

Before we begin please take 10 minutes to complete this survey
for research purposes

Pre workshop survey

stillaware.org/usa1



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Stillbirth
Awareness
+ Education
= Action
= Prevention



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Stillbirth

Is it rare?
Is it common?



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Stillbirth Definition

A stillbirth is the death or loss of a baby before or during delivery. In the United States, a stillbirth is usually defined as the loss of a baby after 20 weeks of pregnancy.

(CDC)




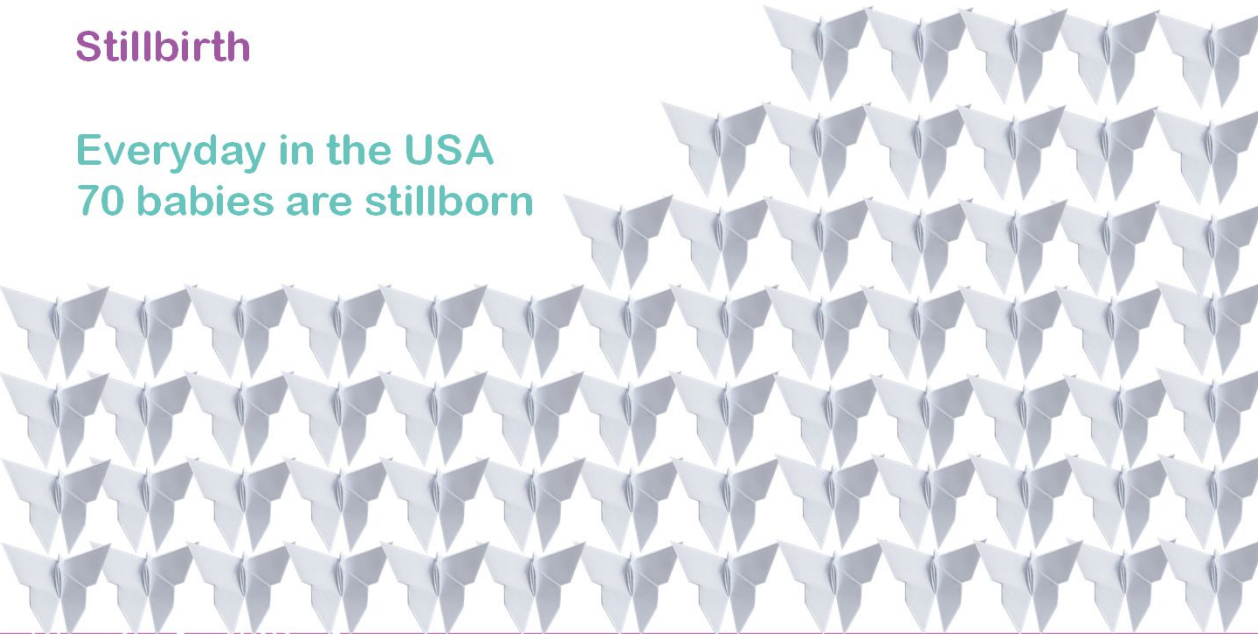
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Stillbirth

**Everyday in the USA
70 babies are stillborn**



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Stillbirth

it is not inevitable



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Stillbirth

it is not inevitable
it is often preventable



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Stillbirth

little lives
never little losses



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What do you need?
Still Aware and Star Legacy are
here to help facilitate
Conversation & Communication
for Prevention of stillbirth
With your expertise



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We're not here to talk at you
or tell you what to do
We're here to work with you
Discovering what's best for your
women to give them the best
chance of avoiding stillbirth



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Part 2:
Considering the
independent
risk factors



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**Research-based information
in laymans terms.**

**How to communicate
evidence-based advice
with understanding &
women's perception
of her fetal movements**

**Help improve outcomes
for women and their babies**



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How many
risk factors,
if any?

Mother:
Leticia Jones
36 years old

Details of pregnancy:
Singleton,
first time pregnancy,
conceived through IVF
35 weeks pregnant with
baby boy

Health notes:
BMI 33,
non-smoker, no medication,
takes prenatal vitamins daily
attends prenatal yoga



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How do you manage
this pregnancy?



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Stillbirth:
leading
causes
USA

- Unknown
- Placental issues
- Cord issues
- Genetic/anatomic issues
- Infection
- Maternal health issues



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Stillbirth
cause:
unknown

Just because there is no cause
does not mean there is no risk



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Stillbirth

What are the independent risk factors?



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Global characteristics of at risk mothers in high income countries may include:

- Primiparity (first time mothers)
- Maternal age (less than 18 or 35years +)
- Assisted reproduction (IVF) pregnancy
- BMI (30 or above)
- Maternal ethnic origin (South Asian descent, African American, indigenous & new immigrant group)
- Previous Stillbirth
- Previous Caesarean section
- Diabetes (pre-existing & Gestational)
- Smoking
- Alcohol
- Illicit drug use
- Lack of folic acid
- High blood pressure (Pre-existing and Pre-eclampsia)
- Multiple Pregnancy
- Infection
- Low socio economic status
- Poor prenatal attendance (less than 50% of planned visits attended)



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Global Characteristics of the at risk baby in high income countries may include:

- Decreased fetal movement
(irregular from what's normal for the individual baby)
- Erratic increased fetal movement
(crazy, insane or out-of-control movement from what is normal for the individual baby)
- Fetal growth restriction
(crossing centiles from the expected growth curve for that baby)
- Low amniotic fluid
- Placental blood flow restriction
- Gestational age 41 weeks or more
- Male



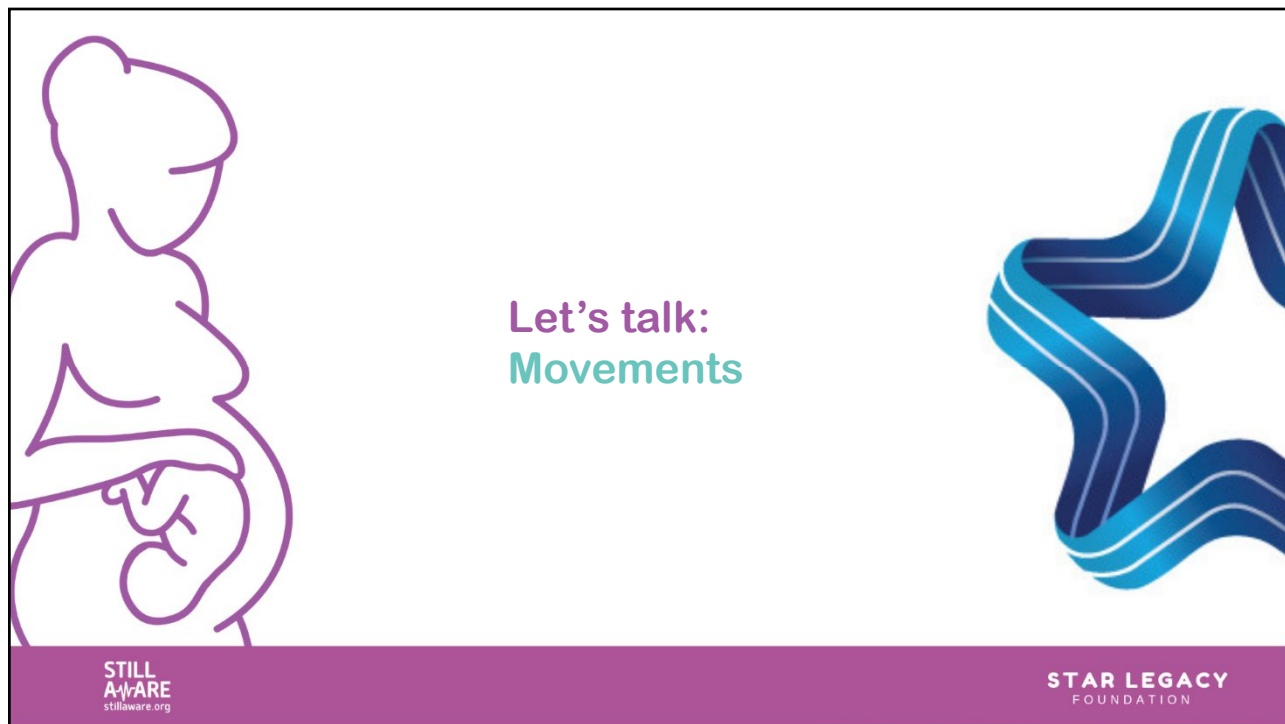
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Stillbirth: leading risk factors USA

- Maternal age
- Maternal obesity
- Post-term pregnancy
- African American mother
- IVF pregnancy
- Maternal smoking/substance use
- Lack of prenatal care
- Low socioeconomic status
- Maternal health conditions (pre-eclampsia, gestational diabetes, autoimmune disorders)
- Multiple gestation



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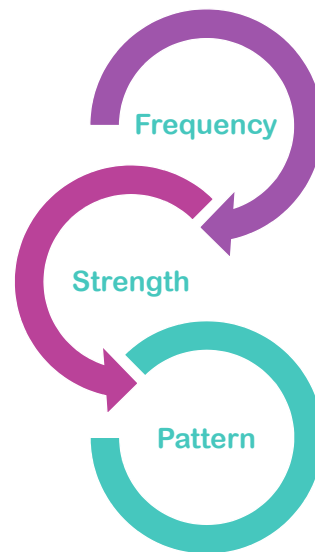
Background:

It is well recognised that maternal perception of a decrease in frequency of fetal movements is associated with poor pregnancy outcomes including stillbirth.

Mechanism: conserving energy

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3 characteristics of fetal wellbeing



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Why are
strength and
pattern
also important?



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STARS Study

Online survey conducted between September 2012 and August 2014.

Cohort study design with nested case-control arm

- Cohort - 1,714 women who had experienced a stillbirth >3 weeks prior to enrolment completed the survey
- Case-control - 153 cases who had a stillbirth ≤ 3 weeks prior and 480 controls who had had a recent live birth or who were still pregnant.



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STARS Study

Research article | [Open Access](#) | [Open Peer Review](#)

Stillbirth is associated with perceived alterations in fetal activity – findings from an international case control study

Alexander E. P. Heazell , Jane Warland, Tomasina Stacey, Christin Coomarasamy, Jayne Budd, Edwin A. Mitchell and Louise M. O'Brien

BMC Pregnancy and Childbirth BMC series – open, inclusive and trusted 2017 17:369

<https://doi.org/10.1186/s12884-017-1555-6> | © The Author(s). 2017



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STARS Study:

historical cohort

Frequency of unusual fetal movement

	N (%)
	N = 1,714
No change in fetal movement	480 (28.0 %)
A little bit less movement	273 (15.9 %)
Significantly less movement	522 (30.5 %)
A little bit more movement	136 (7.9 %)
Significantly more movement	146 (8.5 %)
Don't remember	103 (6.0 %)
Missing	54 (3.2 %)

Warland et al BMC-Pregnancy and Childbirth 2015



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STARS Study

Change in usual pattern of movement case control

Response	Group				All		Crude OR (95% CI)	P-value
	cases		controls					
	Total	%	Total	%	Total	%		
Once you were aware of your baby's usual pattern of movement, was there any time your baby's movements were unusual?								
No	27	19.3	200	52.5	227	43.6	Reference	<.0001
Yes, a little bit less	35	25	96	25.2	131	25.1	2.7 (1.55, 4.72)	
Yes, significantly less	56	40	32	8.4	88	16.9	12.9 (7.17, 23.4)	
Yes, a little bit more	15	10.7	44	11.6	59	11.3	2.53 (1.24, 5.14)	
Yes, significantly more	7	5	9	2.36	16	3.07	5.76 (1.98, 16.7)	

Heazell et al 2017



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STARS Study

Fetal movement at bedtime: case v control

	Group				All		Crude OR (95% CI)	p-value
	cases	controls						
	Total	%	Total	%	Total	%		
Did you usually feel your baby move at bedtime during this pregnancy?								
No	5	3.42	16	4.15	21	3.95	Reference	0.704
Yes	141	96.6	370	95.9	511	96.1	1.22 (0.44, 3.39)	
Did you feel your baby move at bedtime on the last night of this pregnancy?								
No	49	39.8	23	6.67	72	15.4	Reference	<.0001
Yes	74	60.2	322	93.3	396	84.6	0.11 (0.06, 0.19)	

Heazell et al 2017



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STARS Study

Change in strength: case v control

Response	Group				All		Crude OR (95% CI)	P-value
	cases		controls					
	Total	%	Total	%	Total	%		
During the last two weeks of this pregnancy, did the STRENGTH of your baby's movements...								
Stay the same	66	46.5	180	49.2	246	48.4	Reference	<.0001
Decrease	58	40.9	56	15.3	114	22.4	2.83 (1.78, 4.49)	
Increase	18	12.7	130	35.5	148	29.1	0.38 (0.21, 0.67)	

