

# *Normal labour*

*Dr.Saba M.Althwune*

Labour is defined as the onset of a sequence of painful regular uterine contractions that result in progressive effacement and dilatation of the cervix with descent of the presenting part and voluntary bearing –down efforts leading to the expulsion of the products of conception through the vagina .

Physiological preparation of labour ;

Prior to the onset of true labour , several preparatory physiological changes commonly occur . The setting of the fetal head into the brim ( inlet ) of the pelvis , known as " lightening " , usually occurs 2 or more weeks before labour in first pregnancies . In women who have had a previous delivery , lightening often doesn't occur until early labour clinically , the mother may notice a flattening of the upper abdomen and increase pressure in the pelvic .

This descent of the fetus is often accompanied by a decrease in discomfort associated with crowding of the abdominal organs under the diaphragm ( e.g heartburn , shortness of breath ) , and an increase in pelvic discomfort and frequency of urination .

During the last 4-8 weeks of pregnancy increase in pelvic discomfort and frequency of urination .

During the last 4-8 weeks of pregnancy irregular , generally painless uterine contractions , known " Braxton Hicks contraction " , may occur more frequently , sometimes every 10-20 minutes , and with greater intensity during the last weeks of pregnancy , when these contractions occur early in the third trimester , they must be distinguished from true preterm labour , later , they are a common cause of " false labour " which is distinguished by the lack of cervical changes in response to the contractions .

During the course of several days to several weeks before the onset of true labour , the cervix begins to soften , efface and dilate . In many cases , when labour starts the cervix is already dilated 1-3 cm in diameter . This is usually more pronounced in the multi porous women . with cervical effacement , the mucus plug within the cervical canal may be released . when this occurs , the onset of labour is sometimes marked by the passage of a small amount of blood-tinged mucus from the vagina known as " bloody show " .



Stages of labour :

Normal labour is a continuous process that has been divided in to three stages for purposes of study by Friedman's division of labour :

1<sup>st</sup> stage : from the diagnosis of labour to full dilatation of the cervix .

Diagnosis of labour usually recognized by the combination of two feature 1 regular , painful , gradual increase in intensity of uterine activity and contractions " at least 4 contractions per 10 minutes which persist at least for 40 seconds for each single contractions " .

2 cervical changes

Full dilatation of cervix mean when reach 10 cm

The 1<sup>st</sup> stage of labour further subdivided into two phase , the latent phase and the active phase .

Latent phase start from 0 dilatation and 3cm length " shortening and effacement " while active phase from 3cm dilatation till 10cm (( fully dilatation )) .

The duration of the 1<sup>st</sup> stage of labour in prime Para patients is noted to range from 6-18hours , while in multiparous patients the range is reported to be 2-10 hours . The lower limit of normal rate of cervical dilatation during the active phase is 1.2 cm per hour in 1<sup>st</sup> pregnancies .



2<sup>nd</sup> stage :

Is the interval between full cervical dilatation and delivery of the fetuses , the 2<sup>nd</sup> stage may be subdivided into two phases , phase one is where there is no maternal urge to push and the fetal head is low .

The duration of the 2<sup>nd</sup> stage in the prime parous is 30 minute to 3 hours , and is 5 – 30 minutes for multi parous .

