



DOI: 10.1111/ajo.12762

SHORT COMMUNICATION

Care of pregnant women with decreased fetal movements: Update of a clinical practice guideline for Australia and New Zealand

Lisa M. Daly^{1*} , Glenn Gardener^{2*} , Victoria Bowring^{3*}, Wendy Burton⁴, Yogesh Chadha⁵, David Ellwood^{6*} , Frederik Frøen^{7*} , Adrienne Gordon^{8*} , Alexander Heazell^{9*} , Kassam Mahomed^{10*} , Susan McDonald^{11*}, Jane E. Norman^{12*} , Jeremy Oats^{13*}  and Vicki Flenady^{1*} 

¹NHMRC Centre of Research Excellence in Stillbirth, Mater Research Institute, The University of Queensland, Brisbane, Australia

²Mater Health Services, The University of Queensland, Brisbane, Australia

³Stillbirth Foundation Australia, Sydney, Australia

⁴Morningside General Practice, Brisbane, Australia

⁵Royal Brisbane and Women's Hospital, Brisbane, Australia

⁶Gold Coast University Hospital, Griffith University, Gold Coast, Australia

⁷Norwegian Institute of Public Health, Oslo, Norway

⁸Royal Prince Alfred Hospital, University of Sydney, Sydney, Australia

⁹Maternal and Fetal Health Research Centre, Faculty of Biology, Medicine and Health, University of Manchester, Manchester, UK

¹⁰Ipswich Hospital, The University of Queensland, Ipswich, Australia

¹¹La Trobe University and Mercy Hospital for Women, Melbourne, Australia

¹²University of Edinburgh, Edinburgh, Scotland

¹³Melbourne School of Population and Global Health, University of Melbourne, Melbourne, Australia

Correspondence: Lisa Daly, PhD Candidate, Mater Research Institute, The University of Queensland, Level 3 Aubigny Place, South Brisbane, QLD 4101, Australia. Email: lisa.daly@uq.edu.au

Conflict of interest: Authors feel strongly that the identification and management of conflicts of interest are of central importance, to ensure that there is no influence by competing interests that could erode the integrity of recommendations. Each author has agreed to comply with the principles about disclosure of interests and also follows their own internal institutional procedures in relation to declaration, identification and management of interests. No potential conflicts of interest have been declared.

Received: 11 October 2017;
Accepted: 22 November 2017

The National Health and Medical Research Council (NHMRC) Centre of Research Excellence in Stillbirth and the Perinatal Society of Australia and New Zealand (PSANZ) have recently partnered in updating an important clinical practice guideline, *Care of pregnant women with decreased fetal movements*. This guideline offers 12 recommendations and a suggested care pathway, with the aim to improve the quality of care for women reporting decreased fetal movements through an evidence-based approach. Adoption of the guideline by clinicians and maternity hospitals could result in earlier identification of higher-risk pregnancies, improved perinatal health outcomes for women and their babies, and reduced stillbirth rates.

KEYWORDS

fetal movement, practice guideline, pregnancy, prenatal care, stillbirth

*Affiliated with the NHMRC Centre of Research Excellence in Stillbirth.

BACKGROUND

Stillbirth affects over 2500 families in Australia and New Zealand,^{1,2} and over 2.6 million families worldwide annually.³ Stillbirths are often preceded by maternal perception of decreased fetal movement (DFM), which is frequently the first sign of fetal compromise.⁴ The *Lancet Stillbirth* series identified awareness and timely evaluation of women reporting DFM as a stillbirth research priority.⁵ Similarly, the MBRRACE-UK Perinatal Report 2015 cited management of reduced fetal movements as a key area of action to prevent stillbirth.⁶ In addition to stillbirth, DFM is also linked to adverse perinatal health outcomes such as infection, neurodevelopmental disability, foeto-maternal haemorrhage, placental insufficiency, fetal growth restriction, umbilical cord complications and emergency delivery.⁷⁻⁹

There is no robust, universally agreed definition of DFM based on the number of movements a woman feels over a specified time period, but it is generally considered to be maternal perception of

significantly reduced or absent fetal activity. Fetal movement counting, or 'kick counting', where the number of kicks felt over a period of time is recorded by the pregnant woman, has not been shown to reduce stillbirth rates.¹⁰ Clinical practice guidelines underscore that maternal concern of DFM overrides any definition of DFM based on numbers of fetal movements.^{8,11} A mother's perception of fetal activity may also include descriptions of intensity, character or duration.

