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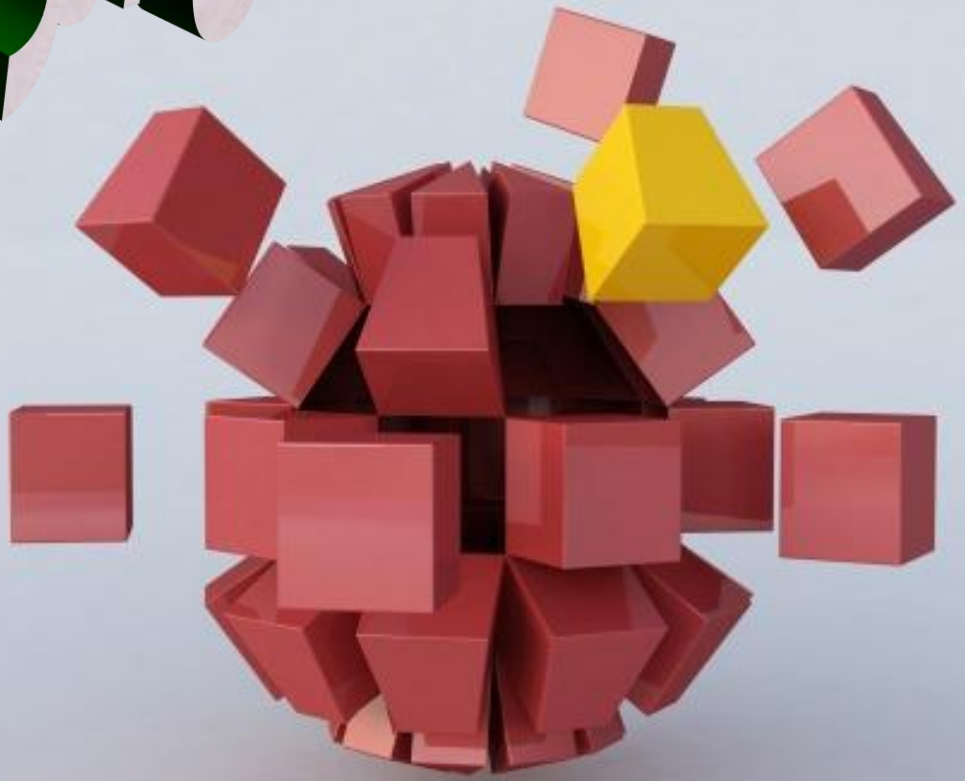


Prenatal & antenatal care &diagnosis in pregnanacy

Dr. Sawsan Talib

assistant professor in department of obstetrics and gynecology

College of medicine/ Diyala University

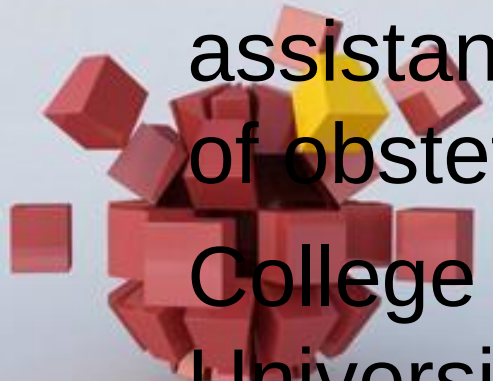


Table 1

Four Goals for Preconception Health (CDC/SPPC)

Goal 1: Improve the knowledge, attitudes, and behaviors of men and women related to preconception health.

Goal 2: Assure that all women of childbearing age in the U.S. receive preconception care services (i.e., evidence-based risk screening, health promotion, and interventions) that will enable them to enter pregnancy in optimal health.

Goal 3: Reduce risks indicated by a previous adverse pregnancy outcome through interventions during the interconception period, which can prevent or minimize health problems for a mother and her future children.

Goal 4: Reduce disparities in adverse pregnancy outcomes.