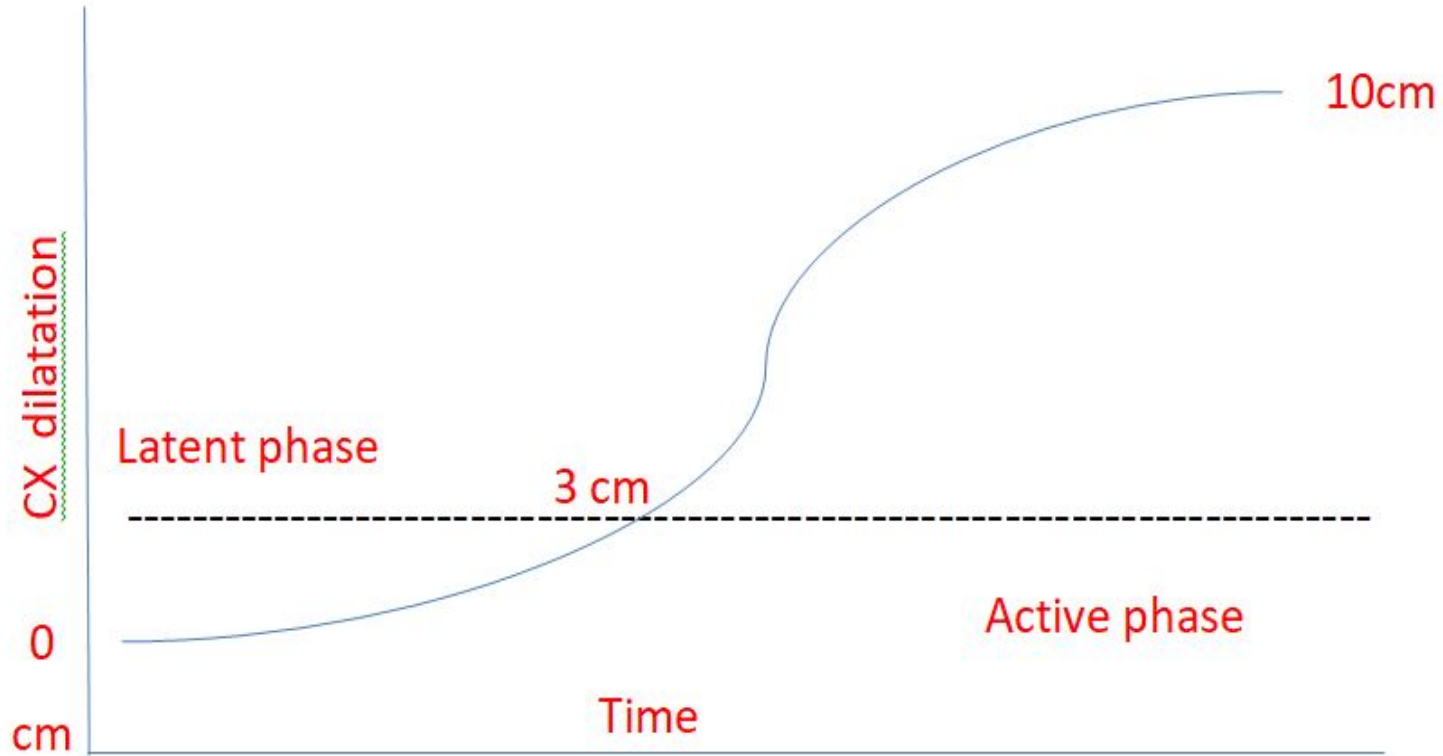
3<sup>rd</sup> stage : is the period between the delivery of the fetus or fetuses until delivery of the placenta , the duration of the 3<sup>rd</sup> stage is 0-30 minutes for all pregnancies .

Separation of the placenta generally occurs within 2-10 minutes of the end of the 2<sup>nd</sup> stage , but it may take 30 minutes or more to spontaneously separate .

## Signs of placental separation one

1. fresh show of blood from vagina
2. the umbilical cord lengthens outside the vagina
3. the fundus of the uterus rises up
4. the uterus becomes firm and globular .





Friedman's division of labour

This refers to the series of changes in position and attitude that the fetus undergoes during its passage through the birth canal . It is described here for the vertex presentation and the gynaecoid pelvis , the relation of the fetal head and body to the maternal pelvis changes as the fetus descends through the pelvis . This essential so that the optimal diameters of the fetal skull are present at each stage of the descent .

Cardinal movement of labour are :

Engagement : is the passage of the fetal biparietal diameter through the pelvic inlet " brim " and it " the head " normally enter the pelvic in the transvers diameter and position or some minor variant of that position . engagement is said to have occurred when the widest part of the presenting part has passed successfully through the inlet .

Descent of the fetal head within the pelvic and this descent secondary to uterine action and helped by voluntary use of abdominal musculature .

Flexion : of the fetal head allows a smaller diameter of the head to the pelvis , this is probably as a passive movement in part due to the surrounding structures .

