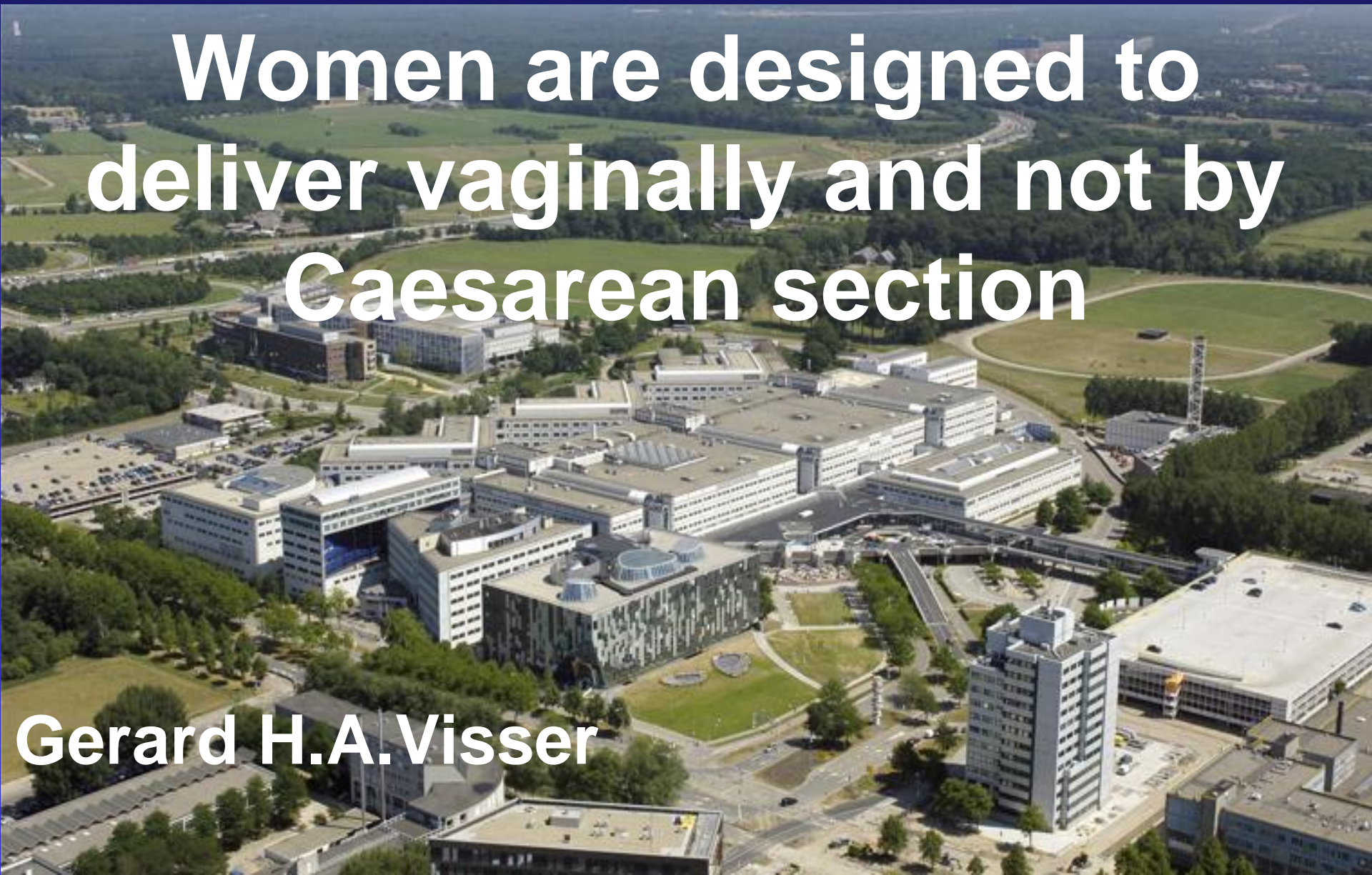


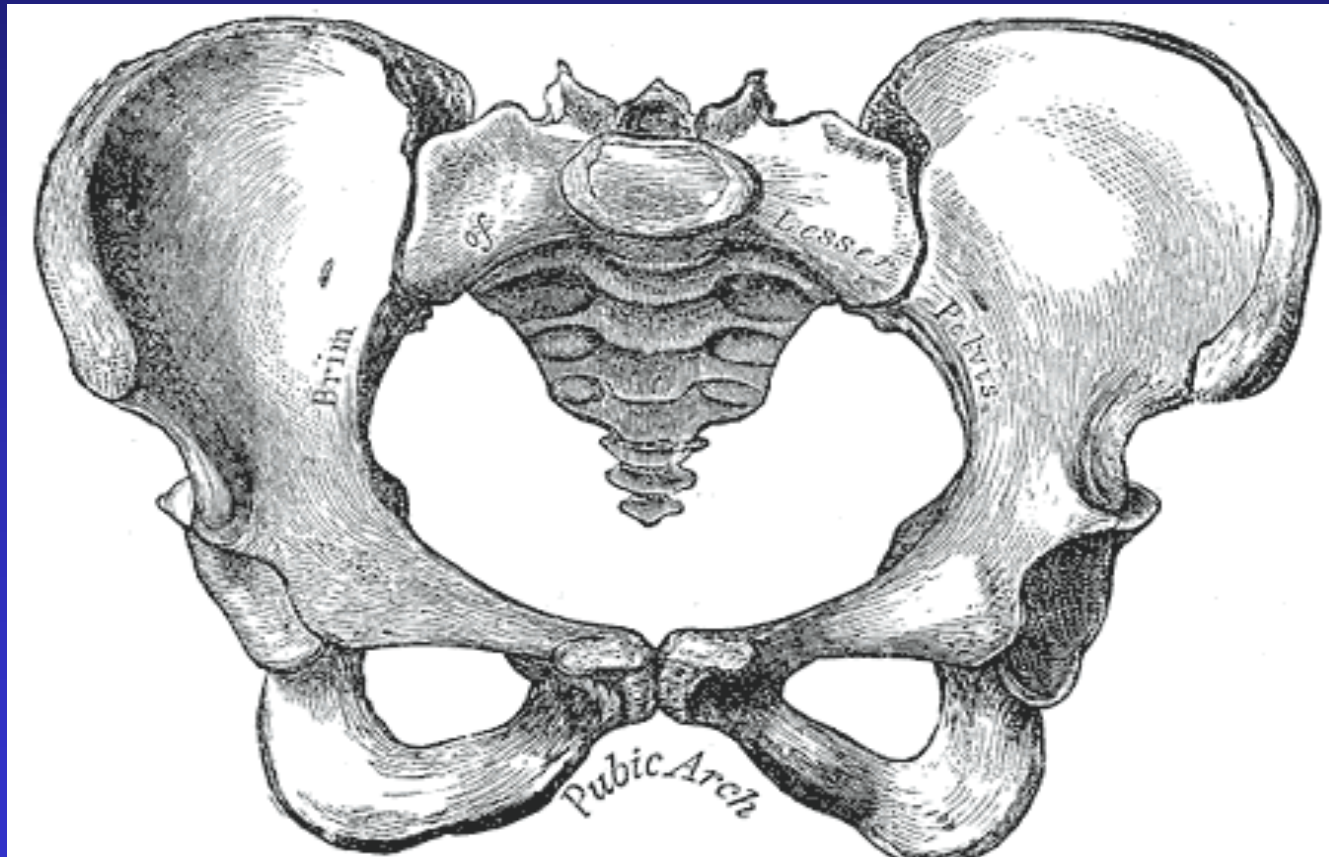
University Medical Center, Utrecht, the NL

**Women are designed to
deliver vaginally and not by
Caesarean section**

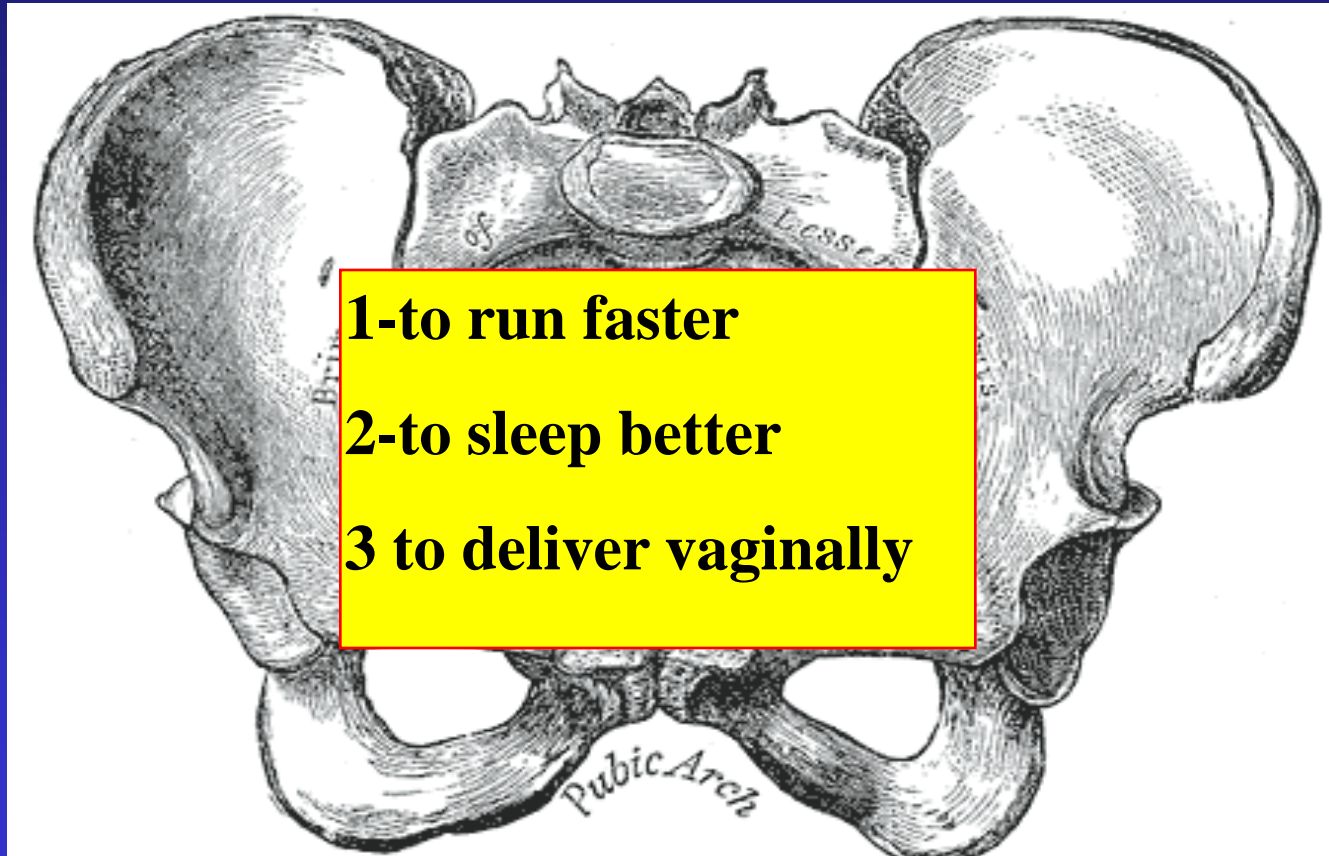
Gerard H.A. Visser



Why are women born with such a strange pelvis?