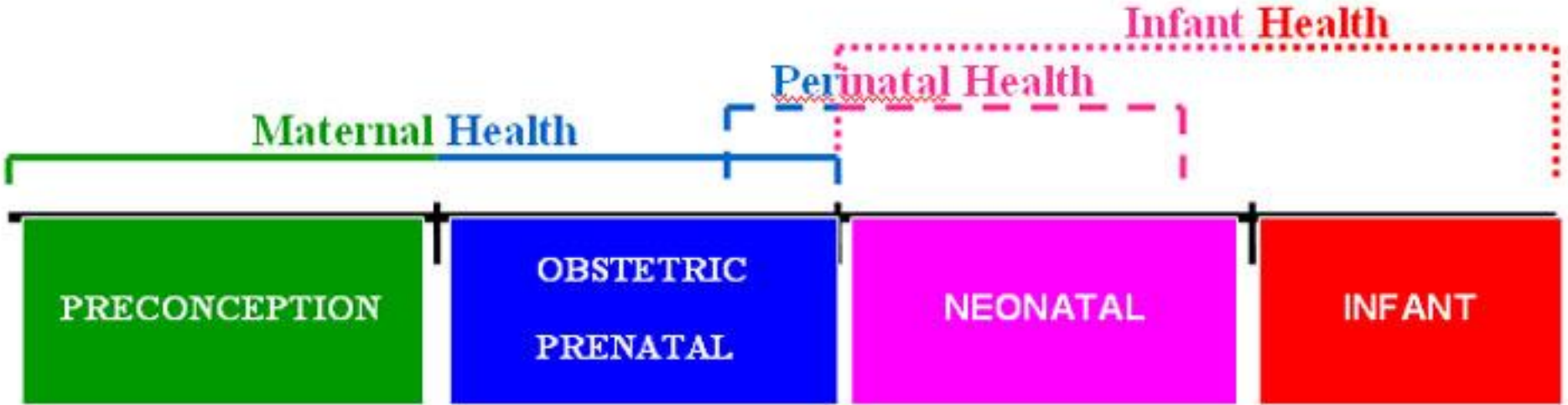
CDC: Centers for Disease Control and Prevention; SPPC: Select Panel on Preconception Care.
Source: Reference 4.

Preconception Care

Continuum of care designed to meet the needs of a woman throughout the various stages of her reproductive life

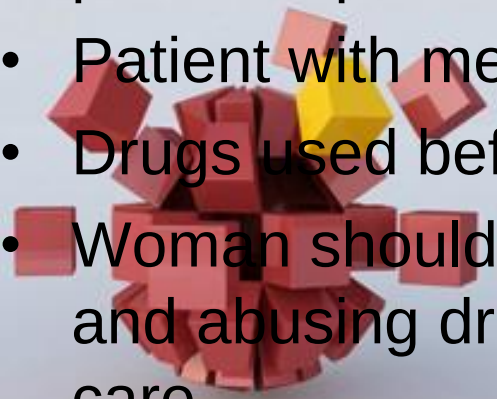
Goals:

1. Make sure that the woman is healthy as she attempts to become pregnant
2. Promote the health of the woman and her children throughout her reproductive life cycle



PRECONCEPTIONAL VISIT, RISK ASSESSMENT AND EDUCATION

- Identification of high risk factors by detailed evaluation of female.
- Base level health status.
- Rubella and hepatitis immunization.
- Folic acid supplementation.
- Maternal health is optimized preconceptionally.
- Fear of the incoming pregnancy is removed by preconceptional education.
- Patient with medical complications.
- Drugs used before pregnancy.
- Woman should be urged to stop smoking, taking alcohol and abusing drugs. Addicted woman is given specialized care



- Inheritable genetic diseases (sickle cell disease, cystic fibrosis) are screened before conception and risk of passing on the condition to the offspring is discussed.
- Importance of prenatal diagnosis.
- Inheritable genetic diseases could be managed either by primary prevention (eliminating the causal factor) or by secondary prevention (terminating the affected fetus).
- Couples with history of recurrent fetal loss or with family history of congenital abnormalities (genetic, chromosomal or structural) are investigated and counseled appropriately. There may be some untreatable factors

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Show Your Love Preconception Health

Diagnosis of Pregnancy

FIRST TRIMESTER (FIRST 12 WEEKS)

