Occupational therapy in neonatal services and early intervention

Practice guideline

Royal College of Occupational Therapists

Quick Reference and Implementation Guide

Royal College of Occupational Therapists

Specialist Section Children, Young People and Families
Occupational therapy in neonatal services and early intervention

Quick Reference and Implementation Guide

This guide provides a summary of the recommendations in the Royal College of Occupational Therapists practice guideline *Occupational therapy in neonatal services and early intervention* and suggestions for implementing the recommendations.

It is intended to be used by practitioners as an easily accessible reminder of the recommendations for intervention and implementation. It should be used once the practitioner has read the full guideline document. This is important to ensure an appreciation and understanding of how the recommendations were developed and their context.

The full practice guideline together with implementation resources can be found on the Royal College of Occupational Therapists website:

https://www.rcot.co.uk/practice-resources/rcot-practice-guidelines
Introduction

The aim of this practice guideline is to define the best and most effective practice for occupational therapy for high-risk infants in neonatal and early intervention settings. The guideline aims to support the occupational therapist's decision-making and clinical reasoning but, being based on evidence, cannot cover all aspects of occupational therapy practice in neonatal services or early intervention. The recommendations are intended to be used alongside the therapist's clinical expertise and the practitioner is, therefore, ultimately responsible for the interpretation of this evidence-based guideline in the context of their specific circumstances, environment and the needs of infants and parents.

This resource provides a quick reference to the guideline recommendations, together with tables outlining the nature of the strength and quality grading categories of the recommendations. Extracts from the full guideline document and an overview of the occupational therapy role are also provided. Evidence-based recommendations are, however, not intended to be taken in isolation and must be considered in conjunction with the contextual information, and full guideline development methodology, described in the practice guideline document, together with current versions of professional practice documents, of which knowledge and adherence is assumed (RCOT 2017, p14).

Additionally, this resource provides tips for implementing the guideline’s recommendations, acting as an aid to occupational therapists wishing to incorporate the knowledge and evidence base contained in the guideline into their practice.

1. Policy and service delivery context

Over 96,000 infants in the UK are born premature or ill each year, and often admitted to a neonatal unit, usually because of relatively minor problems with adaptation after birth or risk of serious illness (National Data Analysis Unit 2015, Bliss 2014). Many of these infants are surviving birth at younger gestational ages than in the past.

Neonatal care is divided into three types: special care (Level I), high-dependency care (Level II) and neonatal intensive care (Level III). Special care is for infants who need additional care, while high-dependency care is for infants requiring highly skilled staff, though with a lower nurse-to-patient ratio than a neonatal intensive care unit. Neonatal intensive care is for infants who are ‘most unwell or unstable and have the greatest needs in relation to staff skills and staff to patient ratios’ (British Association of Perinatal Medicine [BAPM] 2011, p3). It provides the full range of medical neonatal care. Finally, transitional care is where the mother cares for the infant with support from a midwife or healthcare professional who may not have specialist neonatal training (BAPM 2011).

Service delivery will be influenced by principles and frameworks and by national commissioning specifications, local policies and guidance. What all have in common is the idea that the family is the central element of care provision, and occupational therapists, as part of multidisciplinary teams, work towards that aim.

2. The occupational therapy role

Occupational therapy is centred on promoting health and wellbeing through enabling engagement and participation in everyday occupations. It uses a framework which focuses on the relationship between the person, their environment and the occupations that they need or would like to do. When working with high-risk infants*, occupational therapists promote optimal development of the child and work with families to support them to engage and participate in their role as parents/carers.

Occupational therapy services within neonatal settings are focused on supporting the development of the high-risk infant and their family. Occupational therapists work collaboratively with parents of high-risk infants to facilitate the infant’s and parents’ occupational roles, support the parent-infant relationship and ensure a successful transition from hospital to home and community. In addition, occupational therapists contribute to the provision and promotion of developmentally supportive care of high-risk infants. This approach serves to minimise the potential for harm of the neonatal unit
environment on the infant’s developing brain and support their growth and development in order to promote early engagement with their parents, including shared occupations such as nurturing touch and the introduction of feeding, bathing and handling. As the infant is discharged from the unit and grows older, ongoing intervention and/or guidance provides continued opportunities to support the development of infant occupations around self-care, learning and play. Through educating parents on strategies to support and engage their infant with appropriate sensory and motor experiences, occupational therapists can provide building blocks for developmental progression and parent-infant interaction.

