



# Midwifery Research Review™

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Issue 20 – 2018

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### Abbreviations used in this issue

**DHB** = District Health Board  
**LMC** = lead maternity carer  
**MOH** = Ministry of Health



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## Welcome to the latest issue of Midwifery Research Review.

We bring you our selection of the best in current research from NZ and around the world. The following areas are included in this review: vitamin D and risk of pregnancy-related hypertensive disorders, how duration of lactation reduces the risk of type 2 diabetes, country of birth and impact on obstetric anal sphincter injuries, administration of oxytocin during spontaneous labour, preparing students for rural practice, the impact of pregnancy on cognition, and acupuncture for treating pain in pregnancy. We also present reviews of what we know about siblings attending birth, the purpose of documentation, and increasing compliance with a clinical practice guideline for foetal fibronectin testing.

We hope you find the selected papers of interest, and look forward to hearing your comments, feedback and suggestions.

Kind regards,

**Nimisha Waller**

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## Vitamin D and risk of pregnancy related hypertensive disorders

**Authors:** Magnus M et al.

**Summary:** This mendelian randomisation study investigated the association between 25-hydroxyvitamin D (25(OH)D) levels and gestational hypertension or preeclampsia. Data were analysed for 7389 women in a one sample mendelian randomisation analysis (751 women had gestational hypertension and 135 had preeclampsia), and 3388 preeclampsia cases and 6059 controls in a two sample mendelian randomisation analysis. Conventional multivariable analysis showed that the relative risk for preeclampsia was 1.03 per 10% decrease in 25(OH)D level, and 2.04 for 25(OH)D levels <25 nmol/L vs ≥75 nmol/L. No association was found for gestational hypertension. Neither the one sample mendelian randomisation analysis nor the two sample mendelian randomisation analysis found strong evidence of a causal effect of 25(OH)D on the risk of gestational hypertension or preeclampsia.

**Comment:** The MOH 2018 clinical practice guideline on Diagnosis and Treatment of Hypertension and Pre-eclampsia in Pregnancy in NZ suggests that preeclampsia complicates approximately 3–8% of pregnancies, and hypertensive disorders together affect about 5–10% of pregnancies. In many countries, including the UK and the US, pregnant women are advised to take a daily dose of vitamin D. The hormone that regulates blood pressure is suppressed when pregnant women have low levels of vitamin D, increasing their chances of both hypertension and preeclampsia during pregnancy. Previous studies have found that supplementation with vitamin D in pregnancy can be beneficial. However, a 2017 systemic review suggested that the evidence is inconsistent. What is unclear/unknown is whether preeclampsia is caused by low levels of vitamin D. No strong evidence was found to support the theory that low levels of vitamin D in pregnancy can cause gestational hypertension or preeclampsia. Until a larger study with a larger number of women with preeclampsia or more genetic variants is undertaken there is insufficient evidence to suggest a vitamin D supplement to prevent gestational hypertension or preeclampsia. The study used a technique called mendelian randomisation (MR). MR has the potential to provide information on causality in many situations where randomised controlled trials are not possible. Here is a link to reading MR studies if you are interested <https://www.bmj.com/content/362/bmj.k601>.

**Reference:** *BMJ* 2018;**361**:k2167

[Abstract](#)

## Midwifery Council of NZ

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## Lactation duration and progression to diabetes in women across the childbearing years

**Authors:** Gunderson E et al.

**Summary:** This analysis of data from the 30-year CARDIA study evaluated the association between lactation and progression to diabetes in women across the childbearing years. Overall 1238 women were included in the analysis. 182 incident diabetes cases occurred during 27,598 person-years of follow-up (6.6 cases per 1000 person-years). Rates for women with and without gestational diabetes were 18.0 and 5.1 per 1000 person-years, respectively. Lactation duration showed a strong, graded inverse association with diabetes incidence: adjusted relative hazards (vs no breastfeeding) were 0.75 for breastfeeding for <6 months, 0.52 for breastfeeding for 6–12 months, and 0.53 for breastfeeding for >12 months ( $p$  for trend = 0.01).