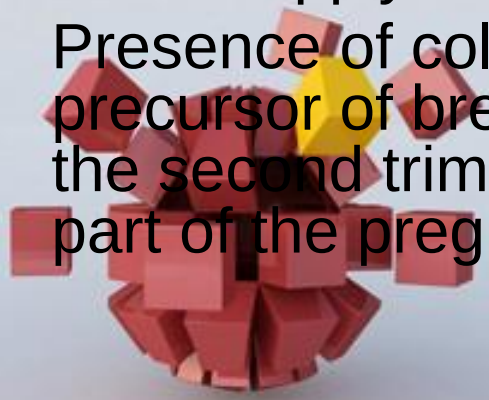
SUBJECTIVE SYMPTOMS

- **Amenorrhea** cyclic bleeding may occur up to 12 weeks of pregnancy, until the decidual space is obliterated by the fusion of decidua vera with decidua capsularis. This is termed as placental sign.
- **Morning sickness (Nausea and vomiting)** It usually appears soon following the missed period and rarely lasts beyond 16 weeks.
- **Frequency of micturitionIt is due to** (1) resting of the bulky uterus on the fundus of the bladder because of exaggerated anteverted position of the uterus, (2) congestion of the bladder mucosa and (3) change in maternal osmoregulation causing increased thirst and polyuria . As the uterus straightens up after 12th week, the symptom disappears**.**
- **Breast discomfort.**
- **Fatigue**

OBJECTIVE SIGNS

- **Breast changes**
- In early pregnancy, changes start with a slight, temporary enlargement of the breasts, causing a sensation of weight, fullness, and mild tingling.

- Darkening of the areola--the brown part around the nipple.
- Enlargement of Montgomery glands--the tiny nodules or sebaceous glands within the areola.
- Increased firmness or tenderness of the breasts.
- More prominent and visible veins due to the increased blood supply.
- Presence of colostrum (thin yellowish fluid that is the precursor of breast milk). This can be expressed during the second trimester and may even leak out in the latter part of the pregnancy.