Decreased fetal movement is a common cause of concern for pregnant women, with up to 16% of women contacting a health-care provider during the final trimester due to fetal movement concerns.⁴ However, *prompt* action to report fetal movement concerns is suboptimal. A case-control study across six Queensland hospitals and 18 000 births found that 60% of concerned women waited longer than 24 h before seeking care.¹¹

Antenatal education about fetal movement has been shown to reduce the time from maternal perception of DFM to health care-seeking behaviour.¹² A quality improvement study in Norway reported an association between increased awareness of DFM and

TABLE 1 Summary of clinical practice recommendations

Recommendations	Evidence level [†]	Grade [†]
Recommendations for fetal movement monitoring		
1a. All pregnant women should be routinely provided with verbal and written information regarding normal fetal movements during the antenatal period. This information should include a description of the changing patterns of movement as the fetus develops and normal wake/sleep cycles.	III-3	C
1b. Clinicians should emphasise the importance of maternal awareness of fetal movements at each clinical visit.		✓
2. Women with a concern about decreased fetal movements (DFM) should be advised to contact their healthcare provider immediately.	III-3	C
3a. Maternal concern of DFM overrides any definition of DFM based on numbers of fetal movements.	III-3	✓
3b. The use of kick-charts is not currently recommended as part of routine antenatal care.	I	B
Recommendations for the investigation of DFM		
4a. When a woman reports DFM, assessment of the woman and her fetus should be undertaken as soon as possible.	III-3	B
4b. This assessment should preferably be undertaken within two hours.		✓
5a. Women who report DFM should be assessed for the presence of other risk factors associated with an increased risk of stillbirth.	III-3	C
5b. Women with DFM in combination with other risk factors should be managed as a high-risk pregnancy.		✓
6. Clinical assessment of a woman with DFM should include review of symphysis-fundal height measurements.		✓
7a. A cardiotocography (CTG) should be performed to exclude immediate fetal compromise.	III-3	C
7b. Further evaluation is recommended for women with any abnormal CTG pattern.		✓
8. Ultrasound scan assessment for fetal biometry and amniotic fluid volume should be considered as part of the preliminary investigation of a woman reporting DFM.	III-3	B
9. Ultrasound scan assessment should include evaluation of fetal morphology if this has not already been performed.	III-2	C
10. Where an ultrasound scan assessment for DFM is indicated, the timeframe to perform this investigation will be guided by the clinical circumstances and availability of appropriate expertise.		✓
11. Testing for fetal to maternal haemorrhage should be considered in the preliminary investigation of women with DFM.		✓
12. In the presence of a normal clinical assessment (including a CTG and ultrasound), if maternal concern of DFM persists, specialist medical opinion should be sought and further management should be individualised.		✓

[†]Determined with guidance from NHMRC. *A guide to the development, implementation and evaluation of clinical practice guidelines*. Canberra: National Health and Medical Research Council, 1999.

a 30% reduction in stillbirth rates.^{12,13} However, many women report not receiving adequate information from care providers. A recent study of 526 pregnant women at a metropolitan maternity hospital in Australia found that more than one-third of women at 34 weeks' gestation or later did not recall receiving information about fetal movements from their healthcare provider.¹⁴

A survey of obstetricians and midwives in Australia and New Zealand showed wide variation in clinical practice regarding the management of DFM.¹⁵ Monitoring fetal activity by asking women about fetal movements was considered an important part of routine antenatal care, but the definition of alarm limits, levels of clinical assessment and follow-up of women presenting with DFM widely varied. A clinical practice guideline for healthcare providers in Australia and New Zealand was developed and disseminated in 2010, and has now been updated and released, with revised recommendations, care pathway and algorithms for care.