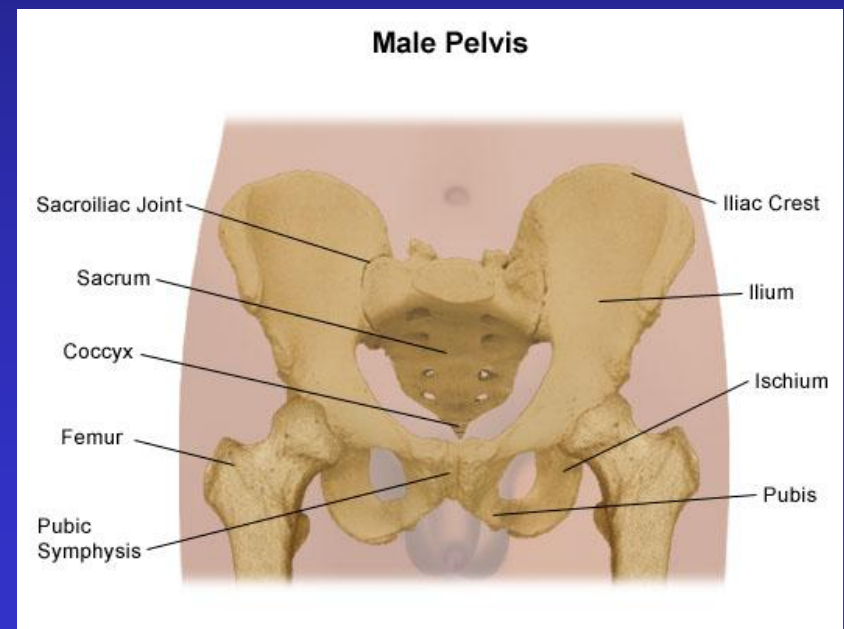
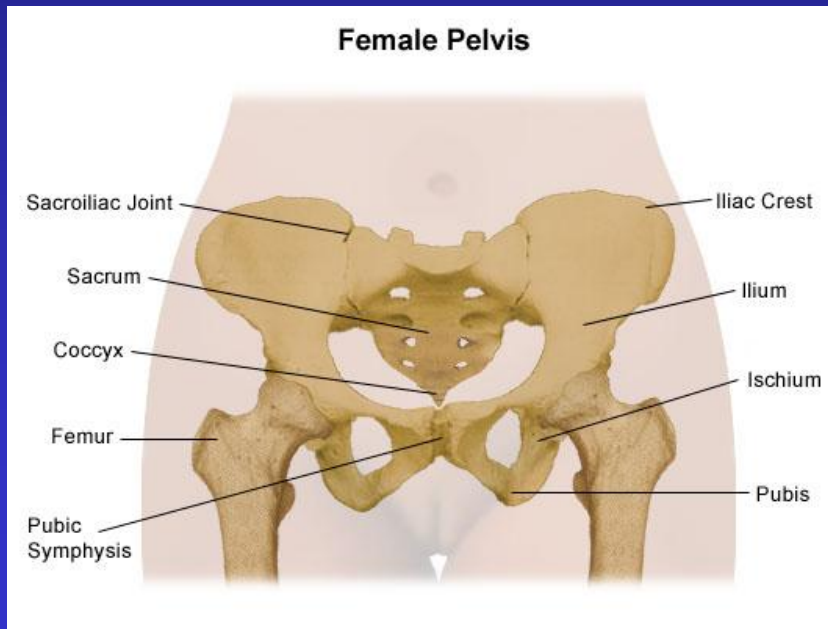


Why are women born with such a strange pelvis?



The female & the male pelvis

- And why is the male pelvis so different?



The female & the male pelvis

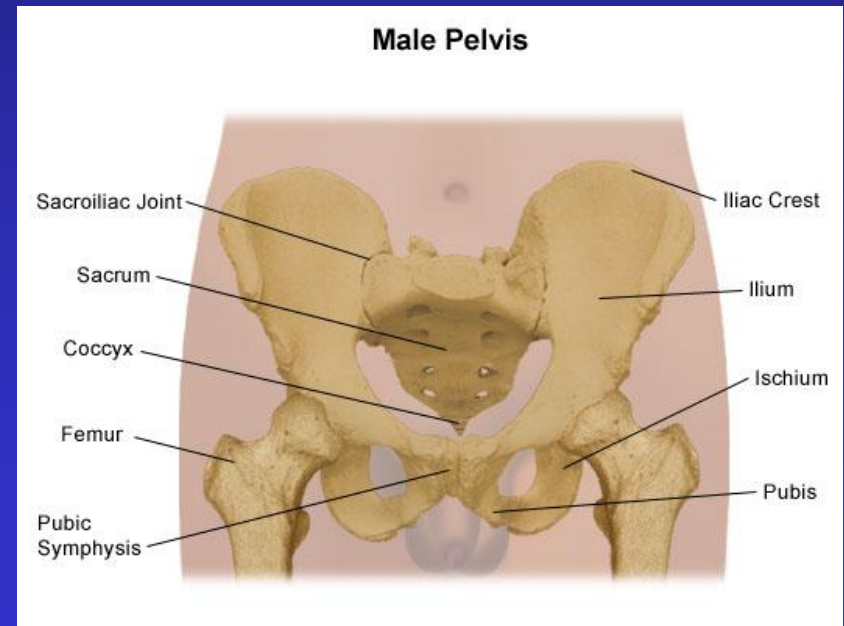
- And why is the male pelvis so different?

1-to run faster

2-to sleep better

3-to be unable to deliver a child

4- all 3 options correct

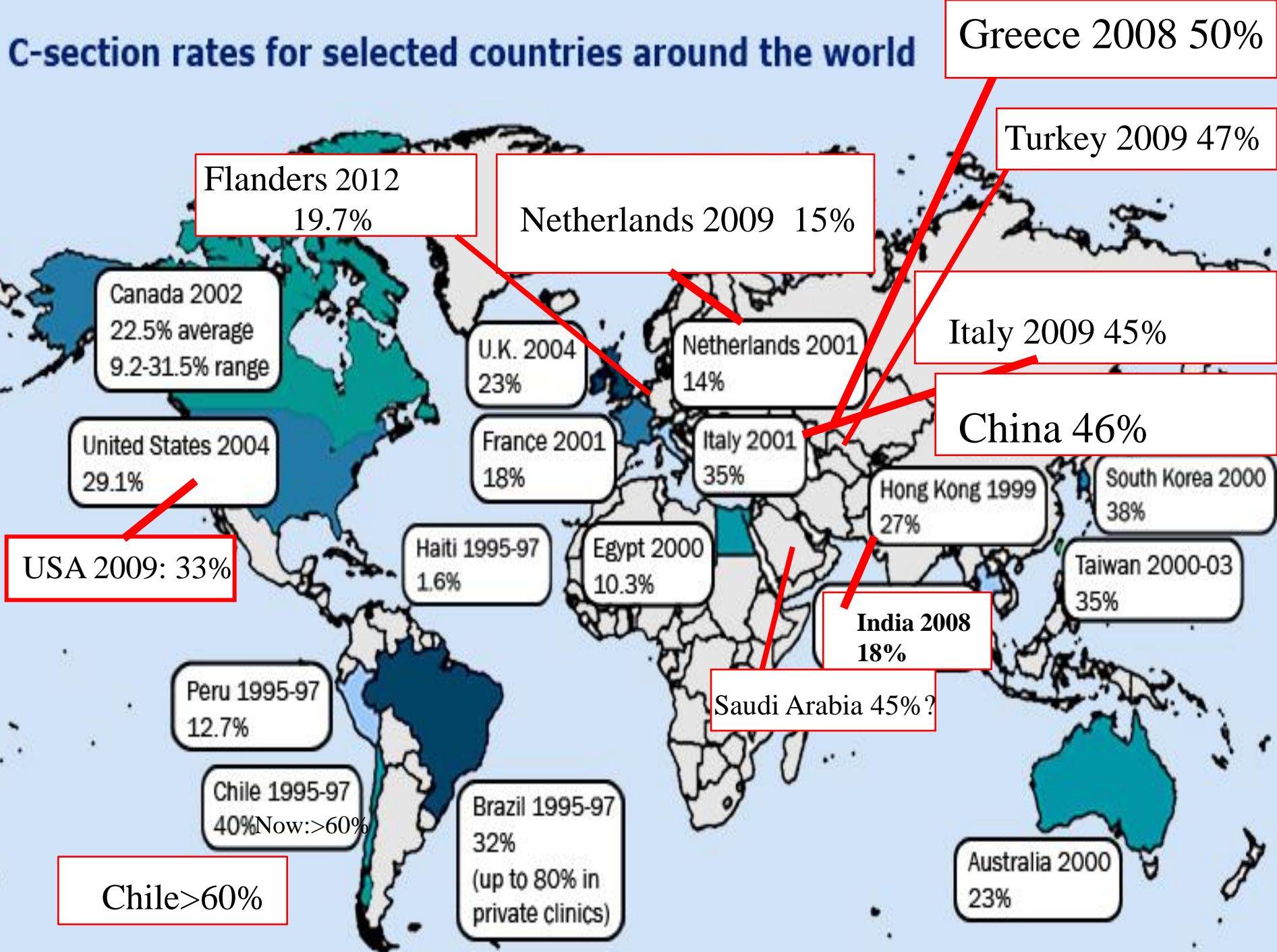




The car of my wife and my garage door



C-section rates for selected countries around the world



**What should be the conclusion
from that slide.....**

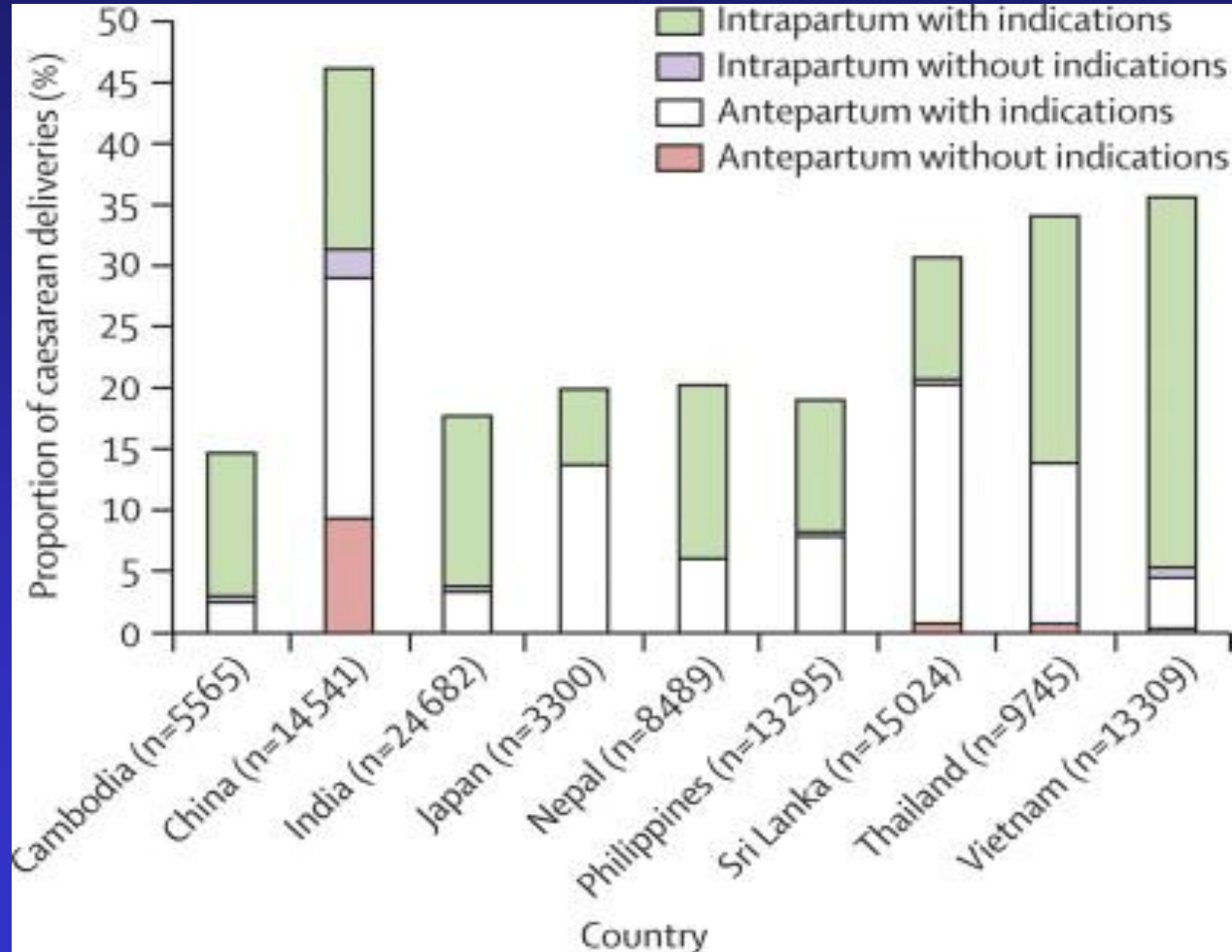
What should be the conclusion from that slide.....