Heazell et al 2017



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STARS Study

Change in vigor: case v control

Response	Group				All		Crude OR (95% CI)	P-value
	cases		controls					
	Total	%	Total	%	Total	%		
During the last two weeks of this pregnancy, did you notice any time that your baby was more vigorous than usual)?								
No	59	42.8	143	40.2	202	40.9	Reference	<.0001
Yes, once.	42	30.4	24	6.74	66	13.4	4.24 (2.36, 7.62)	
Yes, sometimes.	30	21.7	158	44.4	188	38.1	0.46 (0.28, 0.75)	
Yes, often.	7	5.07	31	8.71	38	7.69	0.55 (0.23, 1.31)	

Heazell et al 2017



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STARS Study

Hiccups: case v control

Response	Group				All		Crude OR (95% CI)	P-value
	cases		controls					
	Total	%	Total	%	Total	%		
Did you experience?								
No	28	20	69	18.1	97	18.6	Reference	0.61
Yes	112	80	313	81.9	425	81.4	0.88 (0.54, 1.43)	
How long were the episodes?								
< 5 minutes	44	40.7	160	52.5	204	49.4	Reference	0.037
≥ 5 minutes	64	59.3	145	47.5	209	50.6	1.60 (1.02, 2.50)	
How often were the episodes?								
Once or twice in total	12	11.2	59	19.3	71	17.2	Reference	0.027
Weekly	33	30.8	113	37.1	146	35.4	1.43 (0.69, 2.98)	
Daily	62	57.9	133	43.6	195	47.3	2.29 (1.15, 4.56)	

Heazell et al 2017



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STARS Study

Case control: Fetal Movements (FMs) summary

Stillborn cases more likely to report in the last 2 weeks of the pregnancy:

- perception of **decreased frequency** (aOR 14.1, 95%CI (7.27-27.45)
- **Weak strength** (aOR 2.86 95% CI (1.72, 4.75) ,
- A single episode of **excessive vigorous** fetal activity (described as frantic or crazy) (aOR 4.30, 95%CI (2.25-8.24)
- Change in pattern at **bedtime and prolonged periods of daily hiccups**

Controls more likely to:

- Reports of **increased strength and frequency** of fetal movements and **"sometimes" vigorous FMs** were all protective.
- **Usual pattern of movement** at bedtime last night (aOR 0.11, 95% CI (0.06-0.21).

Heazell et al 2017



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Auckland stillbirth study(FMs)

summary

Stillborn cases more likely to report in the last 2 weeks of the pregnancy:

- perception of **decreased frequency** (aOR: 2.37; 95% CI: 1.29–4.35)
- **Weak strength** (aOR 2.37 95% CI (1.29-4.35),
- A single episode of **excessive vigorous** fetal activity (aOR 6.81, 95%CI (3.01-15.41)

Controls reported:

- **increased strength and frequency** of fetal movements and **"sometimes" vigorous FMs** were all protective.

Stacey et al 2011



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MINESS: case- control study

	Cases (n=291)	Controls (n=733)	OR (95% CI)
In the last two weeks did the strength of your baby's movements			
Increase	53 (18.3%)	455 (62.8%)	0.15 (0.11-0.22)
Decrease	62 (21.4%)	50 (6.9%)	1.61 (1.05 - 2.46)
Stay the same	153 (52.8%)	198 (27.3%)	Reference
Unsure	22 (2.6%)	22 (3.0%)	1.29 (0.69 -2.42)

Heazell et al: 2018 PSANZ



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MINESS: case- control study

	aOR (95% CI)
During the last 2 weeks did you notice anytime that your baby was more vigorous than usual?	
No	Reference
Once	2.10 (1.06, 4.17)
More than once	0.59 (0.37, 0.96)

Heazell et al: 2018 PSANZ



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NZ: Multi- center

summary

Stillborn cases (n=164) more likely to report in the last 2 weeks of the pregnancy:

- perception of **decreased frequency** (aOR: 2.41; 95% CI: 1.59–3.36)
- **Weak strength** (aOR: 2.35, 95% CI 1.44 -3.82)
- “Quiet in the evening” (aOR 3.41, 95%CI (1.34 – 8.72)

Controls (n=569) :

- 74% of controls reported “strong” FM in the evening
- Also **increased strength and frequency** of fetal movements, and “clusters or longer busy times” were all protective.

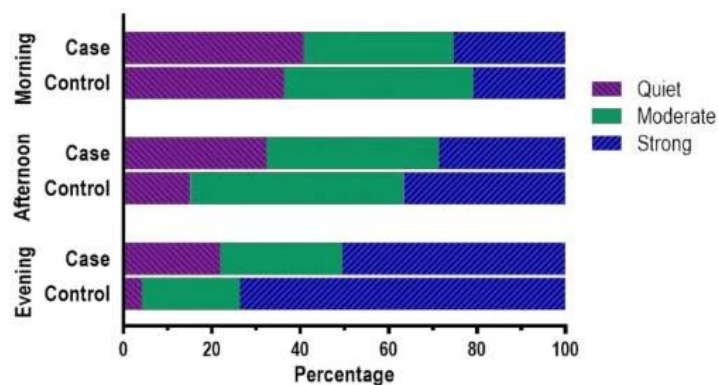
Bradford et al 2018 PSANZ



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NZ: Multi- center

Fetal movements and time of day



Bradford et al 2018 PSANZ



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Healthy babies behave differently

Interview question	N = 271
In the last two weeks did the strength of your baby's movements?	
Increase	162 (59.8%)
Decrease	17 (6.3%)
Stay the same	89 (32.8%)
Don't know	5 (1.8%)
In the last two weeks did the frequency of your baby's movements?	
Increase	110 (40.6%)
Decrease	38 (13.9%)
Stay the same	125 (45.8%)
Don't know	4 (1.5%)
During the last two weeks did you notice any time that your baby was more vigorous than usual?	
No	127 (47.0%)
Yes, once	15 (5.5%)
Yes, more than once	119 (44.2%)
Yes, more frequently	7 (2.5%)
During the last two weeks did you feel your baby having hiccups?	
No	83 (30.6%)
Yes	200 (73.9%)
Don't know	10 (3.7%)
If yes, how often?	
Once if hiccups	10 (3.6%)
Yes, once	11 (4.1%)
Yes, occasionally	89 (32.8%)
Yes, daily	90 (33.3%)
Yes, more frequently	5 (1.8%)
In the last two weeks, how many busy times did your baby have in a day?	
0-1	60 (22.1%)
2-3	180 (65.9%)
4-5	33 (12.1%)
6-7	5 (1.8%)
In the last two weeks, on average, how long did these busy times last?	
Longer than before	89 (32.8%)
About as long as before	151 (55.3%)
Shorter than before	19 (7.1%)
Don't know	2 (0.7%)

<https://doi.org/10.1371/journal.pone.0217686.t006>

In the last 2 weeks of pregnancy they are more likely to :

- Increase (or stay the same) in Strength
- Increase (or stay same) frequency
- Be more vigorous multiple times
- Occasionally Hiccup
- Have multiple "busy" times during the day
- Strongest movement in the evening or night time

Bradford et al 2019
PLOS One

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Get to know
who? your baby is
how? your baby is

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Movements

What is common practice?



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Is your baby moving?

Yes



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Dads & partners can get to
know movements too
Not just mums



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Myths?



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MYTH



IF I HAVE SOMETHING TO
EAT OR DRINK WILL IT GET
MY BABY MOVING?

FACT: If you are wanting to make your baby move because you are concerned about movements, it is best not to waste time but instead contact your care provider immediately.



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MYTH



IS AN INCREASE IN
MOVEMENTS A GOOD SIGN?

FACT: A slow increase probably indicates that your baby is getting stronger and is healthy and well, but a sudden increase, particularly if you feel the baby going "crazy" should be immediately checked out by your care provider, do not wait.



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MYTH



DOESN'T A BABY SLOW
DOWN BEFORE IT'S BORN?

FACT: A baby will keep moving throughout pregnancy, even during labour. In fact, a healthy baby usually gets stronger. Particularly in the last few weeks of pregnancy, be conscious of your baby's movements and call for a checkup if anything seems irregular or different.

**Never wait until the next day
to seek advice.**



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M Y T H



ISN'T IT OKAY IF MY BABY
MOVES 10 TIMES A DAY?

FACT: Every baby is different. Sure, some might move 10 times in a day, but others will move 10 times in 10 minutes! Baby's movements can vary from 4 to over 100 every hour. It is important to know what is normal for you and your baby and report any change in that.



MYTH



MY PLACENTA IS AT THE FRONT,
DOES IT MEAN I WON'T FEEL
MY BABY'S MOVEMENTS

FACT: You will be able to feel your baby's
movements within you regardless of
where your placenta lies.

Get to know your baby's individual
movements.



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Counting to 10
Why or why not?



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Mother:

Caitlin Ward

30 years old

Details of pregnancy:

Singleton,

first time pregnancy

39 weeks pregnant

Scenario:

**What is
your most
likely
first
response?**

She has recently stopped working. She has had a busy day. She has just gotten ready for bed and after lying down for a few minutes she realises her baby isn't moving. This is concerning because she knows her baby always moves when she goes to bed. She rings you, (after you have determined her age, gravidy, parity, gestational week and what has triggered her recent concern)



What do you do?

- A. Reassure her, it sounds like she has been busy today and hasn't noticed her baby's movements
- B. Ask her how many times her baby has moved today? (your next response will depend on the answer to that question)
- C. Suggest she have something sugary to eat or cold to drink to "wake the baby" and ring back if she is still concerned
- D. Suggest she concentrate on her baby's movements for the next hour and ring back if she is still concerned
- E. Invite her in to be assessed



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Phone advice regarding fetal movements?

What have you noticed?
What would you do?



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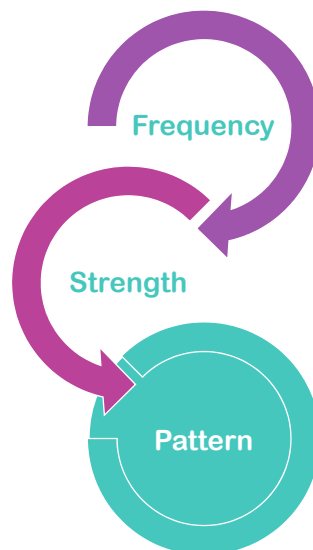


Should she be assessed?

If a women rings concerned
shouldn't we always invite
her in? Why?



She has noticed
a change in her
baby's pattern
of activity



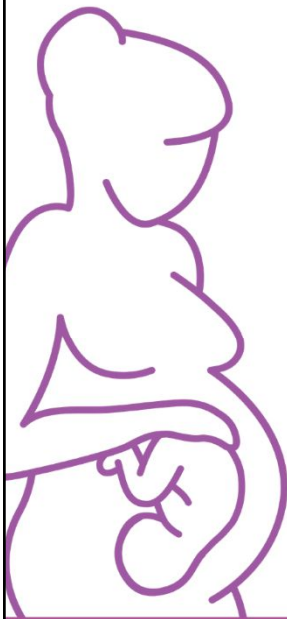
Conclusions:

- Pregnant women require education about the importance of quickly reporting ANY concerning alteration in their baby's activity to their maternity health professional.
- In order to properly assess fetal wellbeing maternity health professionals need to respond to ANY concerns the mother has about alterations in her baby's behaviour not just a reduction in frequency



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Break



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Current Primary Research: position

Authors	Country	Method	OR	PAR
Stacey et al 2011	NZ	Case Control 155/310	aOR = 2.54, 95% CI: 1.04–6.18, and p = 0.005.	PAR for non-left-sided sleep position night before for stillbirth to be 37%.
Owusu et al 2013	Ghana	Cross sectional 220	aOR = 8.0, 95% CI: 1.5-43.2, and p = 0.016).	PAR of 'typical' supine sleep position for stillbirth was 25%.
Gordon et al 2015	Australia	Case-Control 103/192	aOR = 6.26, 95% CI: 1.2-34	The PAR for self-reported supine sleep position in last month of pregnancy was 9.88%.
Lakshmi et al 2017	India	Case-control 100/200	OR 2.27 (1.37-3.75)	Not reported
McCowan et al 2017	NZ	Case-Control 164/569	aOR 3.67, 95% CI 1.74-7.78.	The PAR of supine sleep position for late stillbirth was 9.4%.
Heazell et al 2017	UK	Case-Control 297/ 742	aOR 2.31, 95% CI 1.04-5.11	The PAR of supine going to sleep position 3.7%
O'Brien et al 2019	Internet	Case-Control 153 /480	n.s.	N/A



STARS results: Sleep Practices

Cases (n=153) Controls (n=480)

