



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

Physiology of the third stage of labour

Cecily Begley

Labour is a continuum, not a series of stages



The third stage of labour

- The period from the birth of the baby to the complete expulsion of the placenta and membranes. It is concerned with the control of haemorrhage (Harris 2004).

This is the language of
the text books.

What do you think of it?



Why not say: The third stage of labour is:

- The period from the birth of the baby when the mother, partner and baby meet and start to develop a relationship. It includes the complete expulsion of the placenta and membranes, the control of haemorrhage, and the commencement of breast-feeding.

Duration

- Usually lasts 5-15 minutes (for placental separation) but may last 1 hour

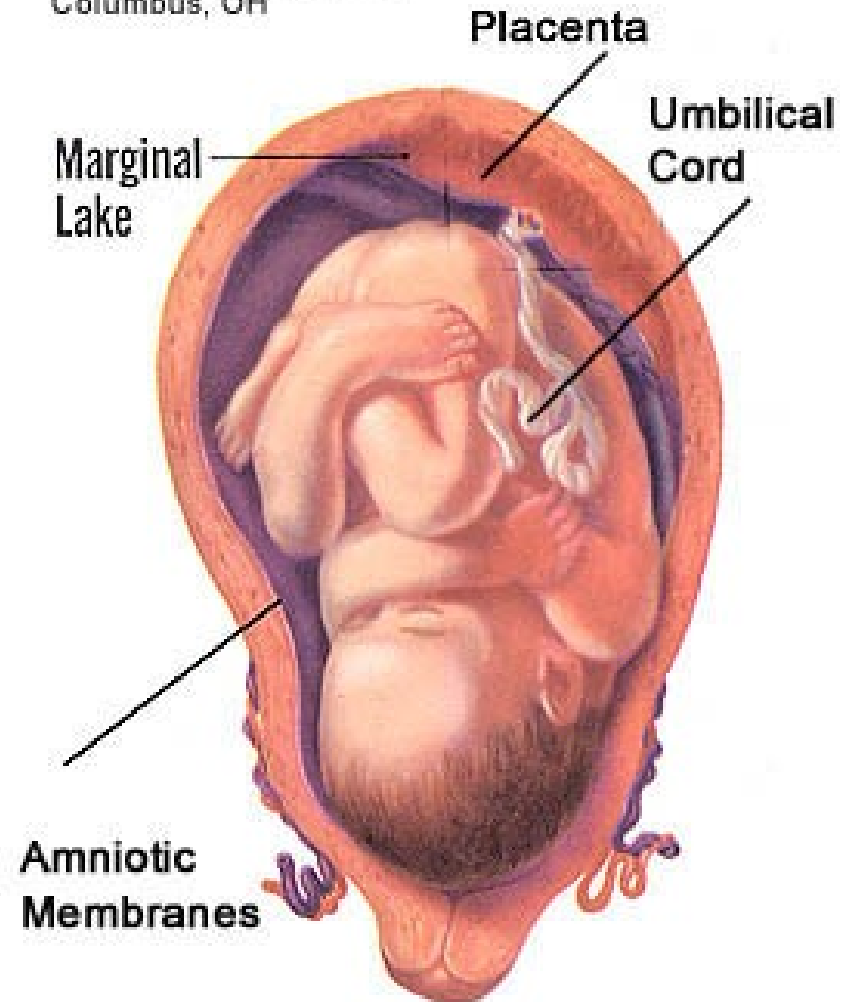
(Try not to be fixated on time)

With the new definition, we are definitely looking at a one-hour period, to include breast-feeding