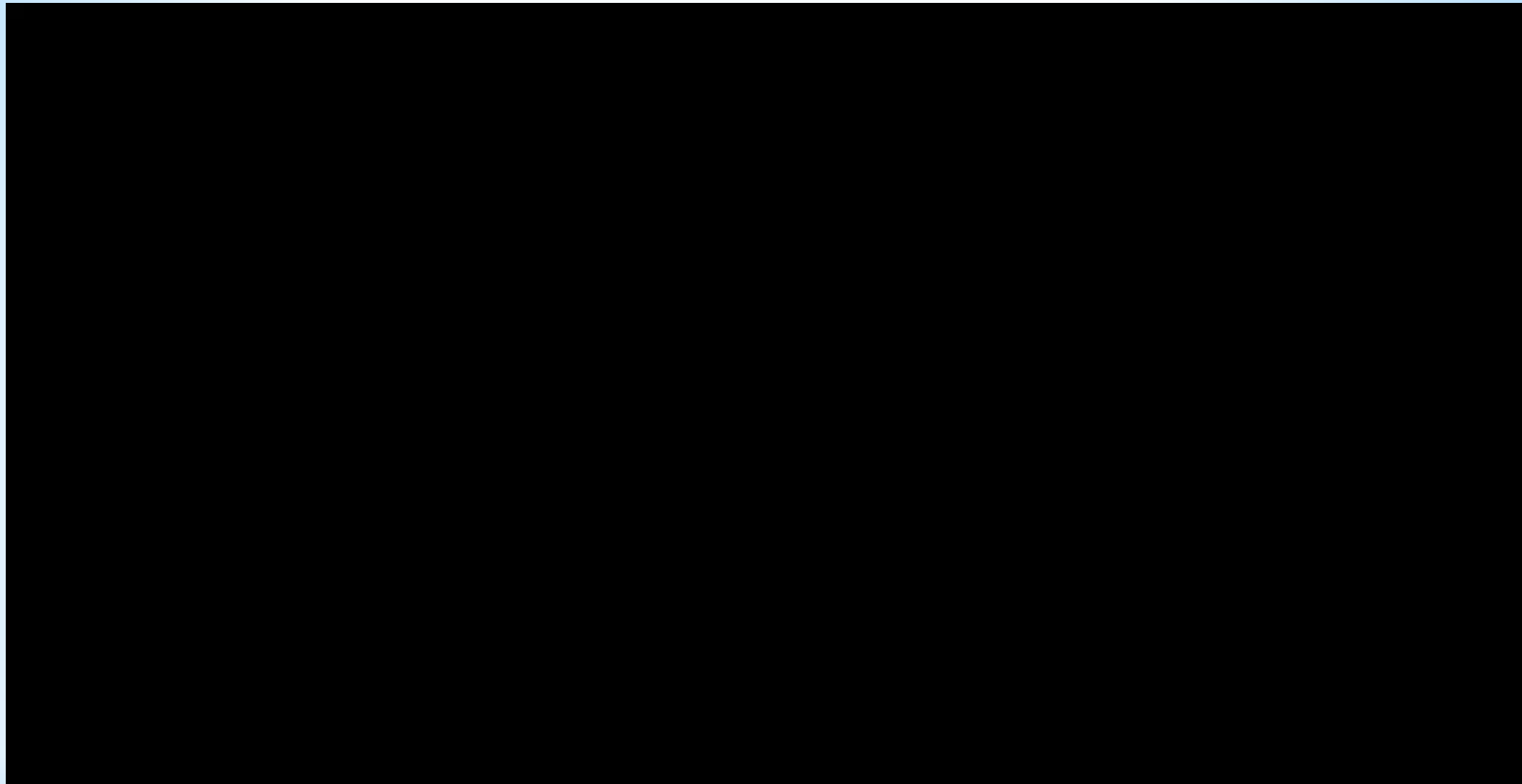
Internal rotation :

This is occur because with a well flexed head the occiput is leading and meets the sloping gutter of the levator ani muscles , which by their shape direct it to anterior position at pelvic outlet , if the fetus has engaged in occipito -posterior position , internal rotation can occur from occipito - posterior to occipito – anterior position and this long internal rotation may explain the increased duration and dystocia " abnormal labour " associated with malposition .

Extension :Following completion of internal rotation the occiput is underneath the symphysis pubis and starting to distend the vulva . This is known as the " crowning " of the head .

Restitution : when the head is delivering , the occiput is directly . As soon as it escapes from the vulva , the head aligns itself with shoulders and this usually marked as slight rotation of occiput through  $1/8$  of circle .

