

# Babies in Neonatal Care

## A Handbook for Parents





This handbook was written by the neonatal multidisciplinary team at the National Maternity Hospital to support parents of babies throughout the country who have been admitted to a neonatal unit during their hospital stay and early years at home. The Hospital wishes to thank **WaterWipes** for sponsoring this handbook.

We hope this handbook provides you with guidance to help you during this journey.

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## Foreword

We have prepared this handbook for you as parents to help you to understand what may happen during your baby's stay in our Neonatal Unit and following his discharge home. This handbook is designed to give you an outline of the possible treatment and care that your baby will experience, familiarise you with new and strange sounding terms used in relation to Neonatal Care and provide guidance on ways for you to be involved in your baby's care.

The handbook is divided into separate chapters and a reference section for you to refer to as required:

- Introduction
- Neonatal Care
- Understanding Medical Care in the Neonatal Unit
- Getting to know and caring for your baby in the Neonatal Unit
- Feeding your baby in the Neonatal Unit
- Preparing for your baby's discharge home from the Neonatal Unit
- Your baby at home
- Your baby's development
- Reference information

The chapters are colour coded for easy access so that you can refer to specific sections as required. It is not intended for you to read it all at once, e.g. chapter 8 'Your baby's development' will be more relevant when your baby is settled at home.



You have an important role in your baby's care and recovery and we want you to be involved as much as possible. If at any point you do not understand anything, please let the Staff looking after your baby know. Never hesitate to ask questions.

We appreciate that this is a difficult time for you. Staff will do everything to support you during your baby's stay in the Neonatal Unit and during his discharge home.

Please note, all babies are different and so the information may not always apply to your individual baby; practices in Neonatal Units may vary also.

For simplicity, we have referred to your baby as 'he', the caregiver as 'she' and carers as 'parents'.

*The Neonatal Multidisciplinary Team  
National Maternity Hospital  
Holles St., Dublin 2  
17<sup>th</sup> November 2018*

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# Chapter 1



## Introduction

## Chapter 1 Introduction

65,000 babies are born in Ireland each year throughout the 19 Maternity Units. Approximately 10% of these babies are admitted to Neonatal Units. Approximately 5,000 babies are born preterm. About 900 babies are very preterm, born at less than 32 weeks gestation, i.e. at least 8 weeks before they are normally due.

Seeing your baby in the Neonatal Unit for the first time may be overwhelming. It is natural to feel this way until you begin to understand and become familiar with your baby's condition. This chapter includes information on the reasons why your baby may be admitted to the Neonatal Unit and suggestions to help you cope during this time.

### Reasons why your baby may be admitted to the Neonatal Unit

Babies are admitted to the Neonatal Unit for a number of reasons. These include preterm birth and term babies who are unwell or need medical or surgical investigations or treatments as outlined below.

#### Preterm birth

If your baby is born before 35 weeks gestation, he will usually be admitted to the Neonatal Unit.

Preterm birth occurs for various reasons.

**Multiple births** (e.g. twins, triplets and higher order multiples) are one of the more common causes. About 50% of twins are born preterm. The staff, where possible, will keep your babies near each other. However sometimes one baby may require a different level of care, e.g. one baby may be in the Intensive Care Unit and your other baby may

be in the Special Care Baby Unit.

It is also possible that one baby will be discharged home before the other.

Other causes of preterm birth include infection or if a baby is growing slowly – there are various reasons for this, e.g. pregnancy - related high blood pressure or problems with the placenta (after-birth). Sometimes the cause is not known.

The degree of prematurity matters. Babies who are born preterm require a range of care that depends on the degree of prematurity and illness, e.g. babies born more preterm tend to require a more intensive level of Neonatal Care than those born later.

#### Proportions of preterm births

- 60% are born at 34-36 weeks gestation
- 20% are born at 32-33 weeks gestation
- 15% are born at 29-31 weeks gestation
- 5% are born at 28 weeks gestation or less



Preterm baby boy born at 25 weeks gestation in the Neonatal Unit



... and later at home

## Term babies who need medical or surgical investigations or treatment

Most term babies do not need Neonatal Care but some do. When term babies are admitted to the Neonatal Unit it may be for observation due to a complication. If all is well and your baby is alert and feeding well, he can usually be discharged to you.

Other conditions that may necessitate admission include rapid breathing after birth, known as transient tachypnoea of the newborn (TTN), jaundice requiring phototherapy, or possible infection needing intravenous antibiotics. Less commonly a baby may have a more serious problem that requires investigation or a specific medical or surgical treatment, e.g. encephalopathy, a heart condition or intestinal (bowel) problem.



*Term baby receiving phototherapy in the Neonatal Unit*

**Neonatology** is a subspecialty of paediatrics and involves the medical care of newborn babies, especially those who are preterm or unwell.



*Preterm twins boys born at 27 weeks gestation in the Neonatal Unit*



*... and later at home*



*Preterm triplets born at 25 weeks gestation in the Neonatal Unit with Dad*



*... and later at home*

## Coping with your baby in the Neonatal Unit

### First reactions

For parents the Neonatal Unit can be an unfamiliar environment with a lot of medical equipment and monitors. It may seem overwhelming and a shock to see your baby in the middle of this. It may also seem impersonal at first but, behind this technology there is a very caring approach.

The equipment is specialised and designed to keep your baby warm, to record his vital body functions (including his heart rate, blood pressure and oxygen saturation) and to support his breathing if necessary. Staff will explain the functions of each item of equipment surrounding your baby.

If you do not understand what is being said to you, please let your baby's Doctor or Nurse know. There can be a lot of new information for you to take in.

Your role as a parent is a vital part of your baby's care. You are encouraged to visit your baby as often as you can and to be involved in his care.

***“Your role as a parent is a vital part of your baby's care”***

As a parent it is important to be both hopeful and realistic. The mixture of shock and worry can seem overwhelming. You may have fears about your ability to cope and about how fragile your baby appears. This is all normal.

If you have concerns it is good to share them with staff as it may help to relieve them and get you through this difficult time.

Your opinion and point of view are important and will always be considered in your baby's care.



*Parents visiting their baby in the Neonatal Unit*

### **Did you know?**

**'Family Centred Care'** is a model of care that encourages greater parent involvement in their baby's care.

**'Family Integrated Care'** is an extension of this model and integrates families as partners in the Neonatal Care team. Staff in the Neonatal Unit are happy to involve you as parents in your baby's care.



*Mum and baby enjoying cuddles*

## Coping with your feelings

Acknowledge your feelings. Concentrate on helping your baby and yourself. It helps to keep in close contact with the Doctors and Nurses looking after your baby.

It is good to get to know your baby and he will be comforted by your visits. No matter how unwell your baby is, do not be afraid to get close to him.

Spend time talking to and observing your baby. Your baby's Nurses are happy to involve you in your baby's care. When your baby is stable you will be able to help with feeding, changing nappies, cuddling and comforting him, see chapter 4 'Getting to know and caring for your baby in the Neonatal Unit', page 39.

Let someone know if you are finding it difficult to cope.



*Parents getting used to the early arrival of their baby in the Neonatal Unit*

## Suggestions to help you to cope

- Talk about your feelings.
- Talk with staff about your baby.
- Visit your baby as often as you can.
- Watch your baby, not the monitors.
- Take pictures of your baby, or if you cannot visit, ask someone to send you photos.
- Become actively involved in your baby's care, see chapter 4 'Getting to know and caring for your baby in the Neonatal Unit'.
- Spend time with your partner, other children, family and friends and discuss your feelings together.
- Let family and friends help, e.g. by caring for other children at home and cooking meals.
- Take care of yourself. Try to eat well, get as much rest as you can and minimise stress as much as possible.
- Take time out from the Neonatal Unit and reconnect with what you enjoy doing.
- If you find the Neonatal Unit a stressful environment, use techniques to help you cope, listen to music (using headphones), read, try relaxation techniques, draw, write, keep a journal or do a puzzle.
- Remember that the Doctors and Nurses are there to help you in every way that they can – it may help to share your feelings with them.
- Ask if there is something you do not understand. There is no such thing as a silly question.
- Talk with other parents in the Neonatal Unit.
- Try not to compare your baby with others. Remember that each baby is different and progresses at a different pace.
- Build upon the positive no matter how small.
- Ask to speak with a Medical Social Worker who is available to offer you emotional and other support if needed.
- Ask to meet with a Chaplain who is available to provide spiritual support. You may also find visiting the hospital chapel / prayer room comforting.

*“No matter how unwell your baby is, do not be afraid to get close to him”*



Parents taking 'Time-Out'

Further support and information including details on 'Rights of entitlements', is available from [www.irishpretermbabies.com](http://www.irishpretermbabies.com), an Irish charity for families of babies born preterm.

*Did you know?*

**World Prematurity Day** takes place on 17 November each year to raise awareness of preterm birth and the concerns of preterm babies and their families worldwide.

*Did you know?*

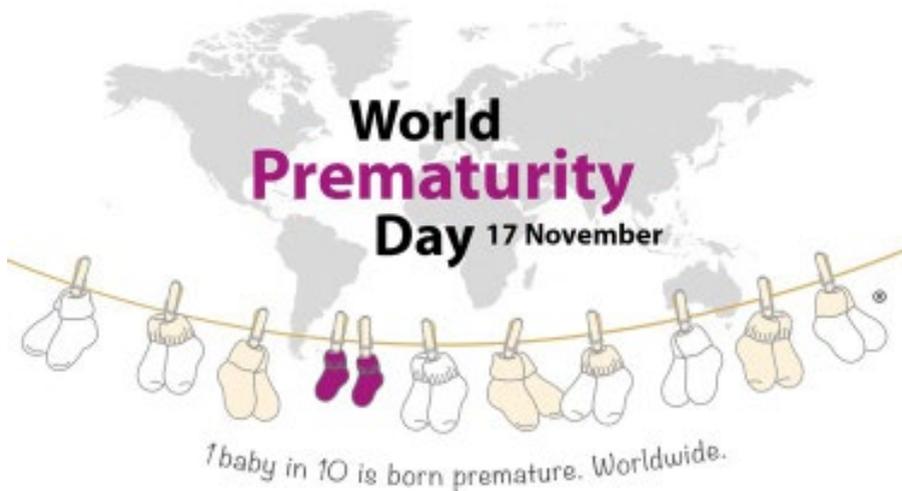
**Mood swings:** After giving birth, most mothers experience some degree of mood swings ranging from 'Baby Blues', to postnatal depression to puerperal psychosis.

If you have any concerns or think you or someone you know may be affected, contact your local PHN or GP.

Information is also available online at [www.heathpromotion.ie](http://www.heathpromotion.ie) - search postnatal depression, and at [www.yourmentalhealth.ie](http://www.yourmentalhealth.ie)



Little girl born preterm at 28 weeks and little boy born at 31 weeks now 7 years old enjoying World Prematurity Day with Consultant Neonatologist



## Chapter 2



## Neonatal Care

## Chapter 2 Neonatal Care

Approximately 10% of babies need admission to a Neonatal Unit. Being familiar with the words and concepts around Neonatal Care will help you to feel involved in your baby's care. The more informed you are, the better you will understand what is happening to your baby.

This chapter aims to help you to understand Neonatal Care. It provides a description of the Neonatal Unit, the team of professionals looking after your baby and guidance for you when visiting your baby.

### The Neonatal Unit

The Neonatal Unit is an area of the hospital that is specially designed for the care of newborn babies.

Generally the more preterm the baby or more complex the issues, the higher the intensity and longer the duration of care required.

Some Neonatal Units are divided into different areas depending on the level of care offered, for example:

**Neonatal Intensive Care Unit (NICU)** is for babies who are receiving the most intensive care. In Intensive Care, one Nurse looks after fewer babies than in other areas.



Neonatal Intensive Care Unit (NICU)

**Neonatal High Dependency Unit (HDU)** is for babies who require a high level of care but less than Intensive Care, this includes babies who may have recently come through Intensive Care.



Neonatal High Dependency Unit (HDU)

**Special Care Baby Unit (SCBU)** is for babies who require a lower intensity of care, e.g. growing babies who are preparing for home. In SCBU parents have the opportunity to be more involved in the 'hands-on' care of their babies, e.g. cuddling, feeding, nappy changing and bathing.



Special Care Baby Unit (SCBU)

The Neonatal Unit aims to imitate the conditions that your baby was used to in the uterus (womb).

Preterm babies may have difficulty keeping their body temperature at the right level. This is because they have almost no fat for insulation and therefore they must be kept warm.

To do this, small babies and some larger babies who are unwell, are nursed in an incubator. An incubator is a specially designed cot with a clear, Perspex cover. This keeps your baby warm and controls the humidity levels around him, while at the same time allows for observation and provides access for medical and nursing procedures.

When your baby is well and weighs about 1800 g (4 lbs), he is generally able to control his own temperature and so he can be transferred from an incubator to a cot.



*Baby in an incubator*

Babies who are unwell are generally nursed without clothing so that their breathing and colour can be closely observed.

Equipment may also be used to monitor your baby, e.g. your baby's heart rate and oxygen levels. See 'Equipment' page 30.

*"Babies who are unwell are generally nursed without clothing so that their breathing and colour can be closely observed"*

### 'Quiet Time' in the Neonatal Unit

Your baby needs as much rest and sleep as possible. 'Quiet Time' gives babies the opportunity to rest and sleep. In-utero (in the womb) babies sleep 80% of the time. It is important to try to mimic this as much as possible if your baby was born preterm – this helps facilitate his development.

Neonatal Units work hard to reduce the amount of noise and activity around your baby. Much of the noise and activity is unavoidable, but for specified periods each day the Neonatal Unit has a 'Quiet Time'. During 'Quiet Time', lights are turned down, noise levels and voices are kept low, medical procedures and cares are kept to a minimum to allow your baby uninterrupted rest and sleep.

*"'Quiet Time' gives babies an opportunity to rest and sleep"*



*'Quiet Time' in the Neonatal Unit*

## How long will my baby be in the Neonatal Unit?

The length of time that your baby needs to stay in the Neonatal Unit depends on his size, prematurity and medical circumstances.

Many babies have easily treatable conditions and can be discharged back to you after a few hours / days of observation and care.

On the other hand, some very preterm babies may require admission for up to 4 months or more.

As a general rule, for preterm babies the discharge time will be approximate to their expected date of delivery.

### Duration of time babies spend in the Neonatal Unit

- **Born before 28 weeks gestation**  
3 months approx.
- **Born 28 - 31 weeks gestation**  
2 months approx.
- **Born 32 - 34 weeks gestation**  
3 weeks approx.
- **Born from 35 weeks gestation**  
A few hours or days.

These are only estimates. Some babies may stay for longer and others shorter durations.



*I'll be home soon*

## Neonatal Terminology

### Terms used when describing newborn babies

- **Preterm / premature**  
Born before 37 completed weeks gestation.
- **Extreme preterm**  
Born before 28 completed weeks gestation.
- **Very preterm**  
Born 28-31 completed weeks gestation.
- **Moderate preterm**  
Born 32-36 completed weeks gestation.
- **Term baby**  
Born from 37 completed weeks gestation.
- **Low birth weight (LBW)**  
Birth weight <2500 g (5 lb 8 ozs).
- **Very low birth weight (VLBW)**  
Birth weight <1500 g (3 lb 5 ozs).
- **Extremely low birth weight (ELBW)**  
Birth weight <1000 g (2 lb 3 ozs).
- **Gestational age (GA)**  
Age estimated from start of pregnancy (the number of weeks from conception to birth). This may be expressed as th number of weeks of gestation over 40, e.g. '28 weeks gestation' may be expressed as '28/40'.
- **Chronological age / Actual age**  
Age from the time your baby was born. No adjustment is made for prematurity.
- **Corrected age (CA) / Corrected gestational age (CGA)**  
Age adjusted according to how preterm your baby was born – see next page.
- **Large for gestational age (LGA)**  
describes a baby who is large for his age / gestation. This may also be referred to as 'Large for dates'
- **Small for gestational age (SGA)**  
describes a baby who is small for his age / gestation. This may also be referred to as 'Small for dates'



*Extreme preterm baby born at 25 weeks gestation*



*Moderate preterm baby at 34 weeks gestation*



*Very preterm baby born at 28-30 weeks gestation*



*Term baby born after 37 weeks gestation*

## The preterm baby and 'corrected age'

Because preterm babies are born before their expected due date, age in days or weeks does not mean the same as it does for a full-term baby. For example, a preterm baby who is 8 months old cannot be compared with a full-term baby who is 8 months old. For this reason the term 'corrected age' is used. 'Corrected age' counts a baby's age from the time he should have been born (his due date), rather than the time he was actually born.

For example, if your baby was born at 32 weeks gestation (2 months preterm) and is now 8 months old from his date of birth; his '**chronological (actual) age**' = 8 months; and his '**corrected age**' is 8 months minus 2 months preterm = 6 months.

*Corrected age is actual age in weeks or months minus the number of weeks or months your baby was preterm.*

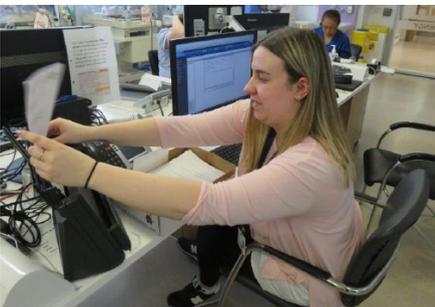
'Corrected age' is used when assessing a baby's development. Doctors are satisfied as long as a baby's developmental milestones are appropriate for his corrected age. Corrected age is generally no longer applied after 24 months of age. 'Actual age' is used when allowance for prematurity is not necessary, e.g. when giving immunisations.

## The Neonatal Multidisciplinary Team

The Neonatal Unit is staffed by a Multidisciplinary Team (MDT) of people who specialise in caring for babies who are unwell. These staff will do everything they can to help your baby get better. Staff in the Neonatal Unit like babies and know how to give them the care they need to get well. They also care about your feelings as parents. They know nothing can replace your love but you can be reassured that your baby will be well cared for with tenderness and respect, even when you are not there. The main carers in the Neonatal Unit are the Doctors and Nurses. In addition, there are many other health professionals who may be available, as well as other support staff including Household, Administration, Catering and Portering. A Chaplain is also available to provide spiritual support at your request.



*Member of Household staff making sure incubator is clean in preparation for a baby's arrival*



*Member of Administration staff organising files in the Neonatal Unit*

## Doctors involved in Neonatal Care

A Doctor who specialises in the care of small babies is called a Neonatologist.



*Doctor reviewing a baby in the NICU*

In addition to these Doctors who care for your baby on a daily basis, there are other specialist Doctors who may attend to your baby in the Neonatal Unit or be consulted regarding your baby's care, as required, see next page.



*Doctor examining a baby in the NICU*

*“Staff in the Neonatal Unit like babies and know how to give them the care they need to get well”*

### Specialist Doctors who contribute to Neonatal Care

- **Cardiologist** – a heart specialist.
- **Endocrinologist** – a specialist in diseases relating to hormones.
- **Gastroenterologist** – a specialist in the gastro-intestinal tract (gut) and liver.
- **Geneticist** – a specialist in inherited conditions.
- **Haematologist** – a specialist in diseases related to the blood.
- **Microbiologist** – a specialist in the management of infections.
- **Neonatologist** – a specialist in the care of small babies.
- **Nephrologist** – a specialist in diseases related to the kidney system.
- **Neurologist** – a specialist in disorders of the nervous system including the brain, spinal cord and nerves.
- **Ophthalmologist** – an eye specialist.
- **Pathologist** – a specialist in the causes and effects of diseases.
- **Radiologist** – a specialist in reviewing x-rays and taking ultrasounds and scans.
- **Surgeon** – performs surgical procedures. Surgeons may also specialise in different areas, e.g. a neuro-surgeon specialises in surgery of the brain and nervous system.

### Nurses involved in Neonatal Care

Nurses take care of your baby's day-to-day Nursing Care. There may also be specialist Nurses / Midwives involved in your babies care. see next column.



*Nurse looking after baby in the NICU*



*Nurse looking after baby in the SBCU*

### Specialist Nurses / Midwives who contribute to Neonatal Care

- **Advanced Neonatal Nurse Practitioner (ANNP)** - has advanced training in the medical needs of babies.
- **Neonatal Clinical Nurse / Midwife Specialist (CNS) / (CMS) in discharge planning** - supports parents preparing for their babies' discharge.
- **Lactation (Breastfeeding) Support Specialist** - supports mothers who require additional assistance expressing (pumping) breast milk or breastfeeding.



*Nurses in the Neonatal Unit*

## Other health professionals involved in Neonatal Care

In addition to Doctors and Nurses, there are many other health professionals who contribute to the care of your baby, see next column. These staff may not always be available in your baby's Neonatal Unit but they may be consulted if their input is required.



*Nurse and Clinical Engineer organising specialist equipment*



*Medical Social Worker meeting with a mum*



*Some members of the Neonatal Multidisciplinary team*

## Other health professionals who contribute to the care of your baby

- **Audiologist** - evaluates and manages hearing problems.
- **Clinical Engineer** - prepares and maintains medical equipment.
- **Developmental Psychologist** - provides guidance on developmental care and follow-up post discharge.
- **Dietitian** - provides guidance on nutrition and growth.
- **Hearing Screening staff** - assess babies for hearing impairment.
- **Medical Laboratory Scientist** - performs diagnostic analysis on blood and other specimens.
- **Medical Social Worker** - provides support counseling, information on entitlements, practical and legal issues such as guardianship, and assistance in accessing supports in the community. If you wish to meet with a medical social worker, ask a member of staff.  
Further information on 'Rights and Entitlements' is available from: [www.irishprematurebabies.com](http://www.irishprematurebabies.com).
- **Occupational Therapist (OT)** - specialises in supporting your baby's development.
- **Pharmacist** - looks after the medicines prescribed for your baby.
- **Phlebotomist** - takes blood samples.
- **Physiotherapist** - helps preterm and unwell term babies learn the correct movement patterns and gives advice on positioning to promote normal movement and muscle development.
- **Radiographer** - takes x-rays.
- **Speech and Language Therapist** - specialises in sucking, oral feeding and early communication development.

## Students

Neonatal Units are generally based in Teaching Hospitals and so Medical students, Nursing / Midwifery students and other students may be present.

Your baby is always under the care of a Consultant Doctor.

## Neonatal Ward Round

There is a ward round every day. This is an important event. During the ward round each baby's condition and progress is assessed by the Neonatal team and his daily management is planned.

You may be asked to leave the Neonatal Unit during the ward round while other babies are being discussed in order to respect their privacy and confidentiality.



*Neonatal Ward Round discussing a baby's care*

## Research in Neonatal Care

Neonatal Units are committed to providing the best level of care for all babies. By conducting clinical research we strive to further develop our knowledge and advance Neonatal Care. As a parent you may be approached to request your permission for your baby to participate in a research study. Your baby's involvement is greatly appreciated and essential to improving the care we provide for all babies now and in the future.

## Transferring and Transporting Babies

### Transferring your baby from one hospital to another

On occasion it is necessary to transfer a baby from the hospital he is born in to another hospital. This is because he needs additional medical or surgical care at another hospital. For example, babies born very preterm in smaller Neonatal Units will be transferred to a larger unit in order to obtain the full range of intensive care. Some babies have intestinal (bowel) complications, which necessitate transfer to a specialist Children's Hospital for surgery. Other babies may need transfer because of a heart condition. The transfer of a baby who is small or unwell from one hospital to another is a complex procedure requiring planning, organisation and skilled staff. The baby is placed inside a specialised transport incubator within an ambulance capable of facilitating full intensive care for the baby during transport. During transport, the baby is accompanied by a Doctor and a Nurse. Babies are usually transported by road ambulance but on occasions where time is very critical and the distance is long, the Air-Corp services may be employed. The current fleet of helicopters is specially designed to carry a baby in an incubator.



*Transport Incubator – used to transport babies*

## The National Neonatal Transport Programme (NNTP)

The NNTP is a specialised service for the transport of preterm or sick babies who require transfer between hospitals for intensive / specialist care.

The NNTP team travels to the hospital from where the baby is being transferred and provides stabilisation advice and intensive care as needed, prior to, as well as throughout the transport to the specialist hospital.

See [www.nntp.ie/parents](http://www.nntp.ie/parents) for further information.

We appreciate that transferring your baby to another hospital may be difficult for you. Staff at the new hospital will do their best to make you feel welcome and deal with any concerns you may have.

If you are unable to be with your baby, every effort will be made to maintain good communication between you and those looking after him in the other hospital.

## Transferring your baby back to his local hospital

If your baby was transferred to a larger or specialist Centre for additional care and treatment, the Doctors and Nurses in this hospital will arrange to send your baby back to his local hospital when this treatment has been provided and he is ready to be transferred back.

This is beneficial for you and your baby as, when he is transferred back closer to home it is easier for you to visit and to become more involved in his day-to-day care. It also gives you the chance to get to know your local Neonatal Centre, which will provide your baby's longer-term follow up. The philosophy is to provide care for your baby as close to home as possible as much as possible –

### Right Care, Right Place, Right Time.

This process also permits the larger or specialist Centre to accept other babies with new critical problems. This rotation of care is the **Model of Neonatal Care** and is an important part of the provision of newborn services in Ireland.



**Right Care, Right Place,  
Right Time**

*Members of the Neonatal Transport Team*

## Communication with the Neonatal Unit

### Letting you know what is happening

Staff fully appreciate the worry and concern that is caused when your baby is admitted to the Neonatal Unit. Staff understand parents' feelings and will try to keep you fully informed about your baby's diagnosis, investigations, treatments and management. If there is anything that you are uncertain about, never hesitate to ask.

Some treatments for your baby are straight-forward, others are more complex and invasive. Staff will inform you about these treatments where possible.

