# Midwifery Research Review™

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**Abbreviations used in this issue**
**DHB** = District Health Board
**NIPT** = non-invasive prenatal testing
**OR** = odds ratio
**PPI** = preserving the perineum intact
**WHO** = World Health Organization

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**Research Review publications are intended for New Zealand health professionals.**

# 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 issue: the implementation of NIPT into publicly funded antenatal screening services in NZ, the existence of inequity in timing of prenatal screening in NZ, and processes and interactions during intrapartum transfer of women from planned homebirths to hospital in Australia. We also present how uncomplicated pregnancies in obese women can be predicted to ensure appropriate care provision, how modification of maternal sleep position optimises fetal wellbeing in late pregnancy, the association of perinatal mortality with induction of labour versus expectant management in nulliparous women aged ≥35, the effects of antenatal reflexology on labour outcomes, Irish and NZ midwives' expertise at PPI, sexual pleasure and emotional satisfaction after childbirth, and breastfeeding indicators among a multi-ethnic sample of NZ children.

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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## Implementing non-invasive prenatal testing into publicly funded antenatal screening services for Down syndrome and other conditions in Aotearoa New Zealand

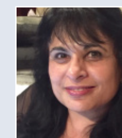
**Authors:** Filoche S et al.

**Summary:** NIPT is a relatively new screen for congenital conditions (including Down syndrome) that has a better clinical performance than current screening. NIPT has been available privately in NZ for the last 4 years. This article discussed the proposed implementation of NIPT into publicly funded antenatal screening services in NZ.

**Comment:** Antenatal screening for congenital conditions has been available to pregnant women in Aotearoa since 1968 and NIPT (a new advanced screen for congenital conditions, specifically common fetal aneuploidies including Down syndrome) has been available for 4 years. NIPT has a superior clinical performance (99.5%) compared to combined first trimester screening (85%) and second trimester screening (75%) for trisomy 21, 18 and 13. The false positive rate is very low. We have an obligation under the Primary Maternity Services Notice 2007, issued pursuant to section 88 of the NZ Public Health and Disability Act 2000, to advise women of screening services available that are endorsed by the Ministry of Health, including antenatal screening for Down syndrome and other conditions. Information about all tests available (publicly funded or not) should be provided to women to ensure informed choice. At present NIPT is not publicly funded in NZ, though that is likely to change soon. This paper discusses the precautions that should be taken not just to ensure informed choice but for the test to be equitable and the service to be culturally responsive. Do read the article, as further information is provided about the test being a screening test and what congenital abnormalities can at present be included in the test. Position statements by the NSU and the NZ Maternal Fetal Medicine Network may be helpful resources for practitioners if women choose to have NIPT.

***Reference: BMC Pregnancy Childbirth 2017;17:344***
Abstract

### Independent commentary by Nimisha Waller



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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.

## Birthplace in Australia: processes and interactions during the intrapartum transfer of women from planned homebirth to hospital

**Authors:** Fox D et al.

**Summary:** This study explored the views and experiences of women, midwives and obstetricians on the intrapartum transfer of women from planned homebirth to hospital in Australia. 36 women, midwives and obstetricians in 4 states of south-eastern Australia who had experienced an intrapartum homebirth transfer within the previous 3 years were interviewed. Women who were transferred to hospital from a planned homebirth faced the uncertainty of changing expectations for their birth. The trusting relationship between a woman and her homebirth midwife was crucial to her sense of safety and well-being in hospital. Midwives and obstetricians of transferred women also reported feeling out of their comfort zones.

**Comment:** The findings from this Australian study will not be a surprise to many. Midwives who have had to transfer women from home or from primary units to the hospital in NZ would know about: 1) the importance of working in partnership with women, 2) the importance of supporting women being transferred out of their comfort zone, and 3) the importance of working collaboratively with colleagues and respecting each other. This would ensure a seamless transfer of care and women feeling positive about their experience. There are some great points/discussions within this study that are worth a read. For example, celebrating the transfer rather than seeing it as a failure; 'contested space' and what this means especially in the presence of strong midwife-woman partnership; and 'us and them' interactions and their impact. The study highlights how midwives who are experienced in homebirth transfers navigate the system to the benefit of the woman and all concerned in her care. According to the authors it also adds an analysis of the dynamics involved in the interactions and processes of homebirth transfer from the perspective of intergroup conflict theory, derived from social psychology.

