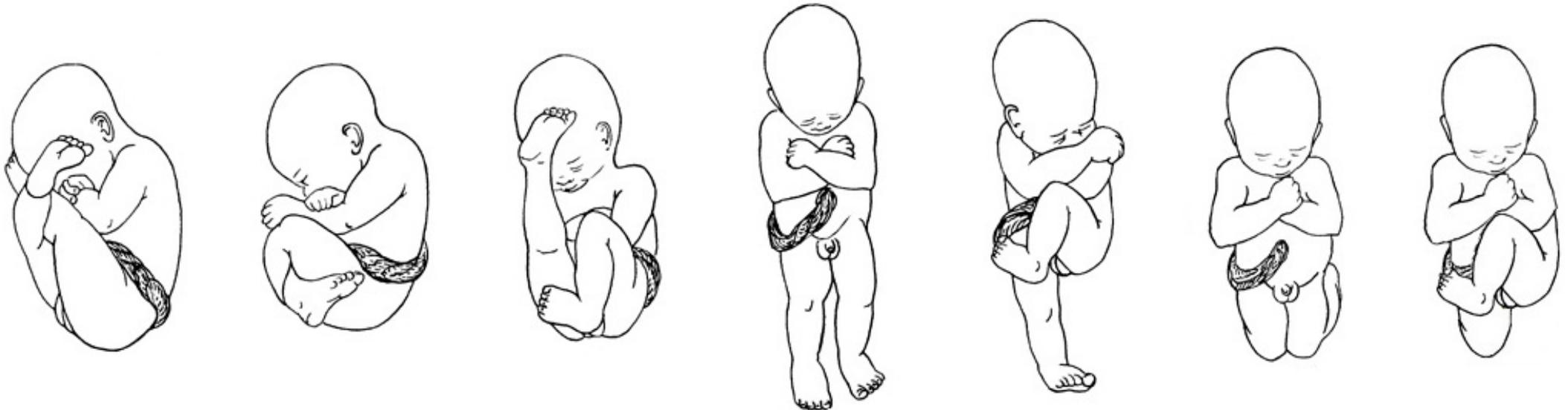


# Breech nomenclature & outcomes associated with various fetal leg positions

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# Problems with current nomenclature

- Nomenclature systems range from 2-tiered to 7-tiered
  - Frank & nonfrank
  - Frank, complete, footling
  - Frank, complete, incomplete, footling
  - Footling = incomplete vs footling  $\neq$  incomplete
  - Don't forget kneeling!
  - Single vs. double footling/kneeling
- Conversion from complete/incomplete to footling during labor

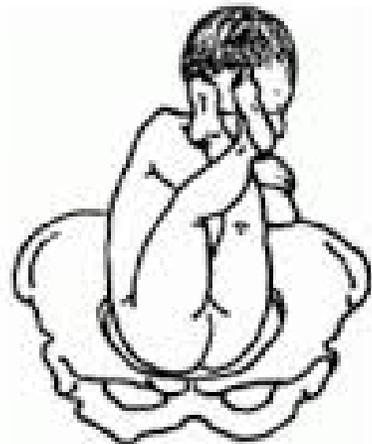
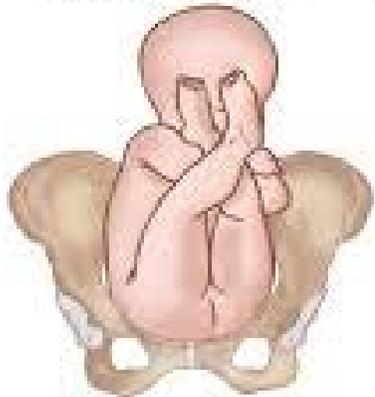
# What is a frank breech?

- Aka “extended” or “full” breech



Frank breech

Frank Breech



(b) Frank breech



**frank**



B. Frank breech.



# What is a complete breech?

- Aka “flexed” breech



Complete breech

Complete Breech



(a) Complete breech



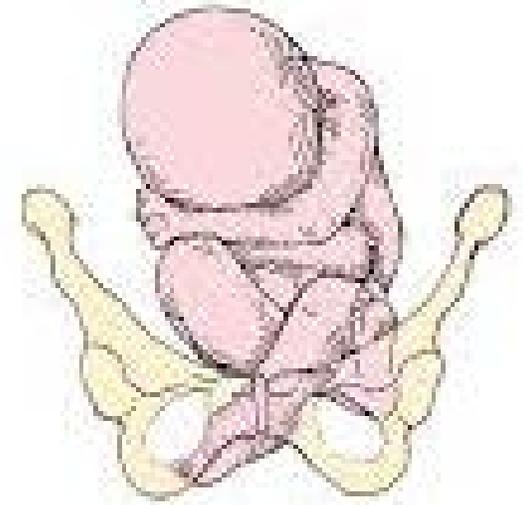
complete



A. Complete breech.



# What is a footling breech?



Footling  
(incomplete) breech

Footling Breech



(c) Footling breech



footling



C. Footling breech.

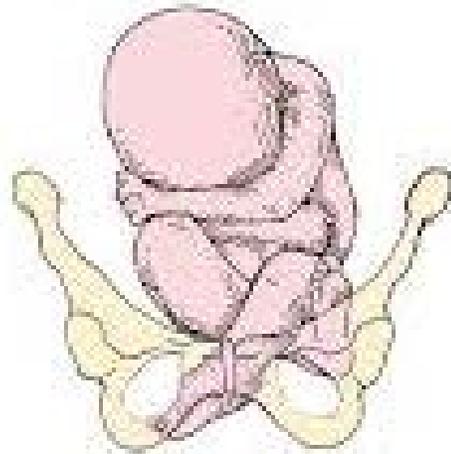


# What is an incomplete breech?

- Both hips flexed, one knee extended (usually)
- One hip extended; same as footling (sometimes)
- Blanket category for footling and kneeling breeches (rarely)