Occasionally in an emergency situation, staff may have to act quickly and therefore may not have time to contact you until after the event.



*Doctor letting Mum know what is happening*

### Consent

Some treatments require your consent, e.g. if your baby needs a blood transfusion, eye laser therapy or vaccinations; or if he needs to be transferred to another hospital for tests or treatment. Sometimes consent is implied, e.g. in an emergency situation. However, parents will be updated and consent obtained as soon as is practical after the event.

### Telephone contact – two-way

While your baby is in the Neonatal Unit, it is important to keep in contact with the Unit.

You are welcome to phone the Neonatal Unit to get the latest update and information from the Nurse caring for your baby whenever you cannot be there. Ask staff for the telephone number. After the daily Ward Round is usually a good time to find out the latest information about your baby. Please understand that the Neonatal Unit cannot give information about your baby to anybody other than you, the parents, except with your expressed permission. For this reason, you may be asked to confirm your relationship with your baby when you phone.

It is also essential that you provide the Neonatal Unit with a reliable list of phone numbers so that you can be easily contacted. While your baby is in the Neonatal Unit we ask you to be attentive to your phone at all times as it creates problems for staff if they try to contact you and they are unable to do so. If you get a phone call, do not think the worst as staff may be contacting you for a wide variety of reasons, such as consent for a procedure.



*Doctor talking with a parent about their baby in the Neonatal Unit*

## Visiting your baby

You are encouraged to visit your baby as much as you can. When visiting, we ask that you observe the following guidelines.

### Guidelines for visiting your baby in the Neonatal Unit

- Follow the advice from your baby's Neonatal Unit about visiting.
- Remain at your baby's cot-side.
- Please respect the privacy of other babies. Staff cannot give you information about other babies.
- You may bring in a few personal items for your baby, e.g. a family photo or small soft toy. You may also bring in personal bedding and clothing, which will be used whenever possible. For hygiene reasons remember to keep all items clean and wash frequently. Check with staff before bringing in other items.
- Protect your baby from infection at all times by observing the important infection control measures outlined.



Mum visiting one of her twins in the SCBU



Dads visiting their babies in the SCBU

## Protecting your baby from infection

It is important to protect your baby from infection by observing the following infection control measures at all times.

### Infection control measures in the Neonatal Unit

- **Hand hygiene is essential every time you visit the Neonatal Unit.** Hand hygiene involves hand-washing or hand-sanitising and is one of the most effective ways of preventing infection and safeguarding your baby.
  - Always wash or sanitise your hands before touching your baby and his surroundings, including his cot or incubator. If you are visiting twins or triplets, please do this before touching each baby and his surroundings.
  - It is important to wash your hands properly: first roll up your sleeves and remove jewellery including any watch, rings and bracelets; next wash your hands and lower arms in warm soapy water; then rinse your hands and lower arms in clean running water; and finally dry your hands and lower arms with a clean towel.
  - A hand-sanitiser / alcohol gel, can be used instead of hand-washing if your hands are visibly clean.
  - A 'bare below the elbow' policy is also practiced.
  - For your baby's safety, anyone who has been exposed to a contagious disease (e.g. Chicken Pox, German Measles, Tuberculosis) should not visit.
  - If you have a cold, fever or are unwell in any way, please check with your baby's Doctor or Nursing staff before visiting.
  - If you have a cold sore, do not let it touch your baby or do not kiss your baby until it has fully healed. If your hands come in contact with a cold sore, always wash or sanitise your hands before touching your baby. Consider using an antiviral cream to encourage the cold sore to heal or use cold sore patches to cover it when it is still not dry.
- Ensure any items you bring in for your baby are clean and washed frequently.



*Hand-sanitising using alcohol gel*



*Hand-washing*

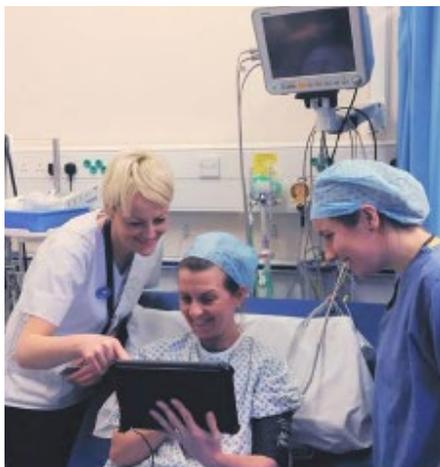
### Times when you may not be able to visit your baby

- During the daily ward round while other babies are being discussed. This is necessary to protect the privacy and confidentiality of other babies.
- When there is an emergency or complicated procedure being performed.
- During staff shift changes, when Nurses are giving reports about babies to incoming staff. Again this is to protect the privacy and confidentiality of other babies.

### When you are unable to visit your baby

If you are unable to visit your baby there is still a lot you can do to connect with him.

- Telephone the Neonatal Unit to hear how your baby is doing.
- Ask someone to take photos or videos of your baby to send to you.
- Increasingly Neonatal Units are providing web camera facilities (e.g. 'Angeleye' Web Cam) for parents who are unable to visit their baby, in particular mothers who are not well enough to visit. The system consists of a camera over your baby that transmits a continuous picture that parents can watch on a mobile smart phone. This facility is relatively new in Ireland and may not yet be available in your local Neonatal Unit.
- Ask someone to bring you a piece of your baby's clothing so that you can smell his scent.
- Ask if you can nominate someone to visit to be with your baby in your place.



*Mum watches her newborn baby on webcam*

## Brothers and sisters

Your baby's brothers and sisters are not permitted into the Neonatal Unit. The reason for this is the risk of cross infection. However, they should still be part of the whole experience and be kept up-to-date,

- Tell them about their new baby sister or brother.
- Show them videos or photos of the new baby.
- Explain in simple terms the reason why their little brother or sister is in hospital.
- Discuss any concerns they may have about the baby at a level that they can understand.
- Encourage them to make drawings or get well cards for the baby, which can then be given to the baby.
- Offer for them to send in a photo of themselves for their baby sister or brother to 'see'.
- Involve them in planning for the baby's homecoming.



*Drawing sent from sibling to baby in the Neonatal Unit*



*Drawings sent from sibling to baby in the Neonatal Unit*

## Chapter 3



### Understanding Medical Care in the Neonatal Unit

## Chapter 3 Understanding Medical Care in the Neonatal Unit

Babies who are born preterm or who are unwell often need complex, technical Medical and Nursing Care. It can be daunting trying to understand the terminology involved.

This chapter will help you to understand the medical conditions that your baby may have and the equipment needed to help him to get well. Treatments, tests and procedures are explained. Becoming familiar with this terminology will help you to feel part of your baby's care. Use this chapter as a reference to help you to understand the conditions, equipment, procedures and tests specific to your baby.

### Medical conditions

#### Apnoea

Sometimes preterm babies take pauses in their breathing and occasionally their breathing may stop. This condition is known as apnoea and is detected with an apnoea monitor.

#### Aspiration

Aspiration refers to breathing any foreign substance into the lungs. In babies this is usually milk or meconium.

Aspiration is also used to describe when a sample is deliberately drawn up from the stomach – this may be referred to as a gastric aspirate and may be done to test if a feeding tube is in the correct position.

#### Bradycardia and Tachycardia

The normal newborn baby's heart rate is 140 beats per minute.

**Bradycardia** is the term used when the heart is beating slower than normal, i.e. a slow heartbeat.

**Tachycardia** is when the heart is beating more rapidly, i.e. a fast heartbeat.

#### Breathing Difficulties / Respiratory Problems

Some babies have breathing problems. There are two main reasons. First, the lungs may not be fully developed, and secondly, the baby may be unwell or have an infection and too weak to breathe normally. If a baby's lungs are not fully developed they can be very stiff. Doctors may use a tube to pass a substance

called 'surfactant' directly into the lungs. Surfactant helps to make the lungs spongier and easier to fill with air, making breathing easier. Babies with breathing difficulties may require extra support to help them to breathe, see 'Forms of respiratory support' page 31.

#### Chronic Lung Disease (CLD) / Broncho-Pulmonary Dysplasia (BPD)

Babies who need to be ventilated for long periods of time may get chronic lung disease (CLD). Babies with CLD have stiffer lungs and have to work harder to get air into their lungs. They may also become more tired during feeds. Babies with CLD sometimes need additional oxygen support for a while after they go home. CLD may also be referred to as 'broncho-pulmonary dysplasia' (BPD).

#### Cyanosis

Cyanosis refers to a bluish colour of the skin usually caused by a reduced oxygen level in the blood.



Doctors and Nurses discussing a baby's care

## Encephalopathy

Encephalopathy is a general term that describes altered brain function. This may present as seizures or irritability in the neonatal period. The causes of encephalopathy are varied. The medical team will decide how best to investigate and manage each individual case.

## Gastro-Oesophageal Reflux (GOR) and Gastro-Oesophageal Reflux Disease (GORD)

GOR refers to bringing stomach contents back up through the oesophagus (tube that connects the mouth to the stomach). GOR is common and is generally seen as milky spills / possets. It is quite harmless and most babies grow out of it as they mature. See also 'Gastro-oesophageal reflux / regurgitation (spilling)' page 93.

If your baby also brings back up some acid from the stomach it can cause discomfort. If this is significant it may be referred to as gastro-oesophageal reflux disease (GORD) and require treatment.

## Haemorrhage

Haemorrhage refers to a bleed.

## Hernias – Inguinal and Umbilical

Hernias are common in preterm babies and often disappear on their own. They can affect up to 10% of preterm babies and are more common in boys than girls.

- **Inguinal hernias** appear in a baby's groin. These are surgically repaired as soon as the baby is well enough to tolerate an anaesthetic.
- **Umbilical hernias** appear behind a baby's belly-button. These tend to sort themselves out without any treatment. They do not generally need surgery.

## Hydrocephalus and Shunt Reservoir

Hydrocephalus is a condition in which the normal flow of cerebro-spinal fluid (CSF), the fluid around the brain and in the spine, is blocked. The fluid builds up in the brain, which makes it swell. If this fluid does not clear of its own accord or with medication, an operation may be necessary to insert a small tube called a shunt to help to remove the excess fluid as it is produced.

## Hyperglycaemia and Hypoglycaemia

**Hyperglycaemia** is a high blood sugar (glucose) level. Treatment requires on-going monitoring until sugar levels normalise.

**Hypoglycaemia** is a low blood sugar (glucose) level. Babies at risk may be small or large for their gestational age or may be babies of mothers who have diabetes. Treatment may require intravenous fluids and on-going monitoring until sugar levels normalise.

## Hypertonia and Hypotonia

**Hypertonia** is an increased muscle tone.

**Hypotonia** is a low muscle tone.

## Hypoxia

Hypoxia is a lack of sufficient oxygen in the blood.

## Infection

Babies at risk of infection require investigations, which include blood culture and full blood count. Babies may require intravenous antibiotics until the infection is out-ruled or adequately treated. The duration of antibiotic therapy depends on the site and severity of the infection. Sometimes babies with an infection are cared for in isolation to reduce the risk of passing the infection to other babies.



*Preterm baby with an infection being cared for in isolation*

**Intraventricular Haemorrhage (IVH)**

A bleed within the brain.

**Jaundice**

Jaundice is a yellow discolouration of the skin and whites of the eyes caused by a build-up of a substance called bilirubin in the blood. Jaundice is predominantly due to immaturity of the liver and resolves as the baby matures. Jaundice is treated by exposing the baby's skin to special lights called phototherapy, see 'Phototherapy' page 33.



*Baby with jaundice receiving phototherapy*

**Meconium Aspiration Syndrome**

Meconium aspiration syndrome develops when meconium is passed before or during the time of birth and is inhaled into a baby's lungs. Meconium consists of material that is present in the intestine (bowel) of a baby in-utero (in the womb) and is normally passed as a specific type of bowel motion post-delivery. It is highly irritant if inhaled and causes lung inflammation. If this happens babies can develop breathing problems requiring respiratory support.

**Metabolic Bone Disease / Osteopenia of Prematurity**

Metabolic bone disease occurs when the level of minerals such as calcium and phosphorus in bones is reduced. Babies born preterm are at higher risk and require higher intakes of these minerals. Vitamin D plays a role too. Metabolic bone disease may also be referred to as osteopenia of prematurity.

**Necrotising Enterocolitis (NEC)**

NEC is an intestinal (bowel) complication that can occur in preterm babies. It varies in degrees of severity. In minor cases the baby gets a slightly swollen abdomen. In more severe cases the baby becomes very unwell. The condition is treated with antibiotics and by holding feeds and providing intravenous fluids. In some cases the baby may require surgery.

**Neonatal Abstinence Syndrome (NAS)**

NAS is a condition in which the baby exhibits withdrawal symptoms. It occurs when a mother has been on narcotics / drugs such as methadone during pregnancy. Babies with NAS are irritable, unsettled, restless and cry excessively. They may require additional Nursing Care. The symptoms may last up to 6 weeks or more. Initially the baby may require small doses of oral morphine.

**Patent Ductus Arteriosus (PDA)**

A PDA is a vessel that forms a link between the two main arteries in the body – the aorta and pulmonary artery. This link is open before birth and usually closes within a few minutes after a baby is born. In some preterm babies it remains open causing additional pressure on the heart and lungs and requires medical and sometimes surgical management.

**Periventricular Leucomalacia (PVL)**

PVL is a form of brain injury that can affect babies.

**Pneumothorax**

Pneumothorax occurs when an opening develops in the lining of the lungs; air then leaks into the chest and the lungs cannot expand properly. A tube can be inserted temporarily to remove the air and the lung usually repairs itself in a few days.

## Respiratory Syncytial Virus (RSV) / Bronchiolitis

RSV is a common cause of chest infections in infancy.

**Synagis (Palivizumab)** is an approved prescription injection of antibodies that is given to help protect high-risk infants from RSV disease. Synagis is administered monthly during the winter months from October to March. If Synagis is advised for your baby, it will be discussed with you prior to his discharge and will be given at home by a specialist Nurse.

## Retinopathy of Prematurity (ROP)

ROP is a disorder that affects the immature blood vessels in the eyes of babies born very preterm or with a very low birth weight. Babies who are considered to be at risk of ROP have their eyes checked by an Ophthalmologist (Eye Specialist). ROP may resolve spontaneously. If it progresses, the Ophthalmologist will treat it with laser therapy or injections into the eye.

The outcome for ROP is generally good. However, some cases result in minor vision problems, which may necessitate wearing glasses for short-sightedness, or treatment with minor surgery or an eye patch for 'crossed eyes' (strabismus) or 'lazy eye' (amblyopia).



Ophthalmologist and Nurse performing eye test to screen for ROP

## Seizures

Newborn babies occasionally develop seizures, which are due to uncontrolled electrical activity in the brain and may appear as abnormal movements. Babies with seizures require admission to the Neonatal Unit for investigations and treatment and will require follow-up.

## Tachycardia

Tachycardia is when the heart is beating more rapidly than normal. See 'Bradycardia and Tachycardia' above.

## Tachypnoea

Tachypnoea describes when a baby's breathing is rapid, usually more than 60 times per minute.

## Transient Tachypnoea of the Newborn (TTN)

TTN is a short period of rapid breathing after birth, usually after a caesarean section. It only lasts a short time and the baby usually makes a quick recovery.



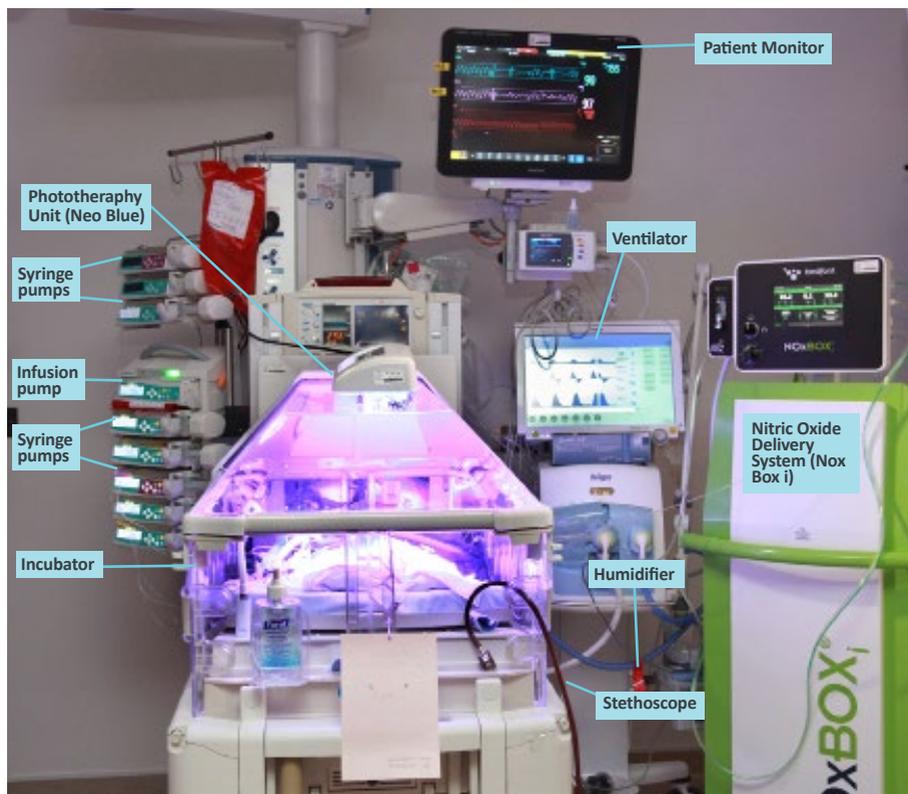
Nurse carefully observing a baby's breathing

## Medical equipment

Neonatal Units are full of equipment that you may not have seen before. This equipment is there to give your baby the best possible chance of survival and a healthy future. This section provides a brief description of some of the equipment you may see surrounding your baby.

### Incubator

An incubator is a specially designed cot with a clear, Perspex cover, used for babies who are preterm or unwell. An incubator keeps a baby warm and controls the humidity levels around him by preventing moisture loss from his thin skin; at the same time it allows for observation and provides access for medical and nursing procedures. Incubators also protect babies from a busy Neonatal environment. See also 'Neonatal Care' page 12.



Equipment in the Neonatal Unit

### Apnoea monitor

This is a sensor that is attached to a baby to detect and record his breathing rate. If his breathing stops, it sets off an alarm.

### Endotracheal (ET) tube

This is a tube that is placed into a baby's trachea (windpipe / airway), through his nose or mouth, and is used to deliver oxygen to his lungs aided by a ventilator.

### Glucometer

Measures the level of glucose (sugar) in your baby's blood.

## Infusion pump

This is used to control the rate/speed that fluids, some feeds and medication are given to babies. Infusion pumps are sometimes called 'syringe pumps' or 'syringe drivers'.

## Intravenous (IV) lines

IV stands for intravenous, which means into a vein. An IV line is a very fine tube threaded into one of a baby's veins, e.g. in the arm, leg or scalp. You may feel anxious about an IV line in the scalp but it is placed only on the skin surface. Babies can be given fluids, nutrition, or medication through IV lines. Fluids given via an IV line can be referred to as IV fluids or a 'drip'. Nutrition given through an IV line is referred to as Parenteral Nutrition (PN). See 'Parenteral Nutrition' page 58 - 59.



*Nurse preparing an IV infusion for a baby*



*Preterm baby with IV line in his arm*

## Phototherapy lights

These are special lights used to treat jaundice, see 'Phototherapy' page 33.

## Pulse oximeter / Saturation monitor

This measures the amount of oxygen in a baby's blood using an infrared light sensor, which is usually attached to his foot or hand.

## Respiratory support

Respiratory support helps a baby to breath. There are many forms of respiratory support some of which are outlined below.

### Forms of respiratory support

#### Oxygen (O<sub>2</sub>) Support

- Bag and mask

#### Non-invasive Ventilation

- Nasal prong / low flow oxygen
- High flow oxygen
- CPAP
- DuoPAP

#### Invasive Ventilation

- Ventilator
- High Frequency Oscillation

### Bag and mask

If a baby stops breathing, staff may help to re-start his breathing with a procedure called 'bagging'. A mask is attached to a soft plastic bag or a 'Neopuff' is placed over a baby's nose and mouth, and the bag is squeezed several times to gently push air into his lungs to stimulate him to start breathing.

### Nasal prong / Low flow oxygen support

This provides a low flow of oxygen, which passes through two small tubes placed in a baby's nostrils (nasal prongs).



*Baby with nasal prongs*

**High flow oxygen support**

This provides a high flow of warmed and humidified oxygen/air, which passes through nasal prongs.

**Continuous Positive Airway Pressure driver (CPAP)**

CPAP provides a mixture of air and extra oxygen, which passes through nasal prongs or a mask down into a baby's lungs to help keep the air sacs open.



*Baby receiving CPAP*

**DuoPAP / BiPAP**

DuoPAP / BiPAP provides a mixture of air and extra oxygen at alternating pressures to a baby's nostrils with a mask or by two tiny tubes (similar to CPAP).

**Ventilator**

A ventilator is used to help babies to breathe. This machine gently pushes air through a tube placed into a baby's trachea (windpipe / airway) and down into his lungs. Some babies need ventilation for just a day or two; others may need it for longer. The amount of support given by the ventilator is regularly adjusted to meet a baby's changing needs.



*Preterm baby receiving ventilation*

**High Frequency Oscillator (HFO)**

HFO provides a faster rate of ventilation than conventional ventilation. It is used to help overcome more severe respiratory difficulties.

**Nitric Oxide (NO)**

NO is an additional gas supplied through the ventilator. This gas has a unique ability to expand blood vessels in the lungs and thus improve a baby's breathing.

**Vital Signs Monitor**

'Vital signs' is the term used for the markers that show how well a baby's major body systems are working.

**Vital signs**

- Breathing rate
- Heart rate
- Blood pressure
- Temperature
- Oxygen saturation

Babies in Intensive Care are generally attached to Vital Signs Monitors 24 hours a day. Small pads may be placed on the baby's chest to pick up electrical signals given out by the heart and check that it is beating properly. The pads can also detect changes in breathing. Pauses in breathing may trigger an alarm.

## Procedures and treatments

**You will be informed about any major procedures your baby may need whenever possible. For some procedures you can choose to be present but sometimes this may not be possible and you will be asked to wait in a separate area.**

### Blood transfusions

Newborn babies, especially those born preterm, have a small circulating blood volume. Their ability to make blood is limited. Their blood is further reduced by illness or necessary blood tests. If a baby's blood count falls he may need a blood transfusion. In order to reduce exposure to multiple different blood donors, the donor unit of blood is subdivided into 5 small packs called 'Pedi-Packs'. The designated Pedi-Packs are set aside and are given to a baby as needed throughout his time in the Neonatal Unit.

### Endoscopy

An endoscopy, sometimes shortened to 'scope' is a procedure that uses a flexible tube with a camera attached to look inside a part of the body.

### Extra Corporeal Membrane Oxygenation (ECMO)

ECMO is an artificial lung by-pass. It is used when a baby is in respiratory (lung) failure. The ECMO machine takes over the work of a baby's lungs. The process keeps the baby stable until the lungs have recovered, which can take up to a week. The treatment is very complex and is performed by a specialist ECMO team based in Sweden. This experienced team travel to Ireland to transport the baby to Sweden for this treatment. The baby remains in the specialist Centre until his lungs have recovered and he is breathing normally. In Ireland, approximately 6 babies require this treatment annually.

### Extubation

Extubation refers to the removal of an endotracheal (ET) tube used for ventilation from the trachea (windpipe / airway).

### Humidification

This is when humidity inside an incubator is used to reduce water loss from the delicate skin of very small preterm babies.



*Extreme preterm baby nursed in a humidified incubator*

### Intubation

The insertion of an endotracheal (ET) tube into a baby's trachea (windpipe / airway) so that oxygen can be given via a ventilator.

### Phototherapy

Phototherapy is used if a baby is jaundiced. It consists of special lights placed over the baby. See 'Jaundice', page 28. Babies undergoing phototherapy are nursed without clothing so that the maximum amount of their skin is exposed to the phototherapy.



*Baby receiving phototherapy in an incubator*



Eye protection while a baby receives phototherapy

Eye pads are used to protect the baby's eyes from the lights. The lights may cause a mild rash but this passes quickly when phototherapy stops.

### Stoma – Intestinal

A stoma is an opening from the intestine (bowel) to the surface of the abdomen (tummy). This is generally performed to allow drainage from the intestine if it is injured or diseased. It is usually temporary and will be closed (reversed) when the intestine has healed.

Until this time a bag may be attached to the stoma to collect any waste that is produced. If the stoma is from the small intestine it is referred to as an **ileostomy**; if it is from the large intestine it is referred to as a **colostomy**.

### Therapeutic Cooling (TC)

TC is the deliberate cooling of a baby's body temperature down to 33.5°C. A baby's normal body temperature is 36.5 - 37.5°C.

TC has been found to be an effective treatment for specific babies who have had deficiency of oxygen around the time of birth. The treatment is instituted for a total of 72 hours. At the end of the cooling period the baby is re-warmed until his temperature is back to normal.



Term baby receiving therapeutic cooling

### Ventilation

Ventilation is a form of respiratory support. To help your baby breathe Doctors may use a ventilator. This machine drives air through a tube placed into your baby's wind pipe (air-way / trachea) and down into his lungs. Some babies need ventilation for a day or two, others, longer. The amount of support given by the ventilator will be regularly adjusted to meet your babies current needs.

There are two types of ventilation, non-invasive and invasive.

#### Non-invasive Ventilation

- Nasal prong / low flow oxygen
- High flow oxygen
- CPAP
- DuoPAP

#### Invasive Ventilation

- Ventilator
  - High Frequency Oscillation
- See Respiratory Support page 31.