- The incidence of CSs has nothing to do with evidence based medicine.
- It has more to do with the doctor's salary, the lazy doctor who does not want to work at night, the doctor who has lost his/her skills to attend a (difficult) vaginal delivery
- Medical legal issues

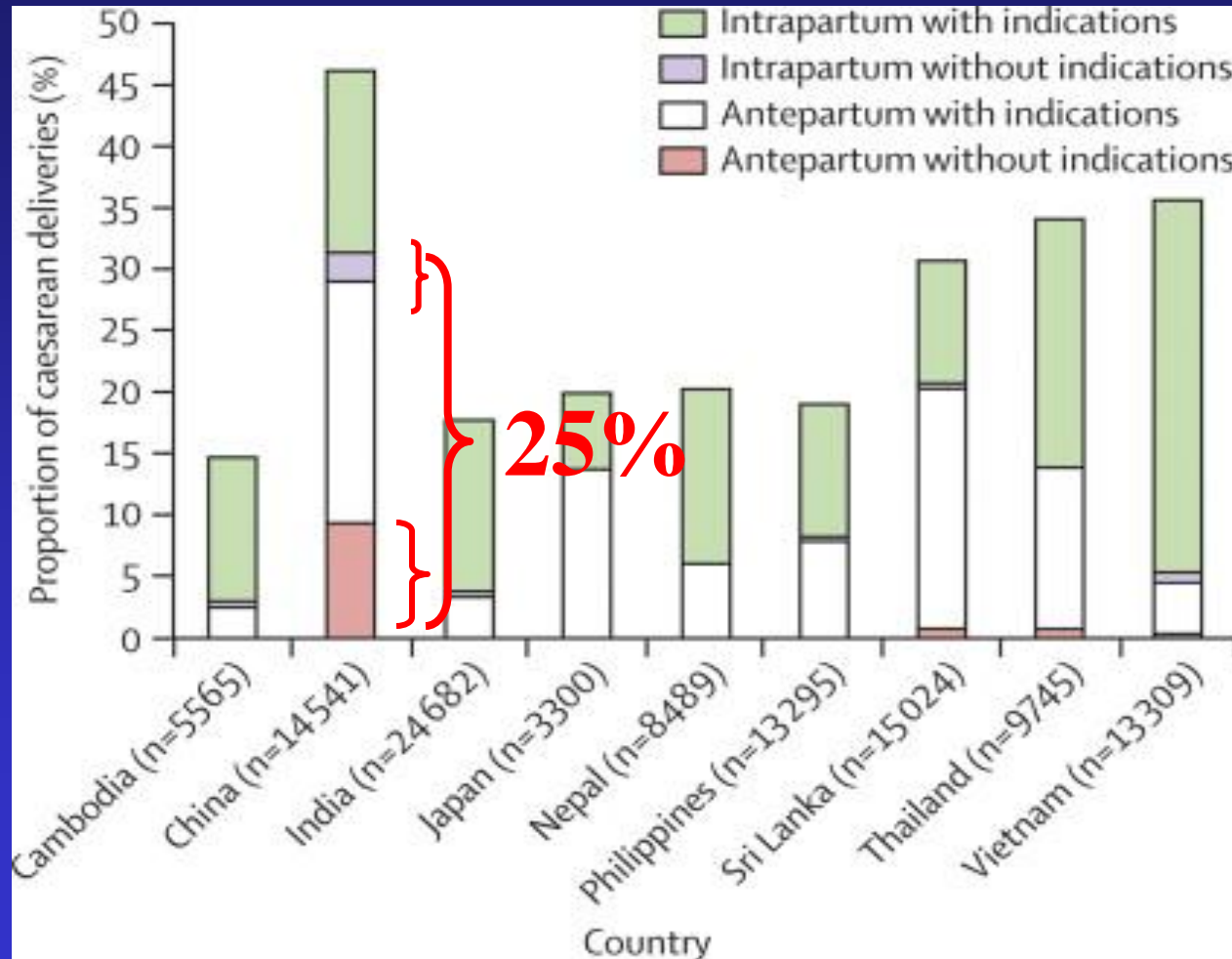
Medico legal issues

- Depend on the court experts
- Which are your/our own colleagues
- Make agreements within your societies and with the legal governmental bodies to ask only experts who are still fully engaged in active clinical practice
- Create clear guidelines: 'Shoulder dystocia is a complication not a mistake/fault'

Caesarean Sections in Asia, 2007-08



Caesarean Sections in Asia, 2007-08



Caesarean Sections in Asia, 2007-08

**Mat. mort, ICU admission, blood transfusion,
hysterectomy, int iliac art ligation**

RR

Antepartum CS without indication 2.7 (1.4-5.5)

Intrapartum CS without indication 14.2 (9.8-20.7)

Placenta previa/accreta and previous CS's

Previous CS	Previa (%)	Previa/Accreta (%)
• 0	0.3	3.3
• 1	0.8	11
• 2	2.0	40
• 3 or more	4.2	60

Placenta accreta, increta and percreta (and hysterectomy)

Number previous CS's	Total	Placenta AIP	Per 1000	
0		3	0,04	1:25000
1	4141	8	1.9	1:526
2	378	1	2.6	1:385
3	39	2	51.3	1:19
≥ 4	11	1	90.9	1:11

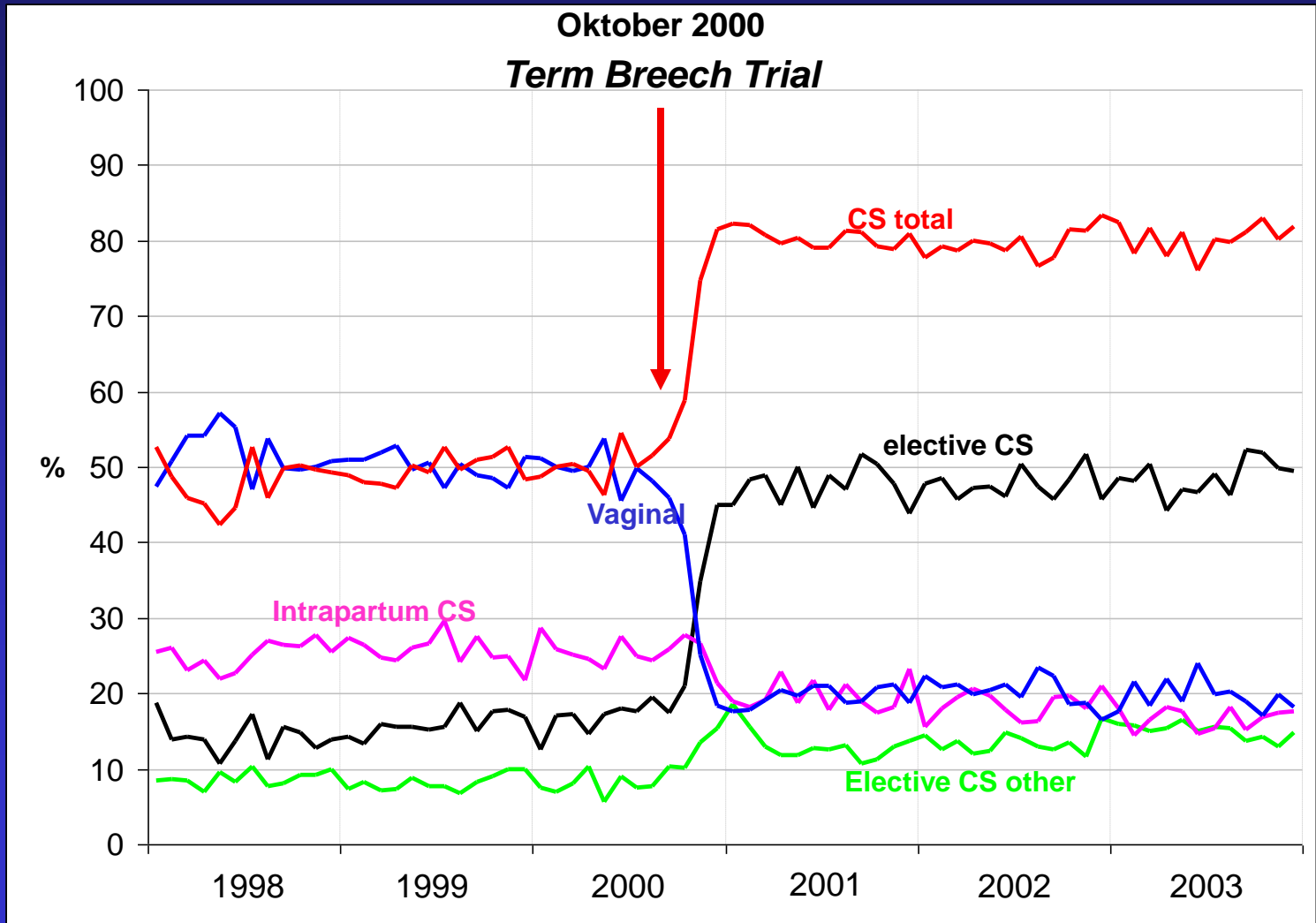
And a uterine rupture in 0.4 to 4% of subsequent pregnancies, with a perinatal death in 10% of cases

Very importantly

There is no evidence that the increasing CS rate is associated with improved **perinatal outcome** (lower perinatal mortality; lower rate of asphyxia; Eckerlund & Gerdtham Int J Techn Assess Health Care 1999),

With possibly as an only exception the breech population???

