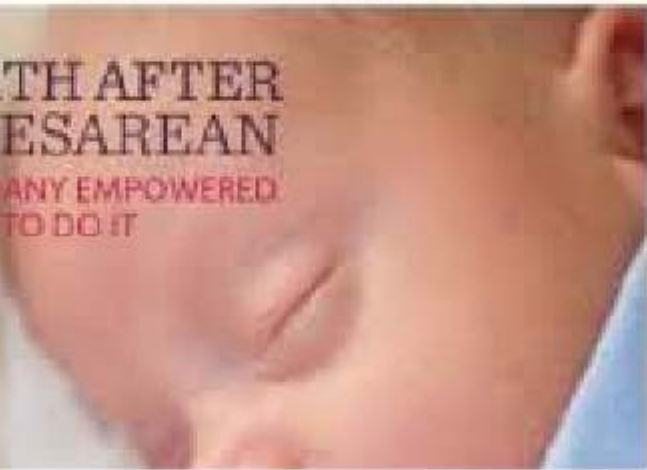


Il parto nella donna con pregresso taglio cesareo

Dr. O.Anis

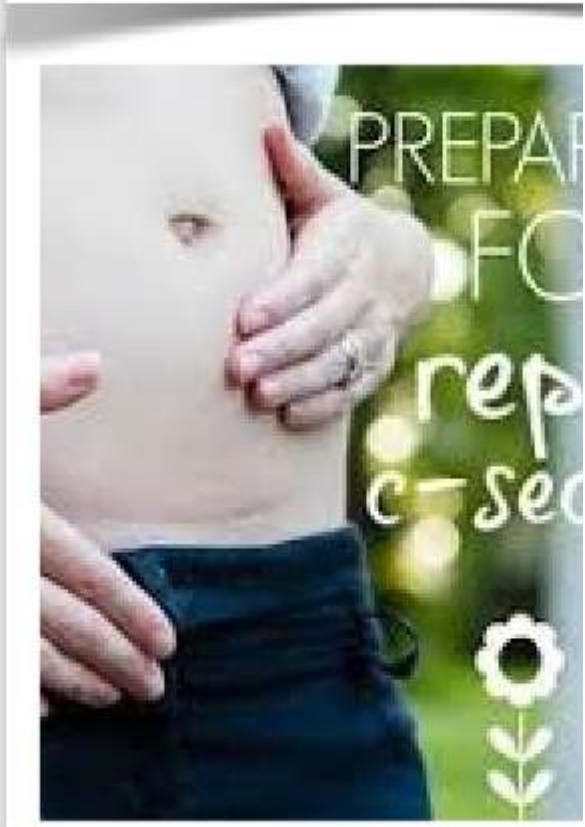


is a VBAC
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OB/GYN gives you the scoop
YOU can decide.

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impegno
culturale
comunicativo
organizzativo



VBAC =
And Courageous,
it's risky to give
because it takes

VENI
VIDI



IERI

EB Cragin Conservatism in obstetrics
N Y Med J 1916;104:1-3

“No matter how carefully the uterine incision is sutured, we can never be certain that the cicatrized uterine wall will stand a subsequent pregnancy and labor without rupture. *This means that the usual rule is once a cesarean, always a cesarean*”





The NEW ENGLAND JOURNAL of MEDICINE

Cesarean Delivery and the Risk–Benefit Calculus

Jeffrey L. Ecker, M.D., and Fredric D. Frigoletto, Jr., M.D. *Perspective*

MARCH 1, 2007

1937

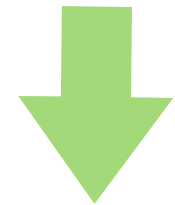
TC 3%

Mort Mat dopo TC 6%

2005

TC >30%

Mort Mat < 1000 volte



Molti TC non necessari

Percezione che il TC sia utile anche in situazioni in cui i benefici potenziali sono bassi

gravide “older” and “heavier”

> neonati prematuri e IUGR/SGA (PMA)

< parti operativi (9.5% 1994, > 5.4% 2003)

**Non percezione
rischi immediati
delle conseguenze**



The NEW ENGLAND JOURNAL of MEDICINE

Cesarean Delivery and the Risk–Benefit Calculus

Jeffrey L. Ecker, M.D., and Fredric D. Frigoletto, Jr., M.D. *Perspective*

MARCH 1, 2007

VBAC vs ERCS

Problema complesso

Key Questions



**Level of risk that is
currently considered
acceptable**

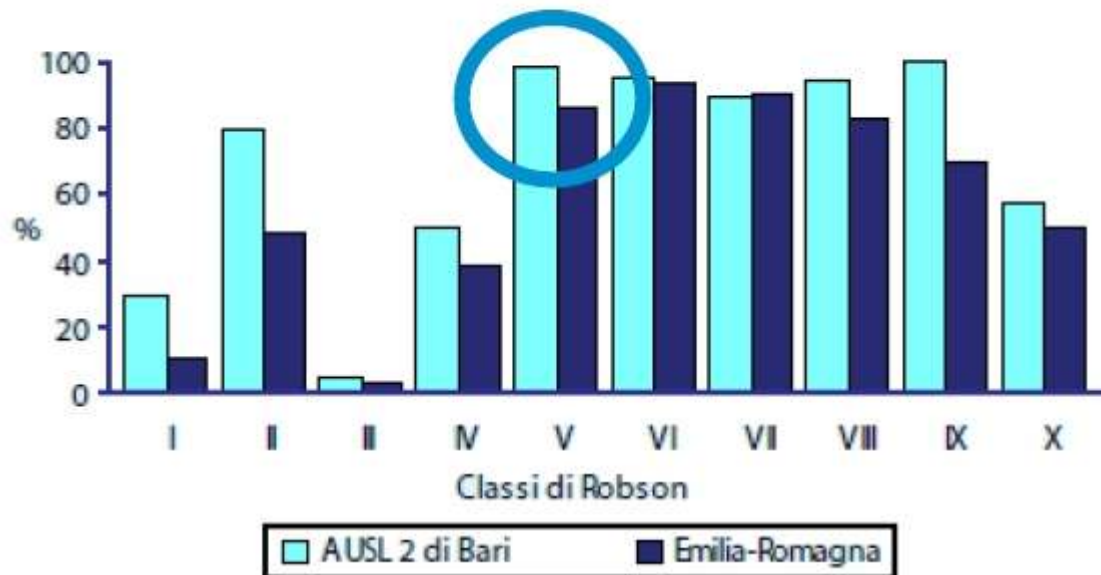


**Number needed to
treat to avoid one
adverse maternal-
neonatal outcome**



Indagine conoscitiva sul percorso nascita e

sulla situazione dei punti nascita con riguardo all'individuazione di criticità specifiche circa la tutela della salute della donna e del feto e sulle modalità di esercizio dell'autodeterminazione della donna nella scelta tra parto cesareo o naturale.



