutritional needs
 - Protein – increase, vegetarians at risk
 - Fluids – increase water, not caffeine
 - Iron – physiologic anemia
 - Folic Acid – green leafy vegetables and liver
 - Calcium – for fetal bone development, milk and dairy are good sources
- History
 - Who is buying cooking, can they afford food, what are they eating, is it healthy food?, Do they need WIC or some other program to get food
 - Cultural influences – look at chart in book (don't memorize it)

Return Prenatal Visits

- Q 4 wks for first 28 wks
- Q 2 wks for 29-36
- Q wk for 37 to delivery
- Every visit
 - Weight, vitals
 - Urine – ketones, proteins, glucose
 - Fundal height – measure, 1 cm per wk of gestation
 - Questions – tell them to write it down on fridge and bring it with them when they come
 - Complaints – backaches, supra pubic pressure, differentiate what is normal pressure or is it a UTI or labor
 - Birthing plan – did it work? Patient devises on their own, IV, meds yes or no, if you don't succeed at your plan, how do you feel if you fail your plan, tell them its ok if they don't follow their birth plan, some women have things they really want to happen or not happen, sometimes see someone with a plan, but you know it won't work, guide them

so they don't set themselves up for failure, may even need to recommend home birth with midwife

- Labs – specific for each trimester

Fundal Measurements

- 12-14 wks, you can feel the uterus just above the pubis
- 20 wks – umbilicus (about 16 wks between pubis and umbilicus)
- 36 – to right under xyphoid
- 40 – lightening, baby drops down into pelvis, feel like you can breath again
- Leopols maneuver
 - Presenting part
 - Fetal lie – long axis of fetus (vertical lie)
 - Fetal attitude – flexion upon self
 - Degree of descent – into pelvis (how far down into pelvis), if not descended too far, you can feel head

Assessing Fundal Measurement

- 1 cm per week of gestation, 34 wks = 34 cm of fundal measurement, + or – 2 is ok
- Accurate for 20-32 wks
- If measuring bigger like 28 wks and they are only 22 wks, they could have problems
- Too big could be
 - Multiple babies
 - Gestational diabetes
 - Polyhydramnios – too much amniotic fluid aka hydramnios
- Too little measurement
 - Oligohydramnios – too little amniotic fluid
 - Could be a kidney problem with the baby
 - Dehydration
- Heartbeat – follow back down to hear the heart
 - LOA – Left occiput anterior position

Assessment for Risk Factors

- Multiple marker screening
- Ultrasound
 - Painless, non invasive
 - 2D – good view of vessles and heart
 - 3D/4D – see a picture of the baby
 - Takes 15-20 minutes
 - 20 wks for fetal anatomy (placenta, how much amniotic fluid)

- First trimester for dates, not sure when period was
- Drink water – lifts uterus out of pelvis to make it easier to assess baby
- Amniocentesis / CVS
 - Amniocentesis
 - Guided by an ultrasound, they take a needle and take a sample of the fluid
 - Invasive – need an informed consent
 - 1% risk for hemorrhage – could nick mom or baby, could cause pre-term labor
 - Reason: to check genetics (downs, trisomy 21), fetal lung maturity
 - Diagnostic test (not just a screening), tells the genetic makeup
 - 14-20 weeks during tri 2
 - Tri 3 – for diabetic moms, they build too much subQ fat, but their lungs are not developed, they test for surfactant, baby could be stillborn if there is too much of a change in sugar
 - Surfactant – L:S ratio, should be 2:1 for a normal baby, non-diabetic, should be 3:1 for diabetic
 - Lecithin
 - Sphingomyelin
 - Get vitals and fetal heart tones
 - Teaching – they should look for and call if bleeding, abd pain or contractions, any sign of infection (sterile technique), decreased fetal movement
 - Karyotyping – tells the 22 pairs and sex chromosomes
 - CVS – 10-13 wks
 - For corionic villi testing – gives exact genetic makeup of baby
 - Needle (1 in 200 risk of miscarriage) higher with amnio
 - Catheter with clamp needle through vagina or aspiration with spinal needle through maternal tissue into fetal tissue
 - Teaching – they should look for and call if bleeding, abd pain or contractions, any sign of infection (sterile technique), decreased fetal movement
 - Karyotyping – tells the 22 pairs and sex chromosomes
- NST – non stress test
 - No stress
 - Could start as early as 28 wks
 - Put mom on external fetal monitor
 - There should be an increase in fetal heart rate with fetal movement, just like and increase in our HR when we move
 - Looking for well oxygenation and intact CNS
 - Mom pushes button to indicate feeling fetal movement which marks the sheet as FM and there should be an increase in FM at that time
 - Reasons to do test
 - No movement – 34 wks, baby hasn't moved in a while (10 kicks in 1-2 hours)
 - Post dates – 41 wks, to make sure baby is ok

