Preconception , prenatal care and intrapartum care

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Definition

- Provision of **Biomedical**, **Behavioral** and **Social health** interventions to women and couples **before conception** occurs.

- Preconception care is **useful for** women who have:

1- Underlying Medical conditions; as D.M, Phenylketonuria, Renal disease.
2- Exposure to Potential teratogens; as Warfarin, Isotretinoin.
3- High-risk behaviors; as Smoking or Cocaine use.

Benefits of Pre-conception care

- Prevent **unintended** Pregnancies.
- Reduce Maternal and Child **Mortality**.
- Prevent **still-births**, **Preterm birth** and **Low-birth weight**.
- Prevent underweight and stunting.
- Prevent **Vertical transmission** and Neonatal infections.
- Prevent **complications** during pregnancy and delivery.
- Prevent **birth defects**.
- Lower the risk of some forms of childhood **cancers**, **D.M type-2** and **Cardiovascular disease** later in life.

Preconceptional Major Components

1. **Risk assessment**
2. **Health Promotion**
3. **Medical and Psychosocial intervention**
4. **Follow-up**

The Major components of Pre-conception care include **12** Risk assessments and **6** Health Promotions. So, to cover each of the 18 components would require Multiple visits to a health care provider.

Risk assessment

1. Reproductive Life Plan
2. Past Reproductive History
3. + 4. Past Medical History and Current Medications
5. Infections and Immunizations
6. Genetic screening and Family History
7. Nutritional assessment
8. Substance abuse
9. Toxins and teratogens
10. Psychosocial concern
11. Physical Examination
12. Laboratory tests

Reproductive Life Plan:

A good place to start is to ask every women at every visit about her reproductive life plan, that is a set of personal goals about having or NOT having children based on personal values.

If it is within the next 1 to 2 years, the provider should bring her and her partner back for **full assessment** and **counseling**.

If she NOT plan on becoming pregnant, the provider should continue to provide a well women care as **effective contraception** and to update the reproductive life plan.

Past-Reproductive History:

- Review prior adverse Pregnancy outcomes, such as **Fetal loss**, **Birth defects**, **low birth-weight** and **Preterm birth**, and assess ongoing biobehavioral risks that could lead to recurrence in a subsequent Pregnancy.

Past Medical and Surgical History:

- With Maternal Medical issues, it is important to **discuss the impact on the fetus** and the potential for the pregnancy to exacerbate the underlying medical condition.

- Ask about Past Medical History, such as **rheumatic heart disease**, **thromboembolism** or **autoimmune diseases** that could affect future pregnancy.
- **Screen** for ongoing chronic conditions such as HTN and D.M.

- Any **Surgeries**, **Transfusions** and **Hospitalizations**, esp. any gynecologic surgeries, including surgeries for fibroids or **abnormal pap-smears**.

Current Medications:

- Review current **Medication** use.
  - Avoid category-X drugs and most category-D drugs unless potential Maternal benefits outweigh fetal risks.
- Review use of **over-the-counter** Medications, **Herbs** and **Supplements**.

Infections and Immunizations:

- **Screen** for Periodontal, Urogenital and STDs.
- Discuss TORCH **infections** (i.e, toxoplasmosis, Rubella, CMV, Syphilis, Parvovirus and Herpes).
- **Immunization** for hepatitis-B, rubella, varicella, HPV and inflanzae.

Genetic screening and Family History:

- Assess risk of Chromosomal or Genetic disorders based on Family History, Ethnic background and Age.
- Including **Cystic Fibrosis** and **Phenylketonuria** and **Thrombophilia** and How to mange it during Pregnancy.

- Evaluation for Family History of **Congenital anomalies**; **Chromosomal abnormalities** (e.g., Down syndrome); **Mental retardation**, Developmental delay; **Inherited diseases** such as hemoglobinopathies, cystic fibrosis and hemophilia; **recurrent pregnancy loss**, still-birth, early infant death in the family; **Ethnicity** and **Consanguinity**.

Nutritional assessment:

- Assess Anthropometric (**BMI**), Biochemical (**anemia**) and **Dietary risks**.
- It's a good idea to reach ideal body weight and Right diet before getting Pregnant.

- **Weight:**
  - This means Losing weight if woman is over-weight (BMI > 30 Kg/m^2) to reduce risk of complications during pregnancy; or Gaining weight if she is under-weight (BMI < 20 Kg/m^2) to reduce the risk of delivering a low birth-weight baby.
- **Diet:**
  - That includes eating a variety of foods rich in fiber and getting enough calcium, folic acid and other nutrients.

Substance abuse:

- **Smoking**, **Alcohol** and **Drug** use.

Toxins and Teratogens:

- Review Exposure at home and work.
- Review Material safety data sheet.

Psychosocial concern:

- **Screen** for Depression, Anxiety, Intimate partner violence and Major Psychosocial stressors

Physical Examination:

- Focus on Periodontal, Heart, Lungs, Breasts, Thyroid, Abdomen and Pelvic Examinations.

Laboratory tests:

- Check **CBC**, **Urinalysis**, **Blood type** and **Antibody screen**.
- **Rubella**, **Syphilis**, **Hepatitis-B**, **HIV**.
- **Cervical cytology**

- Screen for **Diabetes** in selected populations.
- Consider **TSH**.

Health Promotion

1. Family Planning
2. Healthy weight and nutrition
3. Health behaviors
4. Stress resilience
5. Healthy environment
6. Inter-conception care

Family Planning:

- Promote Family planning based on a woman Reproductive Life Plan.
- For women who are NOT planning on getting pregnant, promote effective contraceptive use and discuss emergency contraception.

Healthy Weight and Nutrition:

- Promote Healthy Pregnancy weight through **exercise** and nutrition.
- Discuss **macro-nutrients** and **micro-nutrients** include multi-vitamins as folic acid.

Health Behaviors:

- **Promote health behaviors** as nutrition, exercise, safe sex, effective use of contraception, dental flossing.
- **Discourage risk behaviors** as smoking, alcohol and substance abuse.

Stress Resilience:

- Address any ongoing stressors, **improve sleep** and **relaxation techniques**; address ongoing stressors such as intimate partner violence.

Healthy Environment:

- Discuss household, neighborhood and occupational exposures to metals, organic solvents, pesticides, endocrine disruptors and allergens.
- Give practical tips such as how to reduce exposures during commuting or picking up dry cleaning

Inter-conception care:

- Promote **breast-feeding**, **back-to-sleep**, **positive parenting behaviors** and **reduce ongoing biobehavioral risks**.

Interventions

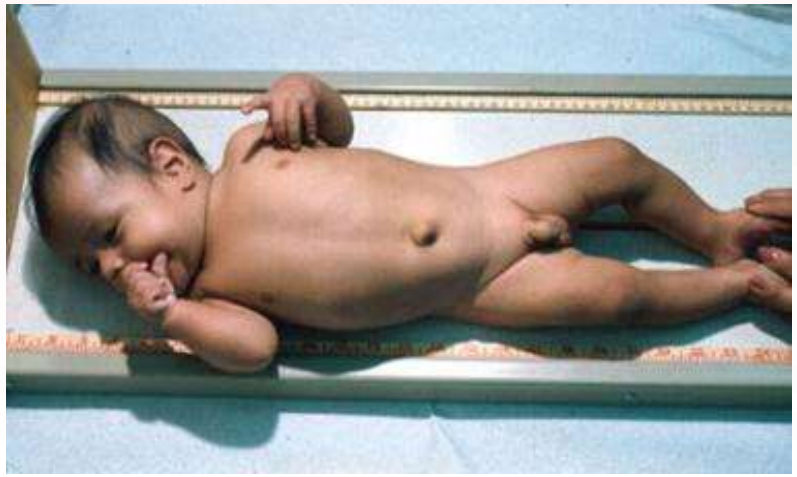
- Pre-conception interventions include **Health Promotion and Education**; **Counseling related to Reproductive health risks**; **Optimizing the control of Medical disorders** and **Referral for specialized care**, when appropriate.
- The following core interventions can reduce the occurrence of congenital anomalies, congenital disease, impaired or excessive fetal growth and a variety of pregnancy complications (e.g, Preterm birth, Abruptio placenta):

1. Age
2. Weight and BMI
3. Folic acid
4. Diabetes
5. Hypothyroidism
6. Anti-epileptic and Oral anti-coagulation
7. Hepatitis-B, Rubella and STDs
8. Smoking and Alcohol

- **Age:**
  - Advanced maternal age (> 35 years at time of delivery) is associated with increased risks that include Infertility, Fetal aneuploidy, Gestational D.M, Pre-eclampsia and Still-birth.

- **Weight and BMI:**
  - **Low-BMI** is associated with intrauterine growth retardation.
  - **Maternal obesity** is associated with NTDs, Preterm delivery, Diabetes, C/S and Hypertensive and Thromboembolic disease.
  - Appropriate Weight loss and Nutritional intake before Pregnancy reduces these risks.

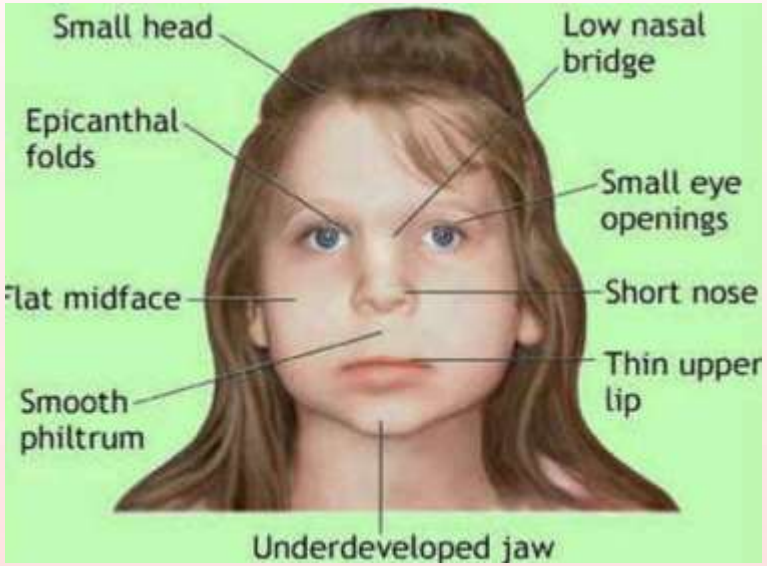
- **Hypothyroidism:**
  - Increase the risk of Spontaneous Miscarriage, Abruption, Pre-eclampsia, Low-birth-weight or Still-birth and Lower cognitive function in offspring.
  - Demand of Thyroid hormones increase during early pregnancy. So, mother need to increase here dose of treatment.



- **Smoking:**
  - Maternal smoking is associated with Preterm birth, Low- birth weight and other adverse perinatal outcomes pregnancy can be prevented if women stop smoking before or during early Pregnancy.
  - Cessation of smoking is recommended before Pregnancy.

- Nicotine and Carbon Monoxide in cigarette reduce unborn Baby's Blood O_2 supply. This lead to:.
  1. **Underdeveloped Baby** which increases risks of Underweight Baby (a pack a der will shave about a half-pound from your baby’s birth weight).
  2. **Heart Defects** (defect in heart that obstruent the blood from right-side of heart into the lung).
  3. **Decrease Lung function** (prone to lung diseases as asthma, night cough, respiratory infections).
  4. **Brain function affected** (learning disorder, behavior problems and relatively lower IQs).
  5. **Death** (either at birth or soon after birth (SIDS)).