Physiological processes

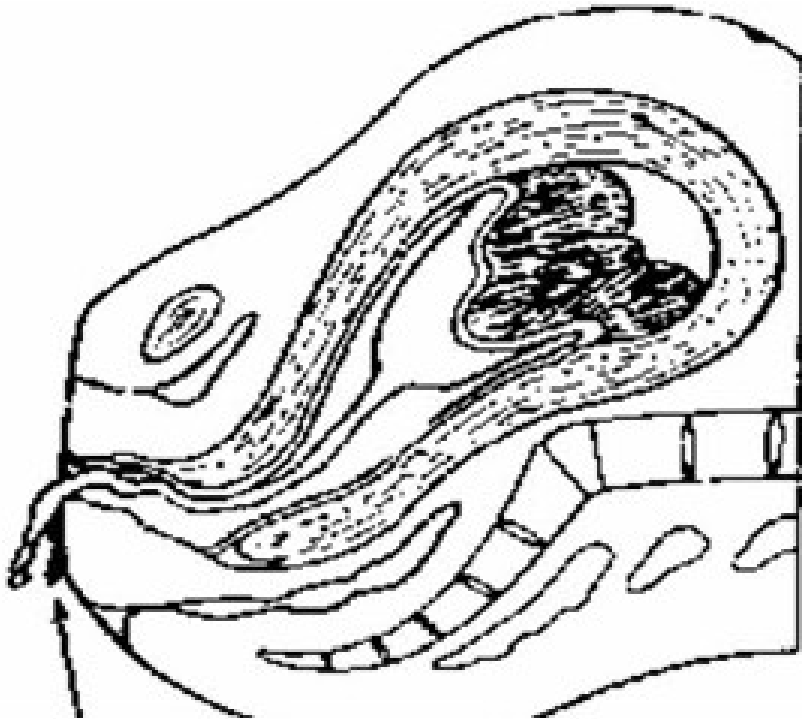
1. Detachment phase
2. Expulsion phase
(Krapp et al 2000)
3. Control of haemorrhage