MATERIALS AND METHODS

This guideline targets healthcare professionals providing antenatal care in Australia and New Zealand, with the aim of improving the quality of care for women perceiving DFM, through six objectives:

- provide an evidence-based approach to the management of women with DFM
- improve consistency in the management of women with DFM

- assist healthcare providers to counsel women with DFM
- aid in the identification of women with higher-risk pregnancy
- reduce maternal anxiety about fetal activity and self-monitoring and
- improve outcomes for women and their babies.

The working party of authors followed National Health and Medical Research Council (NHMRC) guidelines for the development of clinical practice guidelines.^{16,17} A literature review was undertaken, and relevant studies were identified and classified according to level of evidence reported. Recommendations were prepared and graded.¹⁸ The guideline was finalised following circulation and feedback cycles with stakeholders, endorsing organisations and a consumer advisory panel. As this study did not involve human participants, no Human Research Ethics Committee approval was required.

RESULTS

The *Clinical practice guideline for the care of women with decreased fetal movements* has recently been released by the Perinatal Society of Australia and New Zealand (PSANZ) and the NHMRC Centre for Research Excellence in Stillbirth. The guideline offers 12 recommendations for fetal movement monitoring and clinical investigation, as described in Table 1. A revised care pathway reflects updated evidence for investigation of DFM and clinical practice points (Fig. 1). The algorithm presented in Figure 1 is intended for