Italia

% parti cesarei



2011
Italia
31.72

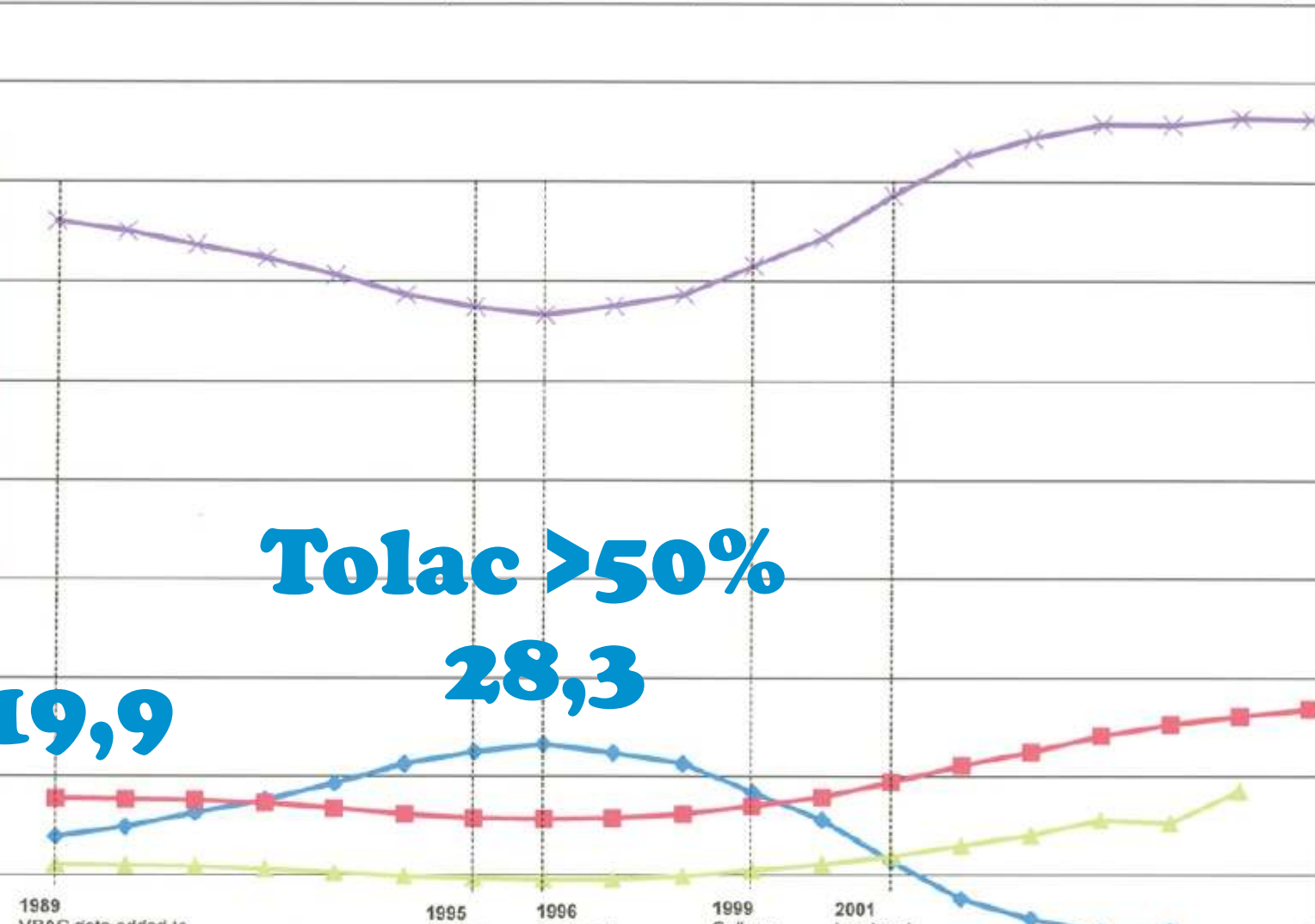


National Institutes of Health (NIH) Consensus Conference on Cesarean Birth after cesarean (VBAC) as a mechanism to safely reduce the cesarean delivery rate.

1988 ACOG Guidelines for **Vaginal delivery after previous cesarean birth**. Committee opinion 143

1995 ACOG Vaginal delivery after previous cesarean birth 143: In the absence of contraindications, a woman with one previous cesarean delivery with a lower transverse uterine incision is a candidate for VBAC and **should be counseled and encouraged to undergo a trial of labor.**"

— VBAC rate — Cesarean delivery rate — Primary cesarean delivery — Repeat cesarean delivery



Tolac >50%

28,3

19,9

1996 NEJM Mc Mahon

1998 due bollettini ACOC "readily" a "immediately" to provide emergency c

2001 NEJM

Rates and Success Rates of Trial of Labor After Cesarean Delivery in the United States, 1990–2009

Sayeedha F. G. Uddin • Alan E. Simon

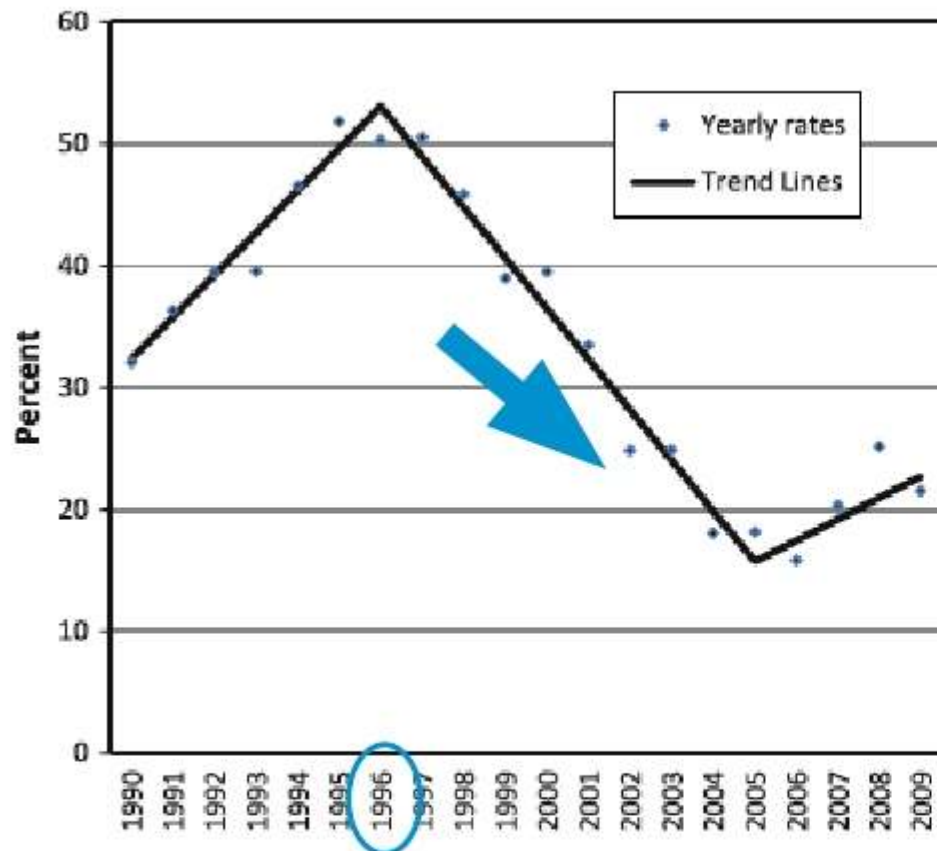


Fig. 1 Percent of births with trial of labor among all deliveries with prior Cesarean delivery in the United States, 1990–2009. Changes in linear trend lines identified using Joinpoint analysis. Source CDC/

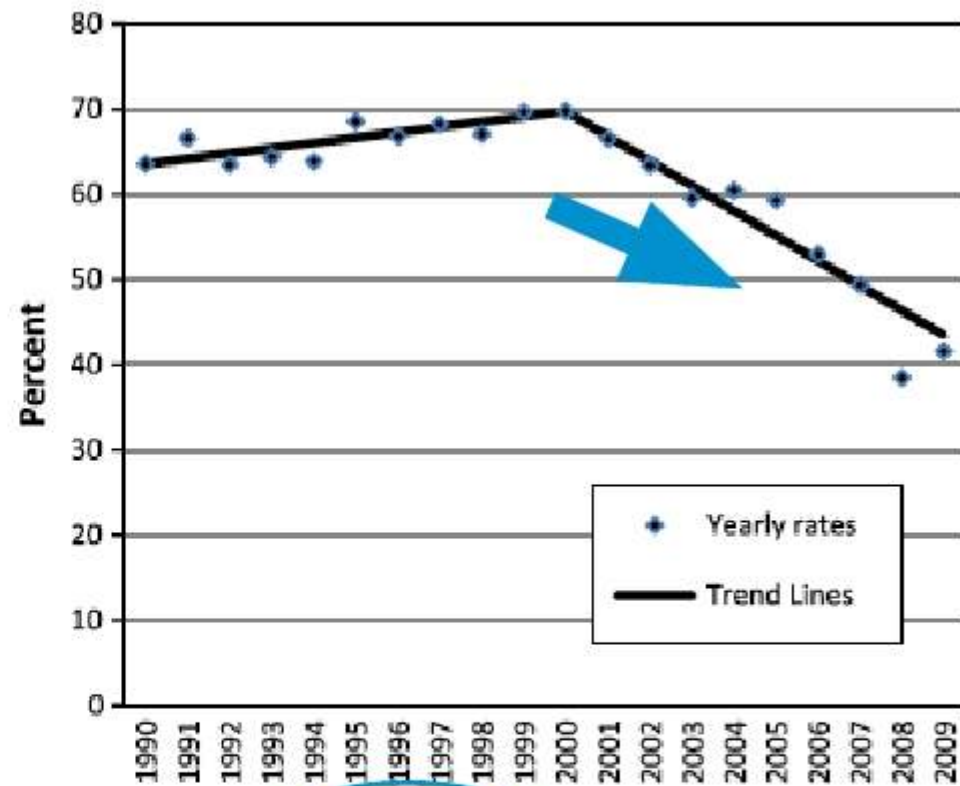


Fig. 2 Percent of successful trials of labor among all TOLAC deliveries in the United States, 1990–2009. Note Changes in linear trend lines identified using Joinpoint analysis. TOLAC is trial of labor after previous Cesarean section. Source CDC/NCHS, National

The New England Journal of Medicine

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VOLUME 335

SEPTEMBER 5, 1996

NUMBER 10



COMPARISON OF A TRIAL OF LABOR WITH AN ELECTIVE SECOND CESAREAN SECTION

MICHAEL J. McMAHON, M.D., M.P.H., EDWIN R. LUTHER, M.D., WATSON A. BOWES, JR., M.D.,
AND ANDREW F. OLSHAN, Ph.D.

1996

TABLE 2. MORBIDITY IN PREGNANT WOMEN WHO CHOSE A TRIAL OF LABOR OR AN ELECTIVE SECOND CESAREAN SECTION IN NOVA SCOTIA FROM 1986 THROUGH 1992.

