"Modern" Management of Labour

Assoc. Prof. Dato' Dr. Hamizah Ismail

Head
Department of Obstetrics and Gynaecology
International Islamic University Malaysia

President
Perinatal Society of Malaysia

“Modern” Management of Labour

- What Labouring Women Wants?
- What We Offer?
- The Labour Suite
- The Stages of Labour - Partograph
- The Birthing Position
- The Delayed Cord Clamping

What Labouring Women Wants

Satisfying childbirth experience

- self-control – less interference
- Expectations on health care support
  - birthing suite
  - Non-medicated handling of labour pain
  - appropriate length of labour time before augmentation / instrumentation / caesarean
  - birthing position – positive influence on childbirth experience / good course and outcome of labour
  - care of the newborn

What labouring women wants?

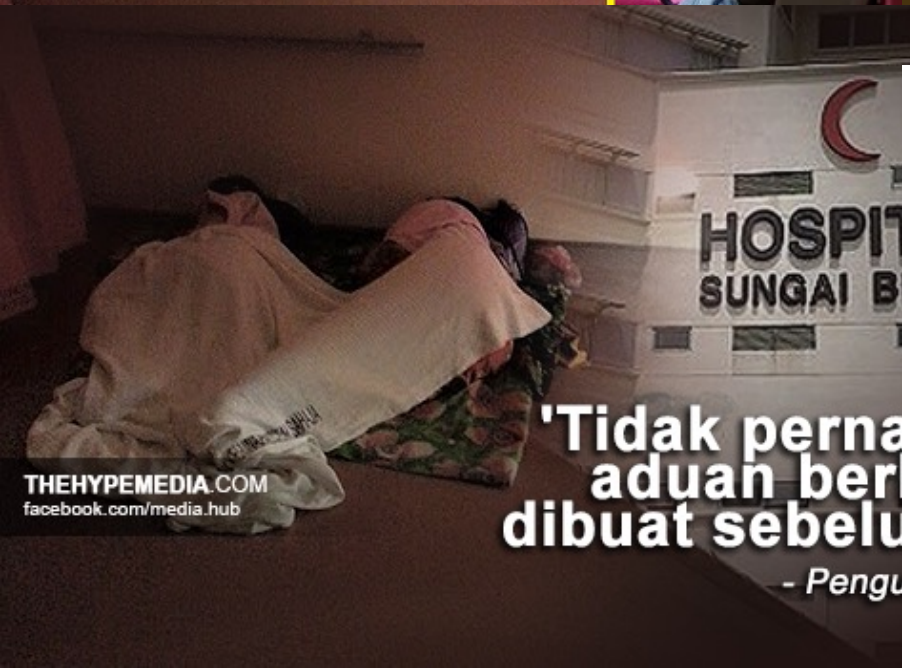
What We Offer and How We Response?

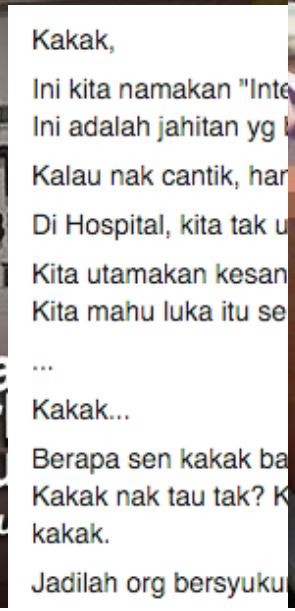
malaysiakini

BERITA

Hospital siasat dakwaan layan buruk pada ibu bersalin

Diterbitkan 22 Nov 2015, 4:47 petang | Dikemaskini 22 Nov 2015, 4:53 petang




Kakak,

Ini kita namakan "Inte
Ini adalah jahitan yg

Kalau nak cantik, har

Di Hospital, kita tak u

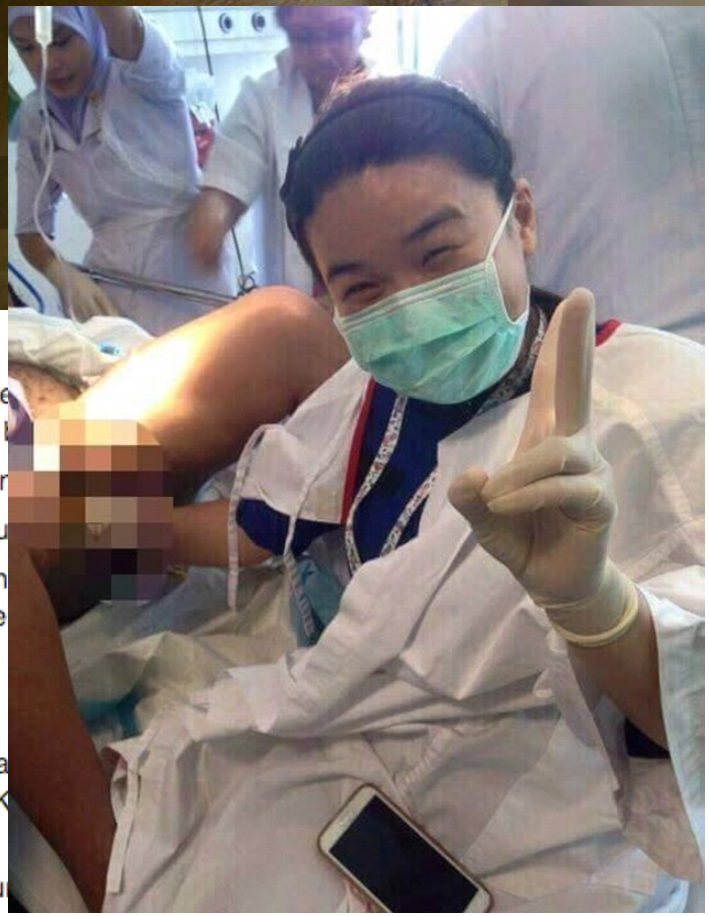
Kita utamakan kesan
Kita mahu luka itu se

...

Kakak...

Berapa sen kakak ba
Kakak nak tau tak? K
kakak.

Jadilah org bersyuku



No walking around just lie in bed – you need CTG !!

Women can push baby better in dorsal position. Nak menonggeng pulak!!

No eating No drinking
Hook to this drip!!

Let me confirm the VE findings
(Not for hourly but four VE in an-hour)

Labour Suite

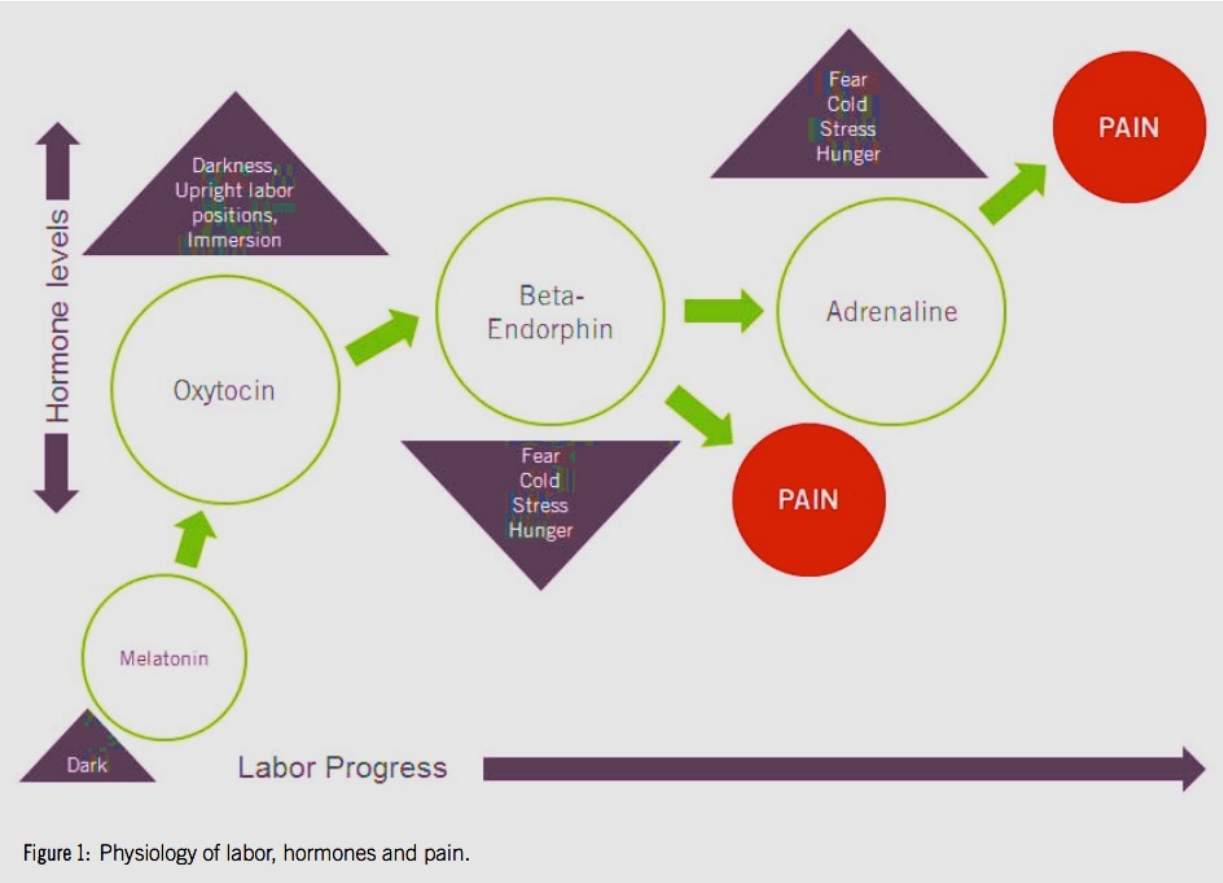


Figure 1: Physiology of labor, hormones and pain.

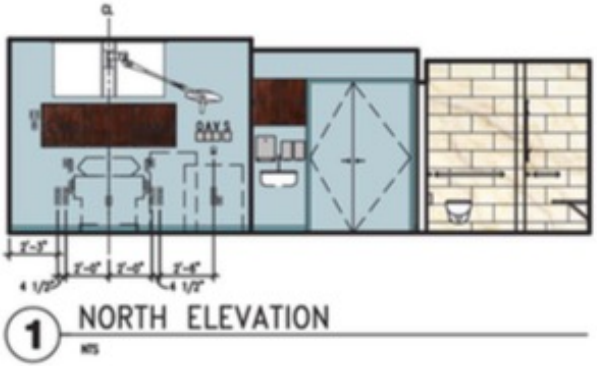
Perception of Pain
Oxytocin
Beta – endorphin
Adrenaline

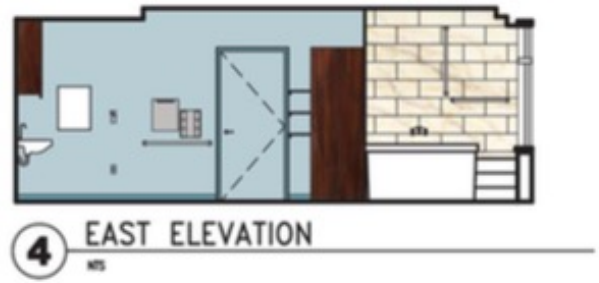
Depends on emotional state of labor
Relaxation is critical to control labour pain