*Incomplete*



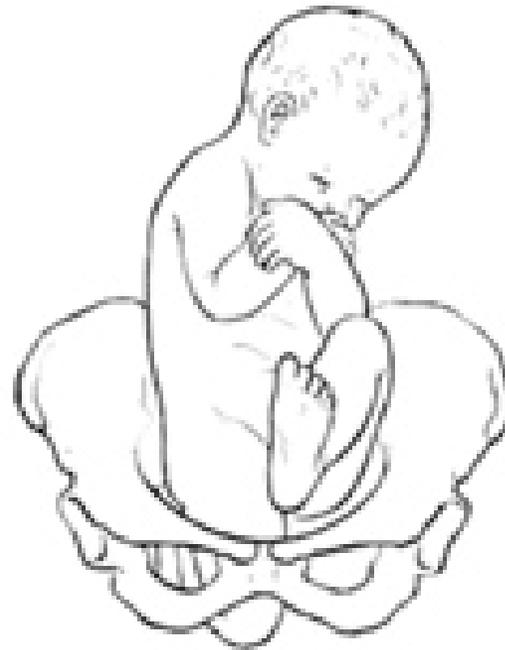
Footling  
(incomplete) breech

Incomplete Breech (25%)	
Footling Breech	Kneeling Breech
	
The baby's hip and knee joints are extended on one or both sides. ●	The baby's hip joints are extended and knee joints are flexed on one or both sides.

# Don't forget kneeling breech!



D. Kneeling breech.



*Kneeling*

# French nomenclature

- Even though footling and/or incomplete are sometimes included in textbooks, most French research articles categorize term breech presentation into only 2 types: frank (siège décomplété) and nonfrank (siège complet).
- Divergence over whether “siège complet” should be translated as “complete” (PREMODA) or “nonfrank” (most other studies)

# Conversation with Dr. Sophie Alexander (PREMODA author)

Rixa: Does complete breech in the PREMODA study mean complete or nonfrank (including footlings)?

Dr. Alexander: “French and Belgian tradition accept both frank (*décomplété fesses*) and full (*complet*). NOT FOOTLING....Having said that, footling in term pregnancy is EXCEPTIONAL in my experience.”

Rixa: If that is the case, what happened to footling breeches in the PREMODA study?

Dr. Alexander: “I will ask my French colleagues.”

# Conversation with Dr. Sophie Alexander (PREMODA author)

“What we are taught, and what we teach, is that if when you examine a lady you feel a foot first, and it is a term baby, check with an ultrasound because mostly it will be a complete with a foot dangling. The idea being that the risk of the footling is that it will start descending before full dilatation and get stuck, which does not happen with a complete, and only very late in the dilatation (8/9 cms with a frank).

“Also, we are taught, and teach, and believe that there is no way unless the lady is a giant that a 50 cm baby can stand straight in a womb? :)”

My takeaway: true term footlings are exceptionally rare in French nomenclature—which is why they are absent in PREMODA

# German nomenclature

- 6-7 categories



*Frank*  
reine Steißlage



*Complete*  
vollk. Steißfußlage



*Incomplete*  
unvollk. Steißfußlage



*Double footling*  
vollk. Fußlage



*Single footling*  
unvollk. Fußlage



*Kneeling*  
Knielage

*Nonfrank*  
gemischte Steiß-fuß-lagen

# The clash over complete breech: TBT vs. SOGC

TBT:

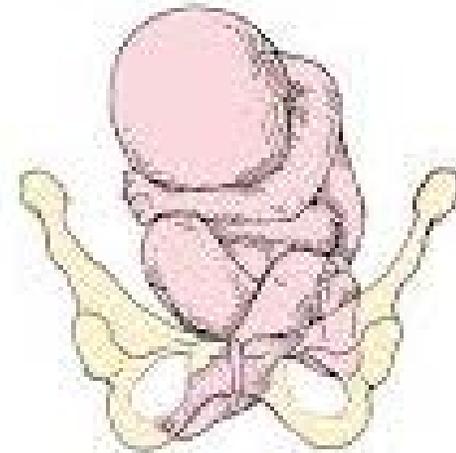
“[C]omplete breech was defined as hips flexed, knees flexed, but feet not below the fetal buttocks.”

Complete Breech



SOGC:

“A fetus with feet presenting but flexed hips and knees is a complete breech, therefore eligible for a TOL.”