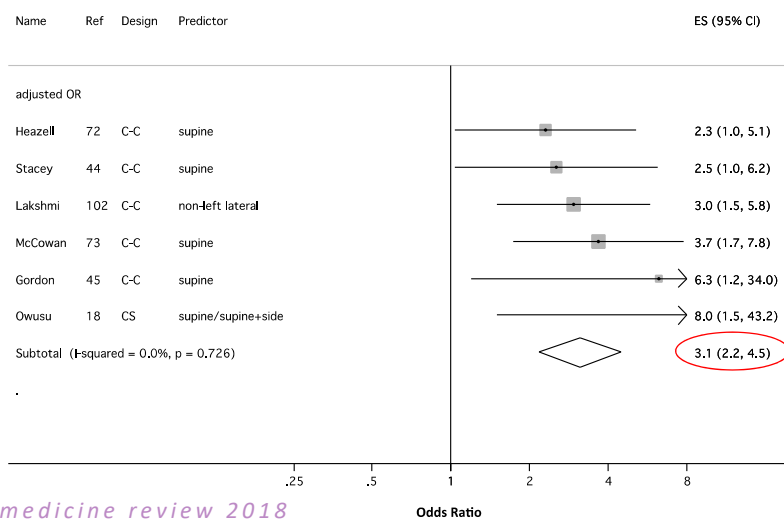
- No association for SR Snoring
- Long sleep duration (> 9 hours) aOR 1.75 (95% CI 1.10-2.79)
- Increased risk of stillbirth for:
 - Getting up less than once (aOR 2.03 95% CI 1.24-3.34)
 - Good/Very Good sleep quality (aOR 1.69 95% CI 1.04-2.75)
 - 74% of cases believed their baby died overnight



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Lit review with meta- analysis

Sleep Position and Stillbirth



Warland et al *Sleep medicine review* 2018

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Collaborative IPD analysis of maternal sleep position and late stillbirth (greater than or equal to 28 weeks of gestation)

Minglan Li, Lesley McCowan, Robin Cronin, John Thompson, Edwin Mitchell, Vicki Culling, Lisa Askie, Adrienne Gordon, Camille Raynes-Greenow, Victoria Bowring, Alexander Heazell, Tomasina Stacey

• **Individual participant Data (IPD) meta-analysis of:**

- NZ (TASS) 155 cases, 310 control
- Australia (SSS) 103, 192 controls
- NZ (MCSS) 164 cases, 569 controls
- UK (MINESS) 297 cases, 742 controls
- International (STARS) 153 cases and 480 controls

• **TOTAL 872 Cases 2293 Controls**



CRIBBS

- Going to sleep in the supine position compared with all other positions is associated with a pooled odds ratio OR of 2.59 (95% CI 1.76- 3.80) I^2 of 0



Putting it into perspective

- In meta-analysis smoking during pregnancy was significantly associated with increase in the odds of stillbirth (OR 1.47, 95% CI 1.37, 1.57, $p < 0.0001$) (Marufu et al 2015)
- Binge drinking later in pregnancy increased odds of stillbirth (OR: 1.62, 95% CI: 1.09, 2.41, $p=0.02$) (Cornman-Homonoff et al 2014)



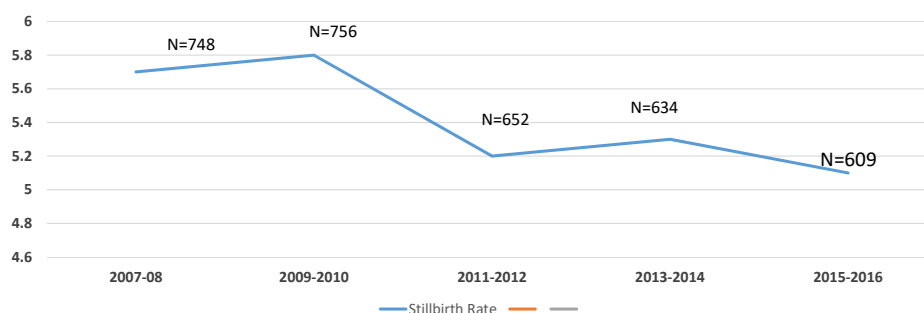
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- Settling to sleep on your side is a simple measure that, if adopted by every pregnant woman has the potential to reduce stillbirth by up to 10%, in Australia that's 220 babies each year
- Will telling women to settle to sleep on their side work?



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What happened in New Zealand in 2011?



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BMJ

RESEARCH

Association between maternal sleep practices and risk of late stillbirth: a case-control study

Tomasina Stacey, midwifery lecturer, PhD student,¹ John M D Thompson, senior research fellow,² Ed A Mitchell, professor of child health research,² Alec J Ekeroma, senior lecturer, obstetrics and gynaecology,¹ Jane M Zuccollo, senior lecturer, perinatal pathology,³ Lesley M E McCowan, professor of obstetrics and gynaecology¹

NEWS
Expecting? Sleep on your left -- just in case

BMJ 2011; 343:d115

COMMENTS

NEW ZEALAND

Stillbirth study suggests sleep position important

7:01 pm on 15 June 2011

Share this

Could Sleeping on Left Side Help Prevent Stillbirth?
Study finds higher rates of this tragic outcome when women sleep on back or right side.
June 15, 2011, at 8:08 a.m.

Left-Sided Sleep May Cut Risk of Stillbirth
... pregnant women who sleep on their left side may be associated with a reduced risk of stillbirth, according to a new study published in the British Medical Journal (BMJ) today.

Sleeping Position in Pregnancy Linked With Stillbirth Risk
A new study published in the British Medical Journal (BMJ) today suggests that pregnant women who sleep on their left side may be associated with a reduced risk of stillbirth.

Medical and Health Sciences
Sleep position in late pregnancy could decrease risk of late stillbirths

THE CONVERSATION

Sleeping on left side may halve risk of stillbirth



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MEETING ABSTRACTS

Open Access

Proceedings of the Stillbirth Summit 2014

Medina, MN, USA. 19-21 June 2014

Published: 15 April 2015

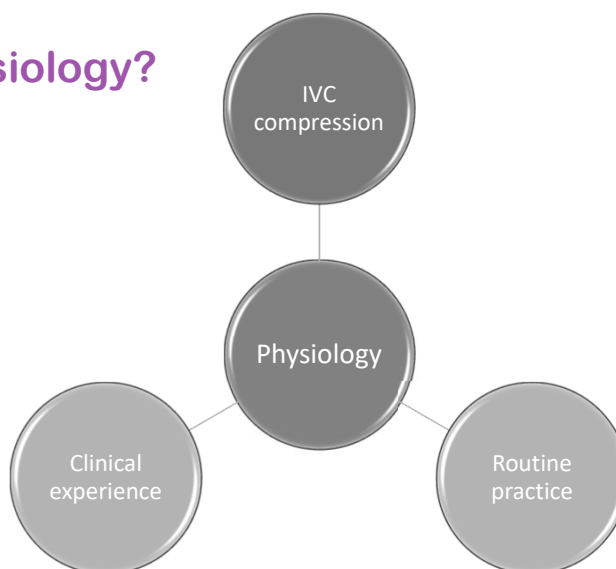
These abstracts are available online at <http://www.biomedcentral.com/bmcpregnancychildbirth/supplements/15/S1>

- *Despite urging caution, midwives appear to have accepted the findings and are advising their patients to sleep on the left side.*
- *This has resulted in a significant increase in left sided sleep position, from 35.9% in the Auckland stillbirth study (2006-9) to 62.5% in late 2011 (unpublished Findings).*
- *This has been associated with a reduction in late stillbirth for New Zealand*
- *Although we cannot exclude other reasons for the decline, it is tempting to believe that the decline is a consequence of more pregnant women sleeping on their left. (Mitchell 2014)*



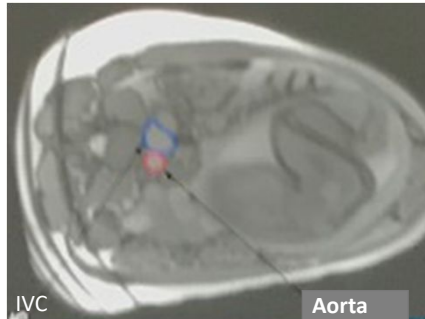
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Plausible Physiology?



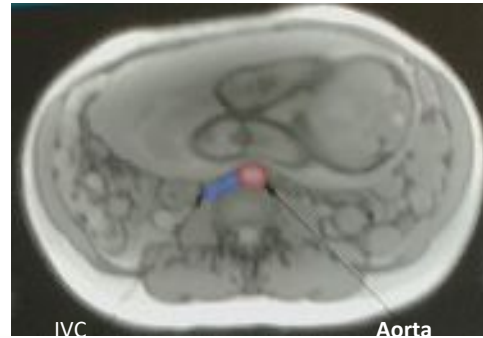
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IVC compression



Left lateral

86.5% reduction in IVC flow

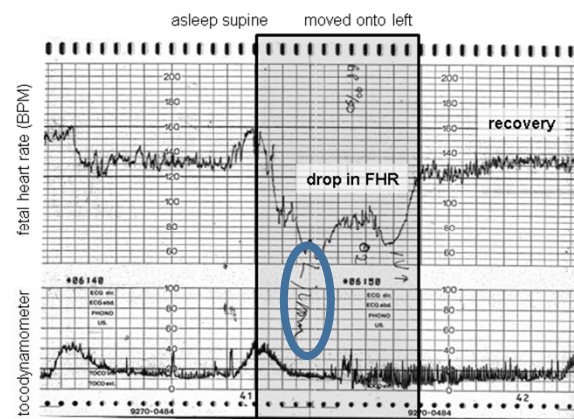


Supine



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Clinical experience



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Routine Practice

Maternal position during caesarean section for preventing
maternal and neonatal complications (Review)

Cluver C, Novikova N, Hofmeyr GJ, Hall DR



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Current Research:
Understanding fetal
response



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Effect of maternal position on fetal behavioural state and heart rate variability in healthy late gestation pregnancy

Peter R. Stone , Wendy Burgess, Jordan P. R. McIntyre, Alistair J. Gunn, Christopher A. Lear, Laura Bennet, Edwin A. Mitchell, John M. D. Thompson, the Maternal Sleep In Pregnancy Research Group, The University of Auckland

First published: 11 December 2016 [Full publication history](#)

DOI: 10.1113/jp273201 [View/save citation](#)

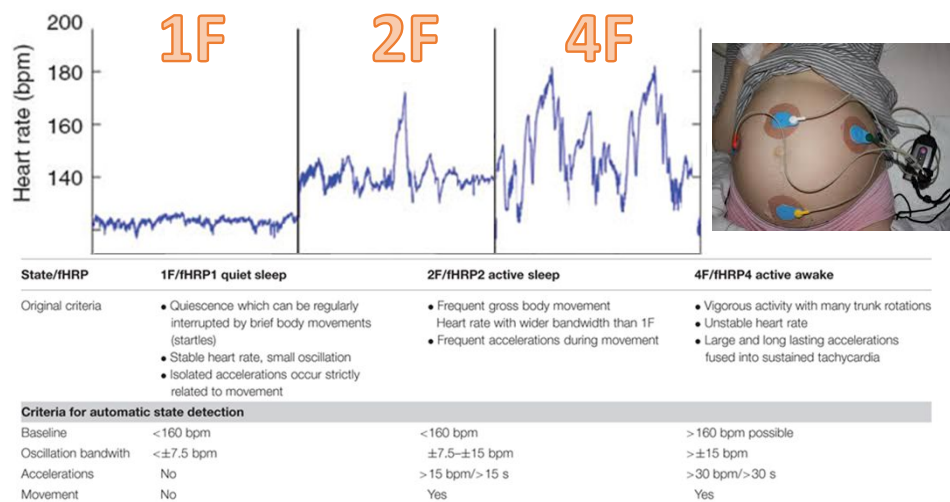


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15 February 2017
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- 29 healthy singleton pregnancies
- 35-38 weeks
- 4 positions: supine, right, left lateral (30° tilt), & semi-recumbent
- FHR via AN24



Fetal Behavioural State: FBS



Pillay &
James
(1990)



FBS in according to maternal position when awake

	1F	2F	4F
Left	11.3	79.1	9.6
Right	22.0	71.7	6.3
Semi-recumbent	16.7	81.9	1.5
Supine	34.4	63.4	2.3

Chi-Sq: 32.2 (p<0.0001)

- 46% of all 4F in left-lateral,
- 41% of all 1F in supine
- Intra-observer Kappa 0.8



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FBS in according to maternal position when asleep

Variable	1F	2F	4F
Left	13.4	82.2	4.4
Right	11.3	83.5	5.2
Supine	14.0	85.2	0.8

Chi-Sq: 81.53 (p<0.0001)

- 4F occurred almost exclusively when mother was on her side,
- 1F was more common when mother was supine (OR 1.30, 95% CI, 1.11-1.52)