Darkness – spurrs melatonin → oxytocin
Go into labour at night

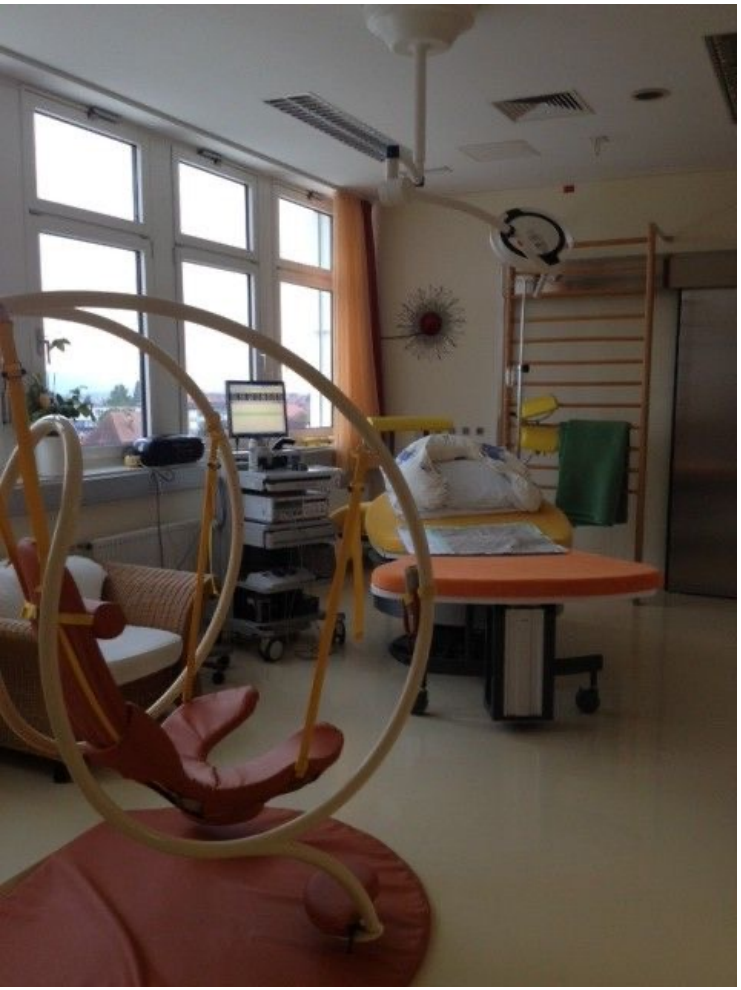
Labour Suite

Figure 4: Plan of a pair of model LDR rooms.





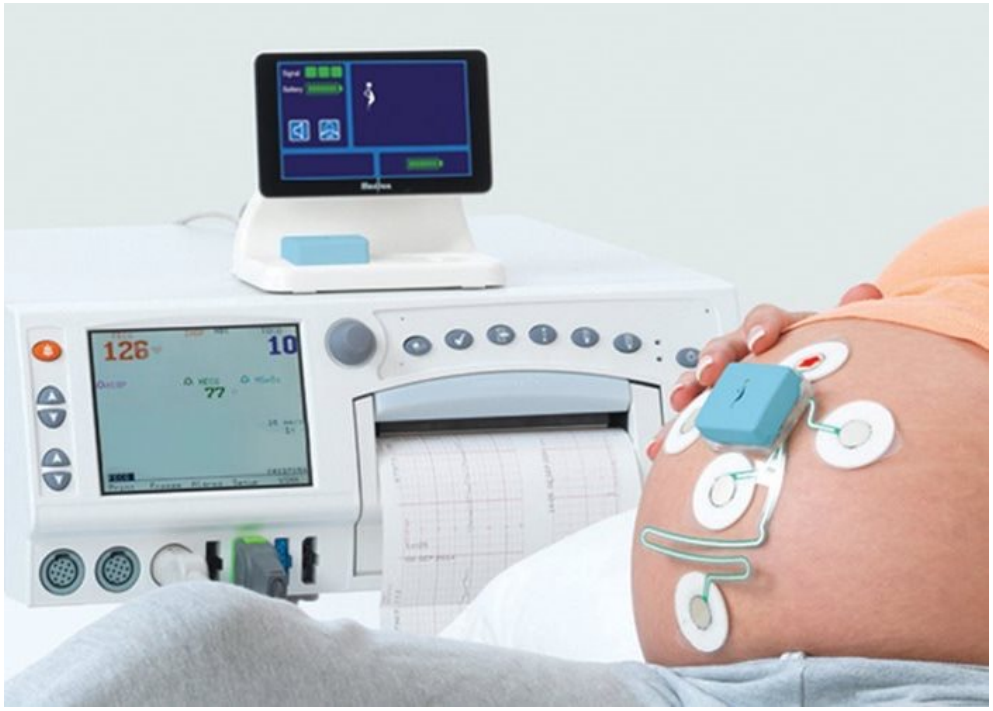
Labour Suite



Privacy
- The bed
- Access to immersion in water
- Shower and ensuite toilet
- Lighting
- Windows
- Noise
- Décor, furniture and equipment

- Ability and space to move around
- Inclusion of nature
- Ease of access
- Olfactory aspects
- Personal items
- Provisions for support people
- Cultural considerations.

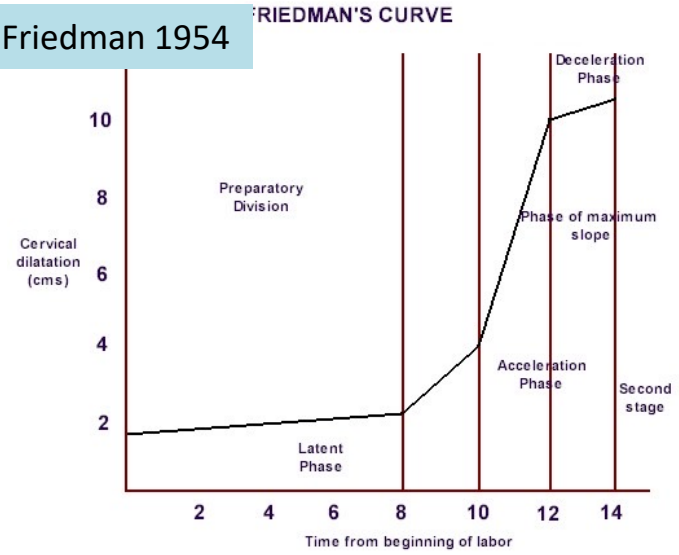
Less interference



Ample time of delivery!!

STAGES AND PROGRESS OF LABOR

Friedman 1954



Philpot and Castle 1972

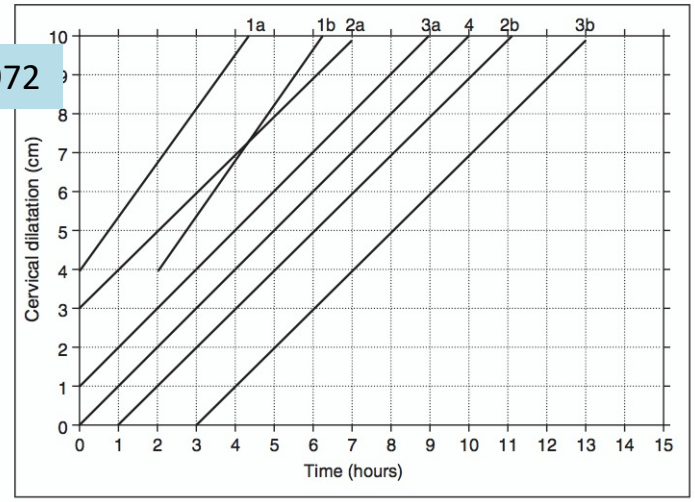
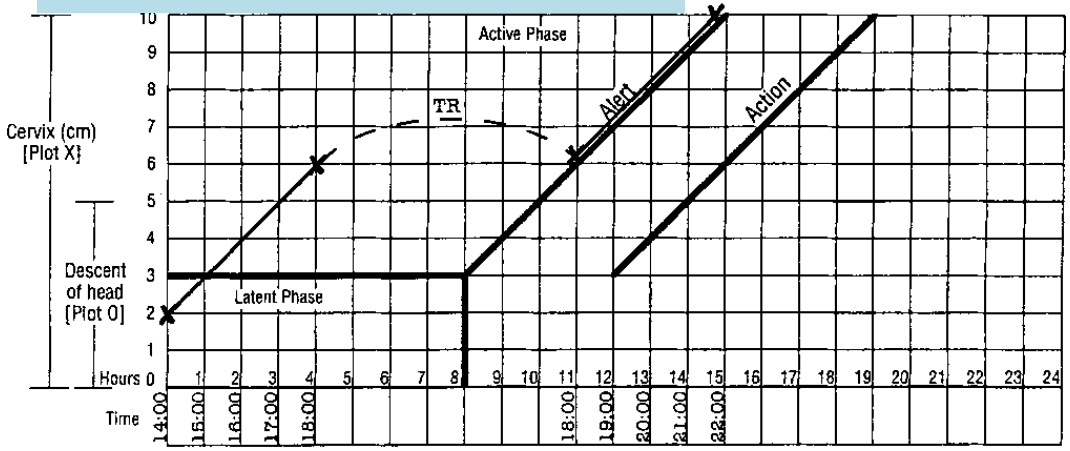
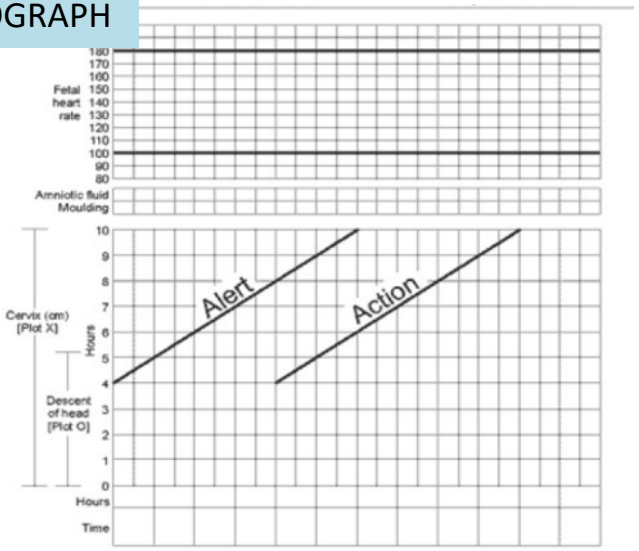


Fig. 1. Square grid partogram without latent phase. (1a = Webber's alert line, 1b = Webber's action line, 2a = Drouin's alert line, 2b = Drouin's action line, 3a = Philpott's alert line, 3b = Philpott's action line, 4 = O'Driscoll's alert line.)