***Reference: Midwifery 2018;57:18-25***
Abstract

## Prediction of uncomplicated pregnancies in obese women

**Authors:** Vieria M et al., for the UPBEAT Consortium

**Summary:** This analysis of data from the UPBEAT trial identified factors associated with uncomplicated pregnancy and birth in obese women, and determined their predictive performance. Data for 1409 obese women with singleton pregnancies were analysed; 36% of the women had an uncomplicated pregnancy and birth. Multiparity and increased plasma adiponectin, maternal age, systolic blood pressure and glycosylated haemoglobin were found to be independently associated with uncomplicated pregnancy and birth.

**Comment:** Most of us are aware of the rising obesity rate globally as well as within NZ. All pregnant women with high body mass index (BMI) are believed to be at high risk of experiencing complications over the course of their pregnancies and births. These women often appear to be over managed. The purpose of this unique study was to discover which previously perceived risk factors could present in an obese woman and still lead to an uncomplicated pregnancy and birth and how successful these risk factors were at predicting the actual outcome. The aim was to seek a normal outcome rather than an adverse effect. Just over 30% of the obese women in this study had an uncomplicated pregnancy and birth. The authors show that risk stratification could be achieved by a combination of clinical factors and biomarkers (a tool that requires external validation). Stratification of risk for an uncomplicated pregnancy is a novel approach to the management of obese pregnant women. This has the potential to improve choices for women and their clinical management, and ensure efficient resource allocation. It is important to read the full article to grasp how the tool was used for achieving risk stratification and what these results mean regarding the place of birth recommended at present because of a woman's high BMI. The authors also suggest management of gestational diabetes and pre-eclampsia in women with high BMI who are least likely to have uncomplicated pregnancy and birth. A must read to encourage further discussion around this topic in your locality.

***Reference: BMC Med 2017;15(1):194***
Abstract

**Midwifery Council of NZ**

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## Inequity in timing of prenatal screening in New Zealand

**Authors:** Payne O et al.

**Summary:** This study evaluated factors associated with inequity in timing of prenatal screening in NZ. 88% of all completed prenatal screens in 2010–2013 were completed in the first trimester. Ethnicity, age, deprivation and DHB were all found to be significant predictors of completed first versus second trimester screening. Māori women were 57% less likely (adjusted OR, 0.37) and Pacific women 77% less likely (adjusted OR, 0.23) than NZ European women to have completed first versus second trimester screening. Women aged <30 years and more deprived women were also less likely to have completed first trimester screening. Compared with women living in Auckland, women living in Whanganui DHB were less likely to have completed first trimester screening (adjusted OR, 0.76) and women living in Bay of Plenty DHB were more likely to have complete first trimester screening (1.55). Women living in Counties Manukau DHB were less likely to be screened in the first versus second trimester than women living in Auckland DHB.

**Comment:** These data were from pregnant women who had prenatal screening from 2010 to 2013. Certain groups of women did not complete first trimester screening that has superior sensitivity. The authors suggest that The National Maternity Monitoring Group (NMMG; 2016) identified that 60% of women who give birth see a GP. Do GPs discuss first trimester screening during this visit or not due to fear of duplicating the information? If discussed, how is this information shared between GPs, women and the lead maternity carers (LMCs) that the women will register with? Are women encouraged to register early with an LMC? Does the information shared include which prenatal screening is superior? The authors have highlighted other barriers for completion of first trimester screening for this group of women. These include short timeframe for completion of first trimester screening, the availability of resources in the community, and co-payment for nuchal translucency (NT) scans. Is it not time to fully fund first trimester screening so the service is equitable? Various DHBs offer vouchers for women who are unable to pay the co-payment for NT scans however there are limits to the availability of these vouchers. Women may also have to travel to radiology facilities that may be a distance away from where they live. The authors suggest that introduction of fully funded NIPT screening may help with completion of the test, as the timeframe is broader and there is no need for an NT scan. However, the Maternal Fetal Medicine Network statement does suggest that women considering NIPT should proceed to the 11–14 week scan as it has other benefits. Will this scan be publicly funded if a decision is made to public fund NIPT? Practitioners need to get involved in any discussions occurring in their region and nationally on how completion of first trimester screening can be improved and for the NIPT and 11–14 week scan to be fully funded to reduce inequity in prenatal testing.