- Any high risk problems – hx of stillborns, diabetes, other problems
 - ACOG – American College of Gynecology
 - Reactive – 2 fetal HR accelerations of 15 BPM, lasting 15 sec or more within 20 minutes (15x15, 2 and 20)*
 - Mom with HTN and vasoconstriction, do these 1-2 times a week
 - If reactive, then baby will be ok for another week
 - Nonreactive – one of the criteria were not met within 40 minutes
 - Accelerations didn't last at least 15 sec
 - Not enough accelerations
 - Unsatisfactory
 - No movements, nothing to monitor
 - Baby is sleeping, or mom didn't eat, try something else because it COULD be a sign
 - If mom feels mvmt and there is no increase in FHR (fetal heart rate) that is a sign of fetal distress
 - Stimulations
 - Acoustic stimulation – loud buzzer and place on baby's head to wake them up,
 - Repeat Q 1 min x 3
 - Baby should wake up and see heart rate accelerate
 - If HR decelerates after buzz, it is not a good fetal sign – immediate follow up
 - CST – Contraction Stress Test – not done too often, but it may be done after a nonreactive or unsatisfactory NST
- OCT – ocitocin challenge test / CST – contraction stress test
 - To evaluate O₂ and CO₂ exchange in the placenta
 - Nipple stimulation stimulates natural pitocin release or needle with pitocin
 - Reason
 - A nonreactive
 - IUGR
 - Negative (good)
 - 2 contractions of good quality with no FHR decels over 10 min period (means baby can tolerate contractions)
 - Positive (poor)
 - FHR late decelerations with 50% of the contractions (indicates that baby cannot tolerate labor and we need to do something about it) (starts late to decel and recovers late after the contraction is over)
 - NOW instead of doing a CST after an NST, they do a biophysical profile first
- Biophysical Profile (BPP)
 - Get 2 points for each item (within 30 minutes)
 - Fetal breathing

- Fetal body movements
 - Fetal tone (flexion of head and extremities)
 - Amniotic fluid volume
 - FHR reactivity
- Normal 8/8 is ok, go home any try again next week, even if they failed the NST
- Abnormal 6/8 or less, baby is going to be delivered because it is in distress
 - No episodes, less than 3
- DFMC – daily fetal movement counts
 - Start at 28 wks (if no mvmt in 12 hrs, mom should realize something is wrong)
 - Mom should do her kick counts at same time every day, baby should be active at the same time every day
 - Assessment of fetal oxygenation via fetal movement

Gestational HTN Disorders

- Gestations hypertension (PIH – Pregnancy induced hypertension)– development of mild htn during pregnancy in previously normotensive woman without proteinuria or pathologic edema (after 20 wks) (someone who never had HTN and never had protein in their urine)
- Gestational proteinuria – development of protienuria after 20 wks of gestation in previously nonproteinuric woman without HTN
- Preeclampsia – development of HTN and proteinuria in previously normotensive woman after 20 wks of gestation or in early postpartum period: in presence of trophoblastic disease (molar preg) : fertilized egg that has no, or an inactivated nucleus; it can develop before 20 wks
- Eclampsia – development of convulsions or coma in preeclamptic woman