WHO 1994 "COMPOSITE PARTOGRAPH'



WHO 2006 PARTOGRAPH



Prolonged Latent Phase

Cervix not fully effaced and not dilated beyond 4 cm after 8 hour of regular contractions

Most common in Primigravida → delay in chemical process which soften the cervix and allow effacement

Managment

- simple analgesia
- Encourage mobilization
- Reassurance
- ARM and oxytocin will cause poor progress later

Management

- simple analgesia
- Encourage mobilization
- Reassurance
- ARM and oxytocin will cause poor progress later

Primary Uterine Dysfunction

Poor progress in active phase < 1 cm / hr

Primigravida → dysfunctional uterine contraction

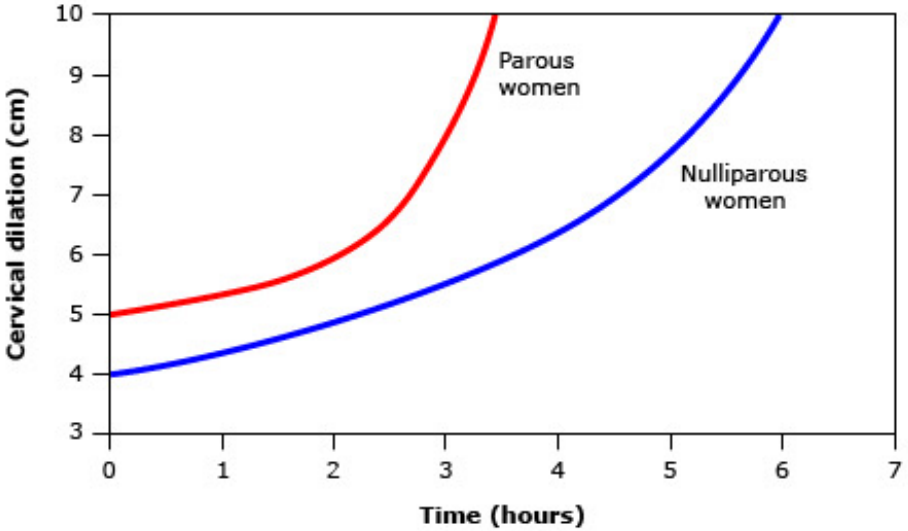
Multigravida → malpresentation, CPD

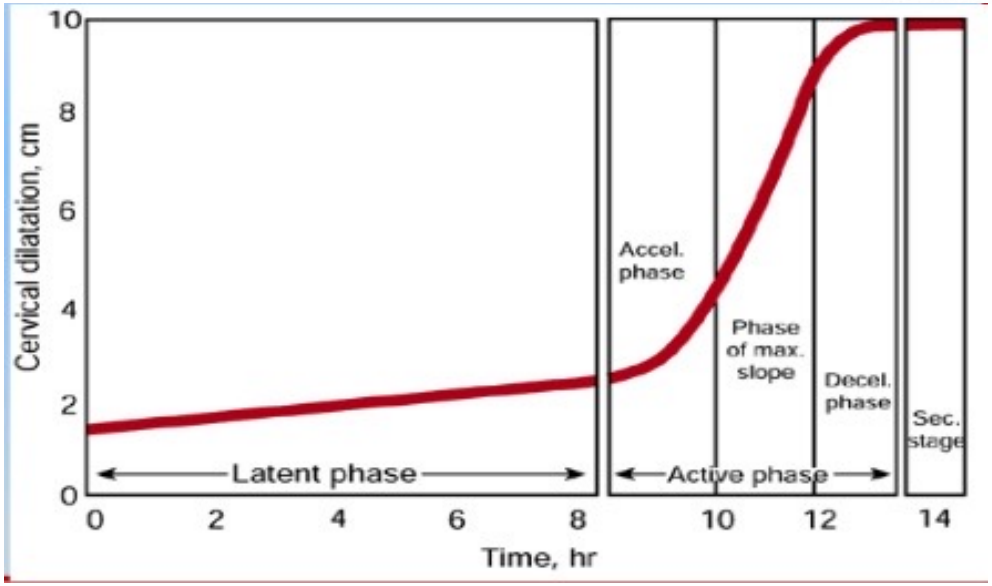
Management

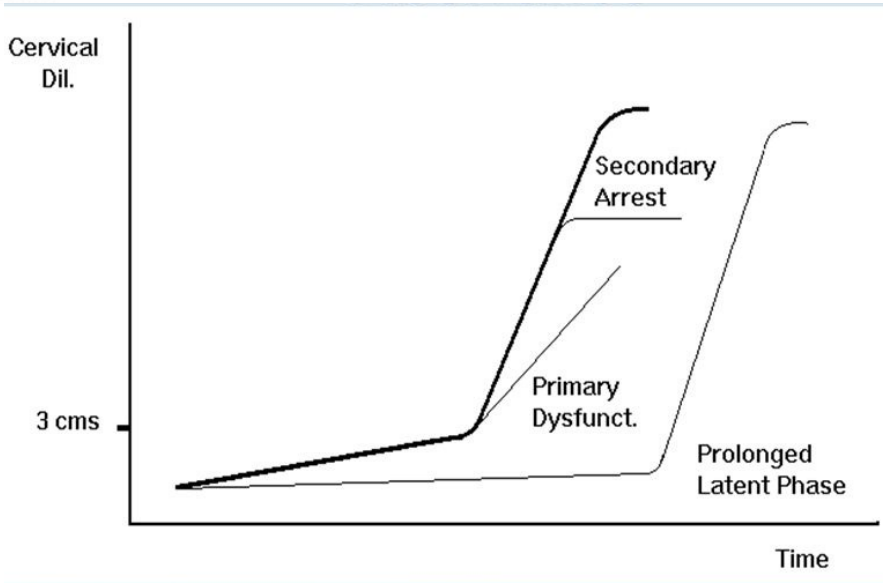
- ARM and oxytocin – primigravida
- Caesaream → multipara, CPD, fetal compromise, VBAC, breech

Stages and Phases of Labour

Zhang 2010

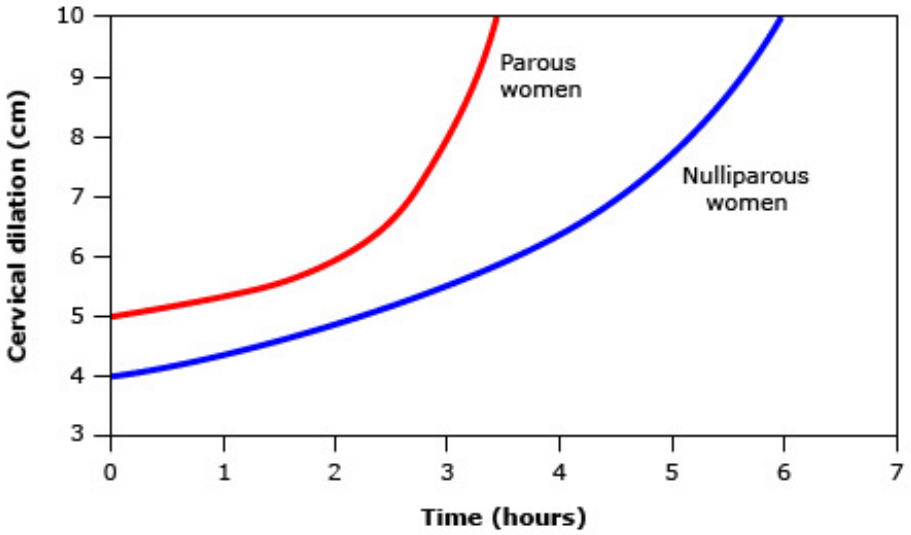






Stages and Phases of Labour

Restrospective cohort
62,415
Singletons, term, spontaneous, verted vaginal delivery & normaloutcome



Nulliparas & Multiparas progress at similar pace before 6 cm
From 4-5 cm → may take > 6 hours
From 5-6 cm → may take > 3 hours (95th percentile)

Redefining Active Labor
Upper limit of normal should be used in patient management

→ 6 cm rather than 4 cm dilation maybe more appropriate "start the clock" on the active phase of labor
→ If the progess is "within normal limits" labour should be allowed to continue
→ No change for 4 hours may be normal at early labour but is probably too long after 6 cm

Zhang 2010

Contemporary estimates of median and 95th percentile in hours by parity

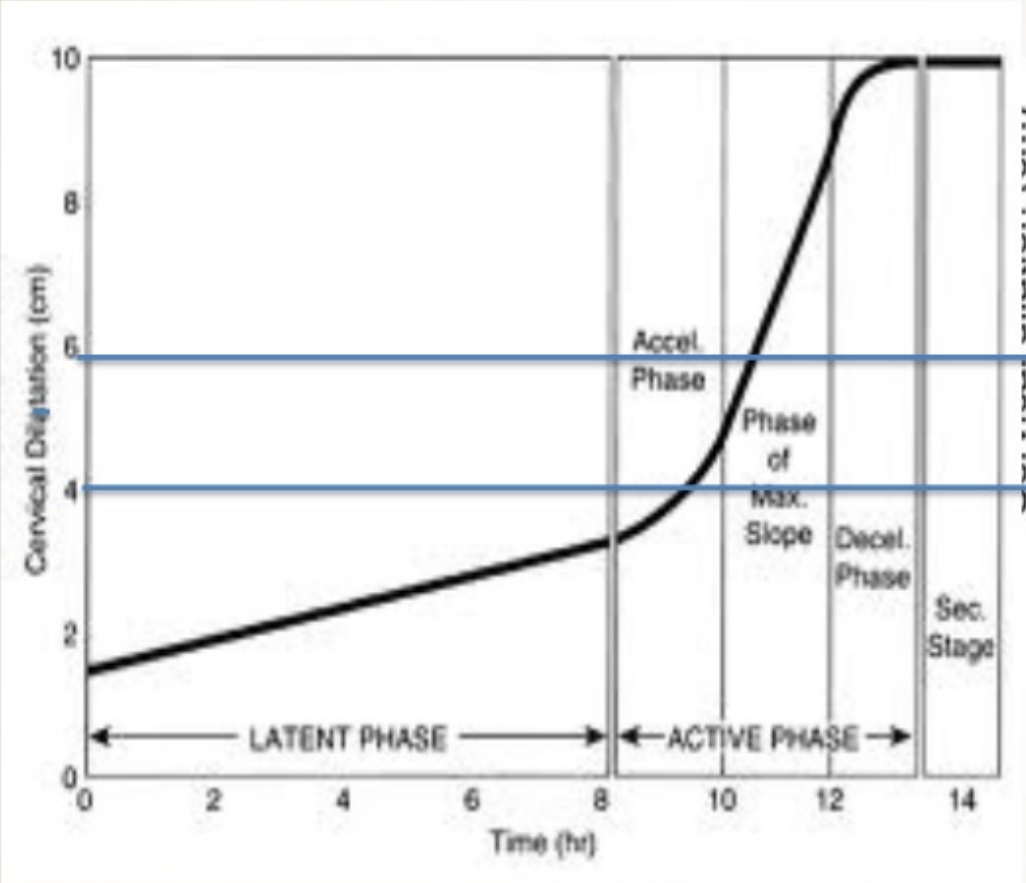
	Parity 0 Median number of hours (95th percentile)	Parity 1 Median number of hours (95th percentile)
Change in cervix		
From 4 cm to 5 cm	1.3 (6.4)	1.4 (7.3)
From 5 cm to 6 cm	0.8 (3.2)	0.8 (3.4)
From 6 cm to 7 cm	0.6 (2.2)	0.5 (1.9)
From 7 cm to 8 cm	0.5 (1.6)	0.4 (1.3)
From 8 cm to 9 cm	0.5 (1.4)	0.3 (1.0)
From 9 cm to 10 cm	0.5 (1.8)	0.3 (0.9)
Duration of second stage		
Second stage with epidural analgesia	1.1 (3.6)	0.4 (2.0)
Second stage without epidural analgesia	0.6 (2.8)	0.2 (1.3)

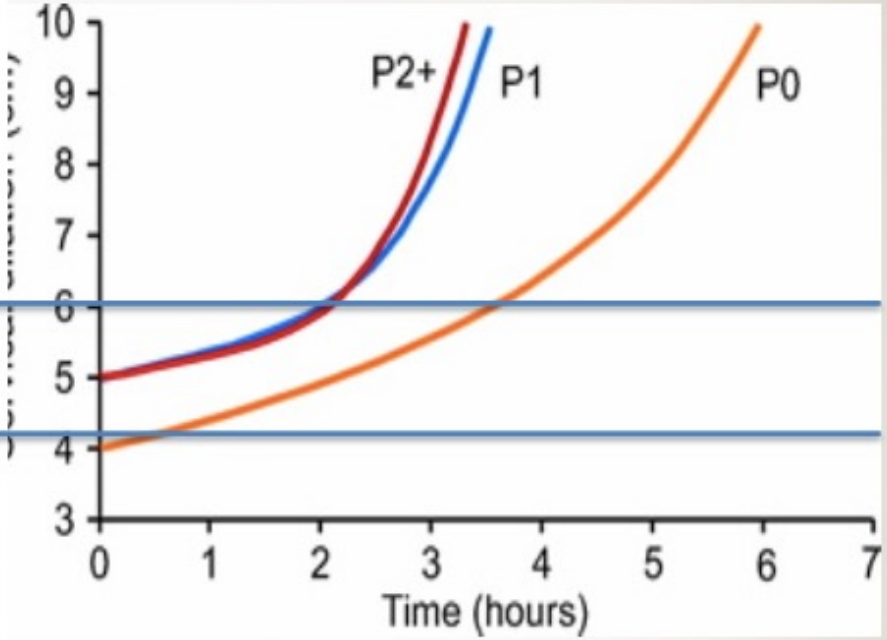
Note the 95th percentile for duration of time to dilate from 4 to 6 cm is almost 10 hours in nulliparous women.