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Detachment

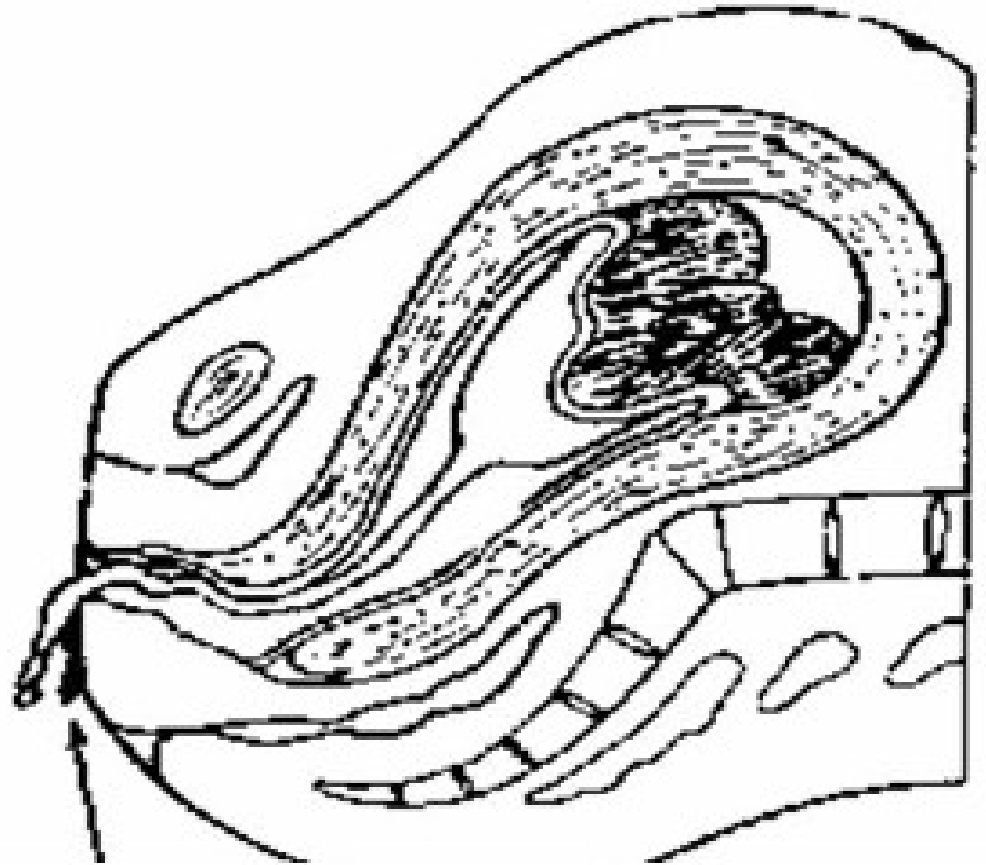
a) Separation



The upper uterine segment contracts strongly, the placental site

diminishes, the placenta is compressed and shears off

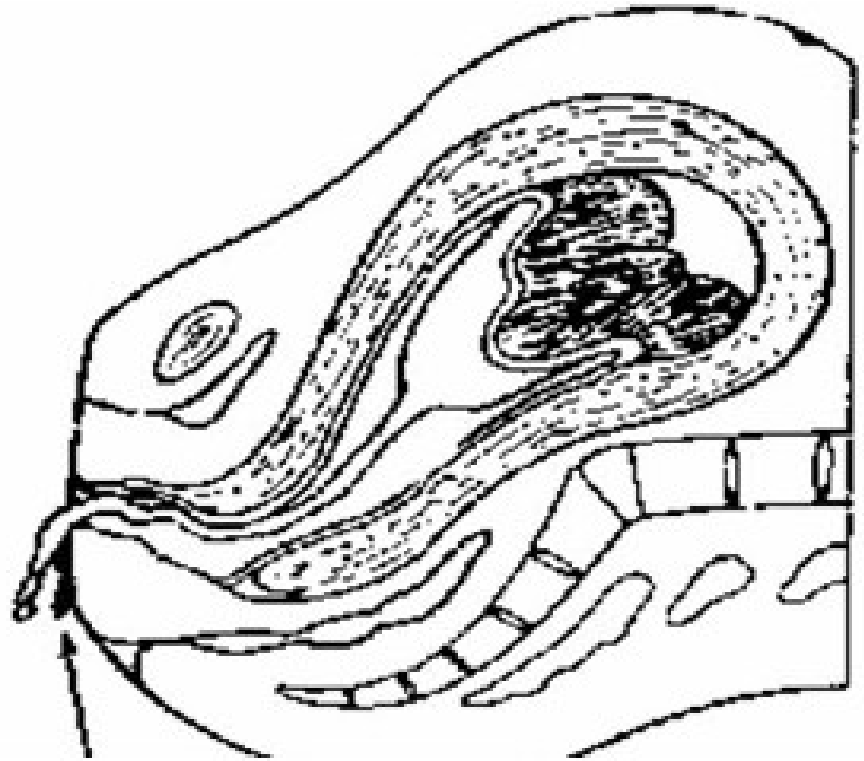
This is easier if the cord is left unclamped, as 70-80 mls of blood flows into the baby, thus shrinking the placenta.



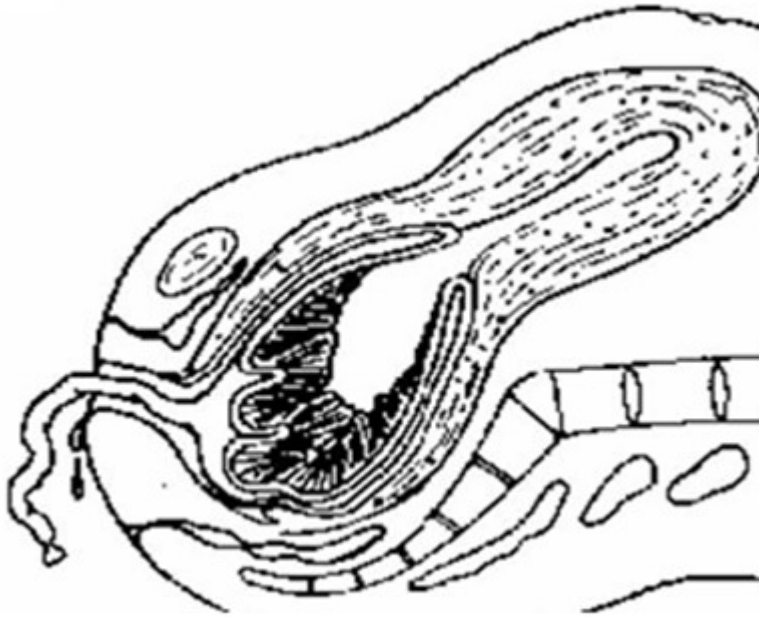
b) Descent

- Upper uterine segment contracts strongly
- Placenta descends into lower uterine segment & vagina (aided by gravity)