**Comment:** This prospective cohort study over 30 years shows that the risk of developing type 2 diabetes in later life is reduced by 47% if women breastfed their babies for 6 months or more and by 25% if breastfeeding occurred for 6 months or less. The finding suggests that as breastfeeding duration increases there is protection from developing type 2 diabetes in later life in addition to other benefits of breastfeeding. It appears that race, family history of diabetes, developing gestational diabetes in pregnancy, body mass index, waist circumference, weight, diet or physical activity have no impact on development of type 2 diabetes as long as duration of breastfeeding increases. The authors suggest the underlying mechanism may be biological. There is a suggestion that lactation-associated hormones are known to influence pancreatic cells that control blood insulin levels and hence blood sugar, though further work is required to clearly explain the relationship between breastfeeding and reduction in type 2 diabetes. In view of these findings, it is important to encourage and support women who want to breastfeed as long as possible. However, this is only likely to happen if appropriate parental leave entitlements are available for women/whānau. The US, where this study was undertaken, is one of the three countries in the world without paid parental leave.

**Reference:** *JAMA Intern Med* 2018;178(3):328-37

[Abstract](#)

## The Great Divide: country of birth as a risk factor for obstetric anal sphincter injuries

**Authors:** Brown J et al.

**Summary:** This retrospective cohort study investigated the risk of obstetric anal sphincter injuries (OASIS) in Australia according to country of birth. Outcomes for 10,750 women with a singleton, nulliparous pregnancy who delivered vaginally by spontaneous vaginal birth or an instrumental delivery in 2009–2015 in Australia were reviewed. 581 (5.4%) of the deliveries had third degree tears and 36 (0.3%) had fourth degree tears. Women born in South Asia were at a much higher risk for OASIS than other groups (including women born in other Asian countries) compared with women born in Australia/NZ. 10% of South Asian women had an OASIS after a singleton vaginal or instrumental delivery.

**Comment:** According to this Australian study, South Asian women (includes Afghanistan, Bangladesh, India, Nepal, Pakistan and Sri Lanka) born in their country but birthing in Western Sydney are at 4 times the risk of sustaining OASIS while other Asian women are only twice as likely to sustain OASIS compared to an Australian/NZ cohort. This is despite South Asian women generally having low birthweight babies and higher prevalence of episiotomies. However, the women do have higher rates for induction/augmentation of labour and more frequent instrumental deliveries. In their own countries, lower rates of OASIS have been reported. Various factors have been suggested as contributing to the increase. It is thought that South Asian women have small pelvic inclination resulting in the pelvis being more horizontal. This may alter the direction of the expulsive forces posteriorly rather than anteriorly. Communication difficulty at time of birth has been recognised as a possible factor. Practitioners have noted that women do not want to make the shift from pushing to breathing as baby's head crowns. South Asian ethnicity was found to be strong predictor of OASIS even when compared with head circumference of the baby, lower body mass index, increased birthweight, induction/augmentation of labour, episiotomy and instrumental delivery. The authors suggest that we must take ethnicity into account when counselling women and developing policies around care. Other studies have suggested being aware of the risk when caring for Asian women, particularly Asian Indians, and considering use of perineal massage, perineal warm packs and episiotomies to decrease the risk of OASIS. A good time to reflect on whether ethnicity is considered when discussing a birth plan with women.

**Reference:** *Aust NZ J Obstet Gynaecol* 2018;58(1):79-85

[Abstract](#)

## Administration of oxytocin during spontaneous labour

**Authors:** Isidore J & Rousseau S

**Summary:** This vignette-based study in France assessed variations in oxytocin use by midwives during spontaneous labour. 204 midwives completed an online survey that including a case-vignette with hourly partograms of a slowly progressing labour, and a short questionnaire. At some point during the case-vignette, 159 (77.9%) midwives responded that they would use oxytocin. Their answers showed variations in oxytocin administration for initial doses, dose-increments and dose-increase delays. The majority of respondents chose high doses of oxytocin (64.1% chose doses >2 mIU/min) and short dose-increase delays (62.9% increased the dose within 30 min). Excessive administration of oxytocin by midwives was associated with the number of births per year in their maternity unit, their workload, overload of delivery rooms, and lack of protocol. 48.5% of midwives felt that their use of oxytocin was mainly related to an overburdened department.