External rotation : the occiput rotates through a further  $1/8$  of a circle to transverse position and this means that the shoulders rotate to anterior - posterior plane in order to be delivered . So the anterior shoulder is under the symphysis pubis will delivered first and the posterior one delivers subsequently .



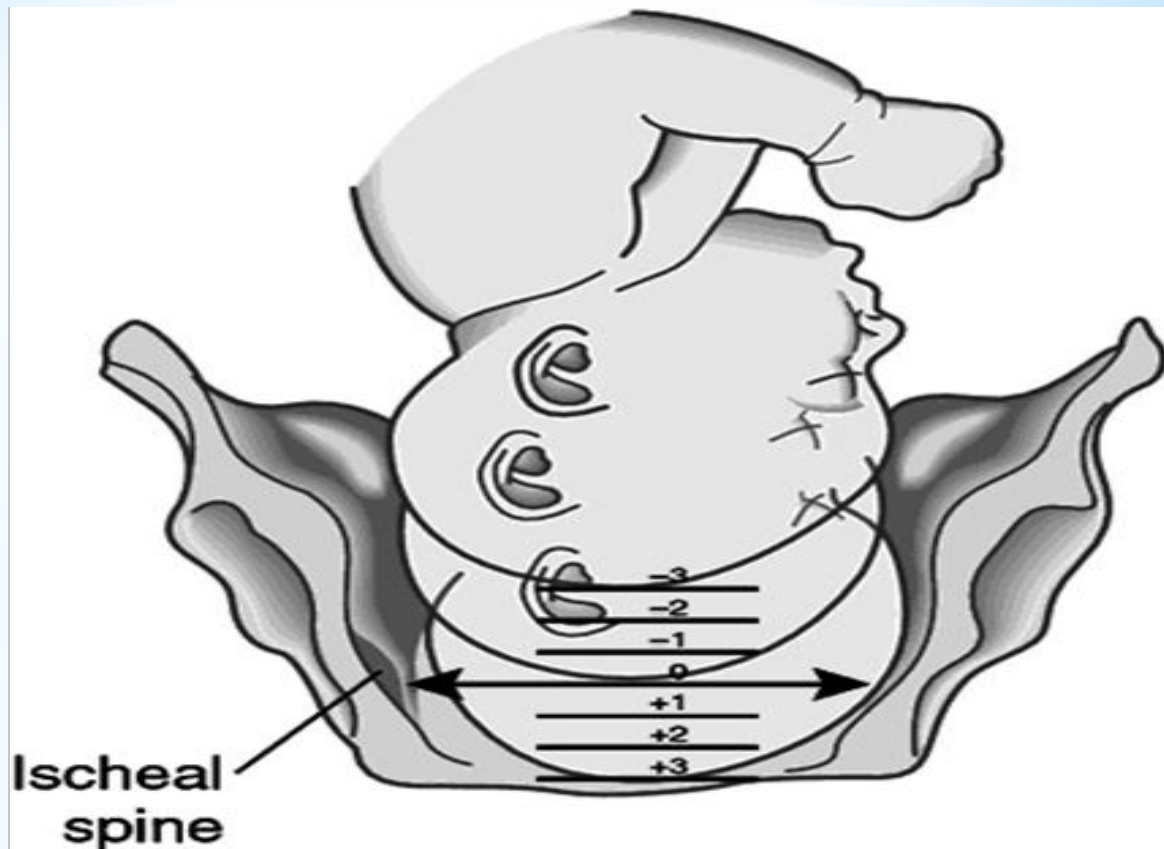


Delivery of the fetal body ; normally the rest of the fetal body easily delivered and occasionally aided by lateral movement .

Progress of labour : in order to labour progressed with these normal sequences it need co-ordination between powers " uterine contraction and voluntary abd.m. contractions " , passenger (( average wt. of fetus and normal presentation )) and passages (( maternal bony and soft tissue pelvis )) .

The key features of normal labour :

1. spontaneous onset
2. single cephalic presentation
3. 37-42 weeks of gestation
4. No artificial intervention
5. Un assisted spontaneous vaginal delivery
6. Less assisted spontaneous vaginal delivery
7. Less than 12 hours in nulliparous , and less than 8 hours in multi porous women
8. Healthy mother and baby
9. Retrospective diagnosis



**" Station of presenting part "**