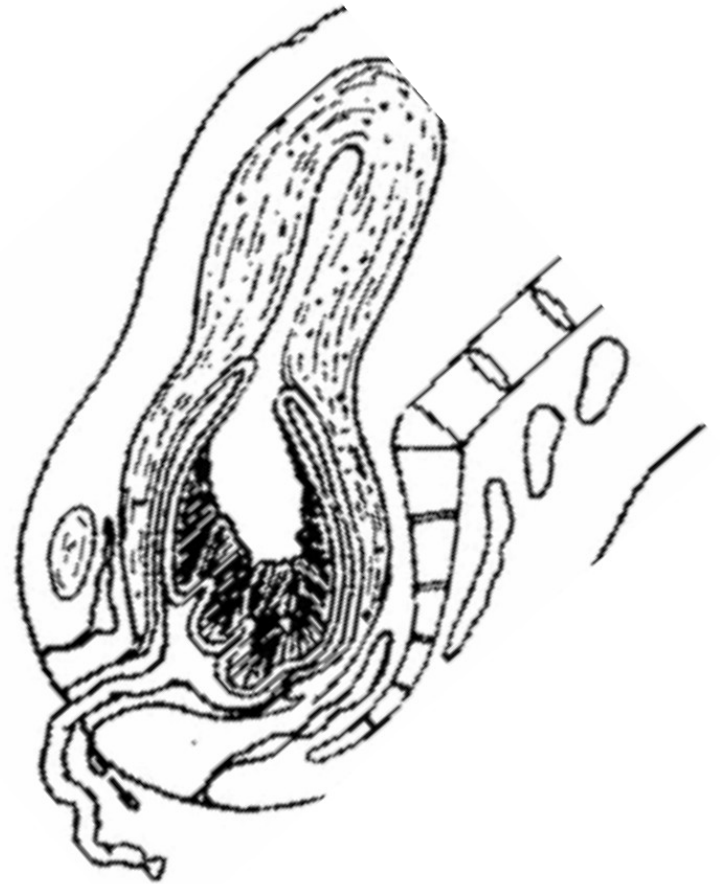
What position is best for this?



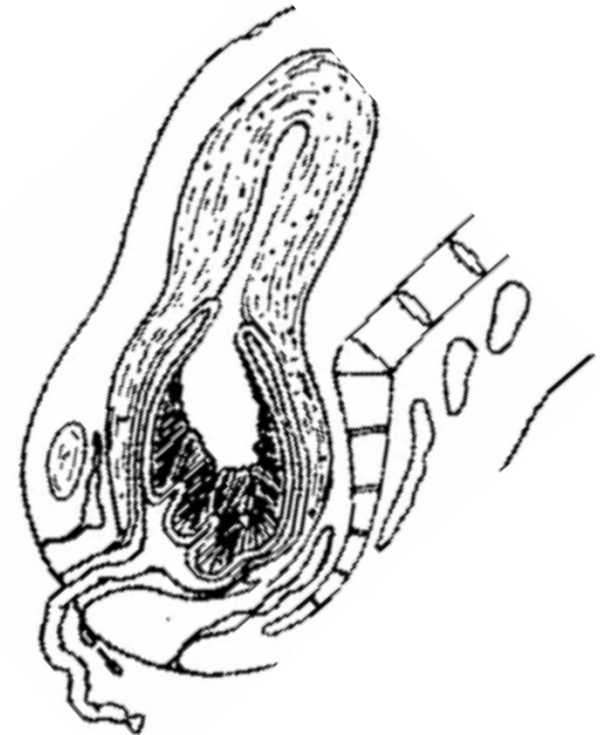
NO



YES!