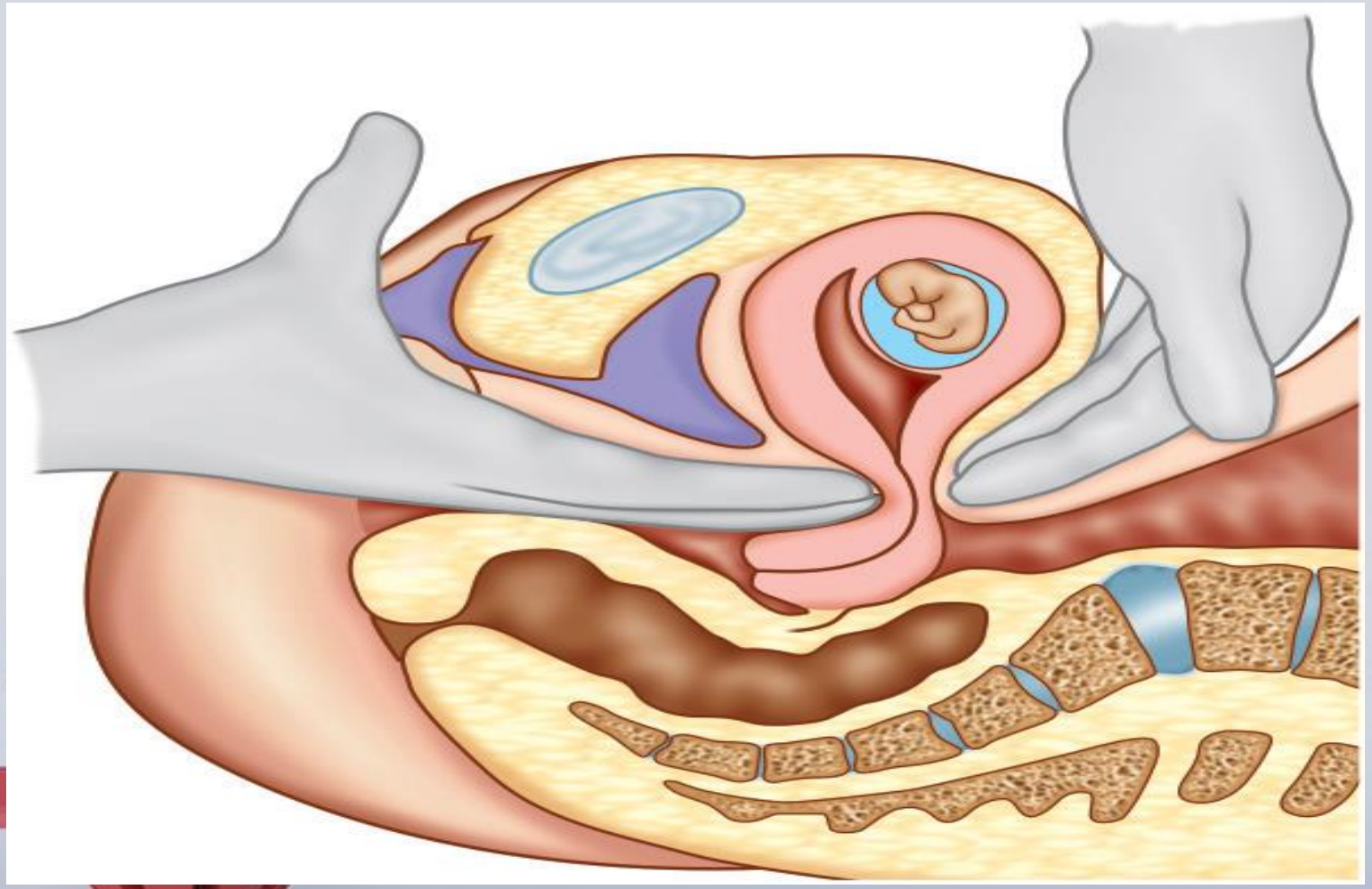
Vaginal signs

- Chadwick's sign. The vaginal walls have taken on a deeper color caused by the increased vascularity because of increased hormones.

  It is noted at the sixth week when associated with pregnancy. It may also be noted with a rapidly growing uterine tumor or any cause of pelvic congestion.
- Leukorrhea. This is an increase in the white or slightly gray mucoid discharge that has a faint musty odor. It is due to hyperplasia of vaginal epithelial cells of the cervix because of increased hormone level from the pregnancy. Leukorrhea is also present in vaginal infections.

- **Cervical signs**: (a) Cervix becomes soft as early as 6th week **(Goodell's sign),** a little earlier in multiparae. The pregnant cervix feels like the lips of the mouth, while in the non-pregnant state, like that of tip of the nose. (b) On speculum examination, the bluish discoloration of the cervix is visible. It is due to increased vascularity.
- **Uterine signs**:(a) Size, shape and consistency (b) **Hegar's sign**: It is present in two-thirds of cases. It can be demonstrated between 6 and 10 weeks, a little earlier in multiparae. This sign is based on the fact that: (1) upper part of the body of the uterus is enlarged by the growing fetus (2) lower part of the body is empty and extremely soft and (3) the cervix is comparatively firm.
- (c) **Palmer's sign**: Regular and rhythmic uterine contraction can be elicited during bimanual examination as early as 4–8 weeks

Demonstration of Hegar’s sign



Tests utilized to determine pregnancy

Tests are based on the presence of human chorionic gonadotropin (HCG) in the urine or blood.

- Urine. This test can be performed accurately 42 days after the last menstrual period or 2 weeks after the first missed period. The first urine specimen of the morning is the best one to use.
- Blood. Radioimmunoassays (RIA) can detect HCG in the blood 2 days after implantation or 5 days before the first menstrual period is missed.

ULTRASONOGRAPHY: Fetal viability and gestational age is determined by detecting the following structures by transvaginal ultrasonography. Gestational sac and yolk sac by 5 menstrual weeks. Fetal pole and cardiac activity — 6 weeks; Embryonic movements by 7 weeks. Fetal gestational age is best determined by measuring the CRL between 7 and 12 weeks (variation ± 5 days)

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SECOND TRIMESTER (13–28 WEEKS)

SYMPTOMS:

- "**Quickening" (feeling of life)** denotes the perception of active fetal movements by the women. It is usually felt about the 18th week, about 2 weeks earlier in multiparae
- **Progressive enlargement** of the lower abdomen by the growing uterus.