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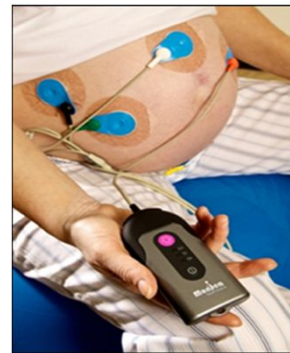
PrenaBelt trial



Warland et al (2018) J Clin Sleep Med. 14(8):1387–1397



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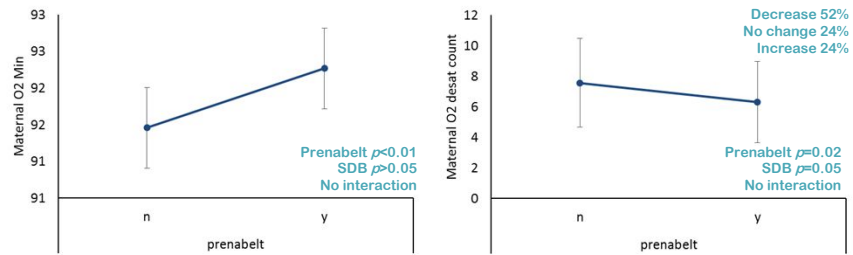


Warland et al (2018) J Clin Sleep Med. 14(8):1387–1397



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Maternal O₂ indicators With Prenabelt

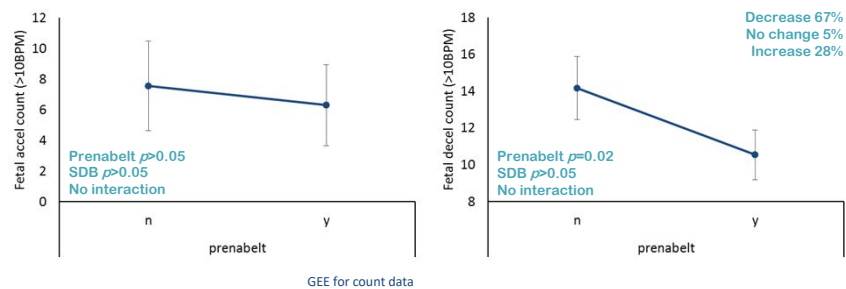


Warland et al (2018) J Clin Sleep Med. 14(8):1387–1397



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Fetal heart rate changes with Prenabelt:



Warland et al (2018) J Clin Sleep Med. 14(8):1387–1397



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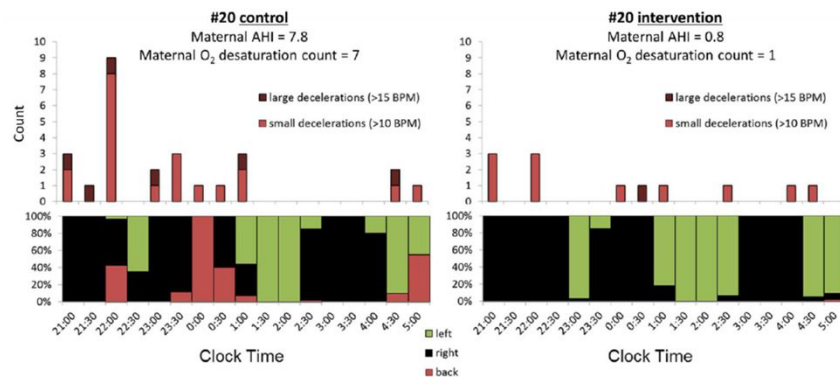


Figure 3. Example results from a single case #20 during the control (left) and intervention (right) nights. Large (>15BPM, dark red) and small (>10BPM, light red) FHR decelerations are shown (upper) relative to maternal sleep position (lower). Proportion of sleep time spent on back (red), left (green) and right (black) is shown across clock time. Maternal AHI and desaturation count for each night are also indicated.

Warland et al (2018) J Clin Sleep Med. 14(8):1387-1397



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What does all this mean?

Most babies adapt to the mum sleeping on her back

But some babies may be more vulnerable than others

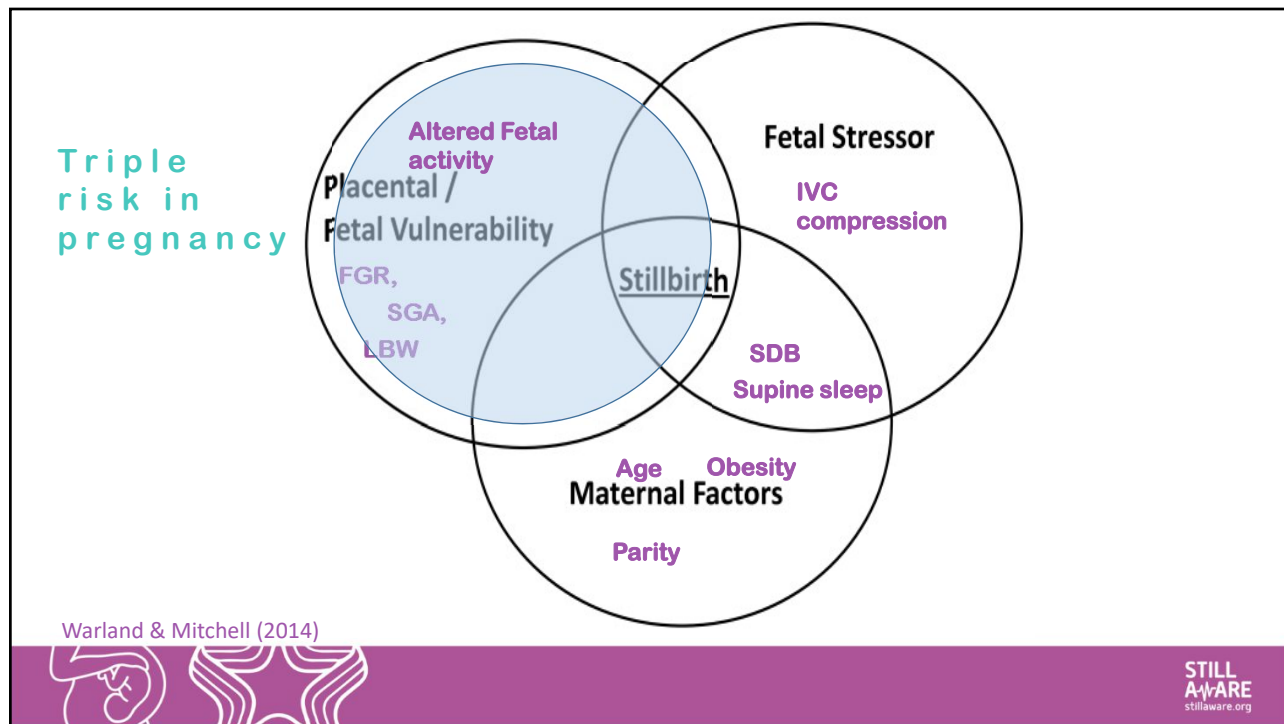


'Mabel' by Jane Warland

If all mums settle to sleep on their side then the vulnerable baby will be protected



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How do we bring this into practice?

Practice



Research



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Public awareness campaigns

Tommy's I need urgent advice

Our organisation
saving babies' lives

Pregnancy information
from our midwives

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Health & care information you can trust

Pregnancy information » I'm pregnant » Pregnancy calendar » Third trimester - weeks 29 to 40 » Safest sleep position in pregnancy

Safest sleep position in pregnancy

In the third trimester of pregnancy going to sleep on your side has been shown to help prevent late stillbirth

Share [Print this page](#)

In the third trimester our advice is to go sleep on your side because research has shown that this is safer for baby. This includes night sleep and day time naps.

<https://www.tommys.org/pregnancy-information/sleep-side-pregnancy-campaign>

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Tommy's international initiative

#SleepOnSide

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DE MANERA SEGURA
DURANTE EL EMBARAZO.

Campaña para prevenir la muerte
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Tips for helping a woman sleep on her side in late pregnancy

- Put pillows behind her back to reduce falling on her back and between knees for comfort. It won't prevent being on your back for certain but is likely to make it more uncomfortable.
- If she has long hair, try tying it in a low bun, which may make it uncomfortable to sleep on her back for any length of time.
- If she wakes up for any reason during the night, don't worry about being on back but go back to sleep on her side.
- If she naps during the day pay the same attention to sleep position during the day as she would during the night.
- For women with pain on side sleeping the important thing is that she is not lying flat on her back as this is what the research is related to.



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health professionals educating pregnant women

- Say something like:
- *Research has shown that settling to sleep on your back is not best for baby. I'd like you to try to settle to sleep on your side from 28 weeks. Don't worry if you wake up in the middle of the night on your back , that's normal, just settle back to sleep on your side?*



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Remaining Questions:



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How much?

How much supine sleep
is needed to cause harm ?



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Who do we tell?

- EVERYONE



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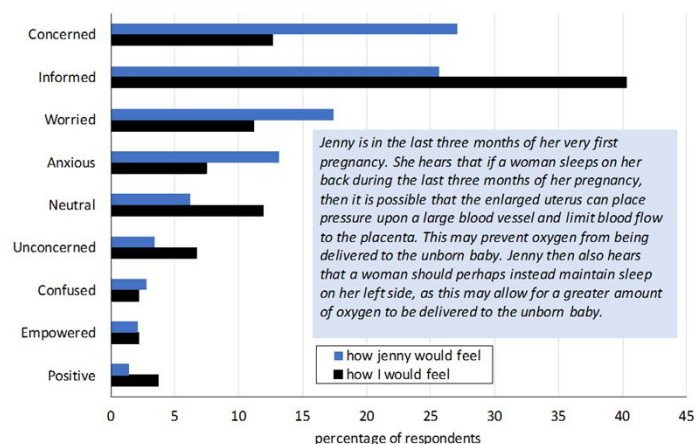
Won't we make women anxious?

- Online survey of 537 women, analyses are presented of 176 women who reported being currently pregnant (mean age=27.9, SD=5.5y). For 37%, this was their first pregnancy.
- Respondents from Australia, U.S.A, England, Italy, Ghana, Lesotho, Northern Ireland, Malaysia, Pakistan, the Philippines, Saudi Arabia, New Zealand, and Norway.



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Anxiety



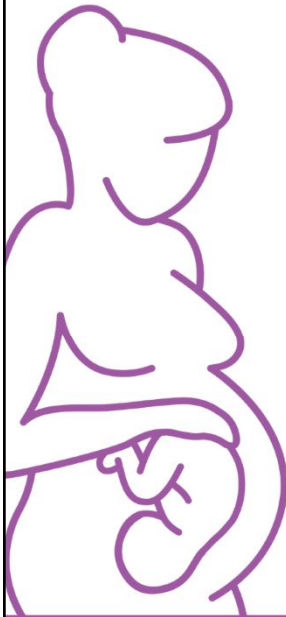
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Summary

- Settling to sleep supine is associated with increased stillbirth risk
- Public health campaigns have been launched or are being considered
- Maternity health professionals (MCPs) can influence women's knowledge and practices during pregnancy AND....telling women to settle to sleep on their side from 28 weeks may save a baby's life.



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Let's talk:
Intuition



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What is maternal intuition ?

Mother's intuition is the natural, inborn intelligence that guides and supports her to deeply know, without external influence, what is truly right, and correct for her child's best interest and wellbeing," (Simone Wright)



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Intuition in practice

*"A mother's intuition
is worth more than
a medical degree."*

-Dr. Susan Markel



"a smart mother often makes a better diagnosis than a poor doctor" (Dr August Bier 1861–1949).



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Do we currently use intuition in practice?

- Dr. Michael Howard, a pediatrician with more than 30 years in practice. *"A mother bears a child for nine months and seems to possess a sixth sense like no other when things don't align correctly with their child," says Howard. "One thing I learned was to always listen to a mother when she told me something was amiss or not right with her child, despite the fact I may not have revealed anything on my physical exam."*

WHY?

We ask the mother because we cannot ask the child so the mother provides the voice for the child until the child can speak for themselves



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Does it exist in
pregnancy?

Can we reduce
stillbirth?