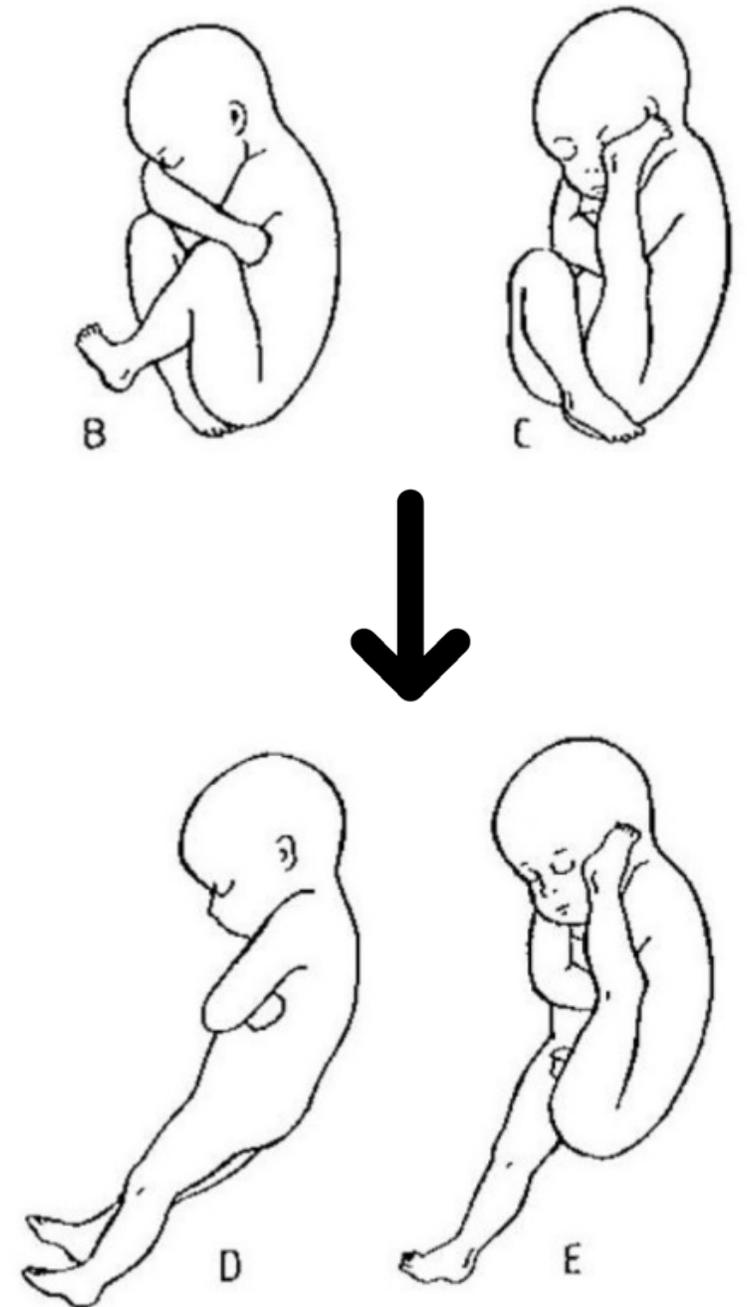
Footling  
(incomplete) breech

# Dropped foot breech (*fremfall av fot*)

The type of breech is evaluated once labor has commenced and needs to be reevaluated later in labor as the presentation may change during the course of labor. For instance, type B [complete] and C [incomplete] can change to type A [frank], D [double footling] or E [single footling].

These latter two scenarios are called “fremfall av fot” [*dropped foot*, meaning one or both feet drop down] when the cervix is fully dilated.

(*Albrechtsen 1994*)



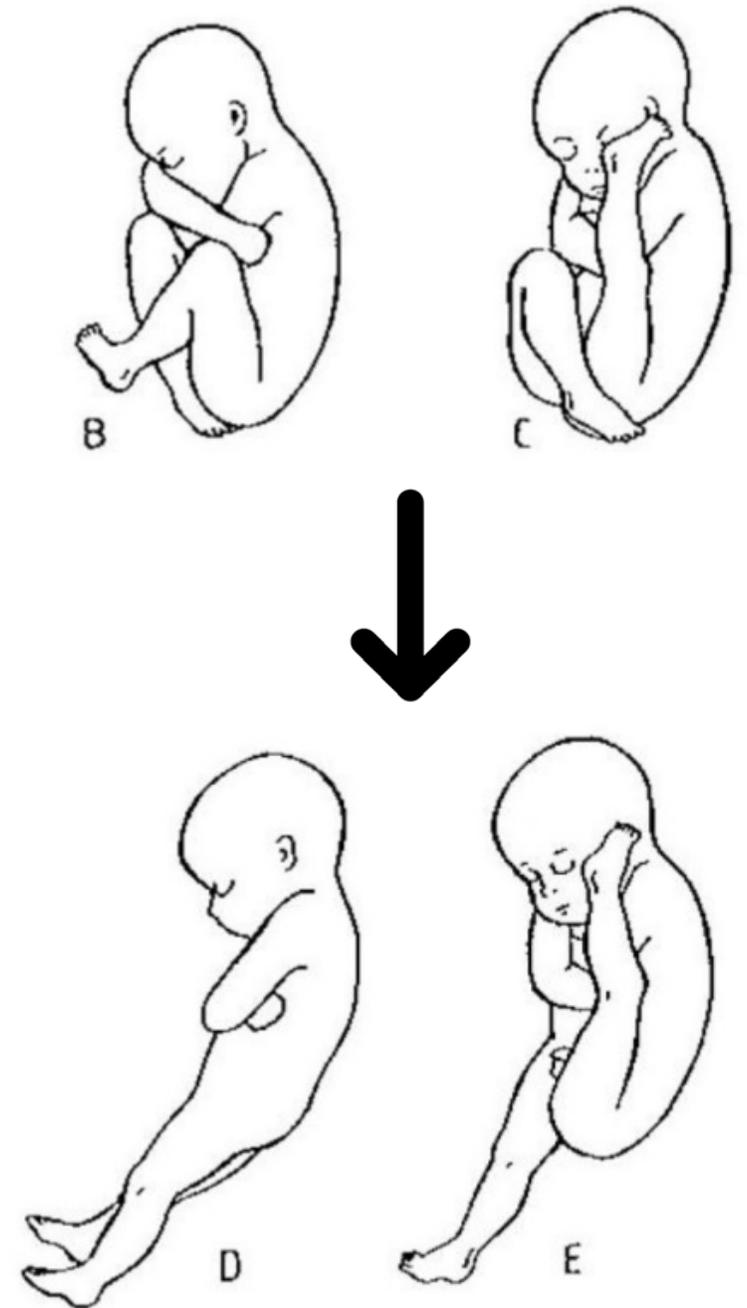
# Dropped foot breech (*fremfall av fot*)

Described in 13 single-center term studies from 1980-present

Often described as a missed/misdiagnosed footling breech

“In several cases, the footling breech presentation was diagnosed first in the second stage of labour.” (Bassaw 2004)