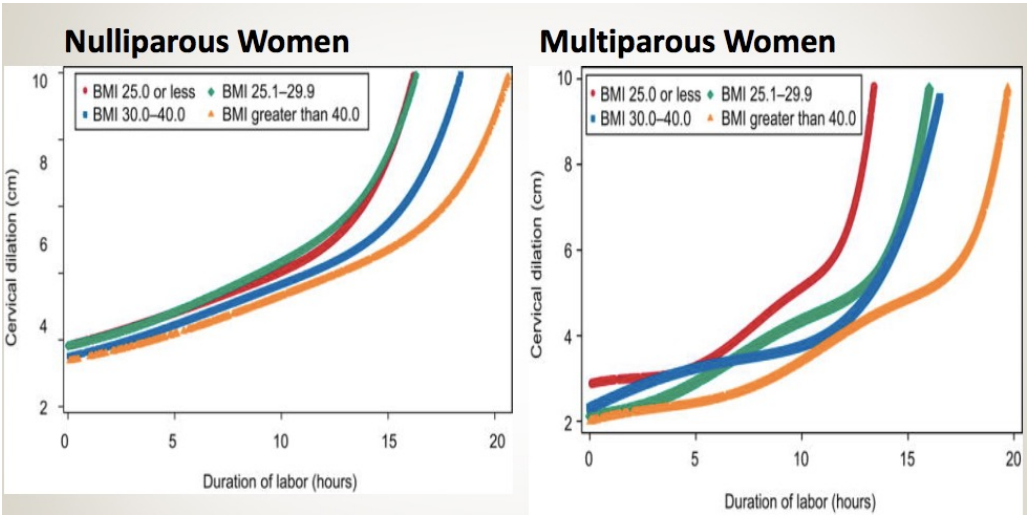
Data from: Zhang J, Landy HJ, Branch DW, et al. Contemporary patterns of spontaneous labor with normal neonatal outcomes. Obstet Gynecol 2010; 116:1281.

Graphic 69170 Version 14.0

Six is the new four



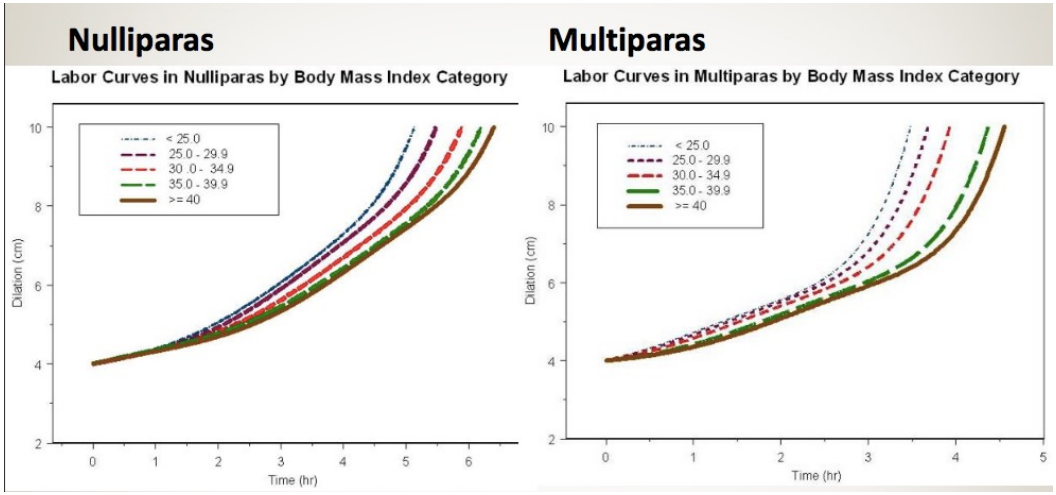




Effects of BMI

Retrospective cohort
5,204 singleton
BMI effects more at first stage

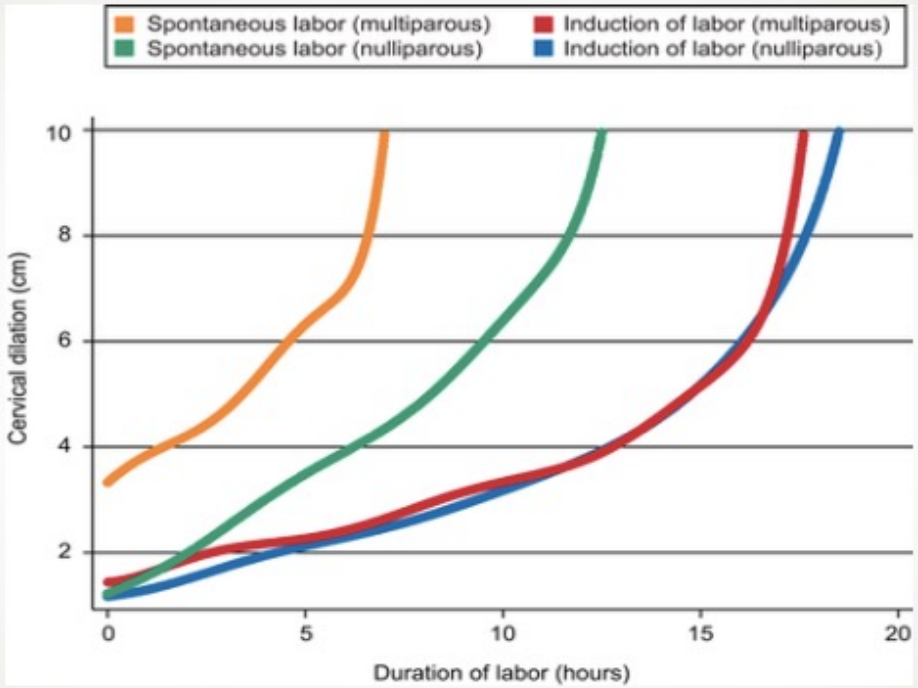
Norman, 2012



Retrospective cohort
118, 978 enter active labour at 6 cm
Labour proceeds more slowly as BMI increases
Need to allow more time during labour management

Kominiarek, AJOG 2011

- Success of IOL in nullips:
  - Indicated IOL had lowest VD rate (62.8% preterm/63.7% term)
  - Elective IOL VD rate (76.2% term) (yes, there were preterm…)
- Success of IOL in multips:
  - Indicated IOL VD rate (80.3% preterm/85.5% term)
  - Elective IOL VD rate (97% term)



Harper et al. *Normal Progress of Induced Labor*

Effects of Induction of Labour

Retrospective cohort
208,695, induction of labour
Success rate depends on maturity

Laughon, AJOG 2012

5388 ;
2021 spontaneous
1720 augmented
1647 induced

Harper, Obstet Gynecol, 2012

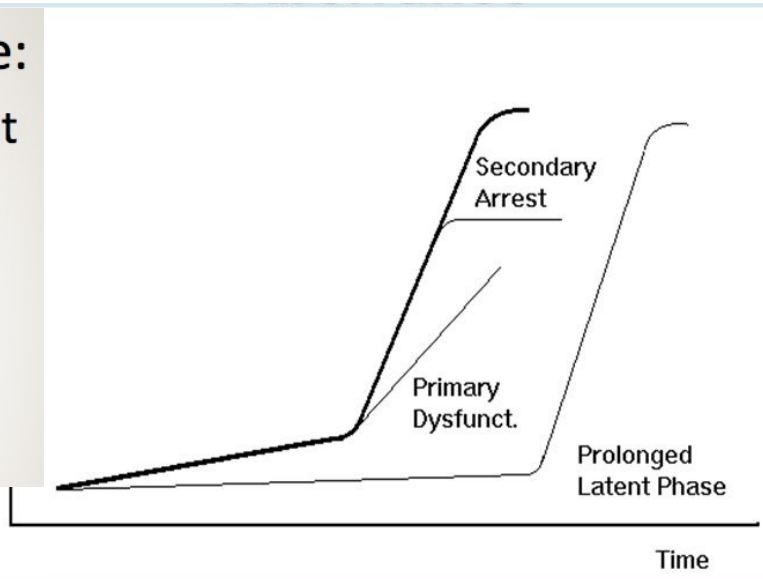
- Both multiparous & primiparous women spent much longer times (> 17hrs) during induced labor after 4cm of dilation.
- Prior to 6cm, each centimeter of dilation may take up to 10 hours .
- After 6cm, each centimeter of dilation generally takes 1-2 hours.
- **Rethink the diagnosis of arrest of labor prior to 6cm dilation in induced labor**

Evidence?

- ✓ Contemporary studies suggest that active phase of labour does not begin until 6 cm dilation. Diagnosing arrest at 4 hours without cervical change prior to 6 cm may be premature.
- ✓ After 6 cm, waiting 4 hours or more to diagnose arrest is probably too long.
- ✓ BMI slows progress in the first stage of labour and should be considered prior to diagnose an arrest.
- ✓ Avoid elective inductions in nullipara especially with an unripe cervix.

Redefine Arrest of of Labour

- Redefining Arrest of Labor in the Active Phase:
  - Reserved for those patients who have achieved at least 6cm dilation with membrane rupture and failed to demonstrate cervical change over 4 or more hours of adequate (> 200 MVUs) contractions or 6 or more hours of inadequate contractions.



- Redefining Second Stage Arrest:
  - Reserved for patients in the second stage who have failed to demonstrate fetal descent or rotation for:
    - >/= 4 hours in a nullipara **with** an epidural
    - >/= 3 hours in a nullipara **without** an epidural
    - >/= 3 hours in a multipara **with** an epidural
    - >/= 2 hours in a multipara without an epidural

Birthing Position

Modern - Lithotomy

First Stage

Kneeling with Birthing Ball

Leaning Forward

Swaying

Lunging

Rocking

On Hands and Knees

Sitting With One Foot Up

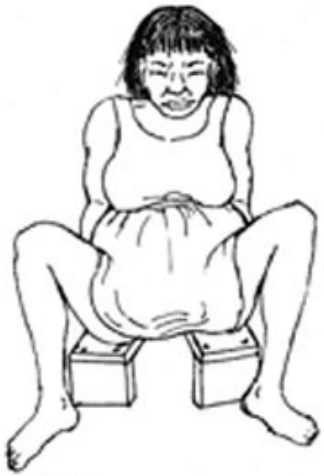
Squatting

Lying on side

Upright

- Partial Sitting / Half-lying
- Sitting
- Kneeling
- Squatting

Squatting

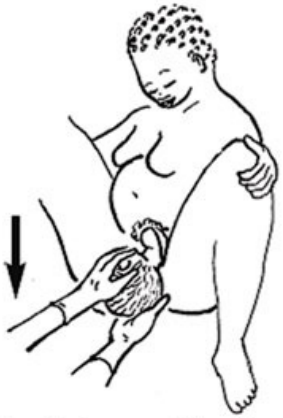


Sitting on a support

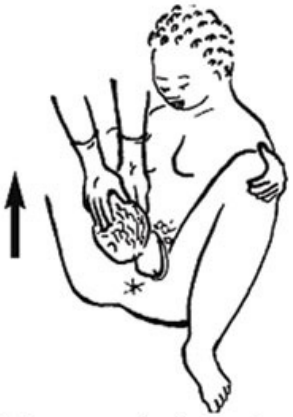
These two positions can help bring the baby down when the birth is slow.