**Comment:** In 2015, 24.6% of women giving birth in NZ (excluding those who had elective caesarean sections) had their labour augmented (MOH, 2017). This is less than in France (58%) where this study was conducted. The midwives who participated in this study had graduated greater than 10 years to less than 5 years and approximately 84% of them worked in Level 2 and Level 3 units. Midwives in France are legally able to prescribe and administer oxytocin during spontaneous labour. The inappropriate use of oxytocin has been reported previously in other studies and the complications differ depending on whether oxytocin is used for dystocia or in the absence of dystocia. This article highlights the factors that may affect the midwives' decision to use oxytocin. Midwives decided whether they were going to use oxytocin or not but those that decided to use it (77.9% based on the clinical vignette provided) used it in a wide variety of ways i.e., the frequency and timing of oxytocin to augment labour was variable. There were no clinical guidelines on oxytocin use in spontaneous labour in France previously, but they were issued by the French National College of Midwives after this survey. According to the guidelines released there was no clinical indication to use oxytocin in the vignette provided! It would be beneficial to read the full study to understand what is in the guideline regarding use of oxytocin to augment spontaneous labour, definitions of arrest labour during active phase in first stage of labour, and factors that influenced the varied use of oxytocin by midwives. All of us need to reflect on whether we are normalising the use of oxytocin for augmentation in spontaneous labour, how does its use differ between practitioners and DHBs, do we follow our guideline, and what factors influence its use, including variability in use in our practice setting.

**Reference:** *Midwifery* 2018;62:214-19

[Abstract](#)



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## 'Living the rural experience-preparation for practice': the future proofing of sustainable rural midwifery practice through midwifery education

**Authors:** Kensington M et al.

**Summary:** This mixed-methods study determined the education needs of student midwives to prepare them adequately for rural practice. 222 midwives working in rural areas in NZ (n=145) and Scotland (n=77) were surveyed for their views. The majority of participants agreed that pre-registration midwifery programmes should include a rural placement for students and rural-specific education with educational input from rural midwives.

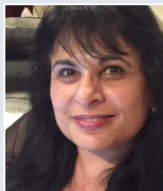
**Comment:** As has been mentioned previously in NZ midwifery research, a third of the women who birth annually live in rural areas. It is therefore interesting that there has not been a specific module/paper focusing on rural midwifery practice in the undergraduate midwifery programme. This study undertaken in NZ and Scotland highlights a need for such a module/paper that has input from rural midwives, inclusion of a rural placement for all students and suggests the best way to prepare students for being a midwife to meet the needs of women and community in such a setting. However, at present in NZ, there are challenges regarding the viability of rural LMC midwives. Crowther (2014) has also highlighted that providing rural and remote midwifery care in NZ is an "expensive hobby" due to lack of more financial support reflecting local needs. Hence to implement the findings from this study in the presence of such challenges will require thought and discussion within the profession, with universities where a midwifery programme is offered and with the Midwifery Council. Further dialogue/reflection will also be required on: 1) how will all students be able to have an experience in rural/remote settings; 2) do all students want a placement/experience in such a setting and if not how will this be managed; 3) the cost to the student of being in rural placement financially as well as socially/psychologically of being separated from the family; 4) the length of optimal time in rural placement to ensure best experience and develop some degree of confidence; and 5) information on incentives that are available and/or being considered to encourage graduates/midwives to practice in rural areas. Is it time to open dialogue/discussion if it's not already happening?

**Reference:** *Nurse Educ Pract* 2018;31:143-50

[Abstract](#)

### Independent commentary by Nimisha Waller

RGON, RM, ADM, Dip. Ed, MM, DHSc  
Candidate



Nimisha Waller is a Senior Lecturer in the Dept of Midwifery, Faculty of Health and Environmental Science at AUT University. She has practised midwifery in tertiary units and as an LMC. She has been a supervisor and a member of the competency review panel for MCNZ, reviewer for NZCOM Midwifery Standards Review and an NZCOM educator for the Midwifery First Year Practice (MYFP). She is an expert advisor and an Academic member/Deputy Chair on the MOH Compliance panel that monitors the Code in New Zealand (Breastfeeding). Nimisha has a particular interest in maternal wellbeing, diabetes and obesity, newborn, postnatal distress, traumatic birth and PTSD. Her doctoral study is on post-birth conversation between midwives and women and the impact it has on them.