“Nineteen fetuses (6%), however, were delivered vaginally with footling presentation because of misdiagnosis during labor.” (Schiff 1996)

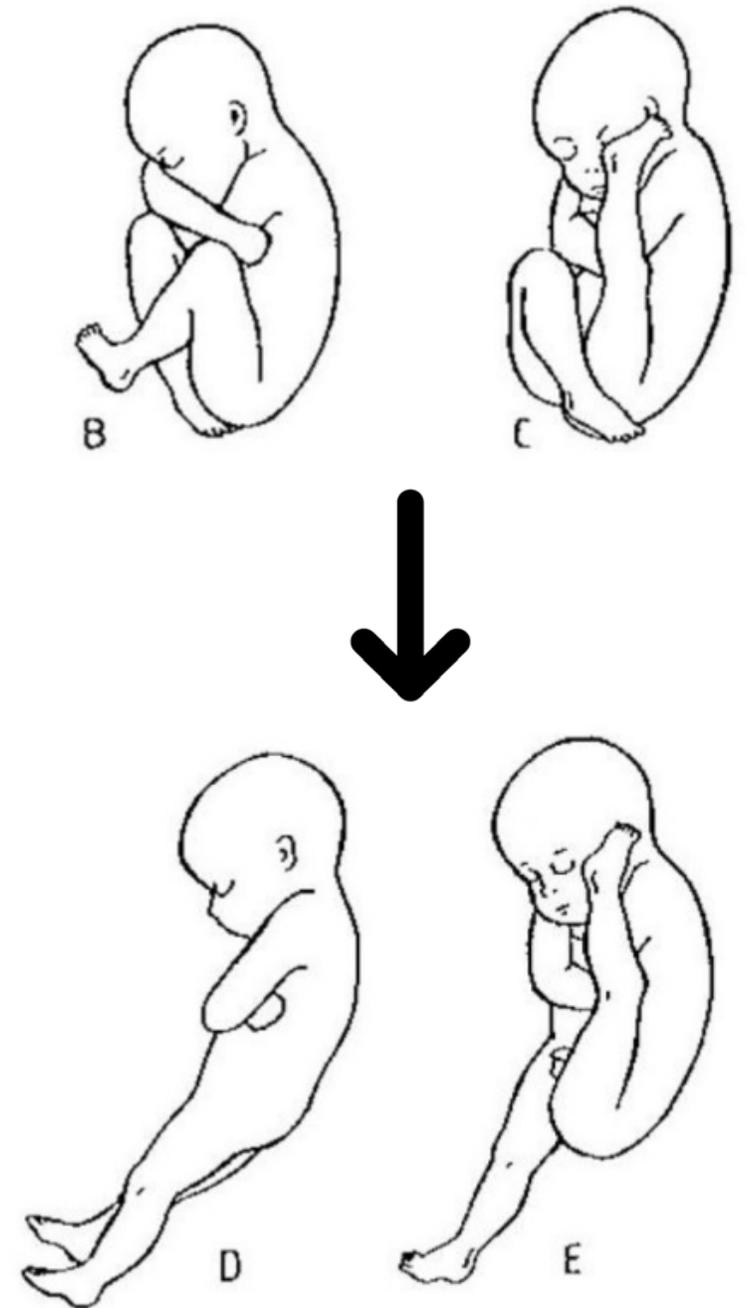


# Dropped foot breech (*fremfall av fot*)

Some authors note that conversion to footling during labor is possible

Krause 1997: 22 cases of a complete/incomplete converting into single or double footling during labor

“In 64.7% of all unplanned c-sections, the fetus began labor in an incomplete/complete breech position and converted into single/double footling breech during labor, which resulted in the move to caesarean section. The earliest possible moment of diagnostic evaluation was the complete opening of the cervix with ruptured membranes.”



# Dropped foot breech vs standing breech

*Norwegian obstetrician:*

A dropped foot is when the foot drops at full dilatation. But it is itself not a true foot presentation until that point, and should not be perceived as one. A presenting foot is not a challenge at a point where the cervix is fully effaced over the buttock.

Standing breeches are a nightmare because you have the risk of head entrapment (I had two cases with extreme prematurity in Norway and one term case in Pakistan), whereas the foot dropping in labor is no issue.