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[RESEARCH ARTICLE](#) | [OPEN ACCESS](#) | [OPEN PEER REVIEW](#)

An international internet survey of the experiences of 1,714 mothers with a late stillbirth: the STARS cohort study

 Jane Warland , Louise M. O'Brien, Alexander E. P. Heazell, Edwin A. Mitchell and the STARS consortium

BMC Pregnancy and Childbirth 2015 15:172 | DOI: 10.1186/s12884-015-0602-4 | © Warland et al. 2015

Received: 18 September 2014 | Accepted: 28 July 2015 | Published: 15 August 2015

[Open Peer Review reports](#)

- **Online survey**
- **Cohort study design with nested case-control arm**
- **Cohort - 1,714 women who had experienced a stillbirth >3 weeks prior to enrolment completed the survey**
- **Case-control - 153 cases who had a stillbirth \leq 3 weeks prior and 480 controls who had had a recent live birth or who were still pregnant.**


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Midwifery

Volume 62, July 2016, Pages 171-176



"They told me all mothers have worries", stillborn mother's experiences of having a 'gut instinct' that something is wrong in pregnancy: Findings from an international case-control study

 Jane Warland PhD , Alexander E. P. Heazell PhD , Tomasina Stacey PhD , Christine Coomarasamy , Jayne Budd , Edwin A. Mitchell PhD , Louise M. O'Brien PhD 
[Show more](#)
<https://doi.org/10.1016/j.midw.2016.04.009>

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Highlights

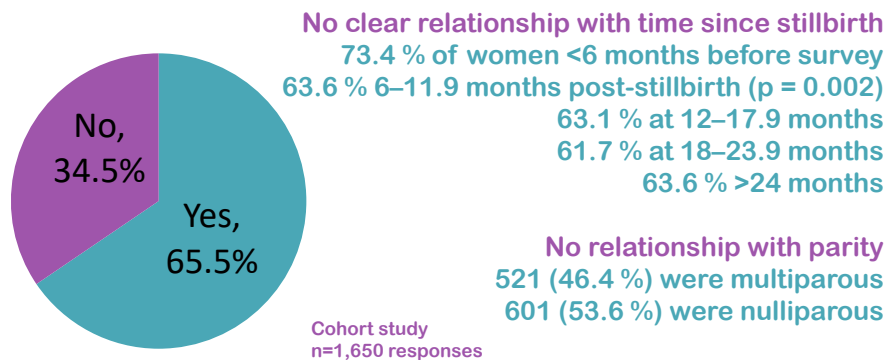
- The risk of stillbirth is 22.5 fold higher when mums report a “gut instinct “ that something is wrong than those who do not report this
- The gut feeling is most likely to be reported as enduring from the beginning of the pregnancy or in response to perceived changes in fetal movements
- Some women reported they had difficulty in expressing their concerns and “being heard” (Warland et al Midwifery 2018)



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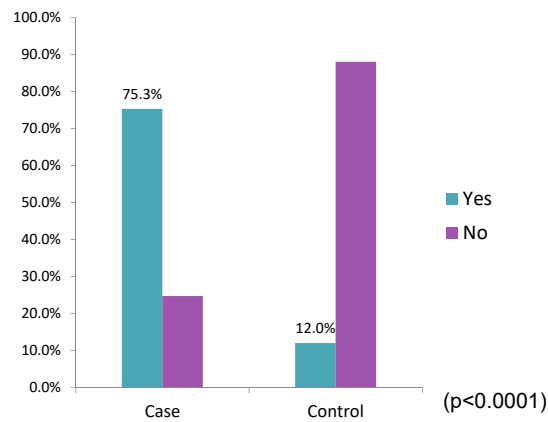
Gut Instinct

During this pregnancy did you ever have a “gut instinct” that something was wrong?



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STARS: Case- control study



110 (75.3%) of the 146 stillborn cases (stillbirth less than 3 weeks prior) and only 28 (12.0 %) of 234 live born controls (livebirth less than 3 weeks prior) answered yes to this question.



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Comment data analysis

‘summative content analysis’ (Hsieh and Shannon 2005)

- data set searched for recurrence of certain words or content.
- Recurring words were then identified and quantified
- 2 Authors JW and JB separately coded the data and then reached agreement on the common recurring words.



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‘Themes’

1. When the Gut feeling occurred
2. How the gut feeling made the woman feel
3. Dreams and other related phenomena
4. Telling someone.



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When the “gut feeling” occurred

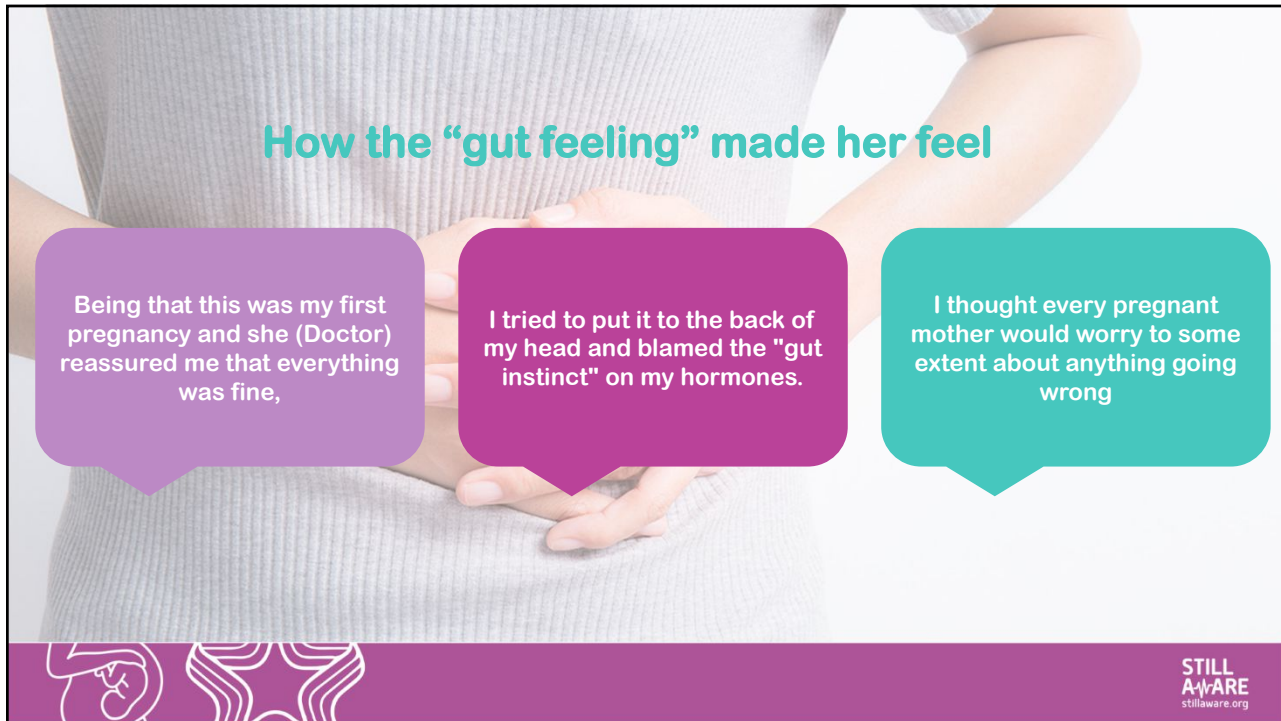
When he was so quiet the last few days I was uneasy about it but my doctor didn't seem concerned

it is hard to explain - I just had this overwhelming sense that something was not right from early on. My OB said it was not uncommon to worry.

The last night of pregnancy I mentioned to husband that I "didn't feel right" but couldn't explain the feeling



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How the “gut feeling” made her feel

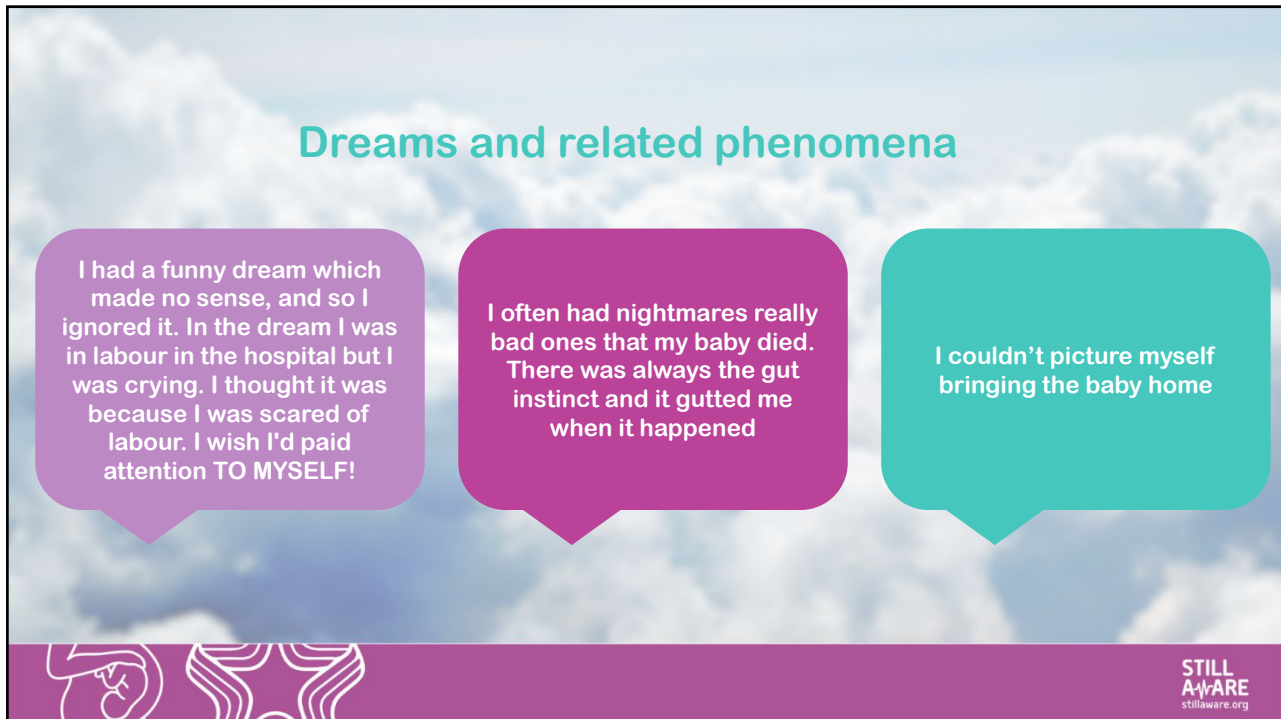
Being that this was my first pregnancy and she (Doctor) reassured me that everything was fine,

I tried to put it to the back of my head and blamed the “gut instinct” on my hormones.

I thought every pregnant mother would worry to some extent about anything going wrong

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Dreams and related phenomena

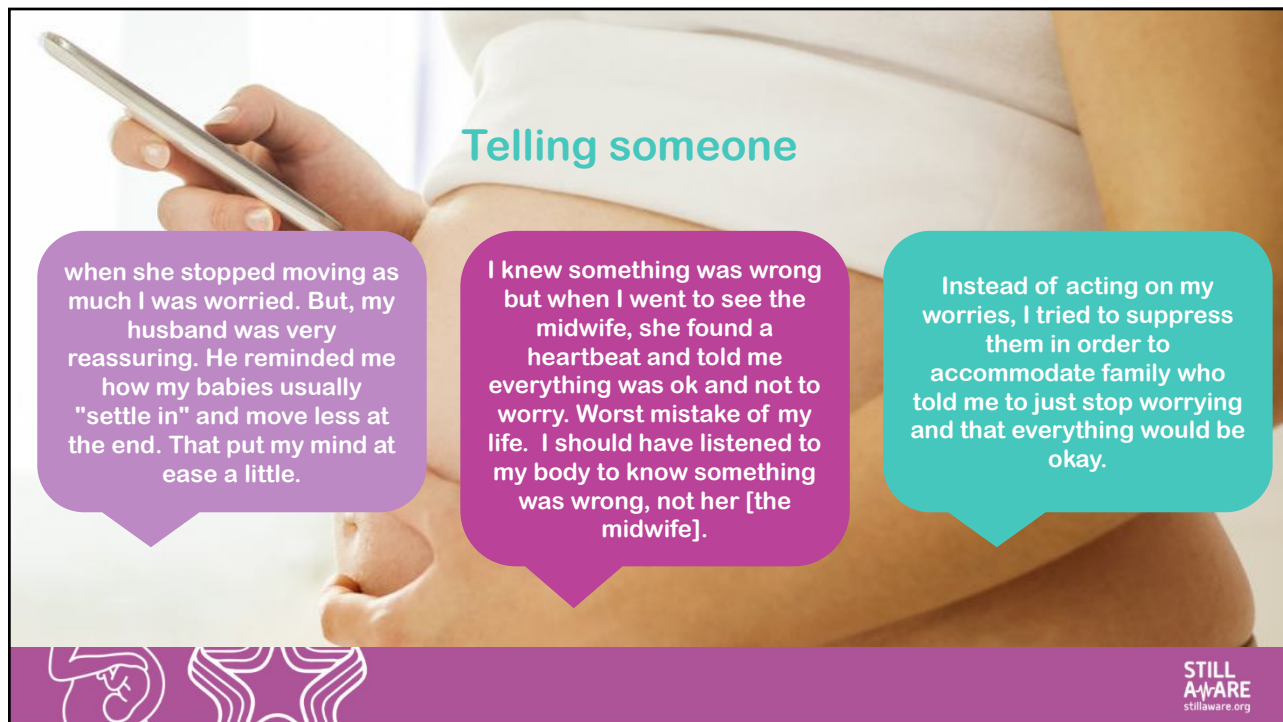
I had a funny dream which made no sense, and so I ignored it. In the dream I was in labour in the hospital but I was crying. I thought it was because I was scared of labour. I wish I'd paid attention TO MYSELF!