More CS, better outcome?? No, only in breech deliveries



CS for breech position at follow up; mother versus infant

2000 SC

11 infants

1000 subsequent pregnancies:

- 10 uterine ruptures
- 1 perinatal death



11 becomes 10

1 uterine rupture for each infant 'saved'

CS for breech position at follow up; mother versus infant

2000 SC

11 infants

1000 subsequent pregnancies:

- 10 uterine ruptures
- 1 perinatal death



11 becomes 10

1 uterine rupture for each infant 'saved'

- 3 hysterectomies (placenta increta, uterine rupture)
- 4 % risk of 1 maternal death / peripartum hysterectomy

And,

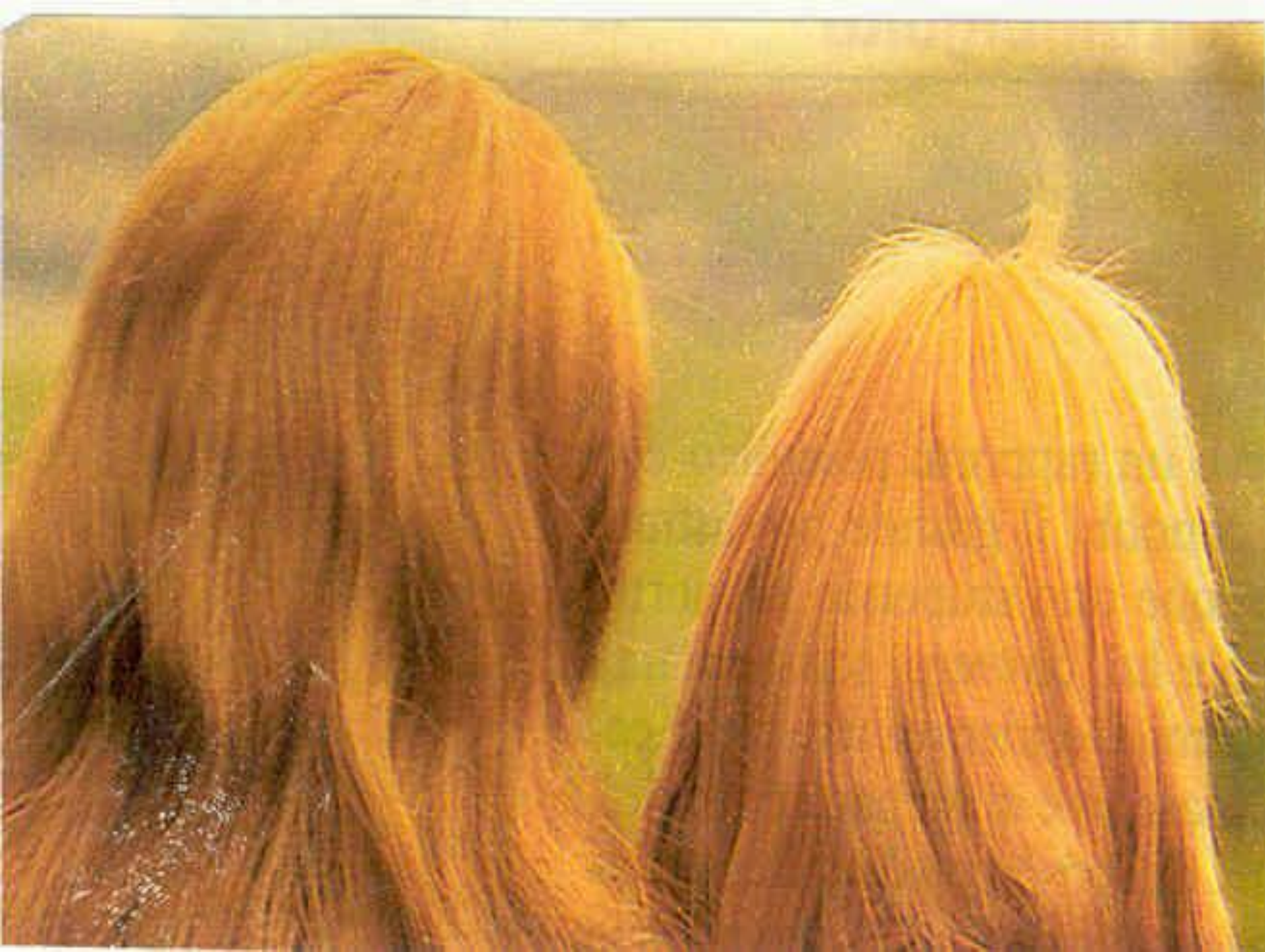
one maternal death for 80 infants that are "saved"

**This implies that counseling
becomes more and more
important**



Progress in obstetrics

**.....is more difficult to achieve
than many of us believe/think**





CS in all women with diabetes

1790 SC to prevent one Erb's palsy, with lasting consequences

900 subsequent pregnancies:

- **9 uterine ruptures** **—————>** **1 perinatal death**
- **3 hysterectomies (placenta increta, uterine rupture)**
- **4 % risk of 1 maternal death / peripartum hysterectomy**

In other words,

One perinatal death for one Erb's palsy prevented

Progress in obstetrics

**.....is more difficult to achieve
than many of us believe/think**

And what about twins



The Canadian Twin Birth Study

- CS or planned vaginal birth in twins
- N= 2.800

CS or planned vaginal birth in Twins?

Adverse outcome: perinatal mortality or severe morbidity

	Planned CS	Planned VB
• N	1398	1406
• CS	89.9%	39.5-43.5%
• Adverse outcome*	57 (2.05%)	52 (1.87%)

The Twin Birth Study; Barrett et al, New England J Med 2013

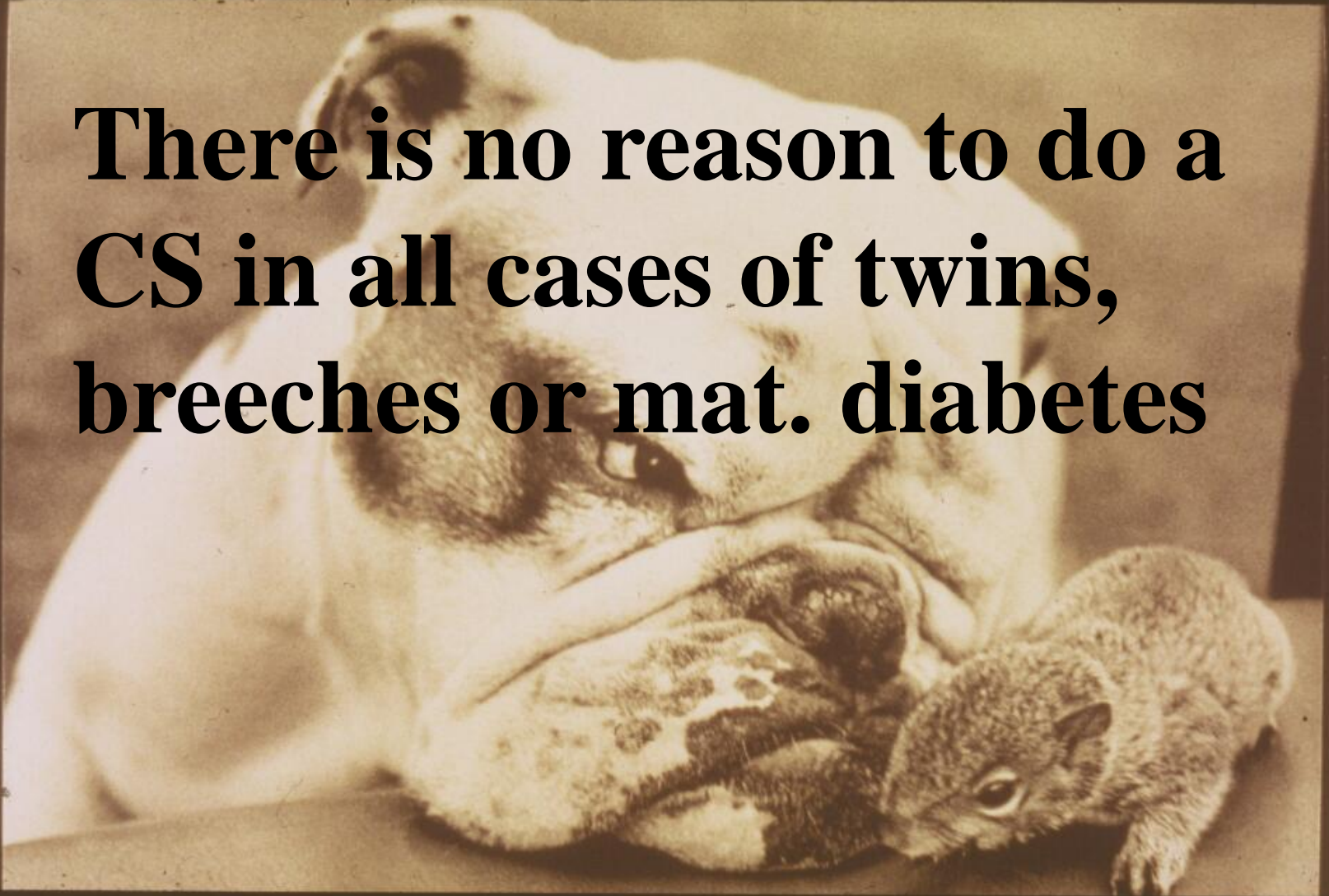
32-39 wks; twin A cephalic; no effect parity, gest age at randomization, mat age, presentation twin B

So,.....



So,.....

**There is no reason to do a
CS in all cases of twins,
breeches or mat. diabetes**



Elective repeat CS and RDS, n=13.258

36 % performed before 39 weeks of gestation

	Odds ratio
37 wks	4.2 (2.7-6.6)
38 wks	2.1 (1.5-2.9)
39 wks (reference)	
40 wks	1.1
41 wks	1.0
42 wks	2.3

Admission to NICU, newborn sepsis, treated hypoglycemia

Elective CS and respiratory outcome, n=20.973

56 % performed before 39 weeks of gestation

	Odds ratio
37 wks	3.2 (2.5-4.2)
38 wks	1.7 (1.4-2.1)
39 wks (reference)	
40 wks	0.9
41 wks	0.8
42 wks	0.3 (0.1-1.0)

Sign. higher incidence of sepsis (<38 wks), hypoglycemia (<39wks), hyperbilirubinemia (<38wks) and NICU admission (<38 wks)

So,

Never do an elective CS before 39 weeks of gestation, unless there is documentation of lung maturity

But,.....

But,.....

- We have lost our skills to attend a vaginal breech or twin delivery.....
- And we will do the CS at around 37 weeks, to prevent

And, we will do the CS around 37 wks, to prevent...

a) an emergency CS with higher maternal risks

b) unexpected vaginal breech delivery

And, we will not do the CS after 37 wks, but around 37 wks, to prevent..

a) an emergency CS , with higher maternal risks

labour will start in 10-15% of cases before 39 wks. So the poor doctor may – indeed- have to work at night. However the risk for RDS is 30% lower after the start of spontaneous contractions (Gerten et al, AJOG,2005)

Intrapartum CS is more risky for the mother than elective CS. However that holds for the real intrapartum period and not at the beginning of labour and patients should be instructed to come early

b) unexpected vaginal breech delivery

And, we will not do the CS after 39 wks, but around 37 wks, to prevent..

a) an emergency CS , with higher maternal risks

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Intrapartum CS is more risky than elective CS. However that holds for real intrapartum and not at the beginning of labour and patients should be instructed to come early