Extreme preterm receiving ventilation

## Tests and examinations

Babies brought to the Neonatal Unit may be very unwell and need a high level of Medical and Nursing Care. This means watching and measuring many of their body functions with tests and examinations. Every test or examination is done for a reason. You will be informed about any tests or examinations your baby may need whenever possible. For some you can choose to be present, but sometimes this is not possible and you may be asked to wait in a separate area.

### Barium study

A Barium study is a test that looks for abnormalities in the gastro-intestinal tract (GIT). This may also be referred to as a contrast study. A special liquid is given and is watched as it moves through the GIT using X-rays.

A **Barium swallow** looks at the upper part of the GIT, e.g. the oesophagus (the tube that connects the mouth with the stomach) and stomach.

A **Barium enema** looks at the lower part of the GIT, e.g. the large intestine (colon / bowel).

### Blood tests

Babies in the Neonatal Unit often need blood tests to check the level of various substances in the blood. The smallest amount of blood possible is taken using very small needles. Common blood tests include:

#### Blood gas sample

This is a small sample of blood that is used to determine the amount of specific gases such as oxygen and carbon dioxide in the blood and also how acidic or alkaline it is.

#### Full Blood Count (FBC)

An FBC measures the level of various components in the blood, e.g. red blood cells (RBC) and haemoglobin (Hb) which carry oxygen; white blood cells (WBC) which help fight infection; and platelets which help blood to clot. An FBC is used to screen for anaemia (low red blood cell count).

### Urea and Electrolytes (U&E)

A U&E measures the level of urea and electrolytes (salts) in the blood and provides an indication of the level of hydration.



*Doctor taking a blood sample from a preterm baby*

### Heel prick

A heel prick is a procedure in which a tiny prick is made on the heel in order to get a sample of blood for analysis.

#### *Did you know?*

#### **The Newborn Bloodspot Screening Programme**

involves a blood test that all newborn babies in Ireland have to screen for certain rare metabolic / genetic conditions. This screening test ensures that any baby who has one of these conditions is identified and treated as early as possible. This test is also referred to as the 'Heel Prick test', 'Guthrie test' or 'PKU test'.

### Echocardiogram (ECHO)

ECHO uses ultrasound to evaluate the heart muscle and valves.

### Electrocardiogram (ECG)

An ECG measures the electrical activity of the heart.

### Electroencephalogram (EEG)

An EEG measures the electrical impulses of the brain.



*Doctor listening to baby's heartbeat with a stethoscope*

### Eye tests

Eye tests will be performed to check for Retinopathy of Prematurity (ROP). ROP is a disorder of the retina of the eye which only usually affects babies who are born less than 32 weeks or with a very low birth weight.

ROP usually resolves of its own accord. Your baby's eyes will be checked routinely by the Ophthalmologist to monitor progress. If the ROP does not resolve, minor surgery will be required in the form of laser treatment. This laser treatment can be done under sedation in the Neonatal Unit. See 'Retinopathy of Prematurity' page 29.

Eye tests may also be performed for other reasons, e.g. if a baby has encephalopathy or other issues which increase the risk of eye problems.



*Doctor examining baby's eyes with an ophthalmoscope*

### Hearing screening

The HSE Universal Newborn Hearing Screening Programme is available nationwide for all babies to screen for hearing impairment or loss. A trained hearing screener will assess your baby's hearing before discharge home. If any impairment is detected, your baby will be referred to an Audiology (Hearing) Clinic for a full hearing assessment.

See HSE 'Newborn Hearing Screening Programme' at [www.hse.ie](http://www.hse.ie) for further information. In specific circumstances a targeted hearing test may be organised for your baby at 8 - 9 months of age.

### Lumbar Puncture (LP)

This is a procedure for taking a sample of cerebro-spinal fluid (CSF), the fluid that circulates around the spine and brain. A needle is passed gently into the lumbar region (at the base of the spine) taking a sample of fluid for testing. This is mainly used to check for meningitis.

### Magnetic Resonance Imaging (MRI)

MRI is a specialised scan to obtain greater detail of inside the body. It is commonly performed to examine a baby's brain. MRI scanners use strong magnetic fields to generate images without exposing your baby to radiation.

Your baby will be prepared for the MRI scan by the Neonatal Team. An MRI scan can last a minimum of 30 minutes but can take up to 1 hour or longer, depending on how settled your baby is.



*Preparing for an MRI Scan*

## Ultrasound

Ultrasound is used to scan various organs, including the brain (cranial), kidneys (renal), liver (hepatic) and intestine (bowel).



*Radiologist doing a cranial ultrasound scan (CrUSS) on a preterm baby*

## Urinalysis

A urinalysis is an analysis of urine. It involves checking the appearance and content of a sample of urine.

## Videofluoroscopy

A videofluoroscopy is an X-ray that is used to check if there is a problem in the mouth or throat during swallowing.

## Weight checks

Babies are weighed regularly in the Neonatal Unit, either inside their incubator or on a separate scale. Weight measurements are used to assess a baby's growth and hydration.

**Length** and **head circumference** measurements are also used to assess growth.

## X-rays

X-rays are images of internal structures, e.g. the heart, lungs, intestine (bowel) and bones.

**A plain film of the abdomen (PFA)** is a specific X-ray of the abdomen (tummy area).



*Radiographer taking an X-ray*



*Staff reviewing X-rays on a screen*

## Medicines

Babies in the Neonatal Unit often need medicines as part of their treatment. Most medicines are given in liquid form or through an IV line and are not painful.

### Some commonly prescribed medicines used for babies in the Neonatal Unit

- Antibiotics for infection.
- Agents for sedation and pain relief.
- Caffeine to help breathing and prevent a condition called apnoea, which is when a baby forgets to breath, see description on page 26.
- Diuretics to help control fluid levels in the body.
- Drugs to treat lung problems.
- Drugs to maintain blood pressure.
- Vitamin and iron supplements to meet increased needs for growth and development.

### Steroids

Steroids are powerful anti-inflammatory drugs, which may be used to manage conditions such as chronic lung disease.



*Pharmacist discussing medication with a Nurse*

### Vitamin K

Newborn babies are deficient in vitamin K therefore it is given to all newborns as a single injection shortly after birth. Vitamin K is necessary for normal blood clotting and to prevent bleeding.



*Nurse reviewing a baby's medicines*



*The best medicine*



*The best medicine*

## Chapter 4



**Getting to now and  
caring for your baby in  
the Neonatal Unit**

## Chapter 4 Getting to know and caring for your baby in the Neonatal Unit

There are many ways you can be involved and care for your baby while he is in the Neonatal Unit. These vary from comforting your baby to participating in care-giving activities. Your baby's Nurse will guide and prepare you for these opportunities. It is important that you too are ready to be involved and part of your baby's care.

This chapter will help you to get to know your baby by watching and observing his behaviour, helping you to understand his early development steps and knowing when he is ready for interaction. Please note some of the guidance is more focused on preterm babies.

### What your preterm baby may look like

Even though your baby may be small, he will have a distinctive appearance.

The first thing you may notice about your baby is how small and fragile he is. Missing time in the uterus (womb) means that he has missed out on some growing time.

Your baby's skin may be thin, wrinkled and red. It may look as if it is too big for his body. This is because your baby has yet to develop a layer of fat under his skin. As your baby gains weight, he will accumulate this fat, which will fill out his skin, making him appear more rounded and more like a full-term baby. Your baby's ears may look flat. As he matures and gains weight, his ears will assume their normal shape.

Your baby may appear hypotonic (floppy) because of the reduced muscle tone seen in preterm babies and so he may have a flat posture on his mattress. This is in contrast to a full-term baby who tends to adopt a more flexed (curled-up) position. See 'Supportive positioning for preterm babies' development' page 42.

Your baby's movements may be less well co-ordinated and may be jerky. You may find that your baby keeps his eyes closed and spends most of his time in a sleep-like state.

The smaller and more extremely preterm your baby is, the more these features may appear, but as your baby matures and grows, his appearance will become more like that of a full-term baby.



*Extreme preterm baby*



*Very preterm baby*



*Moderate preterm baby*

## Your preterm baby's early developmental progress

The chart below outlines your baby's early developmental progress during his stay in the Neonatal Unit and first few weeks at home. This will help you to understand your baby's developmental goals as he grows, from step 1 to step 6, and will help you to know when your baby is ready to interact with you.

Ideally your baby needs to develop each step before he progresses to the next step, e.g. your baby's physiological, motor and state of alertness (steps 1 - 3) need to be met before he is ready to actively socialise with you (step 4).



## Supportive positioning for preterm babies' development

How we position and move your baby while he is in the Neonatal Unit is important for the development of movement and to help your baby to feel secure.

Term babies have a **'flexed'** (curled-up) posture; while preterm babies tend to be less flexed and appear more floppy / hypotonic and weaker.

Preterm babies muscles are not as strong as full term babies'. They are weak. If your baby is not supported his arms and legs will tend to fall away from his body and his head to fall to one side. His movements may be jerky or shaky.



*Preterm baby with a flat posture before being nested*



*Baby with a flexed (curled-up) posture*

## Why is a flexed posture so important?

A flexed posture allows the preterm baby in the Neonatal Unit to activate the correct muscles to strengthen neurological connections and muscle development.

Developmentally supportive positioning mimics the positions a baby would be in if he were still in the uterus (womb), supported by amniotic fluid and the stretchy muscular walls of the womb. It helps preterm babies to adopt a flexed posture and to bring their arms and legs towards their body. This helps to develop more balanced muscle tone. It helps babies to discover / learn to comfort themselves as they can bring their hands and feet together. They can also learn to bring their hands to their face and mouth more easily, which helps promote sucking and oral skills.



*Preterm baby side-lying being supported in midline position*

Developmentally supportive positioning helps to limit problems caused by muscle weakness, tightness and prematurity.

At the start, especially if your baby is very preterm or unwell, he may spend a lot of time in one position. Once your baby settles, a variety of positions can be introduced.

## Nesting and containment

A nest provides boundaries for babies to push against and supports their position as they lie in an incubator. High boundaries help babies get their hands and feet towards a midline position. Without nests babies lie with their arms and legs unsupported and move around and waste valuable energy.

Babies can lie in **supine** (on their back), **side-lying** (on their side) or **prone** (on their tummy) in a nest. Babies can lie in **supine** (on their back), **side-lying** (on their side) or **prone** (on their tummy) in a nest.



*Baby lying in supine position*



*Baby in side-lying position being supported to bring hands to midline*



*Baby lying in prone position*

## Benefits of supported positions in the Neonatal Unit

- Promotes normal muscle development and movement patterns.
- Minimises head flattening known as 'Plagiocephaly', see 'Positional Plagiocephaly', page 104.
- Minimises musculo-skeletal problems such as neck / shoulder / hip tightness.
- Promotes self-comforting behaviours.
- Reduces stress and energy expenditure.
- Promotes easier breathing and blood circulation.
- Preserves energy levels as your baby is more comfortable and does not move around so much.

**Try to alternate the side to which your baby turns his head as well as the side on which he lies when side-lying. This helps your baby's muscles to develop equally on both sides and helps him avoid developing a preference for a particular side.**

In a supported nested position:

- Your baby's shoulders are rounded and relaxed.
- Your baby's hands are both to the middle and can easily come forward to his face and mouth.
- Your baby's legs are bent and his feet have boundaries.

## Important notes about prone positioning (lying on tummy and nesting)

- A prone position can support breathing but can **only** be used while your baby is monitored in the Neonatal Unit.
- Nests are **only** used while your baby is in the Neonatal Unit. **Do not** use nests at home for sleeping.
- When your baby is in a cot, we stop using nests as your baby must learn to sleep on his back.
- When your baby is at home, **do not** allow him to sleep in a prone position and **do not** use nests due to the risk of sudden infant death syndrome (cot death).

**Follow 'Safe Sleep' guidelines and lay your baby on his back on a flat mattress to sleep.** See 'Sleep and sleep safety' page 83.

## Understanding how your baby communicates with you

### How your preterm baby may behave

Babies, no matter how small, communicate. As you get to know your baby you will recognise his personality and his likes and dislikes. Allow yourself time to get used to your baby and his new environment.

### Interpreting your baby's movements and expressions

Babies communicate really well through their body language. Your baby's behaviour including his body movements and facial expressions are his voice.

You will get to know what he likes and what he is able for by watching his behaviour.

By observing your baby's behaviour you will know when he is ready to interact with you, when he wants to rest and how he comforts himself.

Your baby's signals may be subtle because of his small size, but they are still observable. It is important to watch for these signals and respond appropriately as guided in the next sections. This is key to your baby's development.

- Watch your baby's behaviour to learn how he communicates with you.
- Look at the changing expressions on your baby's face and the movement of his limbs; does he show signals that he wants to interact (i.e. 'Positive Approach' behaviours) or that he needs a rest (i.e. 'Time Out' signals), see next column and next page.

*"Babies, no matter how small, communicate."*

## Your baby's 'Positive Approach' behaviours

Babies display signals when they are ready for social interaction or to play with you. These are referred to as 'Positive Approach' behaviours.

Being aware of these will help you to support and enhance them, e.g. when your baby becomes alert on hearing your voice, this may be his signal indicating that he is ready for social interaction.

- To enhance this, first present a still face and quiet voice, then experiment with more expressions and vocal tones.
- As your baby matures, his alertness or attentiveness to a toy or picture may be another signal of readiness to interact with you.
- If your baby is happy, continue your interaction.
- If your baby shows signs that he needs a rest (see "Time-Out" signals' next page), decrease your interaction.

### 'Positive Approach' behaviours

#### *"I'm ready to interact with you"*

- I have a relaxed open facial expression.
- My breathing is regular and relaxed.
- My arms and legs are tucked close to my body.
- I appear comfortable.
- My arm and leg movements are smooth.
- My mouth is relaxed and maybe slightly open.
- I may make sucking movements.
- My eyes are open or may open in response to you.
- I calm when you talk.
- As I grow I will become quietly alert. I will be able to pay attention for longer periods and turn my head to follow your movements, face or sounds.



*Baby with an open face ready for interaction*



*Mum interacting with her baby in an incubator*

### Your baby's 'Time-Out' signals

Babies use coping strategies to protect themselves from over-stimulation. These signal that an interaction or activity is becoming too much for your baby or that he may be becoming distressed or uncomfortable and wants to take 'time-out' to rest or sleep.



*Baby signalling 'Time-Out' with hand over his face*

### 'Time-Out' signals

#### *"Let me rest now"*

- I avoid eye contact. I close my eyes or turn away or my eyes have a glazed expression.
- My breathing becomes irregular.
- I stretch and wriggle.
- My body becomes limp or stiffens, my arms and legs straighten.
- I put my hand over my face (palm turned outwards) with my fingers opened wide (finger splay).
- I frown, grimace, yawn or appear tense.
- I make hiccupping or grunting sounds.
- My mouth droops and falls open.
- I look tired or fall asleep.



*Baby signalling 'Time-Out' with active gaze aversion*



*Baby signalling 'Time-Out' with eyes glazed and mouth drooped open*



*Baby signalling 'Time-Out' with leg straightened and stiff*

### If you see 'Time-Out' signals

- Stop what you are doing and let your baby rest.
- Help to calm your baby, see 'Ways you can comfort your baby' page 48.
- If you must continue an activity, e.g. a nappy change, proceed more slowly and gently.

If your baby is fighting off 'over-stimulation', he can use up energy leaving him less able to engage in more social interaction with you. As your baby matures he will gradually learn to be less reactive and sensitive to stimuli or interactions and will be more alert and sociable.

**Remember that rest also has an important role in your baby's growth and development.**

### Ways your baby comforts himself

As your baby matures you will begin to notice how he can self-soothe or comfort himself. It is important for your baby to experience these self-comforting behaviours as they will give him a sense of control and independence.



*Baby self-comforting with hand-to-face and thumb reaching for mouth*

### Self-Comfort behaviours

#### "How I comfort myself"

- I bring my hand to my mouth or touch my face.
- I suck my hand or soother.
- I clasp my hands together or press one foot over the other.
- I press my feet against the bedding or cot (leg brace).
- I rest one hand over the other or tuck one hand under my head.
- I cover my ears or eyes.
- I move my body, lift or turn my head to get comfortable.
- I grab or hold onto something, e.g. my hat, bedding or tubes.
- I sleep quietly or am quietly awake and still.



*Baby self-comforting with hand-to-face*

## Interacting with your baby

- Watch for your baby's signals inviting you to interact and to see how he responds to each interaction, see 'Understanding how your baby communicates with you' page 44.
- Interactions include listening, responding, touch, talking, looking, comfort care measures and care-giving activities as outlined later in this chapter.
- Be guided by your baby, what he likes and what he does not like. Respect the signals he gives you.
- If an interaction is appropriate, it will cause your baby to seek it out and move towards it, he will enjoy it without becoming too tired or overwhelmed, i.e. he will display 'Positive Approach' behaviours, see page 44.
- If an interaction is inappropriate in its timing, quantity or intensity, it will cause your baby to defend against it, i.e. he will display 'Time-Out' signals, see page 45.

*“Be guided by your baby, what he likes and what he does not like.”*

- Pace things slowly. Preterm or unwell babies can be slow to respond so allow plenty of time to see how your baby responds, e.g. it can take up to 30 seconds for a preterm baby to respond.

*“Pace things slowly”*

- Introduce things one at a time.
- Your baby's senses may not be fully developed yet. Unlike healthy full-term babies, most preterm or unwell babies initially can only take in and respond to one stimuli or interaction at a time, e.g. either touch or sound (e.g. listening to your voice) or vision (e.g. looking at you) or movement (e.g. being picked up).
- Do not be discouraged if your baby is not able to cope with things such as holding and talking, or moving and touching, or listening and looking at you, all at the same time. It is simply that he cannot process all the sensory information he is getting together just yet. See 'Sensory development' page 99.

- Ask your baby's Nurse or Therapist for guidance on how much interaction is appropriate for your baby. This may vary depending on his age, and it can change depending on the time of day and how he is at any given time.
- For example, in the very early days your baby may not like to be touched or picked up as this may be too stressful for him, but he may enjoy listening to your voice or looking at your face. This means that he needs more time to feel well enough to be picked up.
- When your baby is first ready for contact he may only like his hand or foot to be held.
- If your baby shows signs of discomfort or that he needs a rest (i.e. 'Time-Out' signals), stop what you are doing and give him time to recover and rest. Ask your baby's Nurse to guide you.



*Mum and baby enjoying quiet time together*



*Mum holding her baby's foot while he rests on her lap*

### When interacting with your baby also remember the following

- Try to ensure a quiet environment so that all your baby has to focus on is your interaction.
- Avoid bright lights and loud noises.
- Ensure your hands are clean before touching your baby, see 'Infection control measures' page 22.
- Make sure that your hands are warm.
- Use a gentle approach.
- Greet and talk to your baby to let him know that you are there and prepare him for the interaction.
- If your baby is in an incubator, be gentle when opening and closing the incubator doors.
- Watch your baby and respond to his signals.
- **Do not use light feathery stroking movements as babies may find this ticklish and irritating.**

#### Did you know?

**The Neonatal Individualised Developmental Care and Assessment Programme (NIDCAP)** model of care was developed by Heideleise Als and colleagues in the USA.

The NIDCAP philosophy and approach has helped us understand the behaviour of preterm babies knowing when they need time to rest and play as highlighted above. This has changed the way fragile babies are cared for especially in terms of understanding their developmental needs. For more information see [www.nidcap.org](http://www.nidcap.org).



Mum interacting with her baby in an open incubator

### Ways you can comfort your baby

Babies in the Neonatal Unit may undergo many medical procedures. You can balance these experiences with comfort care as outlined below.

- Your Soothing Voice
- Eye-Contact
- Gentle Touch
- Comfort Hold (Containment Hold)
- Kangaroo Care
- Positive Oral (mouth) Experiences

Sometimes it may not be appropriate to provide certain measures, e.g. Kangaroo Care may not be possible if your baby is not able to be held, but you can provide comfort with an alternative measure instead.

#### Benefits of Comfort Care measures

- Helps bonding, attachment and positive interaction between you and your baby.
- Helps steady your baby's heart-beat, breathing and body temperature.
- Helps promote your baby's sleep, which is important for his brain development.
- Helps conserve your baby's energy and improve his growth and feeding.
- Helps stimulate and increase breast milk supply, preparing mothers for breastfeeding.
- Helps build your sense of wellbeing and self-confidence as a parent.
- Provides a pleasant contrast to interactions for medical procedures.

Remember to watch your baby to learn from him what comfort measure to use and when it is appropriate, safe and pleasurable for him, see 'Interacting with your baby' page 47 for further information and ask your baby's Nurse to guide you.

#### Did you know?

For pain relief babies may be offered tastes of a sucrose (sugar) solution to suck.

## Your Soothing Voice

When your baby was inside you, he got to know your voice. Sometimes this can be all that your baby needs to feel comfort and reassurance. Speak to and reassure your baby in a soft, gentle and soothing voice. Reading a story to your baby can also be comforting.

## Eye-Contact

Face your baby and look into his eyes when he is awake. Eye-Contact requires effort for your baby and so he may only be able to do this for a short time.



*Eye-contact between parents and their baby*

## Gentle Touch

Gentle Touch is a way of communicating love and reassurance to your baby and is a very rewarding experience for you both.

- Your first touch may be to put your finger near your baby's hand – he may just like to feel your touch or he may hold your finger.

**Remember do not use light feathery stroking movements as babies may find this ticklish and irritating.**



*Mum engaging in Gentle Touch with her baby*



*Baby holds his Mum's finger*



*Baby holds his Dad's finger*

### Comfort Hold (Containment Hold)

Comfort Hold can help your baby to feel secure and relaxed. A gentle, still handhold can be very soothing.

#### How to do Comfort Hold

- Cup your warm hand around your baby's head and / or feet.
- If your baby is in a prone position (lying on his tummy), gently rest your other hand around your baby's shoulders; or if he is supine (lying on his back) gently cross his arms over his chest. Alternatively, wrap a sheet around his arms and shoulders.
- It helps to breathe slowly and deeply with a feeling of relaxation in your hands.
- Continue to Comfort Hold until your baby feels settled.
- To finish Comfort Hold, slowly remove one hand, and if your baby remains settled, remove your other hand.

#### When is a good time to Comfort Hold my baby?

- During and after care-giving and medical or nursing procedures, e.g. taking a blood test.
- For pain relief.
- When your baby looks unsettled.



*Mum doing Comfort Hold with her baby*

### Kangaroo Care (KC)

KC involves holding your baby 'skin-to-skin', in a 'kangaroo style' on your chest. Your baby can rest and sleep or feed in this position. Stable babies on respiratory support (e.g. ventilator / CPAP) can also enjoy KC.

KC is generally not initiated just after feeds, as babies may be uncomfortable being moved on a full stomach. However your baby can generally be fed during KC, when he is already in a KC position.

Ask your baby's Nurse when is a good time for KC.



*Nurse supporting Mum doing Kangaroo Care with her baby*



*Nurse assists Mum to do Kangaroo Care with her baby*

### How to do Kangaroo Care (KC)

- Wear a light comfortable front opening top, e.g. a pyjama top or shirt. When your baby is stable, he can be tucked inside your top.
- Keep your baby warm by using a soft blanket and a hat if needed.
- Cup one hand under your baby's head and place your other hand around his hips. Gently lift your baby onto your chest, rest his head against your breastbone and support his back and bottom with your hands. If your baby is in a nest in an incubator, you can lift him out on his nest.
- While you are becoming comfortable with KC, your partner or your baby's Nurse may help to position your baby on your chest.
- Alternate the side to which you position your baby's head each time you do KC to help your baby's muscles develop equally on both sides.
- You can do KC with your baby at home too.

*“Kangaroo Care helps bonding, attachment and positive interaction between you and your baby”*



*Dad enjoying Kangaroo Care with his baby receiving respiratory support*

### Positive oral (mouth) experiences

Preterm babies may undergo many medical procedures in the Neonatal Unit that can cause unpleasant sensations around their face and mouth, e.g. intubation, ventilation, suctioning and tube-feeding. As a result your baby may learn that the mouth is not a nice place. This can be a particular issue for babies who are not able to feed by mouth (orally) and so miss out on the pleasure that this can provide.

To help protect against this and promote the development of your baby's oral skills and feeding, offer positive oral experiences when he is able to tolerate handling and touch to his face, see suggestions below.

### Positive oral (mouth) experiences to help develop your baby's oral skills and feeding

- Encourage Non-Nutritive Sucking (NNS) – see ‘Non-Nutritive Sucking’ next page.
- For Mums, hold your baby skin-to-skin and offer your breast to lick and suck. This provides positive oral experiences in a lovely natural way. If your baby is unable to safely suck and swallow offer your ‘empty’ breast, i.e. after you have expressed milk, so that there is no milk for your baby to attempt to suck.
- Offer gentle mouth-care, see ‘Mouth-care’ page 54.
- Expose your baby to pleasurable smells and tastes, e.g. tastes of his milk feeds during NNS, and avoid unpleasant smells and tastes.
- Ensure that tube-feeds are comfortable, see ‘Tube-feeding’ page 65.
- Ensure that any oral feeds (by mouth) that your baby may take are pleasurable and do not cause him any distress, see ‘Oral feeding’ page 66.

### Did you know?

For Mums, holding your baby close to your breast will also help to stimulate your milk supply.

### Non-Nutritive Sucking (NNS)

Sucking is a natural behaviour that babies enjoy. NNS includes sucking a mother's empty breast, a soother, a finger or a cotton bud swab rather than when your baby is sucking to feed.

NNS has a special role in the care of babies who are unable to feed by mouth, for example:

- NNS helps promote positive oral (mouth) experiences that help develop your baby's oral and feeding skills, see 'Positive oral experiences' previous page.
- NNS during tube – feeds helps your baby to associate pleasurable sucking with feeding.
- NNS helps stimulate digestion.
- NNS can be comforting for your baby during medical procedures.