The breadth of practice and degree of specialised care required in the neonatal unit require the occupational therapist to demonstrate advanced knowledge and skills in neonatal care in order to provide complex interventions to critically ill neonates and their families (Vergara et al 2006).

Although this guideline is focused on the provision of neonatal occupational therapy services, it is imperative that occupational therapists work collaboratively with other professionals in the neonatal unit and follow-up settings in order to promote the best outcomes for infants and their families, which support their mutual participation and enjoyment of occupations that align with their family values and priorities.

* High-risk’ has been used to describe the target population of this guideline, which includes all infants born preterm, high-risk infants born at term (e.g. infants with neonatal hypoxic ischaemic encephalopathy, neonatal abstinence syndrome, congenital conditions or having undergone complex surgical procedures), infants receiving palliative care, and their parents.

### 3. Guideline recommendations and evidence overview

The guideline recommendations are presented in ten categories that loosely represent the stages of an infant’s journey through a neonatal admission and beyond.

The evidence from 85 studies used to develop the recommendations is summarised in the guideline document (Section 5), and in evidence tables (Practice guideline supplement). A total of 34% of the evidence from which the recommendations were developed was assessed as being high (Grade A), with 16% as moderate (Grade B) quality studies. A further 39% of the evidence was graded as low (C) and 11% as very low (D) quality. The overall grade of a recommendation is depicted in the guideline with a numerical, then alphabetical grade to reflect the strength of the recommendation and quality of the evidence (e.g. 1A – strong recommendation, high quality). Twenty-nine of the 31 recommendations are graded as strong.

<table>
<thead>
<tr>
<th>4.1 Occupation-based assessment</th>
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</table>
| **1. It is recommended** that occupational therapists safely and appropriately assess the neurobehavioural status of the high-risk infant, in order to plan/deliver developmentally supportive care.  
  *(Als et al 2003 [A]; El-Dib et al 2011 [C])* | 1A |
| **2. It is recommended** that occupational therapists assess neurobehavioural and neurodevelopmental status to provide guidance and identify infants appropriate for developmental follow-up following discharge.  
  *(Bartlett 2003 [C]; Crowle et al 2015 [D]; Liu et al 2010 [D]; Sucharew et al 2012 [C])* | 1C |
| **3. It is recommended** that occupational therapists liaise with community teams and assess neurodevelopmental status for high-risk infants in the first two years of life to provide guidance and implement early intervention services where indicated.  
  *(Liu et al 2010 [D])* | 1D |
### 4.2 Developmentally supportive care

4. **It is recommended** that developmentally supportive care principles are implemented for high-risk infants admitted to neonatal units to enhance short term health and developmental outcomes.


5. **It is recommended** that occupational therapists promote an appropriate developmental environment, based on the infant's age and status and individual needs.

   (McAnulty et al 2010 [B]; Symington and Pinelli 2006 [A]; Symington and Pinelli 2002 [A])

### 4.3 Pain management

6. **It is recommended** that occupational therapists promote and support parent provision of skin-to-skin care with their infant during appropriate, planned, painful caregiving procedures (e.g. heel lance).

   (Ferber & Makhoul 2008 [A]; Johnston et al 2011 [A]; Cong et al 2012 [B]; Kostandy et al 2008 [C])

7. **It is recommended** that occupational therapists promote the use of facilitated tucking by all caregivers (parents and practitioners) for pain management during relevant caregiving procedures (e.g. endotracheal suctioning).

   (Axelin et al 2006 [A]; Obeidat et al 2009 [B])

8. **It is recommended** that occupational therapists support parent understanding and facilitate engagement in appropriate pain management strategies to enable them to provide sensitive support to their infants and promote parent self-efficacy.

   (Franck et al 2012 [C]; Franck et al 2011 [A]; Axelin et al (2006)[A])

9. **It is recommended** that occupational therapists work with the neonatal team to promote routine assessment of neonatal pain and identification of appropriate pain management strategies.

   (Gibbins et al 2015 [C])

### 4.4 Skin-to-skin (kangaroo) care

10. **It is recommended** that occupational therapists collaborate with the neonatal team to facilitate parent engagement in skin-to-skin care for high-risk infants to promote breastfeeding, pain management, physiological regulation and parent self-efficacy.

### 4.5 Positioning

11. **It is recommended** that occupational therapists collaborate with the neonatal team to facilitate individualised positioning recommendations for infants that promote infant motor outcomes, self-regulatory behaviours and prevent respiratory compromise.
   