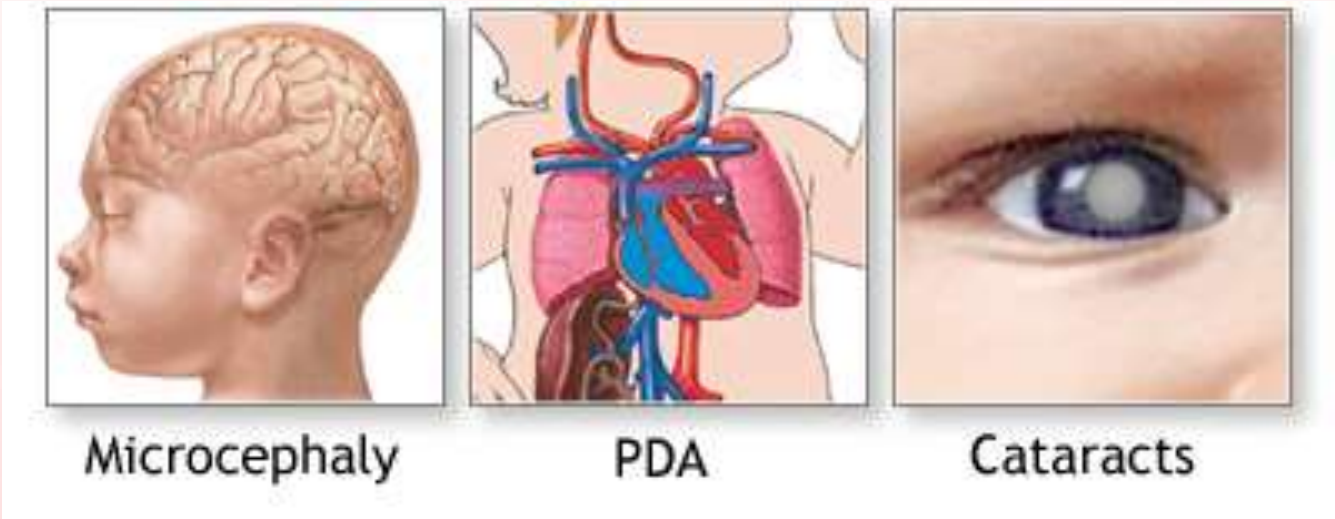
- **Alcohol misuse:**
  - NO time during Pregnancy is safe to drink alcohol, and harm can occur early, before a woman has realized that she is or might be Pregnant.
  - Fetal-alcohol syndrome and other alcohol-related birth defects can be prevented if women cease intake of alcohol before conception.



- **Hepatitis-B:**
  - Preventing hepatitis-B virus (HBV) infection in women of childbearing age, prevents transmission of infection to infants and eliminates risk to the woman of HBV infection and sequelae, including **Liver cirrhosis**, **Hepatic Failure**, **Liver carcinoma** and **death**.
  - All decisions about initiating, continuing or stopping therapy of the HBV during pregnancy must include an analysis of the risks and benefits for mother and fetus. The trimester of the pregnancy and the stage of the mother's liver disease are important factors.
  - Current safety data suggest that **Lamivudine**, **Telbivudine** or **Tenofovir** may be used during Pregnancy.

- **Rubella:**
  - Vertical transmission of rubella from mother to fetus carries a high risk of causing serious congenital abnormalities.
  - Women who are found to be rubella non-immune should be strongly advised to avoid infectious contacts and should undergo rubella immunization after the current pregnancy to protect themselves for the future.
  - The theoretical risk of viral reactivation from the vaccine means it should NOT be given during Pregnancy and Pregnancy should be avoided for the 3 months following immunization.

- Infection with Rubella virus causes the most severe damage (i.e, **Congenital Rubella Syndrome**) when the mother is infected early in Pregnancy, esp. in the first trimester.
    - Cataracts.
    - Heart defects.
    - Intellectual disabilities.
    - Deafness.
    - Liver and spleen damage.
    - Low-birth weight.
    - Skin-rash at birth.



- **Oral anticoagulant:**
  - Use of **Warfarin** during the First trimester is associated with an increased risk of spontaneous abortion, IUGR, CNS defects (including mental retardation), still-birth and a fetal-warfarin syndrome (i.e, a characteristic syndrome of craniofacial features).
  - To avoid exposure to Warfarin during Early Pregnancy, medications can be changed to a non-teratogenic anti-coagulant before the onset of Pregnancy.
    - Warfarin easily crosses the placenta, causing bleeding problems in the fetus, and is excreted in breast milk
    - Heparin has major advantages over warfarin anticoagulants during pregnancy because it does NOT cross the placenta

- **Anti-epileptic drugs:**
  - Women with Epilepsy taking anti-epileptic drugs have a greater (2-3 times) risk than other women of having a baby with a Fetal abnormality.
  - Taking > 1 anti-epileptic drug carries a higher risk than monotherapy esp. if one of the medicines is **Valproic acid**.
  - The most common malformations include **Cleft lip and palate** and **Problems with the heart, urinary or genital systems**.
  - **Carbamazepine** (the safest anti-epileptic agent in pregnancy) or **Lamotrigine** are the anti-convulsant drugs of choice in pregnancy.

- **Recommendations**
  1. Make sure the patient really needs anti-epileptic treatment
  2. the Most Effective drug with the Fewest Side effects should be used.
  3. Use as few drugs as possible at the Lowest Effective dose.
  4. Monitor drug levels during Pregnancy.

- **Antianxiety Agents:**
  - Antianxiety agents are currently used by a significant number of pregnant women. Data regarding their teratogenicity are conflicting, although exposure to **meprobamate or chlordiazepoxide** has been associated with a greater than fourfold increase in severe congenital anomalies.
  - **Fluoxetine** is now the drug of choice for anxiety and depression during pregnancy and is considered safe to continue even in women who breastfeed.

- **Respiratory compromise** may mean that pregnancy is contraindicated, severe compromise is present in such patients as evidenced by their background medical condition such as cystic fibrosis or their limited exercise tolerance.
- In the presence of **Renal compromise**, the advice may be that pregnancy is better attempted sooner rather than later, that conception occurs in mild to moderate renal failure rather than severe renal failure with advancing maternal age.

Antenatal care

Definition of ANC :

professional supervision and evaluation which include examination and advice of a women during pregnancy to asses maternal & fetal health, and intervene when possible to ensure the birth of a healthy baby with minimal risk for the mother.

Aims of antenatal care

¾ Antenatal education

¾ Screening for maternal complicatons

¾ Screening for fetal complication

Provision information

¾Women and their partners have the right to be involved in all decision and informationnof antenatal care , where they will seen .who will undertake their care ,which screening test to have and their plan to give birth

¾They should also be attended antenatal class which discuss physiological and psychological changes during pregnancy ,fetal development ,labor and childbirth and how to care for the newborn baby

Studies show that fewer care giver , the women better informed and prepared for labour .

Any care has received should be documented as:

-legal documents.
-Useful resource for mother’s information.
-mechanism in order to communicate between health care providers.

identification of the risk factors

low-RISK-PATIENT

(normal) Standard protocol

HIGH-RISK-PATIENT

Closer observations

more frequent visits and special tests

- The first prenatal visitprovides an opportunity to review medical, reproductive, family, genetic, nutritional, and psychosocial histories

  - Reproductive historiesthat include preterm birth, low birth weight, preeclampsia, stillbirth, congenital anomalies, and gestational diabetes are important to record because of the substantial risk of recurrence.
  - Women with prior cesarean delivery should be asked about the circumstances of the delivery, and discussion about options for the mode of delivery for the current pregnancy should be initiated.

AFTER history , A complete physical examination should be performed including assessment of the patient's body mass index (BMI) in

- addition to blood pressure (BP) .

- Clinicians should be familiar with physical findings associated with normal pregnancy, such as systolic murmurs, exaggerated splitting and S3 during cardiac auscultation, or spider angiomata, palmar erythema, linea nigra , and striae gravidarum on inspection of skin .

- During the breast examination, clinicians should initiate discussion about breastfeeding .

- A pelvic examination should be performed, and the appearance and length of the cervix and the status of the last Papanicolaou (Pap) smear should be documented, or a new Pap smear obtained

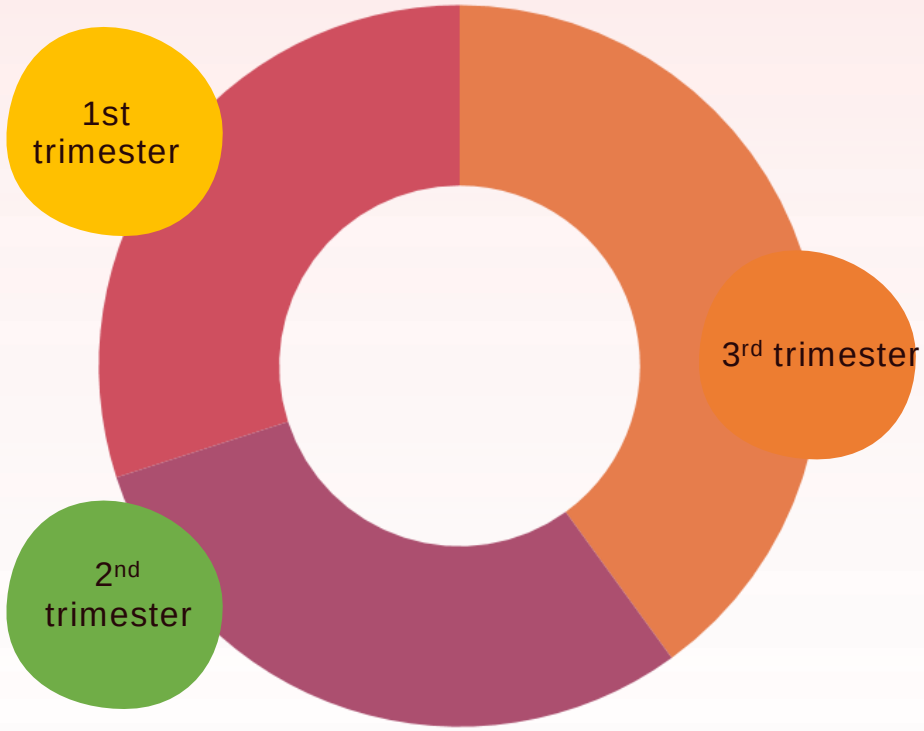
- Follow up visits

  - Recommended follow up visit schedule for health pregnant women is :
- Every 4 weeks up to 28th weeks .
- Every 2 weeks from 29th till 36th weeks .
- Every week from 37th to birth .

- ** During each regularly scheduled visit , the clinician should evaluate :
- 1- blood pressure .
- 2- weight
- 3- urine protein and glucose
- 4- uterine size
- 5- fetal heart rate
- * after 20 weeks of gestation she should be asked about fetal movement

Laboratory tests :

CBC , blood grouping Rh , urine analysis , cervical swab , PAP smear , hepatitis profile , atypical Ab screen .



CBC , diabetic testing (in low risk pt) .

ms-AFP screen , triple or quadrable screening .

Laboratory tests at the initial visit

In the initial visit if the women prime gravida the blood group and RH should be tested

At each visit the symphysis-fundal hight is plotted .the blood pressure measured and the urine tested

1. Blood sample
   *screening for infections disease as (HIV / SYPHILIS)
   *guide immunity against disease as (rubella / varicella)
2. Fasting blood glucose and glycosylated hemoglobin
   *screening for diabetes
   - risk factor :
   -Age > 40
   -BMI > 25 kg/m2
   -HbA1c in prediabetes range
   - history of dyslipidemia and hypertension
3. Urine analysis and urine culture
   *screening for asymptomatic bacteriuria and UTI (which common during pregnancy)
4. Pelvic exam and ultrasound
5. PAP smear
   screening for cervical cancer
6. Cervicall swab
   screening for chlamydia and gonorrhea

normal complains in pregnancy

¾1st trimesters

Nausea and vomiting
Fatigue and extreme tiredness dizziness
Constipation
Nose and gum bleeding

¾2nd trimesters She is feeling better Quickening (fetal movement) 16_18 w

¾3rd trimesters Heart burn 75% Backache
Fluid retention and edema
Stress incontinence Varicose veins Hemorrhoids 1:10

Antenatal Screening for maternal and fetal complications

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- Between 24 and 34 weeks, women should be taught the warning symptoms of preterm labor such as:

1. *uterine contractions (regular or frequent sensation of abdominal tightness)*
2. *leakage of fluid*
3. *vaginal bleeding (bloody show)*
4. *A sensation of low pelvic pressure*
5. *low back pain*

Maternal complication screening :

- Blood group and allontibodies
- anemia
- hemoglobinopathes
- hypertension
- Gestational DM
- Infections
- Psychiatric illness

1-Blood group and alloantibodies

- Identifying the maternal blood group is essential to prevent hemolytic disease.
- Screening for maternal blood group must be done at the first visit and repeated at the 28th week of gestation.