#### Suggested ways to provide NNS for your baby

- Support your baby to bring his hands to his mouth and suck his own fingers.
- For Mums, offer your empty breast to suck.
- Offer an appropriate size soother to suck. Soothers have a useful role in NNS even though they may not be recommended when your baby is learning to breastfeed.

Your baby may like to taste some milk during NNS, e.g. small tastes of expressed milk during skin-to-skin at your breast or a cotton bud swab or his soother dipped in his milk feed. Ask your baby's Nurse for guidance.

*“NNS and providing your baby with the taste of his milk feeds during tube-feeds can help him to associate this pleasurable sucking and taste with feeding”*



*Preterm baby enjoying Non-Nutritive Sucking with a soother in Neonatal Unit*



*Mum tube-feeding her preterm baby as he enjoys Non-Nutritive Sucking with a soother*



*Preterm baby enjoying Non-Nutritive Sucking with a soother while enjoying Comfort Hold with his Nurse*



*Preterm baby enjoys Non-Nutritive Sucking with his tiny soother while experiencing Comfort Hold and Gentle Touch with his Nurse*

**Note, NNS is not an indication of readiness for oral feeds (feeds by mouth). Your baby is only ready for oral feeds when he is mature and well enough to safely co-ordinate sucking, swallowing and breathing, see 'Oral feeding' page 66.**

## Care-giving activities you can do for your baby

You are encouraged to be involved with care-giving activities for your baby, e.g.

- Mouth-care
- Nappy changing
- Bathing
- Weight checks
- Feeding

Participating in care-giving activities for your baby may seem awkward if your baby is very small or there are wires and tubes surrounding him, but do not be discouraged. Start by watching your baby's Nurse do them. You can get involved when you feel comfortable to do so. Even if only observing, you can participate by offering comfort measures, e.g. your Soothing Voice, Gentle Touch or Comfort Hold, see 'Ways you can comfort your baby' page 48.

With practice you will become more comfortable doing these activities yourself. Your baby's Nurse will guide you throughout. Before starting any activity, check with your baby's Nurse as your baby's individual needs may differ.

**Remember, some very preterm or unwell babies may find some care-giving activities tiring or upsetting. Take your time, watch your baby throughout and respond to his signals. See next column "Watch your baby and respond to his signals in the next column. Ask your baby's Nurse to guide you.**

*"Remember to watch your baby and respond to his signals"*

## Watch your baby and respond to his signals

- Ensure your baby is awake and ready for each activity.
- Watch your baby throughout to ensure that he remains comfortable and that you respond appropriately to his signals, see 'Understanding how your baby communicates with you' page 44.
- If your baby shows signs that an activity is becoming too much for him (see 'Time-Out' signals' page 45), pause what you are doing and offer him reassurance and comfort, see 'Ways you can comfort your baby' page 48.
- Only continue the activity when your baby signals that he is ready, see 'Positive Approach' behaviours page 44.
- Do not continue if your baby does not signal that he is ready.
- See 'Interacting with your baby' page 47 for further information.



Mum caring for her baby in the SCBU

## Mouth-care

One of the first care-giving activities you may take part in is cleaning your baby's mouth. Choose a time when your baby is alert and appears comfortable, perhaps during a tube-feed. Sometimes expressed breast milk is used because of its antibacterial properties that help to clean your baby's mouth. If breast milk is not available, use sterile water.

### Cleaning your baby's mouth

- You need a cotton bud swab and tube available in the Neonatal Unit. In the early days if you only have a very small volume of breast milk (colostrum), do not use a cotton bud as this may soak up too much of your precious milk. Use a gloved finger instead, or use sterile water with a cotton bud.
- Pour a little expressed breast milk or sterile water into the tube and dip the swab or your finger in it.
- Use the swab or your finger to clean your baby's mouth with a gentle 'press and scoop' action. This is more pleasant for your baby than a 'wipe and stroke' action. Ask your baby's Nurse to show you.
- Be very gentle, the mouth is a sensitive area.

### Did you know?

Breast milk contains antimicrobial properties that help to clean your baby's mouth.



*Mum doing mouth-care for her baby*

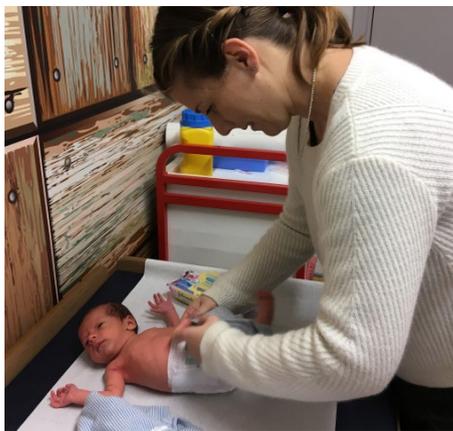
## Nappy changing

Changing your baby's nappy is one of the everyday care giving activities for your baby that you can be involved with. Your baby's Nurse can show you how.

It is not always necessary to change your baby's nappy before feeds. If your baby is awake and hungry, he may become impatient if his feed is delayed in order to do the nappy change. As a result he may not be relaxed during the feed that follows. If so, let your baby feed first.



*Mum doing nappy change for her baby in an incubator*



*Mum doing nappy change for her baby*

## Bathing

Bath-time is another opportunity to interact with your baby. Check with your baby's Nurse to know when might be a good time.

Bathing classes are provided, ask your Nurse for details.

### Bathing your baby when he is in an incubator

- Your baby may be given a little 'bed bath' or a 'top and tail'.
- Your baby's Nurse can show you how to gently clean your baby's face, cleaning each eye separately, his ears, neck, body, arms, legs and all the creases.

### Bathing your baby when he is in a cot

Your baby's Nurse can show you how to bathe your baby in water.

- Fill the bath with enough warm water to cover your baby's tummy and allow him to float.
- Use your elbow to test the temperature of the water. It should feel warm, rather than lukewarm or hot.
- Tuck in your baby's arms and legs and ease your baby into the bath by letting his feet touch the end of the bath first.
- To help your baby feel more secure during the bath, allow him to touch the end of the bath when he stretches out his legs.
- You may also wrap your baby in a light sheet to help him to feel contained at bath-time. Ask your baby's Nurse if this is appropriate for your baby.
- **Support your baby at all times.**
- You may like to use your own towels, sponge and face cloth.
- You may also like to take photos or a little video recording of your baby's first bath.

To protect the natural oils in your baby's skin, it is usually enough to bath him once a week.



*Mum bathing her preterm baby with the assistance of his Nurse*



*Mum bathing her preterm baby*



*Preterm baby enjoying her bath*

## Weight checks

Weighing your baby is another opportunity to be involved in caring for your baby. Your baby's Nurse can advise you.

### Weighing your baby

- Wrap your baby in a blanket to help to keep him warm and comfortable while you lift and place him on the weighing scales. The weight of the blanket will need to be accounted for.
- It may help your baby to relax by placing him on his side.



*Mum weighing her baby in the Neonatal Unit*



*Parents assisting with their baby's weight check*

## Feeding

Feeding is a special time for you to be with your baby. Even if your baby is not ready for oral feeds (by mouth) and is fed via a feeding tube, try to co-ordinate your visits so that you can be involved, see Chapter 5 'Feeding your baby in the Neonatal Unit' page 58 and 'Positive oral (mouth) experiences', page 51.

Providing your breast milk is one of the most valuable ways you can care for your baby. Your breast milk is unique and precious and provides special benefits for your baby - nothing can replicate it. We hope you will consider doing whatever you can to provide your milk for your baby. See 'The value of breast milk' page 59.

*"Providing breast milk for your baby is one of the most valuable ways you can care for your baby"*



*Baby boy ex 26 weeks GA and 580 grams now enjoying breastfeeding with his Mum*

Spending time with your baby and doing cares for him helps you to really get to know him and what he likes. You may also notice when something is not right. If you observe that your baby does not seem himself, let his Nurse or Doctor know - your instinct as a parent is valuable.

## Chapter 5



### Feeding your baby in the Neonatal Unit

## Chapter 5 Feeding your baby in the Neonatal Unit

Nutrition is important for your baby's growth and development. As a parent of a baby in the Neonatal Unit, you may wonder what, how and when your baby will feed.

This chapter sets out to answer these questions and provide guidance on the many ways you can be involved in the nutritional care of your baby in the Neonatal Unit, from providing your precious breast milk, to participating in tube-feeding and offering oral feeds (feeds by mouth) when your baby is ready. It also provides information about monitoring your baby's nutrition and growth.

### Nutrition for your baby

Nutrition is essential for all babies. Nutrition supports your baby's growth and development and is important for both his short-term and long-term health.

#### *Did you know?*

Nutritional needs during infancy are greater than at any other stage in life.

For preterm babies, nutritional needs are even greater than for babies born at term. This is because preterm babies need to make up for the accumulation of nutrients that occurs during the last trimester of pregnancy that they missed out on.

Our aim is to provide nutrition for your baby as soon as possible after he is born, ideally with feeds of your breast milk, i.e. maternal milk.

If your baby is able to feed orally (by mouth), this will be offered, see 'Oral-feeding' page 66.

If your baby is not able to feed orally, his feeds will be provided using a feeding-tube, see 'Tube-feeding' page 65.

### Intravenous fluids and Parenteral Nutrition (PN)

If your baby takes a while to establish milk feeds, e.g. due to prematurity or illness, he may be provided with an alternative source of fluid and nutrition intravenously (IV), i.e. directly into his blood, to support him until he is able for enough milk feeds to meet his needs.

Intravenous (IV) fluids generally provide sugar (carbohydrate) and / or salts (electrolytes); but for longer-term use, IV fluids can provide more complete nutrition, e.g. protein (amino acids), fat (lipid), vitamins and minerals can be added in addition to the sugar and salts. This more complete IV nutrition is referred to as **Parenteral Nutrition (PN)** and is used for babies who are unable for adequate milk feeds for an extended time.



*Preterm baby receiving parenteral nutrition (the red bag) via an IV line while enjoying Kangaroo Care with his mum*

## Terms related to nutrition and feeding

- **Parenteral nutrition (PN)** refers to nutrition provided intravenously (IV), i.e. directly into the blood.  
**Total Parenteral Nutrition (TPN)** is when the total nutrition is provided from PN.
- **Enteral nutrition (EN) / enteral feeds** refers to nutrition / feeds provided directly into the gastro-intestinal tract (GIT), e.g. breastfeeds, bottle-feeds or tube-feeds. Sometimes the term is used to refer to tube-feeds only.
- **Oral feeds** refer to feeds that are provided into the mouth, e.g. breastfeeds or bottle-feeds. Oral feeds also include cup feeds and spoon feeds.
- **Tube-feeds** refer to feeds that are provided via a feeding tube, generally into the stomach, i.e. intra-gastric. If the tube passes through a nostril in the nose it is referred to as a **naso-gastric (NG) tube (NGT)**. If the tube passes through the mouth it is referred to as an **oro-gastric (OG) tube (OGT)**.  
Tube-feeding may also be referred to as ‘gavage’ feeding.
- **Bolus feeds** refer to individual feeds that are given at intervals.
- **Continuous feeds** refer to feeds that are given as a continuous infusion over an extended period of time.  
Continuous feeds are infused via a feeding tube using an infusion pump to control the rate of flow.
- **Expressed breast milk (EBM) / expressed milk** refers to breast milk that has been expressed (pumped), either by hand or pump.  
Expressed milk may be either **maternal milk** from the baby’s own mother or **donor milk** from another mother.

*“Your breast milk is considered personalised medicine for your baby”*

## Feed of choice - breast milk

### The value of breast milk

Breast milk is the natural feed of choice for babies. Breast milk is particularly valuable for babies born preterm or with a low birth weight or who are unwell.

*“Breast milk is particularly valuable for babies born preterm or with a low birth weight or who are unwell”*

### The value of your breast milk

- Your breast milk is unique and is produced to meet the specific needs of your baby.
- Your breast milk is the perfect source of nutrition for your baby. It also helps protect him against infection and disease, aids his tolerance of feeds and promotes his brain development and long-term health.
- Breast milk contains many beneficial ingredients in addition to nutrients. These ingredients are so valuable that your breast milk is considered personalised medicine for your baby.
- Providing breast milk is something special and unique that only you as a mother can do for your baby. Providing milk also benefits your health.



Container for storing breast milk with a snap lid

**Did you know?**

You produce protective antibodies to infections that may be in your environment and these antibodies pass into your breast milk. When your baby receives your milk he gains this extra protection. This process is enhanced by skin-to-skin contact between you and your baby.

Every drop of your breast milk is valuable. Ideally you will provide your milk for all your baby's feeds and will continue to do so for as long as possible; but even if you can only provide milk for some feeds, this will benefit your baby.

*“Every drop of your breast milk is valuable”*

The first priority is to provide breast milk for your baby's initial feeds and then while feeding is established; but to extend the advantage, your baby needs you to provide him with your milk throughout his hospital stay and ultimately to continue to breastfeed him at home.

*“Ideally you will provide breast milk for all your baby's feeds and will continue to do so for as long as possible”*

Staff are available to assist you. If you have concerns or difficulties, ask for support from your Midwife or your baby's Nurse. You may also be referred to a Lactation / Breastfeeding Support Specialist for further assistance.

**Remember, providing breast milk is not solely the responsibility of mothers. Partners, family, friends and staff also play a valuable role providing support.**

**Did you know?**

There are few reasons why a mother cannot provide breast milk for her baby. Some mothers may not be able to provide a full supply, but it is still of value to maximise whatever milk you can provide.

**Medications**

Most medications that mothers take are acceptable when providing breast milk, or if not, a safe alternative is usually available. If you are taking any medication or drugs, prescribed or otherwise, please let staff looking after your baby know.



*Mum being supported to hand express breast milk for her baby*

**Did you know?**

**Probiotics** are beneficial microbes that play an important role in intestinal (gut) health. Breast milk supports the growth of these beneficial microbes in your baby's intestine.

## Colostrum

Colostrum is the first milk that you produce during the first couple of days after your baby is born. It is particularly rich in beneficial ingredients that help your baby to fight infections and promote the health of his intestine (gut).

Colostrum is produced in small amounts but each drop is precious and may be provided directly into your baby's mouth rather than through a feeding tube.

Colostrum is referred to as 'liquid gold' and is the preferred first milk for your baby.

*“Colostrum is referred to as ‘liquid gold’ and is the preferred first milk for your baby”*



*Liquid gold – drawing colostrum into a syringe to give to a baby*



*Preterm baby girl receiving drops of mum's precious colostrum directly into her mouth*

## Expressing breast milk

If your baby is not able to breastfeed at your breast, expressing (pumping) your milk allows him to receive it through a feeding tube instead. Staff are available to guide you – please ask. Milk is produced in response to demand. Expressing your milk effectively and frequently right from the start optimises your supply.

**Remember**, ensure your hands are clean before expressing and handle your breast milk safely.

### Expressing milk – Frequency

- **Express your milk as soon as possible after your baby is born, ideally within the first hour. If this is not possible, express as soon as you can and avoid any delays.**
- The sooner you start to express and the more frequently you express, the more milk you will produce.
- To help **stimulate** your milk supply, you need to **express your milk every 2 - 3 hours or so, including at least once during the night, i.e. 8 - 10 times each day** until your supply is established. This is especially important over the first couple of weeks or so in order to optimise your long-term supply.
- To help **maintain** your milk supply once it is established, continue to **express your milk every 3 - 4 hours or so, including at least once during the night, i.e. 6 - 8 times each day.**
- Mothers produce just a small amount of milk to start with but this early milk, called colostrum, is hugely valuable and ideally will be provided for your baby as soon as possible.
- Over time with frequent effective expressing, the amount of milk you produce gradually increases from drops in the early days to a full milk supply over the first couple of weeks.

- Generally a **'full milk supply'** is considered to be the production of **750 – 1000 ml** or more daily. If you do not express 750 ml or more by about day 10, ask staff for guidance. Even if your baby does not require this volume for feeds now, it will help to ensure an adequate supply when he needs bigger volumes later. Any surplus milk that you produce can be stored/frozen for later use, see 'Storing expressed breast milk' page 64.
- You may find it useful to keep a diary to record when you express and the volume of milk you produce each time so that you can note if there are any issues.

#### **Did you know?**

The volume of milk that mothers produce can vary from one breast to the other, from one feed or expressing session to the next, and from one mother to another.

The composition of breast milk can also vary and change over time.

The breast milk of mothers of preterm babies tends to be richer in some ingredients during the early weeks post-delivery – nature's way to help provide for preterm babies' increased needs.

#### **Expressing milk – Method**

- Your milk supply is optimised through your senses, e.g. sight, hearing, smell and touch, therefore try to include some skin-to-skin contact with your baby before you express (see 'Kangaroo Care' page 50) and to express close to him if you can.
- Most Neonatal Units also have separate areas where you can express if this is more convenient.
- If you are not with your baby when you express, try to have something that reminds you of him instead, e.g. a photo or a piece of his clothing or a blanket with his scent.
- **In the first couple of days** when you produce small volumes of milk (colostrum), you may find it best to **hand-express**. Hand-expressing can be easier for collecting drops of milk directly into small containers.



*Mum hand expressing milk and collecting drops of milk into a small container*

- **After the first couple of days** when you start to produce more milk, it is generally preferable to use an **electric breast pump**.
- **For mothers of preterm babies or for longer term expressing, we recommend using a high quality double electric breast pump.** A high quality pump is considered the most effective for stimulating and maintaining your milk supply; and double pumping (i.e. expressing milk from both breasts at the same time) can reduce the time spent expressing. Some breast pumps also have a special 'preterm cycle' to suit mothers who are expressing for preterm babies.
- Most Neonatal Units have breast pumps available for your use when you visit. You will also need to organise a suitable pump, expressing kits and containers for collecting milk for use when you are not at the hospital. Ask staff for guidance.
- You also need to ensure that you have facilities to sterilise the re-useable expressing kits and containers before each use.
- Ensure that the funnel (flange) on the expressing kit that you use with the breast pump is comfortable and the right size for you. Funnels are available in a range of sizes.

#### **Breast pump discounts**

Some suppliers offer a discount on the cost of renting or purchasing breast pumps for use by mothers of babies who are preterm or unwell if you ask.

- **Massage your breasts with your hands before and during expressing** to help your milk flow, this is referred to as **'hands-on pumping'**. Placing something warm on your breasts may also help.
- Continue to express until all your milk has been collected, i.e. that each breast is 'empty' of milk. This is important to maintain your milk supply as 'empty' breasts stimulate milk production.
- The composition of your milk can change over an expressing session, e.g. the fat content of your milk tends to increase. Continuing to express all your milk until your breasts feel 'empty', also helps to ensure that the composition of your milk is optimised.
- Collect milk into **sterile** containers. If you fill more than one container at a single expressing session, try to mix the milk so that each container contains milk from throughout the session.
- Mark each container with your baby's name and hospital number (use printed labels from the Neonatal Unit if available); as well as the date and time that the milk was expressed.

**'Power Pumping'** can be an effective strategy to stimulate your milk supply. Power pumping involves **regular cycles of expressing and rest while massaging your breasts throughout**.

If your supply is low, it can help to power pump for about 1 hour daily for a few days, e.g. **Express** for 20 minutes / **Rest** for 10 minutes / **Express** for 10 minutes / **Rest** for 10 minutes / **Express** for 10 minutes, etc.

#### *Did you know?*

It is important for you to look after yourself when you are providing milk for your baby. This includes drinking adequate fluids (to satisfy your thirst) and eating regular meals.

As a mother, a poor diet does not affect the quality of your milk, but it can result in lack of energy and difficulty coping. Stress, smoking and alcohol can have a negative effect on your milk supply. Use strategies to minimise stress as best you can, see 'Coping with your baby in the Neonatal Unit' page [8](#).



*Mum ready to express milk with a double pump for her baby in the Neonatal Unit*



*Mum expressing milk using a double pump beside her baby in the Neonatal Unit*

**It can require a lot of effort to express your milk but please do not be discouraged. Your breast milk is very valuable for your baby. Staff are available to help and support you – please ask.**

### Using expressed breast milk

- Fresh milk is best for your baby and so it is ideal if he can receive it as soon as possible after it is expressed.
- If you express your milk away from your baby, try to get it to him as soon as possible. This can be an important job for partners to do.
- If your milk cannot be used when it is freshly expressed, store it safely for later use, see 'Storing expressed breast milk' next column.
- When using milk, the general preference is to use freshly expressed milk before refrigerated milk; and refrigerated milk before frozen milk. Also to use stored milk in the order that it was expressed, i.e. use the oldest milk first. This is particularly beneficial if you have stored colostrum or milk from the early weeks after your baby was born, as this early milk is especially rich in beneficial ingredients.
- Breast milk comprises of different components. As a result, milk can separate on standing with the fat rich milk rising to the top. To help overcome this, mix your milk to incorporate all components before giving it to your baby. Mixing is also important if feeds contain additives that may separate on standing, e.g. fortifier powder, see 'Breast milk fortifier / human milk fortifier', opposite column.



*Dad bringing expressed milk to his baby in the Neonatal Unit*

### Storing expressed breast milk

If your baby cannot receive your milk immediately after it is expressed, store it safely according to neonatal guidelines and note the following:

- Store milk in sterile containers.
- Refrigerate milk for short-term use, or freeze it for longer-term use, as soon as possible after expressing.
- If you express milk at home, keep it cold during transport to the Neonatal Unit, e.g. in an insulated cooler bag with frozen gel/ice-packs. Wrapping the containers in foil can help to keep the milk cold if the travel time is long.



*Containers of expressed milk wrapped in foil and in an insulated cooler bag with frozen gel/ice packs to keep it cold*

### Donating surplus breast milk

If you produce more breast milk than your baby needs, you may donate it to the Human Milk Bank so that it can be pasteurised and provided for other babies. Ask staff for details.

### Breast milk fortifier (BMF) / Human milk fortifier (HMF)

Fortifier may be referred to as either 'Human Milk Fortifier' (HMF) or 'Breast Milk Fortifier' (BMF) and is a supplement containing energy, protein, vitamins and minerals that may be added to breast milk for preterm babies to help to provide for their increased nutritional needs. This will be advised according to your baby's needs by staff looking after him.

**Did you know?**

The HSE has a website dedicated to supporting breastfeeding and the use of breast milk: [www.breastfeeding.ie](http://www.breastfeeding.ie). Here you can also download a booklet '**Breastfeeding and expressing for your premature or sick baby**' which provides lots of useful guidance; and view a video: '**How to hand express breast milk**'.

**Alternatives if your breast milk is not available: Formula milk and Donor milk**

If you are unable to provide breast milk for some or all of your baby's feeds, staff will provide guidance on alternatives.

- If your baby was born preterm, formula milk with increased nutrient levels that is specially designed for preterm babies may be used.
- Formula milk is usually made from cow's milk, which has been modified to make it suitable for babies. It cannot replicate breast milk and may not always be as well tolerated by some very preterm or unwell babies. For this reason donor breast milk may be considered as a temporary alternative for some babies.
- Donor breast milk is provided by other mothers and is pasteurised before it is given to babies. This treatment reduces some of the beneficial components of the milk. Donor breast milk allows your baby to avoid formula milk temporarily but it is not the same as a mother's own breast milk.
- Your breast milk remains the feed of choice for your baby whenever it is available.

*"Your breast milk remains the feed of choice for your baby whenever it is available"*

**Tube-feeding**

Some babies may not be mature or well enough to feed orally or they may not be able to safely swallow feeds even though they may appear alert and look to feed. If your baby is not able to feed orally for some or all of his feeds, he will be fed instead through a feeding tube.

- To do this, a soft narrow feeding tube is gently passed into your baby's stomach (intra-gastric); either through his nose (naso-gastric) or mouth (oro-gastric).
- The position of the tube is checked before feeds by drawing up (aspirating) some of the stomach contents to test that it is acidic (normal).
- The feeding tube can be used to give feeds, fluids and medications.



*Baby with a naso-gastric feeding tube*

When starting feeds, the initial volume may be very small, but this increases step-wise over time until your baby can tolerate 'full feeds'.

'**Full feeds**' is the volume of feeds that meets your baby's fluid and nutritional needs. The volume of 'full feeds' will be adjusted according to your baby's tolerance and growth.

## Caring for your baby during tube-feeds

There is a lot you can do for your baby during tube feeds to provide comfort and help his feeding skills.

- If appropriate, help your baby to be aware that it is feeding time by arousing him gently before feeds.
- Offer positive oral experiences including Non-Nutritive Sucking (NNS), see 'Positive oral experiences' page 52.
- If your baby is stable enough, he may like to be held during feeds. To do so, get in position by sitting comfortably with your back supported and hold your baby in a supported and slightly elevated position, e.g. against your chest, in the crook of your arm or on a pillow on your lap with your knees bent. See 'Positioning' next page. Your baby may also like skin-to-skin contact, see 'Kangaroo Care' page 50.
- If it is not possible to hold your baby during feeds, you can offer alternative comforts such as your Soothing Voice, Gentle Touch or Comfort Hold, see 'Ways you can comfort your baby in the Neonatal Unit, page 48.



*Mum providing Kangaroo Care for her baby in a slightly elevated position during tube-feed as her baby enjoys Non-Nutritive Sucking on a soother*

Watch your baby during feeds. If you notice any signs of discomfort or distress, slow down the feed by lowering the feeding syringe or pause the feed to give your baby a rest. Sometimes it may be necessary stop the feed completely. See 'Watch your baby and respond to his signals' page 53 and ask his Nurse for guidance.

## Oral feeding (feeding by mouth)

When your baby is ready developmentally and medically for oral feeding (feeding by mouth), e.g. breastfeeding or bottle-feeding, it is time to offer opportunities to do so according to his readiness and demands. Your baby's Nurse can help guide you.