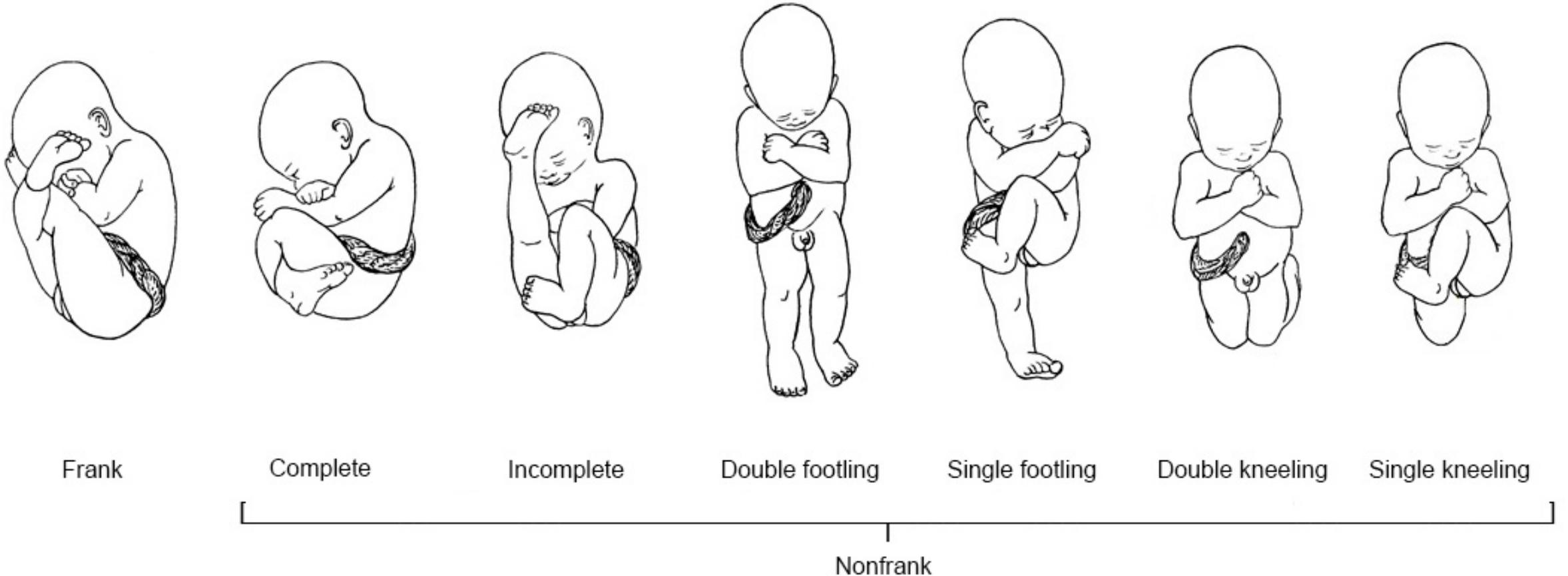
# Rare case of standing breech at term

*American Maternal-Fetal Medicine specialist:*

I had a patient recently whose baby was actually standing in the uterus. Legs extended, both feet in the lower uterine segment (plus a lot of cord). I've certainly never seen that before, but it goes to show that anything is possible.

This was a term baby. There was a 9cm myoma in the lower uterine segment. The baby's body was in the fundus above the myoma, and the legs were dangling past the myoma and the feet were over the cervix. This fetal presentation probably had a lot to do with the myoma being there.

# Proposed nomenclature & classification system (Walker & Freeze)



# Proposed nomenclature & classification system (Walker & Freeze)

- Based on Albrechtsen's 1994 article (translated into English by a Norwegian OB)
- Maximum number of types of breech presentations for greatest clarity
- Based on hip & knee flexion, not the presenting part
- Shows influence of prematurity on types of breech presentation
- Indicates if dropped foot has occurred



**A**



**B**



**C**



**D**



**E**



**F**



**G**

Hip flexion	Category	Type	Name	Description
Hips flexed	Frank	A	Frank	Hips flexed, both knees extended
	<u>Nonfrank</u>	B	Complete	Hips flexed, both knees flexed
		B*	<i>(dropped foot)</i>	As above; one or both feet drop down near full dilation
		C	Incomplete	Hips flexed, one knee extended, one knee flexed
		C*	<i>(dropped foot)</i>	As above; one foot drops down near full dilation
Hips extended (usually premature)	Standing breech	D	Double footling	Both hips extended, both knees extended
		E	Single footling	One hip and one knee extended, other hip flexed
		F	Double kneeling	Both hips extended, both knees flexed
		G	Single kneeling	One hip extended, one knee flexed; other hip flexed

# Frequency of footling presentation at term

- 3.1% to 11.2% in recent term breech studies
- Up to 30% in some German textbooks
- Is this natural variation in breech presentations or is it because of different nomenclature systems?

Source	n	Frank	Nonfrank				Unspecified
			Complete	Incomplete	Footling	Kneeling	
<u>Mändle 2007 (book)</u> <i>Germany</i>		66%	15%		18%	rare	
<u>Feige 2013 (book)</u> <i>Germany</i>		66%	10%	5%	15-20% (double) 5-10% (single)	<1% (double) <1% (single)	
<u>Kouam 1980 (&gt;2500 g)</u> <i>Germany</i>	608	72.9%	9.4%	7.6%	11.2%	0.7%	
<u>Hannah 2000 (TBT)*</u> <i>International</i>	2083	62.0%	33.7%		-	-	4.3%
<u>Goffinet 2006 France &amp; Belgium (PREMODA)</u>	8105	66.1%	29.7%				4.2%
<u>Borbolla Foster 2014</u> <i>Australia</i>	766		89.7%		10.3%	-	
<u>Louwen 2017</u> <i>Germany</i>	750	68.4%	11.9%	8.1%	3.1%	-	5.6% <u>unspec.</u> 2.9% oblique
<u>Singh 2012</u>	265	55.5%	34.7%	-	8.7%	1.1%	
<u>Molkenboer 2004</u>	201	82.6%	14.9%	-	-	-	2.5%
<u>Mohammed 2001</u>	287	77.0%	12.9%	-	10.1%	-	

\* The TBT protocols included only frank or complete presentations

# Vaginal term success rates for various presentations

Type of breech presentation	VBB rate	actual/planned	Notes
<b>All</b>			
Amoa 2001	85.7%	397/463	
Borbolla Foster 2014	58.0%	141/243	
Cattin 2016	60.0%	60/100	with PROM
Cattin 2016	67.9%	74/109	without PROM
Descargues 2001	66.4%	97/146	nullips only
de Leeuw 2002	73.6%	176/239	(all types implied)
Delotte 2008	62.5%	170/272	
Goffinet 2006 (PREMODA)	71.1%	1796/2526	
Golfier 2001	82.6%	342/414	
Hellsten 2003	83.4%	371/445	no double footlings
Herbst 2001	86.2%	603/699	double footling allowed
Krupitz 2005	74.3%	284/382	ILCS for footling/kneeling
Louwen 2017	62.1%	269/435	
Münstedt 2001	62.2%	74/119	
Vendittelli 2002	~64%	~788/1216	exact numbers not given