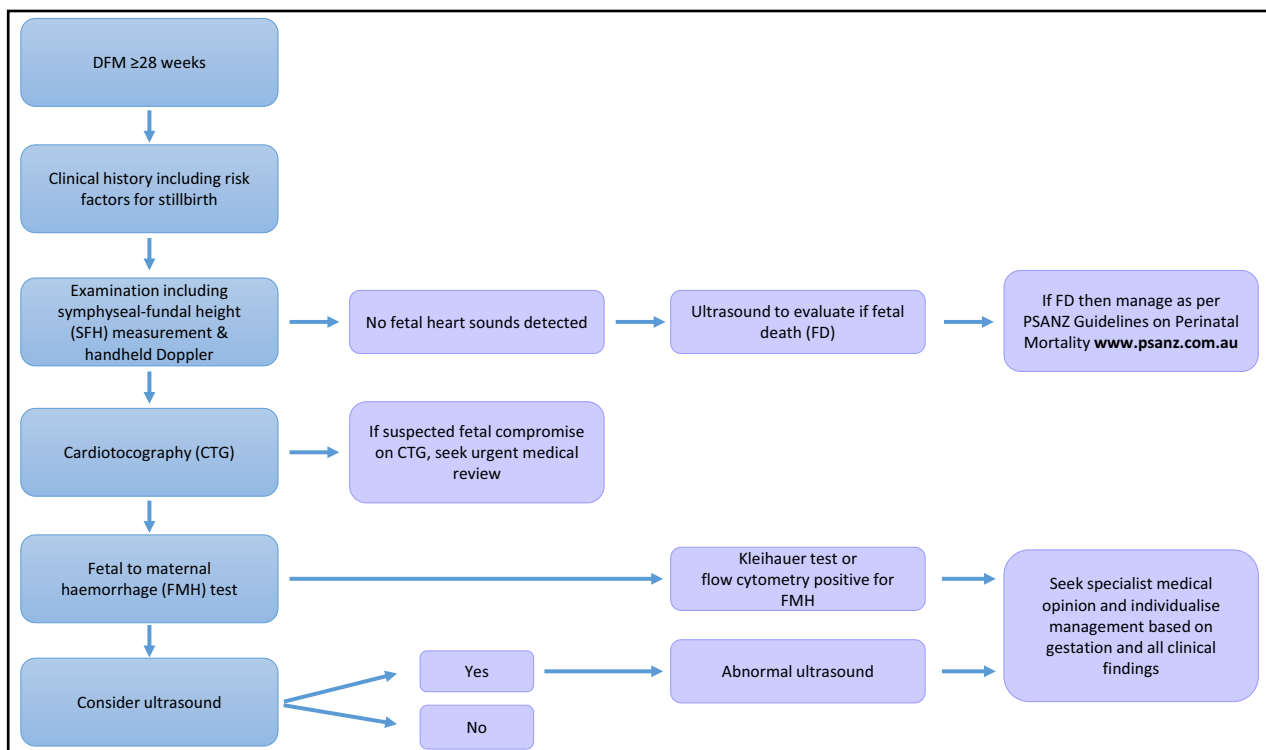


FIGURE 1 Care pathway and clinical practice points for women presenting with decreased fetal movements from 28 weeks' gestation.

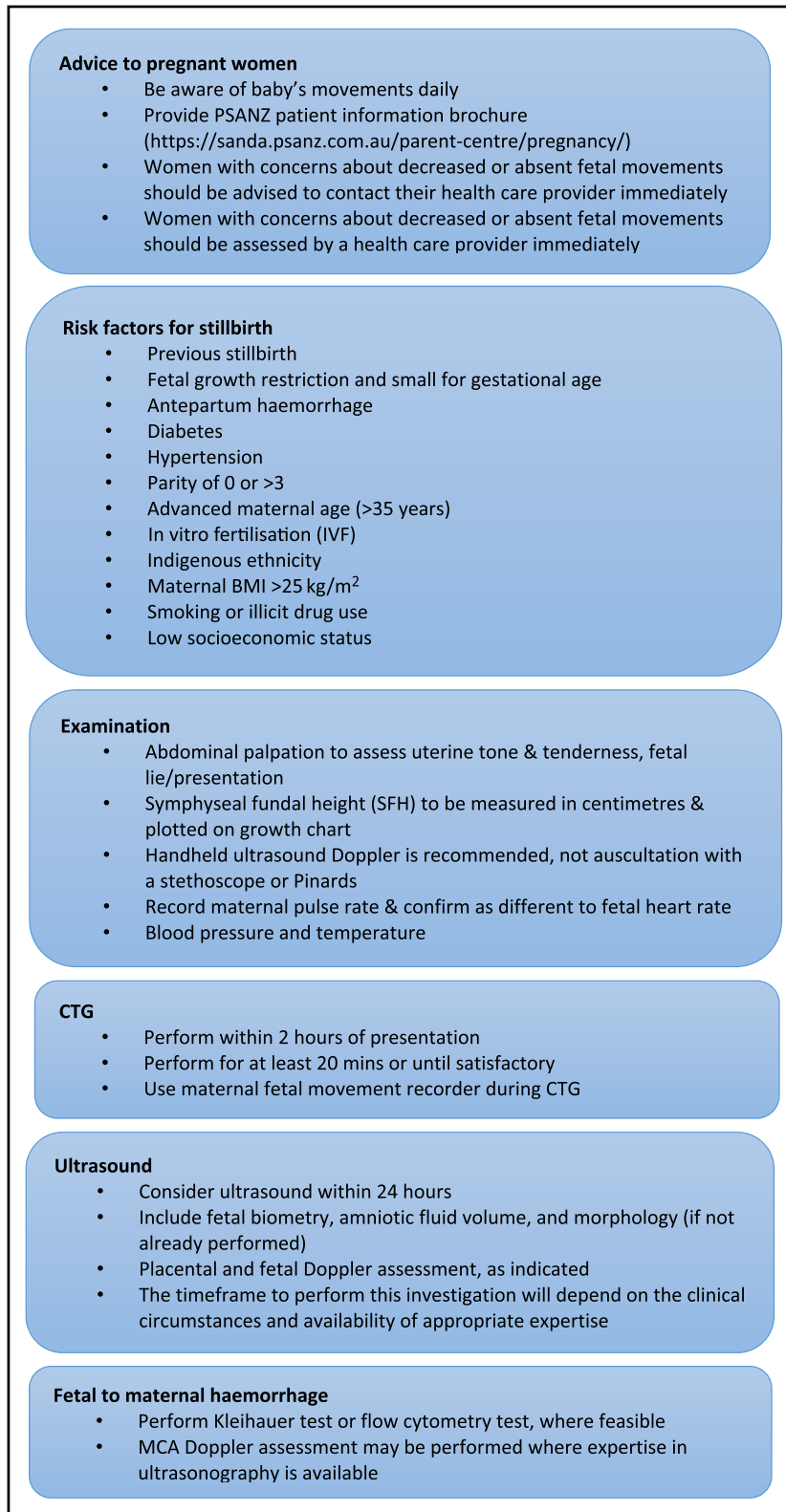


FIGURE 1 Continued.