**** mother RH- , father RH+ , -ve indirect coombs test → give mother anti D prophylaxis at 28 week and at delivery if the baby is RH+ (cord blood sample) , also within 72 hours of any sensitizing event .**

Anti-D should be given whenever it is thought likely that there could have been a leakage of fetal blood suspected to be positive Rhd into the mother's circulation. This is known as a sensitizing event, includes:

1. ***Termination of pregnancy.***
2. ***Turning a breech baby (ECV).***
3. ***Birth of the baby***
4. ***Vaginal bleeding.***
5. ***Miscarriage (usually after 12 weeks).***
6. ***Amniocentesis or Chorionic Villi sampling.***
7. ***Trauma to the stomach – for example: a car accident or fall.***

In pregnancies less than 12 weeks’ gestation, anti-D immunoglobulin prophylaxis is only indicated following ectopic pregnancy, molar pregnancy, therapeutic termination of pregnancy and in cases of uterine bleeding where this is repeated , heavy or associated with abdominal pain.

- # 2- Anemia

  Iron deficiency anemia considered the most common cause of anemia during pregnancy since Iron demands during pregnancy increases due to:

1. *Fetal developing requirements*
2. *Placental formation*
3. *Increasing in Maternal red cells mass*

Hb level below 11 gm/dL up to the 12th week of gestation OR less than 10.5 gm/dL at the 28th week considered significant anemia and requires further investigations. .(routine screening should be performed at the booking visit and at 28 week of gestation)

Severely low Hb (8.5-10.5 gm/dL) is highly associated with preterm and low birthweight.

*Screening methods:

-CBC relieving Hb and Hematocrit levels

-serum ferritin is the best way of assessing maternal iron stores and if found to be low , iron supplementation should be considered

Other causes:

1. *Vitamin B12 deficiency*
2. *Folic acid deficiency*
3. *Vaginal bleeding*
4. *Hemolytic anemia (rare)*

• 3- HEMOGLOBINOPATHIES

- MAINLY SCREENING FOR BOTH **SICKLE CELL DISEASE** AND **THALASSEMIA.**
- DURING PREGNANCY SCD CAN BECOME MORE SEVERE, AND PAIN EPISODES CAN OCCUR MORE OFTEN. A PREGNANT WOMAN WITH SCD IS AT A **HIGHER RISK OF PRETERM LABOR, HAVING A LOW BIRTH WEIGHT BABY OR OTHER COMPLICATIONS.**
- ALSO PREGNANT WOMEN WITH BETA **THALASSEMIA** CAN **DEVELOP ANEMIA**, WHICH CAN RAISE THE CHANCES OF DELIVERING EARLY. THEY ALSO MAY NEED MORE FREQUENT BLOOD TRANSFUSIONS DURING **PREGNANCY** CAUSING **IRON OVERLOAD AND MATERNAL DISTRESS**.

- DEPENDING ON THE PREVALENCE RATES OF THE COUNTRY ; THE SCREENING CAN BE DONE EITHER AS :
- A FREQUENT LABORATORY SCREENING
- FAMILY ORIGINAL QUESTIONNAIRE

In beta thalassemia major women willing to get pregnant:

- Partner: Screening of the partner for beta thalassemia status, with relevant genetic counseling, blood typing, and spermiogram are recommended.

- Fertility assessment: This should include analysis of gonadal function through a medical history and hormone assays, standard pelvic examination, pelvic ultrasonography and hysterosalpingography;

- Iron overload: Given the risk of a significant increase in iron overload during pregnancy, thalassemic women wishing to become pregnant should undergo complete evaluation of organ iron overload, including liver and heart magnetic resonance (MRI) T2. In the case of severe hemosiderosis, pregnancy should be postponed

5-gestational DM

pregnant women having *1 or more risk factors* for gestational diabetes should be offered a screening test

Table 2 High-risk factors for gestational diabetes mellitus

- Previous history of gestational diabetes mellitus
- Previously elevated blood glucose level
- Maternal age ≥40 years
- Family history of diabetes mellitus (first degree relative with diabetes or a sister with gestational diabetes mellitus)
- Body mass index >35 kg/m^2
- Previous macrosomia (baby with birth weight >4,500 g or >90th centile)
- Polycystic ovary syndrome
- Medications: corticosteroids, antipsychotics

l The screening test is called an **oral glucose tolerance test (OGTT)** and it is done between **the 24th and 28th** week of pregnancy.

For those having previous gestational diabetes, they will be offered an OGTT earlier in their pregnancy, then another OGTT at 24 to 28 weeks if the first test is normal

- 6-Hypertensive disorders :

  Chronic Hypertension

- Gestational hypertension

- Pre-eclampsia: pregnant women should be taught to recognize the warning symptoms of preeclampsia(frontal headache, visual changes, hand or facial swelling, epigastric or right upper quadrant pain) in the late second trimester

- Eclampsia :
  pre-eclampsia + new onset of seizure or coma

- 7-Infection

Maternal blood is recommended to be screened for certain infections (HIV, syphilis, hepatitis B virus, and hepatitis C virus) for all pregnant women. they may also be repeated at 32 to 36 weeks if the woman has specific risk factors for these diseases

The Centers for Disease Control and Prevention recommend universal screening for maternal colonization of group B streptococcus at 35 to 37 weeks' gestation

Identification of women who are hepatitis B carriers can lead to a 95% reduction in mother-to-infant transmission following *appropriate postnatal administration of vaccine and immunoglobulin* to the baby

Women who are positive HIV can be offered treatment with *antiretroviral drugs* which when combined with *delivery by SC and avoidance of Breastfeeding* can reduce maternal transmission ratio from near 25% to 1%

8- PSYCHIATRIC ILLNES

Women should be asked about history of significant mental illness, previous psychiatric treatment or a family history of prenatal mental health illness. If mental illness is suspected, further referral assessment should be made.

Women should be also screened for depression early in pregnancy, during the third trimester and again postpartum. A simple self-administered 10 question screening tool, the “Edinburgh Postnatal Depression Scale” (EPDS)

The incidence of depression during pregnancy and the postpartum period is as high as 20%. Multiple studies have shown a significant relationship between vitamin D deficiency and depression.

Fetal screening

1) CONFIRMATION OF FETAL VIABILITY

all women should be offered a “ Dating Scan”; which is best to be performed between the 10th and 13th week of gestation; which is an ultra sound test that is used to:

check the fetal heartbeat

find out if there is more than one fetus

measure the fetal crown-rump length to estimate how many weeks’ pregnant the mother is Diagnose up to 80% of major fetal abnormalities.

It is a part of the combined screening test for Down’s syndrome, Edwards’ syndrome and Patau’s syndrome

2) STRUCTURAL ABNORMALITIES

* Major structural anomalies are present in about 3% of fetus screened at the 20 weeks' gestation.

* Detection rates are very dependent on the system examined, skill of operator, time allowed for the scan and the quality of the U/S.

* Local detection rates of various anomalies such spina bifida, heart diseases or facial clefting should be made available.

3) SCREENING FOR FETAL GROWTH RESTRICTION

* Auscultation for the fetal heart will confirm that the fetus is alive and can usually be detected BETWEEN THE 8TH AND 14th week of gestation.

* Measurement of *symphysis-fundal height* in cm starting at the uterine fundus and ending on the fixed point of the symphysis pubis has a sensitivity and specificity of approximately 88%

* women with one or more risk factors should have serial ultrasound scans to assess fetal growth, whereas low-risk women should have growth assessment by antenatal symphysis-fundal charts.

Intrapartum care

INTRAPARTUM CARE

LABOUR → DELIVERY → ONE HOUR FOLLOWING BIRTH

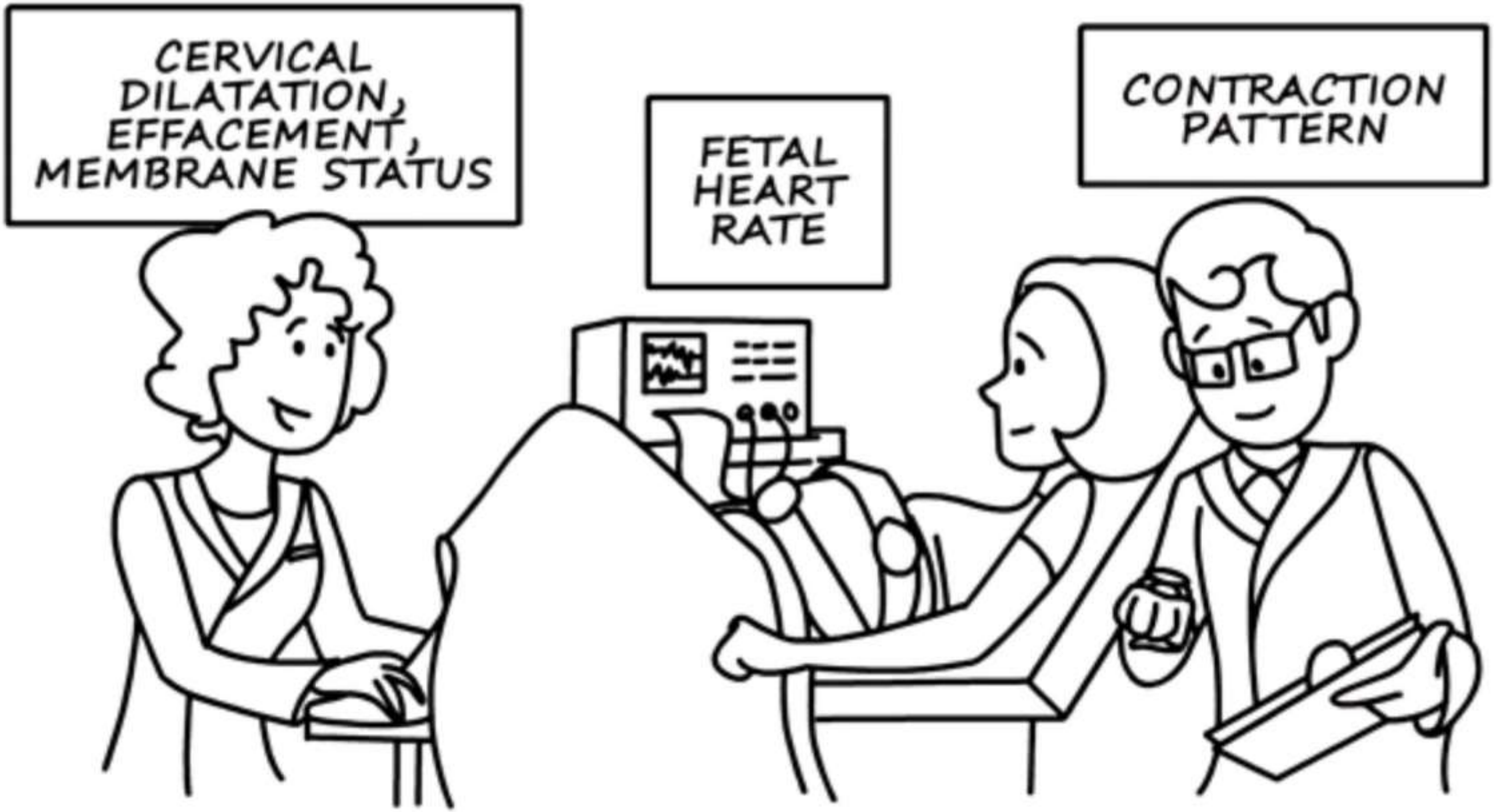
- Intrapartum Care involves the care of both the mother and fetus during labour and delivery including the first one hour following birth.

