The DIAMOND trial

DIfferent **A**pproaches to **MO**derate & late preterm **N**utrition: **D**eterminants of feed tolerance, body composition and development

Parent/Caregiver Information Sheet

Your baby / pepi was born early or preterm (before 37 weeks' gestation). Preterm babies often need some assistance with feeding before breast-feeding becomes fully established. You and your baby / pepi are invited to take part in a study to investigate the different feeding methods used to support moderate- to late-preterm babies whilst full breast-feeding is established to find out which method is the most useful for development. Whether or not you take part is your choice. If you do not want to take part, you don't have to give a reason, and it won't affect the care you or your baby / pepi receive. If you do want to take part now, but change your mind later, you can withdraw your baby from the study at any time without giving a reason. This will not affect your baby's future healthcare.

This Participant Information Sheet will help you decide if you'd like to take part. It sets out why we are doing the study, what participation would mean for your baby / pepi, what the benefits and risks might be, and what would happen after the study ends. We will go through this information with you and answer any questions you may have. You do not have to decide today whether or not you will participate in this study. Before you decide, you may want to talk about the study with other people, such as family / whānau, friends, or healthcare providers. Feel free to do this.

If you agree to take part in this study, you will be asked to sign the Consent Form on the last page of this document. You will be given a copy of both the Participant Information Sheet and the Consent Form to keep.

This document is 5 pages long. Please make sure you have read and understood all the pages.

What is the purpose of the study?

This study is being done to investigate the current feeding methods used to support nutrition of moderate- to late-preterm babies whilst full breast-feeding is established to assess the effects of these methods on your baby's development of fat stores and on brain development. We know that breastmilk is the best source of nutrition for all babies; however, almost all moderate- to late-preterm babies experience a delay in receiving mother's milk due to supply, baby's immaturity or illness, or a combination of these. Without supplemental nutrition your baby may not receive enough nutrition for optimal growth and development. We are investigating whether optimising nutrition and minimising early weight loss whilst waiting for breastmilk feeding to be fully established will prevent the development of extra fat mass that is common in preterm babies whilst supporting optimal development of the brain.

Currently there are three types of feeding methods used across New Zealand for moderate- to late-preterm infants until full nutrition can be met with breastmilk: a sugar solution delivered into the vein; a sugar and protein solution delivered into the vein, or infant formula via a small tube into the stomach. At the moment, any one of these methods, or a combination of them, could be provided to your baby to ensure (s)he grows

and develops. However, there is no research or data that we can refer to determine which method is the 'best' for your baby.

At present, babies receiving milk feeds through the small tube into their stomach do not have the opportunity to smell or taste the milk before it is given down the tube. We know that for children and adults, smell and taste is an important part of every meal, not just for enjoyment but also because the smell and taste prepares the body for the food to come so that it can deal with the food in the most efficient way. We also would like to know whether giving babies the chance to smell and taste their milk before it is given down the stomach tube will improve their tolerance of feeds and help them to reach full feeds more quickly.

Currently, girl and boy babies are managed the same whilst waiting for full breast-feeding to be established, although we know that they grow differently. We also want to find out if breast-milk is different according to whether the baby is a boy or a girl.

We are conducting this study because at present we do not know which feeding strategy best meets preterm babies' needs in order to improve body growth and development of the brain. It is therefore important that we randomly assign babies into a feeding strategy group.

What will my participation in the study involve?

Whilst your baby is in hospital: As you plan to fully breastfeed, you and your baby are able to be a part of the study. The goal for all babies is to reach full breastmilk feeds as quickly as possible.

Whilst full breastmilk feeds are being established, your baby will be randomly assigned to the different ways of providing nutritional support that are currently used and also to receive or not receive smell and taste of milk before stomach tube feeds. The different nutritional supports are: first, *either* glucose *or* glucose + protein into a vein until full milk feeds are established and, secondly, supplemental infant formula in addition to your breast milk when breastmilk supply is less than full feeds or intravenous fluids only in addition to breastmilk with no supplemental formula. If your baby is randomised to receive supplemental formula in addition to breast milk and also is randomised to receive smell and taste before feeds, then the smell and taste preferentially will be breast milk. In the absence of any breastmilk, smell and taste will be provided by formula milk. If your baby is randomised not to receive formula, then smell and taste will only be provided with breastmilk.

Thus, there are eight possible combinations as shown in the table, in which a '+' signifies your baby receiving that intervention and the '-'signifies that your baby does not receive that intervention.

Condition	Parenteral nutrition (i)	Milk supplement (ii)	Taste/smell (iii)
1	+	+	+
2	+	-	+
3	+	+	-
4	+	-	-
5	-	+	+
6	-	-	+
7	-	+	-
8	-	-	-

We would like to ask you for small samples of your breastmilk on three of the days whilst your baby is in hospital. This is to analyse the breastmilk for its nutrition content and also for hormones to determine if the breast milk mothers produce for girl babies is different from that they produce for boy babies. This will help us understand whether girl and boy babies should be fed differently whilst waiting for full breast-feeding to be established. We can collect this breast-milk from the milk that you express for your baby.

We will collect a sample of your baby's stool (poo) whilst in hospital. We would like to determine how different nutritional management of preterm babies affects the make-up of the bacteria (bugs) in a baby's poo. This is because the make-up of the bacteria in your poo can affect your risk of obesity in adulthood.

We will collect saliva samples from your baby by wiping a cotton swab around the inside of their mouth. This sample will be used to measure hormone concentrations. All samples will be transported and stored securely at the Liggins Institute, University of Auckland, where they will be analysed and disposed of once the study's results have been published.