Second Stage

If the mother is in the half-sitting position:



1. Bring out the first shoulder by moving the baby's head downward.



2. Bring out the baby's second shoulder by moving the baby's head up towards the mother's belly.

- **gravity**
- **decreased compression on blood vessels**
- **improve strength and efficiency of contractions**
- **improve alignment of baby**
- **increased width of pelvic outlet**

Side-lying

This position is relaxing and helps prevent tears to the vagina or perineum.

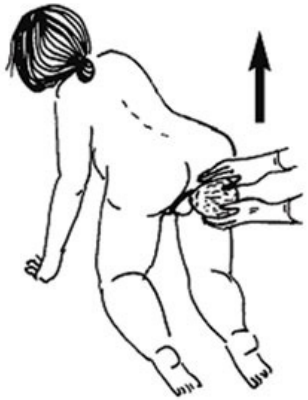
Non- Upright

- Lying on the side
- Four-point kneeling

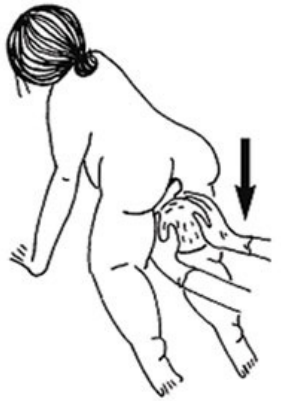
Second Stage

This position is good when the woman feels her labout in her back. It can also help when the baby's shoulders get stuck.

If the mother is kneeling:



1. Bring out the first shoulder by gently moving the baby's head upward towards the mother's bottom.



2. Bring out the second shoulder by moving the baby's head downward towards the floor.

- Upright positions and walking are associated with **a reduction in the length of the first stage of labour**
- Women randomised to upright positions may be **less likely to have** epidural analgesia, but there was little evidence of differences for other maternal and infant outcomes.
- Despite the limited evidence from trials included in the review, observational studies **suggest that maintaining a supine position in labour may have adverse physiological** effects on the woman and her baby
- Therefore, women should **be encouraged to take up whatever position** they find most comfortable while avoiding spending long periods supine.
- Women's preferences may change during labour. Many women may choose an upright or ambulant position in early first stage labour and choose to lie down as their labour progresses.

Cochrane 2014

Women with Epidural, there is no strong evidence it will enhance delivery**, women with epidural should be encouraged to use whatever position they find comfortable** in the second stage of labour

Cochrane 2017

Elvander et al. BMC Pregnancy and Childbirth (2015) 15:252
DOI 10.1186/s12884-015-0689-7

BMC
Pregnancy & Childbirth

RESEARCH ARTICLE Open Access

Birth
injur
spor

Charlotte

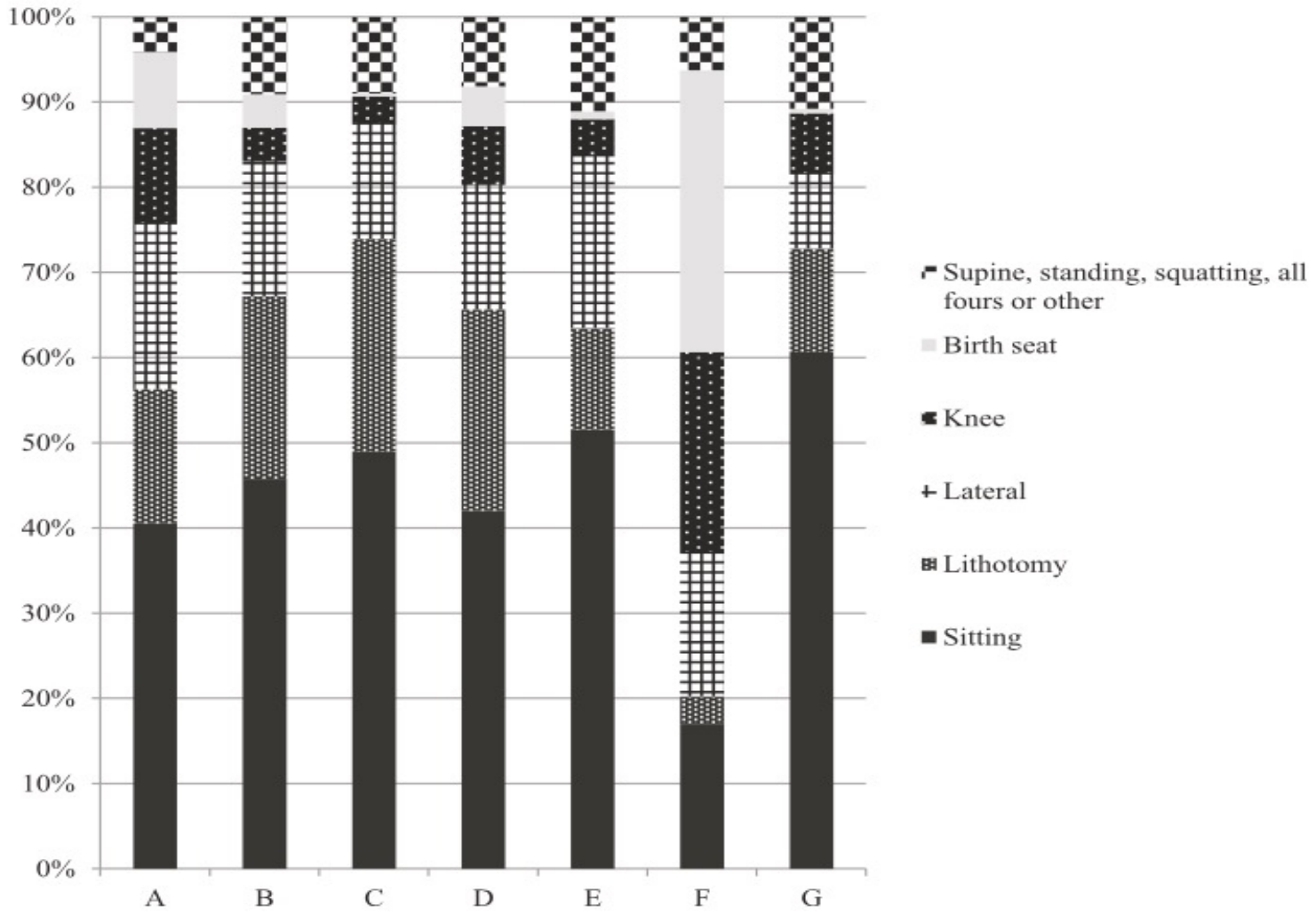


Fig. 2 Rates (%) of birth positions used in relation to in-hospital birth unit (**a**-**g**)

Elvander et al. BMC Pregnancy and Childbirth (2015) 15:252
DOI 10.1186/s12884-015-0689-7

BMC Pregnancy & Childbirth

RESEARCH ARTICLE Open Access

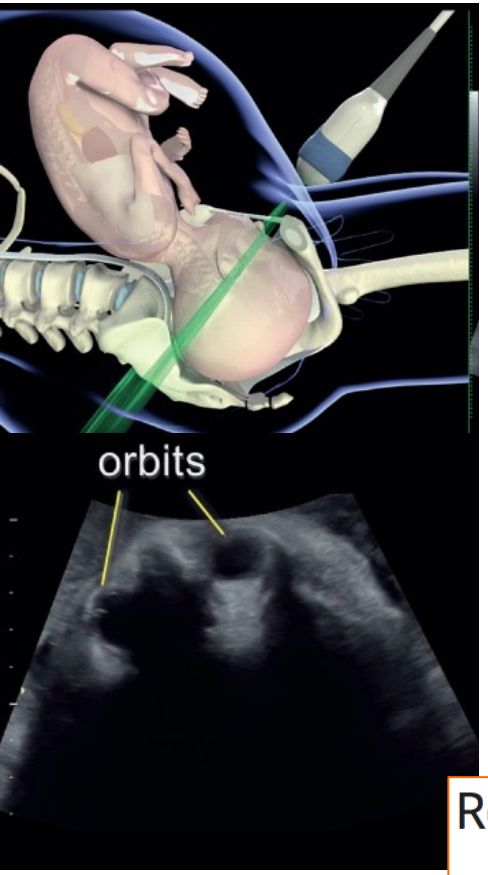
Birth position and obstetric anal sphincter injury: a population-based study of 113 000 spontaneous births

Charlotte Elvander[1], Mia Ahlberg[1], Li Thies-Lagergren[2*], Sven Cnattingius[1] and Olof Stephansson[1]

Table 3 Unadjusted and adjusted risk ratios and 95 % CI for OASIS among nulliparous and parous

	Nulliparous ($n = 44\ 942$)		Parous ($n = 65\ 486$)	
	Unadjusted risk ratio 95 % CI	Adjusted risk ratio* 95 % CI	Unadjusted risk ratio 95 % CI	Adjusted risk ratio* 95 % CI
Total				
Sitting	1.00	1.00	1.00	1.00
Lithotomy	1.33 (1.21-1.46)	1.17 (1.06-1.29)	2.19 (1.83-2.62)	1.66 (1.35-2.05)
Lateral	0.79 (0.69-0.91)	0.79 (0.68-0.92)	0.82 (0.67-1.01)	0.84 (0.66-1.06)
Knee	0.88 (0.73-1.06)	0.88 (0.71-1.09)	0.78 (0.60-1.00)	0.81 (0.58-1.11)
Birth seat	1.05 (0.92-1.21)	1.05 (0.90-1.22)	1.37 (1.07-1.74)	1.36 (1.03-1.80)
Supine	0.89 (0.68-1.16)	0.91 (0.67-1.22)	0.84 (0.60-1.18)	0.84 (0.55-1.30)
Squatting	0.81 (0.49-1.36)	0.66 (0.36-1.24)	1.79 (0.95-3.35)	2.16 (1.15-4.07)
Standing	0.69 (0.36-1.33)	0.71 (0.34-1.49)	0.49 (0.20-1.18)	0.40 (0.10-1.61)
All four	1.03 (0.59-1.78)	1.12 (0.62-2.05)	1.18 (0.53-2.64)	0.95 (0.30-2.96)

- Compared with sitting position, lateral position has a slightly protective effect in nulliparous whilst an increased risk is noted among women in the lithotomy position, irrespective of parity.
- Births in the lithotomy position were accompanied by other risk factors for OASIS which partly explained the elevated risk.
- Squatting and birth seat position involved an increase in risk among parous women.