I often had nightmares really bad ones that my baby died. There was always the gut instinct and it gutted me when it happened

I couldn't picture myself bringing the baby home

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Telling someone

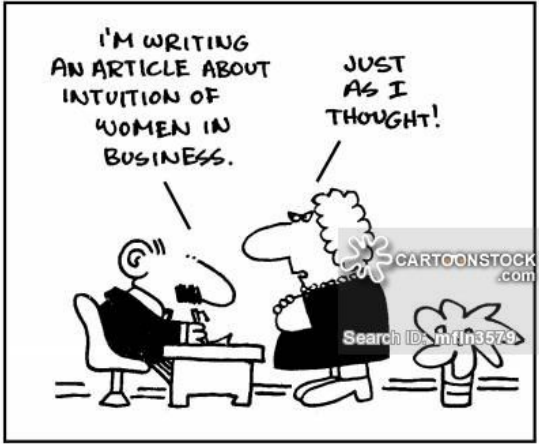
when she stopped moving as much I was worried. But, my husband was very reassuring. He reminded me how my babies usually "settle in" and move less at the end. That put my mind at ease a little.

I knew something was wrong but when I went to see the midwife, she found a heartbeat and told me everything was ok and not to worry. Worst mistake of my life. I should have listened to my body to know something was wrong, not her [the midwife].

Instead of acting on my worries, I tried to suppress them in order to accommodate family who told me to just stop worrying and that everything would be okay.

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Limitations:



I'M WRITING AN ARTICLE ABOUT INTUITION OF WOMEN IN BUSINESS.

JUST AS I THOUGHT!

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Discussion



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What is stopping us from using this in practice?

- Stigma?
- Perception?
- Concerns about Anxiety?



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We could use this, but would we see this?

Request form

Admission for maternal intuition

IOL for maternal intuition



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How might the story be
different?

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“

I worried throughout my entire pregnancy. But I seemed to be having an absolutely perfect , healthy pregnancy so I kept telling myself not to worry. When we hit 37 weeks I pretty much stopped worrying because I figured if anything went wrong they'd cut me open and my baby would be fine. I never even knew stillbirth was a possibility – I'd done TONS of research on pregnancy, read all the books, took the classes and it NEVER came up anywhere. I thought stillbirth had ended in the 1800s- I never knew how common it was until it happened to me. So even though I sensed something was a little off, I was very reassured by everyone's confidence in my pregnancy- I thought it was just normal worries. If I'd really felt like anything was wrong, I would have trusted my instincts- but whatever instincts I might have had were mild enough to be easily dismissed. It's hard to gauge in retrospect – I'd like to think I knew something was wrong, but really, nothing felt wrong enough for me to act on it. It seemed normal.... Yes, right from the beginning!

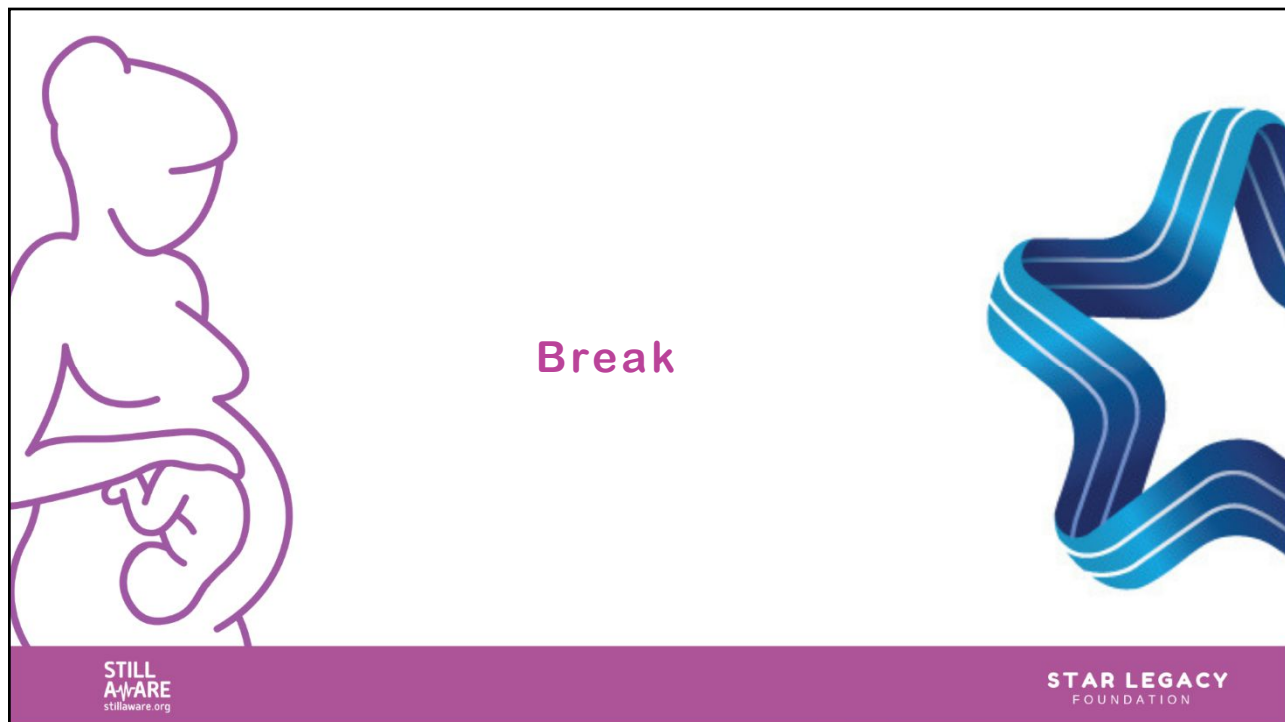
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“

Not listening to my gut
will always haunt me

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Fetal Movement Awareness: Reducing Stillbirth in Scotland

Aim
The Maternity and Children Quality Improvement Collaborative (MCQIC) is one of a number of programmes under way across Scotland which aims to reduce the rate of stillbirth. In 2012, 274 babies were stillborn in Scotland (rate of 4.7 per 1000 births).¹ A key aim of MCQIC is to reduce the Scottish rate of stillbirths by 15%.

The cause of stillbirth is complex, but it is recognised that the need to monitor fetal movement throughout pregnancy is an important health message for women. MCQIC set an aim that by December 2015, 95% of all pregnant women would have a documented discussion with a midwife about fetal movement between weeks 18 and 24 of pregnancy.

Methods
Test teams were given tools to support measurement which included a sampling strategy, how to display data in time sequence and a clear definition of a fetal movement discussion. The discussion was defined as follows:

- (1) the importance of being aware of your baby's fetal movements, and that every baby's movements are unique
- (2) to confirm the maternity unit immediately if fetal movements decrease or stop, and
- (3) the link between fetal movement and fetal wellbeing, and that a decrease or cessation of fetal movement may be associated with the risk of stillbirth.

Baseline data was collected from maternity units on a weekly basis from March 2014 onwards. Using the Model for Improvement, maternity teams tested ideas on a small scale and collected data to confirm if the changes resulted in an improvement.

Outcomes/Results
National aggregated data from 12 of 17 teams which have reported consistently from March 2014 to September 2015 show discussion of fetal movement improved by 11% from the baseline period, but deterioration in late 2015 suggests further work is needed (Figure 1).²

Local level data from the Pampers team, NHS Lothian, shows how the process has improved by 21% from baseline (Figure 2). In 2014, 203 babies were stillborn, a 14.59% reduction in the rate of stillbirth compared to 2012 (rate of 4 per 1000 births) (Figure 3).³

Conclusions
Although no one factor can be attributed to the reduction, it is encouraging that the rate of stillbirth is now at the lowest level ever recorded in Scotland.



1. Annual Report of the Scottish Stillbirth Surveillance System 2012. Available at: www.scottishstillbirthsurveillance.org.uk/annual-report-2012


2. Scottish Stillbirth Surveillance System 2015. Available at: www.scottishstillbirthsurveillance.org.uk/annual-report-2015

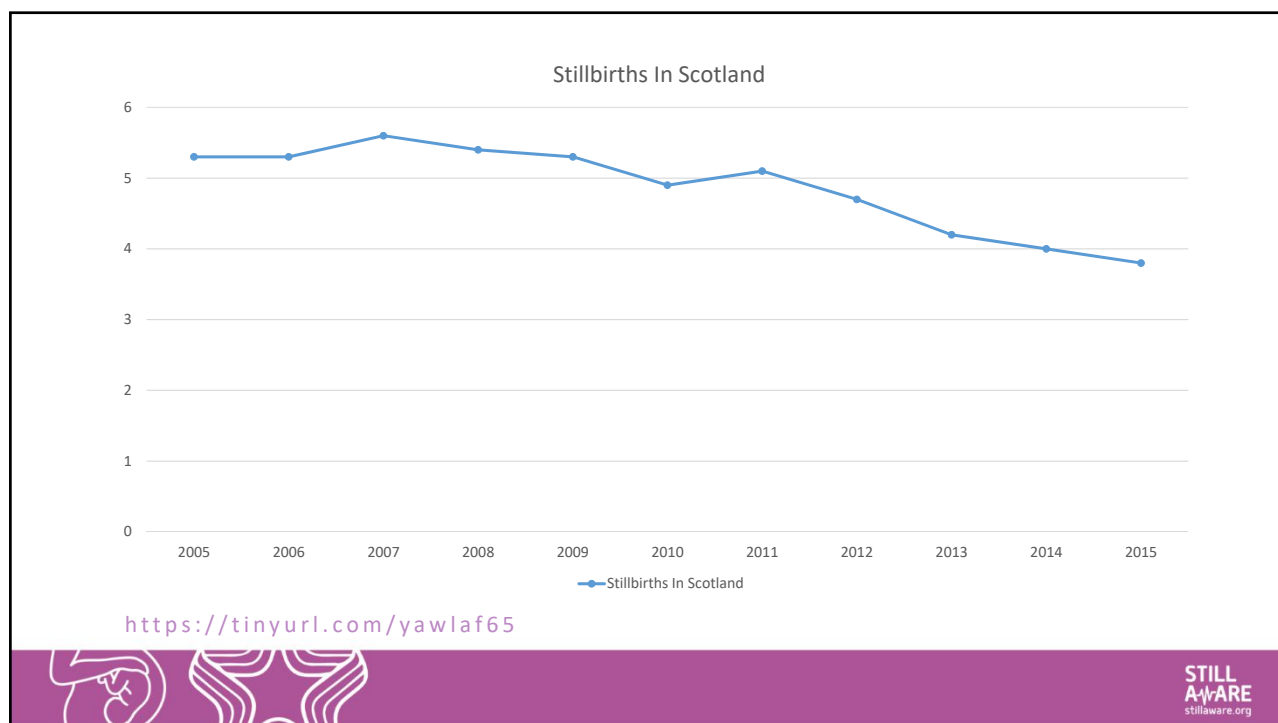
3. Scottish Stillbirth Surveillance System 2014. Available at: www.scottishstillbirthsurveillance.org.uk/annual-report-2014

www.scottishstillbirthsurveillance.org.uk/annual-report-2015
www.healthcareimprovement.scot.nhs.uk/programmes/mcqiic
www.healthcareimprovement.scotland.org

- The Maternity and Children Quality Improvement Collaborative (MCQIC) formed in 2010
- MCQIC set an aim that by December 2015, 95% of all pregnant women would have a documented discussion with a health professional about fetal movement between weeks 18 and 24 of pregnancy.







Fetal Movement Awareness: Reducing Stillbirth in Scotland

Aim
The Maternity and Children Quality Improvement Collaborative (MCQIC) is one of a number of programmes under way across Scotland which aims to reduce the rate of stillbirth. In 2012, 274 babies were stillborn in Scotland (rate of 4.7 per 1000 births). A key aim of MCQIC is to reduce the Scottish rate of stillbirth by 15%.

The cause of stillbirth is complex, but it is recognised that the need to monitor fetal movement throughout pregnancy is an important health message for women. MCQIC set an aim that by December 2015, 95% of all pregnant women would have a documented discussion with a midwife about fetal movement between weeks 18 and 24 of pregnancy.

Methods
Ten teams were given tools to support measurement which included a sampling strategy, tools to display data in time sequence and a clear definition of a fetal movement discussion. The discussion with women highlighted:

- (1) the importance of being aware of your baby's fetal movements, and that every baby's movements are unique
- (2) to contact the maternity unit immediately if fetal movements decrease or stop, and
- (3) the link between fetal movement and fetal wellbeing, and that a decrease or cessation of fetal movement may be associated with the risk of stillbirth.

Baseline data was collected from maternity notes on a monthly basis from March 2014 onwards. Using the Model for Improvement, maternity teams tested ideas on a small scale and collected data to confirm if the changes resulted in an improvement.