GENERAL EXAMINATION

- **Chloasma:**
- **Breast changes**

ABDOMINAL EXAMINATION

- **Inspection:** linea nigra, Striae (both pink and white)
- **Palpation:** Fundal height, Braxton-Hicks contractions, Palpation of fetal parts, Active fetal movements, External ballottement.
- **Auscultation:** Fetal heart sound (FHS) is the most conclusive clinical sign of pregnancy
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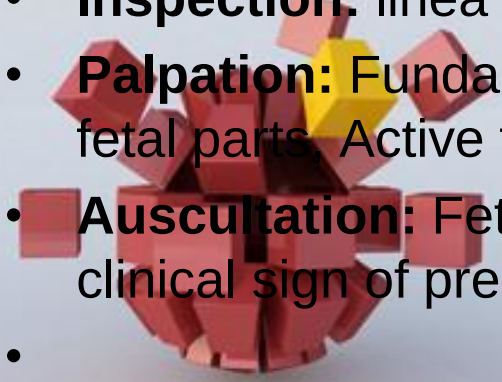
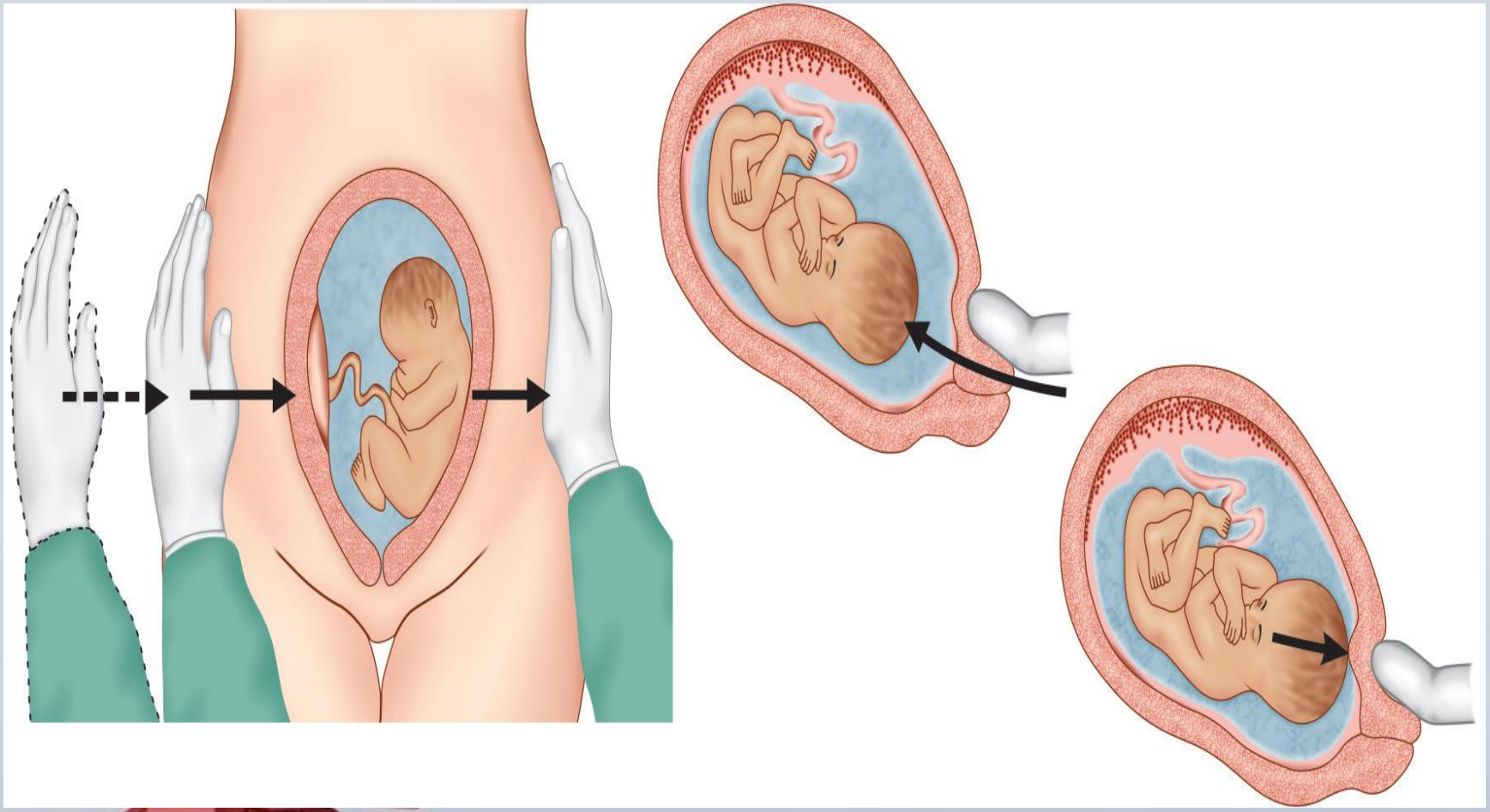