Some considerations for your baby at this time include

- Timing, oral skills and breathing
- Environment
- Positioning
- Feeding cues
- Pacing



*Mum breastfeeds her term baby*

### Timing, oral skills and breathing

Oral feeding is a skill that requires effort and can take time for your baby to master.

Your baby faces two main challenges when learning to feed orally:

- Moving his lips, tongue and jaw to suck properly; and
- Co-ordinating his breathing with swallowing.

Babies born at term tend to do this readily, but babies who are more preterm, small or unwell can take some time.

**The timing varies and depends more on your baby's developmental readiness and how well he is clinically, than on his age alone.**

For example, regardless of your baby's age, he must have a calm, stable breathing pattern and be able to suck properly and co-ordinate his breathing with swallowing, before he can safely be offered oral feeds.

Before this time your baby may be offered tastes of milk to provide positive oral experiences, see 'Positive oral (mouth) experiences' page 52. Breast milk may also be used for mouth care, see 'Mouth-care' page 54. In general however, preterm babies often only become ready to **start** oral feeds sometime from about 32 weeks gestation / corrected age; and many may be 34 - 35 weeks gestation / corrected age or later before they can manage 'full oral feeds'.

'**Full oral feeds**' is when your baby is able to drink enough milk feeds by mouth to meet his fluid and nutritional needs safely and efficiently. Remember, some babies may be older before they are ready to start or can take longer to manage full oral feeds. Also small changes can affect how well your baby feeds at any given time. Try not to be alarmed if your baby's feeding changes during these times; we expect it to improve when he recovers and is stronger. Take it slowly and allow your baby the time he needs.

*"Take it slowly and allow your baby the time he needs"*

### Environment

Your baby's environment during feeding is important. Over-stimulation, e.g. noise and over-handling, can affect his feeding ability. Try to feed your baby in as quiet, calm and soothing an environment as possible for both of you.

### Positioning

Your baby needs to be in an appropriate, comfortable and supported position during oral feeds so that he can focus his energy on feeding rather than on moving or holding his head and body up. Appropriate positioning will also help your baby to swallow comfortably at his own pace.

- Position your baby so that his entire body is comfortably supported, including his head, shoulders, hips and feet.
- Hold your baby close in a gently contained position. Ensure that his head is in the middle, in line with his body, facing forward, so that he does not have to turn his head to feed. His shoulders should be relaxed so that his arms can come to midline or together easily. His body should be long and his legs

relaxed, so that he can bring his feet together easily. Sometimes wrapping him in a light blanket can help.

- Do not hold your baby by the base of his head and ensure that he can move his head.
- Your baby may also like skin-to-skin contact during feeds, see 'Kangaroo Care' page 50.
- Keep your baby slightly elevated (upright) during feeds and avoid excessive handling or movement and any pressure on his tummy during and after feeds. This is particularly important for babies who are prone to spilling (bringing up) some of their feeds. For further information, see 'Gastro-Oesophageal Reflux / Regurgitation (Spilling)' page 93.
- An elevated 'side-lying' position may be useful to try if your baby feeds by bottle, in particular if he has mild difficulty with breathing when feeding, however it may not suit all babies, see photos page 68.



*Baby in slightly elevated side-lying position*

- Swap the side you hold your baby at alternate feeds to help him develop muscles equally on both sides.
- Position yourself so that you are comfortable and supported too, i.e. with your back and feet supported, and lean back rather than forward.



Nurse showing Dad how to feed his baby in a supported side-lying position



Mum feeding her baby breast milk in a supported side-lying position

- After feeding, support your baby in an upright position and allow him to pass air (wind) if present. For further information see 'Trapped air (wind)' pages 94.



Nurse helping Dad to support his baby to pass air (wind)

## Feeding cues

Be responsive to your baby's cues and help him to have a positive feeding experience.

- Watch your baby for signals of hunger and readiness to feed, e.g. that he is awake and alert, opens his mouth, pokes out his tongue, turns towards your breast or sucks or chews on his hand or blanket.
- Crying can be a late sign of hunger. Try to anticipate your baby's readiness to feed before he progresses to crying. It can be difficult for your baby to feed when crying. Also remember that babies cry for a variety of reasons, not every cry means that your baby is hungry.
- Watch your baby during feeds to ensure that he remains comfortable and continues to suck, swallow and breathe calmly and rhythmically.
- Also watch your baby for signals that he has had enough, e.g. he sucks more lightly or stops sucking; or for signals that oral feeding may be too much for him, see below.

*"Be responsive to your baby's cues"*

## Signals during feeds that feeding may be difficult or too much for your baby

- His breathing becomes rapid or he runs out of breath.
- He makes loud 'gulping' sounds.
- He has a poor latch (attachment) on your nipple or teat.
- Milk spills out of his mouth.
- He coughs or splutters as if the milk is 'going the wrong way'.
- His colour changes.
- His body tone changes.
- He squirms / wriggles or changes his position.
- He experiences sudden desaturation - noted if he is attached to an 'Oxygen Saturation' monitor.
- He falls asleep soon after a feed starts, i.e. he cannot continue or complete the feed.
- His eyes water

See also 'Watch your baby and respond to his signals' page 53.

If you observe any of these signals that feeding may be difficult or too much for your baby, pause the feed and seek advice.

#### Suggestions that might help.

- Check that your baby is comfortable and supported or if another position may suit better, see 'Positioning', page 67.
- Offer appropriate comfort to your baby if he seems distressed – see 'Ways you can comfort your baby' page 48.
- Check if your baby needs help to bring up wind, see 'Trapped air (wind)' page 94.
- Allow your baby to rest. It is possible that he is not able to continue to feed orally on this occasion. If so, the remainder of the feed can be given through a feeding tube if he appears able for this, e.g. if your baby stopped feeding because he is too tired to continue rather than because the feed volume is too much.

Do **not** continue to offer an oral feed if your baby shows signs that it is difficult or too much for him. To do so may be unsafe, e.g. milk may go the wrong way (aspirate), which can lead to breathing difficulties.

It may also be distressing and exhausting for your baby and can have a negative effect on his overall feeding, e.g. your baby may learn to associate feeding with something unpleasant; he may also waste energy, leaving him too tired to feed effectively at later feeds.

If your baby has difficulty feeding orally he may be referred to a Speech and Language Therapist / trained professional for assessment and guidance. He may also benefit from additional supports designed specifically for him following assessment of his feeding skills.

*“Do not continue to offer an oral feed if your baby shows signs that it is too much for him”*

#### Pacing

Oral feeding requires effort for babies; the more preterm, small or unwell your baby, the greater the effort tends to be. Your baby may also take longer to feed because the muscles in his mouth may not be so strong and so coordinating breathing with swallowing might be a little tricky to start with. As a result your baby may tire easily during feeds, especially when first learning to feed orally.

- Encourage your baby to pace himself and pause intermittently during feeds to give him the opportunity to rest if he is becoming tired and recover his energy to continue feeding.

#### Feeding time

Feeding should be a positive experience for your baby and you. Ask staff to guide you.

- Ensure that your baby remains alert, calm, relaxed and in an appropriate and fully supported position for the duration of each feed. Ensure you are comfortable and supported too. See 'Positioning' page 67.
- Offer your baby your breast to feed when he appears ready and able. Breastfeeding is natural but that does not mean it is instantly easy especially if your baby is preterm, small or unwell. Allow your baby to familiarise himself and take one step at a time. See 'Breastfeeding step-by-step' page 70. Let staff know if you need support.
- Ensure your baby has a good latch (attachment) during breastfeeds, that he maintains a good seal around your nipple with his lips and that his tongue remains below your nipple.
- If you offer bottle-feeds, check that the teat and flow rate suits your baby, i.e. that it is neither too fast causing him to gulp, nor too slow causing him to suck excessively. There are different teats that may be used. Sometimes a teat with a particular flow rate may help your baby to feed more effectively. During feeds, make sure that your baby maintains a good seal around the teat with his lips and that the teat is always full of milk.

It may help to remove the teat from time to time during feeds – this helps stop the teat from collapsing and causing your baby to swallow air. Also ensure that your baby's tongue remains below the teat.

- When bottle-feeding, ensure that any air bubbles that may be in the feed after preparation have disappeared (settled).

**Remember to watch and listen that your baby sucks, swallows and breathes calmly and rhythmically during feeds; observe his feeding cues; and allow him to pace himself, see previous pages.**

### Breastfeeding Step-by-Step

- There are different positions you can use to hold your baby during breastfeeds. Choose one that feels comfortable and suits your baby and you best. Sometimes the 'cross cradle' position or 'rugby hold' is preferred by babies who are preterm, small or unwell – see photos opposite.
- Keep your baby's body close, with his head and body in a line and facing yours, so that he does not have to stretch or twist his head to feed.
- Position your baby so that his upper lip and nose are near your nipple, and his chin and lower lip touch your breast below your nipple.
- Gently support your baby's head allowing him to move it forward and backward. Your baby will naturally tip his head back to latch onto your breast.
- Express a little milk on to your nipple and offer this to your baby to lick.
- Encourage your baby to open his mouth by gently rubbing your nipple above his top lip.
- When your baby's mouth is wide open, bring him towards you so that your nipple reaches back into his mouth and he takes a large mouthful of your breast. You will feel a drawing sensation as your baby begins to feed but it should **not** be painful.
- When your baby is latched at your breast, check that his tongue is below your nipple, that his lips are turned out and that he maintains a seal around your nipple throughout each feed.
- Watch and listen to hear your baby swallowing as this will indicate that he is getting milk. Babies usually start with short

sucks that change to long, deep, slow sucks and swallows. Also notice that his cheeks are rounded as he feeds.

- Notice how your breasts feel after your baby stops feeding – your breasts will feel softer when your baby has fed well. Your breasts may feel tender in the early days of breastfeeding, but **breastfeeding should never feel painful**. Let staff know if you are not comfortable or ever feel pain.

*Adapted with kind permission from 'You and Your Baby – Supporting Love and Nurture on the Neonatal Unit' UNICEF UK Baby Friendly Initiative 2015,*

*<http://unicef.uk/youandyourbaby> and 'Breastfeeding and expressing for your premature or sick baby' HSE 2016.*



*'Cross-cradle' breastfeeding position*



*'Rugby hold' breastfeeding position*

## Transitioning to oral feeds

- When your baby is transitioning to oral feeds from tube-feeds, he may be only able to start with a small amount of feed by mouth just once a day, but over time, as he becomes stronger and learns the skills involved, he will gradually increase the volume and frequency according to his ability.
- It is important to establish a good quality of sucking / swallowing / breathing in the early days of oral feeding before you begin to increase the quantity of feed offered.
- Oral feeding requires more effort for your baby than tube-feeding and so offer him an oral feed first when he is likely to have the most energy. Your baby needs to suck well to get enough milk. If he is unable to complete the feed by mouth because he is too tired, the remainder can be provided as a 'top-up' through a feeding tube.
- During the transition period, tube-feeds only may be offered for specific feeds in order to save your baby's energy for oral feeding attempts at other times.
- If your baby is transitioning to breastfeeding from bottle feeding or combining breastfeeding with bottle feeding, offer him the breastfeed first when he is most alert. If your baby tires at your breast, it may suit to offer a 'top-up' from a bottle if he appears able for this. Sometimes babies who tire during breastfeeds may be able to continue feeding from a bottle because of the continuous flow of milk through the teat, but this is only suitable if your baby is able to manage the flow of milk safely and is **only** intended as a temporary measure until he is able to breastfeed fully.
- In the early days of breastfeeding, you may need to offer your baby a 'top-up' after each breastfeed until he is able to complete feeds fully at your breast.
- If your baby does not feed fully at your breast, you will need to express your milk to 'empty' your breast after each breastfeed, in order to maintain your milk supply, see 'Expressing breast milk' page [61](#).

## Feeding patterns

- When your baby is mature and well enough to be able to complete all feeds orally, he will generally work out for himself the amount that he needs to meet his needs and the feed pattern that suits him best.
- The amount and frequency at which your baby feeds may vary. This is generally fine once your baby is well and demands enough feeds at adequate intervals to meet his needs and support his growth.
- Some smaller, less mature or unwell babies need extra support and encouragement with feeding to ensure they feed adequately, e.g. if your baby is very sleepy or does not show signs of hunger. Check with your baby's Nurse.
- Generally babies feed at regular intervals; approximately 6 – 8 times daily. Some babies prefer smaller more frequent feeds, others prefer larger less frequent feeds, and others vary the volume and frequency over the day and night, e.g. more frequent feeds at certain times and less frequent feeds at other times.
- When your baby is small, his tummy is small too, and so he may only be able to take small amounts of feed at a time. As a result he needs to feed regularly to take in all the milk he needs. As your baby grows, he can usually increase the volume that he takes per feed, which allows him to stretch for longer between feeds.
- During growth spurts, when your baby grows a little faster, he may look to feed more often. This extra sucking and feeding will help you to make more breast milk to meet his increased needs.



*Dad supporting while Mum breastfeeds*

- When your baby is established on 'full oral feeds' we expect him to take no longer than about 20 - 30 minutes to complete each feed. Extra time may be required to change his nappy or to wind him afterwards.  
If your baby is unable to complete feeds within this time, smaller more frequent feeds may suit him better.
- Whatever your baby's feed pattern, make sure he has sufficient time to rest between feeds, i.e. feeds should not be so frequent or so long that he does not have adequate time to rest in between.



*Dads feeding their babies in the SCBU*

## Nutritional supplements

Some babies may have increased requirements for specific nutrients and these may be provided as supplements, e.g. breast milk fortifier (BMF) / human milk fortifier (HMF), iron and vitamins drops. Some babies may also require sodium (salt), protein, glucose, energy or other nutrient supplements.

Vitamin D supplementation is also recommended for all babies.

Staff will advise if nutritional supplements are recommended according to your baby's needs.

## Monitoring your baby's nutrition and growth

It is important to ensure that your baby's nutritional intake is adequate to support his growth and development.

This involves monitoring how your baby feeds and grows. It also includes assessing his wet and dirty nappies. We generally expect babies to have about 6 - 8 very wet nappies daily, one for every feed; as well as regular soft stools. Monitoring also includes assessing your baby's development. He may also have blood tests.

### Growth

- It is normal for your baby to lose weight during the early days, but we expect him to regain this within 1 - 2 weeks and to continue to gain weight and grow at a steady pace.
- Babies who are preterm, small or unwell may take a little longer to gain weight and grow.
- Growth is generally assessed by measuring your baby's weight, head circumference and length at regular intervals and plotting these measurements on to a growth chart, see 'Growth charts' next page.



*Baby being weighed*



*Baby having head circumference measured*

- When assessing growth in preterm babies, we allow for prematurity by using 'corrected age', i.e. we compare the rate of growth to that of babies of the same 'corrected age'. Generally, for preterm babies born less than 32 weeks gestation, we use corrected age up to about 2 years; and for preterm babies born from 32 weeks gestation, we use corrected age up to about 1 year; after that, we use 'actual (chronological) age'.
- Babies who are born preterm or smaller than expected often will 'catch-up' in size, i.e. grow faster to reach the appropriate size for their actual age. They do this by increasing their feed intake in order to take in extra nutrients to support this faster rate of 'catch-up' growth. If your baby appears hungry and demands bigger and/or more frequent feeds, it may be an indication that he is going through a growth spurt or trying to 'catch-up'. This may occur sooner for some babies but can occur later for others.
- Avoid comparing your baby to other babies. Instead look at the rate at which he is growing overall rather than his size at a single point in time.
- If there is concern about your baby's nutrition or growth, adjustments may be made to his nutritional intake. He may also be referred to a Dietitian to provide guidance.



Dietitian discusses baby's nutrition with Nurse

## Growth charts

- Growth charts are used to assess your baby's rate of growth.
- Growth charts show the standard range of growth rates for babies and children, with separate charts for boys and girls.

### Did you know?

**Growth charts** for children in Ireland are based on World Health Organisation (WHO) data from healthy breastfed children around the world. These charts describe optimal growth for babies regardless of how they are fed. These WHO charts are used for term babies and ex-preterm babies from their due date.

There are different growth charts based on preterm growth data that are used during the preterm period. There are also separate growth charts for babies and children with Down Syndrome (Trisomy 21).

## Approximate Conversion Values

1 kg = 2.2 lb  
 1 lb = 0.454 kg  
 1 oz = 28 g  
 1 fluid oz = 28 ml  
 100 ml = 3.5 fluid oz

*"...look at the rate at which your baby is growing overall rather than his size at a single point in time"*



## Chapter 6



Preparing for your baby's  
discharge home from the  
Neonatal Unit

## Chapter 6 Preparing for your baby's discharge home from the Neonatal Unit

While you have been wishing for the day to have your baby home, it can also feel daunting. We want you to be comfortable with all aspects of your baby's care at home. It is perfectly normal for you to be nervous and anxious about taking your baby home. The best way to prepare is to visit and care for your baby as much as you can during his stay in the Neonatal Unit.

This chapter includes information about when your baby is generally considered to be ready for discharge home and what you can do to prepare for his arrival home.

### Your baby's discharge home from the Neonatal Unit

Your baby is generally considered ready for discharge home when

- He is at approximately 35 weeks corrected age.
- His weight is about 1800 g (4 lbs).
- He is gaining weight steadily.
- He can maintain a stable temperature.
- He has regular breathing without assistance. If your baby requires oxygen support at home, staff in the Neonatal Unit will prepare you for this and will organise the services needed.
- He is feeding well.
- He is not receiving medications that require hospital management.
- He has no recent major changes in medications.

The arrangements for discharge are coordinated by Neonatal staff or a Clinical Nurse Specialist Neonatal Discharge Coordinator.

#### *Did you know?*

**Maternity Leave Entitlement:** Revised legislation grants mothers who have had a preterm baby additional weeks of maternity leave corresponding to the number of weeks their babies were born early.

The current universal entitlement is 26 weeks. The additional weeks are added at the end of this. Ask your Medical Social Worker if you have questions.

*“The best way to prepare for home is to visit and care for your baby as much as you can during his stay in the Neonatal Unit”*



*Nurse discussing requirements for home with parents (photo above) while baby listens too (photo below)*

## Preparation for discharge home

### The following suggestions will help you to prepare for your baby's discharge home

- Practice baby care including feeding, positioning, bathing and nappy changing throughout your baby's stay in the Neonatal Unit. Try to arrange your visits to coincide with your baby's care-giving. See 'Care-giving activities you can do for your baby', page 53.
- Attend 'Parent Classes'. Classes are available that provide information and demonstrations on Baby Care.
- Organise the various items your baby will need at home including a suitable car seat, clothing, nappies, cot/crib/ Moses basket and blankets, pram/buggy and thermometer that is suitable for use with small babies. See 'Car seat for the journey home' page 78 and 'Baby's cot and blankets', page 84.
- Check what supplements or medicines your baby may need to take at home, e.g. prescribed medicines, iron or vitamins. Organise a supply for home and ask staff how to give them.
- Make contact with your baby's local Public Health Nurse (PHN) and General Practitioner (GP) prior to your baby's discharge home and link with them on his arrival home. You need to register your baby with a GP before discharge if possible.
- Learn about baby '**Cardio-Pulmonary Resuscitation**' (CPR). To relieve anxiety and empower parents, a booklet and practical demonstration (using a mannequin/doll) on baby CPR is offered to parents of babies who were born preterm or who were ventilated or critically ill prior to discharge home. Ensure that you are familiar with these first aid skills.
- Check if you need to meet with specific staff before your baby's discharge home to discuss issues relevant to your baby.
- Ask your baby's Nurse for details about his feeds for home and check if a fortifier for your breast milk or special feeds are recommended.
- Prepare for breastfeeding by organising a comfortable chair and pillow. Link up with local Breastfeeding Support groups. Ask your local Health Centre / Primary Care Centre for details.

- If your baby is not exclusively breastfed, i.e. if he receives breast milk or formula milk from a bottle, organise a supply of bottles, teats and equipment for sterilising bottles and warming feeds. Ask your baby's Nurse for advice on suitable bottles and teats for your baby before buying them. See 'Feeding time' page 69.
- Bring in your own sterilised bottles from home. This will enable your baby to get used to these bottles before he goes home.
- If you do not plan to feed breast milk for all feeds, you will need to buy a supply of formula milk to use when there is no breast milk.
- Learn how to prepare bottle-feeds safely. Information is available at Baby Care classes or from your local Health Centre / Primary Care Centre or from the HSE website [www.healthpromotion.ie](http://www.healthpromotion.ie).



*Nurse showing parents baby resuscitation (CPR) using a doll*

- Some Neonatal Units offer the opportunity of 'rooming-in' with your baby before his discharge home. 'Rooming-in' offers parents the opportunity of caring for their baby by themselves overnight with the support of the Nursing staff should any questions arise. Ask if this can be accommodated for you and your baby.
- At the time of discharge, your baby's Doctor will prepare a 'discharge letter' to send to your baby's GP outlining his medical history and details of his stay in the Neonatal Unit. Ask for a copy for your reference.
- Make note of your baby's recent weight and other growth measurements. It may also be useful to ask for a copy of your baby's growth chart if this is available to show to his PHN and GP.
- Some Neonatal Units provide a pack providing information for parents to refer to at home. Ask your baby's Nurse for a copy if one is available.
- Further information for home time is provided in a range of information leaflets available in the Neonatal Unit and from other sources, see 'Sources of further information and useful contacts', page 118.

If your baby has special requirements following his discharge home, e.g. if he has a stoma or requires oxygen support or tube-feeds, your baby's Doctor or Nurse will advise accordingly.



*Baby celebrating her 1st birth at home on oxygen support*

## Car seat for the journey home

- Make sure you have an appropriate car seat and that it is fitted correctly. You cannot take your baby home in a car without one.
- We recommend that you buy a car seat from a reputable store that employs technicians trained in car seat fitting and car seat advice.
- Ensure that your baby is comfortable, secure and properly strapped into the car seat as per the manufacturer's instructions.
- Ask for guidance from staff in the Neonatal Unit and check the Road Safety Authority guidelines on transporting babies in car seats, see [www.rsa.ie](http://www.rsa.ie).
- Avoid using bulky pram suits in car seats.



*Preterm twins in car seats ready for home with parents*

### *Did you know?*

The Road Safety Authority (RSA) website has a section on 'Child Safety in Cars'. See [www.rsa.ie](http://www.rsa.ie). This provides useful information and guidance.

## Preparing your baby's brothers and sisters

You will be spending a lot of time with your baby when he comes home. Prepare your other children for this explaining in simple language why this is so and maybe working out with them ways that they can be involved too and help.

Prepare for this before your baby leaves hospital through discussion and involving sisters and brothers in preparations for their new sibling, e.g. choosing toys, blankets or clothes. After the baby comes home, include brothers and sisters by involving them in choosing clothes, nappy changing and bathing. By including brothers and sisters in your baby's care, they will feel more involved and important as opposed to feeling left out.



*Sister greets her baby sister coming home*

## Follow-up post discharge home

- Check with staff about follow-up schedules for your baby, e.g. if he will be followed-up at the hospital Out-Patient Baby Clinic or directly with his GP. Other clinic appointments may also be required in addition.
- Staff will notify your baby's local PHN and GP that your baby has been discharged home.
- Your local PHN will visit you and your baby at home. You can also make contact with your PHN directly.
- Your baby's GP is also available to provide follow-up.
- See 'Follow-up care for babies' page 95.

**Support is always available after your baby's discharge home from his Public Health Nurse (PHN) and General Practitioner (GP).**

**You may also telephone the Neonatal Unit if you are unsure where to get appropriate advice and staff will advise you.**

### *Did you know?*

Primary Care is all of the health and social care services in your community, outside of the hospital. It includes GPs, PHNs and a range of other services. For information on your local Primary Care services visit [www.hse.ie](http://www.hse.ie) and search for Primary Care.

*"By including brothers and sisters in your baby's care, they will feel more important"*

Notes:

A series of 20 horizontal dotted lines for writing notes.

## Chapter 7



### Your baby at home

## Chapter 7 Your baby at home

The first few days at home with a baby who has spent time in the Neonatal Unit may be tinged with a mixture of excitement and anxiety. It is great to have your baby safely home at last. However, you may also find yourself wondering about many things.

*"Will I be able to look after my baby properly?", "What if my baby cries and I don't know what is wrong with him?", "Is he getting enough milk?", "Is he getting enough sleep?" "Is he unwell?"*

This chapter provides you with guidance about the environment for your baby, going out with him, sleep safety, establishing a routine, knowing when your baby wants to rest and play, his feeding and growth, follow-up care and recognising if he is unwell and what to do. Remember to take one day at a time.

### Home environment

- Your house does not need to be as warm as the Neonatal Unit. Keep the room your baby is in at around 18°C (range 16 – 20°C). Babies do **not** need hot rooms to sleep in. If you are comfortably warm that should be sufficient. See 'Sleep and sleep safety' next page.
- Avoid extremes of temperature.
- Protect your baby from direct sources of heat and drafts.
- Maintain a smoke free zone around your baby. Exposure to smoking is a powerful risk factor for Sudden Infant Death syndrome (SIDS / cot death). Children exposed to smoke (in the air or on clothes) also have a higher risk of developing asthma and respiratory problems, e.g. bronchitis and pneumonia. **It is best that no one smokes in your house or anywhere near your baby.**
- During the first few days at home, limit visitors and phone calls. Be honest if now is not a good time – silence or turn your phone off. Well-meaning visitors and callers will understand.
- Try to limit how much your baby is handled by others. It can be disruptive for your baby and increases his risk of infection.
- Do not over-dress your baby. Remove any hat and extra clothes when he is indoors.
- Ensure you minimise the risk of infection for your baby, see 'Tips for reducing risk of infection at home' next page.