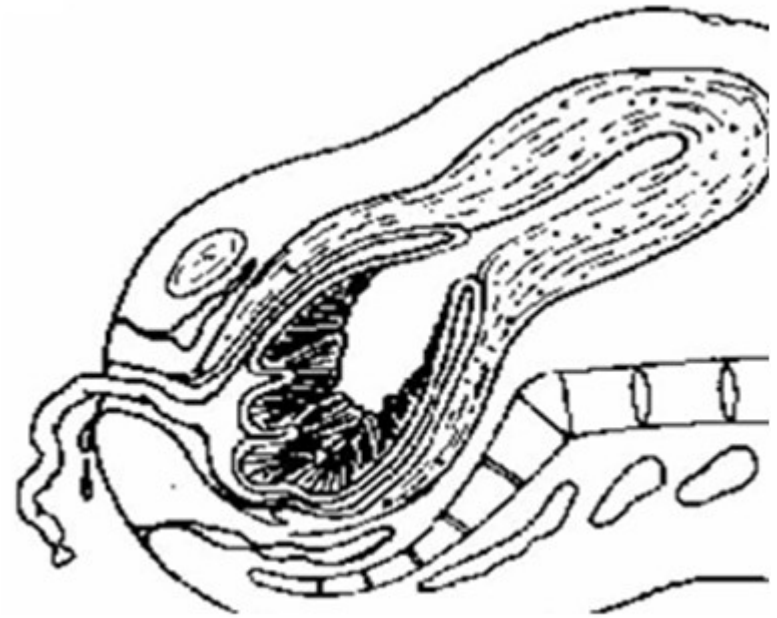
- So – lying back on two pillows, or in her partner's arms, at an angle of 45 degrees. (And the weight of the baby presses down on her uterus as well).



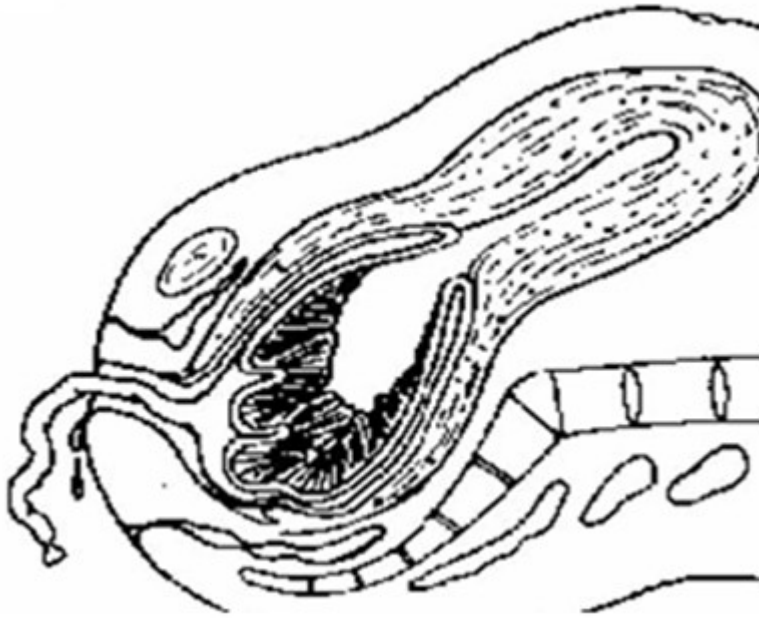
Expulsion phase

Leading to expulsion of placenta & membranes
(aided by gravity & maternal effort)
(Krapp et al 2000)

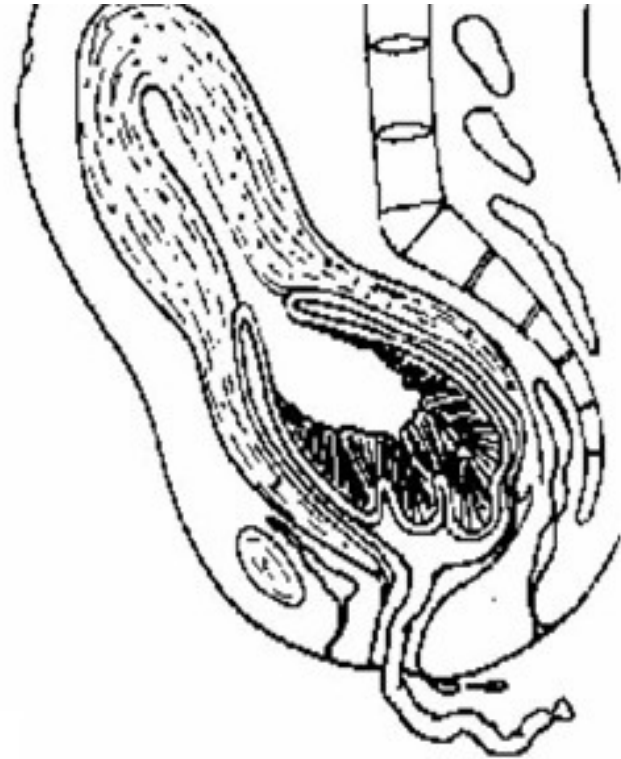
What position is best?