MORBIDITY*	TRIAL OF LABOR (N = 3249)	ELECTIVE SECOND CESAREAN SECTION (N = 2889)	ODDS RATIO (95% CI)†
	no. (%)		
Total complications	257 (7.9)	243 (8.4)	0.9 (0.8–1.1)
Major complications	53 (1.6)	24 (0.8)	1.8 (1.1–3.0)
Hysterectomy	5 (0.2)	6 (0.2)	0.6 (0.2–2.4)
Uterine rupture	10 (0.3)	1 (0.0)	5.2 (0.6–45.4)
Operative injury	41 (1.3)	18 (0.6)	1.9 (1.0–3.5)
Minor complications	204 (6.3)	219 (7.6)	0.8 (0.7–1.0)
Puerperal fever	171 (5.3)	185 (6.4)	0.8 (0.7–1.0)
Transfusion	36 (1.1)	39 (1.3)	0.8 (0.5–1.3)
Abdominal-wound infection	43 (1.3)	63 (2.2)	0.6 (0.4–0.9)

Conclusions

Among pregnant women who have had a cesarean section, **major maternal complications**

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VOLUME 345

JULY 5, 2001

NUMBER 1



RISK OF UTERINE RUPTURE DURING LABOR AMONG WOMEN WITH A PRIOR CESAREAN DELIVERY

MONA LYDON-ROCHELLE, PH.D., VICTORIA L. HOLT, PH.D., THOMAS R. EASTERLING, M.D., AND DIANE P. MARTIN, PH.D.

2001

TABLE 3. INCIDENCE AND RELATIVE RISK OF UTERINE RUPTURE DURING A SECOND DELIVERY AMONG WOMEN WITH A PRIOR CESAREAN DELIVERY.*

TYPE OF DELIVERY	NO. OF WOMEN	INCIDENCE (PER 1000)	RELATIVE RISK (95% CONFIDENCE INTERVAL)
Repeated cesarean delivery without labor	6,980	1.6	1.0
Spontaneous onset of labor	10,789	5.2	3.3 (1.8–6.0)
Induction of labor without prostaglandins	1,960	7.7	4.9 (2.4–9.7)
Induction of labor with prostaglandins	366	24.5	15.6 (6.1–30.0)

Conclusions

For women with one prior cesarean delivery, the risk of uterine rupture is higher among those whose labor is induced than among those with repeated cesarean delivery.

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

DECEMBER 16, 2004

VOL. 351 NO. 25

2004

Maternal and Perinatal Outcomes Associated with a Trial of Labor after Prior Cesarean Delivery

Mark B. Landon, M.D., John C. Hauth, M.D., Kenneth J. Leveno, M.D., Catherine Y. Spong, M.D.,

Table 2. Maternal Complications.*

Complication	Trial of Labor (N=17,898)	Elective Repeated Cesarean Delivery (N=15,801)	Odds Ratio (95% CI)	P Value
	no. (%)			
Uterine rupture	124 (0.7)	0	—	<0.001
Uterine dehiscence†	119 (0.7)	76 (0.5)	1.38 (1.04–1.85)	0.03
Hysterectomy	41 (0.2)	47 (0.3)	0.77 (0.51–1.17)	0.22
Thromboembolic disease‡	7 (0.04)	10 (0.1)	0.62 (0.24–1.62)	0.32
Transfusion	304 (1.7)	158 (1.0)	1.71 (1.41–2.08)	<0.001
Endometritis	517 (2.9)	285 (1.8)	1.62 (1.40–1.87)	<0.001
Maternal death	3 (0.02)	7 (0.04)	0.38 (0.10–1.46)	0.21
Other maternal adverse events§	64 (0.4)	52 (0.3)	1.09 (0.75–1.57)	0.66
One or more of the above	978 (5.5)	563 (3.6)	1.56 (1.41–1.74)	<0.001

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Table 5. Perinatal Outcomes for Term Infants.*

Outcome	Trial of Labor (N=15,338)	Elective Repeated Cesarean Delivery (N=15,014)	Odds Ratio (95% CI)	P Value
	no. (%)			
Antepartum stillbirth†‡				
37–38 wk	18 (0.40)	8 (0.10)	2.93 (1.27–6.75)	0.008
≥39 wk	16 (0.20)	5 (0.10)	2.70 (0.99–7.38)	0.07
Intrapartum stillbirth‡				
37–38 wk	1 (0.02)	0	—	0.43
≥39 wk	1 (0.01)	0	—	1.00
Hypoxic–ischemic encephalopathy	12 (0.08)	0	—	<0.001
Neonatal death	13 (0.08)	7 (0.05)	1.82 (0.73–4.57)	0.19
One or more of the above	59 (0.38)	20 (0.13)	2.90 (1.74–4.81)	<0.001

Conclusions Overall, our data suggest a risk of an adverse perinatal outcome at term among women with a previous cesarean delivery of approximately 1 in 2000

2010

NIH

**Revisione sistematica della
letteratura su VBAC (AHRQ)**

1980-2009

203 studi

Vaginal Birth After Cesarean

New Insights on Maternal and Neonatal Outcomes

Jeanne-Marie Guise, MD, MPH, Mary Anna Denman, MD, Cathy Emeis, PhD, CNM, Nicole Marshall, MD, Miranda Walker, MA, Rongwei Fu, PhD, Rosalind Janik, BA, Peggy Nygren, MA, Karen B. Eden, PhD, and Marian McDonagh, PharmD

Table 2. Summary of Strength of Evidence and Findings for Maternal Outcomes for Trial of Labor Compared With Elective Repeat Cesarean Delivery

Maternal Outcome	Number of Studies/Subjects	Grade of Evidence	Direction of Effect	Magnitude of Effect Absolute Risk (95% CI)
<u>Maternal death</u>	12/402,883	High	<u>Significantly reduced by TOL ($P=.027$)</u>	TOL: 0.004% (0.001–0.015%) ERCD: 0.013% (0.004–0.042%)
<u>Uterine rupture</u>	8/63,499	Moderate	<u>Significantly increased by TOL ($P<.001$)</u>	TOL: 0.47% (0.28–0.77%) ERCD: 0.026% (0.009–0.082%)
Hysterectomy	8/402,059	Moderate	No significant difference ($P=.50$)	TOL: 0.17% (0.12–0.26 %) ERCD: 0.28% (0.12–0.67%)
Hemorrhage	6/47,754	Low	Insufficient data to evaluate	Insufficient data to evaluate
Transfusion	9/401,307	Moderate	No significant difference ($P=.25$)	TOL: 0.9% (0.4–2.0%) ERCD: 1.2% (0.5–2.6%)
Infection	22/354,060	Low	No significant difference	TOL: 4.6% (1.5–13.5%) ERCD: 3.2% (1.3–7.3%)
Surgical injury	4/53,282	Low	Insufficient data to evaluate	Insufficient data to evaluate

Vaginal Birth After Cesarean

New Insights on Maternal and Neonatal Outcomes

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Table 3. Summary of Strength of Evidence and Findings for Neonatal Outcomes for Trial of Labor Compared With Elective Repeat Cesarean Delivery

Neonatal Outcome	Number of Studies/Subjects	Grade of Evidence	Direction and Magnitude of Effect (95% CI)
Perinatal death	5/76,899	Moderate	Significantly increased by TOL ($P=.002$) TOL: 0.13% (0.06–0.30%) ERCD: 0.05% (0.007–0.38%)
Neonatal death	6/108,328	Moderate	Significantly increased by TOL ($P=.001$) TOL: 0.11% (0.06–0.20%) ERCD: 0.06% (0.02–0.15%)
Respiratory conditions	4/5,599	1. Bag/mask ventilation: Low 2. Transient tachypnea of the newborn (TTN): Low	1. TOL 5.4% (3.5–7.6) vs ERCD 2.5% (1.6–1.6%) 2. TOL: 3.6% (0.9–8%) ERCD: 4.2% (1.9–7.3%)
Hypoxic-ischemic encephalopathy	3/62,829	Low	Insufficient data to evaluate direction of risk
Sepsis	3/2,846	Low	Insufficient data to evaluate direction of risk
Trauma	2/41,899	Insufficient	Insufficient data to evaluate direction of risk
NICU admissions	8/65,121	Low	Insufficient data to evaluate direction of risk

Vaginal Birth After Cesarean

New Insights on Maternal and Neonatal Outcomes

Jeanne-Marie Guise, MD, MPH, Mary Anna Denman, MD, Cathy Emeis, PhD, CNM, Nicole Marshall, MD, Miranda Walker, MA, Rongwei Fu, PhD, Rosalind Janik, BA, Peggy Nygren, MA, Karen B. Eden, PhD, and Marian McDonagh, PharmD

• In a hypothetical group of **100,000** women of any gestational age who undergo **TOLAC**, there will be **468 cases of uterine rupture, 4 maternal deaths, and 133 perinatal deaths**

Rischio perinatale x

• In a hypothetical group of 100,000 women of any gestational age who undergo **ERCD**, there will be **26 uterine ruptures, 13 maternal deaths, and 50 perinatal deaths**

Rischio materno x 3

NIH Consensus Development Conference Statement on Vaginal Birth After Cesarean: New Insights