CONTRACTIONS: HOW TO KNOW IF THEY'RE TRUE LABOR OR FALSE LABOR

	TRUE LABOR	**FALSE LABOR** (Braxton-Hicks contractions)
Are the contractions regular?	**Yes.** • They're regular and get closer together over time. • They last 30 to 70 seconds each.	**No.** • They're irregular and stay irregular. They don't get closer together over time. • You're more likely to have them late in the day or after a lot of physical activity.
Are the contractions strong?	**Yes.** • They get stronger over time. • They're so strong you can't walk or talk. • They keep coming even when you move around.	**Sometimes.** • They're usually mild and don't get stronger over time. • They may be strong and then weak. • They can be painful. • They may stop when you walk or change position.


REVIEW HISTORY:
OBSTETRICAL
MEDICAL
SURGICAL
CONFIRM:
GESTATIONAL AGE
GBS STATUS
ACTIVE LABOUR
MEDSKL

- When a woman presents in labour, it is essential to review her obstetrical, medical and surgical history, confirm the gestational age, and GBS status and determine that she is in active labour.


CERVICAL DILATATION, EFFACEMENT, MEMBRANE STATUS
FETAL HEART RATE
CONTRACTION PATTERN

- Examination must ensure a normal fetal heart rate, determine cervical dilatation and effacement and membrane status and note the contraction pattern.

- The clinician must be aware of any contraindications to vaginal birth such as placenta previa, malpresentation, and previous classical caesarian section.

- Normal FHR is (110 -160)

Bradycardia Baseline FHR < 110 BPM	Tachycardia Baseline FHR > 160 BPM
Causes: - Congenital heart block. - Serious fetal compromise.	**Causes:** - Maternal fever. - Fetal compromise. - Maternal hypotension due to epidural analgesia. - Cardiac arrhythmias.

4 STAGES OF LABOUR

1. LATENT AND ACTIVE

2. FULL DILATATION TO DELIVERY

3. DELIVERY OF PLACENTA

4. 1ST HOUR POSTPARTUM

It is important to understand the 4 stages of labour:

Stage 1 – latent and active phase
Stage 2 – full dilatation to delivery
Stage 3 – delivery of the placenta
Stage 4 – the 1st hour postpartum

DIAGNOSE AND TREAT PROBLEMS

DIAGNOSE AND TREAT PROBLEMS

- During labor and delivery clinicians must be able to diagnose and treat problems such as labor dystocia and any obstetrical emergencies such as preeclampsia, chorioamnionitis, cord prolapse... shoulder dystocia, uterine rupture, and decide on the need for caesarian section.

POST DELIVERY

CORD BLOOD FOR GAS ANALYSIS AND BLOOD GROUP

REPAIR LACERATIONS

EVALUATE VITAL SIGNS

- Once the baby is delivered, cord blood for gas analysis and blood group are collected. Next, any lacerations can be repaired. Bleeding and vital signs of the mother and the baby can be evaluated. Parent infant bonding can be promoted, including having the baby skin to skin and initiating breastfeeding.

Immediate postpartum care

- Dispose placenta in correct, safe and culturally appropriate manner.
- Keep mother and baby together – encourage early breastfeeding.
- Encourage to eat , drink and rest.
- Encourage women to pass urine.
- Don’t discharge the women before 24 hours after delivery.
- Post partum visits :
    - First at 7-10 days.
    - Second at 6 weeks.

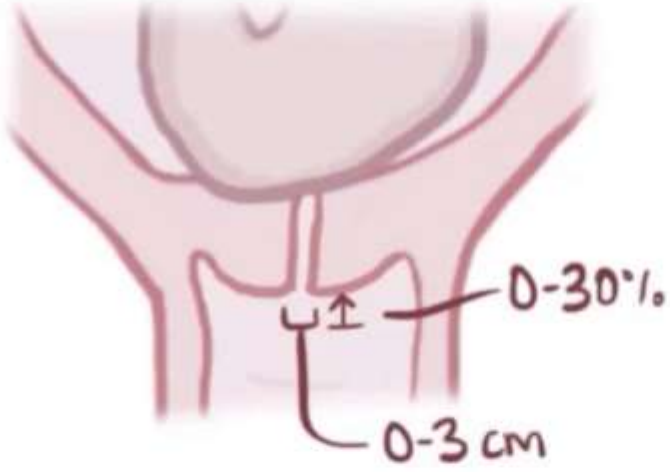
FIRST STAGE

SECOND STAGE

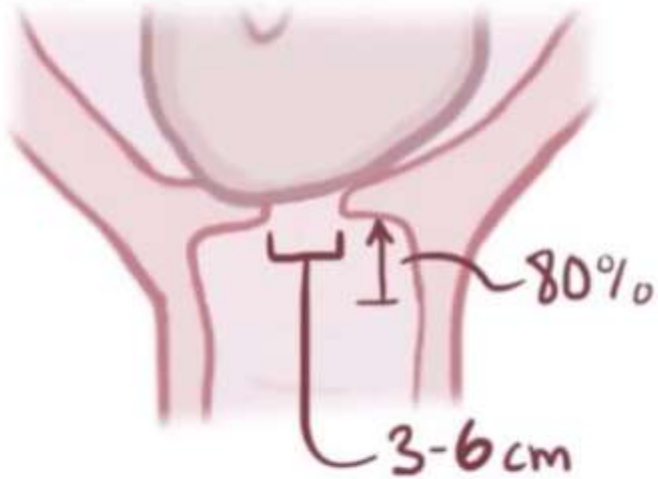
THIRD STAGE

FIRST STAGE

(LATENT) EARLY



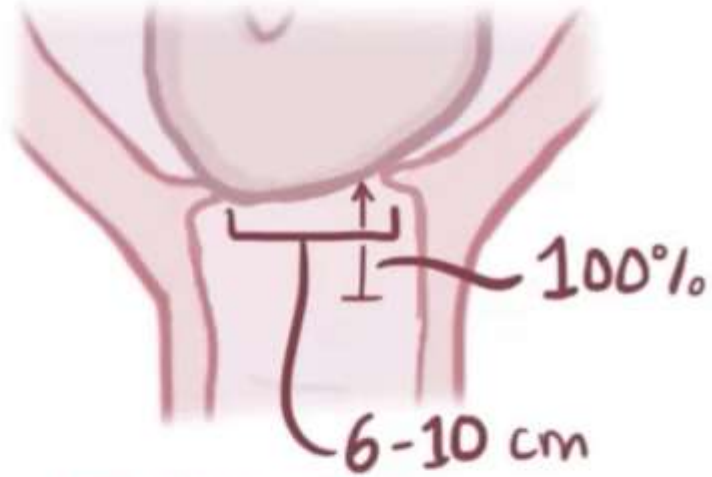
* 20 HOURS
* IRREGULAR CONTRACTIONS
  - Every 5-30 min
  - Lasts ~30 sec



* REGULAR CONTRACTIONS
  - Every 3-5 min
  - Lasts 1+ min

(AMNIOTIC SAC RUPTURES)

ACTIVE



* INTENSE CONTRACTIONS
  - 60-90 sec
  - Every 0.5-2 min

Monitoring of first stage of labour

- **Latent phase:**

Monitor every ½ hour :

- Contractions :

frequency: How many contractions in 10 min.

Duration: Each lasting for how many seconds.

- Fetal Heart Rate (FHR)

Monitor the following every 4 hours:

Temperature , pulse , blood pressure.

Monitoring of first stage of labor

- **Active phase:**

<u>Monitor the following every 30 minutes:</u>

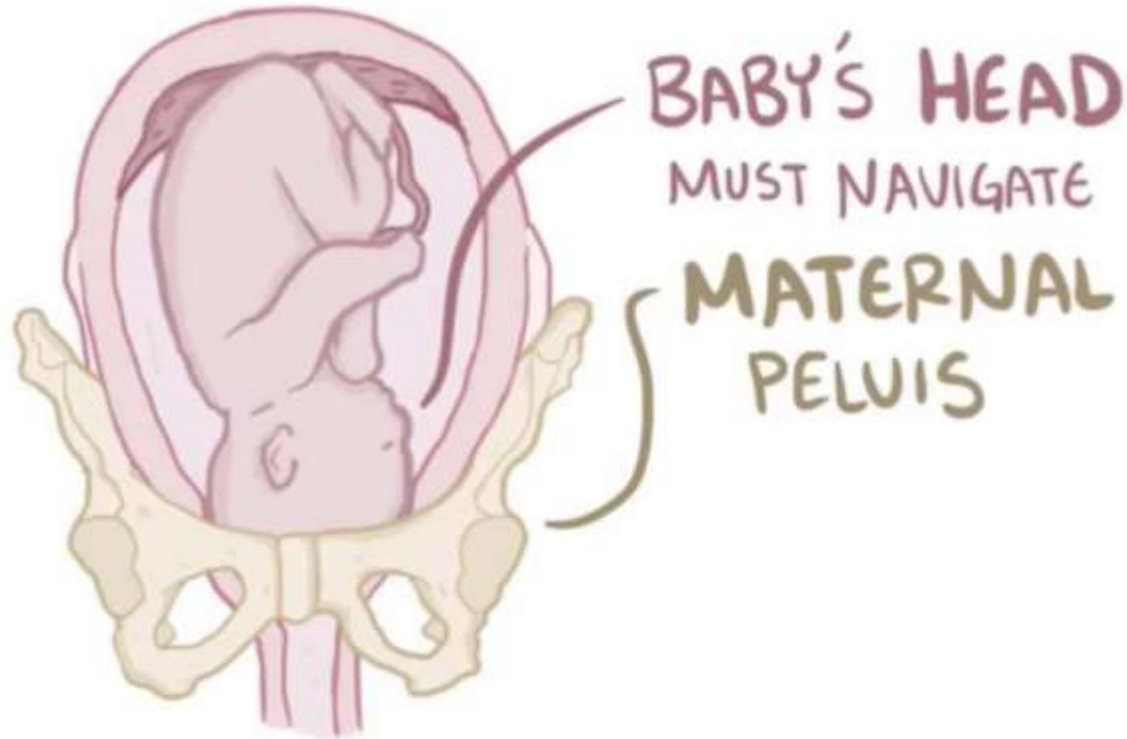
- Maternal pulse, uterine contraction , FHR
- Look for presence of :
  meconium or blood stained or cord prolapse.
- Monitor the following every 4 hours :
  Cervical dilatation (in cm) by P/V.
  Temperature .
  Blood pressure.

(PUSHING) SECOND STAGE

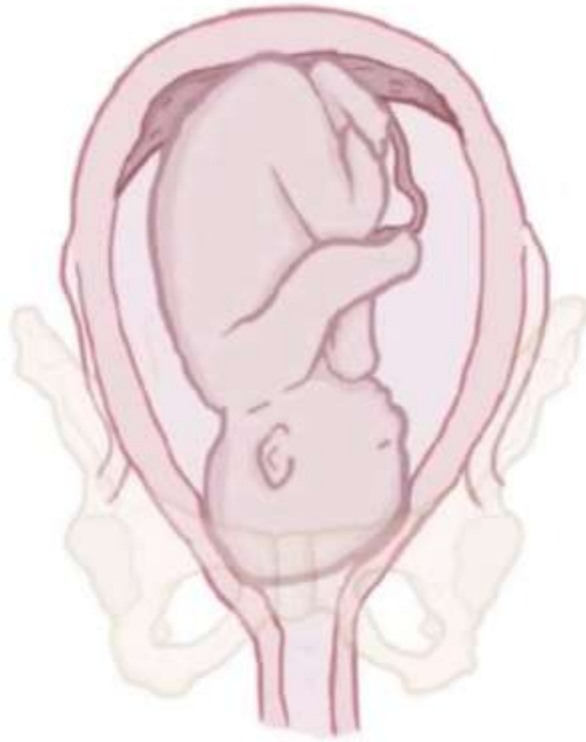
POWER
* forceful contractions

PASSENGER
* fetus

PASSAGE
* Route through BONY PELVIS



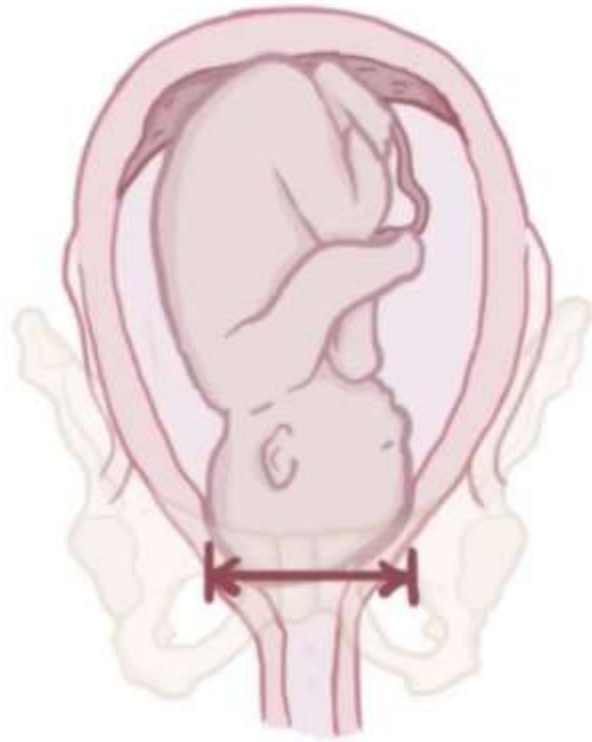
Second Stage



Second Stage

Fetal Size

* Fetal Head



Second Stage

Fetal Size

* Fetal Head

Fetal Attitude

* Normally **Fully Flexed**
  - ~ Chin on Chest
  - ~ Rounded Back
  - ~ Flexed Arms & Legs