Outcomes/Results
National aggregated data from 12 of 17 teams which have reported consistently from March 2014 to September 2015 show discussion of fetal movement improved by 117% from the baseline period, but deterioration in late 2015 suggests further work is needed (Figure 1). Local level data from the Forth Valley team, NHS Lothian, shows how the process has improved by 27% from baseline (Figure 2). In 2014, 233 babies were stillborn, a 14.6% reduction in the rate of stillbirth compared to 2012 (rate of 4 per 1000 births) (Figure 3).

Conclusions
Although no one factor can be attributed to the reduction, it is encouraging that the rate of stillbirth is now at the lowest level ever recorded in Scotland.

For further information, please contact: maternity@mcqic.scot.nhs.uk or www.healthcareimprovement.scot.nhs.uk/programmes/mcqiic

NHS SCOTLAND Healthcare Improvement Scotland

- The Maternity and Children Quality Improvement Collaborative (MCQIC) formed in 2010
- MCQIC set an aim that by December 2015, 95% of all pregnant women would have a documented discussion with a health professional about fetal movement between weeks 18 and 24 of pregnancy.
- In 2015, the stillbirth rate was 3.8 per thousand versus 4.9 in 2010.
- Although no one factor can be attributed to this reduction, it is encouraging that the rate of stillbirth is now at the lowest level ever recorded in Scotland.



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UK: Saving babies lives care bundle

What is the Saving Babies' Lives care bundle?

Saving Babies' Lives is designed to tackle stillbirth and early neonatal death. It brings together four elements of care that are recognised as evidence-based and/or best practice:

1. Reducing smoking in pregnancy
2. Risk assessment and surveillance for fetal growth restriction
3. Raising awareness of reduced fetal movement
4. Effective fetal monitoring during labour

"This large scale evaluation of the NHS England Saving Babies Lives Care Bundle shows that the interventions to reduce cigarette smoking, detect small for gestational age babies, inform women about reduced fetal movements and improve monitoring of babies during labour, have been increasingly implemented in the early adopter maternity units. Over the same time period **stillbirths have fallen by 20%**, meaning 161 fewer stillbirths in the participating units.

Case-control: Health professional Information

Response	Group				All		OR (95% CI)	p-value	
	Cases	Controls							
	Total	%	Total	%	Total	%			
During this pregnancy did your healthcare provider tell you about or ask you to keep track of your baby's movement?									
	No	79	54.9	161	41.6	240	45.2	Reference	0.0066
	Yes	65	45.1	226	58.4	291	54.8	0.59 (0.4, 0.86)	

Heazell et al 2017



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“

The question got routinely asked by my midwife during both pregnancies, but the importance of it was never explained... With Bridget I did voice at 35w+ that my belly isn't growing...'you look fine to me' was the response I got.... And I did say that movements are starting to decrease, especially at night time... Bridget was stillborn

Angelica Fricot

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“

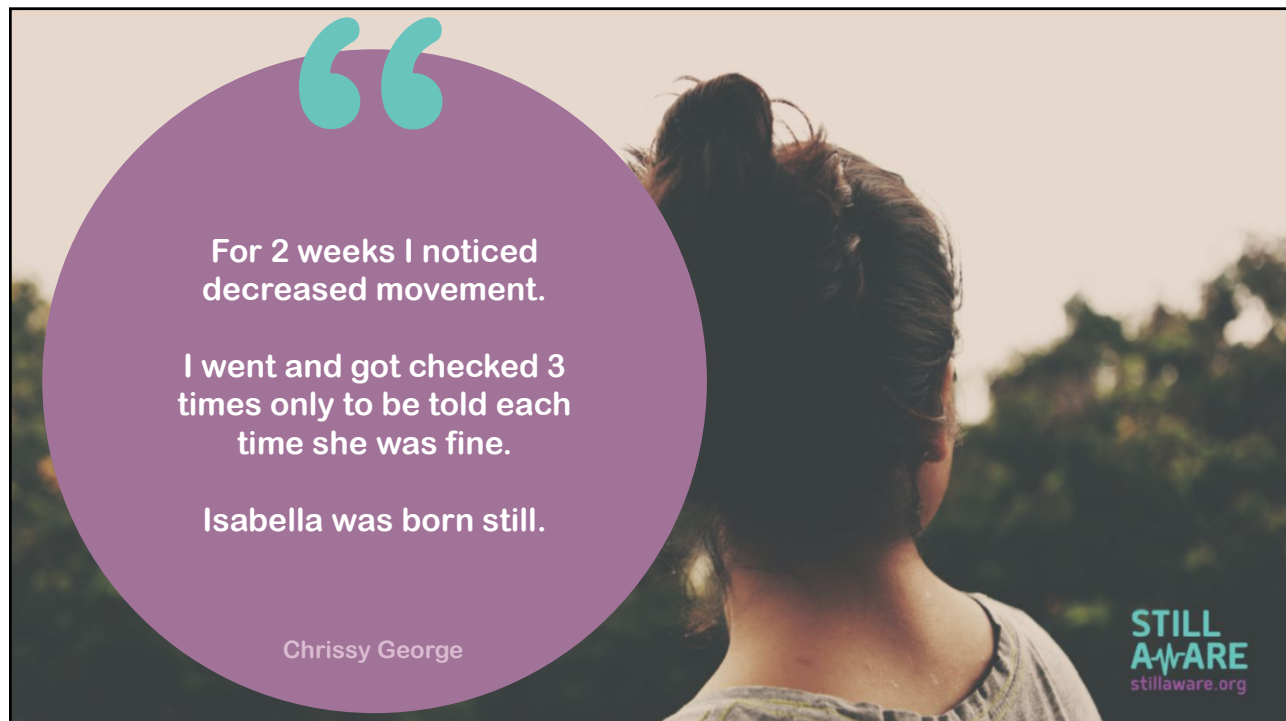
I remember questioning my midwife about feeling less movement and she said don't worry it's normal.

I later went to the hospital the nurse told me that I was over reacting and that it was normal.

I delivered my daughter sleeping

Sarah Hudson

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“

For 2 weeks I noticed decreased movement.

I went and got checked 3 times only to be told each time she was fine.


Isabella was born still.

Chrissy George

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What was your response to the change?	Reduced n=795 (%)	Increased n=282 (%)
Did not worry	51 (6.4%)	39 (13.8%)
Mentioned to family and friends but did not worry further	105 (13.2%)	59 (20.9%)
Mentioned to healthhealth professional and was reassured	244 (30.7%)	76 (27.0%)
Mentioned to healthhealth professional and was told to monitor at home for symptoms and call back if still concerned	65 (8.1%)	21 (7.4%)
Mentioned to healthhealth professional and had general evaluation (fetal heart rate, cervical status etc)	59 (7.4%)	16 (5.6%)
Mentioned to healthhealth professional and outpatient testing	80 (10.1%)	23 (8.1%)
Mentioned to healthhealth professional and was admitted	45 (5.7%)	12 (4.5%)
Went to hospital and was admitted	75 (9.4%)	13 (4.6%) ^a
Went to hospital and was sent home	37 (4.7%)	10 (3.5%)
Did not provide response to question	34 (4.3%)	13 (4.6%)

Warland et al 2015



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Why isn't stillbirth
and preventative
measures shared
as part of common
pregnancy advice?



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Why the reluctance?

Fear?
Who?

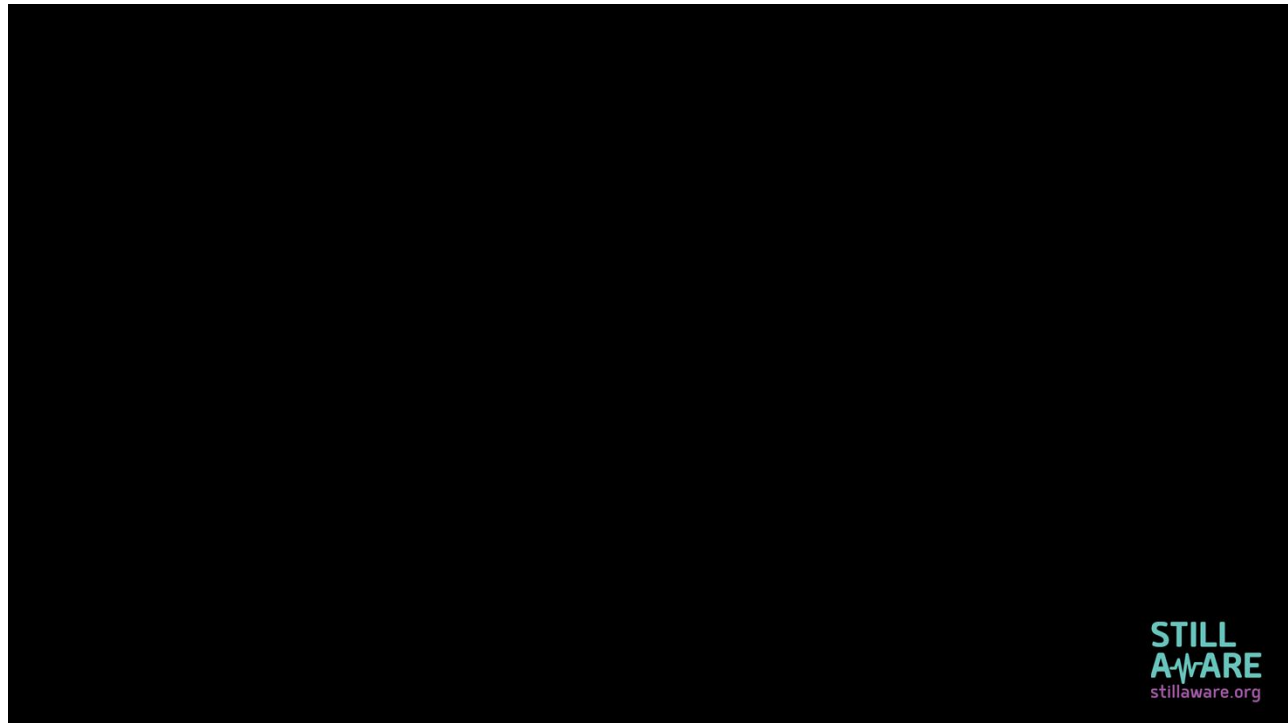


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Is the message
hard to deliver?





Why the importance?

Empowerment



The Power of Words

Stillbirth



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Does it worry you?



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Do you think?

Putting the responsibility on moms during pregnancy relating to side sleep, monitoring movement, honoring maternal intuition, etc – will cause parents who experience loss to blame themselves or you?

Open for discussion



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Will I be sued?

The risk of malpractice. The reality is that parents seem to only consider that route if they feel like they were brushed off, their provider didn't take their concerns seriously, or specifically said they wouldn't do something the family asked for (ie - delivery before 39 weeks). Even then, the system is set up to protect the providers - so it is very rare for a family to be successful in suing their doctor for a stillbirth - but most families and physicians don't realize this.

Open for discussion



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Implementing open conversation about stillbirth into practice



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STAR LEGACY FOUNDATION

PARENTING IN PREGNANCY:
Taking care of baby starts now!

baby, all are of you. Ask breaks time taking.

Facing 'giving as

have r or team. sing rush

www.starlegacyfoundation.org

6 ACTIONS FOR YOUR SAFER PREGNANCY

Get to know your baby's normal. Avoid comparing your pregnancy to others. You and your baby are a team.

Trust your instincts. Report any concerns or unusual feelings to your care provider without delay. Do not wait.

Monitor the strength of your baby's movement. If the start to weaken or feel unusual for your baby, contact your care provider straight away. Early in pregnancy baby's movements may feel like a flick or flutter. As baby grows, the movements will get stronger and feel more like kicks and punches. Closer to the due date movements may feel more like baby is rolling over and stronger sweeping movements.

Get to know your baby's pattern of movement. Is your baby a morning person or a night owl? Does your baby like to hear your voice or dance to music? Is your baby vocal or shy? Monitor to match to your baby's usual or day? Monitor to match to your baby's usual or day? Monitor to match to your baby's usual or day? Monitor to match to your baby's usual or day?

Monitor frequency of your baby's movement. If anything feels irregular, do not wait to contact your care provider. Your baby should keep moving even during labour. There should be at least 10 movements by 28 weeks.

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DAILY ACTIONS FOR A SAFER PREGNANCY

Avoid comparing your pregnancy to others. From 28 weeks settle to sleep on your side.

Monitor baby movement pattern. Trust your intuition.

Monitor baby movement strength. Any changes call straight away.

Monitor baby movement frequency.

These daily actions may help prevent a stillbirth from happening to you.

YOUR PREGNANCY
This is important information, take the time to read it.

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Talk SAFE Pregnancy

Sleep

Awareness of stillbirth

Fetal Wellbeing; movements & intuition

Empowered care

to help prevent Stillbirth



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Talk SAFE Pregnancy

Open communication is key



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Talk SAFE Pregnancy

Tell me about your baby's
movements.