Type of breech presentation	VBB rate	actual/planned	Notes
<b>Frank &amp; complete</b>			
Alarab 2004	49.0%	146/298	
Babović 2016	58.3%	42/72	
Burgos 2014	52.9%	512/891	
Borbolla Foster 2014 (subset)	63.7%	137/215	
Bourtembourg 2013	71.4%	10/14	breech VBAC
Daskalakis 2007	82.9%	325/392	
Giuliani 2002	71.1%	342/481	
Hannah 2000 (TBT)	56.7%	591/1042	
Hoffmann 2016	67.5%	162/240	nullips only
Macharey 2017	76.6%	602/786	includes incomplete
Maier 2011	54.1%	46/85	
Mattila 2014	83.3%	338/406	
Mazhar 2002 (term subset)	78.9%	45/57	
Mohammed 2001	76.7%	99/129	includes unplanned footlings
Molkenboer 2004	65.7%	109/166	
Nkwabong 2012	80.8%	84/104	nullips only
Sanchez-Ramos 2001	74.6%	203/272	
Singh 2012	53.6%	113/211	
Sobande 2007	45.6%	175/384	
Toivonen 2012	68.5%	175/254	
Uotila 20005	77.1%	455/590	

Type of breech presentation	VBB rate	actual/planned	Notes
<b>Nonfrank only</b>			
Gimovsky 1983	44.3%	31/70	23/70 were excluded from labor due to inadequate pelvimetry
Broche 2005	77.4%	106/137	
Descargues 2001 (subset)	70%	28/40	nullips only
<b>Frank only</b>			
Descargues 2001 (subset)	65.1%	69/106	nullips only
Mohammed 2001 (subset)	81.0%	81/100	
<b>Complete only</b>			
Mohammed 2001 (subset)	70.0%	14/20	
Gimovsky 1983 (subset)	22%	not stated	
<b>Footling only</b>			
Borbolla Foster 2014 (subset)	14.2%	4/28	
Curet 1982	61%	22/36	includes all gestational ages
Gimovsky 1983 (subset)	66.7%	not stated	
Mohammed 2001 (subset)	44.4%	4/9	

# Footling presentation

- Less than 100 planned vaginal footling births in the literature between 1980-present!
  - 28 from Borbolla Foster (2014)
  - 36 from Curet (1982), includes premature gestations
  - Unspecified small number from Gimovsky (1983)
  - 9 from Mohammed (2001)

# Geburtsmechanisch wirksamer Umfang

Literally: “mechanical birthing-related circumference”

It is roughly equivalent to *bitrochanteric diameter*, only measured in circumference. It translates as *dilator circumference* or *circumference of the dilating part*.

Type of breech	Feige 2013	Mändle 2007
Frank	28 cm	28 cm
Complete	33 cm	32 cm
Incomplete	30 cm	30-32 cm
Double footling	25 cm	25 cm
Single footling	27 cm	28-30 cm
Double kneeling	25 cm	25 cm
Single kneeling	23-25 cm	28 cm

# Dilator circumference explained: Krause 1997

“In our work we found that the fetuses born in a frank-presenting vaginal breech had approximately 60-minute longer labors, with an overall average of 460 minutes of labor. This difference is grounded in the mechanics of birth. The presenting part of a fetus in a frank-presenting breech position is 27-28 centimeters in circumference, whereas a fetus in a complete breech position has a diameter of approximately 32-33cm.

Although the fetuses in a frank breech position occupy a smaller plane of the birth canal, they require more time to completely dilate the cervix, and must negotiate a greater tissue resistance in the birth canal. For the fetus in a complete/incomplete breech position, the circumference of the presenting part is similar in size to a cephalic presentation. The greater pre-stretching makes the passage through the birth canal faster for a baby in a complete/incomplete breech possible. We found this was confirmed in our work: the second stage was typically doubled for fetuses in a frank breech (89 minutes) as for those in a complete/incomplete breech (37 minutes).”

# Breech presentation is dynamic, not static

- May change in labor (Albrechtsen “dropped foot”)
- From a review of the literature 1980-present, most common seems to be conversion from complete/incomplete to footling
- “Dropped foot” is not recognized as a term outside of Norway, but described in some fashion in at least 13 articles from 1980-present
- Suggest adopting the term “dropped foot” when it occurs during labor
- Presenting foot  $\neq$  footling; look at hip & knee flexion!

# Breech presentation is dynamic, not static

May also change during late pregnancy

Russel (1969): In a series of x-rays of breech fetuses,

- 26% of the 84 term fetuses (>36 weeks) changed leg position in a 10-minute time span.
- The frequency of leg movement was even more pronounced in fetuses at earlier gestations.
- Conclusion: “The fetus frequently alters the position of its legs, so that radiographic examination is only momentarily valid.”

# Intrapartum ECV

- 5 citations in literature with 37 total attempted IP ECVs
- Performed as late as 8 cm dilation with intact membranes
- Done on breech presentations unfavorable for labor (footling and/or unengaged breeches)
- Usually done in OR under tocolysis; sometimes with regional anesthesia
- Successful IP ECVs sent back to labor ward; sometimes with amniotomy and/or oxytocin to restart labor