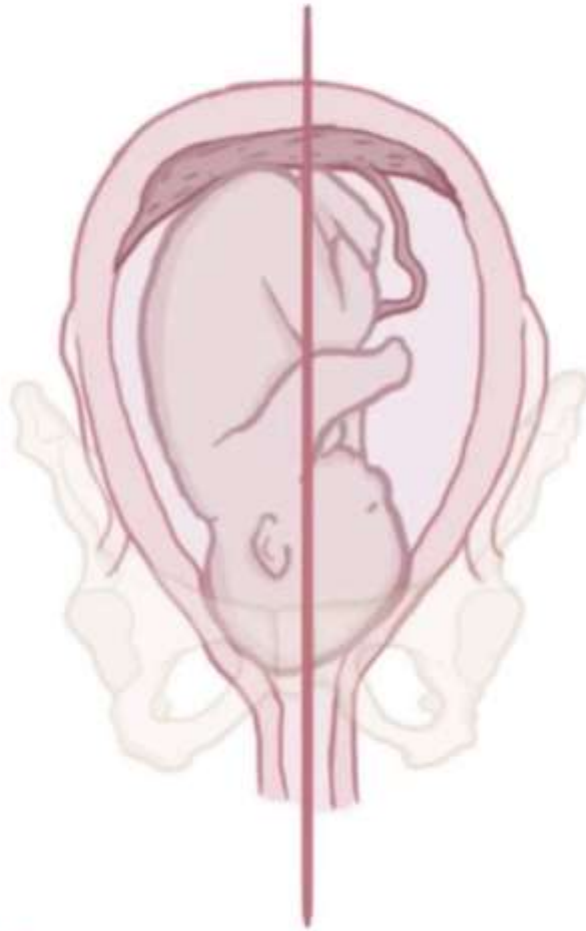
Second Stage

Fetal Size

* Fetal Head

Fetal Attitude

* Normally **Fully Flexed**
  - ~ Chin on Chest
  - ~ Rounded Back
  - ~ Flexed Arms & Legs



Fetal Lie

* Longitudinal (Ideal)

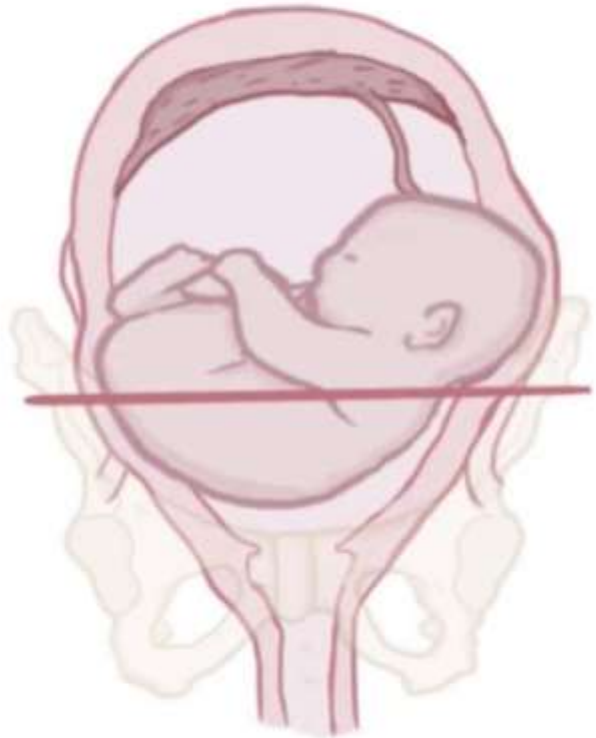
Second Stage

Fetal Size

* Fetal Head

Fetal Attitude

* Normally **Fully Flexed**
  - ~ Chin on Chest
  - ~ Rounded Back
  - ~ Flexed Arms & Legs



Fetal Lie

* Longitudinal (Ideal)
* Tranverse

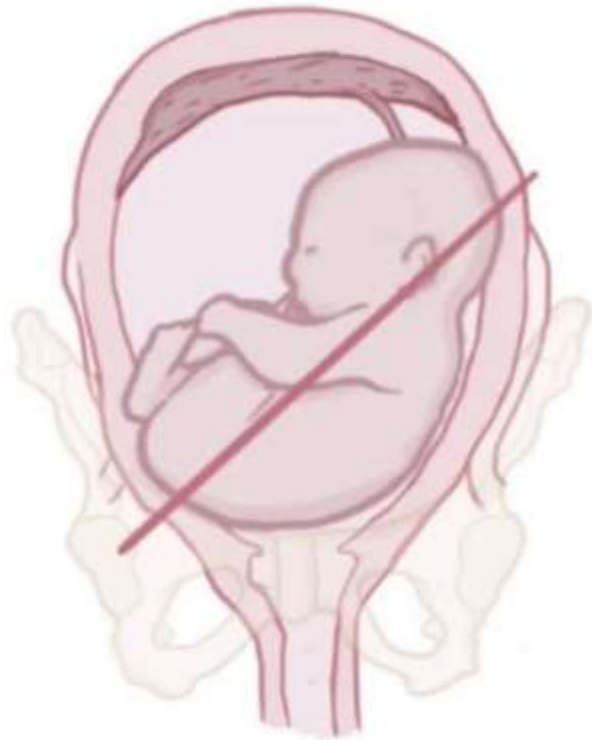
Second Stage

Fetal Size

* Fetal Head

Fetal Attitude

* Normally **Fully Flexed**
  - ~ Chin on Chest
  - ~ Rounded Back
  - ~ Flexed Arms & Legs



Fetal Lie

* Longitudinal (Ideal)
* Tranverse
* Oblique

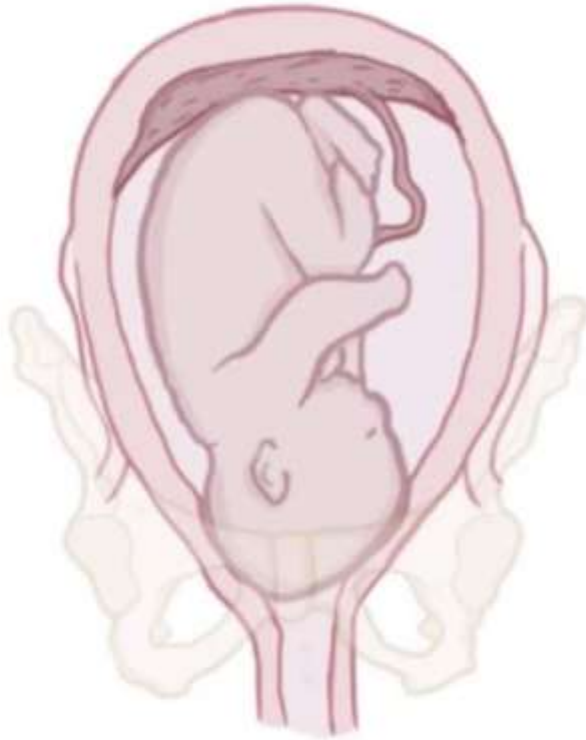
Second Stage

Fetal Size

* Fetal **Head**

Fetal Attitude

* Normally **Fully Flexed**
  - ~ Chin on Chest
  - ~ Rounded Back
  - ~ Flexed Arms & Legs



Fetal Lie

* Longitudinal (Ideal)
* Tranverse (Not Ideal)
* Oblique (Not Ideal)

Fetal Presentation

* Cephalic (Head First)
  - Vertex ~ flexion of head

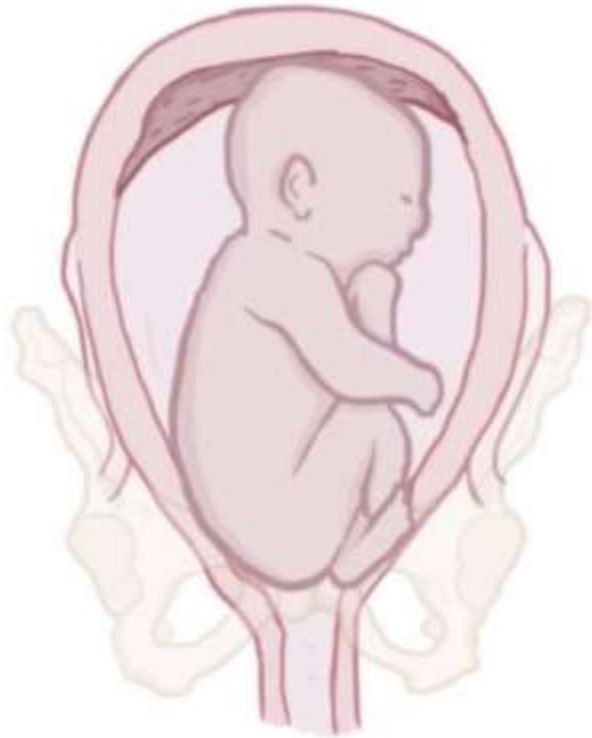
Second Stage

Fetal Size

* Fetal Head

Fetal Attitude

* Normally **Fully Flexed**
  - ~ Chin on Chest
  - ~ Rounded Back
  - ~ Flexed Arms & Legs



Fetal Lie

* Longitudinal (Ideal)
* Tranverse (Not Ideal)
* Oblique (Not Ideal)

Fetal Presentation

* Cephalic (Head First)
  - Vertex ~ flexion of head
* Breech

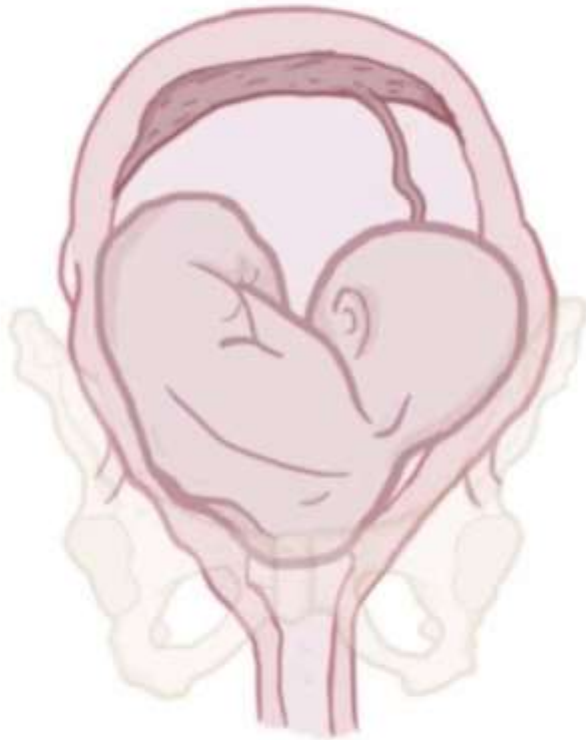
Second Stage

Fetal Size

* Fetal Head

Fetal Attitude

* Normally **Fully Flexed**
  - ~ Chin on Chest
  - ~ Rounded Back
  - ~ Flexed Arms & Legs