## Cognitive impairment during pregnancy

**Authors:** Davies S et al.

**Summary:** This meta-analysis evaluated the impact of pregnancy on cognitive function. A search of CINAHL Complete, MEDLINE Complete, and PsychINFO identified 20 studies that reported quantitative relationships between pregnancy and changes in cognition in a total of 709 pregnant women and 521 non-pregnant women. Meta-analysis of the data showed that overall cognitive functioning was poorer in pregnant women than in non-pregnant women ( $p=0.025$ ). Analysis of cross-sectional studies found that general cognitive functioning, memory, and executive functioning were significantly reduced during the third trimester of pregnancy compared with controls, but not during the first two trimesters. Longitudinal studies found declines between the first and second trimesters in general cognitive functioning and memory, but not between the second and third trimesters.

**Comment:** The 'baby-brain' that has been talked about but most often dismissed really happens according to this Australian study. The findings suggest that, compared to non-pregnant women, cognitive function in pregnant women was worse in relation to attentiveness, decision-making, planning and memory. The decline in cognitive function starts in the first trimester and stabilises from the middle to the end of pregnancy. In spite of the decline in cognitive function in the first trimester, pregnant women's performance in the tests was well within the normal range. The tests included a digit span test that involves measuring visual working memory capacity involved in remembering and comprehension. The authors suggest that the decline in cognitive function is unlikely to have a significant impact on pregnant women in everyday life and further studies are needed to assess why it happens and how long it lasts following the birth of baby. A prospective study by Hoekzema et al., (2017) suggested that reduction in grey matter volume occurs in regions subserving social cognition and it overlaps with brain regions responding to women's babies postpartum. Hence such changes/adaptations enable the mum to be a mother by decoding her infant's facial expressions, and establish a bond between mother and baby. They further show that grey matter is restored two years after the birth of the baby. It would be interesting to know what happens to the restoration of grey matter if you have another baby in less than two years!

**Reference:** *Med J Aust* 2018;208(1):35-40

[Abstract](#)

## Treating pain in pregnancy with acupuncture

**Authors:** Soliday E & Betts D

**Summary:** This observational study evaluated the impact of acupuncture on pain in pregnancy. 81 pregnant women who received acupuncture at a free, hospital-based acupuncture service in NZ were included. The main outcome measure was the Measure Your Medical Outcome Profile, a brief, validated self-report instrument. 72 of the women (89%) reported clinically meaningful symptom reduction in lumbopelvic pain. Adverse events were infrequent and mild.

**Comment:** The lumbopelvic region is the lower torso, lower back, and the pelvic girdle. Women often experience pain in this area during pregnancy. This observational study determined that acupuncture/cupping does not just reduce 89% of pregnancy-related lumbopelvic pain but produces significant positive outcomes for pregnant women. Women in this study were referred by midwife/others throughout the pregnancy though most of the referred women were in the third trimester. Apart from acupuncture, some women (50%) also received cupping therapy – interestingly cupping is apparently contraindicated on the lower back in pregnancy. Reading the full study is a must for those interested in acupuncture/cupping therapies as points and techniques used as well as treatment provided to women are fully described. Women may not always want to use pharmacological medications to relieve pain or those medications may not be recommended for use during pregnancy. Thus the findings of this study provide effective alternative options to manage lumbopelvic pain in pregnancy. The community clinic in which the study was undertaken offers a free acupuncture service to pregnant and postpartum women in that particular DHB. Costs of such a service can be a barrier for many women. To enhance women's wellbeing during pregnancy should we not be having conversations/dialogue about funding such services free across all DHBs or individual practitioners who offer such services to women in NZ?

**Reference:** *J Acupunct Meridian Stud* 2018;11(1):25-30

[Abstract](#)

## What do we know about sibling attended birth?

**Authors:** Naber N et al.

**Summary:** This integrative literature review examined the available research regarding sibling attended birth (SAB). A search of 5 electronic databases and 17 grey literature databases identified 22 studies (13 qualitative, 4 quantitative and 5 mixed-methods) that were suitable for inclusion. Review of the data found that the children observed birth as a positive, exciting and important life event, and parents viewed their SAB experiences as overwhelmingly positive. The children did not show signs of trauma or severe distress in the short term, although there were varying levels of transient fear and anxiety. The studies did not address the long term effects of SAB.