External ballottement; Steps showing how to elicit internal ballottement



- Two other sounds are confused with fetal heart sounds. Those are:
- **Uterine souffle:** The sound is synchronous with the maternal pulse and is due to increase in blood fl ow through the dilated uterine vessels.
- **Funic or fetal souffle** is due to rush of blood through the umbilical arteries. It is a soft, blowing murmur synchronous with the fetal heart sounds.

VAGINAL EXAMINATION

- **The bluish discoloration** of the vulva, vagina and cervix
- **Internal ballottement** can be elicited between 16–28th week.

INVESTIGATIONS

Sonography: Routine sonography at 18–20 weeks permits a detailed survey of fetal anatomy, placental localization and the integrity of the cervical canal. Gestational age is determined by measuring the (BPD), (HC), (AC) and (FL). It is most accurate when done between 12 and 20 weeks (variation ± 8 days)

LAST TRIMESTER (29-40 WEEKS)

SYMPTOMS:

(1) Amenorrhea

(2) Enlargement of the abdomen is progressive which produces some mechanical discomfort to the patient such as palpitation or dyspnea following exertion.

(3) Lightening — At about 38th week, specially in primigravidae, a sense of relief of the pressure symptoms is obtained due to engagement of the presenting part.

(4) Frequency of micturition.

(5) Fetal movements

SIGNS:

- **Cutaneous changes.**
- **Uterine shape** is changed from cylindrical to spherical beyond 36th week**.**
- **Fundal height.** Symphysis fundal height (SFH).
- **Braxton-Hicks.**
- **Fetal movements.**
- **Palpation of the fetal parts.**

Sonography: gestational age estimation by BPD, HC, AC and FL is less accurate (variation ± 3 weeks). Fetal growth assessment can be made provided accurate dating scan has been done in first or second trimester

DIFFERENTIAL DIAGNOSIS OF PREGNANCY

- uterine fibroid,
- cystic ovarian tumor,
- encysted tubercular peritonitis, hematometra
- distended urinary bladder
- Pseudocyesis

Antenatal Care

Definition of Antenatal care

comprehensive health supervision of a pregnant woman before delivery

Or it is planned examination, observation and guidance given to the pregnant woman from conception till the time of labor.

Goals

- To reduce maternal and perinatal mortality and morbidity rates

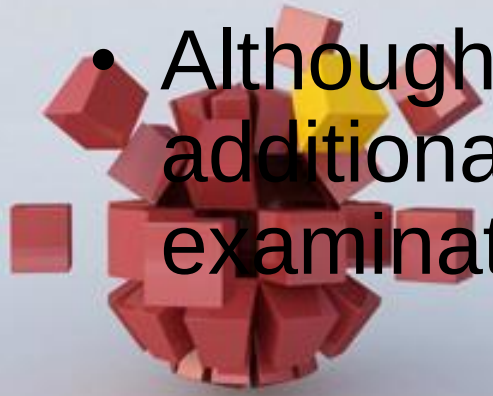
- To improve the physical and mental health of women and children

Importance of Antenatal Care

- To ensure that the pregnant woman and her fetus are in the best possible health.
- To detect early and treat properly complications
- Offering education for parenthood
- To prepare the woman for labor, lactation and care of her infant

Follow-up Visits: During Pregnancy

- Visits every 4 weeks up to 28 weeks gestation (during the 1st & 2nd trimesters).
- 29-36 weeks visits are scheduled q2 weeks.
- 37-40 weeks gestation visits are q week.
- Although less intense, visits include additional interview data & physical examination.