OccipitoPosterior

ORIGINAL ARTICLE

Efficiency of the modified Sims maternal position in the rotation of persistent occiput posterior position during labor: A randomized clinical trial

Vanessa Bueno-Lopez RNM, MSc, PhD ✉, Carmen Fuentelsaz-Gallego RN, MSc, PhD, Manel Casellas-Caro MD, PhD, Ana Maria Falgueras-Serrano RNM, MSc, Silvia Crespo-Berros RNM, Ana Maria Silvano-Cocinero RNM, Carolina Alcaine-Guisado RNM, Manuela Zamoro Fuentes RNM, Elena Carreras MD, PhD, Carmen Terré-Rull RNM, MSc, PhD

First published: 14 March 2018
https://doi.org/10.1111/birt.12347

Results

In pregnant women undergoing labor in the Sims position, fetuses in POP rotated to occiput anterior in 50.8% of cases, whilst in the free position group, the rotation occurred in 21.7% (*P* = .001). The rate of vaginal deliveries was higher in the Sims group compared with the free position group (84.7% vs 68.3%, *P* = .035).

Discussion

The modified Sims position is a maternal posture intervention efficient in POP rotation, which decreases cesarean delivery rate. It is a simple and noninvasive intervention, reproducible, and well tolerated by pregnant women.

Research Article

Women's Choice of Positions during Labour: Return to the Past or a Modern Way to Give Birth? A Cohort Study in Italy

Salvatore Gizzo,[1,2] Stefania Di Gangi,[1] Marco Noventa,[1] Veronica Bacile,[1] Alessandra Zambon,[1] and Giovanni Battista Nardelli[1]

[1] *Department of Woman and Child Health, University of Padua, 3 Giustiniani Street, 35128 Padua, Italy*
[2] *Dipartimento di Salute della Donna e del Bambino, U.O.C. di Ginecologia e Ostetricia, Via Giustiniani 3, 35128 P*

Correspondence should be addressed to Stefania Di Gangi; stefaniadig@yahoo.it

Received 24 February 2014; Revised 3 April 2014; Accepted 29 April 2014; Published 15 May 2014

Group A

Maternal positions were considered as follows.

(i) Recumbent position: the pregnant is lying on her back, above the bed at an angle up to 45 degrees, or on her side preferring that one on which the fetal back and the occiput are located. A pillow between the legs (extended or flexed) was allowed.

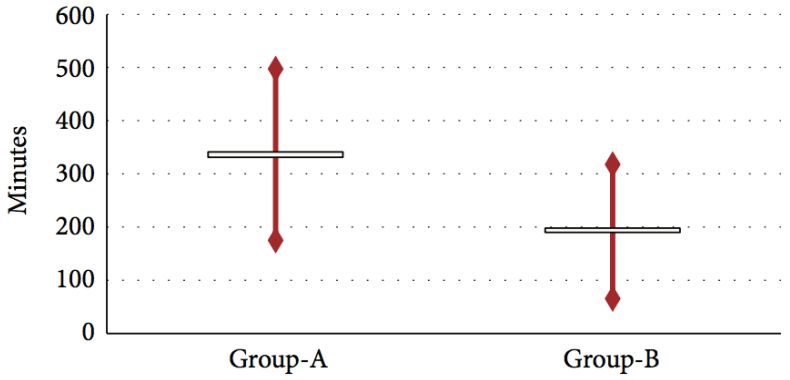
Group B

(ii) Upright position: the woman is in an upright position standing by herself or against to a support (bed, chair, or partner).

(iii) Squatting position: the patient crouches during contraction and then recuperates during relaxation.

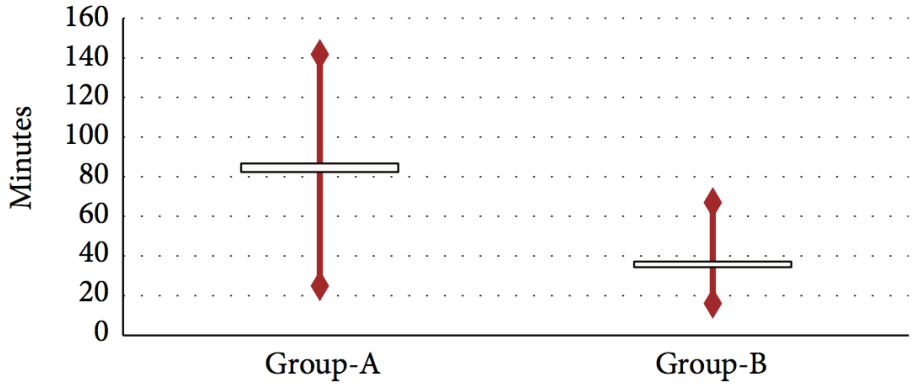
(iv) Sitting position: the pregnant is sitting on a bed, on a chair, or on a ball.

(v) Position "on all fours": the pregnant is kneeling and bent forward in order to support her weight with arms.



Group-A (336.1 ± 161.1)
Group-B (192.1 ± 125.8)

FIGURE 1: Comparison between the groups (Group-A versus Group-B) in terms of length of first stage of labour.



Group-A (84.4 ± 57.8)
Group-B (34.4 ± 32.6)

FIGURE 2: Comparison between the groups (Group-A versus Group-B) in terms of length of second stage of labour.

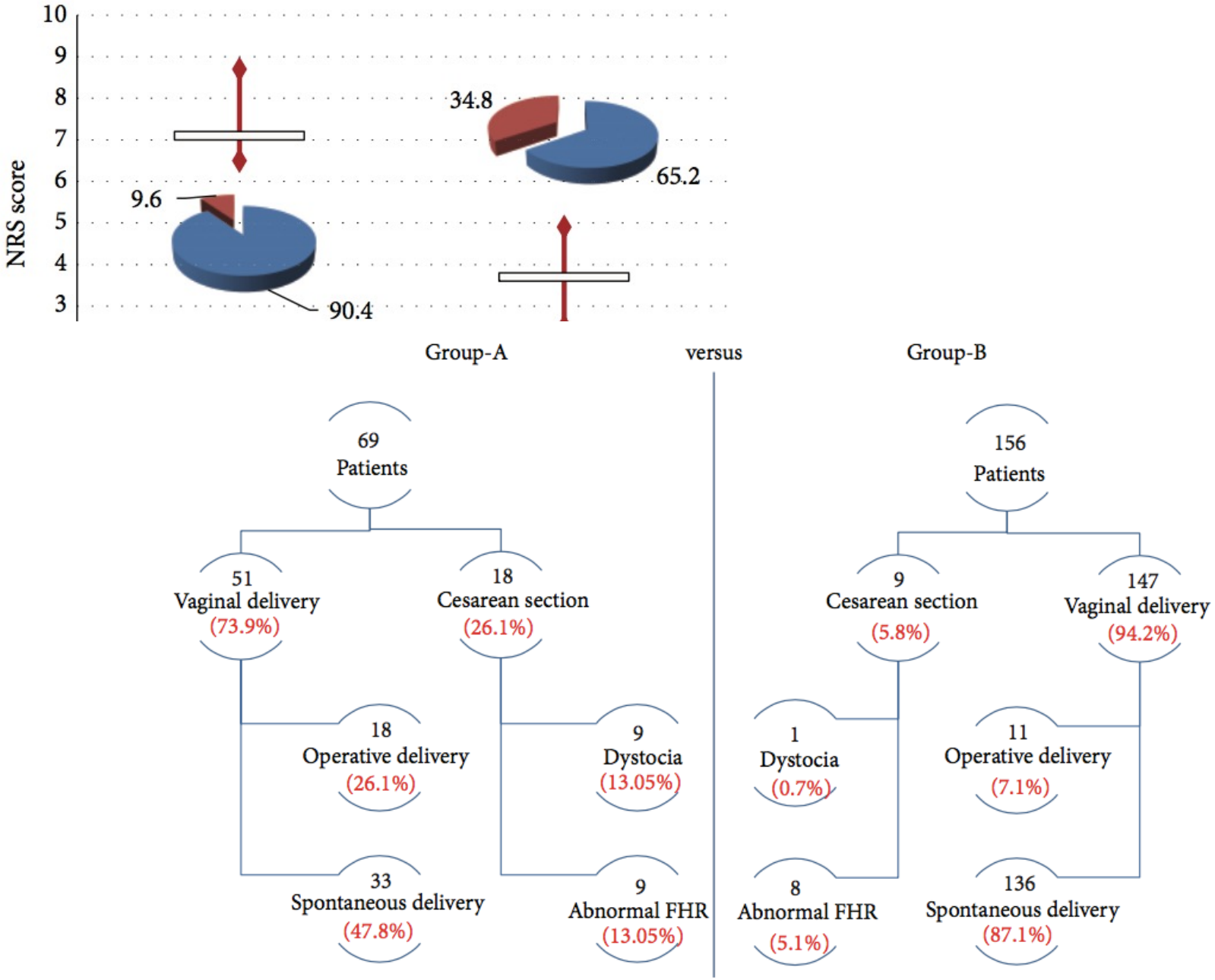
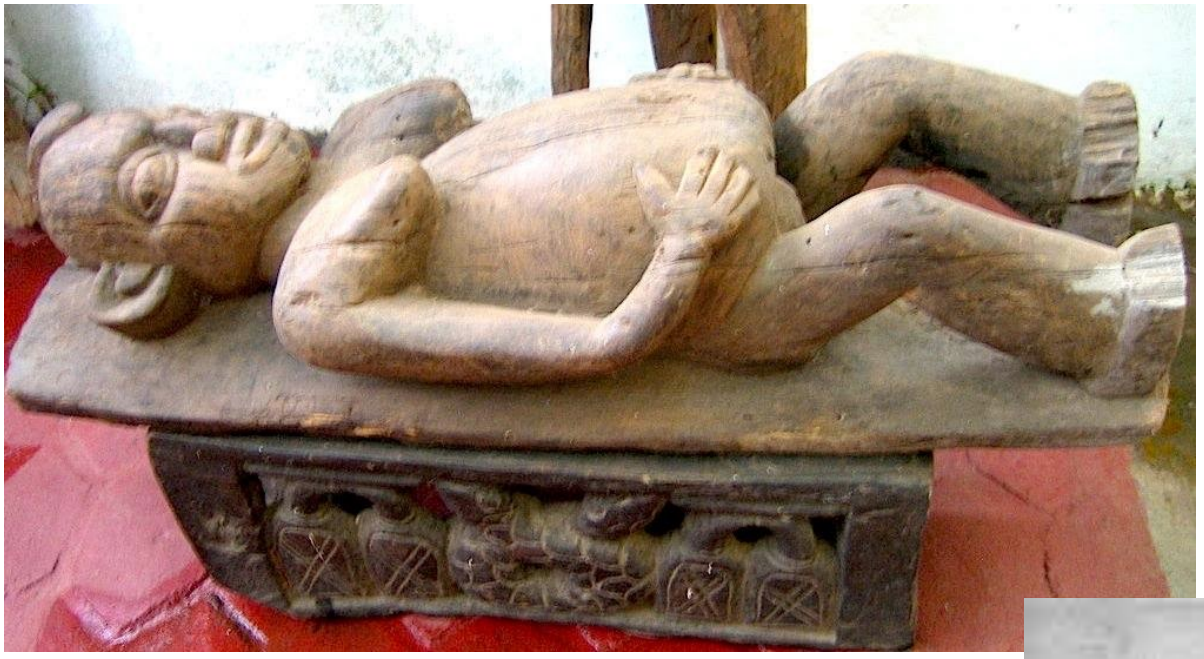


FIGURE 4: Flow diagram reporting type of delivery and indication of intrapartum caesarean section (comparison between the groups: Group-A versus Group-B).