# Intrapartum ECV

Author & year	IP ECVs (%)	TOLs (VB rate)	Dilation	Reasons for failed ECV or TOL	Notes
<u>Kaneti</u> 2000	12/13 (92.3%)	10/12 (83.3%)	2-8 cm	<u>Failed ECV</u> : membranes ruptured during ECV, 8 cm <u>Failed TOL</u> : 1 cord presentation 1 arrest of labor	Prospective. Term footling breech. Ritodrine; regional anesthesia when possible; <u>amniotomy</u> after ECV. All <u>multips</u> (by chance). Membranes intact in all successful ECVs.
Ferguson 1985	11/15 (73.3%)	10/11 (90.9%)	1-8 cm	<u>Failed TOL</u> : arrest of labor in <u>primip</u> . All <u>multips</u> had successful versions & TOLs.	Participants “not good candidates” for VBB. <u>Tocolysis</u> . All women had intact membranes. 6 <u>primips</u> , 9 <u>multips</u> . 3 had epidurals.
Belfort 1993	1/1 (case report)	1/1	5 cm/ 70% eff.		<u>Multip w/ unengaged complete breech</u> , feet presenting. IV nitroglycerin; <u>amniotomy &amp; oxytocin</u> to restart labor.
Leung 1999	2/5 (40%)	2/2 (100%)			Done on 5/28 undiagnosed breeches
<u>Deline</u> 2012	3/?	3/3 (100%)			Amish birth center; ECV for <u>nonfrank breech presentation</u>

# Intrapartum ECV recommendations

- Alternative to CS for breeches otherwise *least* favorable for vaginal birth (such as unengaged and/or footling breech)
- Seems quite effective as long as membranes are intact
- For both multips and primips
- Tocolysis recommended; regional anesthesia optional
- Return successful IP ECVs to labor ward; amniotomy or oxytocin if necessary to restart labor

# Footling: From favorable to feared

In the 1940s, footling breeches were perceived as easier to birth and as less lethal than frank breeches.

Moore and Steptoe (1943): “Contrary to current statements that the fetal mortality in frank breech presentation is higher than in footling presentation, we found that in primiparae the fetal mortality in the two types was almost identical; while in multiparae the mortality rate in frank breech presentation was actually lower than in footling presentation.”

# Footling: From favorable to feared

Moore & Steptoe (1943): “We agree that an infant presenting by frank breech offers more difficulty during actual delivery than a footling breech, especially in primiparae, but this increase in the hazard for the infant in frank breech is compensated by the increased frequency of prolapse of the umbilical cord in footling presentations.”

They suggest that complete breech is the ideal presentation “since the difficulties with delivery are less than with frank breech and the incidence of prolapse of the umbilical cord, especially in primiparae, is much less than in footling presentation.”

# Footling: From favorable to feared

Within a few decades, opinion had radically shifted. Frank breech had acquired a favorable reputation, while footling and sometimes complete were seen as unfavorable for vaginal birth.

- Example: 1981 textbook chapter by Joseph Collea: “Complications and Management of Breech Presentation” in *Advances in Perinatal Medicine*, ed by Milunsky et al.

# Primary reasons for contraindicating footling presentation for vaginal breech birth

1. Umbilical cord prolapse
2. Head entrapment (cervical & pelvic)
3. Mechanically less efficient than frank or complete

# Umbilical cord prolapse—early studies

Incidence of cord prolapse in breech presentation (adapted from Collea 1981)

Study	Age/weight	Overall (%)	Frank (%)	Complete (%)	Footling (%)
Moore & Steptoe, 1943	1500+ g	4.7	0.09	4.4	10.9
Kian, 1963	500+ g	4.7	1.3	2.3	13.1
Hall et al, 1965	1000+ g	3.7	1.2	5.3	10.3
Morley, 1967	term	4.1	0.0	5.1	15.0
Johnson, 1970	term				18.0
<u>Gimovsky 1980</u> (vaginally born)	term		1.9%	10.5%	28.5%
<u>Gimovsky 1982</u>	term	1.5%	0.9%	2.1%	
<u>Gimovsky 1983 (RCT)</u>	term			7.1%	

# Umbilical cord prolapse—recent studies

Rates of umbilical cord prolapse in term singleton breech with planned vaginal birth (87 cases total)

Study	Rate	n UCP	n pVBB	Notes
Broche 2005*	5.6%	11	137	6 full extraction, 5 CS. No deaths
Daskalakis 2007	0.8%	3	392	
Descargues 2001**	1.4%	2	146	Both with nonfrank @ 4 & 9 cm (5% rate for nonfrank). No NNMB due to prolapse.
Giuliani 2002	1.9%	9	481	All born by CS
Hellsten 2003***	1.6%	7	445	6 by CS, 1 vaginally. Apgars >7 in all cases.
Hannah 2000	1.3%	14	1042	2 before labor, 12 during labor
Herbst 2001**	2.1%	15	699	2 with poor outcomes: 1 PROM & UCP, CS, died. 1 UCP at home, CS, HIE grade 1.
Hoffmann 2016	1.3%	3	240	All born by CS
Louwen 2017**	3%	13	435	All ended in CS. No adverse outcomes. 1 additional UCP in pCS group.
Mohammed 2001	1.6%	2	129	All born by CS
Nkwabong 2012	3.8%	4	104	All born by CS
Singh 2012	1.9%	4	211	All born by CS

\* Nonfrank only (other studies included frank & complete unless otherwise noted)

\*\* All types of breech presentations

\*\*\* Frank/complete/incomplete (no footling)

# Umbilical cord prolapse—Kouam 1980

**Table I. Cord prolapse relative to presentation for infants > 2500 g (Kouam 1980)**

<b>Fetal presentation</b>	<b>%</b>	<b># of births</b>	<b># of cord prolapses</b>	<b>Rate of UCP (%)</b>
Cephalic	96.9	19151	10	0.05
Breech	3.1	608	21	3.5
Frank breech	72.9	443	3	0.7
Nonfrank breech	27.1	165	18	10.9
- <i>Complete</i>	9.4	57	5	8.8
- <i>Incomplete</i>	7.6	46	5	10.9
- <i>Double footling</i>	10.0	61	5	8.2
- <i>Single footling</i>	1.2	7	-	0
- <i>Kneeling</i>	0.7	4	3	75
<b>Total</b>		<b>19759</b>	<b>31</b>	<b>0.16</b>