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AIM High

Activate
Implement
Monitor

to help prevent Stillbirth



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SAFE PREGNANCY EMPOWERED CARE TIMELINE

MID PREGNANCY IMPLEMENTATION

- o Discuss and open the dialogue on **Sleep, Movements &** the importance of **intuition**
- o Take women through SAFE Pregnancy brochure and magnet
 - o **Say:** "Did you know your baby can communicate with you through it's movements? Get to know who your baby is so together we can know how your baby is. Spend time daily learning your baby's personality (is baby a morning person, does baby like to hear your voice). Find your baby's **routine, strength and frequency of movement** and you will find what's normal for your baby's movements. We are a team, you, your baby and I. I need to know if anything feels different or if you feel uneasy in anyway."
 - o **Say:** "It's important to start to settle to sleep on your side. This helps oxygen flow to you and your baby's placenta. Dont worry if you wake up on your back just settle back to sleep on your side"



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SAFE PREGNANCY EMPOWERED CARE TIMELINE

MID PREGNANCY IMPLEMENTATION

- o **Discuss why:** "Monitoring movements and sleeping on your side in pregnancy are best practice to keep your baby safe and help prevent a stillbirth from happening to you."
- o **Explain:** "**Early movements** may feel like a flutter or a tickle, only mum can feel these. As baby gets bigger, so do the **mid pregnancy movements**. After about 20 weeks baby is gradually getting stronger and you will feel kicks and punches, other people will be able to feel this too. Regularity of **movements in late pregnancy** shouldn't change. As your due date draws near baby won't slow down or run out of space but you might feel different types of movement such as rolling and strong sweeping movements. You may even see a hand or foot. Anything feels different to normal, as your clinician, I need to know, straight away"



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SAFE PREGNANCY EMPOWERED CARE TIMELINE

MID PREGNANCY IMPLEMENTATION

- **Ask & Listen:** Do you have any questions? How are you feeling?
- **Place sticker on the rear of the handheld record or your clinics own pregnancy folder for mothers**



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SAFE PREGNANCY EMPOWERED CARE TIMELINE

LATE PREGNANCY MONITORING

- **Ask:** Tell me about your baby's movements? Have you noticed any change in your baby's movements?
- **Anytime** a women presents, follow the relevant clinical guidelines and if you feel all is OK to send away **ALWAYS** ask "How do you and baby feel? Do you feel comfortable leaving? Has everything returned to your normal?" **ALWAYS** say "Remember if something feels different or you feel uneasy, you can come back at anytime, even if its today"



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Still Aware & Star Legacy are
committed to ending
preventable stillbirth.

Stillbirth is the leading cause
of infant death in
Australia and in the
United States of America.



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What do
talk openly
about in
pregnancy?

Listeria

260 deaths per year
(all listeria including in
pregnancy)

Pertussis

20 deaths per year
(under 1 years old)

Why not
Stillbirth?

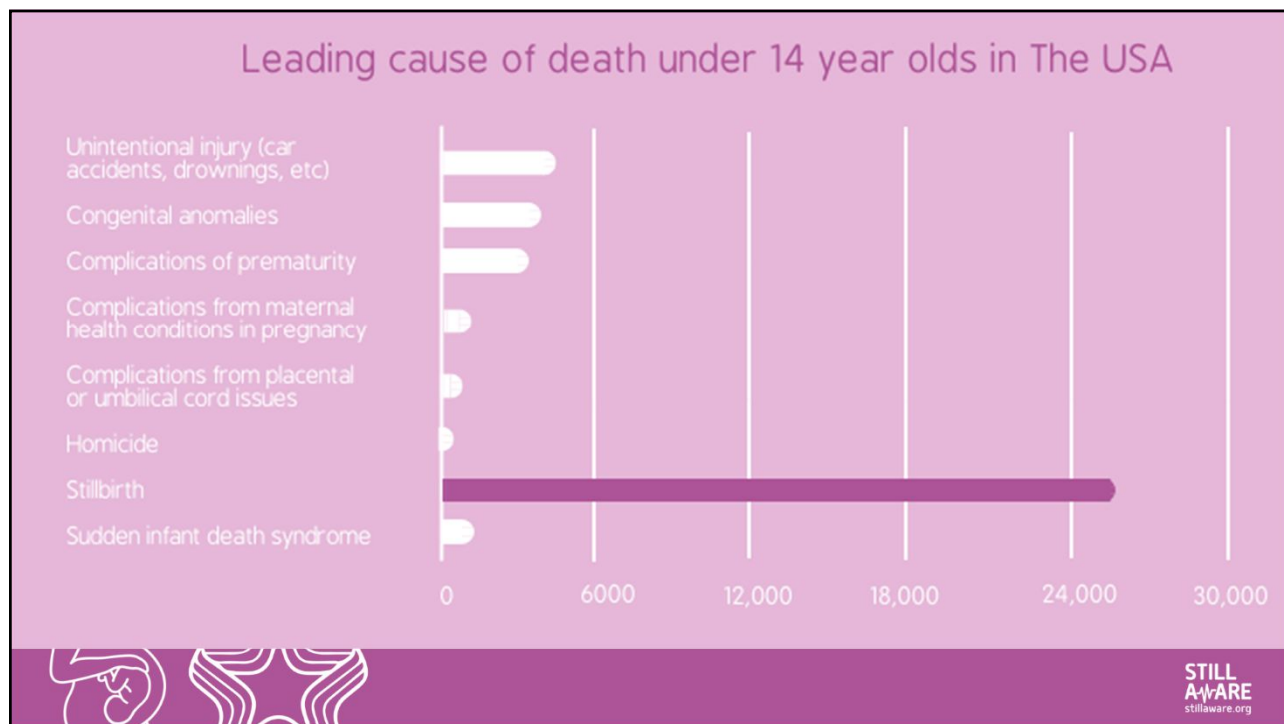
Stillbirth

more than 25,000 per year

Source CDC



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Stillbirth

Awareness + Education =
Action = Prevention

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Before you leave or at home please take
10 minutes to complete this survey
for research purposes

Post workshop survey

stillaware.org/usa2



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When should I call my care provider?

When you should contact your health professional or visit the hospital immediately?

ANY change in your baby's movement, behavior, or patterns or have a sense that somet

Fever

Bleeding

New, changed, or worsening pain

Headache Fainting/dizziness Painful urination

Vomiting more than once a day, especially if accompanied by pain or fever

Sudden or significant swelling of hands, feet, or face

Constant itching

Overwhelming concern that something is wrong

- If you have a temperature or fever

- If you have any pain including headaches

- If your vision becomes blurred or patchy

- If you have any fluid loss or bleeding

- If you have pain passing urine

- If your hands or feet become
swollen or painful

- If you have a "bad" feeling

- If you feel uneasy in anyway

- If your contractions are regular,
regardless of the interval



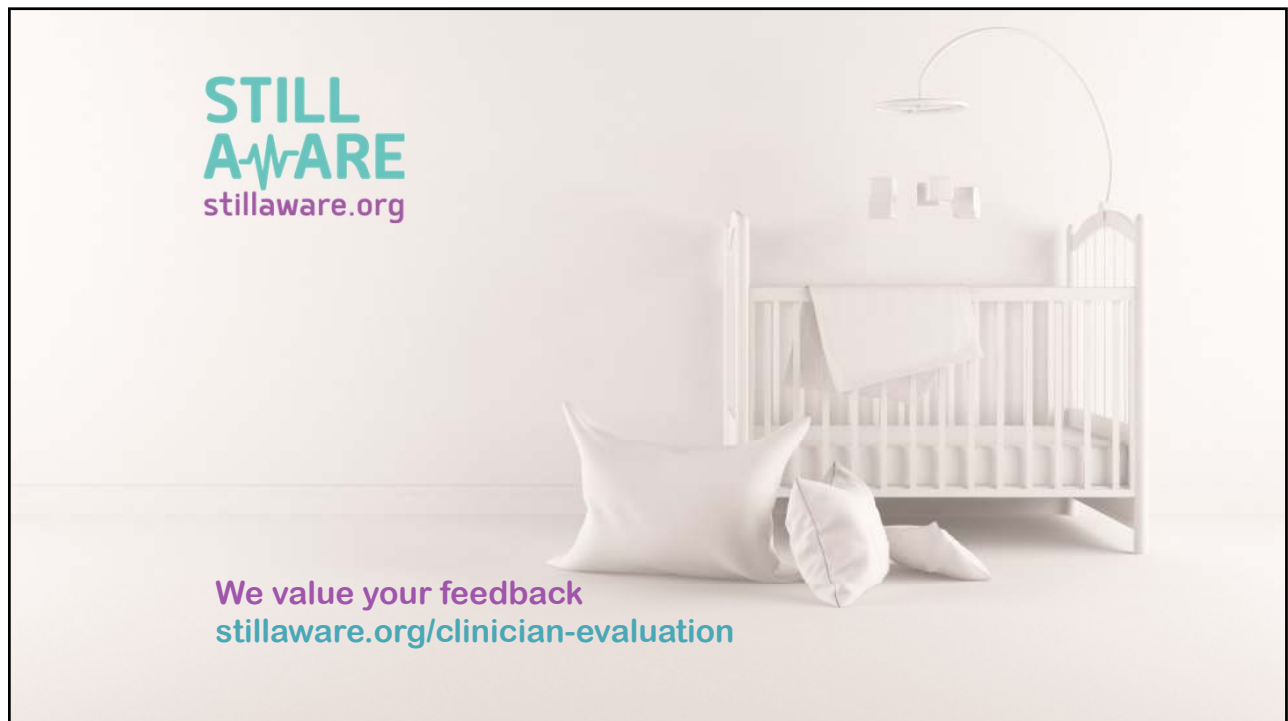
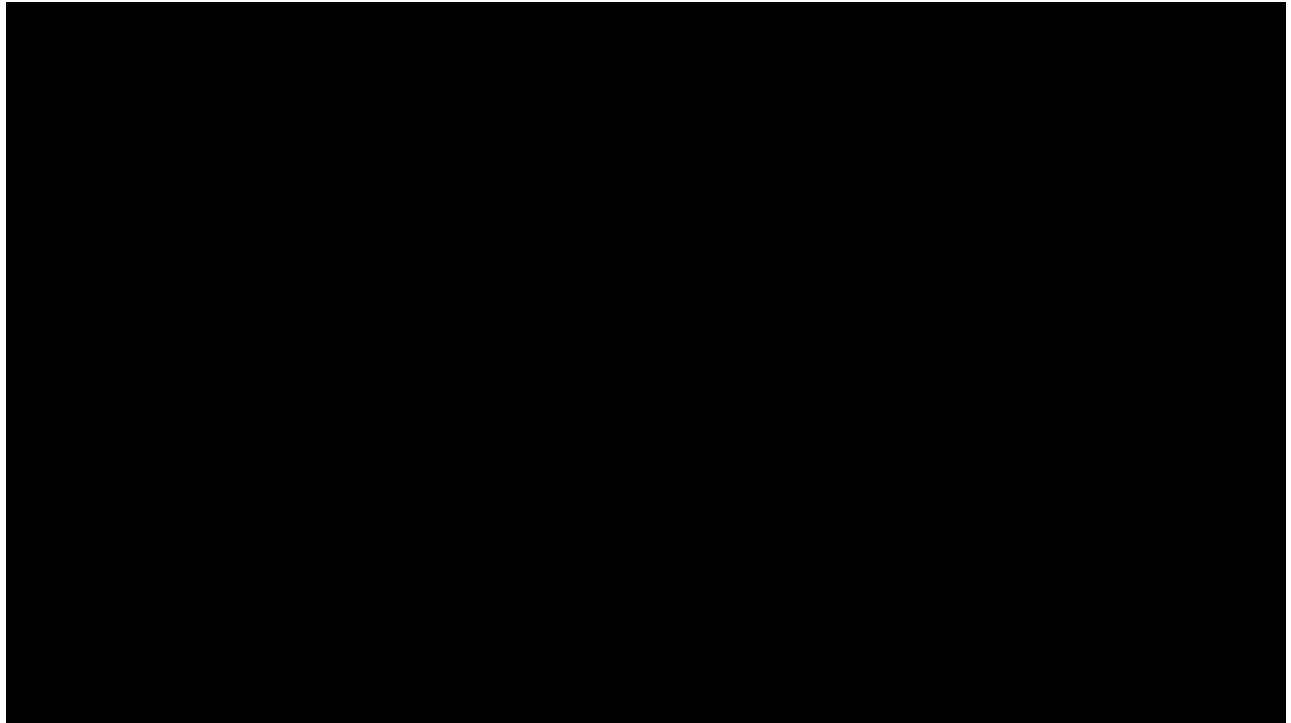
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From parents
Stories of remembrance
Stories of hope



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