Your baby will have fat mass measured using a machine called a PEAPOD. This is a very safe method which does not hurt the baby in any way. Your baby will first be weighed very accurately and then will lie in the PEAPOD for 2 minutes whilst the measurement is made. This measurement will be done at just before your baby goes home. We will give you a record of your baby's measurements.

You and your baby's health information will be collected as part of the study. We will also ask you to fill in a questionnaire about how you are feeling and your levels of stress. All information that is collected is confidential and will be stored in a locked filing cabinet and on a password protected database until 10 years after your baby reaches maturity (a total of 26 years).

Optional extra parts of the study whilst in hospital: To study the effects of smell and taste on how well babies tolerate their milk feeds, we would like to observe how quickly the milk leaves the stomach using ultrasound and the effect on blood flow and oxygen levels in the front part of the brain using a non-invasive light source attached very lightly to the forehead.
The ultrasound is similar to the scans you will have had when you were pregnant and is not painful or harmful in any way.
The blood flow assessment is very similar to the oxygen probe your baby will have attached to either a hand or a foot for most of the time in hospital, except it is placed on the forehead. Again, this is does not hurt and is not harmful in any way.

At four months of age: We also will measure your baby's fat mass with the PEAPOD and your baby's weight, length and head circumference when she / he is 4 months old. We also will ask if we can measure your weight, height and body composition and will ask you to complete three brief questionnaires: one about your baby's development, one about breastfeeding and the same questionnaire about how you are feeling that you completed just after your baby was born. We will ask for another sample of your baby's stool (poo) at 4 months of age. We will provide you with the pot needed to do this and instructions on how to do this. If you are still breastfeeding at four months, we would like to ask you for a last sample of breast milk to analyse its nutritional and hormonal content.

When your baby is six months old we would like to contact you by 'phone or text with a few very simple questions about breastfeeding.

At two years of age: We would also like to invite you to bring your baby back when she / he is 2 years old for further measurements of growth and also for a more detailed assessment of her / his developmental progress. Many parents find these assessments reassuring.

A summary of your baby's growth and development can be provided to you and/or your GP if you request it. If we discover any areas of concern for you or your baby we will discuss this with you and help you decide if any further help is needed.

What are the possible benefits and risks of this study?

As all of the feeding strategies being investigated are currently used throughout New Zealand we do not anticipate any foreseeable risks.

This study may benefit your baby if adequate nutrition from birth while awaiting your breastmilk turns out to improve growth and brain development, but this is not yet known.
All babies in this study will have had an intravenous line placed because the doctors thought this was necessary. There is a risk of intravenous lines leaking into the skin and needing to be replaced; taking part in the study will not change this risk, although the leak can be more troublesome if babies are receiving a protein solution in addition to the sugar solution.

Sometimes, the immaturity of a preterm baby's gut can mean that the baby does not tolerate milk feeds very well. If this happens with your baby, we will increase feeds more slowly until the milk is tolerated and can ensure that baby receives adequate nutrition by giving extra glucose or glucose + protein into the vein if needed. The doctors caring for your baby can decide on the best feeding for your baby at any time, regardless of your baby's participation in the study.

Funding

This study is funded by the Health Research Council of New Zealand. Participants will not incur any costs and will be reimbursed for their travel costs and time to appointments at 4 months and 2 years.

Ethics Approval

The Northern A Health and Disability Ethics Committee has given ethical approval for this study (16/NTA/90).

What if something goes wrong?

In the unlikely event of a physical injury to you or your baby as a result of participation in this study, you would be eligible for compensation from ACC just as you would be if you were injured in an accident at work or at home. You will have to lodge a claim with ACC, which may take some time to assess. If your claim is accepted, you will receive funding to assist your baby's recovery.

What are my rights?

You have the right to choose whether you would like your baby to be part of the research study. If you agree for you and your baby to participate in the trial and then change your mind you have the right to decline participation at any time. Your decision to decline involvement in the study will by no means effect the care your baby receives in the Neonatal Care Unit or disadvantage you in any way.
You have the right to access all information that we collect from you and your baby as part of the study.
All information will be collected in a private and confidential manner. It will be stored in a highly secure system that can only be accessed by researchers. It will be kept for at least 26 years following the completion of the trial after which time it will be appropriately and securely destroyed.

Results

We will discuss your child's assessment results with you after the two follow-up visits and, if you agree, we will send a summary of results to you and/or your GP. The results from the completed study will be published in a scientific journal. The results will be presented in a way that does not identify you or your baby. If you wish to receive a copy of the study results you can indicate this on the consent form this is likely to be within 5 years.

Who do I contact for more information or if I have concerns?

If you have any questions, concerns or complaints about the study at any stage, you can contact talk to the nurse or doctor looking after your baby or contact one of the researchers.

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If you want to talk to someone who isn't involved with the study, you can contact an independent health and disability advocate on:

Phone:	0800 555 050
Fax:	0800 2 SUPPORT (0800 2787 7678)
Email:	advocacy@hdc.org.nz

You can also contact the health and disability ethics committee (HDEC) that approved this study on:

Phone:	0800 4 ETHICS
Email:	hdecs@moh.govt.nz

For Māori health support:

If you require Māori cultural support talk to your whānau in the first instance. Alternatively you may contact the administrator for He Kamaka Waiora (Māori Health Team) by telephoning +64 9 486 8324 ext 2324. If you have any questions or complaints about the study you may contact the Auckland and Waitematā District Health Boards Māori Research Committee or Māori Research Advisor by telephoning +64 9 4868920 ext 3204.

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