- Try to establish a sense of night and day by using a dim night light in the bedroom at night instead of a lamp.
- You may discover that your baby makes noises at night that you are not aware of. Most of the time these are normal baby sounds. If concerned, ask for advice from your baby's Public Health Nurse (PHN) or Doctor.
- It may take a few days to a week for you to adjust to having your baby home. Your baby needs time to adjust to his home environment.

### Going out with your baby

- For the first few days limit your outings, as your baby's immune system is still frail and developing.
- Fresh air is important for you and your baby. When you do venture out, start small – a short walk, a stroll in the park, a trip to the local shop. Avoid crowds, e.g. busy shopping centres..
- Wait half an hour or so after a feed before travelling by car or bus, to reduce the chance of your baby spilling (bringing-up) some of the feed.
- Bring extra clothing.

*"It may take a few days to a week for you to adjust to having your baby home. Take one day at a time"*

## Tips for reducing the risk of infection at home

- Hand-hygiene is extremely important to protect against infection. Insist everyone washes their hands before touching your baby. Alcohol gel / a hand-sanitiser is useful for when you are out and about.
- Do not expose your baby to visitors with cold or flu symptoms.  
If you have cold or flu symptoms yourself do not over handle your baby and avoid kissing or sneezing over him.
- If you sneeze, use a disposable tissue to catch the sneeze and dispose; then wash / sanitise your hands. The cold virus spreads through droplets produced when you sneeze.
- Always use disposable tissues to wipe your baby's runny nose.
- If your baby has sticky eyes, use cotton wool dipped in cooled boiled water to clean. Ask your baby's Nurse to show you.
- Clean toys, work surfaces and high-chairs regularly, as germs can live up to 48 hours on these areas.
- If you have children who attend crèche or school, ensure that they do not over handle your preterm baby. Ask the school to keep you informed of any outbreaks of childhood illnesses.
- You need to be extra careful of viral flu-like infections, especially during the flu season from October to March. If your baby is born from October to March it may be necessary for you or those caring for your baby to receive the flu vaccination – check with his GP. Babies can receive the flu vaccine from 6 months of age.
- Consult your baby's Doctor if planning to travel by plane or abroad with your baby.
- If your baby is bottle fed, it is important to prepare and handle feeds safely. Ask staff for further information.
- Follow the advice regarding contagious diseases and cold sores in the section 'Protecting your baby from infection' page 22.

## Sleep and sleep safety

- Sleep is very important.
- Sleep promotes growth, boosts your baby's immune system, increases his attention span and enhances his learning.
- Sleep is a key element in developing your baby's central nervous system.
- Sleep helps your baby to be less irritable / fussy, more adaptable and calmer.

The sleep of preterm babies is easily interrupted and they may need help to settle back after a disturbance.

It is important to follow 'Safe Sleep' guidelines for your baby, see next page. 'Safe Sleep' guidelines are important to help reduce the risk of **Sudden Infant Death Syndrome (SIDS) (cot death)**. SIDS does not only happen in a cot - it can happen anywhere a baby is sleeping.



*Safe sleeping position*

Please check with the HSE for further information on 'Safe Sleep' for your baby, see [www.healthpromotion.ie](http://www.healthpromotion.ie)

## Safe Sleep

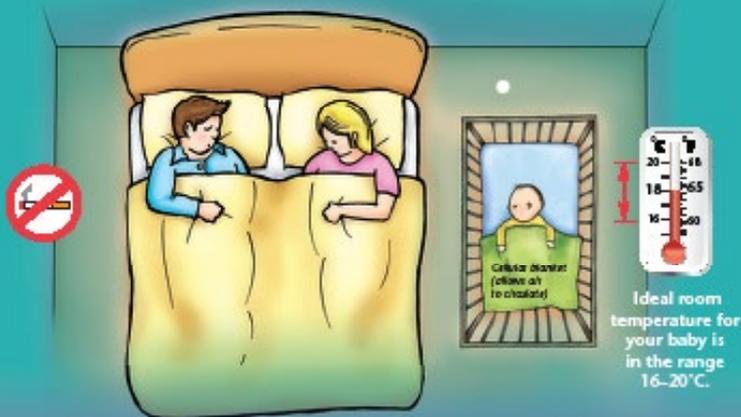
### Baby's cot and blankets

- Position your baby's cot away from radiators, windows and outer doors to protect him from over-heating and cold drafts.
- Use a clean firm mattress that fits the cot correctly.
- Make up the cot with enough thin layers of bedding to keep your baby warm.
- If you need an extra top on while indoors your baby might need an extra blanket. If a blanket is folded consider it two layers.
- Use aerated / cellular blankets and cotton sheets that allow air to pass through, see photo opposite.
- Before you go home, check with your baby's Nurse as to how many layers you can safely use for your baby, both in his cot and out of it. Generally, smaller babies need to be kept a little warmer than bigger babies.
- Tuck covers in loosely but securely and keep them below your baby's shoulder level to make sure they cannot slip over his head.



*Aerated cellular blanket*

## Safe Sleep for your Baby Reduce the Risk of Cot Death



*Reproduced with kind permission from the National Paediatric Mortality Register (NPMR) and HSE Child Safety Programme, 2018*

- To check how warm your baby is, feel his tummy. It should feel warm but not too hot. If his tummy feels hot (or if he is sweating anywhere), remove one layer and test again. If your baby's tummy feels cold, add a layer. Do not worry if your baby's hands or feet feel cool, this is normal.
- 'Baby-gro' bags for sleeping may be used instead of blankets provided they fit correctly. Check that the thermal value / TOG is appropriate.
- Do not use duvets, quilts, pillows and bumper pads with your baby until he is at least 1 year old.
- Do not leave toys, teddies and other items in the cot with your baby.

### Safe sleeping positions

- **Always position your baby to sleep on his back, face up and face free from blankets.**
- Always place your baby's feet to the foot of the cot, Moses basket or pram, so that he cannot wriggle down under the covers and risk covering his face.
- Vary your baby's head position when sleeping i.e swap his head from facing to the left or to the right side to help him to avoid developing a preference for one side.
- **Never fall asleep with your baby**, this includes in a bed or on a sofa, armchair or beanbag.
- **The safest place for your baby to sleep at night is in a cot or Moses basket in your room.**

### Did you know?

The risk of **Sudden Infant Death Syndrome (SIDS)** is much higher if you or your partner smoke, take drugs or medication that make you sleep more heavily.

### Establishing a routine for your baby

Babies benefit from a daily routine that responds to their individual needs. As you get used to having your baby at home, you will become familiar with his routine and specific needs. Routines that are consistent and familiar are reassuring for your baby. Chaos and lack of routine can be unsettling.

### Preterm babies have specific needs

**Preterm babies** mature at a different pace to term babies. They are often more sensitive to noise and handling than a term baby for the first few weeks or months.

- Your preterm baby may not like to sleep in a noisy room as, unlike a full-term baby, he may be unable to block out the excess stimulation that is caused by the noise and may need you to do it for him.
- Your preterm baby may like to be held and fed in a certain way and played with at certain times.
- Your preterm baby may not be able to cope with as much stimulation and interaction with his world as term babies do.
- Your preterm baby may have a hard time becoming wide awake and paying attention to the things around him but, as his nervous system develops, his sleeping and waking patterns will become more regular like those of term babies.

Preterm babies' behaviour can also be unpredictable, for example:

They tend not to follow a consistent pattern of behaviour as term babies do.

This unpredictable behaviour can make it harder for parents to cope or know what to do, but this is normal for preterm babies.

**Term babies'** behaviour generally follows a more logical progression, e.g. they will typically go from a quiet sleep where they move very little, to alert sleep where they are more active and coming close to waking up, to being awake but dozy, to being fully awake and alert.



*Baby enjoying floor play after daily nap*

## Knowing when your baby is ready for play and rest

Preterm babies need more periods of rest and time for recovery than healthy term babies do. They are very good at communicating these needs through non-verbal gestures and behaviour. You will already be familiar with these gestures from the times you were observing your baby while in the Neonatal Unit. See 'Understanding how your baby communicates with you' page 44.

## Recognising your baby's social interactive needs at home

You will rediscover and understand your baby's needs by simply watching him and interpreting his behaviour. He will tell you when it is okay to play and when it is too stressful for him. He will signal when he wants to feed, socialise and sleep.

*"By heeding your baby's signals you are giving him back some sense of control"*

### When I am hungry

- Watch for me making mouthing movements.
- Listen for my 'hunger cry'.

### When I want to play / socialise

- My eyes open widely.
- I show eye-contact.
- I increase my facial and limb movements.
- I may respond by blinking or by moving my legs or arms.
- I may mimic gestures that you make, e.g. stick out my tongue, purse my lips (pout) or open my mouth.
- My breathing is regular.
- My limbs are relaxed and supple.

### When I am tired and need a rest - 'Time-Out' signals

- I may shut my eyes or look away.
- I may grimace.
- My arms and legs may stretch out and stiffen.
- My breathing may become uneven.
- I may throw my head back and extend my body.
- I may yawn, grunt or hiccup.

### When you observe these 'Time-Out' behaviours I'm asking you to

- Stop playing with me.
- Give me a break.
- Hold me quietly or let me lie down to rest.



*'Time-out' signal: baby yawning, arm extended, hand to head to self-control*

When you observe these signals for 'time-out', it is time to take a break from the play session and let your baby rest. By heeding your baby's signals and by responding appropriately you are giving back some of your baby's sense of control over his environment, which in turn will boost his self-worth and self-confidence.

It is important that you do not tire or overstimulate your baby. Your baby needs to channel his energy into behaviours that will promote his neurological (mental) and physical development and his learning, e.g. following the movement of a bright light or dangling toy, opening his hands from time-to-time, smiling in response to an adult or other stimulus, making non-crying noises, e.g. cooing or gurgling, and being able to ignore certain sounds that would have previously caused him to startle.



*Dad interacting with his son at home*

Following your baby's discharge home, it is important to ensure that he is feeding and growing well. This will be reviewed by his PHN and GP. He may also be reviewed at the hospital Out-Patient Baby Clinic.

## Feeding your baby at home

- Your baby must usually be feeding appropriately before he is discharged home. In practical terms we expect your baby to be able to complete feeds within approximately 20 - 30 minutes and to continue to do so at home.
- For more information about feeding your baby and monitoring his nutrition and growth, see chapter 5 'Feeding your Baby in the Neonatal Unit' page 58.
- During your baby's early life, feeding may have been quite scheduled for practical reasons, but when your baby is home and feeding well, we expect feeding to be more responsive to his demands and cues.
- If your baby was born preterm or is smaller than expected for his age, he may feed more often or take bigger feeds relative to his size compared with other babies. This is because small babies often try to 'catch-up' by increasing their feed intake in order to take in extra nutrients to support this faster rate of 'catch-up' growth.
- We hope you will continue to breastfeed your baby at home as this provides continued benefits, see 'Long-term benefits of breastfeeding' next page.
- If your baby is fed breast milk using a feeding tube or bottle, it is possible to transition to breastfeeding if you have maintained your milk supply. Ask for support and contact your local Health Centre / Primary Care Centre for details of Breastfeeding / Infant Feeding Support Services in your area. See also 'Suggestions to help breastfeeding' page 70 and 'Transitioning to oral feeds' page 71.
- If you do not fully breastfeed your baby, you may still continue to express your milk and offer this by bottle instead. This will provide your baby with the benefits of breast milk but it can require a lot of time and effort to both express and bottle-feed. While it may take time initially for your baby to learn to breastfeed, it will require less time once he does.
- If you do not have enough breast milk for all your baby's feeds, the alternative milk for babies is infant formula milk. Ask staff if a particular formula milk is recommended.

- Give your baby only breast milk or infant formula milk as his main drink until he is at least 1 year old (corrected age).
- Avoid other drinks as these may decrease your baby's appetite. Water may be offered if your baby appears thirsty rather than hungry, e.g. if it is particularly warm.
- If your baby bottle-feeds, ensure the feeds are prepared safely - information is available from the hospital or your local Health Centre / Primary Care Centre.
- If you use formula milk, follow the manufacturer's preparation instructions.
- It is important to make sure that your baby is feeding enough. It is reassuring if he is growing well, has lots of very wet nappies – one for every feed, and regular stools. See 'Monitoring your baby's nutrition and growth at home' page 89.

### Long-term benefits of breastfeeding

The goodness of breastfeeding will last a lifetime.

The Health Service Executive (HSE) promotes that 'Every breastfeed makes a difference' and advises that every single drop of breast milk is good for your baby's health. The longer you breastfeed for the greater the health protection for both you and your baby.

#### The health benefits of breastfeeding for babies includes less risk of

- Stomach upsets.
- Coughs and colds.
- Ear infections.
- Diabetes.
- Asthma and eczema.
- Obesity (being very overweight).
- High blood pressure later in life.

#### Breastfed promotes

- Better mental development.
- Better mouth formation and straighter teeth.

#### The health benefits of breastfeeding for mothers

- Less risk of breast cancer.
- Less risk of ovarian cancer.
- Less risk of bone thinning (osteoporosis) in later life.
- Stronger bones in later life.
- Faster return to pre-pregnancy figure.

#### Breastfeeding has other benefits too

- It creates a special bond between mother and baby.
- Less equipment is needed.
- It saves you time because you do not have to prepare bottles (or express milk).

The World Health Organisation (WHO) recommends continued breastfeeding for 2 years and beyond (in combination with the timely introduction of nutritious complementary (solid) foods) in order to provide continued benefits.

Adapted from [www.breastfeeding.ie](http://www.breastfeeding.ie)



Mum breastfeeding her preterm baby

### Supplements

- Follow the advice of staff in the Neonatal Unit regarding supplements that may be recommended for your baby at home, e.g. vitamin and iron drops.
- If your baby receives fortifier added to your breast milk or a special formula milk, check

with his local PHN or at the hospital Out-Patient Baby Clinic when to stop this. This generally depends on how your baby is feeding and growing.

### **Did you know?**

**Vitamin D<sub>3</sub>:** The HSE advises that you give your baby 5 micrograms (5 µg) of vitamin D<sub>3</sub> every day. Vitamin D helps our bodies use calcium to build and maintain strong bones and teeth.

## **Weaning – Introducing solid foods**

- Weaning here refers to the introduction of solid foods to your baby's diet. This may also be referred to as '**complementary feeding**'.
  - Solid foods provide a valuable source of nutrients for your baby and play an important role in his development, e.g. learning the skills involved and hand to mouth coordination.
  - The age for weaning depends on your individual baby and his readiness to start.
  - Signs of readiness include your baby showing interest in food and others eating as well as putting things in his mouth and munching. He may also appear hungrier than usual for more than a few days – not just during a growth spurt.
- It is also important to ensure that your baby can sit upright, with support if necessary, and that he can hold his head in a stable position.

- Each baby develops differently, therefore the age at which your baby shows signs of readiness can vary from others.
- Ask your baby's PHN for information about weaning including starting off, what to include and food safety.
- Include your baby in family mealtimes – this allows him to join in and observe normal feeding behaviour.
- Encourage your baby to participate in feeding by offering him appropriate foods of a suitable texture, size and shape that he can pick up and eat himself, or even just explore with his hands and mouth.
- Offer your baby a range of foods with different flavours and progress to include appropriate textures according to his readiness. Babies tend to be more willing to try new flavours and changes to textures when they are younger and may become

more hesitant as they grow older. Including variety and progressing without unnecessary delay helps your baby to enjoy a nutritious age appropriate diet.

- If your baby is not ready or able to start weaning by about 6 months (corrected age if born preterm) or if you have any concerns about starting or progressing, ask your baby's PHN for guidance.

*“Offer your baby a range of foods with different flavours and progress to include appropriate textures according to his readiness”*



*Baby self-feeding during mealtime at home*

## **Monitoring your baby's nutrition and growth at home**

Attention needs to be paid to your baby's nutrition and growth. This requires regular checks with his PHN, GP or when he attends at the hospital Out-Patient Baby Clinic. This monitoring includes regular assessment of your baby's feeding, growth and development, see 'Monitoring your baby's nutrition and growth' page 72.

- If your baby does not grow appropriately, or if you are concerned, contact his PHN or GP.
- Your baby's Doctor may refer him to a Dietitian to provide guidance.

## Recognising when your baby is unwell and what to do

All parents worry about their baby getting sick. “*Would I recognise the signs?*”, “*What would I look for?*”, “*How do I distinguish between a minor problem and a major illness?*”, “*What do I do?*”, “*Who do I contact?*”

**At the most simple level any baby who is ‘off form’ should be considered unwell.**

### Signs that your baby maybe unwell

- A change in your baby’s normal pattern of feeding or settling.
- Poor colour or rapid breathing.
- Drowsiness.
- Raised temperature – your baby may feel hot with a temperature above 37.5°C.
- Poor feeding – your baby may be slow to feed or off his feed. It is of concern when feed intake is reduced by one third or more over 2 or more feeds.
- Vomiting which is persistent.
- Dry nappies – nappies may be dry because of reduced urine output.
- Diarrhoea or frequent loose or foul smelling stools (bowel motions).
- Irritability – babies who are unwell generally do not like you to touch or move them and may show distress when you do.
- Crying more than usual or persistent crying that is difficult to console despite your best efforts.
- Whimpering – babies who are unwell generally have a low pitch whimper while healthy babies have a loud vigorous cry.
- Reduced activity – being limp, listless or less active than usual.

**Remember, babies become unwell quicker than older children or adults. If you think your baby is unwell trust your instincts.**

*“If you think your baby is unwell trust your instincts”*

### Have a clear plan about how to get medical help in the event that your baby becomes unwell.

The options are to visit your baby’s GP, ask your GP to make a home visit, or bring your baby to the nearest Children’s Hospital / Emergency Department (ED).

If your baby has a specific medical condition that is being cared for at a specialist Paediatric Centre and becomes suddenly unwell, take him to that Specialist Centre, e.g. if your baby has a known heart problem under the care of the National Cardiac Centre, take him there; or take him to the nearest Emergency Department if this is closer and time is critical.

### In an emergency, dial 999 or 112

Make contact with your GP soon after discharge home from the hospital. This will ensure your GP knows your baby if he becomes unwell.

### Your baby’s temperature

- Learn how to take your baby’s temperature.
- Ensure that the thermometer you buy is suitable for use with small babies.
- **The normal body temperature for babies is 36.5 – 37.5°C.**

### Anaemia of prematurity

Anaemia of prematurity can be a problem for preterm babies. It is due to an immature bone marrow.

- Anaemia can cause your baby to appear pale and tire easily.
- If anaemia is present or suspected you will be asked to bring your baby to the hospital Out-Patient Baby Clinic for regular blood tests until it resolves.
- Haemoglobin (Hb) carries oxygen in the blood and a low level is an indication of anaemia. Occasionally some babies need a ‘top-up’ blood transfusion if their Hb level is low.
- Iron is essential for Hb. Most babies who were born preterm are recommended to take iron supplements during their first year unless they receive adequate iron from their diet.

## Crying

All babies cry, especially when they are very young.

- Crying is a baby's verbal form of communication.
- Babies cry for a variety of reasons – some important, some less so, see 'Reasons why babies cry' below.
- When a baby cries he needs to be checked out.

Generally the louder and more vigorous the cry, the more likely your baby is well. Babies who are unwell tend to moan and whimper rather than cry loudly.

### Babies are never, ever manipulative. They only cry when they want help.

They are not trying to control you or be assertive; they simply want to be looked after.

You cannot spoil a small baby. Your baby will only ask for what he wants.

Try to understand why your baby is crying - this will become easier as you get to know him.

#### Reasons why babies cry

- Having a wet or dirty nappy.
- Feeling too hot or too cold.
- Hunger or thirst.
- Being over-tired or over-stimulated.
- Feeling lonely or bored or in need of social contact, e.g. a cuddle.
- Discomfort.
- Trapped air (wind).
- Tummy cramps.
- Illness – this is a less common reason, however, a number of medical considerations need to be excluded. Check for fever and infection and refer to the check-list 'Signs that your baby maybe unwell', page 90.

Do not leave your baby to cry. Long periods of unattended crying may increase your baby's sense of isolation. **It is important to respond to a crying baby.**

#### Suggestions to help if your baby cries

- Check that the crying is not caused by any of the reasons listed, see previous column 'Reasons why babies cry'. If trapped air (wind) or tummy cramps are the issue, see 'Trapped air' (wind) and 'Tummy cramps' page 94.
- Use a gentle approach and avoid over-stimulating your baby. Sometimes a secure cuddle in a quiet environment may be all that your baby needs to settle.
- For **term babies**, gentle back-patting or rocking, quiet background music or noise, singing softly, distraction with toys or making faces, warm baths, walks or car rides, may be helpful; however, for **preterm babies** these measures do not seem to work as well, even when your baby is well and strong enough to be at home.

#### Calming a crying preterm baby

A gentle approach seems to work best. The usual baby-soothing combination of movement, sound and sight can be too much for a preterm baby and may cause him to cry more.

Preterm babies can be overwhelmed and upset by cheery faces talking up close to them, being bounced up and down or being sung to, rocked and patted all at the same time. The reason they respond like this is that they are still finding it difficult to handle more than one thing happening to them at the one time.

Sitting still and holding your baby close to you in a peaceful quiet surrounding can sometimes be the most effective way to help settle him.

- Be flexible; what works one day might not work the next.
- Try to follow a routine for your baby, see 'Establishing a routine for your baby' page 85.

*“Sitting still and holding your baby close to you in a peaceful quiet surrounding can sometimes be the most effective way to help settle him”*

**Coping with a crying baby**

If your baby is difficult to settle it can cause anxiety and exhaustion, especially if the crying is difficult to interpret and there is no obvious cause.

**If you find it hard to cope, seek support.**

For example:

- Ask for support from family and friends.
- Take 'time-out'. Ask someone you trust to care for your baby to give you a break, e.g. to go for a walk, coffee or any activity that you enjoy. Even a short break can be beneficial, e.g. put your baby in his cot and take a rest for a few minutes.
- Contact your GP or PHN.

*"If you find it hard to cope, seek support"*

**Remember**

- Try not to exhaust yourself.
- Your baby's crying is no reflection on you.
- Asking for help is not a sign of failure.
- Never shake your baby.

**If the crying persists, sounds unusual or if you are concerned that your baby is unwell or not thriving, contact his GP, PHN or local Hospital.**



*Mum calming her crying baby*

**Common issues for babies****Belly button (umbilicus) problems**

It is very common for the belly button to protrude. This is harmless and will disappear in a matter of months. If your baby's belly button is red, ask his PHN or GP to examine it.

**Colds**

Your baby is as likely to get a cold as any other baby. The symptoms are a runny nose with a cough and there is usually little to worry about as long as your baby remains in good form and continues to feed well. If there is any drowsiness or deterioration in feeding, seek medical advice.

**Constipation**

If your baby is constipated his stools (bowel motions) will be hard like pellets and difficult to pass. It is normal for babies to make some straining noises when they pass a stool. Stool patterns also vary. Some babies pass stools once or more each day, others may do so once every few days.

What the stool looks like can also vary. Babies fed breast milk tend to have softer looser stools; babies fed formula milk tend to have firmer more formed stools.

Sometimes stools change following a change in diet, supplements or medication, e.g. if your baby's feeds change. If constipation is a problem, seek advice from your baby's PHN or GP.

**If your baby is prone to constipation, suggestions that may help**

- Ensure he drinks enough fluids – this includes milk feeds.
- If he feeds formula milk make sure it is prepared correctly – follow the manufacturer's instructions.
- Gently massage his tummy, see 'Massage for your baby's tummy' next page.
- Check if it might be appropriate to offer a small amount of prune, pear or apple juice. These fruits contain the sugar sorbitol, which acts as a natural bowel stimulant.
- If your baby is taking solid foods, include appropriate sources of fibre, e.g. vegetables

and fruits, including prunes, pears and apples; peas, beans, lentils and other pulses as well as whole-wheat foods from about 6 - 8 months. Note high fibre diets including unprocessed bran and fibre-enriched foods are **not** recommended for babies.

Ensure your baby drinks sufficient fluids (including milk feeds and drinks of cooled boiled water if thirsty) with fibre containing foods.

- Only use laxatives or other medications if advised by your baby's Doctor.

### Massage for your baby's tummy

Gently stroke your baby's abdomen (tummy) in a clockwise direction, or lay your baby on his back and gently bring his knees towards his tummy.

Ask your Health Centre / Primary Care Centre for details of local Baby Massage Classes.

### Cradle cap

This is a scaly, greasy rash that develops on the scalp and eyebrows. It may also make a baby appear 'spotty'. It is usually mild and responds to gently rubbing olive oil or Vaseline (or equivalent) onto the affected area.

### Gastro-Oesophageal Reflux / Regurgitation (Spilling)

It is quite normal for babies to spill (bring-up) a little milk after a feed. This is not generally harmful and most babies grow out of it over time. If your baby is well and growing normally, there is generally no need for concern.

#### If your baby is prone to spilling

- Keep him in an appropriate, supported and slightly elevated position and avoid pressure on his tummy during and after feeds, see 'Positioning' page 67.
- Make sure feed volumes are appropriate – this is more applicable for bottle-fed babies. Sometimes smaller, more frequent feeds may suit better. If your baby is unable to take the expected amount of feeds, let his PHN or Doctor know.
- Help him avoid trapped air (wind), see page 94.

- Avoid exposure to tobacco smoke.

If your baby brings back up some acid from the stomach it can cause discomfort. If this is significant and affects his feeding or growth, it may require additional treatment.

If your baby vomits large amounts of milk or experiences discomfort, or if his growth is slow, ask his PHN or GP to examine him and provide further guidance.

### Hiccups

Hiccups are normal. Helping your baby to prevent trapped air may help. See 'Trapped air (wind)' page 94.