**Comment:** It is not only the parents or significant others but also the health professionals who are likely to be divided about whether or not children should be present at the births of their younger siblings. Society and culture play a significant role in how we view birth. Some may hold the view that birth should happen openly and children should be present to ensure that they feel included in this family event. Others may feel that birth is a private affair and witnessing a birth would be far too traumatic for younger children. This integrated literature review has been undertaken by NZ midwives and researchers. It appears that this is the first literature review in this area. The studies that have been reviewed have nearly all been in the US. 22 studies were reviewed to provide evidence of what is known so far that can be shared with women/whānau so they can make informed decision about SAB. The review suggests that there are very few publications over the last 20 years and most lay articles on the internet and chat forums are about siblings being present at the home birth. This review highlights the concept of SAB in in both home births and in the hospital setting. I am sure many of us have had experiences of SAB in our midwifery practice that need to be shared through publication. To ensure informed discussion with women/whānau so they achieve the best experience of SAB, reading the article in full is a must.

**Reference:** *Midwifery* 2018;63:24-32

[Abstract](#)

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## Making midwifery work visible: the multiple purposes of documentation

**Authors:** Kerkin B et al.

**Summary:** This article explored the purposes of midwifery documentation. A search of CINAHL and PubMed databases failed to find any research articles that addressed the purpose of midwifery documentation, so a broader search of literature from other healthcare fields was undertaken to identify the contribution of record keeping. It was found that midwifery documentation would potentially enhance the maternity care experience for women, support the role of the midwife, positively impact collaboration between health professionals, and contribute to organisational processes and research.

**Comment:** Hopefully all of us are aware of the frameworks that set the standard for midwifery documentation in NZ and that it is a critical component of providing midwifery care. This literature review aimed to explore the purpose of documentation. The review required the broader search from other healthcare fields due to lack of midwifery literature. The authors suggest that it is more than a legal record of care or the narrative record of experience for women – it makes visible the way we practice as a midwife, how we collaborate effectively with other colleagues, and contributes to organisational processes and research. It can also be used to ensure we are paid for the work we do, very relevant when it becomes necessary to negotiate the payment model. Anecdotally some practitioners have suggested it substantiates their pricing for services offered when providing care to women who are not NZ residents or citizens. The authors suggest that further work needs to be done to address what women and midwives consider is a priority when documenting maternity care. Lack of literature in this area highlights the need for such further work. As documentation makes the way we practice as a midwife visible it provides us with an opportunity to reflect on how it is or can be used effectively during our professional process such as Midwifery Standards Review. Worth a read!

**Reference:** *Women Birth* 2018;31(3):232-39

[Abstract](#)

## Increasing compliance with a clinical practice guideline for fetal fibronectin testing and the management of threatened preterm labour

**Authors:** Dawes L et al.

**Summary:** This article described a project undertaken at National Women's Health in Auckland to increase adherence to the clinical practice guideline for the use of foetal fibronectin (fFN) testing in women presenting with symptoms of threatened preterm labour. All obstetricians, junior obstetric doctors and hospital-employed midwives participated in a pre-education audit and survey, compulsory interactive educational intervention, and a post-education audit and survey 1 year later. The number of fFN tests increased by 25% after 1 year, with an accompanying increase in the proportion that met clinical criteria for testing (from 76% to 93%). Adherence to guidelines for clinical management according to fFN results also improved over time (from 80% to 95%). Clinician knowledge on some indications for fFN testing improved, but understanding the clinical scenarios that may result in a false positive test did not.

**Comment:** Healthcare including maternity care is often based on international, national and/or local guidelines that provide recommendation for practice. This NZ audit highlights how reviews that are not robust and editorial comments following such a review can impact on the uptake of knowledge/recommendation(s) in practice. The DHB, by use of an audit, identified that the use of fFN testing in women presenting with symptoms of preterm labour was an area of concern. The audit showed a significant proportion of fFN tests and the management of women with threatened preterm labour did not comply with local hospital guidelines. This article defines what clinical audit is and how a varied approach of pre-education survey, compulsory educational interventions, post-educational audit, supportive reminders to adhere to the guideline and post-education survey a year later increased the number of fFN tests performed by 25%. There was also an increase in the number of clinicians being aware of the fFN guideline and the test being performed meeting clinical criteria for testing. The article details what knowledge regarding fFN test and management following the result was present, whether there was any increase in such knowledge or not and reluctance at times to follow the guideline, for example, reluctance to discharge the woman home if she was contracting but the fFN test was negative. A must read to ensure how to implement and ensure use of a pertinent guideline in maternity care.

**Reference:** *Eur J Obstet Gynecol Reprod Biol* 2018;221:89-96

[Abstract](#)

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