Fetal Lie

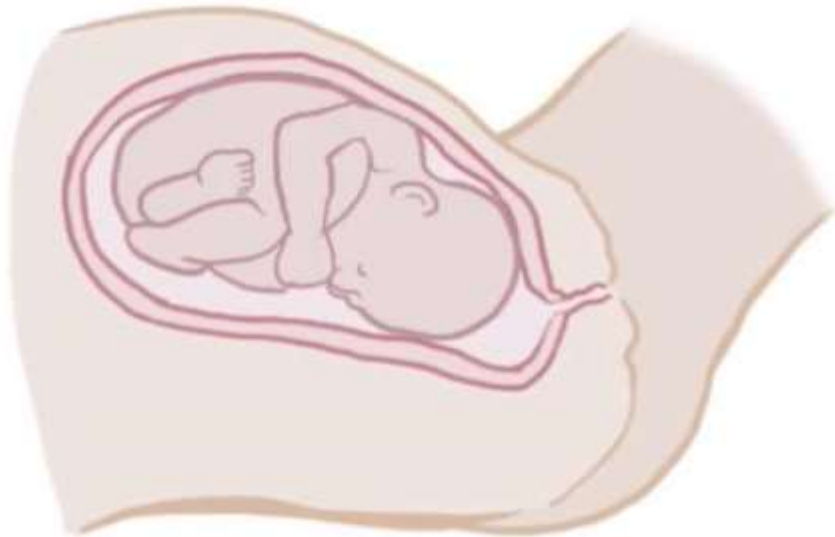
* Longitudinal (Ideal)
* Tranverse (Not Ideal)
* Oblique (Not Ideal)

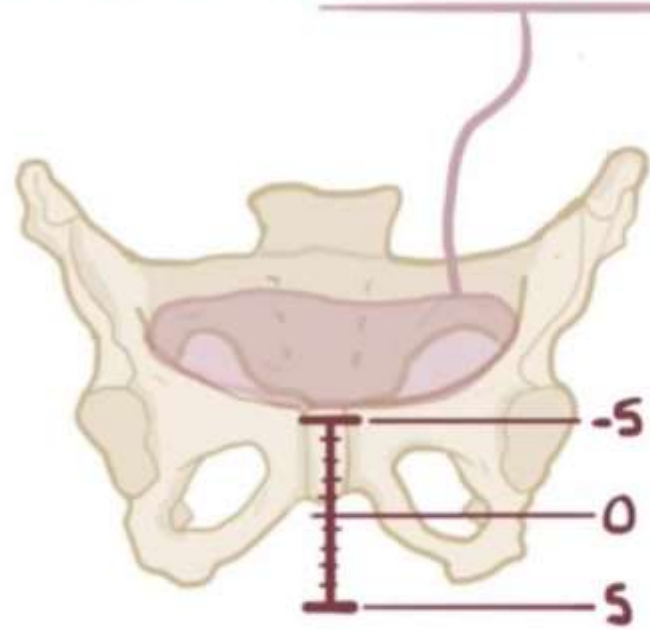
Fetal Presentation

* Cephalic (Head First)
  - Vertex ~ flexion of head
* Breech (Bottom First)
* Shoulder