### Sneezing and snuffles

Sneezing and snuffles are very common. Treatment is not needed unless they interfere with feeding. If necessary the nostrils can be cleared out with twists of cotton wool dipped in warm water. The moisture will loosen the dry mucus and this will make your baby sneeze.

### Sore bottom

A sore bottom can develop rapidly. Apply a barrier cream (e.g. Vaseline or equivalent) and secure the nappy loosely. If it does not get better quickly contact your baby's PHN or GP. See also 'Thrush' below.

### Sticky eyes

Sticky eyes are a common problem. If your baby experiences sticky eyes, clean his eyes well. Use a separate piece of cotton wool dipped in water for each eye. If it does not improve within a day or two consult your baby's GP.

### Thrush

Thrush is an infection caused by a fungus called Candida. It presents as a white coating that can develop in various parts of the body including on your baby's bottom or in his mouth. Thrush is treated with an anti-thrush cream which needs to be prescribed by your baby's GP.

## Trapped air (wind)

Sometimes babies swallow air, which may then become trapped and cause discomfort.

### If your baby is prone to 'trapped air (wind)'

- Help your baby to avoid swallowing air during feeds. Ensure that he remains alert, calm and in an appropriate position.
- Ensure he maintains a good latch (attachment) during breastfeeds.
- If he bottle feeds, ensure that the teat and flow rate suit and that he maintains a good seal around the teat. Ensure that it remains full of milk and doesn't collapse during feeds, and that any air bubbles that may be in the feed have disappeared or settled, see 'Feeding time' page 69 for further guidance.

If your baby is unable to pass the air himself, try the following to help him to pass it up (burp) or down (flatulence).

- Hold your baby in an upright position on your lap or to your shoulder with his back supported and gently rub his back until you hear the air pass.
- It may also help to change your baby's position by holding him over your shoulder or in a sitting position on your lap; then lay him on his back or tummy for a few minutes and repeat until you hear air pass.
- Sometimes gently massaging your baby's tummy can help, see 'Massage for your baby's tummy' page 93.

Your baby may bring up a little milk when he burps, but this is not generally of concern if he is well and gaining weight.

## Tummy Cramps

Some babies have particular crying episodes, which are associated with tummy cramps. At these times babies may draw up their legs and go red in the face. This tends to be more bothersome for younger babies and generally resolves by approximately 3 – 4 months (corrected age). It is reassuring if your baby is otherwise well and thriving, with no vomiting or change in bowel habits.

- If you think the cramps are linked to something in your baby's diet, contact your baby's PHN, GP or a Dietitian for guidance.

- If your baby is fed formula milk, ensure it is prepared correctly; and avoid switching between different formula milks unless your baby's Nurse, Doctor or Dietitian advises it.



*Mum supporting her baby after feed*



*Mum consulting with her babies' Doctor*

**If you have any concerns about your baby seek medical advice from his Public Health Nurse (PHN) or General Practitioner (GP).**

## Follow-up care for babies

Now that your baby is well and at home, anxiety may set in regarding his short-term and long-term progress.

*“Will he be alright?” “What will his developmental outcome be like?” “Will he be able to go to a normal school?”*

A parent’s expectation about their baby’s development can often be based on comparisons with other children. This is not always appropriate. As a parent of a preterm baby you need to know that your baby will take some time to catch-up. You may be measuring your baby’s milestones according to his corrected age for up to 2 years. It must be appreciated that even with adjustment for gestational age some preterm children may exhibit a delay in their development. Some babies may have a non-specific cause that will hinder their performance.

### Medical check-ups

After your baby goes home his first contact will be with his local PHN who will call to see you and your baby.

Your baby may also be requested to attend the hospital Out-Patient Baby Clinic where a Doctor will review his overall appearance, his movements, reflexes, sight, hearing, feeding, growth and social development, e.g. *“is he interested when you talk to him? Does he follow you with his eyes? Does he smile?”*



*Out-Patient Baby Clinic – always a friendly face*



*Baby attending the Out-Patient Baby Clinic being examined by doctor*



*Ex-preterm boy attending the Out-Patient Baby Clinic*

The schedule of your baby’s check-ups will depend on his individual needs – this will be decided by your baby’s Doctor.

**Attendance at the Baby Clinic is by appointment only.** You will be provided with details of appointments in advance.

When your baby no longer requires follow-up at the Baby Clinic, his follow-up care will be transferred to his GP or to another Specialist Service if required.

### Eye tests

Some babies, e.g. those born very preterm or with a very low birth weight or babies with a specific clinical history including those who have had Retinopathy of Prematurity (ROP), will be requested to attend the Ophthalmologist (Eye Specialist) for eye check-ups. Your baby's Doctor will advise you.

### Hearing screening

It is important to detect any hearing difficulties as early as possible. Hearing difficulties can make it harder for a child to listen and to learn to speak.

Your baby's hearing will be screened before he is discharged home from the hospital, see 'Hearing Screening' page 36. If any issue is detected, your baby will be referred for a full hearing assessment.

### Formal assessment of your baby's development

Some babies who were born very preterm, or with a very low birth weight or a specific clinical history, may be requested to attend for a formal developmental assessment at 24 months corrected age. This assessment is only available in some hospitals and is performed by a Developmental Psychologist or Physiotherapist using the **Bayley Scales of Infant and Toddler Development (Bayley-III)**.

If your child is demonstrating developmental delay in a specific area when assessed, an appropriate intervention may be recommended to prevent further delay. This developmental assessment facilitates the identification of areas of your child's development that appear responsible for a delay, e.g. language development, sensory integration or gross motor / fine motor delay. See Chapter 8 'Your baby's development' page 98.



*Ex-preterm boy demonstrating fine motor skills*



*Ex-preterm girl demonstrating cognitive skills*

#### **Did you know?**

- **Gross motor skills** involve movements of the large muscles of the body, including the arms and legs
- **Fine motor skills** involve movements of hands and fingers.

## Chapter 8



Your baby's development

## Chapter 8 Your baby's development

**Preterm babies are born before the natural gestation period of 40 weeks. Being born early means that they have not had the opportunity for full brain development before birth. Consequently, in the early months after birth, their milestones may be a little behind when compared to babies born full term. When assessing a preterm baby's development, allowances are made for this.**

**This chapter will help you to take an active role in your baby's development. It outlines the key areas for you to focus on, with guidelines to develop including growth, sensory development, playtime and positioning, communication and language skills, cognitive / intellectual development, fine and gross motor skills, attention and memory skills.**

### Your baby's development

Preterm birth, a long-term stay in a Neonatal Unit, an on-going health problem or a disability are all factors that may slow down your baby's development. Most preterm babies catch-up with their peers by around 2 years of age and sometimes later. This will depend upon how preterm he was and his medical history.

Try not to make comparisons between your baby and other children. When monitoring your baby's development it is important to bear in mind two key facts:

- Your baby's development is based on his corrected age during the first two years of life.
- Most preterm babies do 'catch-up', but in their own time.

### Preterm babies need more time

Preterm babies need more time and care. Parents frequently report that the big difference is the additional time and patience needed in relation to feeding and getting their preterm baby settled between feeds.

While his level of eye-contact and facial expressions will be limited initially, he will still need to be looked at and spoken to, to fulfil his emotional needs and to promote his social development.

Your baby's development may be a little behind because of his prematurity. However, you will find that he will become more alert

and responsive over time. He will spend more time awake.

As a parent you need to take an active role in helping your baby's development. This can be achieved initially by creating a warm and loving home environment with opportunities for rest and play.

In the early days, when playing with your baby, use his behaviours to guide you in terms of the type of play / social interactions that he enjoys and in terms of how long you can spend playing with him without over-tiring him.

See 'Understanding how your baby communicates with you' page 44 and 'Knowing when your baby is ready for play and rest', page 86 for further information.

*"As a parent you need to take an active role in helping your baby's development"*

When learning new skills, some preterm babies need additional encouragement, as they can be less adventurous. They can be more hesitant when attempting new tasks, e.g. trying to roll over or sit.

If your baby's progress seems a little slow, talk to his Paediatrician, Public Health Nurse (PHN) or General Practitioner (GP).

#### **Did you know?**

Your preterm baby's development will follow his corrected age, not his chronological (actual) age, up to 2 years.

## Key areas for development

### Growth

Growth is a very important aspect of your preterm baby's development and will need to be monitored carefully. This will require regular weight checks with your baby's PHN or at your local Health Centre / Primary Care Centre. See 'Feeding and growth at home', page 87, for more information.



*Baby having weight checked at Out-patient Baby Clinic*

### Sensory development

We receive sensory information from our bodies and the environment through our sensory systems. It is through the senses that babies discover the world. There are 7 senses

- Vision
- Hearing
- Touch
- Smell
- Taste
- Proprioception (sense of the orientation of one's limbs in space, e.g. coordinating legs / arms)
- Vestibular (for balance and posture). Our vestibular sense gives us information about where our head and body are in space. It allows us to stay upright while we sit, stand, and walk (balance).

Sensory experiences support language development, cognitive growth, fine and gross motor skills, problem solving skills and social interaction.

Most activities require us to combine information from many different senses at the same time, e.g. a toddler uses touch, vision and taste to explore the texture of his food, coordination of his body to bring the food to his mouth, smell and taste to identify the different types of food and his vestibular sense to sit upright during his meal.

As they grow, children learn how to take in and process all this sensory information at the same time and focus their attention on particular sensations while ignoring others. Some children have difficulty receiving and processing incoming sensations making everyday tasks at home and at school challenging. Some children may have sensory issues.

### Signs that your child may have a sensory issue

Be aware that these signs can be part of usual toddler development but if they are persisting beyond when you would expect or are beginning to interfere with your child's abilities, function or daily family life, seek advice from his PHN or GP.

- Overly or under reactive to touch, movement, sights or sounds.
- Unusually high or low activity levels.
- Easily distracted, poor attention to tasks.
- Delays in speech, motor skills or academic achievement.
- Coordination difficulties and poor body awareness, being clumsy or awkward.
- Difficulty learning new tasks.
- Difficulty with tasks that require using both hands simultaneously.
- Displaying immature social skills.
- Displaying frustration or lack of control.
- Having difficulty calming oneself once wound up.

## Promoting your baby's development

### Positioning and playtime activities to promote your baby's development

As your baby is now home, it is a good time to start some gentle forms of play and movement. These short periods of play and exercise will greatly help your baby's development.

Babies born preterm or babies that have spent some time in hospital in the first few weeks of life will sometimes need time and special exercises to help them to catch-up. They are often at risk of having a delay in their development especially in the first year. During this time, your baby will be developing according to his corrected age, not his chronological (actual) age.

His gross motor skills and fine motor skills, will follow his corrected age. The same applies to his social skills (eye-contact, smiling), and his speech.

Preterm babies can be easily distracted and easily over stimulated. They often need help calming themselves.

## Developmental activities for babies under 3 months corrected age

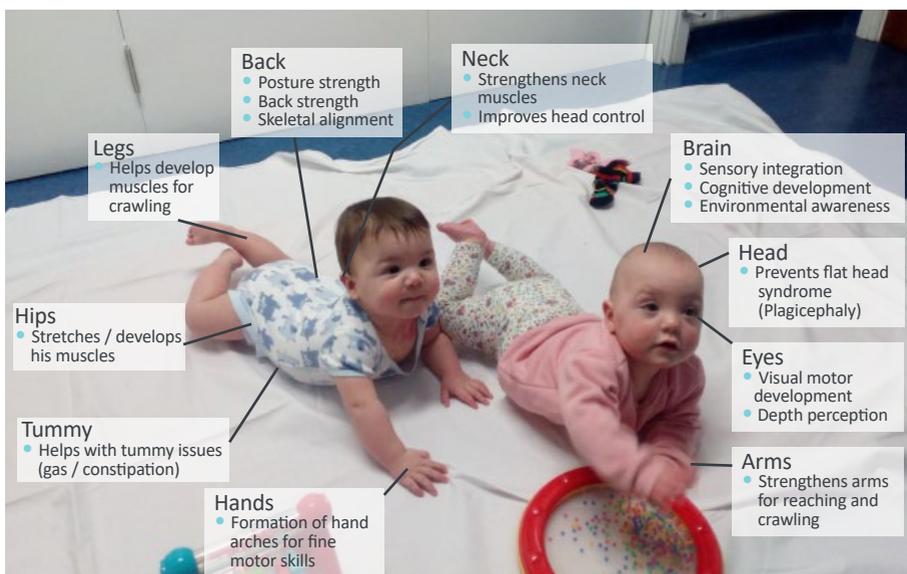
Muscle tone is a key factor in how a preterm baby's motor skills develop. A full-term baby is able to keep himself in a nicely flexed (curled-up) position with his arms and legs tucked into his body. Preterm babies are often weaker. They often have imbalances in their muscles.

The following pages outline activities and positions for awake time that will help your baby develop movement and play skills.

- Short periods of play-time and interaction can help your baby learn how to move and develop his muscle control. The ideal time to do this is when he is awake and calm in a quiet relaxed place.
- Keep play times short at the start. Start with 1 or 2 sessions per day, depending on how alert your baby is.
- Watch your baby for signs of needing a rest or time out, see 'Time-Out signals' page 45.

**Do not be disappointed if your baby is not able for much interaction at the start. Remember he will change and grow quickly over the next few weeks.**

- Try one position or one activity at a time. Each time you try a play time session, vary it by using a different position or activity next time.



## 'Tummy Time'

Tummy time is about providing short periods (for a few minutes) throughout the day when your baby is being active, alert and exercising while lying on his tummy. Your baby will need to practice 'Tummy Time' several times each day.

### Tips for 'Tummy Time'

- Your baby can do 'Tummy Time' on your chest / tummy while you lie slightly reclined, on your knees, on a therapy ball, on a firm mat on the floor or over a 'Tummy Time' roll toy or rolled up blanket. This helps support your baby if he struggles when placed down on a flat surface.
- You can carry your baby 'Tummy down' along your arm.
- Position your baby's forearms / elbows under or slightly in front of his shoulders so that he can lean through them to help lift his head.
- Cup your hands around his shoulders and use touch to alert his muscles.
- Place your hand on his bottom to keep it down if he is struggling.
- Use gentle massage on his shoulder / neck to encourage him to lift his head.
- Use your voice to help / encourage your baby.
- Use a toy that has nice colours or makes a noise (music or shakers). Be aware and watch your baby for his reactions in the event this stimulation might be too much for him to deal with. If so, focus only on the 'Tummy Time' exercise.
- As your baby gets better at lifting his head while on his tummy, increase his 'Tummy Time' experiences.
- Roughly, by the time your baby is 2 months corrected he should be spending about 30-40 minutes in total 'Tummy Time' every day.

**Always supervise your baby while on his tummy. 'Tummy Time' is awake time. Look at his face to see that his breathing is comfortable. Never let your baby sleep in this position on his tummy .**



'Tummy Time' on Mum's lap



'Tummy Time' on Mums arm



'Tummy Time' on the floor



'Tummy Time' on a therapy ball

As your baby grows, he will begin to enjoy spending more and more awake time on his tummy for play and development. You will notice that he will begin to lift his head higher for longer while propping himself on his arms to look around he may even start to reach for toys placed close by.

#### **Did you know?**

Tummy Time is especially important for babies that have low tone, reflux or plagiocephaly.

#### **Ideas for play during 'tummy time'**

- Place a rattle in your baby's hand or help him to explore or touch different toys and textures (try using little teddies, rattles or textured sensory toys).
- Use a mirror placed close by so he can look at his face.
- Lie in front of him so he can see you and 'talk' to you. If your baby is one of twins or triplets, let him face his twin or triplet so that they can 'play' together.



*Baby looking in mirror*



*Tummytime over a roll with big brother*

#### **Side-lying: laying your baby on his side**

- This is a nice position to promote development.
- This can be done on your lap or on the floor.
- A rolled towel or blanket behind your baby will give him support and stop him from rolling backwards. Your Physiotherapist will show you how to position your baby with support.
- Alternate the sides to which your baby lies.
- **This is not a position for sleeping.**



*Baby side-lying with rolled blanket on the floor*



*Baby side-lying reaching for brightly coloured toys*

#### **Benefits of side-lying**

In this position your baby's hands come to midline naturally. This means that he can begin to observe his hands to learn to use them. This is also beneficial for communication and language development. Your baby can easily comfort himself in this position. He can get a new sensation of bearing weight through different parts of his body.

### Supine-lying: laying your baby on his back while on your lap

- Get yourself into a comfortable position, on a sofa or a seat. You may find it helpful to place a small box under your feet so your knees are raised higher than your hips (a baby step is a perfect height for this).
- Lay your baby on your lap. Help him to rest his feet in a curled-up position or let them rest on your tummy.
- Help your baby to bring his hands and head into a midline position.



Baby lying on mum's knees with hands in midline

### Supine-lying: laying your baby on his back while on the floor

Your baby may need some positioning rolls or supports initially to help him control his posture and learn to move well against gravity when playing in this position. Your physiotherapist will advise if this is necessary. **Remember positioning supports are for awake time. Remove them during sleeping time.**

**In a supine position you can try activities to help develop the following skills**

- **Fine motor (hand) and reaching skills** – help your baby to learn to bring his hands to his face or hand-to-hand on his chest. Help and guide your baby's hand to reach

for toys (a play arch or dangling toys are useful for this) Place small toys in his hands or let him hold your fingers (grasping). Use different shapes and textures of objects to help his sensory development e.g.

- **Looking (visual) skills** – hold toys / baby books for your baby to look at.
- **Social skills** - engage your baby to chat, coo, mimick facial expressions.
- **Self-regulation skills** – help your baby to bring his hands to his mouth to learn to comfort himself.



Baby supine-lying on floor reaching for toys

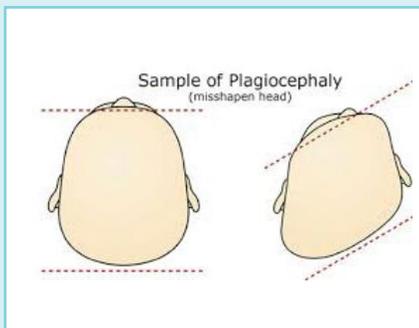
### Sitting positions

- Sitting is a good position to enable and encourage your baby to look around him and interact.
- Adjust the angle of the seat so that he can sit supported and comfortably with his head in the middle position, without slumping to the side or forward.
- As your baby gets bigger he can play while sitting on a 'V' cushion or while sitting supported with his back to you, or between your legs on the floor.
- Your baby's Physiotherapist or Occupational Therapist can show you how to use positioning supports when your baby is big enough to sit in a baby seat.

**It is not recommended to let babies sleep in a sitting position, e.g. in seats or bouncers.**

## Positional Plagiocephaly

Sleeping and lying with his head always turned to one side can cause flattening or misshaping of your baby's head. This is known as plagiocephaly and may include tightening of the neck muscles. This does not affect brain development but can cause changes in the physical appearance of the shape of your baby's head.



*Plagiocephaly*

## Tips to help prevent positional plagiocephaly

- Alternate the side to which your baby turns his head each time you are laying him down.
- Do **not** place pillows or rolls or positioners into the cot or under his head while your baby is sleeping. **These are not advised and can increase the risk of Sudden Infant Death Syndrome.** See **Sleep and sleep safety** page 83 - 85.
- Practice lots of 'Tummy Time' and other developmental activities page 100 - 103 to help your baby develop head control and strong neck and shoulder muscles
- If your baby has a preferred side to turn to try to place him to sleep with his head turned to the other side and encourage him to turn to the less preferred side when he is awake.
- If you are concerned talk to your baby's Doctor or Physiotherapist.

## Physiotherapy for your baby

If you are worried about your baby's development, movement or muscle tone consult with his PHN or GP to organise an appointment with a Paediatric Physiotherapist for guidance on specific exercises or positions that might help.

## Toys for preterm babies

- The best toy for your baby in the early days is you. He does not need lots of equipment.
- Baby books designed with large contrasting patterns (often in black and white) may help to encourage vision and focus.
- Small toys like rattles are excellent for encouraging reaching, grasping and mouthing skills.
- Toys of different texture and sensory experiences help touch and sensory development.
- Balls of different sizes are very useful for grasping and exploring, and later for reaching and encouraging movement.

One of the most important things your baby needs to do is learn to control and move his body. Generally the best way to do this is by following the activities suggested in the previous pages and free play on a mat on the floor in a safe environment. Too much time spent in devices that limit active movement, e.g. car seats, or that only allow certain movements (jumpers) can stunt this.

## Equipment to avoid

- **Baby bouncers and bouncer seats:** These can cause your baby to do a lot of bouncing and pushing backwards. This can over strengthen your baby's muscles and lead to muscle imbalances. For example, this may make it more difficult for your baby to use his arms to reach forward and can encourage him to stand on tip-toe.
- **Jumpers / door jumpers:** While lots of babies love to stand and bounce, and this is a normal part of development, spending time in jumpers teaches babies to stand on their toes and can cause stiffening of the ankles. It also stops babies from strengthening their core and tummy muscles.

- **Walkers and entertainers:** These do not necessarily help babies to learn to walk better. They can lead to delays in walking independently. They can encourage babies to learn to walk on their toes and stunt the development of balance, core muscle development and coordination.

## Communication and language development

Communication is a multisensory activity and relies on the integration of several senses, i.e. vision, hearing, smell, touch and overall good body tone and posture to help with early signalling, reaching and pointing. See 'Sensory development' page 99.



*Dad and baby son communicating via eye contact and touch*

### Communication development

Moving our mouths for feeding is very important. It is also important for speech sounds to develop. Ensuring that your baby has good oral skills can make speech sounds easier for him. In the early days encourage your baby to bring his hands to the center of his body and to his mouth as this provides a good basis for building skills for communication.

The human voice is what your baby wants to hear. He learns the sounds of language by listening to you and imitating you.

It is important to talk to your baby even if you think he is too young to understand.

Babies love gentle playful games.

Eye - contact at this stage is your baby's main mode of interaction. In the early days, your baby will have little interest in toys, responding best to close contact and social interaction with you or family and friends.

### When communicating with your baby

- Ensure that he can see your face, watch your lips move and observe your facial expressions. You will quickly notice him mimicking your facial changes.
- Repeat the sounds your baby makes to you. This is fun as he realises that what he is verbalising means something to you.
- Ensure your baby is able to turn his head in response to sounds and voices around him.
- Ensure that he can reach out towards you and point to people or objects he wants (showing signs of early gesture formation).
- When talking to your baby, use short phrases and sentences.
- Repeat words frequently, e.g. "which sock today?" "This Sock?" "It's a red sock!" Understanding words makes it easier for him to try to say them.



*Dad and his baby daughter interacting*

Through tone of voice, facial expression and eye-contact, your baby becomes secure and self-confident.

## How to develop language and communication

A child's mental development and grasp of language are strongly associated with the amount of language a child is exposed to in the first 3 years of life. The greater variety of adult words a baby hears, the greater his language skills will be. Listening to TV does not have the same effect. The more you talk to your child, the more opportunities your child has to practice verbalizing and conversing, listening and talking.

### Tips to develop your baby's language and communication skills

- Show your baby new things every day.
- Face your baby. Encourage eye-contact to let your baby know that you are listening and interested.
- Talk, smile and sing to your baby. Listen to his responses.
- Talk about what you are doing as you bathe, feed and dress your baby.
- When out for a walk, talk to your baby. Point out interesting things that you can see and hear in the environment.

- Encourage your baby to make vowel-like sounds, e.g. "ma", "da", "ba".
- Imitate animal sounds for your baby to copy, e.g. dog says "woof, woof", cat says "meow", pig says "oink, oink", cow says "moo".
- Supply the finishing words to each nursery rhyme sentence, e.g. "baa baa black... sheep".
- Sing nursery rhymes for rhythm and action words, e.g. "clap hands" "peek-a-boo", "incy-wincy spider". Repeat to develop conversation and confidence.
- Reinforce your conversations with non-verbal gestures, facial expressions, hand movements and body language.
- Make time to read to your baby every day. Use nursery rhyme and picture books for babies.
- Encourage page turning. Ask your child to identify pictures or objects, e.g. "what is this?" When he can talk ask him to name objects, e.g. "ball", "duck", "spoon", "cup".
- Play simple games, which involve action and taking turns.



Dad engaging with eye-to eye contact with his baby



Ask your child to identify pictures

*"Talk, smile and sing to your baby and listen to his responses"*



Little boy communicating with his mum

- Play 'let's pretend' games to encourage skills of imagination, e.g. pretending to be an animal, driving a fire engine / truck.
- Play role-play games, e.g. doctor / nurse / vet / pilot.
- Encourage play with older children to develop language.
- Make a scrapbook of favourite things by cutting out pictures. Group them into categories, e.g. things to eat, things to take to the beach, fruit, tools, transport, things to play with.
- Expand vocabulary, e.g. name body parts and identify what you do with them, e.g. "This is my nose. I can smell flowers and perfume".
- Place familiar items in a box; as your child explores and removes each item ask him to tell you what it is called and how to use it, e.g. "This is my brush. I use it to brush my hair".
- Simplify your language. If your child is using two-word phrases, try to do the same at regular intervals throughout the day, e.g. "Daddy gone", "Daddy car", "Mammy shop", "Mammy work", "more water".
- Give your baby choices to increase his vocabulary, e.g. "Do you want water or milk?".
- Keep reading and talking to your child.

## Assessing your child's language development

Keep an eye on the way your child is communicating with you.

### By one year corrected age your child should be able to

- Babble using increasing intonation as if having a conversation.
- Understand simple instructions associated with a gesture, e.g. "come to daddy", "clap hands", and "wave bye-bye".
- Hand objects to adults when asked.