b) unexpected vaginal breech delivery

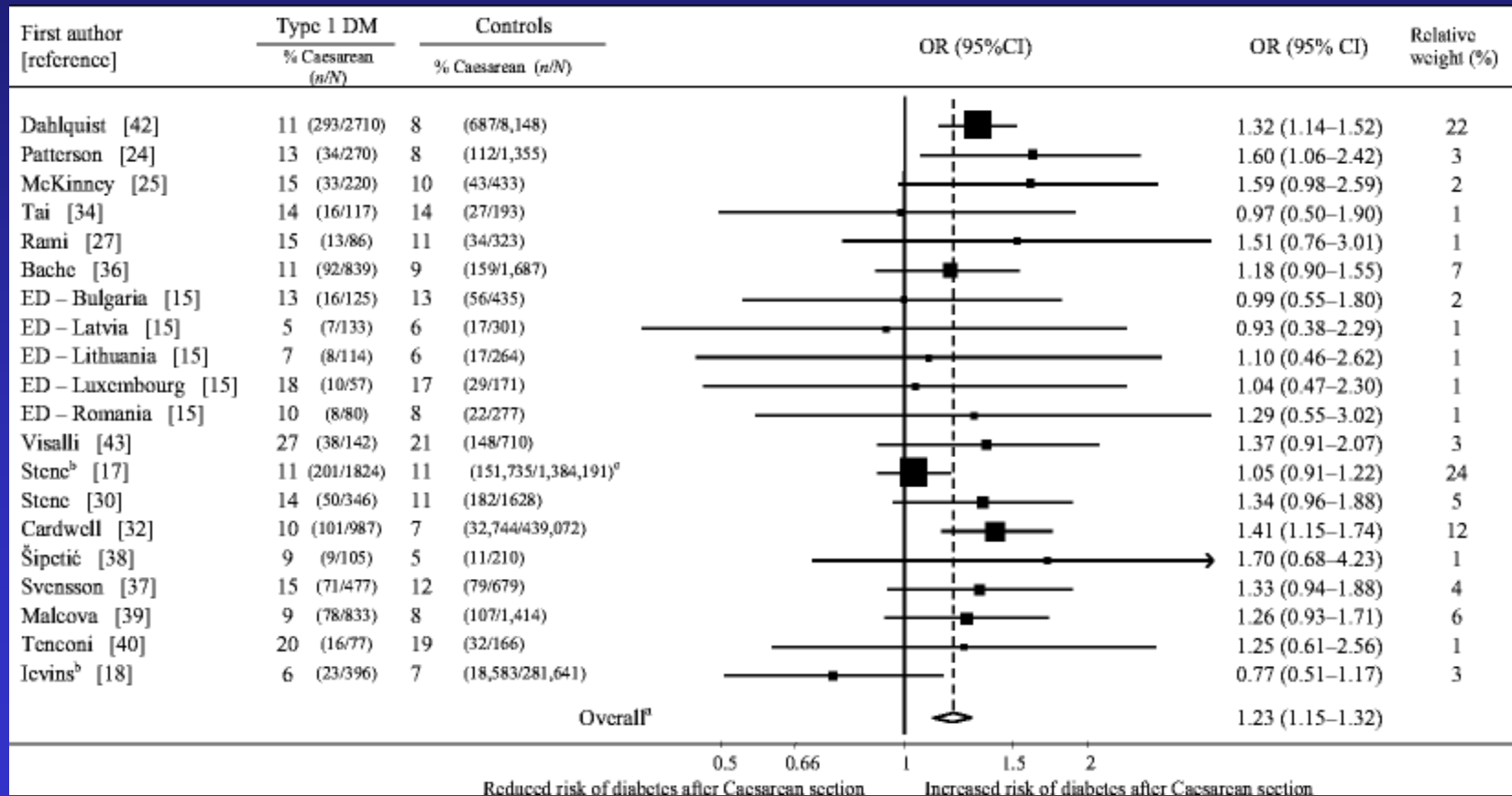
“Sorry Mrs So-and-so I have to do the CS at 37 wks, putting your baby at a 4fold increased risk for respiratory disorders, because I am too stupid, or forgot to practice how to do an unexpected breech delivery”

If that is the case, than we really have to.....

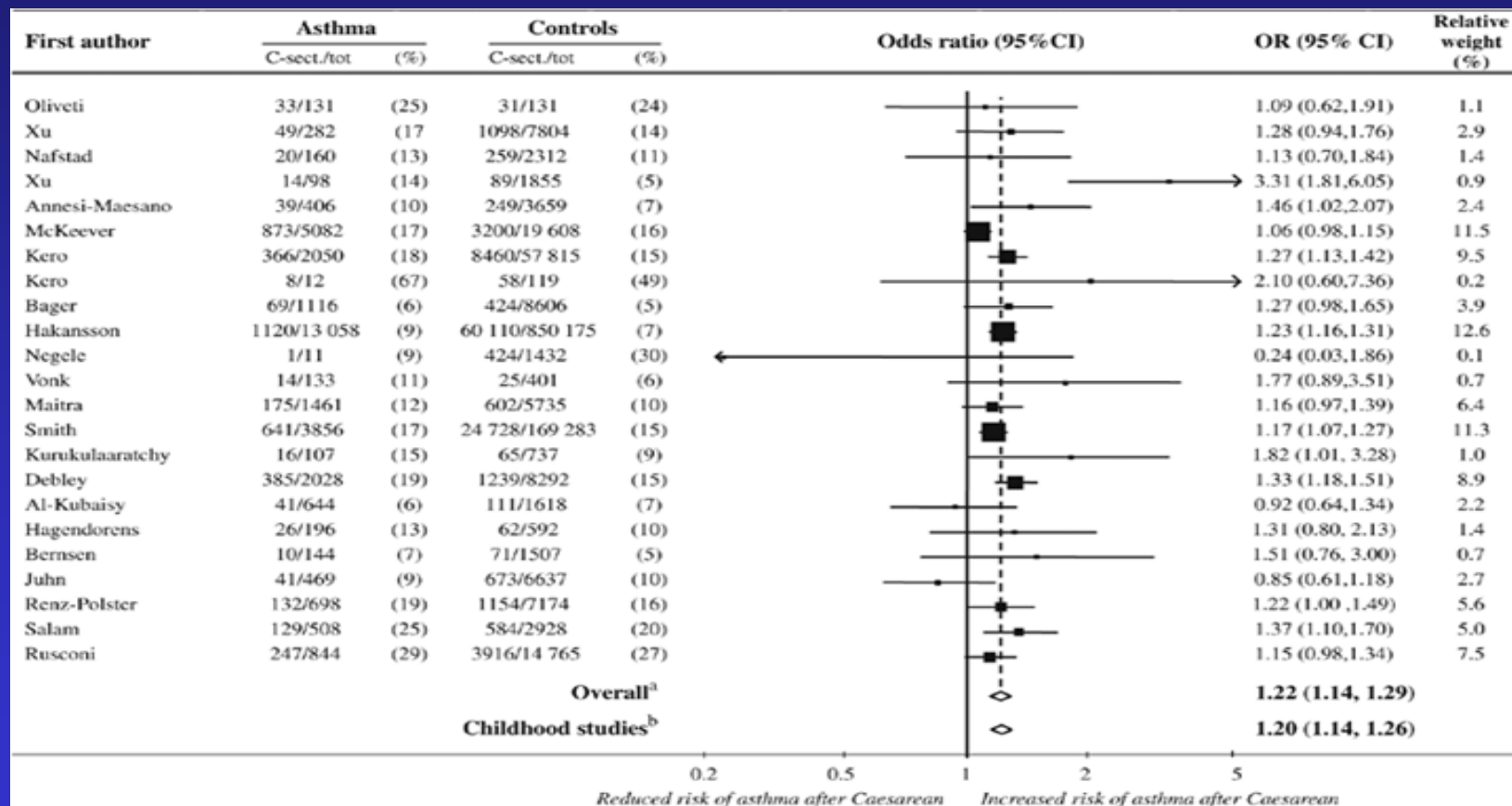
pray seriously for a better future



CS is associated with a 23% increase in childhood-onset type-1-diabetes



CS is associated with a 20% increase in childhood asthma



CS is associated with a 20% increase in childhood asthma

Limitations:

Observational studies!

However, no clear effects of:

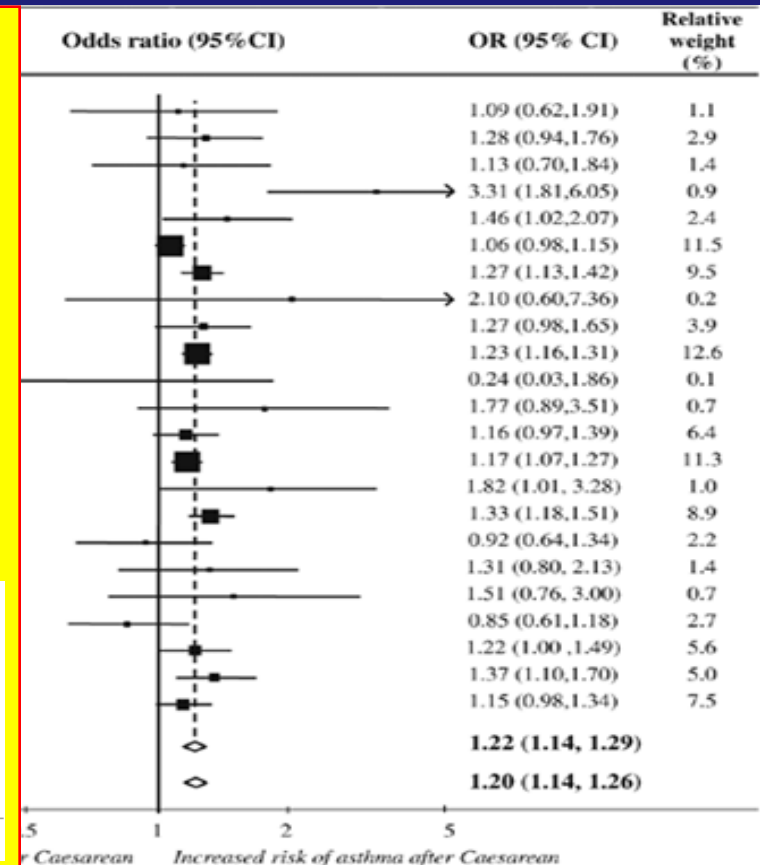
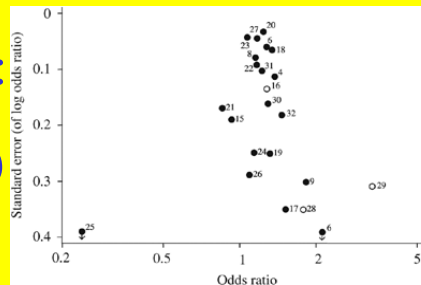
-low birth weight

-breastfeeding

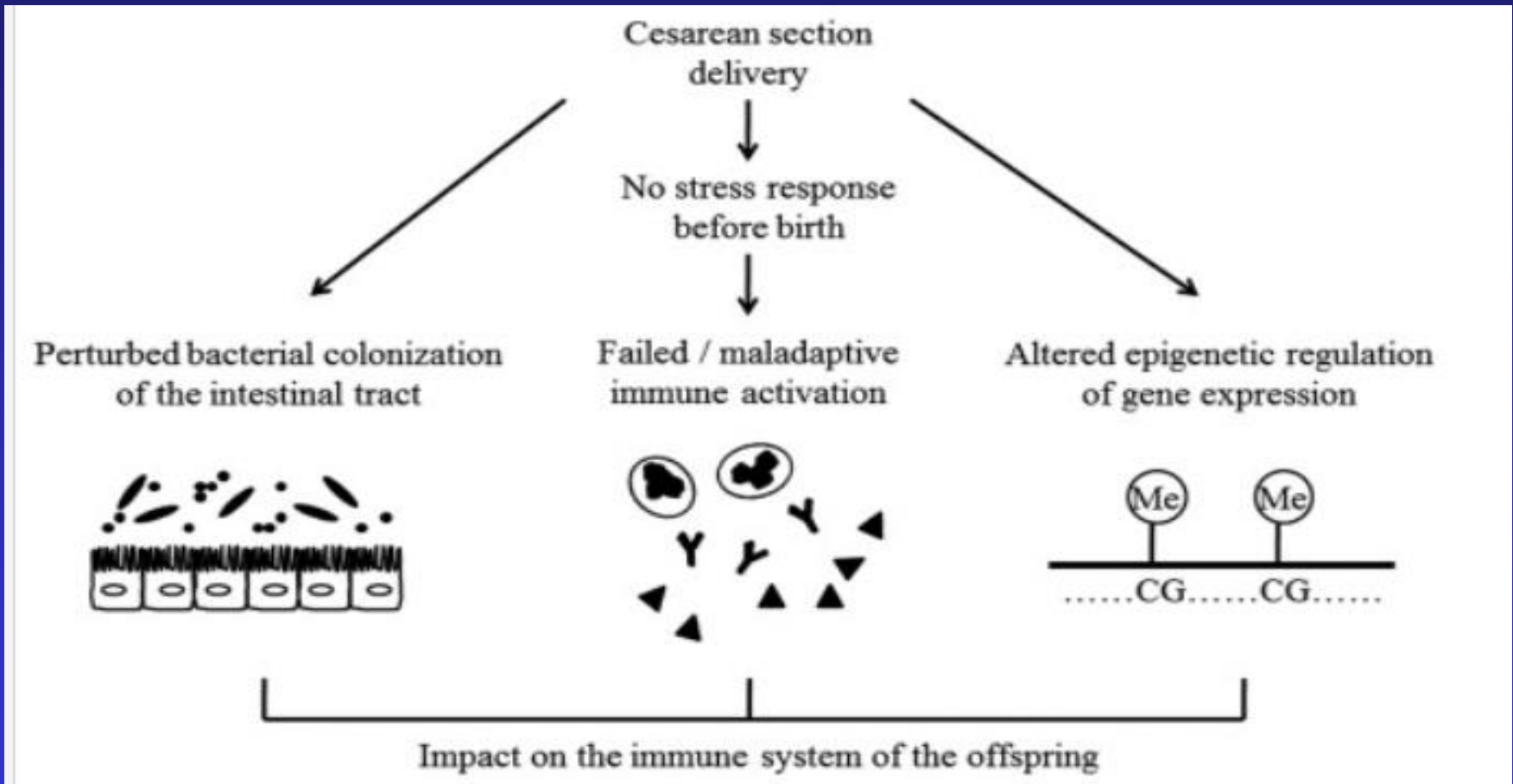
-passive smoking

No publication bias:

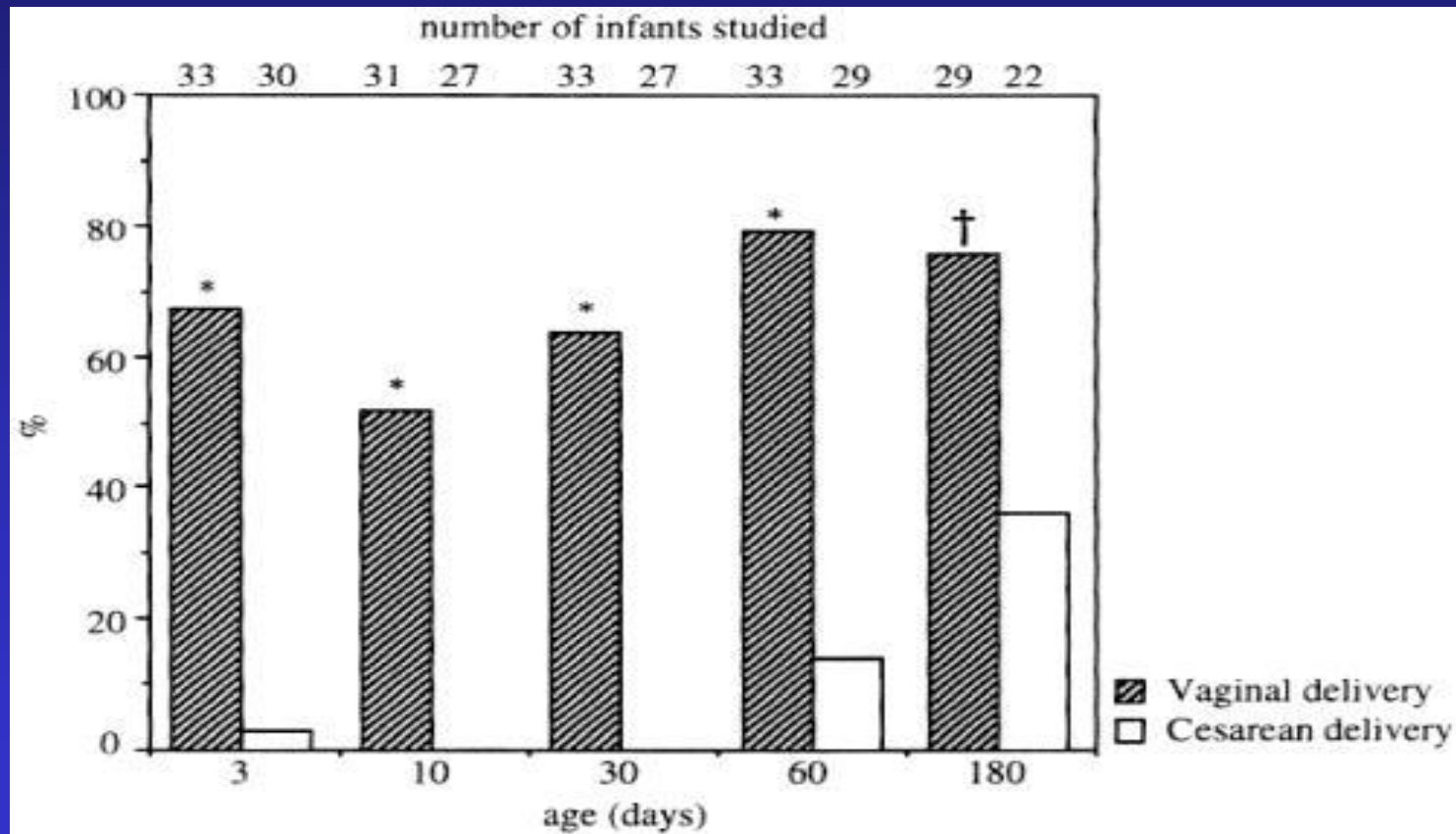
(funnel plot:)



Effects of CS on Immune response



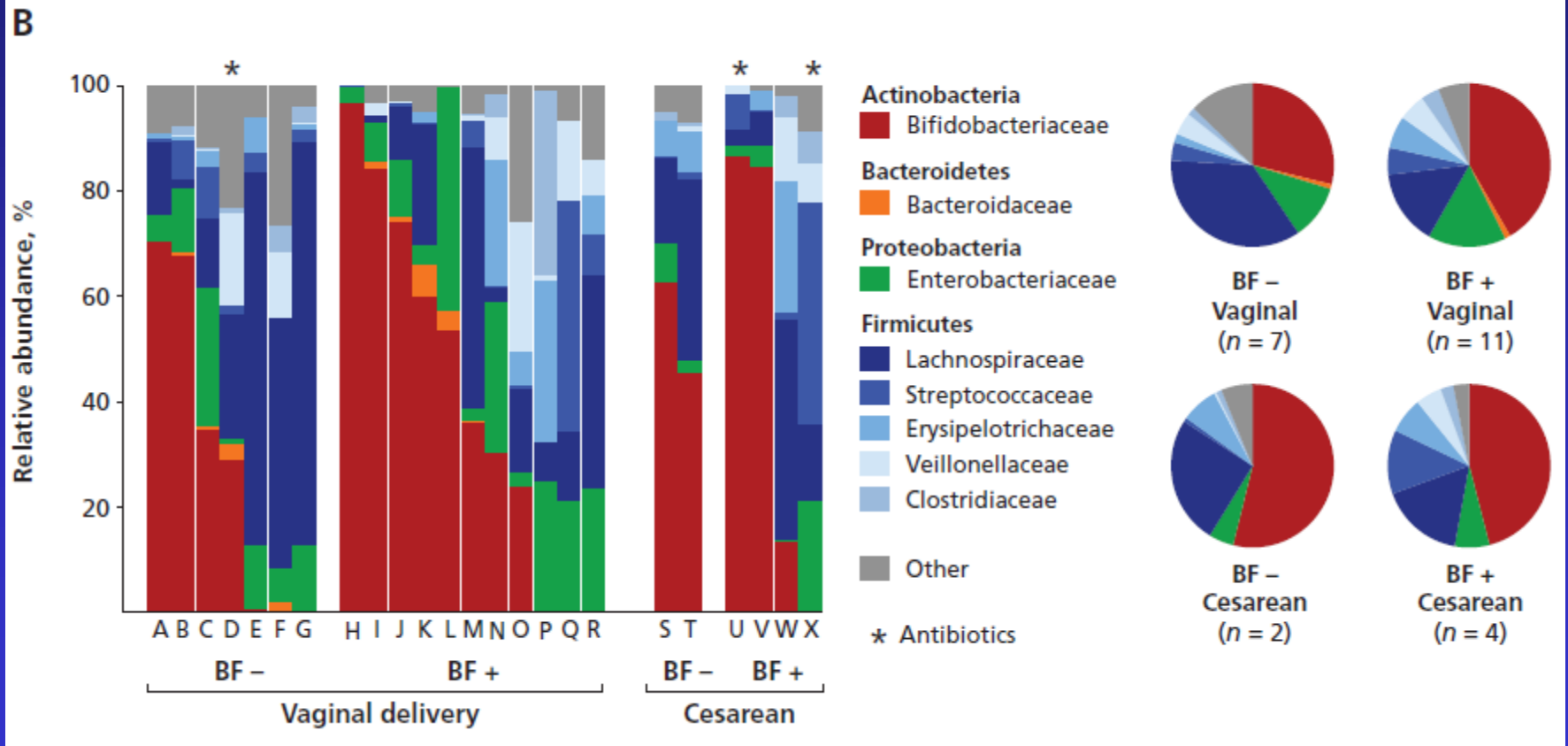
Colonization with *Bacteroides fragilis*



M.M.Gronlund et al JPGN, 1999

probiotics????

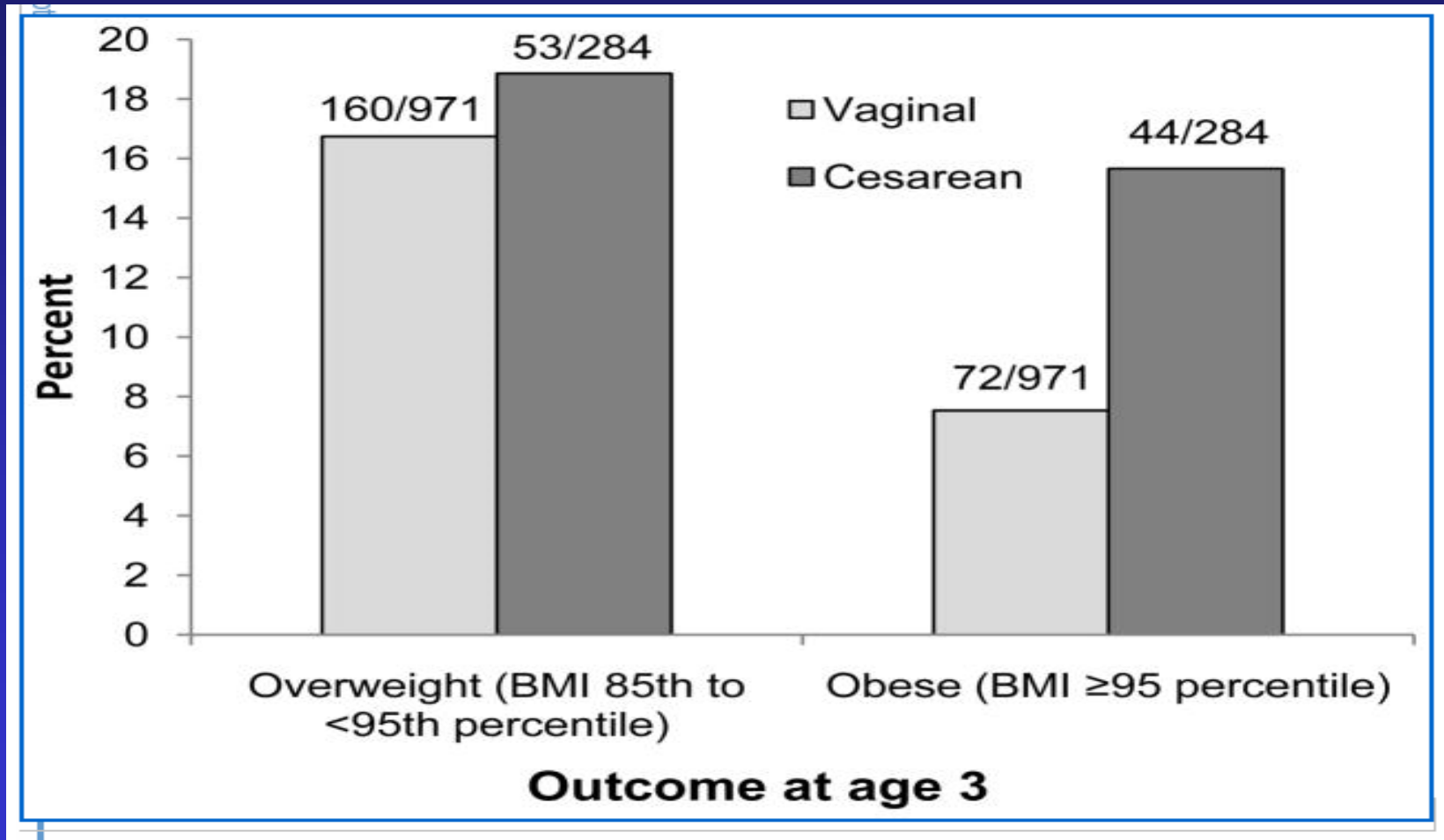
Low bacterial richness and diversity, especially after elective CS