Second Stage ~ Cardinal Movements of Labor

Descent ~ Downward movement of Fetus to Pelvic Inlet

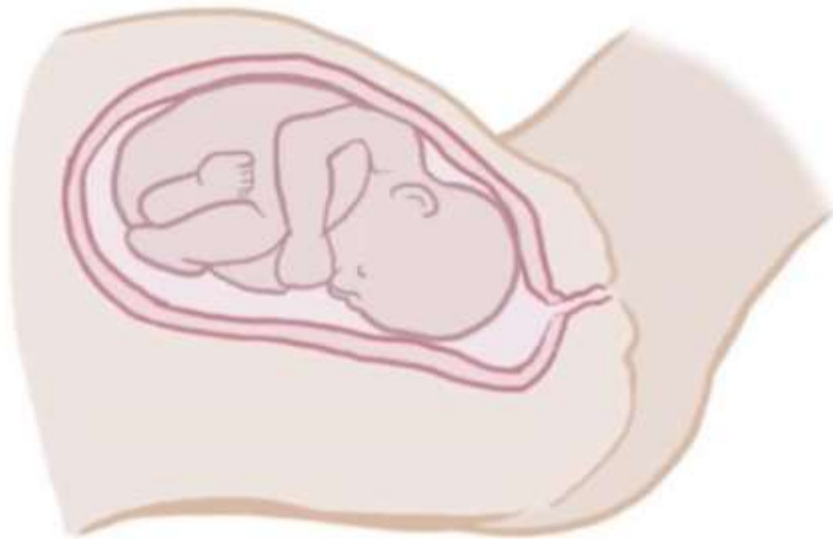


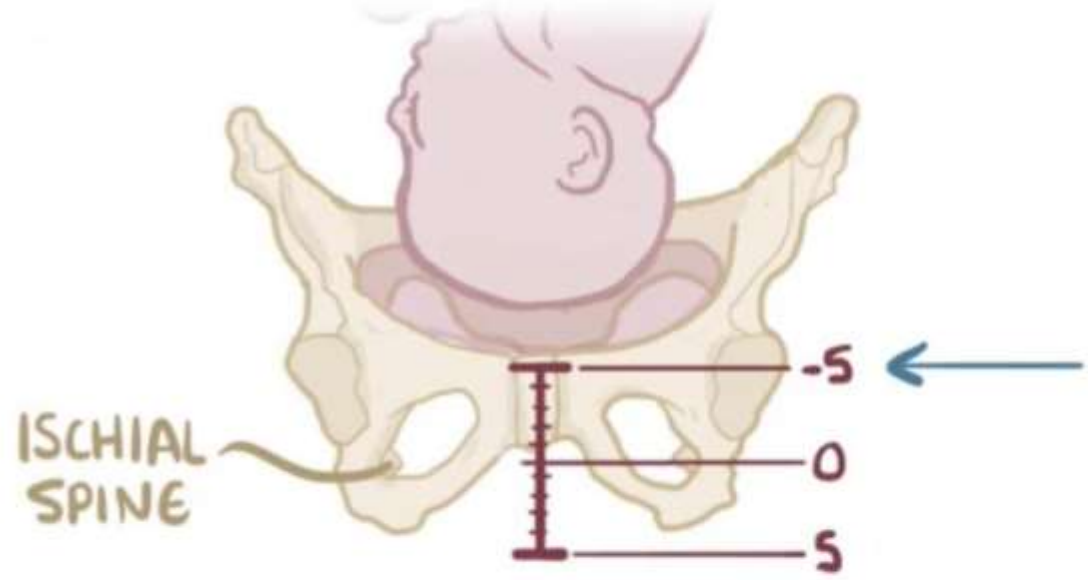


Fetal Station

SECOND STAGE ~ CARDINAL MOVEMENTS of LABOR

DESCENT ~ DOWNWARD MOVEMENT of FETUS to PELVIC INLET

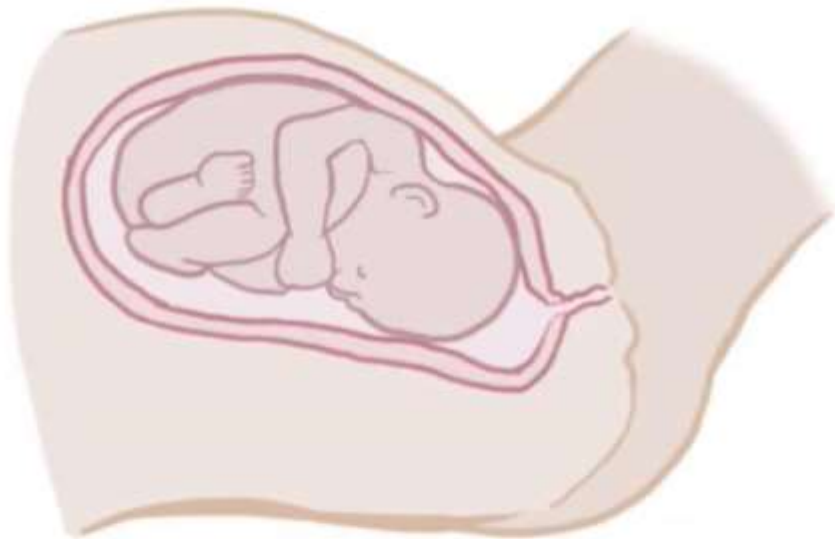


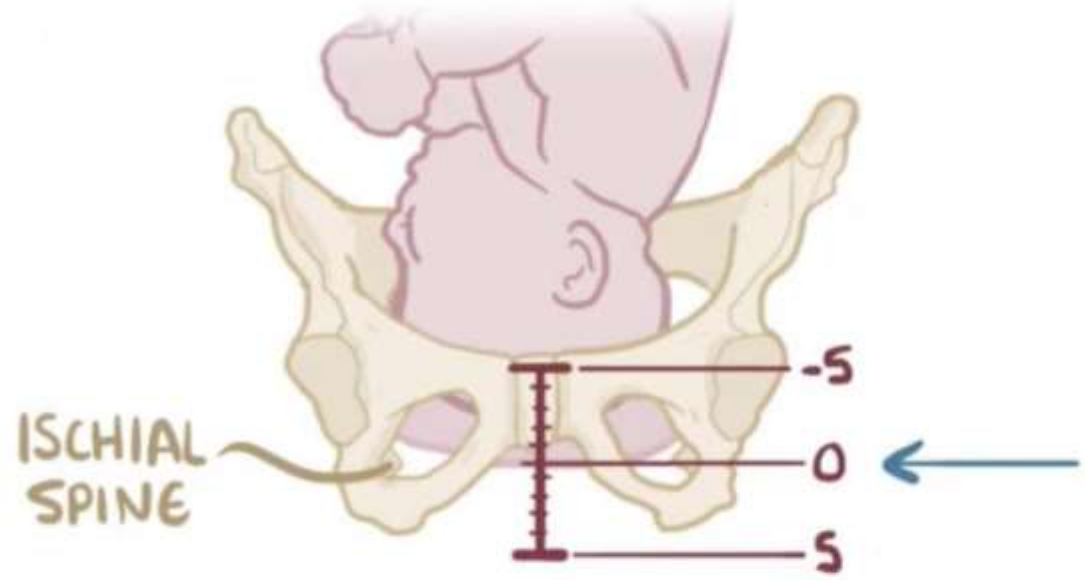


FETAL STATION

SECOND STAGE ~ CARDINAL MOVEMENTS of LABOR

ENGAGEMENT

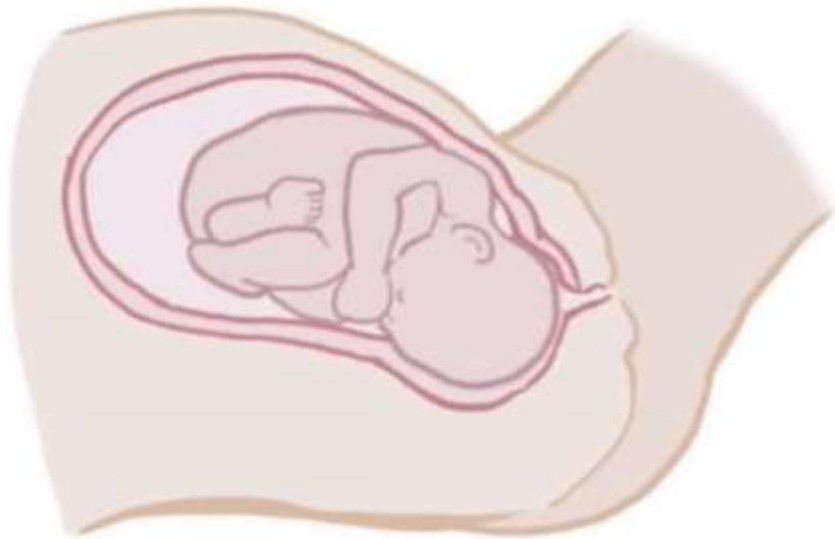


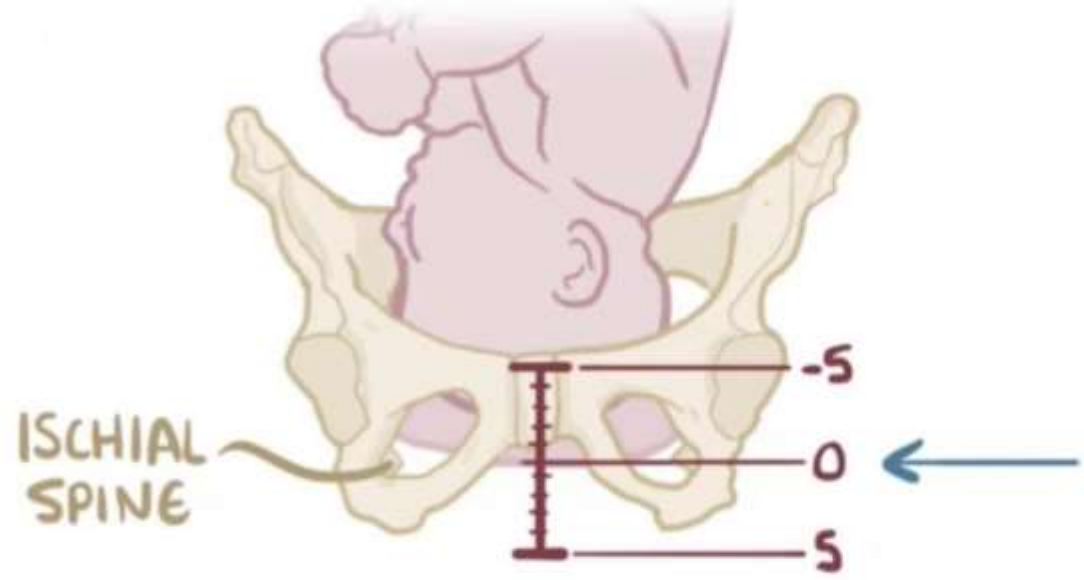


FETAL STATION

SECOND STAGE ~ CARDINAL MOVEMENTS of LABOR

FLEXION ~ CHIN AGAINST CHEST; RESISTANCE from PELVIC FLOOR

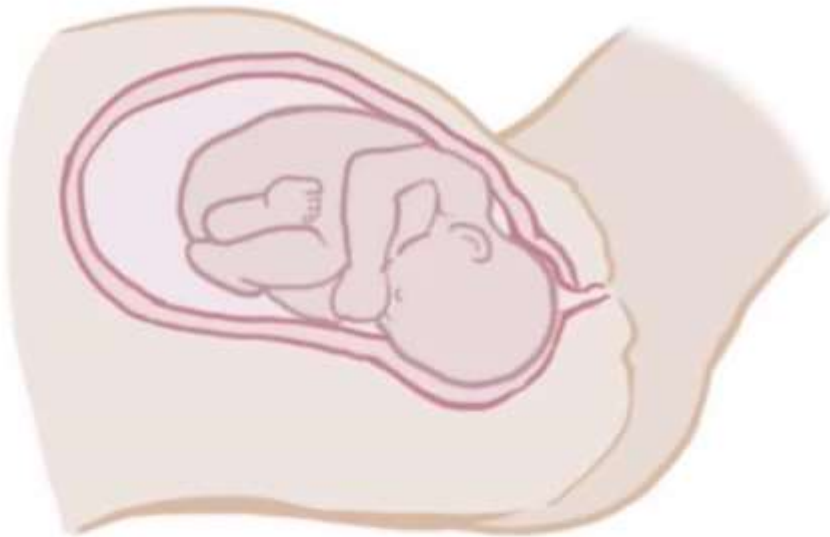


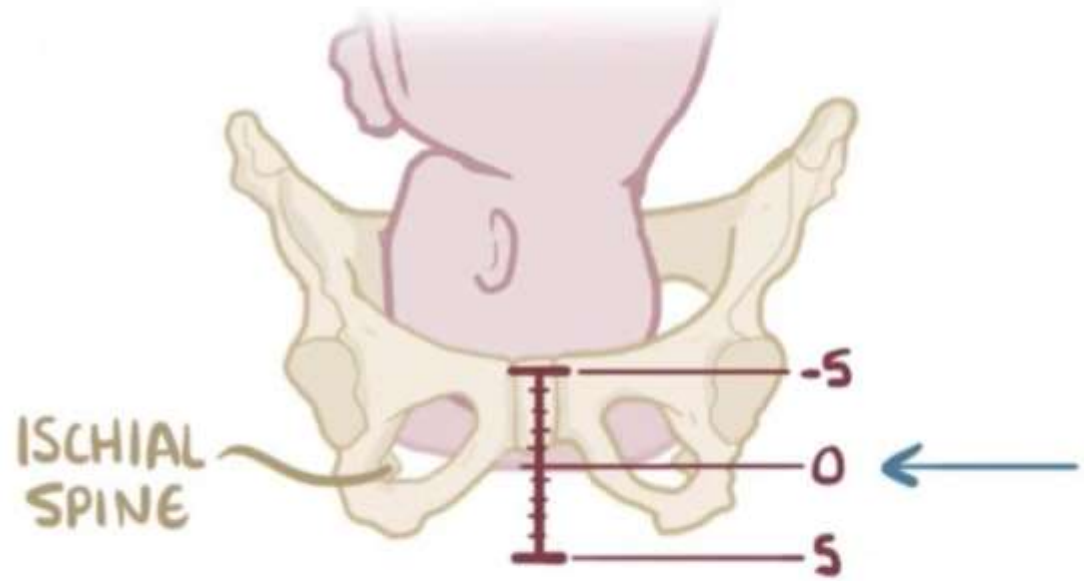


FETAL STATION

SECOND STAGE ~ CARDINAL MOVEMENTS of LABOR

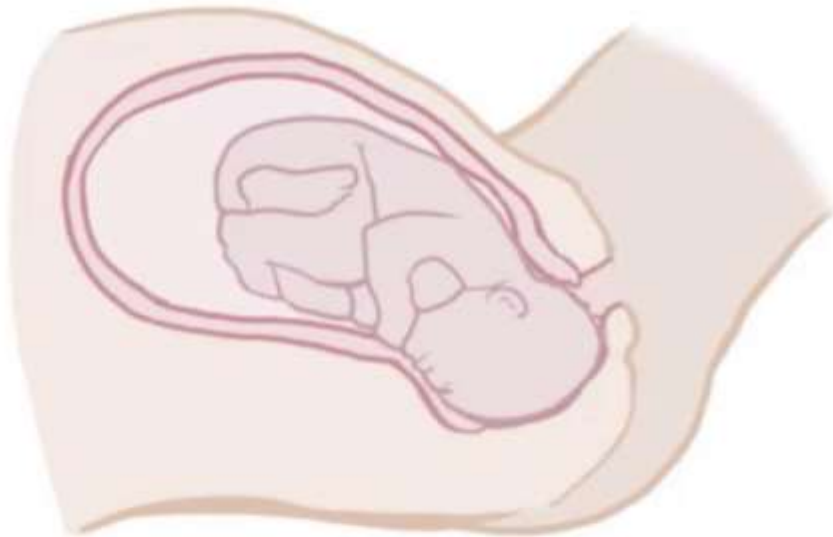
INTERNAL ROTATION ~ FETAL SHOULDERS INTERNALLY ROTATE 45°