Lying



Reclining


position que conseille le docteur Gaillard Thomas, de New-York,
Wellcome Images

Semi- Reclined

Upright- Sitting

Hand - Knees

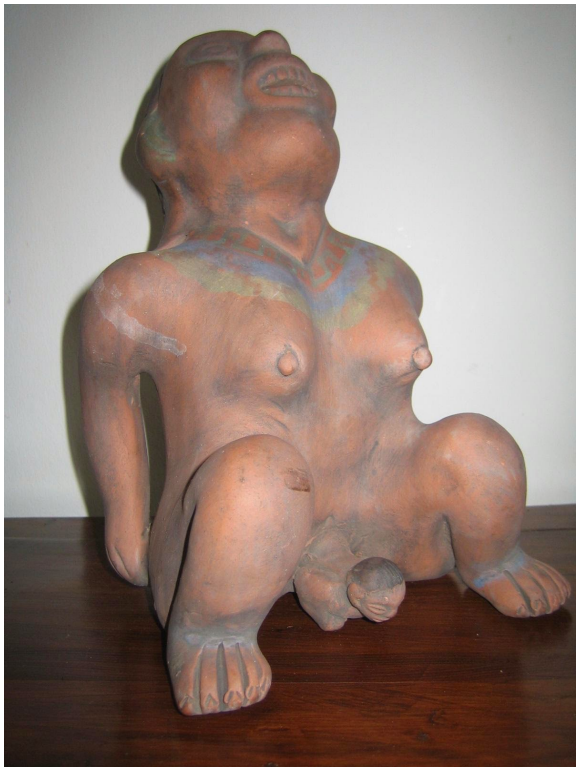
Fig. 12. Obstetric Position of the Persians. — From Ploss (after Pollak and Haentsche).

Kneeling

Supported Squatting

Birthing Stool

Arched Back



Counter-Force

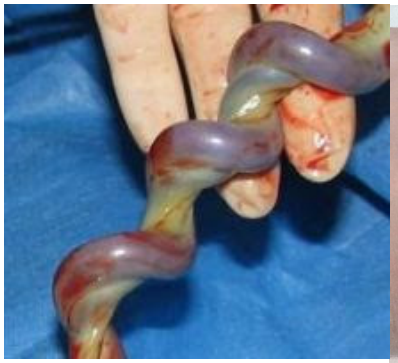
Gustave Witkowski, Pioneer Birth Scene, 1877

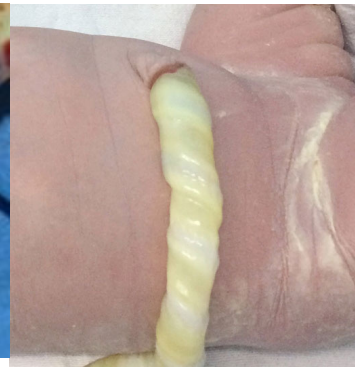
CHILDBIRTH
IN STANDING POSITION

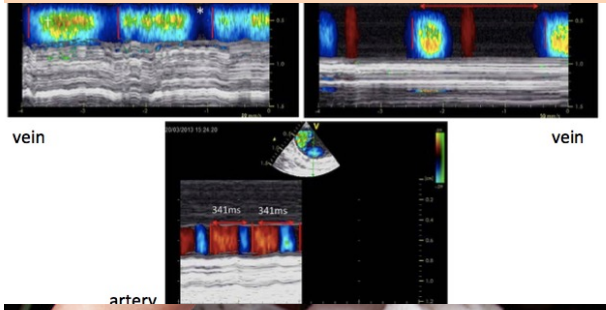
AN 8th CENTURY CHOLA SCULPTURE AT
IRAVATHEESWARAR TEMPLE DARASURAM

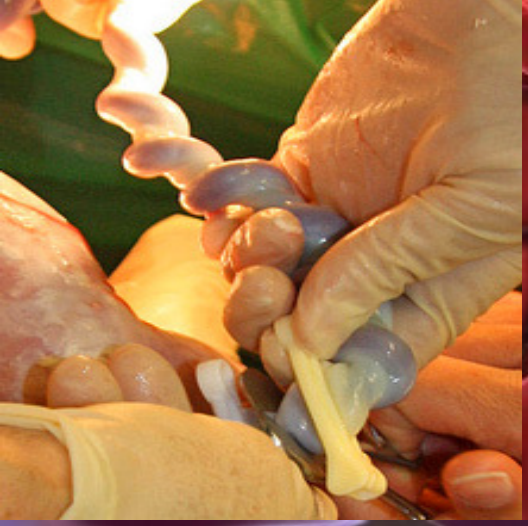
ICC vs DCC v

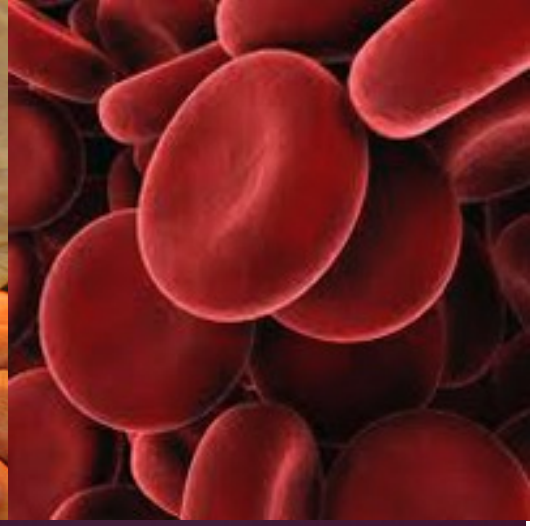
Immediate Cord Clamping (ICC)
Vs
Delayed Cord Clamping (DCC)
Vs
Intact-Umbilical Cord Milking (I-UCM)
Vs
Cut-Umbilical Cord Milking (C-UCM)

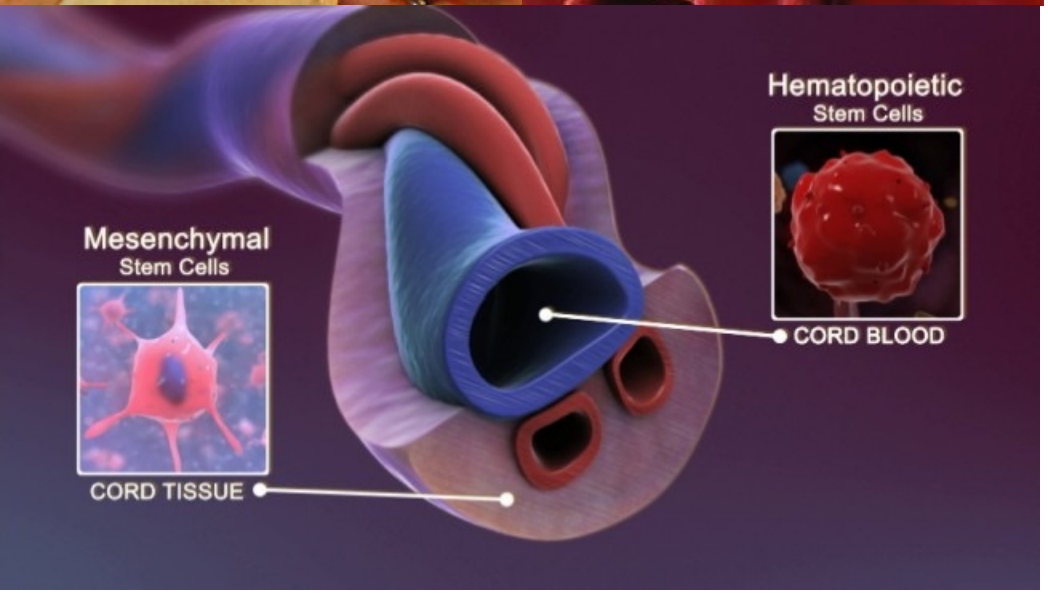


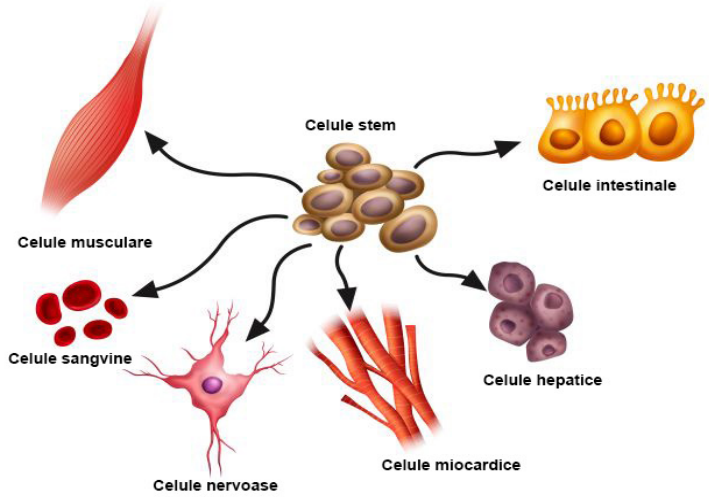












Red blood cells

15ml/kg RBC's

iron : 30 to 75 mg (enough for 3 – 6 months need)

Stem Cells

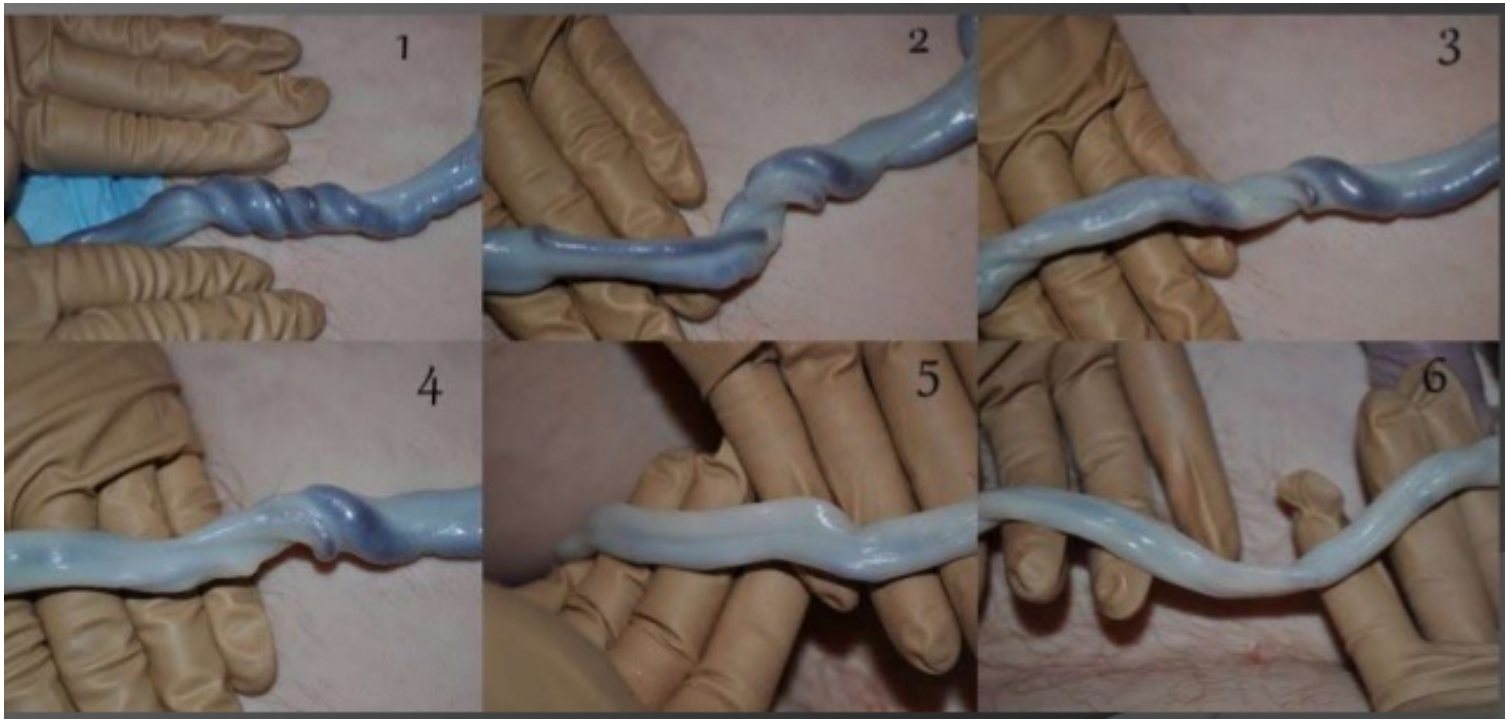
several million to 1 billion SCs and cytokines to direct them