Conclusions

Given the available evidence, *trial of labor is a reasonable option for many pregnant women with one prior low transverse uterine incision.* The data reviewed in this report show that *both trial of labor and elective repeat cesarean delivery* for a pregnant woman with one prior transverse uterine incision have *important risks and benefits and that these risks and benefits differ for the woman and her fetus.* This poses a profound ethical dilemma for the woman, as well as her caregivers, *because benefit for the woman may come at the price of increased risk for the fetus and vice versa.*



3 categorie
con rischi materno-fetali
molto differenti

**successful
VBAC**

**failed
VBAC**

ERCS

**generale, i benefici complessivi del travaglio di prova sono direttamente
legati ad avere un sVBAC**

OBSTETRICS

Maternal morbidity following a trial of labor after cesarean section vs elective repeat cesarean delivery: a systematic review with metaanalysis

A. Cristina Rossi, MD; Vincenzo D'Addario, MD

7 studi pubblicati dal 2000 al 2007:

24,349 (57%) planned

successful VBAC	17,905 (73%)
F-TOL	6444

18,621 (43%) planned ERCS

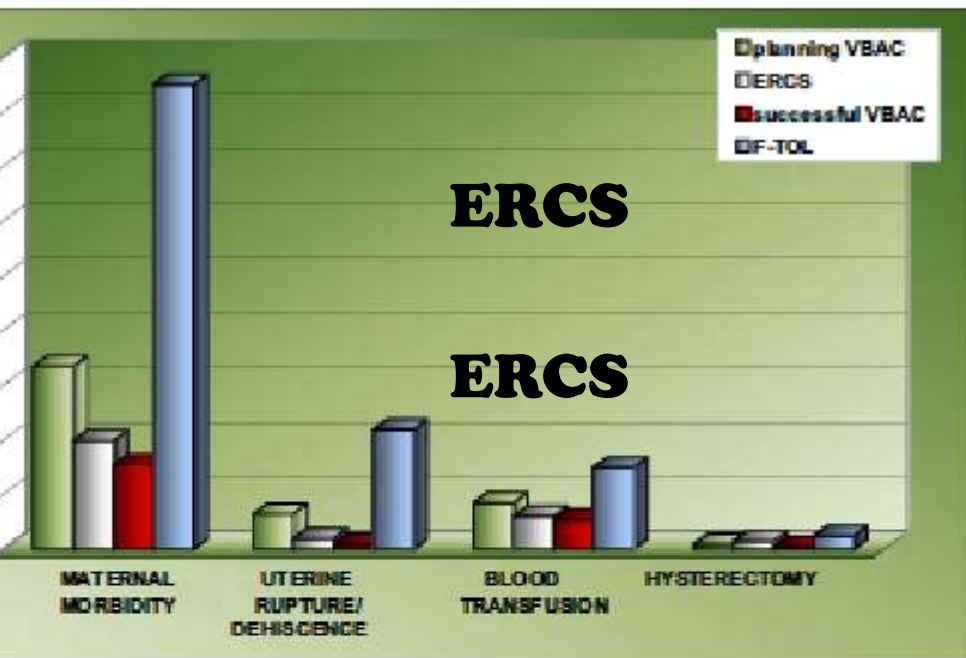
to compare:

- **Maternal morbidity**
- **Uterine rupture/dehiscence**
- **Blood transfusion**
- **Hysterectomy**

OBSTETRICS

Maternal morbidity following a trial of labor after cesarean section vs elective repeat cesarean delivery: a systematic review with metaanalysis

A. Cristina Rossi, MD; Vincenzo D'Addario, MD



- **Maternal morbidity** = VBAC e ERCS
- **Blood transfusion** = VBAC e ERCS
- **Hysterectomy** = VBAC e ERCS

FIGURE 2
 Uterine rupture/dehiscence in planned VBAC vs those opting for an ERCS

Study or sub-category	planned VBAC n/N	ERCS n/N	OR (random) 95% CI	Weight %	OR (random) 95% CI
Bala	1/154	0/68		6.53	1.12 (0.95, 27.82)
Blanchette	12/754	0/727		7.00	24.49 (1.45, 424.49)
Hillard	14/3274	2/431		12.88	2.27 (0.92, 10.13)
Kwee	49/3274	1/1295		13.31	29.25 (2.65, 109.69)
London	243/17898	74/18401		40.88	2.85 (2.20, 3.69)
Spence	0/147	1/29		4.50	0.18 (0.01, 3.74)
Tan	2/788	0/232		8.92	1.82 (0.87, 31.70)
Total (95% CI)	24389	18421		100.00	3.13 (2.30, 7.80)

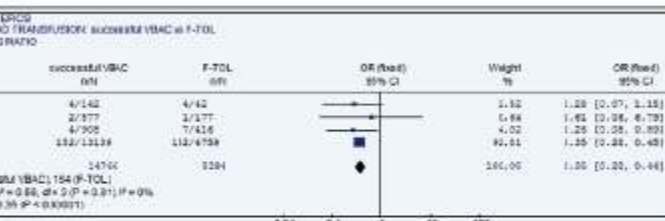
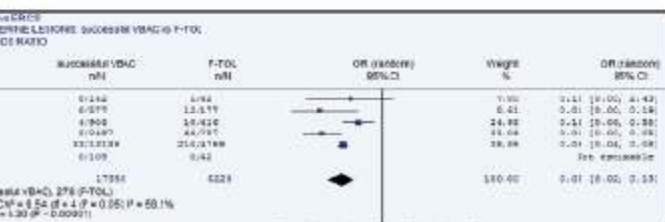
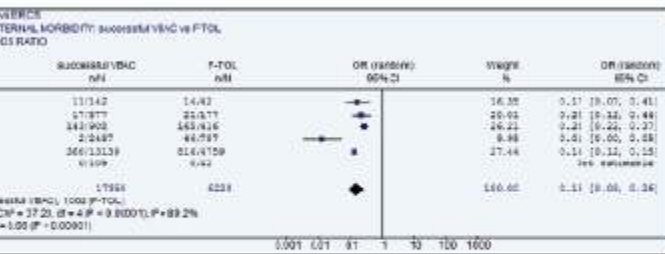
Maternal morbidity following a trial of labor after cesarean section vs elective repeat cesarean section: a systematic review with metaanalysis. *Am J Obstet Gynecol* 2008.

OBSTETRICS

Maternal morbidity following a trial of labor after cesarean section vs elective repeat cesarean delivery: a systematic review with metaanalysis

A. Cristina Rossi, MD; Vincenzo D'Addario, MD

Comparison of outcomes in women destined for successful VBAC vs those with failure of TOL



- **Maternal morbidity** ➤ after **fTOL** /s**VBAC** e **E**
- **Blood transfusion** ➤ after **fTOL** /s**VBAC** e **E**
- **Hysterectomy** ➤ after **fTOL** /s**VBAC** e **E**
- **Uterine rupture** ➤ after **fTOL** /s**VBAC** e **E**

Conclusion

Outcomes were more favorable in sVBAC than ERCS. These findings show that a **higher risk of rupture in women planning VBAC than ERCS is counterbalanced**

VBAC con successo rispetto al TC elettivo si associa con:

- una ospedalizzazione più breve
 - meno perdita ematica e meno trasfusioni
 - meno infezioni
 - meno eventi tromboembolici,
- riduce la mortalità neonatale**

VBAC fallito si associa con:

- > complicanze materne: rottura d'utero, isterectomia, lesioni organi pelvici
 - > infezioni
 - > trasfusioni
 - > morbilità neonatale (ph < 7, apgar 5° min < 7, infezioni),
- aumenta la mortalità neonatale**

TC elettivo si associa a

- > plac previa-accreta
- > rischio di gravidanze ectopiche
- > morbilità respiratoria neonatale, soprattutto prima della 40° w

**Poichè gli esiti migliori si correlano
ad un sVBAC ,
il vero problema è scegliere nel
miglior modo possibile le gravide
da avviare ad un TOLAC
e cioè
quelle con le migliori possibilità di
partorire per via vaginale**

La % di successo attesa è del 60–80 la probabilità di successo aumenta se:

- parto vaginale prima del TC (83%)
- VBAC precedente (94%)
- insorgenza spontanea del travaglio
- indicazione al pregresso TC non ricorrente (75%)
presentazione podalica, 60% per anomalie CTG
- condizioni locali favorevoli
- Peso alla nascita < 4000 g e EG più basse
- fattori demografici: donne bianche non ispaniche,
età < 35 anni, normosviluppo, ospedali universitari.

Parturient management of trial of labour after caesarean delivery: evidence and experience

t

Department of Obstetrics and Gynecology, University of Utah Medical Center, Salt Lake City, UT, USA

Correspondence: Prof. JR Scott, Department of Obstetrics and Gynecology, University of Utah Medical Center, 50 N. Medical Drive, Salt Lake City, UT, USA. Email james.scott@hsc.utah.edu

© August 2013. Published Online 16 September 2013.