# Nonfrank cord prolapse (Kouam 1980): More common but less dangerous

- Cord prolapse after prelabor rupture of membranes was about 10 times more frequent than with timely (in-labor or AROM) rupture of membranes.
- “With frank breech and cephalic presentations  $\geq 2500$  g, the longer the diagnosis-delivery time interval, the higher the mortality rate and the lower the 5-minute Apgar scores. However, for nonfrank presentations  $\geq 2500$  g, this linear association did not exist. 5-minute Apgar scores remained unaffected and there were no fatal outcomes after cord prolapse, no matter how long the diagnosis-delivery time interval.”
- Longest diagnosis-delivery interval was 60 minutes

# Nonfrank cord prolapse (Kouam 1980): More common but less dangerous

- Mortality rate after UCP with cephalic: 30%
- Mortality rate after UCP with frank breech: 33%
- Mortality rate after UCP with nonfrank breech: 0%

# Counseling points for umbilical cord prolapse & breech presentation

When counseling women about the risks of umbilical cord prolapse, the type of breech presentation matters:

- Women with a **frank breech** should be counseled that cord prolapse is *very uncommon but very dangerous* if it happens, and the baby should be delivered immediately.
- Women with a **nonfrank breech** should be counseled that cord prolapse is *relatively common but not very dangerous*. Labor should be closely monitored and birth should be timely—vaginally or by cesarean section, depending on individual circumstances—but not rushed.

# Head entrapment & footling breech

- Is head entrapment more common in footling breeches than in other presentations? If so, to what degree and with what outcomes?

Difficult to answer for 3 reasons:

1. Scarcity of data on footling breeches
2. Vague definition of head entrapment: cervical? pelvic?
3. Confounding factor of prematurity

# Head entrapment & footling breech

- Question to be answered in our systematic review
- No recorded cases of mortality or severe morbidity due to **cervical** head entrapment in **term** footling breech

# Most mechanically efficient type of breech?

Descargues 2001 (my translation): “On a mechanical level, the frank breech provides a better dilator cone. Labor in a nonfrank breech is more often complicated by PROM or PPRM, by prolapse of the foot or umbilical cord, or by abnormalities in dilation.”

vs.

Dubois 1981 (my translation): “Classically a complete/nonfrank breech was considered more favorable [than frank] because the expulsion was easier. However, it also has a higher rate of foot and cord prolapse.”

# Outcomes for term footling breech

Two largest series of planned vaginal footling breeches:

## 1. Curet 1982

- 36 **term and preterm** footling pVBB compared to 35 footling pCS
- 61% gave birth vaginally
- No deaths in infants over 37 weeks gestation
- 1 death in the 30-36 week group (umbilical cord prolapse + multiple malformations).
- The rate of low 1- and 5-minute Apgars were not different from the pCS group.

## 2. Borbolla Foster 2014

- 28 **term** footling pVBB
- 14.2% gave birth vaginally
- No poor outcomes

# Outcomes for term footling breech

- PREMODA study recognized only 2 types of breech presentations: frank & complete (=nonfrank), plus “unspecified.”
  - Higher rate of “unspecified” in pCS group (17.9%) vs pVBB group (4.2%)
  - Lower rate of frank breech in pCS group (54.7%) vs pVBB group (66.1%)
  - Nearly identical rates of complete breech in pCS group (27.4%) vs pVBB group (29.7%)
- Did not sort outcomes by type of breech presentation, but pVBB outcomes were identical to pCS.

# Correspondence with Dr. Sonia Adjaoud (2017)

Study compared 43,595 planned term vertex vaginal births against 665 pVBB and 876 planned breech CS during a 12-year period

Findings: pVBB has higher rate of severe acidosis, but no increase in risk of asphyxia, NICU admission, or in-hospital death

Another article in press examining outcomes of frank vs nonfrank

# Correspondence with Dr. Sonia Adjaoud (2017)

Personal correspondence: “In our study, we selected breeches without distinguishing between frank and nonfrank since in our hospital, the type of presentation does not affect the prognosis of the likelihood of success of a planned vaginal breech birth, nor of neonatal morbidity.”

# Correspondence with Dr. Sonia Adjaoud (2017)

“For us, we are a school with a strong tradition of vaginal birth that has always taught its students the techniques of vaginal breech birth. Our training in this type of delivery and a good knowledge of the mechanics of breech birth leave us less afraid when we face this situation. In our practice, nonfrank breeches—whatever their nature (1 foot, 2 feet, standing)—can be born vaginally as long as they are engaged and as long as the fetal heart tones are normal (CTG is, obviously, continuous).”

# Correspondence with Dr. Sonia Adjaoud

“During the expulsive efforts, either the two feet are born spontaneously, or one foot is born first. In the latter case, we do a ‘small extraction’ by manually bringing down the 2nd foot, then we continue the birth with the other normal maneuvers.

“Concerning the article that we are submitting, neonatal outcomes for nonfrank breeches are not any worse than for frank, except for a higher rate of in-labor cesarean section due to a higher rate of umbilical cord prolapse.”

# Ongoing systematic review

## All single-center term studies from 1980-present

- 105 studies mention type of breech presentation
- 44 do not mention type of BP anywhere
- 11 currently under review
- 44 unavailable or need translations

## All multi-center term studies from 1980-present

- Not yet analyzed

# 105+ single-center studies

- Selection criteria
- Rates of various types of BP
- MOD by type of BP
- NN mortality/morbidity related to type of BP
- Other factors/outcomes related to type of BP (parity, dilation/descent, length of labor, timing of ROM)
- Dropped foot
- Cord prolapse
- Entrapped aftercoming head