

**NORMAL PREGNANCY  
(PHYSIOLOGICAL AND  
PSYCHOLOGICAL CHANGES  
IN PREGNANCY)**

# Signs of pregnancy

Its important to establish the diagnosis of pregnancy or to confirm that the woman is really pregnant

Signs are:

**A- Presumptive sign** (may suggest pregnancy)

1- Amenorrhea: no menstruation

2- Nausea and vomiting: 50% = morning sickness

3- Fatigue.

4- Breast tenderness...hormonal changes

5-Urinary frequency

**B- Probable signs**(strongly indicate pregnancy)

1-positive pregnancy test: (hCG).

2-Uterine enlargement

3-Pigmentation changes: darkening of skin such as linea nigra on abdomen & of nipple

4-Goodell's sign: softening of the cervix .

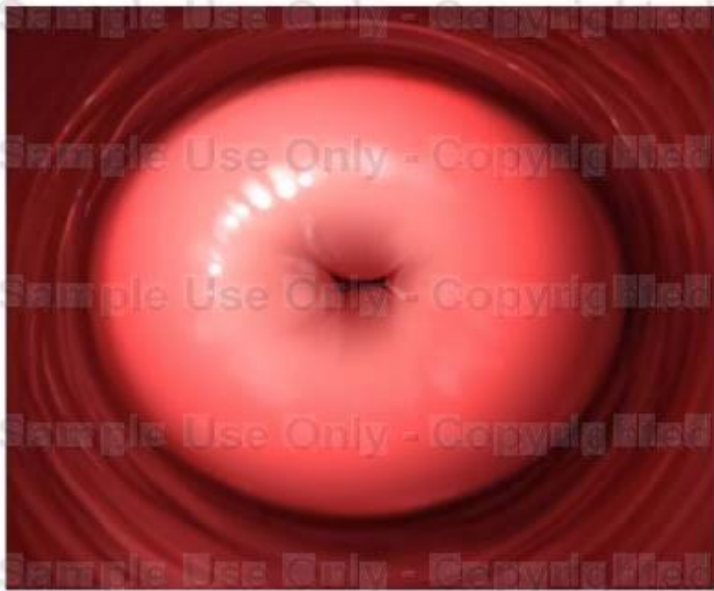


5-Hegar's sign: softening of lower portion of uterus.

6-Chadwick's sign: increased vascularity in the vagina caused bluish purple discoloration of vaginal mucosa.

C\_ **positive sign** (confirm pregnancy):

Ultrasound examination : FH ,FM & Fetal outline.



Chadwick sign- pregnant

# Physiological changes:

## T1(first trimester):

1-fertilization occurred, progesterone hormone  $\uparrow$ , as a result of that pregnancy happened ie amenorrhea & Sodium retention( $\text{Na} \uparrow$ )

So(Nursing care)  $\rightarrow$  Guide patient about folic acid requirement , nutritional needs , encourage **ANC** & asses attitude toward this pregnancy and how it affect family.

2-Blood volume ↑, relaxin hormone ↑, hCG ↑,  
the result → Fainting, nausea, heartburn....etc.

SO → teach pt. how to rise slowly from bed, how  
to cope with nausea & eat suitable food.

3- ↑ Melanocyte-stimulating hormone from  
pituitary gland, the result → pigmentation ↑ on  
face (chloasma) & on abdomen (linea nigra)

So → discuss that with the pt.



4- Fetus growth..the result→ enlargement of abdominal size when uterus rises out of the pelvis & small wt.gain occurs.

SO→ Teach methods to minimize fetal problems.....fever ,drugs,encourage suitable food and avoid others...etc and discuss effect of uterine enlargement on the bladder like frequency.

## 2-T(second trimester):

1-placenta replaced corpus luteum function ,the result is  $\uparrow$  B.volume.

So  $\rightarrow$  teach pt. how to minimize the risk of abortion.

2- $\uparrow$  B.volume & vasomotor liability  $\uparrow$ , the result supine hypotension.

So  $\rightarrow$  teach pt. to change position slowly to avoid this.

3-↑cardiac output →physiological anaemia.

So →teach about diet and iron supplements.

4-renal threshold↓,itching may occur

So must exclude DM by tests and teach about personal hygiene.

5-uterus rises out of pelvis leads to change in center of gravity , nerves compression (legs)

So teach about shoe wearing, avoid supine lying in bed , foot massage &no tight clothes.

6- ↑estrogen hormone leads to a ↑vascularity of oral mucosa → infection (gingivitis)

b\_ ↑excretory function of the skin → itching

c\_ relaxation of sacroiliac joint → pr. On bladder and rectum

So → teach about oral hygiene, wear loose clothes , shower frequently & pelvic exercise to strengthen pelvic floor.

7-Pituitary gland secretes prolactin hormone resulting in colostrum leak from nipple and breast enlargement

So teach pt. about nipple cleaning .

8-Platelet level ↑ this lead to possible risk of DVT

So teach about movement

8-Fetal growth continue.

### 3- T3(THIRD TRIMESTER):

1\_Maternal wt. gain → teach proper nutrition & encourage patient to attend childbirth classes.

2\_Colostrum forms → teach patient care of nipple.

3-Maximum ↑ in cardiac output → teach pt. follow up of her B.P.

4- ↑Size of the uterus →pressure on stomach & diaphragm.→ teach how to cope with decrease in appetite and dyspnoea.