   (Gouna et al 2013 [C]; Grenier et al 2003 [C]; Liaw et al 2012 [C]; Nakano et al 2010 [C])

12. **It is recommended** that occupational therapists review the selection and use of neonatal positioning aids for their ability to promote infant motor outcomes, the development of infant postural control and self-regulatory behaviours.
   
   (Madlinger-Lewis et al 2015 [B]; Zarem et al 2013 [C])

13. **It is recommended** that occupational therapists use a positioning assessment tool to support the education of the neonatal team and promote individualised positioning of high-risk infants in the neonatal unit.
   
   (Coughlin et al [D])

### 4.6 Infant feeding

14. **It is recommended** that occupational therapists collaborate with the neonatal team to support parents in reading and responding to infant feeding readiness cues to promote the shared occupation of feeding in the neonatal unit and following transition to home.
   
   (Ross and Browne 2013 [B]; Brown and Pridham 2007 [C]; Caretto et al 2000 [C]; Swift and Scholten 2010 [C]; Ward et al 2000 [C]; Chrupcala et al 2015 [D]; Waitzman et al 2014 [D])

15. **It is recommended** that occupational therapists promote an appropriate environment in the neonatal unit to support parent/infant participation in early feeding experiences. Environmental support factors may include space, seating, privacy, sensory environment and NICU culture.
   
   (Flacking and Dykes 2013 [C]; Pickler et al 2013 [C])

### 4.7 Parent engagement

16. **It is recommended** that occupational therapists work with parents of high-risk infants to support parenting roles and relationships, and to provide sensitive and appropriate parent engagement in the infant's care in the neonatal unit.
   
   (Dudek-Shriber 2004 [C]; Ganadaki and Magill-Evans 2003 [D]; Gibbs et al 2015 [A]; Price and Miner 2009 [D])

17. **It is recommended** that occupational therapists facilitate the development of shared occupations of feeding, dressing and play activities of daily living with preterm and low-birthweight infants to ensure sensitive and appropriate caregiving and promote occupational performance of infants and parents.
   
   (Chiarello et al 2006 [C]; Kadlec et al 2005 [C]; Winston 2015 [D])

18. **It is recommended** that occupational therapists working with families of high-risk infants build a positive therapeutic collaboration with parents to enhance parental learning about their infant both during and following the transition to home.
   
   (Harrison et al 2007 [C])
19. **It is suggested** that occupational therapists explore both traditional and innovative means (e.g. video-conferencing) of supporting families post-discharge from the neonatal unit as a means of promoting parent confidence and competence in caring for their infant following the transition to home.

*(Gund et al 2013 [C])*

### 4.8 Parent support

20. **It is recommended** that occupational therapists support engagement in parenting occupations in the neonatal unit and following discharge (including, but not limited to reading infant cues, guided participation in care, skin-to-skin, positive touch and holding) to promote decreased parent stress and positive improvements in parent-infant relationship and self-efficacy.


21. **It is recommended** that occupational therapists employ parent-focused interventions that incorporate parental sensitivity elements (e.g. reading infant cues and responding in developmentally appropriate ways) in order to reduce the psychosocial impact of delivering a high-risk infant, foster sensitive nurturing behaviour and promote the cognitive development of preterm infants.


22. **It is suggested** that occupational therapists engage parents in brief activity-based interventions during their infant’s admission to the neonatal unit and that this can have a short-term effect in lowering parent anxiety.

*(Mouradian et al 2013 [C])*

### 4.9 Identifying developmental concerns

23. **It is recommended** that occupational therapists should be involved in the screening and assessment of high-risk infants for problems related to cognitive performance and social interaction, in order to support the development of the infant’s occupations, with referral to early intervention services as indicated.


24. **It is recommended** that occupational therapists should be involved in the screening and assessment of high-risk infants for problems related to functional motor skills, in order to support the development of the infant’s occupations, with referral to early intervention services as indicated.


25. **It is recommended** that occupational therapists should be involved in the screening and assessment of high-risk infants for problems related to sensory processing difficulties, in order to support the development of the infant’s occupations, with referral for early intervention services as indicated.