general guidance only with the understanding that decision making is guided by a clinician's expert judgement for an individual patient.

The updated clinical practice guideline has been endorsed by the Royal Australian and New Zealand College of Obstetricians

and Gynaecologists (RANZCOG), Australian College of Midwives (ACM), Stillbirth Foundation Australia, Australian National Council for Stillbirth and Neonatal Death Support (SANDS), Red Nose, Still Aware and Women's Healthcare Australasia.

In addition to the clinical practice guidelines document, additional consumer resources have been developed as an adjunct to the guidelines to improve uptake, including patient information brochures endorsed by the International Stillbirth Alliance and available in multiple languages (<https://sanda.psanz.com.au/resources/pregnancy/>). A clinician eLearning module is available for enrolment (<http://perinatal.matereducation.qld.edu.au>).

DISCUSSION

Limited guidance exists on clinical management of pregnant women presenting with DFM, resulting in clinical variation and increasing the possibility of suboptimal care. This guideline was developed to promote clinical practice based on the best available international evidence, thereby improving information and guidance during the antenatal period.

Guideline recommendations cover two key areas: (i) information for pregnant women about what constitutes normal fetal movements and advice about reporting DFM concerns to a healthcare provider; and (ii) information for clinicians regarding management and investigation of women reporting DFM.

In the absence of definitive clinical trials, the 12 key recommendations are largely based on consensus after careful consideration of available evidence. The working party emphasises the importance of rigorous research to develop and test screening tools which identify 'at-risk' pregnancies on the basis of fetal movement. High-quality, randomised controlled trials are needed to determine appropriate intervention strategies for women with DFM. Trials should be adequately powered to examine effects on perinatal mortality and major neonatal morbidity, as well as maternal anxiety, healthcare utilisation and cost.

The majority of women examined for perceived DFM in their third trimester continue with uncomplicated pregnancies; so while maternal perception of DFM is recognised as an indicator of potential fetal compromise, its predictive value for adverse outcomes is low. Stillbirths preceded by a reported decrease in fetal activity form an important group on which to focus future research.

Two large stepped-wedge, cluster-randomised trials currently underway will likely impact guidelines to support women experiencing DFM. The *AFFIRM* study in Scotland¹⁹ and the *My Baby's Movements* trial in Australia/New Zealand²⁰ hypothesise to reduce stillbirth rates through a package of interventions to: (i) increase pregnant women's awareness of fetal movement and prompt timely reporting of a decrease in fetal movement; and (ii) strengthen clinical management plans for women presenting to hospital with DFM.

Improving the consistency and standard of information about DFM provided to pregnant women and their clinicians, is likely to lead to earlier identification of higher-risk pregnancies, timely intervention and stillbirth reduction.

ACKNOWLEDGEMENTS

This clinical practice guideline was produced by a multidisciplinary working group led by the Mater Research Institute, The University of Queensland, Brisbane, Australia, under the auspices of the Stillbirth and Neonatal Death Alliance (SANDA) of the Perinatal Society of Australia and New Zealand (PSANZ) in partnership with the Centre of Research Excellence in Stillbirth and the Stillbirth Foundation Australia. Support for guideline development was received from the Mater Foundation, Brisbane. This guideline has been endorsed by the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), Australian College of Midwives (ACM), Stillbirth Foundation Australia, Australian National Council for Stillbirth and Neonatal Death Support (SANDS), Red Nose, Still Aware and Women's Healthcare Australasia. Members of the guideline working party have also been supported by their host institutions to enable participation.

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