***Reference: Aust NZ J Obstet Gynaecol 2017;57(6):609-16***
Abstract

## Perinatal mortality associated with induction of labour versus expectant management in nulliparous women aged 35 years or over

**Authors:** Knight H et al.

**Summary:** This English national cohort study determined the association between induction of labour (IOL) at ≥39 weeks and the risk of perinatal mortality among nulliparous women aged ≥35 years. English Hospital Episode Statistics data collected between April 2009 and March 2014 were analysed by multivariable Poisson regression with adjustment for maternal characteristics and pregnancy-related conditions. Among the cohort of 77,327 nulliparous women aged 35–50 years who delivered a singleton infant, 33.1% had labour induced. IOL at 40 weeks (compared with expectant management) was associated with a lower risk of in-hospital perinatal death (adjusted risk ratio, 0.33; p=0.015) and meconium aspiration syndrome (0.52; p=0.002), but a slightly higher risk of instrumental vaginal delivery (1.06; p=0.020) and emergency caesarean section (1.05; p=0.019). The number needed to treat (NNT) analysis indicated that 562 inductions at 40 weeks would be required to prevent 1 perinatal death.

**Comment:** Globally there is an increase in birth rates for women aged ≥35 years. This is reflected in our Maternity Report 2015 (published in July 2017). Women giving birth for the first time in 2015 also had a higher proportion of inductions (27.8%) than women who had given birth previously (19.9%). Multiple studies have established maternal age as a risk factor for stillbirth. Women aged 40 or older had a large increase in risk, especially at term gestation. At 39–40 weeks' gestation this equates to 2 in 1000 for women aged ≥40 years compared to 1 in 1000 for women aged <35 years, representing a 2-fold increase in risk. The relative risk of stillbirth was 3-fold higher for women aged ≥40 years than women aged <35 years of age by 41 weeks' gestation. The guidelines by the DHBs suggest offering IOL to women ≥40 years at or beyond 39 weeks' gestation. This UK trial concludes that we should routinely offer IOL at 40 weeks' gestation to women aged ≥35 years giving birth for the first time to reduce the rate of perinatal mortality. The authors have highlighted the limitations of this study and that 562 inductions of labour at 40 weeks will be required to prevent 1 perinatal death. Should we be thinking of discussing the offer of this information to women aged ≥35 years for informed choice? What implications will this have on resources locally and nationally?

***Reference: PLoS Med 2017;14(11):e1002425***
Abstract

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## A pilot randomised controlled trial exploring the effects of antenatal reflexology on labour outcomes

**Authors:** McCullough J et al.

**Summary:** This pilot study in a large UK inner city hospital maternity department investigated the effects of antenatal reflexology on labour outcomes. 90 primiparous women with a singleton pregnancy who were having low back and/or pelvic girdle pain were randomised 1:1:1 to receive 6 weekly 30-minute reflexology treatments, sham (footbath) treatments, or usual antenatal care only. Labour outcomes were analysed for 61 women who completed the study. The second stage of labour decreased by a mean 44 min in the reflexology group (74 min) compared with the usual care (118 min; p<0.05) and footbath groups (117 min; p=0.08). No adverse effects were reported.

**Comment:** Women have been using reflexology to alleviate discomforts of pregnancy or lack of sleep and fatigue. Previous studies on the use of reflexology in labour have reported mixed results. The National Institute for Health and Care Excellence (NICE; 2017) guidelines recommend that pregnant women should be informed that few complementary and alternative medicine therapies have been established as being safe and effective during pregnancy, therefore, they should not consider them without risks and use them as little as possible during pregnancy. However, the guidance goes on to say that women's decisions should be respected, even when contrary to the views of the healthcare professional. In this pilot study the duration of the second stage of labour was reduced by 44 min compared with usual care and footbath (2 hours' duration). The women reported reflexology and footbaths to be beneficial for their health and they enjoyed the treatments, the 'time out for themselves' and their improved sleep quality. This may be more important for some women than the actual reduction in duration of second stage of labour. The authors suggest that reduction in second stage of labour could be due to women entering labour in a more relaxed emotional state. The study did not demonstrate a reduction in induction rates, nor did it appear to affect mode of delivery, possibly due to small sample size. The cost of having 6 weekly reflexology sessions during pregnancy has not been considered as part of this study. However in reality women would have to pay for these sessions. One NZ website suggests the cost to be about $40 for a 40-min session, though this is likely to be variable depending on the practitioner and locality. A randomised controlled trial with a larger sample size should be considered for robust data.