Box 1 Factors to consider when deciding on a trial of labour after caesarean (modified from Scott¹⁸)

Successful VBAC most likely when

- 1 prior caesarean incision was low transverse
- 2 clinically adequate pelvis and normal fetal size
- 3 no other uterine scars, anomalies, or previous ruptured uterus
- 4 previous vaginal delivery
- 5 patient enthusiasm and informed consent
- 6 spontaneous labour
- 7 dilated cervix
- 8 doctor available and able to monitor labour, the fetus, and perform a caesarean
- 9 anaesthesia, blood bank, and staff are available
- 10 simulation training for emergency caesarean delivery

Importante: avere mamme consapevoli e motivate

- 3 recurrent indication for initial caesarean delivery
- 4 morbid obesity
- 5 short interpregnancy interval
- 6 medical or obstetric condition precluding vaginal delivery
- 7 patient refusal
- 8 induction of labour and unfavourable cervix
- 9 augmentation of labour
- 10 inability to perform emergency caesarean delivery

Simple, Validated Vaginal Birth After Cesarean Delivery Prediction Model for Use at the Time of Admission

Torri D. Metz, MD, MS, Gregory J. Stoddard, MPH, Erick Henry, MPH, Marc Jackson, MD, Calla Holmgren, MD, and Sean Esplin, MD (Obstet Gynecol 2013;122:571-8)

Box 1. Calculation of Integer Vaginal Birth After Cesarean Score

Calculate the Bishop score using the cervical examination at the time of admission

Add 4 points for history of vaginal delivery

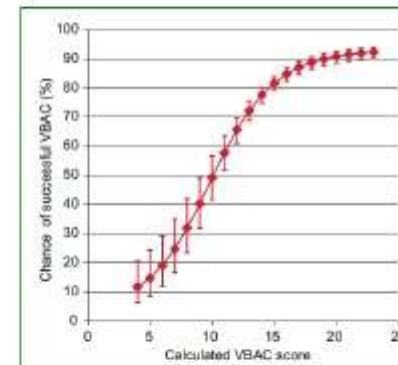
Add 2 points if prepregnancy body mass index is less than 30

Add 3 points if primary cesarean delivery was not because of a recurring indication

Add 2 points if maternal age at the time of delivery is younger than 35 years

Sum total score

**con SCORE < 10
% di successo < 50%**



**con SCORE > 16
% di successo > 85%**

5 variabili da valutare al ricovero per fare un migliore counseling e valutare la possibilità di successo del VBAC per quella paziente: i problemi maggiori si correlano infatti ai casi in cui fallisce il tentativo di VBAC

Simple, Validated Vaginal Birth After Cesarean Delivery Prediction Model for Use at the Time of Admission

Torri D. Metz, MD, MS, Gregory J. Stoddard, MPH, Erick Henry, MPH, Marc Jackson, MD, Calla Holmgren, MD, and Sean Esplin, MD

Calculated VBAC Score	No. of Study Participants	Chance of Successful VBAC	Actual VBAC Success Rate
4	2 (0.17)	11.7 (6.4–20.5)	0.0
5	3 (0.26)	14.7 (8.5–24.3)	33.3
6	5 (0.43)	19.0 (11.8–29.1)	20.0
7	5 (0.43)	24.7 (16.7–35.0)	40.0
8	7 (0.60)	31.9 (23.3–41.9)	42.9
9	16 (1.37)	40.2 (31.8–49.2)	25.0
10	23 (1.97)	49.1 (41.6–56.6)	60.9
11	46 (3.93)	57.7 (51.6–63.6)	58.7
12	58 (4.96)	65.6 (61.0–69.9)	65.5
13	95 (8.12)	72.2 (68.7–75.4)	73.7
14	102 (8.72)	77.5 (74.7–80.1)	71.3
15	150 (12.82)	81.6 (79.1–83.8)	80.7
16	134 (11.45)	84.7 (82.3–86.8)	84.2
17	144 (12.31)	87.0 (84.6–89.0)	86.1
18	139 (11.88)	88.6 (86.3–90.6)	92.1
19	94 (8.03)	89.8 (87.6–91.8)	90.4
20	62 (5.30)	90.7 (88.5–92.6)	91.9

**score
< 10**

**successo
< 50 %**

**Score
10-16**

**Successo
60-85 %**

Score

**Successo
> 85 %**

visione longitudinale o a T

struttura uterina precedente

complicanze mediche o ostetriche che
controindicano un PV

di 2 precedenti TC senza pregressi parti vaginali
nessuna chirurgia uterina (fondo)

possibilità di eseguire un TC d'emergenza

Rottura completa

lacerazione completa del miometrio e del peritoneo viscerale, con comunicazione diretta tra cavità uterina e peritoneale

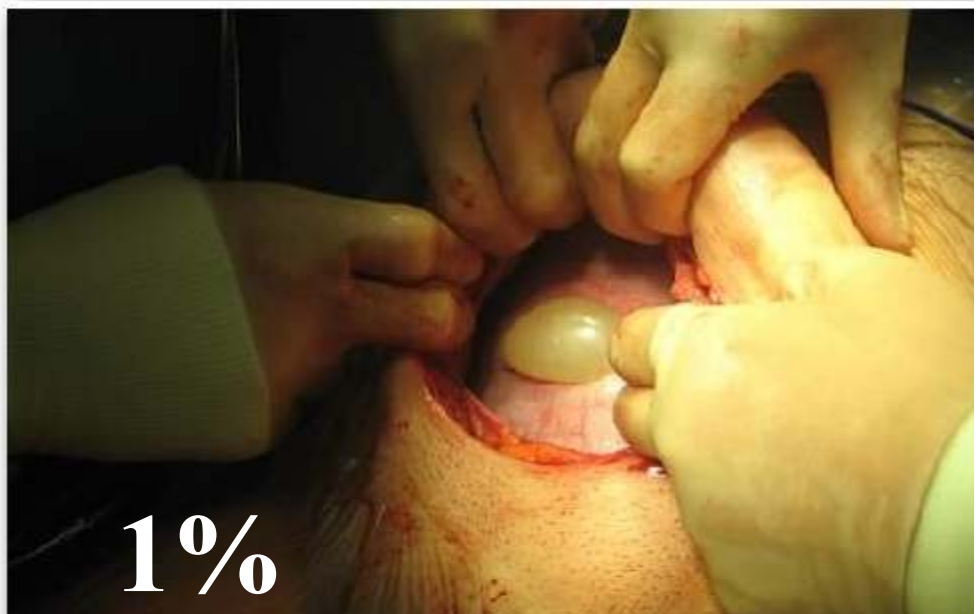
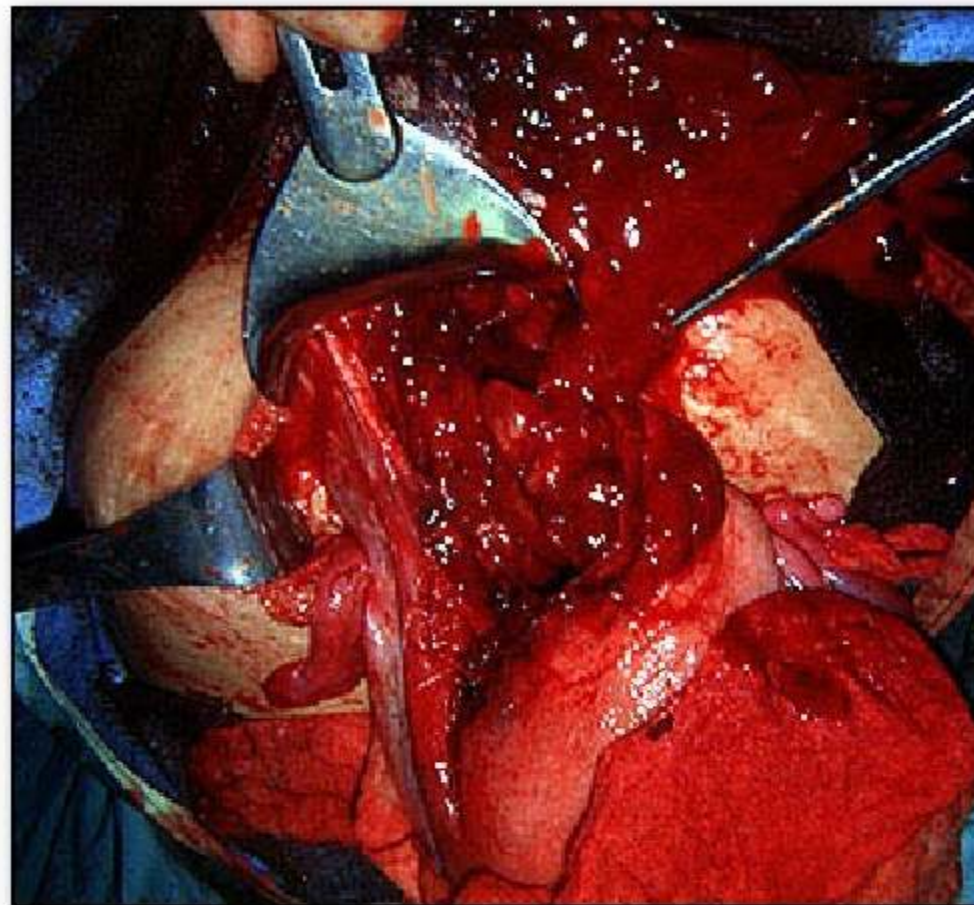
Si associa ad emorragia e shock materno a morte fetale