Risk factors for Preeclampsia

- Prima gravid + 40
- Past hx of preeclampsia
- Multiple gestation
- Pregestational diabetes
- Renal disease
- Chronic htn
- HTN > 30/15 systolic/diastolic increase above baseline (90/60 baseline increase
- +1 protein
- Uric acid > 6
- Review difference between mild and sever preeclamptics in book*

p. 25 in manual

- angiotensin – increased sensitivity to angiotensin 1, kidneys secrete rennin in times in decreased blood flow to kidney or htn, the rennin is secreted from kidney and changed into angiotensin 2,

aldosterone causes na and water retention and elevates htn and causes edema, right now we are vasoconstricted

- Vasopressor – causes spasms (decreased perfusion of blood)
- inc in bp and dec in o₂ to organs impt in preg like placenta and kidneys and brain
- normal gfr is > 60, but now this is going to cause kidney damage and gfr will decrease, it won't filter as much anymore, oliguria < 30 ml/hr, starts releasing things it can't filter
- causes kidney damage, increase in uric acid (waste products) can't get rid of what it used to
- inc in na causes edema
- decreased BV intravascularly – hypovolemia
- look in Lewis book at Urine cycle

coagulation cascade – lowered platelets

*differences between mild and severe preeclampsia

Treatment of Preeclampsia

- Mild
 - Treat at home, come 1-2 times a week for stress test, rest and relax at home
 - They do not feel sick, we are telling them to rest, but they don't feel sick, BP will go up and then it will go higher, without rest, it will get worse
 - If mom at home loses a few lbs, that is good because the edema is going
- Severe
 - Hospitalization
 - Little visitors
 - No stimulation
 - Decrease risk for seizure
 - Bed rest for left-side lying to increase kidney perfusion
 - Daily weights to check for fluid retention
 - Hi protein diet and moderated sodium (bc you are peeing out your protein and retaining na)
 - May need apresoline, IV med used to control BP
 - Assessments – hourly
 - Vitals
 - Deep tendon reflexes
 - LOC
 - I and O – check urine for protein and ketones
 - Edema assessment
 - Do you have a headache – brain is lacking O₂
 - Epigastric pain (not reflux) – could indicate liver involvement
 - Seizure precautions
 - Visual problems – could indicate preeclampsia getting worse
 - Diagnostic lab work

- BUN (8-20) and creatinine (0.5-1.5) – the higher they are the worse the kidney function
 - At risk for placenta abruption
 - 0 no response, 2 normal
 - 4 hyper flexive
 - Clonus – dorsi flex foot, if it bounces back, count number of beats when it bounces back
 - Pitting edema - +1 to +4
- Magnesium Sulfate is a common med p. 26 in manual
 - Primary action is CNS depressant
 - Secondary action is smooth muscle relaxant
 - Lowers BP and stops contractions
 - Always given IV piggyback on a pump (high risk medication)
 - Loading dose - 4-8 g over 15-30 minutes
 - Maintenance dose is 1-3 g over 1 hr
 - Biggest risk is toxicity
 - Oliguria
 - Decrease or absence of reflexes
 - Loss of patellar reflex – earliest sign
 - Decreased respirations < 12
 - Must do mag levels daily (therapeutic levels)
 - Key – calcium Glucinate – have the antidote available
 - Check hourly for vitals, reflexes
 - Will decrease muscle one in baby too, relaxed muscles and decreased suck
 - Constant fetal monitoring – mom will feel hot, flush, weak and miserable
 - May even need to stay on the mag sulfate after

Complications of Preeclampsia

- Fetal
 - IUGR – less O2 to baby

HELP – fits in with coag cascade – can turn into DIC (disseminated intravascular coagulation – body is using up all of its clotting factors and you bleed out from everywhere)

- H – Hemolysis
- Elevated Liver enzymes
- Low Platelets
- Typical in older Caucasian women
- < 100,000 is low
- These women are very sick
- But they MAY be asymptomatic
- Do bloodwork

Preeclampsia →HELP → DIC

Childbirth education p. 21-22 in manual, read this in the book

- 1st trimester class topics
- 2nd trimester
- No specific questions on these
- Dick-Read – breathing techniques and relaxation
- Lamaze – stop the pain before it hits your brain, focus on something and breath and focus on the focal point
- Bradley (partner coah method) – focuses on adominal breathing

Nursing Diagnosis

- Knowledge Deficit – first time moms are very unsure