***Reference: Midwifery 2017;55:137-44***
Abstract

## Modification of maternal sleep position to optimise fetal well-being in late pregnancy

**Authors:** Cronin R et al.

**Summary:** This NZ study investigated maternal sleep practices in late pregnancy. A random sample of 377 ethnically-representative women between 28 and 42 weeks' gestation were surveyed in 2014 in South Auckland. The self-reported going-to-sleep position in the last week was left (30%), right (22%), supine (3%), either side (39%), and other (6%). 68% of the women had received advice about pregnancy sleep position. A non-left position was more likely to be reported by women of Māori (adjusted odds ratio, 2.64) or Pacific (2.91) ethnicity, and those who did not sleep on the left-hand side of the bed (3.29). 87% of non-left sleepers reported that they would be able to change to sleep on their left side in late pregnancy if this was better for their fetus.

**Comment:** The findings from this survey suggest that there are still women, particularly multi-ethnic women residing in high deprivation regions, who may not know about sleeping on the left side during late pregnancy. From the results of a 2011 study, many practitioners may know that going to sleep in the supine position is associated with a 3.7-fold increase in overall late stillbirth risk. This risk is independent of other common risk factors. Though it is positive that 91% of women chose a side position to sleep, only 30% actually slept on their left side. In this survey, 32% of women appeared not to have received advice about pregnancy sleep position. The authors suggest that the novel and modifiable factor that could become incorporated into a late pregnancy sleep routine was that sleeping on the left-hand side of the bed is associated with a left side going-to-sleep position. 87% of the participants who currently don't sleep on the left-hand side of the bed reported that they could change the side of bed they slept on, to help to modify their usual going-to-sleep position from non-left to left, if this was better for the baby. The suggestion by the authors for formal public health recommendation on late pregnancy maternal sleep position in NZ is worthy. This will not only have the potential to reduce the late stillbirth rate by approximately 9% but also hopefully ensure consistency in the information shared with women.

***Reference: J Midwifery Womens Health 2017;62(5):632***
Abstract

## Irish and New Zealand midwives' expertise at preserving the perineum intact (the MEPPI study)

**Authors:** Smith V et al.

**Summary:** This study examined how midwives in Ireland and NZ achieve low rates of perineal trauma during birth. Seven Irish and 14 NZ midwives who were expert in preserving the perineum intact (PPI) were interviewed about their views and skills regarding PPI. The midwives reported that they relied on multiple sources of knowledge in building their expertise for PPI. Physical characteristics of the perineum were prominent factors associated with PPI, and episiotomy was usually only performed when there were signs of fetal distress. The midwives supported the practice of antenatal perineal massage.

**Comment:** This report highlights how midwives who are expert at PPI achieved low rates of perineal trauma. The midwives who were interviewed had to have a no suture rate >40% for nulliparous women in the 3.5 years before the study, an episiotomy rate of <11.8% (the average taken from all NZ and Irish midwife-led unit data), and a serious perineal tear rate of <3.2%. Midwives built their expertise by drawing on multiple sources of knowledge. They have identified: 1) the importance of avoiding manual stretching of the perineum or vagina when a woman is pushing during uterine contractions as it has no benefit and can be distressing for the woman, 2) episiotomy should only be performed when there is a clear clinical need, 3) positioning of the mother at birth is of importance, and 4) women should be prepared for PPI by using antenatal perineal massage during pregnancy. Some midwives mentioned that birthing in water did not protect the perineum, which needs further exploration. Some also felt that the shape of the perineum rather than size of the baby was an important predictive factor for perineal trauma. The findings highlight the need to continue to gather information to build on existing data. All practitioners involved in intrapartum care need to reflect, discuss and share their expertise and wisdom about preserving the perineum to prevent rigid procedures in the work environment. Worth a read!