Deiscenza

lacerazione del miometrio senza interessamento del peritoneo delle membrane amniocoriali e che si verifica su una cicatrice uterina da pregresso taglio cesareo

NON è associata ad emorragia e shock

NON è associata a morte fetale



1%



Vaginal Birth After Previous Cesarean Delivery

Number 115, August 2010

Replaces Practice Bulletin Number 54, July 2004

Reaffirmed 2015

Table 1. Composite Maternal Risks from Elective Repeat Cesarean Delivery and Trial of Labor After Previous Cesarean Delivery

Maternal Risks	ERCD (%)	TOLAC (%)	
		One CD	Two or more CDs
Endometritis	1.5–2.1	2.9	3.1
Operative injury	0.42–.6	0.4	0.4
Blood transfusion	1–1.4	0.7–1.7	3.2
Hysterectomy	0–0.4	0.2–0.5	0.6
Uterine rupture	0.4–0.5	0.7–0.9	0.9–1.8
Maternal death	0.02–0.04	0.02	0

Abbreviations: CD, cesarean delivery; ERCD, elective repeat cesarean delivery; TOLAC, trial of labor after cesarean delivery; VBAC, vaginal birth after cesarean.

Tipo di incisione

Longitudinale alta	4-
Longitudinale bassa	2
Trasversale sul SUI	0,7

Numero TC precedenti

Associated uterine rupture
0.72% versus 1.59% (p < 0.0)

Intervallo tra le
gravidanze

Intervallo < 18 mesi RR 2-

Risk of uterine rupture associated with an interdelivery interval between 18 and 24 months.

Bujold E, Gauthier RJ. *Obstet Gynecol.* 2010 May;115(5):1003-6. doi: 10.1097/AOG.

Precedente parto
vaginale e attuale

protettivo

0,45% vs 0,87% (p= 0,01)

Mercer BM, Gilbert S, Landon MB, Spong CY, Leveno KJ, R

Tipo di sutura

molto dibattuto

Obstet Gynecol. 2010 Jul;116(1):43-50. doi: 10.1097/AOG.0b013e3181e41be3.

The role of uterine closure in the risk of uterine rupture.

Bujold E, Goyet M, Marcoux S, Brassard N, Cormier B, Hamilton E, Abdous B, S

anomala placentazione

Accretismo placentare

Risk of uterine rupture and placenta accreta with prior uterine surgery outside of the lower segment.

Gyamfi-Bannerman C, Gilbert S, Landon MB, Spong CY, Rouse DJ, Y
Shriver National Institute of Child Health and Human Development (NIH)
Maternal-Fetal Medicine Units (MFMU) Network

induzione/
accelerazione

- Misoprostolo da evitare
- Precauzione all'utilizzo sequenziale di prostaglandine E2 ed ossitocina
- Augmentation con ossitocina può incrementare il rischio di rottura (da 0,4% a 0,9%)
- Dose massima di ossitocina raccomandata 20mU/min
- I metodi meccanici (Foley) sono sicuri
- Attenzione ai tempi del travaglio

Meta-analysis 25 studies, Nahum G, Uterine Rupture in Pregnancy, 2 Years of Data Collection 1966-2000

Outcome	Total Cases	Cases With Uterine Rupture	Incidence in Patients With Uterine Rupture, %	Years of Data Collection	No. of Studies Reviewed	References
Fetal hypoxia	231	19	8	1983-2002	3	Landon2004, Leung1993, Kieser2002
Umbilical pH (<7)	252	83	33	1976-2002	5	Landon2004, Ravasia2000, Yap2001, Leung1993, Menihan1998
Apgar 1-minute (<7)	349	90	26	1976-2002	9	Landon2004, Shipp1999, Blanchette2001, Caughey1999, Yap2001, Leung1993, Miller1997, Kieser2002, Menihan1998
Perinatal asphyxia	164	71	43	1976-2002	4	Landon2004, Miller1997, Kieser2002, Menihan1998
Fetal death, stillborn	548	39	7	1975-2002	14	Gardeil1994, Plauche1984, Landon2004, Shipp1999, Lydon-Rochelle2001, Blanchette2001, Caughey1999, Esposito2000, Yap2001, Leung1993, Kieser2002, Flamm1994, Lieberman2001, Flamm1990

Disruption of the placenta and/or of the fetus

Am J Obstet Gynecol. 2002 Feb;186(2):311-4.

Neonatal morbidity associated with uterine rupture: what are the risk factors?

Rujold E, Gauthier RJ.

Department of Obstetrics and Gynecology, Hôpital Ste-Justine and Université de Montréal, Quebec, Canada

Table II. Comparisons of obstetrical factors

	<i>Metabolic acidosis (n = 9)</i>	<i>No metabolic acidosis (n = 14)</i>	<i>Statistical significance</i>
Gestational age (wk)			
Median (interquartile range)	40 (39-40)	39.5 (38-41)	<i>P</i> = 1.0
Birth weight (g)			
Median (interquartile range)	3520 (3360-3900)	3415 (3140-3670)	<i>P</i> = .22
Induction of labor	3 (33%)	5 (36%)	<i>P</i> = 1.0*
Use of oxytocin	5 (56%)	9 (64%)	<i>P</i> = 1.0*
Use of epidural	8 (89%)	12 (86%)	<i>P</i> = 1.0*
Least cervix dilatation (cm)			
Median (interquartile range)	10 (6-10)	5.5 (4-9)	<i>P</i> = .11
Placental or fetal extrusion	6 (67%)	0	<i>P</i> < .001*

When uterine rupture occurs, placental or fetal extrusion was the most important factor associated with severe

CLINICAL OBSTETRICS AND GYNECOLOGY
Volume 55, Number 4, 978-987
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Uterine Rupture Associated With VBAC

CALLA M. HOLMGREN, MD

Department of Maternal-Fetal Medicine, Intermountain Medical
Center and Department of Obstetrics and Gynecology, University of
Utah School of Medicine, Salt Lake City, Utah

TABLE 1. Time to Delivery and Adverse Outcome

References	Total No. Patients	Time to Delivery* (min)
Bujold et al 2002	23	< 15
Holmgren et al 2012	36	< 30
Leung et al 1993	41	< 18

*After uterine rupture suspected.

Leung 41 casi : nessun caso di esiti se TC entro 18 m

Uterine Rupture With Attempted Vaginal Birth After Cesarean Delivery

Decision-to-Delivery Time and Neonatal Outcome

Calla Holmgren, MD, James R. Scott, MD, T. Flint Porter, MD, MPH, M. Sean Esplin, MD, and Tyler Bardsley, MS

Table 3. Time to Delivery and Primary Adverse Outcome*

Variable	Odds Ratio Estimate	95% CI	P
Time to delivery (min)	1.09	1.004–1.195	.038
Intermountain nontertiary (University of Utah is referent)	1.45	0.167–14.001	.781
Intermountain tertiary (University of Utah is referent)	1.67	0.18–19.34	.952

The exact conditional logistic regression yielded time until delivery as a significant predictor of the adverse outcome with an odds ratio of 1.09 (P<.038) and 95% CI of 1.004–1.195. This model estimates that every additional minute until delivery is associated with an approximate 8.8% increase in the odds of an adverse outcome. Hospital type was controlled for in the analysis but did not appear to be a significant predictor of an adverse outcome with a P<.9 (Table 3).

Uterine Rupture by Intended Mode of Delivery in the UK: A National Case-Control Study

Kathryn E. Fitzpatrick¹, Jennifer J. Kurinczuk¹, Zarko Alfirevic², Patsy Spark¹, Peter Brocklehurst¹, Marian Knight^{1*}

¹ National Perinatal Epidemiology Unit, University of Oxford, Oxford, United Kingdom, ² Division of Perinatal and Reproductive Medicine, University of Liverpool, Liverpool Women's Hospital, Liverpool, United Kingdom

Table 2. Symptoms and signs noted prior to diagnosis of uterine rupture.

Symptoms and Signs	<i>n</i> (%) ^a Cases (<i>n</i> = 159)
Fetal heart rate abnormality	118 (76)
Abdominal pain	76 (49)
Vaginal bleeding	45 (29)
Altered uterine contractions	21 (13)
Hypotension/fainting/cardiac arrest	10 (6)
Haematuria	4 (3)

et Gynecol. 2004 Mar;103(3):506-12.

Heart rate changes associated with uterine rupture.

Geigley JJ, Weyrich DL, Benedetti TJ.