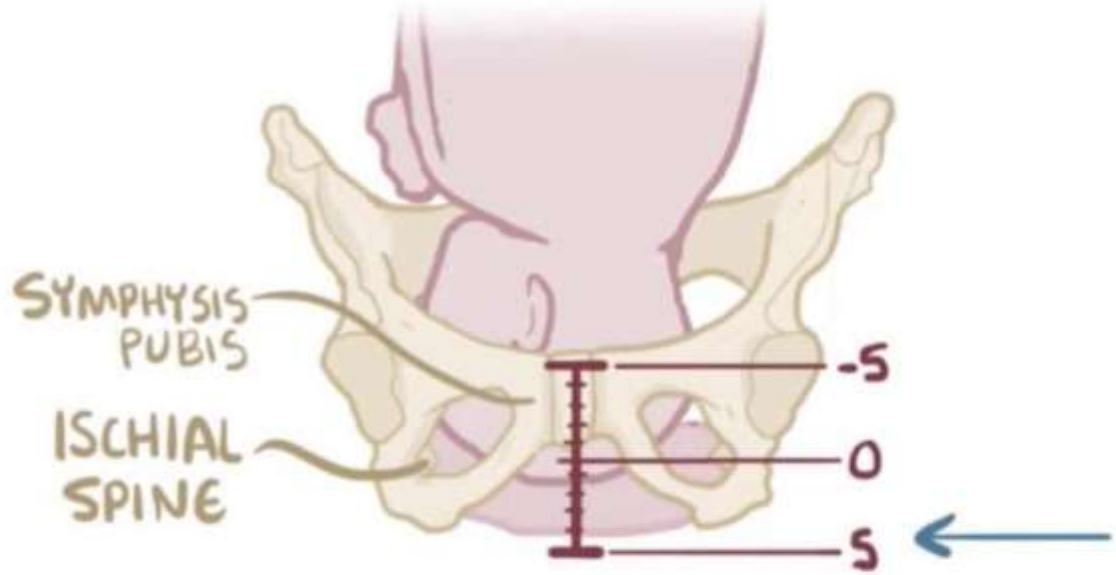




FETAL STATION

SECOND STAGE ~ CARDINAL MOVEMENTS of LABOR

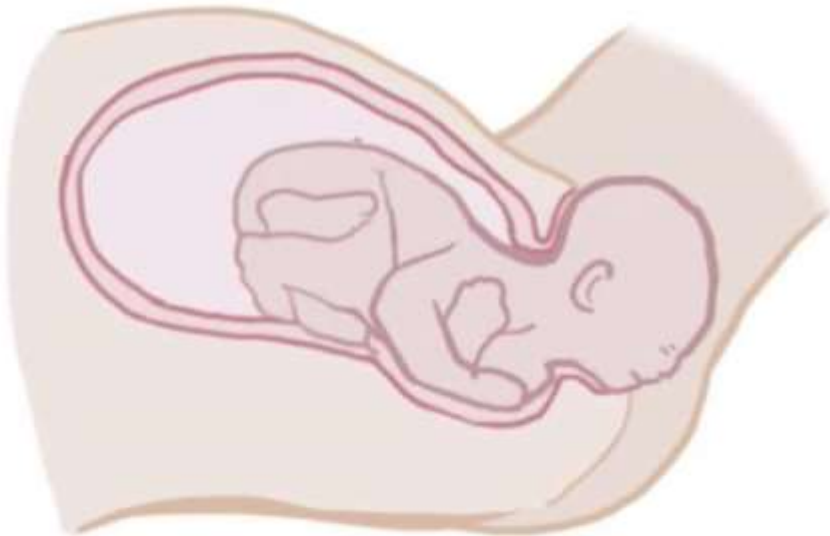


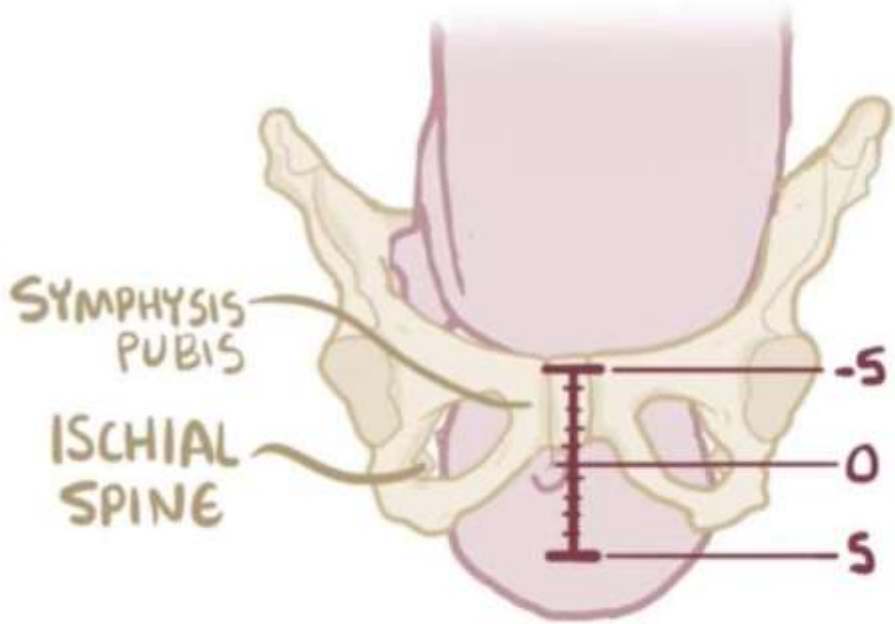


FETAL STATION

SECOND STAGE ~ CARDINAL MOVEMENTS of LABOR

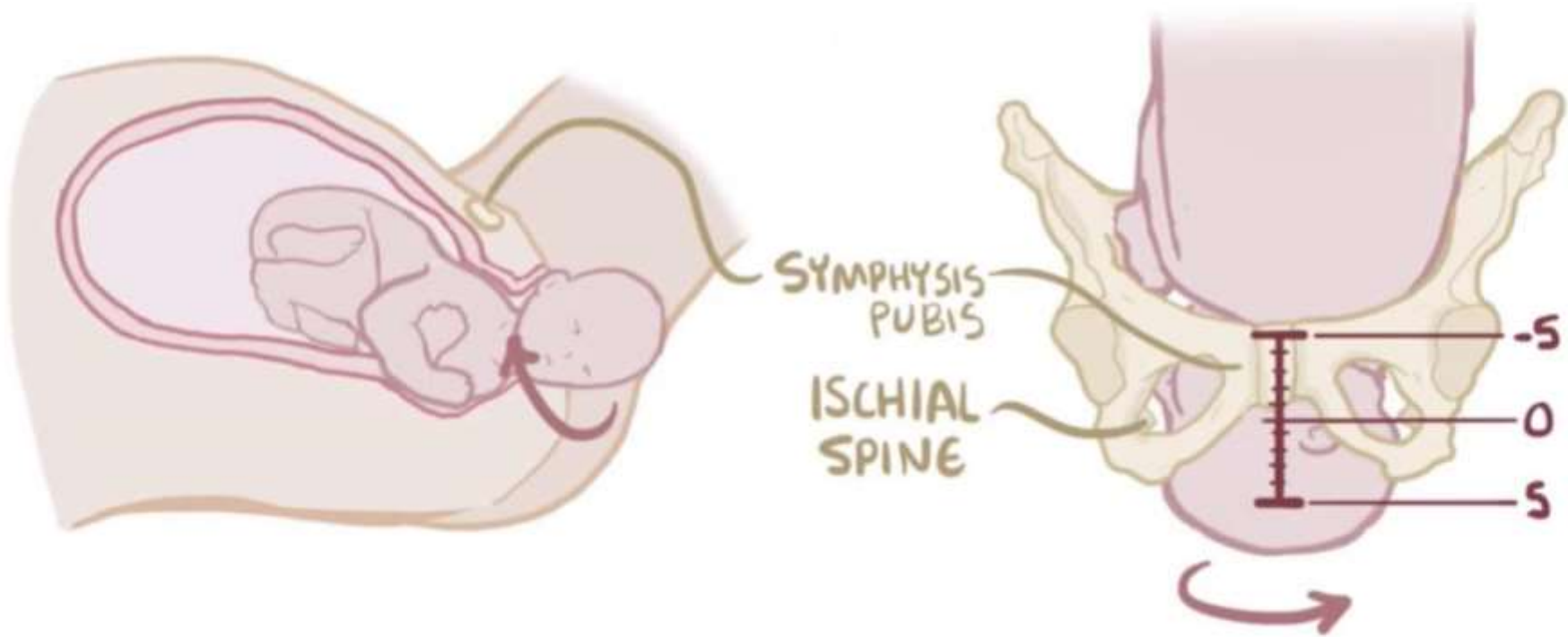
EXTENSION ~ EMERGES from VAGINA



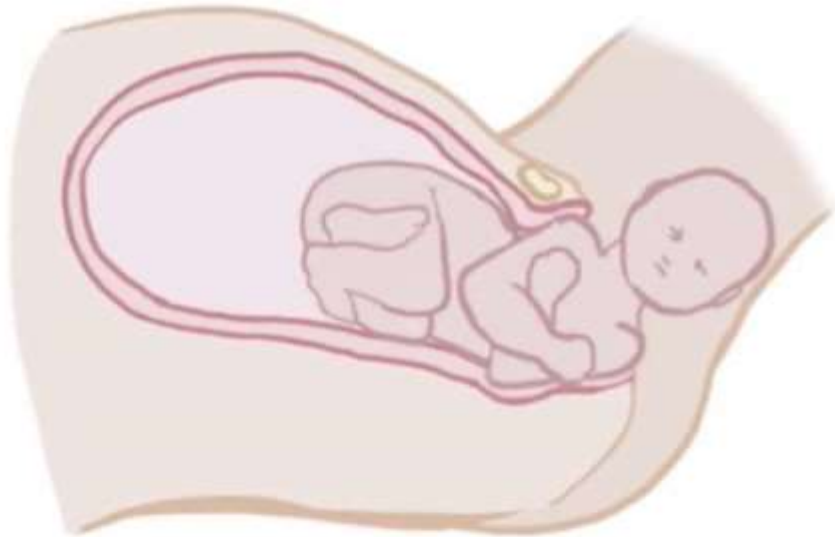


SECOND STAGE ~ CARDINAL MOVEMENTS of LABOR

RESTITUTION ~ HEAD EXTERNALLY ROTATES



Second Stage ~ Cardinal Movements of Labor



Expulsion

Anterior Shoulder

↓

Posterior Shoulder

↓

Rest of Body (!)

Monitoring of 2nd stage of labour

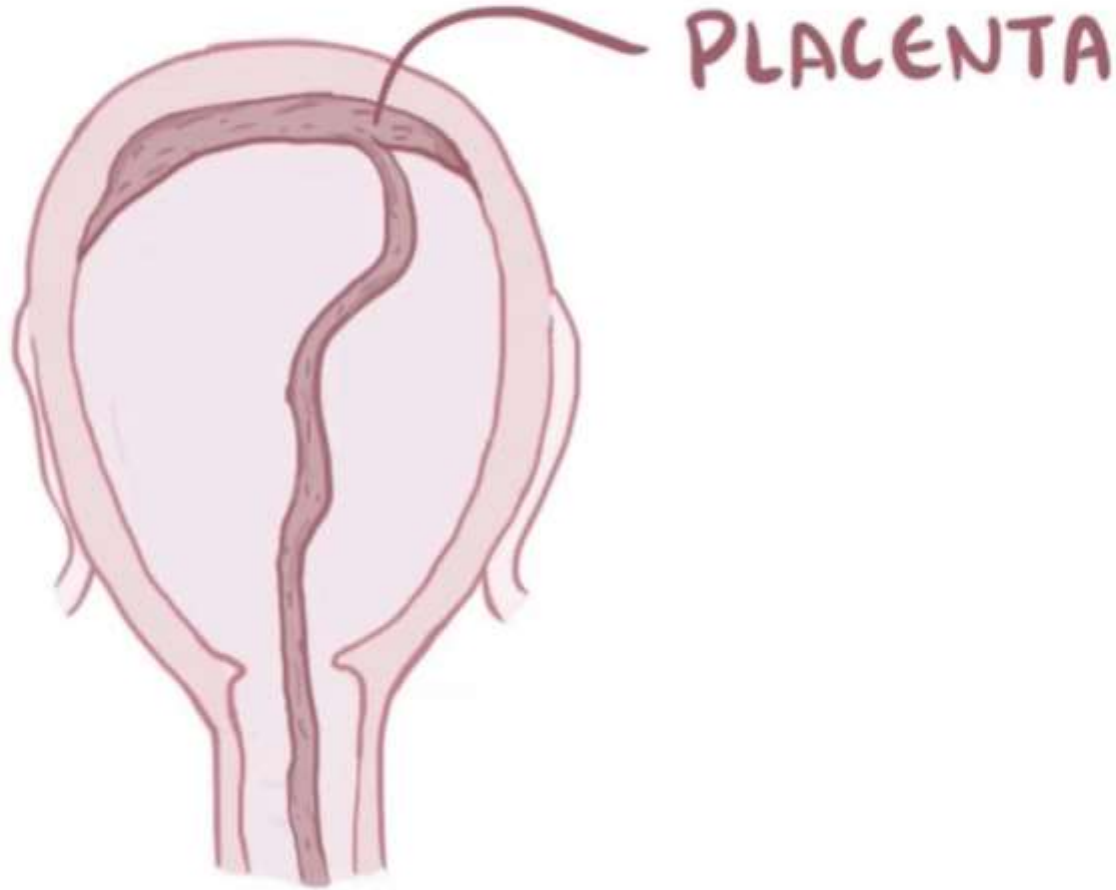
- Monitor the following every 5 minutes:

- Frequency , duration and intensity of contractions.
- FHR.
- Perineal thinning and bulging.
- Visible descent of fetal head during contractions.
- Presence of any signs indicating an emergency.

Supportive management during second stage

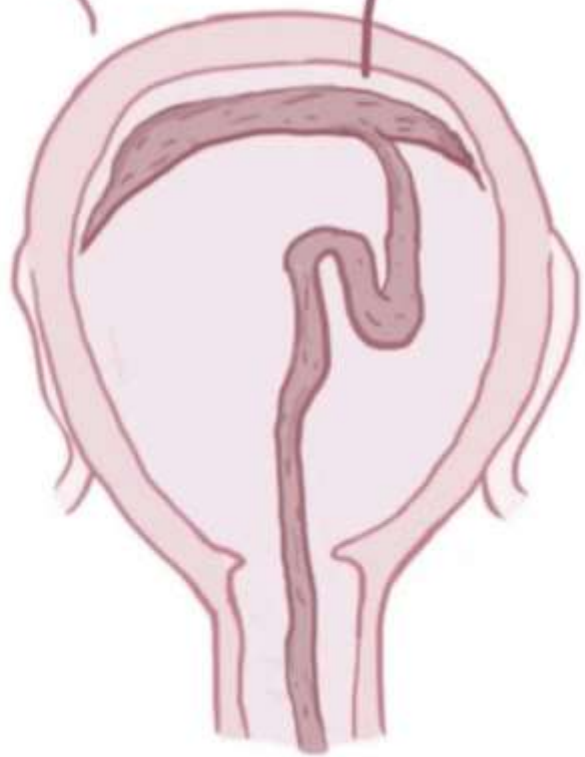
- Any position woman is comfortable; dorsal lithotomy, sitting, squatting.
- Encourage bearing down when has urge to push at full dilatation.
- Discourage bearing down before the cervix is fully dilated.
- Don’t ask her to hold breath.
- Encourage rapid breathing with mouth open.
- Hydration – oral / IV fluids
- Once the baby is born, check for cord around the neck.
- The fetal mouth should be aspirated before first breath.
- Deliver the shoulder.
- Give the neonate to the nurse for cleaning and drying.

THIRD STAGE



THIRD STAGE

UTERUS CONTRACTS



PLACENTA SEPERATES from UTERINE WALL & CAREFULLY REMOVED

Immediate postpartum care

- Fourth stages ; first one hour after delivery.
- After placental delivery –check uterus well contracted.
- Examine perineum ,lower vagina and vulva for tears.
- Estimate the blood loss.
- Clean the perineum.
- Sanitary napkins.

(FOURTH STAGE)

* ADAPTATION to BLOOD LOSS
* START of UTERINE INVOLUTION