***Reference: Midwifery 2017;55:83-89***
Abstract

## Sexual pleasure and emotional satisfaction in the first 18 months after childbirth

**Authors:** McDonald E et al.

**Summary:** This study investigated the experiences of first-time mothers with regard to sexual pleasure and emotional satisfaction in the first 18 months after childbirth. 1239 first-time mothers were recruited in early pregnancy at 6 public maternity hospitals in Melbourne, and completed questionnaires at 3, 6, 12 and 18 months postpartum. 78% of the women resumed vaginal sex by 3 months postpartum, 94% by 6 months and 98% by 12 months. Sex was described as extremely or very pleasurable by 40.1% of women at 3 months and by 49.1% at 18 months. Emotional satisfaction with intimate partner relationships declined over time. Women who were happy with their partner's contribution to household tasks were more likely to report high emotional satisfaction (OR 10.31) and greater physical pleasure (2.32) in their sexual relationship.

**Comment:** The WHO stresses the importance of sexual pleasure to the human experience of sexual health. All of us are aware and anticipate that childbirth and caring for a new baby will have an impact on a woman's sex and emotional health in the short term. Perineal trauma is also likely to impact on sexual and emotional satisfaction. This study looks at the longer-term impact of pregnancy and childbirth. The authors suggest that the myth that everything is likely to be 'back to normal' by 6 weeks (or even 6 months) postpartum is refuted by the findings. Women experience profound changes to their sexual and emotional relationships in the first 18 months after birth, and have markedly lower levels of sexual pleasure and emotional satisfaction. The study highlights the importance of a father's involvement in household chores/tasks. Women who were happy with their partner's contribution to household tasks and those who had more frequent time for themselves were more likely to report high levels of emotional satisfaction and sexual pleasure in their relationship. The findings provide an opportunity to reflect on how comfortable we are in having discussions on sex and intimacy post-birth, what information we share with women, and do we encourage women to plan some 'me' time by themselves.

***Reference: Midwifery 2017;55:60-66***
Abstract

## Breastfeeding indicators among a nationally representative multi-ethnic sample of New Zealand children

**Authors:** Castro T et al.

**Summary:** This analysis of data from the Growing Up in New Zealand cohort examined breastfeeding initiation and duration in a representative sample of 685 NZ infants. Breastfeeding was initiated in 97% of the infants. 16% were exclusively breastfed to age 6 months and 13% were breastfed to age 24 months. Exclusive breastfeeding for ≥4 months was less likely for infants with mothers of Māori (relative risk [RR], 0.80), Pacific (0.90) or Asian (0.80) ethnicity. Exclusive breastfeeding for ≥4 months was associated with maternal age 20–29 years (RR, 1.24),maternal age ≥30 years (1.36), maternal tertiary education (1.14), planned pregnancy (1.14), and infants with older siblings (1.31).

**Comment:** The researchers of this study (Growing Up in New Zealand) suggest the findings to be the first description of breastfeeding indicators in a NZ sample that is generalisable to the national birth cohort. The majority of us (if not all of us) will be aware of the WHO recommendation that breastfeeding begin within an hour of birth, be exclusive to 6 months and continue to 2 years and beyond, alongside appropriate complementary feeding from 6 months. The findings suggest that 3% of the children were not breastfed at all so our breastfeeding initiation rate (97%) is comparable to other developed countries. However, the rate declines with just half the children being exclusively breastfed at 4 months of age and 16% of the children being exclusively breastfed at 6 months of age. The 16% exclusively breastfed rate is an improvement from the 12% reported in Plunket Data in 2011. The median duration of receiving any breast milk is 7 months. The study highlights the groups of mothers whose children are at risk of exclusive breastfeeding and shorter duration of breastfeeding. The findings provide an opportunity to reflect and discuss 1) how we inform/remind women and each other of the health and economic benefits of breastfeeding, and 2) the plan and the strategies we presently have in place and any revising required in light of these findings. This will ensure appropriate support, promotion and protection of breastfeeding in NZ. A must read for all those involved in maternity and newborn/children's care!

***Reference: NZ Med J 2017;130(1466):34-44***
Abstract

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