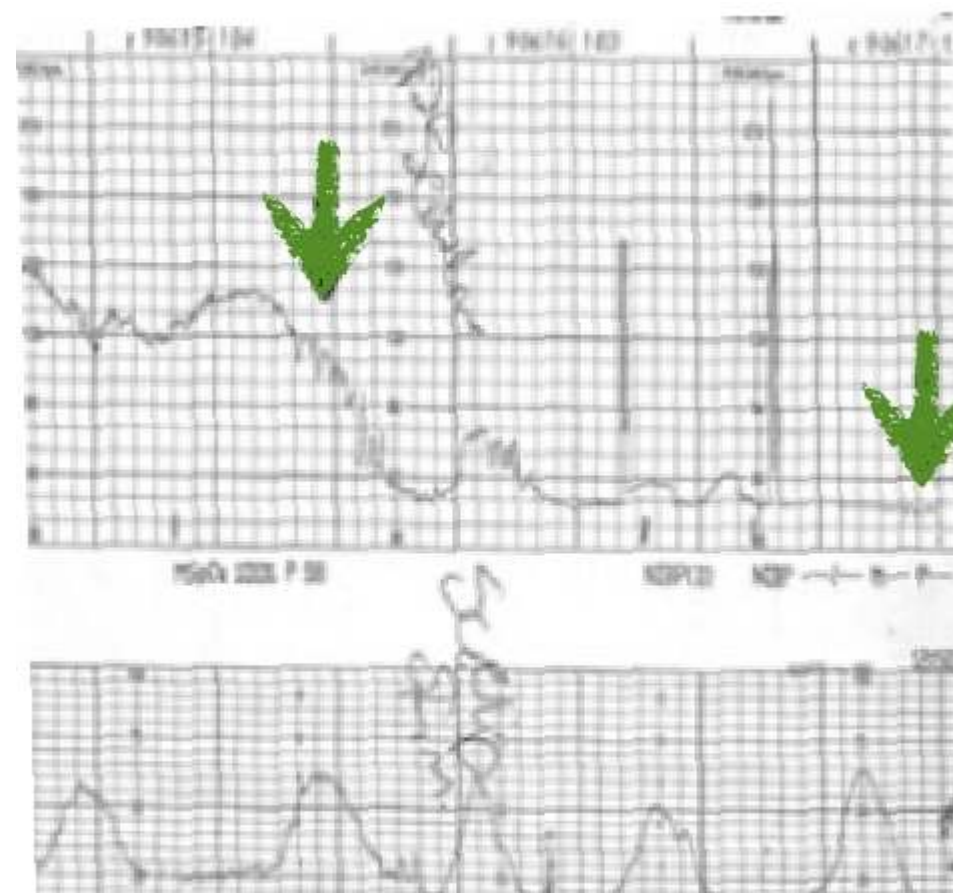
Department of Obstetrics and Gynecology, University of Washington
Medical Center, Bo

No significant differences were noted in rates
of mild or severe variable decelerations, late
decelerations, prolonged decelerations, fetal
bradycardia, or loss of uterine tone.

CONCLUSION:

**Fetal bradycardia in the first and second
stage is the only finding to differentiate
uterine ruptures from successful VBAC
patients.**

LEVEL OF EVIDENCE:II-2



Staircase sign: A newly described uterine contraction pattern seen in rupture of unscarred gravid uterus

J. Obstet. Gynaecol. Res. Vol. 34, No. 1: 100–104, February 2008

Koji Matsuo, Jennifer T. Scanlon, Robert O. Atlas and Jerome N. Kopelman

Department of Obstetrics, Gynecology and Reproductive Sciences, University of Maryland School of Medicine, Baltimore, Maryland, USA



Riduzione della dinamica uterina spesso preceduta da tachisistolia, ipertono, nessuna variazione

METRICS

Prediction of uterine rupture associated with attempted vaginal birth after cesarean delivery

Grobman, MD, MBA; Yinglei Lai, PhD; Mark B. Landon, MD; Catherine Y. Spong, MD; Kenneth J. Leveno, MD; Rouse, MD, MSPH; Michael W. Varner, MD; Atef H. Moawad, MD; Steve N. Caritis, MD; Margaret Harper, MD; Wapner, MD; Yoram Sorokin, MD; Menachem Miodownik, MD; Marshall Carpenter, MD; Mary J. O'Sullivan, MD; Tsai, MD; Oded Langer, MD; John M. Thorp, MD; Susan M. Ramin, MD; Brian M. Mercer, MD; for the National Child Health and Human Development Maternal-Fetal Medicine Units Network

The purpose of this study was to develop a model that individual-specific risk of uterine rupture during an attempted vaginal birth after cesarean delivery.

DESIGN: Women with 1 previous low-transverse cesarean delivered a term singleton were identified in a prospectively collected database of deliveries that occurred at 10 academic medical centers during a 4-year period. We analyzed different prediction techniques in an effort to develop an accurate prediction model for uterine rupture.

RESULTS: Of the 11,855 women who were available for analysis, 83 (0.7%) had had a uterine rupture. The optimal final prediction model was based on a logistic regression, included 2 variables:

CONCLUSIONS: Prediction of uterine rupture associated with attempted vaginal birth after cesarean delivery

any previous vaginal delivery (odds ratio, 0.44; 95% CI, 0.27-0.71) and induction of labor (odds ratio, 1.73; 95% CI, 1.11-2.69). This model, with a c-statistic of 0.627, had poor discriminating ability and did not allow the determination of a clinically useful estimate of the probability of uterine rupture.

CONCLUSIONS: Prediction of uterine rupture associated with attempted vaginal birth after cesarean delivery

Key words: cesarean delivery, uterine rupture, prediction model

Ultrasound Obstet Gynecol. 2013 Apr 10. doi: 10.1002/uog.12479. [Epub ahead of print]

The ability of sonographic measurement of the lower uterine segment thickness to predict uterine rupture during a trial of labour in women with a previous Caesarean section: a meta-analysis.

Kok N, Wiersma IC, Opmeer BC, de Graaf IM, Mol BW, Pajkrt E.

Department of Obstetrics and Gynaecology, Academic Medical Centre, Amsterdam, The Netherlands

**non riusciamo a
predire con
accuratezza**

**un evento raro come
la rottura d'utero...**

scelta, informazione e gestione

corrette

delle pazienti da avviare al VBAC

Ogni ospedale dovrebbe sviluppare un **protocollo specifici per la gestione delle pazienti VBAC** (checklists scritte, **percorsi ell'emergenza**, simulazioni e training ripetuti).

Monitoraggio clinico da parte di personale **informato** sui segni e sintomi di rottura d'utero **e monitoraggio CTG in continuo.**

Analgesia peridurale è utile (la correzione del dolore potrebbe incoraggiare un maggior numero di donne a scegliere tolac), **non maschera i segni di rottura.**

L'induzione del travaglio per indicazioni materne e/o fetali rimane un'opzione . **L'induzione con PGE2 rimane controversa ma proponibile con un aumento del rischio**

Controindicato il misoprostolo

Accelerazione con ossitocina può essere **pericolosa** (schema basse dosi). **Evitare l'associazione PGE2+Ox.**

Induzione meccanica con catetere appare un'opzione



L'offerta del parto vaginale dopo taglio cesareo

quali informazioni per la gravida

importante: avere mamme consapevoli e motivate



Royal College of
Obstetricians and
Gynaecologists

Setting standards to improve women's health

Green-top Guideline No. 45
February 2007

BIRTH AFTER PREVIOUS CAESAREAN BIRTH



Royal College of
Obstetricians and Gynaecologists
Setting standards to improve women's health



The Royal College of
Midwives

November 2011

NICE Clinical Guideline



National Collaborating Centre for

SOGC CLINICAL PRACTICE GUIDELINES

No 155 (Replaces guideline No 147), February

**Guidelines for Vaginal Birth After Previous
Caesarean Birth**

THE AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS
WOMEN'S HEALTH CARE PHYSICIANS



**PRACTICE
BULLETIN**

CLINICAL MANAGEMENT GUIDELINES FOR OBSTETRICIAN-GYNECOLOGISTS



AMERICAN ACADEMY OF
FAMILY PHYSICIANS
STRONG MEDICINE FOR AMERICA

Clinical Practice Guideline:

Planning for Labor and Vaginal Birth

Le Linee Guida sono piuttosto omogenee.

Parto dopo pregresso taglio cesareo

Raccomandazioni

IA

L'ammissione al travaglio, in assenza di controindicazioni specifiche, deve essere offerta a tutte le donne che hanno già partorito mediante taglio cesareo.

BPC

È necessario che i professionisti sanitari forniscano alla donna con pregresso taglio cesareo raccomandazioni rispetto alla probabilità di partorire per via vaginale in base alla sua storia clinica e in base alla casistica della struttura ospedaliera.

BPC

In aggiunta alle informazioni cliniche sulle modalità di parto, è necessario fornire alle donne con pregresso taglio cesareo indicazioni relative alle caratteristiche e all'organizzazione della struttura ospedaliera e alla formazione di personale specificamente formato sulle modalità assistenziali in uso (induzione del travaglio, utilizzo di ossitocina, uso di parto-analgesia, uso del parto operativo vaginale profilattico), in quanto tali aspetti possono condizionare gli esiti relativi alla salute materna e feto-neonatale.

personalizzare e



Primo momento: durante la degenza del parto cesareo, prima della dimissione.