*(Witt Mitchell et al 2015 [B]; Crozier et al 2016 [C])*
### 4.10 Early intervention

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Grade</th>
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<tbody>
<tr>
<td>26. It is recommended that occupational therapists provide early developmental intervention programmes for preterm infants to promote improved cognitive performance through the preschool years.</td>
<td>1A</td>
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<tr>
<td>(Orton et al 2009 [A]; Spittle et al 2015 [A]; Spittle et al 2007 [A])</td>
<td></td>
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<tr>
<td>27. It is recommended that occupational therapists provide home-based early intervention programmes for infants born &lt;30 weeks gestation in the first year of life as this may result in decreasing parent anxiety.</td>
<td>1A</td>
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<tr>
<td>(Spencer-Smith et al 2012 [A])</td>
<td></td>
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<tr>
<td>28. It is recommended that occupational therapists facilitate individualised functional motor interventions for high-risk infants and young children to promote engagement in early occupations such as play, exploration and participating in personal care (activities of daily living).</td>
<td>1A</td>
</tr>
<tr>
<td>(Lekskulchai and Cole 2001 [A])</td>
<td></td>
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<tr>
<td>29. It is recommended that occupational therapists incorporate home routine/occupation-based approaches in early intervention programmes for children at risk for developmental delay as a means of promoting occupational performance.</td>
<td>1B</td>
</tr>
<tr>
<td>(Hwang et al 2013 [B])</td>
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<tr>
<td>30. It is recommended that occupational therapists be routinely referred preterm infants with the following co-morbidities: septicaemia, extremely low birth weight (ELBW), chronic lung disease, periventricular leukomalacia (PVL) or intraventricular haemorrhage (IVH) (grade III-IV), for early intervention.</td>
<td>1C</td>
</tr>
<tr>
<td>(Hintz et al 2008 [C])</td>
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<td>31. It is recommended that occupational therapists working in early intervention settings with high-risk infants consider key elements when building a therapeutic collaboration with parents – promoting effective collaboration amongst multi-agency providers, supporting family social/emotional needs in addition to infant developmental concerns, and consistency of service provision.</td>
<td>1D</td>
</tr>
<tr>
<td>(Ideishi et al 2010 [D])</td>
<td></td>
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</table>

It is additionally recommended that occupational therapists use the audit tool that is available to support this guideline to undertake audit against the above recommendations. Recommendations, for which there is a transdisciplinary component, may be usefully audited jointly with other members of the multidisciplinary team. Likewise, the occupational therapist may be involved in audits related to other frameworks, such as the Bliss Baby Charter Standards and audit tool (Bliss 2015).
4. Guideline implementation

In addition to the full guideline document, there are a number of implementation resources available to aid translation into practice, including a CPD resource and an audit tool. Some key tips to consider are outlined in the table below.

<table>
<thead>
<tr>
<th>Key tips</th>
</tr>
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<tbody>
<tr>
<td>1. Look for opportunities to <strong>promote</strong> the practice guideline with colleagues and multidisciplinary team members: include on the agenda of relevant meetings.</td>
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<tr>
<td>2. Present and discuss the evidence-based recommendations with colleagues – preferably with the multidisciplinary team. A Continuing Professional Development (CPD) <strong>PowerPoint</strong> resource is available with information already prepared and which can be tailored for your local use.</td>
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<tr>
<td>3. Use the guideline <strong>audit form</strong> to benchmark your service/practice and assist in identifying actions to progress implementation of recommendations. The audit form is available to download and evaluate your service against the recommendations, and kick-start an action plan.</td>
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<tr>
<td>5. Use the guideline evidence and recommendations to support the case for occupational therapy as part of your <strong>business planning and commissioning activities</strong> – an occupational therapy <strong>evidence fact sheet</strong> is also available (<a href="https://www.rcot.co.uk/about-occupational-therapy/ot-evidence-factsheets">https://www.rcot.co.uk/about-occupational-therapy/ot-evidence-factsheets</a>).</td>
</tr>
<tr>
<td>6. Write an <strong>implementation case study</strong> to demonstrate how your service has translated the guideline recommendations into the workplace. Provide supporting performance/outcome data and service user feedback to demonstrate the difference you are making to service users, quality of services and cost-effectiveness. Visit: <a href="http://cotimprovinglives.com/">http://cotimprovinglives.com/</a>.</td>
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**To access the implementation tools visit:**
[https://www.rcot.co.uk/practice-resources/rcot-practice-guidelines](https://www.rcot.co.uk/practice-resources/rcot-practice-guidelines)

6. Evidence References

The full reference list for the evidence supporting the 31 recommendations, together with the full evidence tables, can be found in the *Occupational therapy in neonatal services and early intervention practice guideline supplement: Evidence tables.*

The supplement is available at:
[https://www.rcot.co.uk/practice-resources/rcot-publications/downloads/neonatal-services](https://www.rcot.co.uk/practice-resources/rcot-publications/downloads/neonatal-services)
7. References


All websites in these references were accessed on 11.10.18.