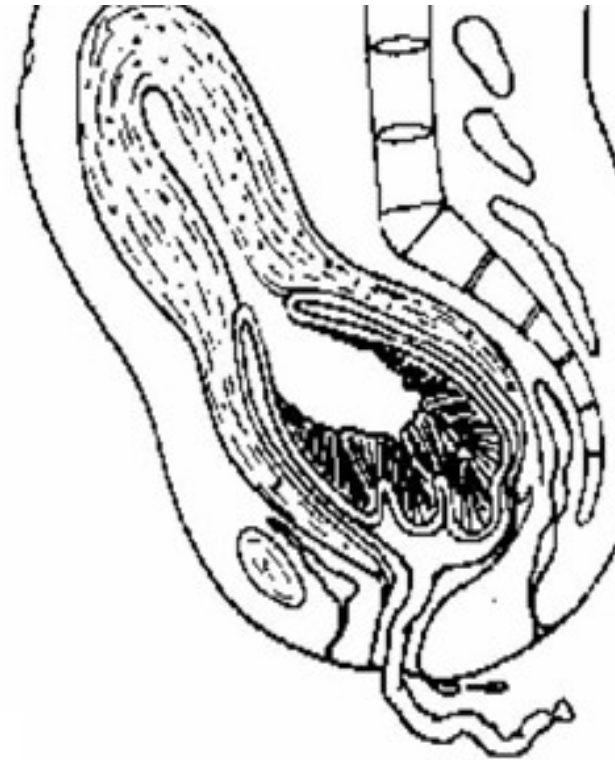
NO



YES!



- So – lying well propped up, or standing, sitting, kneeling, sitting on birthing stool or toilet).



Signs of Placental Separation & Descent

- The woman looks uncomfortable; says that she feels contraction in her tummy
 - Sign of separation
- The woman looks uncomfortable; says that she feels pressure/pain in her bottom; wriggles or moves around.
 - Sign of descent (and separation)

(the MEET study, Begley et al 2012)

Signs of Placental Separation & Descent

- Vaginally:
 - a small amount of blood oozes from the placental site and tracks down between the membranes and appears as a 'gush' at the vagina.
 - Sign of separation.
- Abdominally:
 - the uterus rises up to 'sit on top' of the descended placenta
 - Sign of descent (and separation).
- Cord:
 - the cord lengthens.
 - Sign of descent (and separation).

Summary of immediate and long-term benefits of delayed umbilical cord clamping for infants and mothers from individual studies

	Immediate benefits		Long-term benefits	
Preterm/LBW infants	Full-term infants	Mothers	Preterm/LBW infants	Full-term infants
Decreases risk of: <ul style="list-style-type: none"> • IVH • NEC • late-onset sepsis 	Provides adequate blood volume and birth iron stores	No effect on maternal bleeding or length of the third stage of labour	Increases haemoglobin at 10 weeks of age	Improves haemoglobin and haematocrit at 2–4 months of age
Decreases need for: <ul style="list-style-type: none"> • blood transf. for anaemia or low BP • surfactant • ventilation 	Increases: <ul style="list-style-type: none"> • haematocrit • haemoglobin 	“Cord drainage” trials show less blood-filled placenta shortens 3 rd stage of labour and decreases incidence of retained placenta	May be a benefit to neurodevelopmental outcomes in male infants	Improves iron status up to 6 months of age
Increases: <ul style="list-style-type: none"> • haematocrit • Hgb, BP • cerebral O₂ • RBC flow 				

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