La donna deve essere edotta che l'evento non le preclude la possibilità di un successivo parto eutocico, fatte salve le situazioni che potenzialmente controindicano un successivo parto vaginale.

Le riflessioni sulle modalità di parto devono trovare spazio fin da inizio gravidanza

Clinical outcomes in VBAC attempts: what to say to patients?

George A. Macones, MD

JULY 2008 American Journal of Obstetrics & Gynecology

First, I believe it **IS IMPORTANT TO DISCUSS THE COMPLICATIONS OF BOTH a VBAC attempt and ELECTIVE REPEAT CESAREAN DELIVERY.**

The **LACK OF PREDICTABILITY OF UTERINE RUPTURE** should also be discussed with patients.

The **SHORT TERM RISKS OF AN ELECTIVE REPEAT CESAREAN DELIVERY** should also be discussed.

I believe it is critical to include a discussion of **the SHORT and LONG TERM IMPLICATIONS OF MULTIPLE REPEAT CESAREAN DELIVERIES,** both on the risk of **SURGICAL COMPLICATIONS AND ABNORMAL PLACENTATION.**

DIFFICULT INDUCTIONS are **BEST AVOIDED** in patients with a previous CS

Abnormal placentation: Twenty-year analysis

Yi-Wei Wu, MD, Masha Kocherginsky, PhD, Judith U. Hibbard, MD

Division of Maternal Fetal Medicine, Department of Obstetrics and Gynecology, and Department of Health Sciences, University of Chicago, Chicago, Ill

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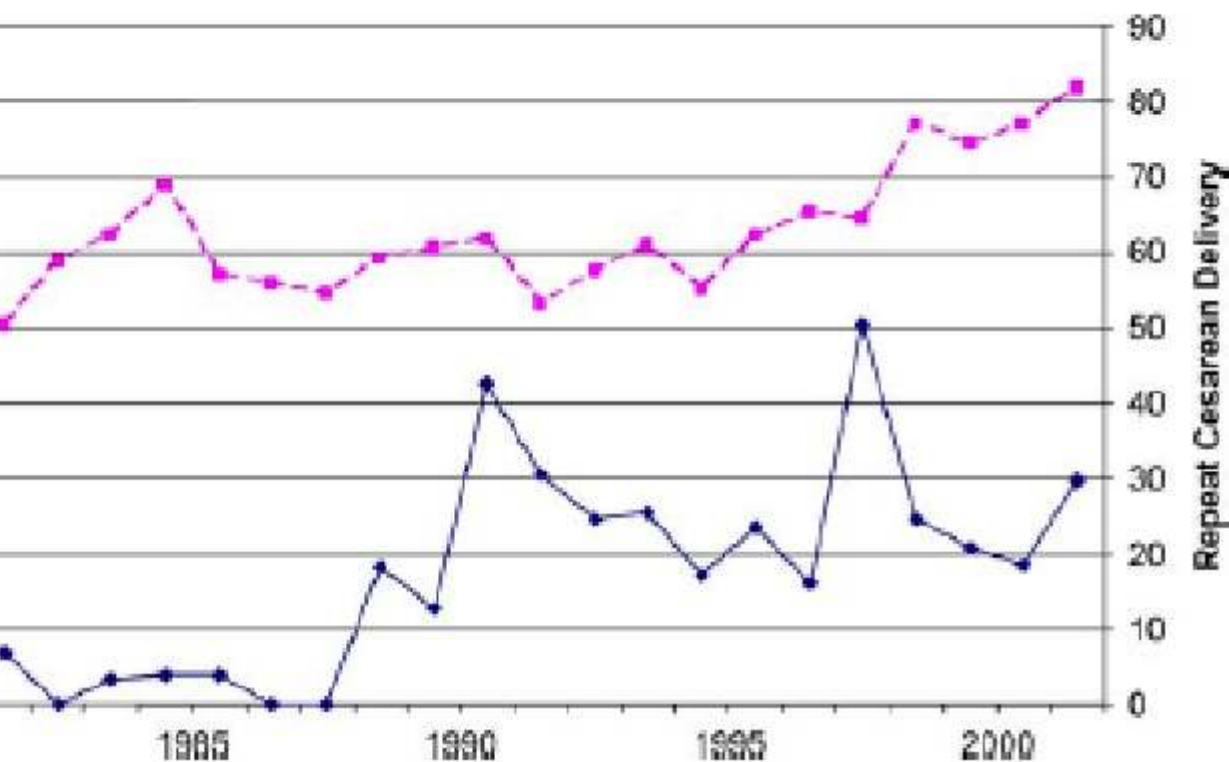


Table II Risk factors for placenta accreta identified using conditional logistic regression (University of Chicago Hospitals, 1982-2002)

Risk factor	OR	95% CI	P value
Age	1.14	1.08-1.19	< .001
Previous cesarean deliveries			
1	2.16	0.96-4.86	< .001
≥ 2	8.62	3.53-21.07	< .001
Placenta previa	51.42	10.65-248.39	< .001

Travaglio di Prova è un'alternativa da sostenere rispetto al TC elettivo

Attori che favoriscono la scelta della donna per VBAC

Supporto del travaglio di parto da parte del medico

informazione completa e conforme alle raccomandazioni riportate in letteratura

Indicazioni sul momento del ricovero e illustrazione delle procedure previste per assistenza durante il travaglio di prova

consulenza personalizzata in relazione alle condizioni cliniche

considerazione aspetti emotivi, esperienziali e progettuali donna/coppia

non enfattizzazione del rischio di rottura d'utero

Consapevolezza alta probabilità di successo del travaglio di prova (in media 75%)

Attesa dell'insorgenza spontanea del travaglio entro al 41^a settimana +3 giorni

Sala Parto:

Buona accoglienza della donna

Quali sono le possibilità di partorire per via vaginale

complessivamente 3 donne su 4 (pari al 75%) che hanno avuto una gravidanza fisiologica e che entrano in travaglio spontaneamente, partoriscono per via vaginale dopo taglio cesareo.

Le possibilità di successo per un VBAC sono maggiori in presenza di queste condizioni:

aver avuto un pregresso parto vaginale

avere un esordio spontaneo del travaglio

avere una regolare progressione del travaglio

Quali sono i vantaggi di avere un parto vaginale (AC)?

avere un parto vaginale e non essere sottoposta a procedure chirurgiche, con relative complicanze

maggiori possibilità di avere un parto senza complicazioni in caso di futura gravidanza

maggiori possibilità di avere un ricovero più breve

minor dolore addominale dopo il parto

più rapida ripresa dopo il parto e maggiore facilità di accudimento del neonato

Quali sono gli svantaggi di un VBAC ?

Taglio cesareo d'urgenza. Esiste la possibilità che Lei necessiti di un taglio cesareo d'urgenza durante il travaglio. Il rischio è di poco superiore a quello di una donna al primo parto ...

Cedimento o rottura della cicatrice uterina. Esiste la possibilità che la cicatrice uterina formatasi dopo il primo

Importante: avere mamme consapevoli e motivate

in emergenza. La frequenza è 2-8 volte su 1000 donne necessarizzate. Tale rischio è aumentato dall' induzione ...

Il rischio di morte o di danno cerebrale per il bambino in caso di travaglio di prova è molto basso, pari

2 per 1000 e non è diverso da quello di ogni donna alla prima esperienza di travaglio. Questo rischio deve anche

Rottura d'utero

COMPLICANZE ASSOCIATE ALLA PROVA DI TRAVAGLIO NELLE PRECESARIZZATE

1 su 1 milione	1 su 100.000	1 su 10.000	1 su 1000	1 su 100	1 su 10
MINIMO	MOLTO BASSO	BASSO	MODERATO	ALTO	MOLTO ALTO
			Emotrasfusioni 2/1000		
			isterectomia 0,9 /1000		
			Lesioni genitourinarie 0,8 /1000		
	Mortalità materna 1,6 /100.000			Acidosi neonatale 1,5 /1000	
					Rottura d'utero 5/1000

COMPLICANZE ASSOCIATE AL TAGLIO CESAREO ITERATIVO ELETTIVO

1 su 1 milione	1 su 100.000	1 su 10.000	1 su 1000	1 su 100	1 su 10
MINIMO	MOLTO BASSO	BASSO	MODERATO	ALTO	MOLTO ALTO
			Rottura d'utero 1,6/1000		
				Emotrasfusioni 7/1000	
	Mortalità perinatale 0,1/1000				
		Mortalità perinatale 0,4/1000			
	Mortalità materna 5,6 /100.000				
					Placenta anomala dopo 1 TC 3,2/1
					Placenta anomala dopo 2 TC 5,7/1
					infezioni 5,2 /100
					isterectomia 3/100
			Mortalità perinatale 0,5/1000 se placenta anomala		

Consapevolezza del problema

Selezione delle gravide

Informazione corretta

Gestione

Organizzazione

Sostegno