Components of routine prenatal care are recorded in a standardized pro forma (antenatal record

- **Detailed history**
- **Examination :**

1. General Physical Examination
2. Systemic examination:
3. Obstetrical examination

- **Investigations**

Blood and other tests

Your antenatal care will probably include these tests:

- Blood test to find your blood group (in case you are later in need of a blood transfusion) and to determine whether you are rhesus positive or rehesus negative.
- Blood test to see whether or not you are anaemic.
- Blood test to check for your immunity to rubella.
- Blood test to ensure that you free of hepatitis B and to check for HIV if you agree to the test.
- Blood test for syphilis.
- Blood test to see if you are at risk of any of a large number of disorders, which include sickle cell disease, B-thalassaemia, cystic fibrosis, Down's syndrome.
- Urine test in order to check for kidney disease, diabetes and urinary tract disease such as cystitis.
- Cervical smear, unless one has already been carried out recently.
- Gonorrhoea and chlamydia tests of your cervix, if you are at risk.

ANTENATAL SCREENING AND TESTS

You may be offered one or more of these procedures if you are at risk. Discuss in advance the implications if your baby is found to have one of these conditions.

Procedure	When	To identify condition
Chorionic villus sampling	between weeks 9 and 11	*chromosome abnormality*
Alphafetoprotein blood test	between weeks 15 and 22	*foetal abnormality, including spinal cord defects*
Amniocentesis	between weeks 15 and 20	*chromosome abnormality*
Ultrasound scan	from 18 weeks	*defects of spinal cord, other foetal abnormalities. Check growth and well-being*
Cordocentesis (foetal blood sampling)	from week 20	*rhesus negative mother with antibodies that may destroy baby's blood cells*

Terminology

- **A nullipara** is one who has never completed a pregnancy to the stage of viability. She may or may not have aborted previously.
- **A primipara** is one who has delivered one viable child. Parity is not increased even if the fetuses are many (twins, triplets).
- **A multigravida** is one who has previously been pregnant. She may have aborted or have delivered a viable baby.
- **A parturient** is a women in labor.

- **A nulligravida** is one who is not now and never has been pregnant.
- **A primigravida** is one who is pregnant for the first time.
- **Multipara** is one who has completed two or more pregnancies to the stage of viability or more.
- **A puerpera** is a woman who has just given birth.

Healthy Living

- Stop smoking - give support
- Avoid alcohol in first 3 months. After that, no more than 1-2 units/week
- Exercise - no risk associated with moderate exercise but avoid contact sports, scuba diving and excessive joint stress
- Reassure that sex during pregnancy is thought to be safe
- Discourage women from using recreational drugs including cannabis

Dietary advice

- Recommend folic acid supplementation for first 12 weeks
- Advise of important of Vitamin D intake
- "Healthy Start" vitamins may be useful
- Advise of birth defects associated with Vitamin A, and to avoid Vitamin A supplements and liver.
- Advise how to reduce risk of listeriosis and salmonella

General

- Advise on the importance of avoiding infection including toxoplasmosis
- Recommend that women use as few OTC medicines as possible
- Ascertain a woman's occupation to identify risk but advise that it is usually safe to continue working
- Explain maternity rights and benefits
- Seatbelts should go "above and below the bump,but not over it.
- Advise women to discuss travel abroad and air travel with their midwife or doctor

SOME WOMEN MAY NEED ADDITIONAL CARE IF THEY HAVE A HISTORY OF:

Medical conditions	Events in previous pregnancies
Cardiac disease	Recurrent miscarriage
Hypertension	Preterm birth
Endocrine disorders/diabetes	Severe pre-eclampsia/eclampsia
Psychiatric problems	Rhesus isoimmunisation
Autoimmune conditions	Caesarean section
Epilepsy	Puerperal psychosis
Cancer	Parity four or more
Severe asthma	Stillbirth/neonatal death
Obesity – BMI 30 or above	A baby with a congenital abnormality
Underweight – BMI below 18	A baby <2.5 kg or >4.5 kg
HIV/HBV infection	A small or large for gestational age baby
Use of recreational drugs	
Vulnerable women	
Women at higher risk of developing complications – i.e. aged 40 and older	

Thank you