→ Acute benefit for newborn related diseases

→ Long term benefit age-related diseases

Plasma / cells for volume expansion

Cord Clamping



ICC – 30 % of feto-placental blood volume remaining in the placenta

DCC reduces residual placental blood to 20 % of the feto-placental blood volume by 60s and 13% by 3-5 min

Delayed Cord Clamping

"In the time of Hippocrates the cord was not cut until the placenta was delivered....Since the time of Levret it has been established as a general rule, among accoucheurs, to separate the child from the mother as soon as it has passed through the vulva, and that it is never necessary to wait for the expulsion of the foetal appendages. At first view the conduct of the ancients appears to be more rational and more physiological than that of the moderns; it seems that the placenta ought immediately to follow the foetus, or at least be separated from the uterus before the cord can be prudently cut; that before it is divided, the circulation ought to be permitted gradually to take on its new type, which soon becomes similar to that of the adult; but in reality it is not perceived that the present mode of practice produces the least inconvenience to the foetus, and is certainly better for the mother." [1]

– Prof. A.A. Velpeau, 1829 [1]

Umbilical Cord Milking

"In the time of Aristotle the midwives were in the habit of forcing the blood contained in the cord into the belly of the fcetus before they tied it, and pretended by means of this practice, which has been revived at the commencement of the present century, to restore strength and vigour to feeble children." [5]

“Modern” Labour Management

Resisting change

فَحَمَلَتْهُ فَٱنتَبَذَتْ بِهِۦ مَكَانًا قَصِيًّا ﴿٢٢﴾

So she conceived him, and she retired with him to a remote place.

فَأَجَآءَهَا ٱلْمَخَاضُ إِلَىٰ جِذْعِ ٱلنَّخْلَةِ قَالَتْ يَٰلَيْتَنِى مِتُّ قَبْلَ هَٰذَا
وَكُنتُ نَسْيًا مَّنسِيًّا ﴿٢٣﴾

And the pains of childbirth drove her to the trunk of a palm-tree: She cried (in her anguish): "Ah! would that I had died before this! would that I had been a thing forgotten and out of sight!"

فَنَادَىٰهَا مِن تَحْتِهَآ أَلَّا تَحْزَنِى قَدْ جَعَلَ رَبُّكِ تَحْتَكِ سَرِيًّا ﴿٢٤﴾

But (a voice) cried to her from beneath the (palm-tree): "Grieve not! for thy Lord hath provided a rivulet beneath thee;

وَهُزِّىٓ إِلَيْكِ بِجِذْعِ ٱلنَّخْلَةِ تُسَٰقِطْ عَلَيْكِ رُطَبًا جَنِيًّا ﴿٢٥﴾

And shake towards thyself the trunk of the palm-tree: It will let fall fresh ripe dates upon thee.

فَكُلِى وَٱشْرَبِى وَقَرِّى عَيْنًا ۖ فَإِمَّا تَرَيِٰنَّ مِنَ ٱلْبَشَرِ أَحَدًا فَقُولِىٓ إِنِّى
نَذَرْتُ لِلرَّحْمَٰنِ صَوْمًا فَلَنْ أُكَلِّمَ ٱلْيَوْمَ إِنسِيًّا ﴿٢٦﴾

So eat and drink and cool (thine) eye. And if thou dost see any man, say, 'I have vowed a fast to (Allah) Most Gracious, and this day will I enter into not talk with any human being'

Thank you!

- **23.Maka rasa sakit akan melahirkan anak memaksa ia (bersandar) pada pangkal pohon kurma, dia berkata: `Aduhai, alangkah baiknya aku mati sebelum ini, dan aku menjadi barang yang tidak berarti, lagi dilupakan`. (QS; 19:23**

- **24. Maka Jibril menyerunya dari tempat yang rendah: `Janganlah kamu bersedih hati, sesungguhnya Tuhanmu telah menjadikan anak sungai di bawahmu.**(QS. 19:24)

- **25. Dan goyanglah pangkal pohon kurma itu ke arahmu, niscaya pohon itu akan menggugurkan buah kurma yang masak kepadamu,**(QS. 19:25)

- **26. maka makan, minum dan bersenang hatilah kamu. Jika kamu melihat seorang manusia, maka katakanlah:` Sesungguhnya aku telah bernazar berpuasa untuk Tuhan Yang Maha Pemurah, maka aku tidak akan berbicara dengan seorang manusiapun pada hari ini.`**(QS. 19:26)

Eat and Drink During Labour

Study	Randomization	Outcomes	Notes
Tranmer, Hodnett et al. 2005	• Counseled during prenatal visits to eat and drink freely (163) — versus — • Ice chips and sips	No differences in labor duration, augmentations, Cesareans, operative vaginal deliveries, or any other outcome assessed	
Kubli, Scrutton et al. 2002			
Scheepers, Thans et al. 2002			
O'Sullivan, Liu et al. 2009	• Specific foods/fluid (1219) — versus — • Water only (1207)	No differences in Cesareans, labor duration, operative vaginal deliveries, vomiting, Apgar scores, or any other	
Scrutton, Metcalfe et al. 1999	• Specific foods/flu — versus — • Water only (43)	and vomiting in the eating group, and less development of ketosis	
Singata, Tranmer et al. 2013	Included all above studies (3130)	The number of studies that included each variable of interest is specified below: No differences in Cesareans (all studies), operative vaginal births (all studies), Apgar scores (four studies), maternal ketosis (one study), labor duration (three studies), maternal nausea (one study), maternal vomiting (three studies), augmentation (all studies), epidural analgesia (all studies), or NICU admissions (one study)	Dominated the large, h medicalize O'Sullivan potentially it more diff detect diff in outcome

Study	Randomization	Outcomes	Notes
Rahmani et al. 2012	• Intervention of: 3 medium dates plus 110 ml water; 3 dates plus 110 ml light tea without sugar; or juice (87) 0)	No differences in duration of active labor, Cesareans, operative vaginal deliveries, vomiting, or Apgar scores Significantly shorter second stage of labor (pushing) in the carbohydrates group	The intervention amounted to 13 g/110 mL (orange juice) or 15 g/110 mL (dates) Ongoing at the time of the Cochrane review
	of a drink us — flavored (102)	No differences in operative vaginal deliveries, Cesareans, duration of active or second stage of labor, augmentations, or Apgar scores	The carbohydrate solution was a high concentration, 12.6 g carbs/ 100 mL Participants were not randomized until the start of the second stage. Both groups could eat and drink at will until randomization.
	bohydrate versus —	Significantly shorter second stage of labor in the carbohydrates group and fewer Cesareans	Unpublished abstract
Goodall & Wallymahmed,	• Food low in fat and fiber with a neutral pH (110)	Significantly higher percentage of the eating group participants nded that they were satisfied their nourishment during labor versus 55%)	Unpublished personal communication
	ficantly shorter duration of e and second stage labor in the receiving honey date syrup		Awaiting assessment at the time of the Cochrane review

In high-risk birthing persons, the informed consent discussion might look a bit different. People should know there is no evidence from randomized trials that could be applied to their situation. More research needs to be done to better define risk factors for aspiration, but it appears that some people – those with **a difficult to manage airway, eclampsia, pre-eclampsia, a body mass index of 40 or greater, and who receive intravenous (IV) opioid medications during labor**–

Low-risk laboring people, including those with epidurals, have the right to choose whether or not they would like to eat and drink during labor.

The World Health Organization (WHO) ("Care in normal birth: a practical guide. Technical Working Group," 1997)
The American College of Nurse-Midwives (ACNM) ("Providing Oral Nutrition to Women in Labor," 2016)
NICE Clinical Guidance for the United Kingdom (Delgado Nunes et al. 2014) The Society of Obstetricians and Gynecologists of Canada (SOGC) (Lee et al. 2016)

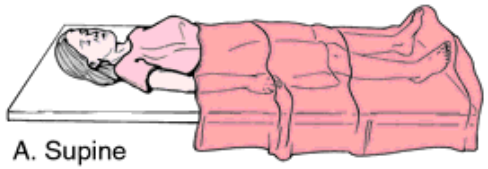
"Nothing by Mouth" is an outdated restriction that should not be applied to low-risk people giving birth today

American Journal of Obstetrics and Gynecology.

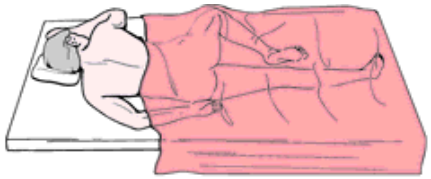
Oral Intake

- Oral fluid permitted
- Solids are better avoided – delayed emptying of stomach
- Antacids orally
- Stop feeding and appropriate iv fluids whenever there is apparent that patient may need any intervention

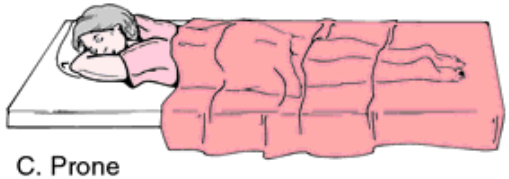
- This guideline examines the evidence for 8 key practices in labour-delivery care:
- Augmentation of labour
- Routine episiotomy
- 24 hour discharge
- Active management of third stage of labor (AMTSL)
- Monitoring of labour and partograph
- Position for delivery
- Breastfeeding < 1 hour
- Drying & wrapping of newborn



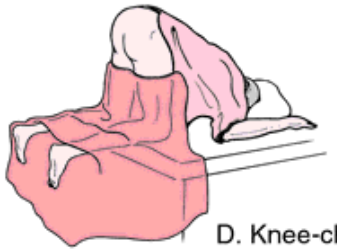
A. Supine



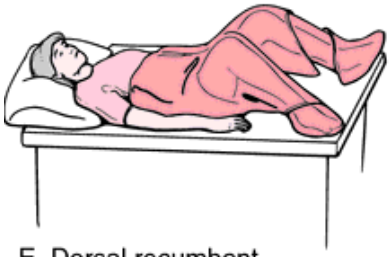
B. Sims' (posterior view)



C. Prone

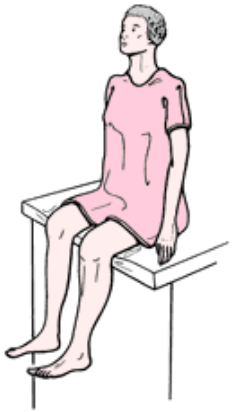


D. Knee-chest

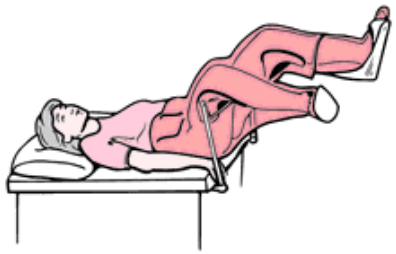


E. Dorsal recumbent

G. Standing



I. Sitting



F. Lithotomy

H. Squatting