Effects CS on Immune response

- Later risks for allergy
- Celiac disease
- Aseptic necrosis of femoral head
- Cancer in the young

Cesarean Delivery and Childhood obesity



Huh et al Arch Dis Child, 2012; USA; adjusted for mat BMI and birth weight

Cesarean Delivery and Childhood obesity

Meta-analysis, 2 case control and 7 cohort studies

OR

- Children 1.32 (1.15-1.51)
- Adolescents 1.24 (1.00-1.54)
- Adults 1.50 (1.02-2.20)
- Overall 1.33 (1.19-1.47)

- High quality trials 1.18 (1.09-1.27)
- Median quality trials 1.78 (1.43-2.22)

Caesarean section and Childhood immunity and obesity

Timing and acquisition of gut microflora during early life events appears to play significant role in health and disease (Flint et al, 2012)



Dutch boy born by Caesarean Section

Another perspective

God, Allah and Buddha have designed the woman to be able to deliver vaginally

Another perspective

- God, Allah and Buddha have designed the woman to be able to deliver vaginally
 - And later they designed the doctor to correct errors they might have made
-

Another perspective

- God, Allah and Buddha have designed the woman to deliver vaginally
 - And later they designed the doctor to correct errors they might have made
 - But, it seems unrealistic to assume that they made errors in 30-50% of the normal population or in 80% of the diabetic population
-

How to bring the CS rate down?

- Increase the doctor's fee of a vaginal delivery and bring the CS fee down to half of that
- Have a companion present during the whole process of labour (care versus cure; 'Doula')
- Re-establish the practical skills of the doctors*
- Confidence to the women
- Medico-legal

* Training shoulder dystocia results in a 3-fold decrease in brachial nerve injury; Inglis et al, AJOG 2011

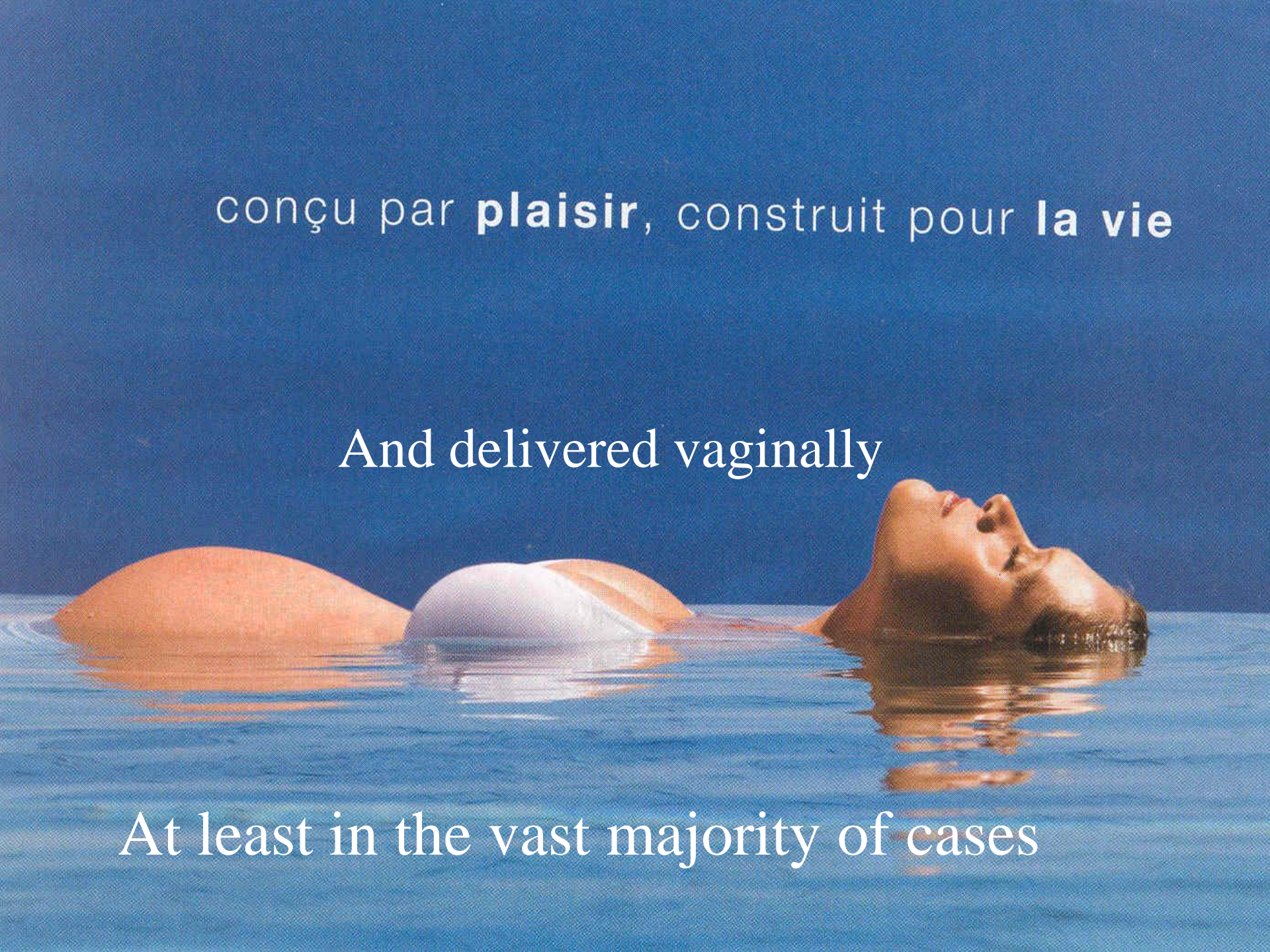
conçu par **plaisir**, construit pour **la vie**