# CHANGES IN THE REPRODUCTIVE SYSTEM

## THE UTERUS

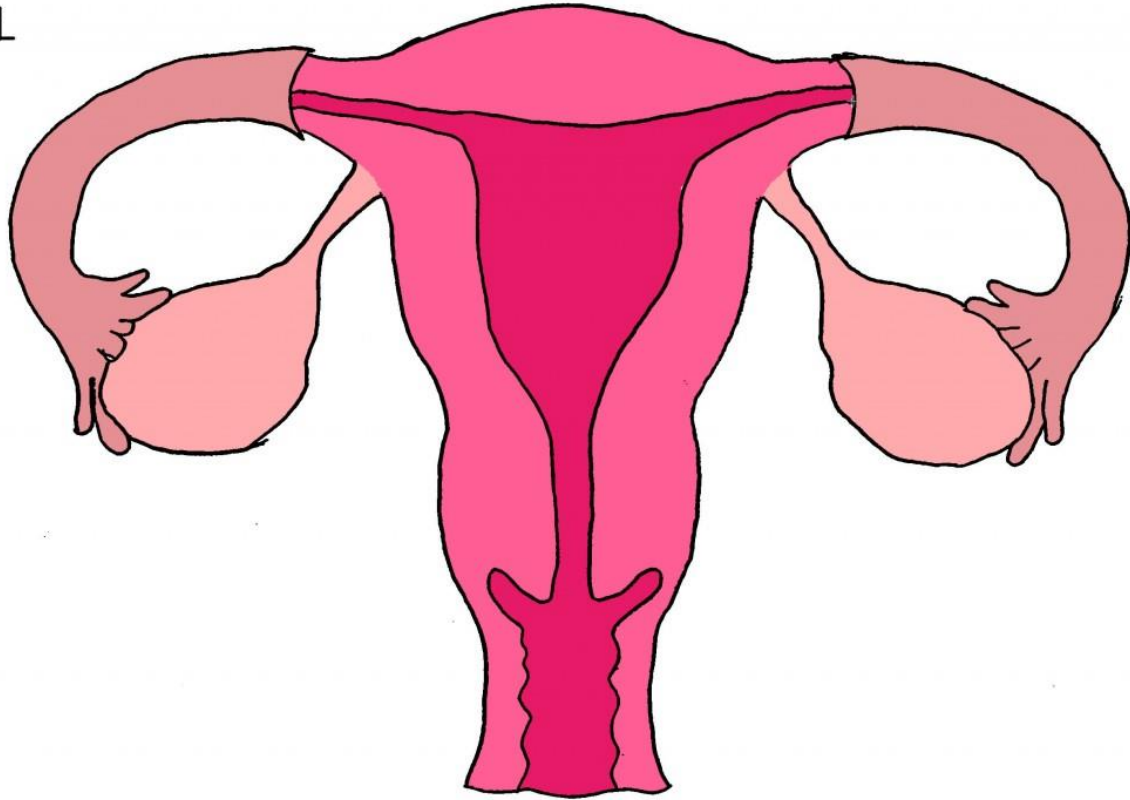
Before pregnancy the uterus is small , semisolid , pear-shaped organ wt=60g

At the end of pregnancy it's a thin wall, muscular containing the fetus , the placenta and the amniotic fluid wt=1000g.

This growth of the uterus is stimulated by hormones(estrogen & progesterone )



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## The cervix

During pregnancy the cervix become shorter & softer ,these adjustments prepare cx. for thinning(effacement)and widening(dilatation) of the opening which is nessasory to permit fetus to be pass.

## THE VAGINA

Several changes occur in the vagina in pregnancy preparing for child birth like...proliferation of cells , hyperamia of connective tissue & ↑vaginal discharge.

## THE OVARIES

During pregnancy, follicles in the ovaries cease to develop to maturity, ovulation does not occur. The corpus luteum produce estrogen and progesterone for the first 7\_10 wks gestation to maintain the pregnancy until the placenta develops and can take over this function.

## THE BREASTS

Lactation → several hormonal changes take place during pregnancy in the breast in order to prepare for lactation.

There is rapid enlargement in breast in first 8 wks.

The changes are:

1-↑size

2-breast become full and more sensitive

3-↑pigmentation of areola and nipple

4-Montgomery's glands become more prominent

5-Striae

6-Colostrum: a thin yellowish fluid(pre-milk fluid) begins to be excreted from the breasts as early as 10<sup>th</sup> wk of pregnancy and continue until the 3<sup>rd</sup> day post delivery.

# Changes in cardiovascular system

All changes that occur in CVS in pregnancy are essential to deliver oxygen and nutrients to the growing fetus and enlarging uterus

1- ↑ cardiac output

2- 30%\_45% ↑ in blood volume

3\_ ↑ clotting factors

## CHANGES IN RESPIRATORY SYSTEM

Increase ventilation (inspiration & expiration) occur during pregnancy and become more deep .so O<sub>2</sub> consumption increase by 15%-40% , dyspnea is a common complaint of pregnancy.



# CHANGES IN GASTROINTESTINAL SYSTEM

Gum hyperatophy, ↑saliva production, nausea vomiting ,heartburn→ encouraged pregnant woman to sit up for 30 minutes before lying down, constipation.

# CHANGES IN URINARY SYSTEM

Renal plasma flow  $\uparrow$  by 75% to remove metabolic wastes of the mother and the fetus.

Frequency of micturition (pressure symptom),  
 $\uparrow$  risk of urinary tract infection (stasis of the urine).

## CHANGES IN SKELETAL SYSTEM

Waddling gait (slight separation of symphysis pubis) as a result of pressure effect of the fetus.

The center gravity of the woman shifts → lordosis  
→ backache.

# Psychological changes during pregnancy

Pregnancy is a profound event in the life of a woman & her family, it is a time when she & her partner faced with challenge of a new life with more responsibility.

Several changes happen to the pregnant woman including her appearance (become more fat and sometimes ugly), her function, sensation & mobility.

So our job is to reassure the pregnant woman & discuss these changes to her that they are temporary and will subside after delivery.

THANK YOU