### By two years corrected age your child should be able to

- Respond to simple instructions, e.g. "give me the ball".
- Have a reasonable single word vocabulary, e.g. "cat", "ball", "spoon", "bed", "car", "dog", "mama", "dada", "man", "baba", "no".
- Start to imitate two word utterances, e.g. "Mummy shop", "Daddy gone".
- Start to use 2 to 3 multiple word sentences, e.g. "Daddy gone car".

If your child is making no effort to communicate or babble by two years corrected age, arrange to see a Speech and Language Therapist. Ask your baby's GP, local Early Intervention Service or Health Centre / Primary Care Centre to help you. A hearing test may need to be performed to rule out hearing impairment.



Little boy reading with his Mum

## Cognitive / intellectual development

Cognitive intellectual development is the development of the mind. Cognitive development is about your baby's ability to learn about his environment and to solve problems. It involves the use of memory, language, reasoning and thinking. The toys that help a baby's cognitive development initially are toys that produce cause and effect, i.e. when a baby handles them they do something, e.g. rattles, toys that light up and play music, toys with press button sounds.



*Placing tubs in a tub and pouring them out*



*Sitting is a good position for explorative play*

### Suggestions to develop your baby's cognitive skills during his first two years

- Place toys around him to reach out to, touch and explore.
- Hang rattles and toys over his cot or use a play mobile on the floor to encourage your baby to reach and grab.
- Provide stacking pots and blocks; build a tower of blocks for your baby to topple.
- Look at picture books together.
- Talk about everyday things especially when out and about.
- Provide simple musical instruments, e.g. xylophone or wooden spoon and saucepan.
- Provide boxes or beakers for your baby to put things into and take things out of.
- Provide suction toys on table-tops.
- Introduce nursery rhymes to promote memory and listening skills, e.g. 'this little piggy' and 'pat-a-cake'.
- Let your baby watch a toy or ball being hidden and encourage him to retrieve it.
- Encourage creativity skills using crayons and paint to draw.

*“Introduce nursery rhymes to promote memory and listening skills”*



*Little boys playing with their toys*

**To build up your baby's cognitive skills from around two years corrected age, engage him in a variety of more complex activities**

- Shape activities; form boards to place shapes or boxes for posting shapes.
- Pegboard activities, e.g. placing pegs into holes / peg jigsaws on a form board.
- 2 to 4 piece jigsaw puzzles to develop object assembly skills, building up to more complex jigsaw puzzles.
- Opportunities for creative or make-believe play, e.g. simple puppets, tea sets, doll play, toy telephone, train set, cars, blocks.
- Opportunities to play with construction toys, e.g. Duplo / Lego.
- Reproducing simple block constructions built by you, e.g. a tower, a train, a bridge.



*Little girl identifying a bunny rabbit on a wall*

*“Provide opportunities for creative or make-believe play”*

**Language-related cognitive activities should be introduced at around two years of age. Depending on your child's language skills - ask your child to**

- Match and distinguish pictures.
- Match colours - present different coloured blocks, or shapes e.g. Lego / Duplo to match and group by colour.
- Play games introducing prepositions, e.g. 'on', 'in', 'under', 'behind', 'between', etc.
- Compare objects to show opposites, e.g. fast - slow, wet - dry.
- Distinguish between sizes, e.g. big and little, long and short.
- Weigh objects to see if they are heavy or light.
- Sort shapes and objects in your home by size, e.g. square objects (table), circular objects (ball).
- Discuss objects by use, e.g. chair for sitting, ball for bouncing, cup for drinking, spoon for eating.



*Little girl enjoying creative play*

*“Sort shapes and objects in your home e.g. square objects (table), circular objects (ball)”*

## Gross motor development

Gross motor skills involve the use of the large muscles in the body and include walking, running, jumping, climbing and hopping.

### Suggestions to enhance your baby's gross motor development

- See 'promoting your babies development' page **100** for babies less than 3 months old.
- When your baby is comfortable on the floor, provide supervised play-time encourage him to learn to move and explore on the floor.
- Provide opportunities to sit unaided, to crawl and cruise around furniture; a pull along toy or trolley of blocks will help.
- Provide toys to ride and climb on and space to run and play.
- Use of climbing frames and playground activities to aid coordination strength and fitness, e.g. swings, see-saw, slide, obstacle track.
- Provide ball play for rolling, throwing, catching and kicking to promote coordination skills.
- Encourage play with cardboard boxes to push, crawl through, pull and get into.
- Encourage play with large pillows to jump on / roll about.
- Play peek-a-boo games, hide and seek.



*Toddler sliding*



*Toddler playing in the rain*



*Ball play to promote coordination skills*



*Toddler on a swing*



*Toddler on a climbing frame*



*Toddler in a play-house*



*Toddler enjoying small ball play*



*Toddler playing with toy shopping trolley*

## Fine motor development

Fine motor skills involve precise use of the hands and fingers, e.g. pointing, drawing, using a spoon to feed, writing, stringing beads, doing up shoelaces.

### Suggestions to encourage your baby's fine motor development

- Drawing activities eg. crayons for spontaneous scribbling.
- Building blocks for creative building.
- Hammering activities, e.g. hammer and peg toys.
- Pop-up toys / stacking toys / nesting toys.
- Opening / closing lids on bottles.
- Playing with construction toys, e.g. Duplo / Lego.
- Sticker book activities.
- Feeling / guessing / finding toys in an old tissue box and learning 'in' and 'out'.
- Opportunities for messy play, e.g. sand, water, finger and foot paints, bath toys, beakers, sprinkling toys, ducks and boats for pouring and play.
- Play-dough activities e.g. rolling dough into big balls using palms of hands, into small balls using only the fingertips, or making things, e.g. snake, people, snail and house.
- Using a large plastic tweezers to lift small objects into a container, e.g. peas, cereal.
- Posting coins into a piggy bank.
- Lacing macaroni / cereal onto string.
- Sorting activities e.g. sorting coloured pegs / buttons into different containers.
- Pouring and filling e.g. water and sand play.
- Balloons and ball play, e.g. catching and hitting.

**Remember to supervise your child at all times and take particular care when they are handling small objects.**



*Toddler engaging in fine motor play*



*Toddler playing with building blocks*



*Toddler posting coins*

## Attention and memory development

### Suggestions to encourage your baby's attention and memory skill development

- Produce one or two toys to play with at a time. This will decrease distractibility and the tendency to flit from toy to toy without attending appropriately to one toy.
- Make sure you have your child's attention and engagement when you are giving him instructions on how to use a toy or puzzle board.
- If your child is not attentive, gently hold his head up to gain eye-contact with you and repeat the instruction.
- Repeat a simple nursery rhyme daily until your child can say it with you.
- Read a simple story and have your child repeat the story back to you.
- Review events of the day with your child at bedtime.
- Play the memory game with a fun deck of cards starting with 3 pairs and building up gradually to more pairs as your child improves.
- Play a memory game with objects, e.g. place 4 objects on a tray, let your child look at these for 1 minute, cover the tray, remove an object, uncover the tray and ask what is missing.

**Most importantly, do not over stimulate your child as you will make fun and learning a chore instead.**

*“Make sure you have your child's attention and engagement when you are giving him instructions on how to use a toy or puzzle board”*



*Using a colored toy to attract baby's attention*



*Mum teaching her baby to sit and reach while supported between her knees.*



*Mum instructing daughter on how to stack items*

## Immunisation schedule for babies

Immunisation is a safe and effective way to protect your child against certain diseases. Immunisation is provided as vaccines which are given at specific time points to immunise (protect) your child against these diseases. In general, preterm babies should be immunised as normal based on their chronological (actual) age. If your baby is in the Neonatal Unit at the time a vaccine is due, it may be given there.

Immunisation continues into early childhood. Please ensure that your child receives all his immunisations by consulting with his Public Health Nurse (PHN), General Practitioner (GP) or school. Your baby will be provided with an Immunisation Passport to keep a record of his immunisations. For further information see [www.immunisations.ie](http://www.immunisations.ie)

### Did you know?

Delaying vaccination increases the risk of preventable diseases for your child and outbreaks of preventable diseases for others.

Age	Visit	Vaccination
<b>2</b> months	<b>Visit 1</b> 3 injections 1 Oral drops	6 in 1 MenB (new) PCV Rotavirus (new)
<b>4</b> months	<b>Visit 2</b> 2 injections 1 Oral drops	6 in 1 MenB Rotavirus
<b>6</b> months	<b>Visit 3</b> 3 injections	6 in 1 PCV MenC
<b>No Rotavirus vaccine on or after 8 months 0 days</b>		
<b>12</b> months	<b>Visit 4</b> 2 injections	MMR MenB
<b>13</b> months	<b>Visit 5</b> 2 injections	Hib/MenC PCV

<b>6 in 1</b>	Diphtheria, Haemophilus influenzae, b (Hib), Hepatitis B, Pertussis (whooping cough), Polio & Tetanus
<b>PCV</b>	Pneumococcal conjugate
<b>Rotavirus</b>	Rotavirus oral vaccine
<b>MenB</b>	Meningococcal B
<b>MenC</b>	Meningococcal C
<b>MMR</b>	Measles, Mumps, Rubella
<b>Hib/MenC</b>	Haemophilus influenzae b + Meningococcal C combined Vaccine

## Glossary of commonly used terms and abbreviations

You may come across the following terms and abbreviations in the course of your baby's treatment. This list is provided for your reference in understanding the complex vocabulary that may be used during your baby's stay in the Neonatal Unit.

For more terms related to prematurity and Neonatal Care, see 'Neonatal Terminology' on page 14, 'Medical Conditions' on page 26; 'Medical equipment' on page 30; 'Procedures and Treatments' on page 33; 'Tests and Examinations' on page 35; 'Medicines' on page 38, 'Terms related to nutrition and feeding' on page 59 and 'Common issues for babies' on page 92.

**Apgar Score** Score used when assessing the well-being of a baby at birth.

### Bayley Scales of Infant and Toddler Development (Bayley III)

Developmental assessment scale measuring cognitive, language, motor and behavioural / emotional development. See description on page 96.

**Breast Milk (BM) / Human Milk (HM)** Milk produced by mothers.

**Maternal Breast Milk (MBM) / Maternal Milk (MM)** refers to milk produced by a baby's own mother.

**Donor Breast Milk (DBM) / Donor Milk (DM)** refers to milk donated by other mothers. See also 'Expressed Breast Milk' on next column.

**Breast Milk Fortifier (BMF) / Human Milk Fortifier (HMF)** See description on page 64.

**Broncho-Pulmonary Dysplasia (BPD)** See description on page 26.

**Cardiac** Relating to the heart.

**Cardio-Pulmonary Resuscitation (CPR)** See description on page 77.

**Central Nervous System (CNS)** Brain and spinal cord – part of the nervous system.

**Cerebral** Relating to the brain.

**Cerebro-Spinal Fluid (CSF)** Fluid in and around the brain and spinal cord.

**Chronic Lung Disease (CLD)** See description on page 26.

**Cognitive** Intellectual activity / relating to the mental processes of perception, memory, judgment, and reasoning / thinking or conscious mental processes.

**Continuous Positive Airway Pressure (CPAP)** See description on page 32.

**Corrected Age (CA) / Corrected Gestational Age (CGA)** See description on page 15.

**Cranial** Relating to the head including the brain.

**Cranial Ultrasound Scan (CrUSS)** See description on page 37.

**Encephalopathy** See description on page 27.

**Electrocardiogram (ECG)** See description on page 35.

**Electroencephalogram (EEG)** See description on page 35.

**Endo-Tracheal (ET) Tube** See description on page 30.

**Expressed Breast Milk (EBM) MEBM** refers to Maternal EBM; **DEBM** refers to Donor EBM. See description on page 59.

**Extra-Corporeal Membrane**

**Oxygenation (ECMO)** See description on page 33.

**Extremely Low Birth Weight (ELBW)** See description on page 14.

**Fine motor skills** Precise use of the hands and fingers.

**Flexed** Curled-up position.

**Full Blood Count (FBC)** See description on page 35.

**Gastric** Relating to the stomach.

**Gastro-Intestinal Tract (GIT)** This may also be referred to as the 'gut'. The GIT includes the oesophagus (the tube that connects the mouth to the stomach), the stomach and the intestine (bowel).

**Gastro-Oesophageal Reflux (GOR) and Gastro-Oesophageal Reflux Disease (GORD)** See description on pages 27 & 93.

**General practitioner (GP)** Family Doctor.

**Gestational Age (GA)** See description on page 14.

**Gross motor skills** Use of the large muscles of the body, including the arms and legs.

**Health Service Executive (HSE)** Public Health Service in Ireland.

**Hepatic** Relating to the liver.

**High Dependency Unit (HDU)** See description on page 12.

**High Frequency Oscillator (HFO)** See description on page 32.

**Intra-Uterine Growth Restriction (IUGR)**

Refers to slower than expected growth of a baby during pregnancy. This may also be referred to as 'Intra-Uterine Growth Retardation' or 'Foetal Growth Restriction'.

**Intravenous (IV)**

Intravenous means into a vein, i.e. directly into the blood.

**Intraventricular Haemorrhage (IVH)**

A bleed within the brain.

**Large for Gestational Age (LGA)** Describes a baby who is larger than expected for his age / gestation. This may also be referred to as 'Large for Dates'.

**Low Birth Weight (LBW)** See description on page 14.

**Lumbar Puncture (LP)** See description on page 36.

**Magnetic Resonance Imaging (MRI)** See description on page 36.

**Meconium** Material present in the intestine (bowel) of a baby in-utero. It is usually excreted as a specific type of bowel motion in newborn babies, but may be excreted before or during the time of birth. If the meconium is inhaled into a baby's lungs it can cause 'Meconium Aspiration Syndrome'. See description on page 28.

**Multidisciplinary Team (MDT)** See description on page 18.

**Naso-Gastric (NG) Tube (NGT)** See description on pages 59 & 65.

**Neonatal Abstinence Syndrome (NAS)** See description on page 28.

**Necrotising Enterocolitis (NEC)** See description on page 28.

**Neonatology** Branch of paediatric medicine, which deals with newborn babies.

**Neonatal Intensive Care Unit (NICU)** See description on page **12**.

**Newborn Individualised Developmental Care and Assessment Programme (NIDCAP)** See description on page **48**.

**Nil Per Orally (NPO)** Nothing via the mouth.

**Nitric Oxide (NO)** See description on page **32**.

**Non-Nutritive Sucking (NNS)** See description on page **52**.

**Occipital Frontal Circumference (OFC)** Head circumference measurement.

**Occupational Therapist (OT)** See description on page **18**.

**Oro-Gastric (OG) Tube (OGT)** See description on pages **59** and **65**.

**Oxygen (O<sub>2</sub>)** See 'Respiratory support' page **31**.

**Parenteral Nutrition (PN)** See description on page **58 - 59**.

**Patent Ductus Arteriosus (PDA)** See description on page **28**.

**Periventricular Leucomalacia (PVL)** See description on page **28**.

**Per Orally (PO)** Via the mouth.

**Plain Film of Abdomen (PFA)** See description on page **37**.

**Preterm baby** Baby born before **37** completed weeks gestation (of pregnancy). See description on page **14**.

**Prone** Lying on tummy. See description on page **43**.

**Pulmonary** Relating to the lungs.

**Public Health Nurse (PHN)** Community based Nurse who provides a range of health services including checks for mothers and babies post discharge home. PHNs may also assess your baby's growth and provide guidance on care, feeding and development. Your local PHN is usually accessed via your local Health Centre / Primary Care Centre.

**Renal** Relating to the kidneys.

**Retinopathy of Prematurity (ROP)** See description on page **29**.

**Sudden Infant Death Syndrome (SIDS)** See page **83**.

**Speech and Language Therapist (SLT)** See description on page **18**.

**Small for Gestational Age (SGA)** Describes a baby who is smaller than expected for his age / gestation. This may also be referred to as 'Small for Dates'.

**Special Care Baby Unit (SCBU)** See description on page **12**.

**Supine:** Lying on back. See description and photo on pages **43** and **103**.

**Term baby** A baby born from 37 completed weeks gestation (of pregnancy). May also be referred to as a 'full-term baby'.

**Therapeutic Cooling (TC)** See description on page **34**.

**Total Parenteral Nutrition (TPN)** See description on page **59**.

**Transient Tachypnoea of the Newborn (TTN)** See description on page **29**.

**Urea and Electrolytes (U&E)** See description on page **35**.

**Very Low Birth Weight (VLBW)** See description on page **14**.

## Sources of information and useful contacts

### Association of Occupational Therapists

**Ireland (AOTI)** [www.aoti.ie](http://www.aoti.ie)

Professional association of Occupational Therapists in Ireland.

**Bliss** [www.bliss.org.uk](http://www.bliss.org.uk)

A UK based charity dedicated to improving both the survival and long-term quality of life for babies born too soon, too small or too sick to cope on their own. Provides a range of resources and publications for parents.

**Breastfeeding** [www.breastfeeding.ie](http://www.breastfeeding.ie)

Irish Health Service (HSE) resource that provides practical guidance on breastfeeding and expressing.

**Early Babies** [www.earlybabies.com](http://www.earlybabies.com)

A UK based resource that provides practical information, including a parent's handbook, to help parents of babies in Neonatal Units.

**European Foundation for the Care of Newborn Infants (EFCNI)** [www.efcni.org](http://www.efcni.org)

A pan-European organisation and network to represent the interests of preterm and newborn infants and their families.

**First Light (formerly the Irish Sudden Infant Death Association)**

[www.firstlight.ie](http://www.firstlight.ie)

Ireland based service that provides support for families affected by the death of a child.

**Health Promotion**

[www.healthpromotion.ie](http://www.healthpromotion.ie)

Irish Health Service (HSE) resource that provides a range of publications on various topics including hygiene, safety and accident prevention, immunisations, and breastfeeding in Ireland.

**Health Service Executive** [www.hse.ie](http://www.hse.ie)

Public health service in Ireland. Provides a range of information relating to health.

**Irish Association of Speech and Language Therapists (IASLT)**

[www.iaslt.ie](http://www.iaslt.ie)

Professional association of Speech and Language Therapists in Ireland.

**Irish Neonatal Health Alliance (INHA)**

[www.inha.ie](http://www.inha.ie)

A collaborative Irish network representing and supporting the interests of preterm and ill babies and their families in the Neonatal Unit.

**Irish Nutrition and Dietetic Institute (INDI)** [www.indi.ie](http://www.indi.ie)

Professional body for Dietitians in Ireland. Provides a range of nutrition fact sheets and details of Dietitians in private practice.

**Irish Premature Babies (IPB)**

[www.irishprematurebabies.com](http://www.irishprematurebabies.com)

Charity for parents with premature babies in Ireland. Provides support information and practical help.

**Irish Society of Chartered**

**Physiotherapists (ISCP)** [www.iscp.ie](http://www.iscp.ie)

Professional body for Chartered Physiotherapists in Ireland. Provides a list of Paediatric Physiotherapists.

**Safefood** [www.safefood.eu](http://www.safefood.eu)

All-Ireland body that promotes awareness and knowledge of food safety and nutrition. Provides information on nutrition and food safety including the safe preparation of bottle-feeds.

**Tinylife** [www.tinylife.org.uk](http://www.tinylife.org.uk)

Northern Ireland based premature and vulnerable baby charity.

## Weight conversion chart

Kg	lbs	oz	Kg	lb	oz	Kg	lb	oz	Kg	lb	oz
0.45	1	0	1.70	3	12	2.95	6	8	4.20	9	4
0.48	1	1	1.73	3	13	2.98	6	9	4.22	9	5
0.51	1	2	1.76	3	14	3.01	6	10	4.25	9	6
0.54	1	3	1.79	3	15	3.03	6	11	4.28	9	7
0.57	1	4	1.81	4	0	3.06	6	12	4.31	9	8
0.60	1	5	1.84	4	1	3.09	6	13	4.34	9	9
0.62	1	6	1.87	4	2	3.12	6	14	4.37	9	10
0.65	1	7	1.90	4	3	3.15	6	15	4.39	9	11
0.68	1	8	1.93	4	4	3.18	6	0	4.42	9	12
0.71	1	9	1.96	4	5	3.20	7	1	4.45	9	13
0.74	1	10	1.98	4	6	3.23	7	2	4.48	9	14
0.77	1	11	2.01	4	7	3.26	7	3	4.51	9	15
0.79	1	12	2.04	4	8	3.29	7	4	4.54	10	0
0.82	1	13	2.07	4	9	3.32	7	5	4.56	10	1
0.85	1	14	2.10	4	10	3.35	7	6	4.59	10	2
0.88	1	15	2.13	4	11	3.37	7	7	4.62	10	3
0.91	2	0	2.15	4	12	3.40	7	8	4.65	10	4
0.94	2	1	2.18	4	13	3.43	7	9	4.68	10	5
0.96	2	2	2.21	4	14	3.46	7	10	4.71	10	6
0.99	2	3	2.24	4	15	3.49	7	11	4.73	10	7
1.02	2	4	2.27	4	0	3.52	7	12	4.76	10	8
1.05	2	5	2.30	5	1	3.54	7	13	4.79	10	9
1.08	2	6	2.32	5	2	3.57	7	14	4.82	10	10
1.11	2	7	2.35	5	3	3.60	7	15	4.85	10	11
1.13	2	8	2.38	5	4	3.63	7	0	4.88	10	12
1.16	2	9	2.41	5	5	3.66	8	1	4.90	10	13
1.19	2	10	2.44	5	6	3.69	8	2	4.93	10	14
1.22	2	11	2.47	5	7	3.71	8	3	4.96	10	15
1.25	2	12	2.49	5	8	3.74	8	4	4.99	11	0
1.28	2	13	2.52	5	9	3.77	8	5	5.02	11	1
1.30	2	14	2.55	5	10	3.80	8	6	5.05	11	2
1.33	2	15	2.58	5	11	3.83	8	7	5.07	11	3
1.36	3	0	2.61	5	12	3.86	8	8	5.10	11	4
1.39	3	1	2.64	5	13	3.88	8	9	5.13	11	5
1.42	3	2	2.66	5	14	3.91	8	10	5.16	11	6
1.45	3	3	2.69	5	15	3.94	8	11	5.19	11	7
1.47	3	4	2.72	5	0	3.97	8	12	5.22	11	8
1.50	3	5	2.75	5	1	4.00	8	13	5.24	11	9
1.53	3	6	2.78	6	2	4.03	8	14	5.27	11	10
1.56	3	7	2.82	6	3	4.05	8	15	5.30	11	11
1.59	3	8	2.83	6	4	4.08	8	0	5.33	11	12
1.62	3	9	2.86	6	5	4.11	9	1	5.36	11	13
1.64	3	10	2.89	6	6	4.14	9	2	5.39	11	14
1.67	3	11	2.92	6	7	4.17	9	3	5.41	11	15

Note, numbers have been rounded and are approximate only.

# Freddie's Story



*To all in Unit 8,*

*Just a note to thank all you guys in the NICU for the incredible care and attention you gave our little boy Freddie. We're here looking at Freddie's 1st Birthday photos and are amazed at how well he is doing now. He was born breech, naturally, in St Vincent's Hospital weighing 980 g at 26 weeks gestation. He needed immediate transfer to Holles Street in your special transport incubator.*

*Little Freddie had a very stormy neonatal period and spent 7 months in total in Holles St and Crumlin. Four days after his birth he suffered a bleed in his lung resulting in him being ventilated for 14 weeks. That was only the start of Freddie's problems as he had many more challenges to face. His neonatal complications were extreme to say the least. It's amazing what he has achieved to date and what a difference a year and Holles Street can make. He has been an incredible little warrior. Looking back now we realise that we were just taking each day one at a time and worried so much about him. We just want to say thanks to all the amazing staff in NICU. You never once gave up on Freddie and got him to where he is today. He's the happiest, jolliest little boy with the biggest love for life. We couldn't be prouder parents and couldn't be more grateful to every member of staff in the NICU.*

*Never give up hope.*

*Lots of Love,*

*Eoin, Eimear and Freddie x*



# Ailbhe's Story

*To our friends in Unit 8,*

*We hope you are all well.*

*We wanted to let you know how our wonderful Ailbhe is doing now that she has just turned 5. Ailbhe was born at 23<sup>+6</sup> on 12<sup>th</sup> Oct 2012 weighing 440 g. After a shaky start and 10 weeks on a ventilator, Ailbhe made great progress and came home to us after 131 days in Unit 8 and Special Care.*

*Ailbhe has continued to do incredibly well and is an active and chatty little girl who is torn between being a diver or, as she says, a "medicaler" when she grows up – I think diver is winning at the moment as she loves being in the water.*

*Ailbhe graduated from preschool in the summer and started in school in September. She loves her new school, has lots of lovely friends and is really enjoying all the new challenges.*

*We know that all of Ailbhes achievements are possible because of the excellent care and support she received from you. You are all in our thoughts especiall on her birthdays. Thank you.*



## Acknowledgements

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- The babies, their parents and families.
- The Neonatal multidisciplinary team.
- Colleagues at other centres.
- The NMH Foundation.
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Photos are courtesy of babies and families who were cared for in our Neonatal Unit at the National Maternity Hospital.

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## WaterWipes

Waterwipes want to help new parents realise the natural power they have to offer comfort to their baby. With that in mind we launched the [#PureLove](#) campaign to help new parents and their babies reap the benefits of prolonged skin to skin. This campaign involved a study by world renowned skin to skin expert, Dr Susan Ludington, showing the immediate physiological benefits of skin to skin. These include an increase in confidence, in bonding and how a mother's body regulates her baby's biology.

To see the science and benefits behind skin to skin please check out our [#PureLove campaign](#)  
[@www.waterwipes.com/purelove](#)

[www.waterwipes.com](http://www.waterwipes.com)





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*“This booklet was our bible and made us believe we were on a path travelled by others.  
It gave us invaluable guidance and above all else hope”*

*- Neonatal Mum*

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