conçu par **plaisir**, construit pour **la vie**

And delivered vaginally

At least in the vast majority of cases



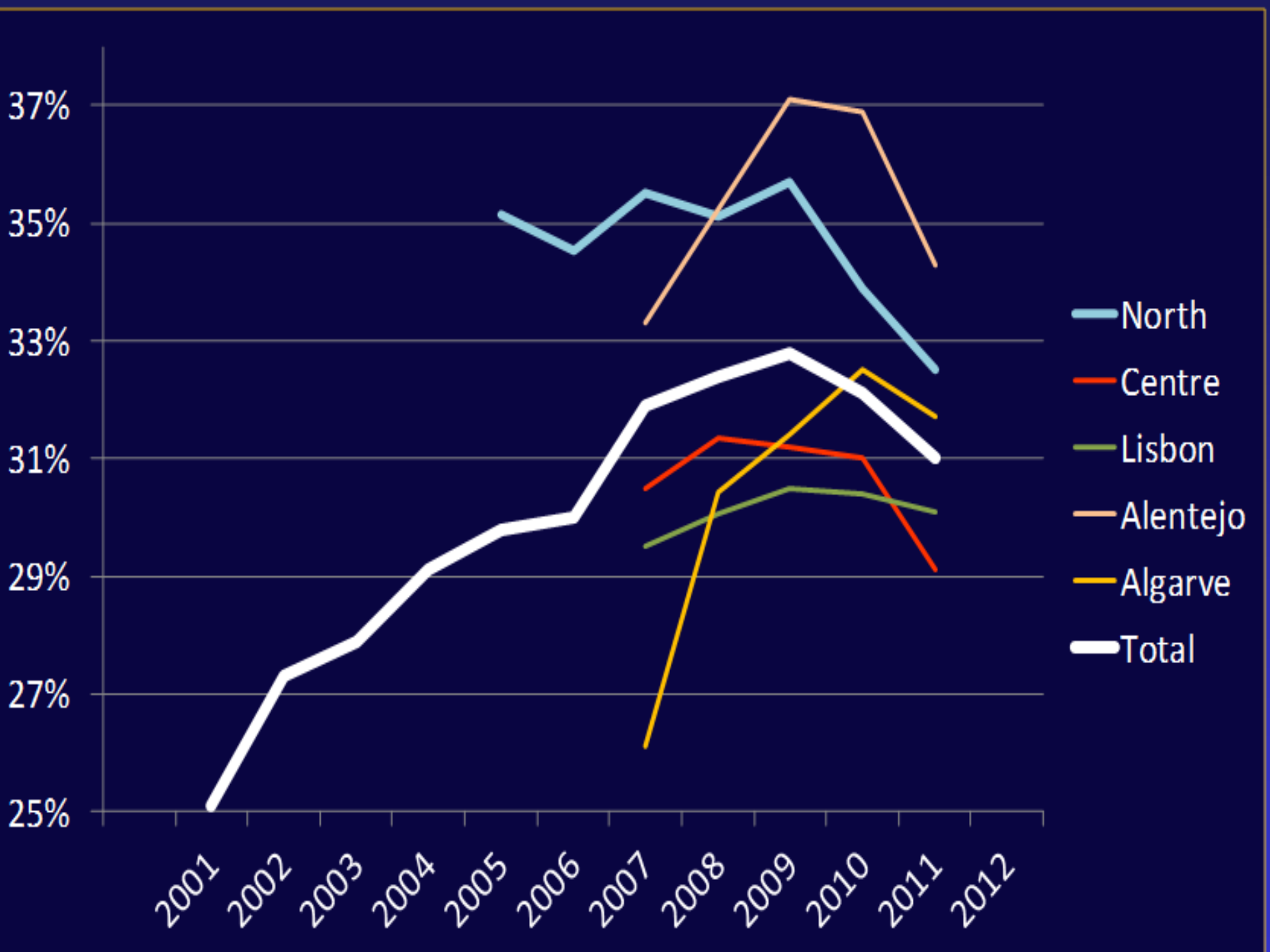


Thank You

Antalya May 2014

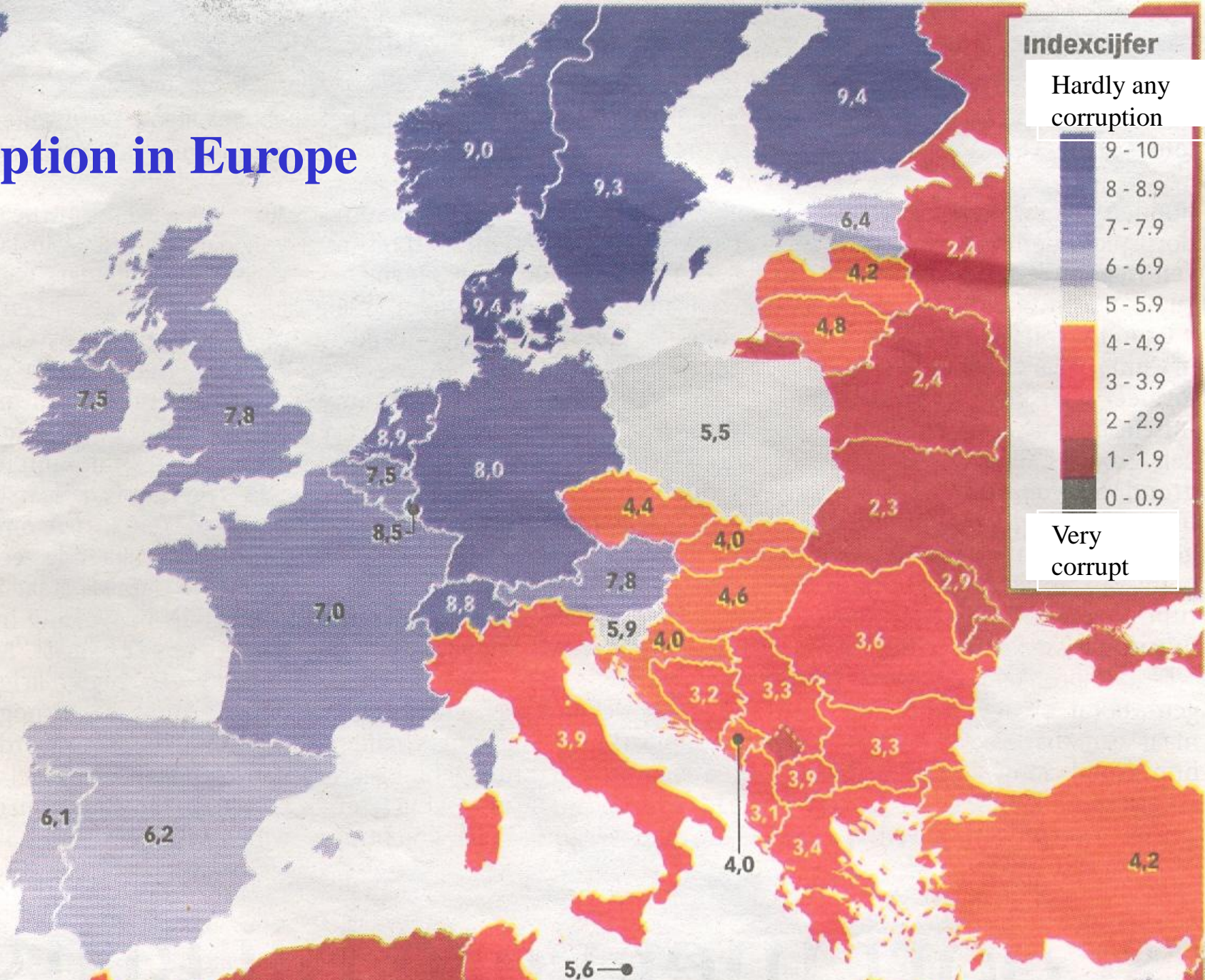
How the Portuguese bring their CS rate down? (D.Ayres-de-Campo)

- Dissimination of knowledge
- Uniform CS classification system
- Annual CS rate/hospital
- Payment of CS= vaginal delivery **
- **Financement of hospitals based on CS rate**
- Implementation of STAN technology
- ** (initially) not accepted by private sector



8,3

Corruption in Europe



Risks of Uterine rupture, Placenta previa/accreta, Hysterectomy after previous CS, will be presented by

Corinne Hubinont

Placenta previa/accreta and previous CS's

Previous CS	Previa (%)	Previa/Accreta (%)
• 0	0.3	3.3
• 1	0.8	11
• 2	2.0	40
• 3 or more	4.2	60

OR for elective C delivery: 3 !!

Pregnancy after CS is also a problem in China

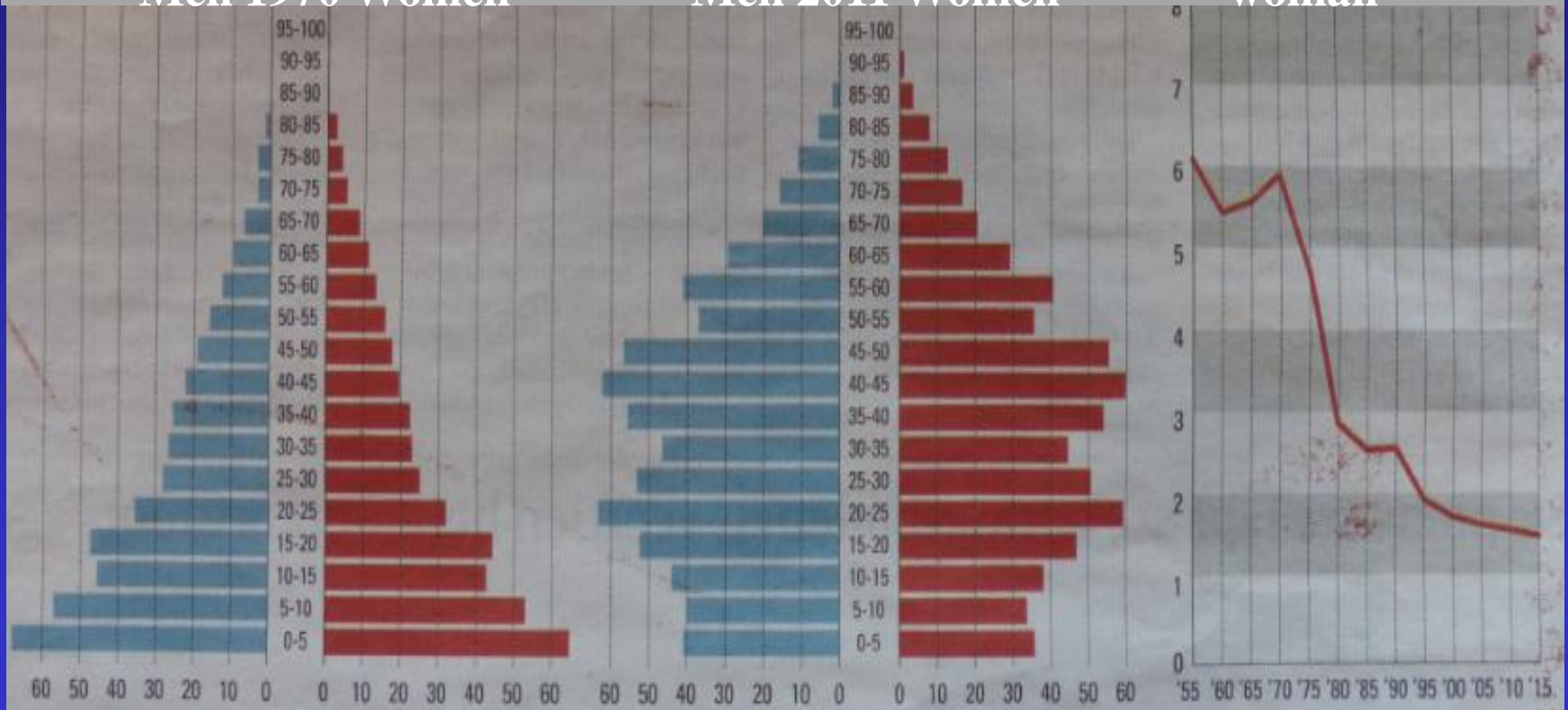
Population pyramid

Men 1970 Women

Men 2011 Women

N children/

woman



Another perspective



**Man delivers abdominally,
God delivers vaginally**

Meta-Analysis - Definition

*“Meta-analysis is like a sausage:
Only God and the butcher know what it
contains
And both are not going to eat it”*



Pasgeborene onderdrukt eigen afweer voor gezonde darmflora

Immuunsysteem

Pasgeboren baby's dempen actief hun afweersysteem. Daardoor zijn ze in hun eerste levensweken vaak ziek.

Door onze redactie wetenschap

AMSTERDAM. Baby's lopen kort na hun geboorte snel een infectieziekte op doordat hun afweersysteem zichzelf op een laag pitje zet. Dat gebeurt om een gevaarlijke afweerreactie tegen zich vestigende darm- en huidbacteriën te voorkomen. Dat is wat anders dan wat de medische leerboeken nu zeggen. Daarin staat dat jonge baby's zo bevattelijk zijn doordat hun afweercellen nog moeten rijpen.

Die eerste infectieziekten tijdens de opbouw van de darmflora zijn „een ongelukkig bijproduct van het grotere nut van actieve afweeronderdrukking”, schrijven onderzoekers van het Cincinnati Children's Hospital Medi-

cal Center vandaag in *Nature*.

En baby's komen inderdaad op de wereld met een onrijp afweersysteem. Ze krijgen daarom hulp, van afweerstoffen in de moedermelk. Ondertussen moet hun afweersysteem het verschil leren tussen lichaamseigen en lichaamvreemd, zodat de afweer voortaan weet wat het moet opruimen en wat het met rust moet laten. Maar dat is dus niet de hele verklaring voor hun vatbaarheid voor infectieziekten.

„De afgelopen tien jaar zijn al eerder mechanismen van actieve afweeronderdrukking gevonden”, zegt kinderarts/infectioloog/immunoloog Louis Bont van het Wilhelmina Kinderziekenhuis, onderdeel van het UMC Utrecht. Bont doet ook onderzoek naar die vroege afweeronderdrukking, maar is niet bij deze publicatie betrokken. „In de baarmoeder is de afweer al onderdrukt, zodat de foetus de moeder niet als lichaamsvreemd gaat afstoten. Meteen na de geboorte staat de baby massaal bloot aan stoffen die een afweerreactie kunnen opwekken. Die actieve onder-

drukking is dus erg slim, want de zuigeling beschermt zich daarmee bijvoorbeeld tegen het krijgen van koemelkallergie. En tegen een massale afweerreactie in de darmen, waar zich direct na de geboorte de darmbacteriën vestigen. De pijn die ze ervoor betalen is een grotere vatbaarheid voor ernstiger infectieziekten.”

Te hevige afweerreacties kunnen zo uit de hand lopen dat ze dodelijk zijn. Allergische reacties en astma-aanvalen zijn soms fataal. Iemand die aan bloedvergiftiging overlijdt, sterft in feite aan een massale afweerreactie.

„Dit onderzoek”, zegt Bont, „is vooral bijzonder omdat voor het eerst heel duidelijk een bepaald celtype is geïdentificeerd.” De onderzoekers vonden dat een bepaald type voorlopercellen van rode bloedcellen (CD71+-erythroiden) de demping verzorgen, maar alleen als die een bepaald enzym (arginase-2) produceren. Bont: „Daar zou je medicatie tegen kunnen ontwikkelen. Je zou die cellen kunnen stilleggen bij zuigelingen met een levensbedreigende infectie.”

nrc

1500 PIA

WWW

Foto: C. Beckstein

Vestigingen:

Advertere

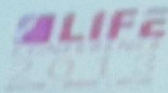
Email: sa

NRC November 8, 2013

Active suppression of immune response in newborns to allow development of a healthy intestinal microflora and to tolerate food, through CD71 erythroid cells

Bengalore 10-11-2013

ery few eons



P.C. MAHAPATRA

**Man delivers abdominally,
God delivers vaginally**

Caesarean section and Childhood obesity

Gut microflora may stimulate fat deposition and promote obesity through several mechanisms:

- It promotes obesity by improving energy yield from food
- It regulates gut permeability, low grade inflammation and immune balance
- It modulates metabolism/genes directly in the liver

The “Doula”

Continuous support compared to no-doula support: meta analysis 11 trials

	Odds ratio	(CI)
need for oxytocin	0.29	(0.20 - 0.40)
need for analgesia	0.64	(0.49 - 0.85)
forceps	0.43	(0.28 - 0.65)
Caes. section	0.49	(0.37 - 0.65)

difference in duration of labour -1.6 h (-0.96 – -2.3)

Care is more important
than **Cure**

Main indication for CS in some countries: the doctor's salary?

CS prevalence in Brasil 2006-2007:

- Public Health System 33.2%
- Private Services 72.2%

Another problem regarding CSs.....

They are seem so easy to perform

Ines Ramirez Peres did her own CS



Discussions on CSs.....

For instance ‘why do you do a CS in all cases of twins and maternal diabetes...?’

Italian gynaecologist (GCdiR):

..... If you do so many Caesarean sections without a reason, than why not in case of maternal diabetes, twins etc.....