

Occupational therapy and play

Practice guideline

Royal College of Occupational Therapists

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An associated document: *Practice guideline supplement: Evidence tables* (see Appendix 2) is available to download from the Royal College of Occupational Therapists' website.

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This guideline was developed using the processes defined within the *Practice guideline development manual* 4th edition (Royal College of Occupational Therapists [RCOT] 2020).

Readers are referred to the manual to obtain further details of specific stages within the guideline development process, available at:

www.rcot.co.uk/practice-resources/rcot-publications/downloads/practice-guideline-development-manual

The term 'parent', as used in the guideline, should be considered inclusive of guardians or caregivers.

Foreword

To be added post-consultation.

Introduction

This guideline supports occupational therapists who work with children and young people aged 0-18 years old in the United Kingdom. It has been developed using high quality, contemporary evidence on the **occupation of play** and the **use of play** in occupational therapy assessment, intervention and as a therapy outcome.

Play is a primary occupation of childhood and recognised as a universal human right. It is a central domain of childhood and an essential focus for occupational therapists working with children and their families (Lynch and Moore 2016).

For occupational therapists, defining play is difficult, and there are several definitions in the literature (Kuhaneck and Spitzer 2022). A further difficulty is that play is not only within the remit of the occupational therapy profession, which means that the available play-related literature and evidence reflects a wide range of concepts of play. This guideline focuses on play rather than leisure or recreation although at times separating these can be challenging. For the purposes of this guideline, play is defined as:

What makes play fun for you?
Playing with friends and taking turns to play each other's games.
Ayla, age 4

...activities that are intrinsically motivated, internally controlled, and freely chosen and that may include the suspension of reality (e.g. fantasy; Skard and Bundy 2008), exploration, humour, risk-taking, contests, and celebrations (Eberle 2014, Sutton-Smith 2009). Play is a complex and multidimensional phenomenon that is shaped by sociocultural factors (Lynch et al 2016).

(American Occupational Therapy Association 2020, p34).

Why is playing important?
It helps you relax.
Ebba, age 7

In the context of this definition, play as an **occupation** is an activity a person chooses to do for fun, enjoyment or amusement, following their own ideas and interests. However, this may not always be the case when play is used by occupational therapists to assess, to promote performance skills or body functions, or as a therapeutic motivator.

Central to occupational therapy philosophy is the view that 'doing' can be therapeutic depending on the 'degree of positive meaning associated by the person(s) with the doing' (Pentland et al 2018, p11). In other words, it can be helpful to do something if the person enjoys and values it. As a primary resource for occupational therapists who work with children and young people, this guideline can support therapists in the evidence-based **use of play in occupational therapy assessment and intervention**, and to evaluate **play participation as a meaningful outcome** for the individual child or young person.

Occupational therapists must, however, be mindful that the 'play' activities they use during assessment, either as a therapeutic medium or identified as an intervention goal, may not be perceived as 'play' by the child or young person. Does the individual experience their participation as play? Exploring and understanding how the child experiences play is vital if our interventions are to be meaningful and relevant to them.

We must also be clear about what we mean by participation in play. According to the International Classification of Functioning, Disability and Health (ICF) (World Health Organisation 2007), participation is 'involvement in a life situation' (Adolfsson et al 2011). Participation has two elements: attendance and involvement. Attendance relates to the frequency and diversity of activities that a person takes part in, while involvement is the experience of participation while attending (for example motivation or social connectedness) (Imms et al 2017). For children and young people to truly participate in play, they must be both present and involved.

What makes play fun for you?

Downtime from school and being with my friends.

Josh, age 13

How we play changes throughout childhood as skills, interests and abilities develop. How play is expressed in society is also impacted by the constantly evolving and developing nature of play in the 21st century, for example with the inclusion of virtual and alternate realities. We also use play in a variety of ways, including play for learning, play for socialisation, play as therapy and play for play's sake. Alongside an understanding of play as defined above, occupational therapists require an awareness of children and young people's experience of play within different environments, including homes and outdoor locations as well as in cultural, educational, social and therapeutic environments. Play is subjective, and occupational therapists need to consider the intended purpose and outcome of the activity they are using, promoting or facilitating.

Occupational therapists have identified three core themes linked to play in their interventions: as a

Why is playing important?

Playing is important as it is a way to socialise with my friends online in a way that allows freedom of expression. It is also used as a way to escape reality and its pressures by being able to immerse myself in a completely different world and story.

Euan, age 17

means to an end, as a primary occupational outcome and as a reward (Moore and Lynch 2018). Play has different uses and outcomes and there is a need to understand and identify the different ways play is demonstrated. Interactions and activities may not appear playful to an observer but for a child are a playful experience or preference (Graham et al 2018). Occupational therapists should recognise that children may play in ways that appear different or restricted. These include children with disabilities who may require others to facilitate play activities and whose play consists of adapted activities. In

appreciating the nature of play, occupational therapists also have an obligation to promote play for neurodivergent children (Dallman et al 2022).

The United Nations Convention on the Rights of the Child (UNICEF 1989) sets out children's rights across all aspects of their lives; Article 31 states that all children have the right to 'rest and leisure, to engage in play and recreational activities' (p10). Recognising that this right is not universally experienced, General Comment No.17 emphasises the right of every child to play and highlights at risk populations including girls, children with disabilities and those from indigenous and minority groups (UNCRC 2013, p15-16). General Comment No.25 updates the convention regarding digital technologies, including children's online play (UNCRC 2021).

As the first occupation-focused guideline produced by RCOT, this practice guideline represents a change in approach for practice and education. As such there is a fresh emphasis on the potential impact of the delivery of occupational therapy for children and young people. It is expected that this guideline will be a catalyst for change within the profession.

Why is playing important?

So friends get to play together.

Arlo, age 4

Within the process of developing the guideline the guideline development group found limited

research specifically investigating play for young people aged 11 and older. It is possible that this is because young people frame their play in a different way. While this guideline has focused on play specifically rather than leisure there is research available which discusses leisure and occupational therapy with young people (Powrie et al 2015, Powrie et al 2020) and this research should be considered alongside this guideline, particularly when working with young people over 11.

Underpinning the recommendations of this guideline is the belief that children and young people must be part of the research process. Incorporating the voices of children and young people into research questions, methods and outcomes of play and occupational therapy research is essential for good quality, relevant research. As part of this guideline development process, children and young people aged 4 to 17 were asked why play is important to them. Their thoughts are included in this introduction.

This guideline brings together the large body of evidence that contributes to occupational therapists' use of play while working with children and young people. It is beyond the scope of this guideline to specify models for occupational therapy services or provide discrete recommendations for specific assessment tools or interventions.

In summary, play is influenced by the characteristics of the player and the environment (social/educational/home/therapeutic). While play can be used at various stages of the occupational therapy process, the guideline reminds occupational therapists of the importance of person-led occupational engagement.

Key recommendations for implementation

The aim of this guideline is to provide evidence-based recommendations for occupational therapists working with children aged 0-18. These recommendations support occupational therapists in the way they recognise and encourage play as an occupation and use play as a tool within their practice, through all stages of the occupational therapy process.

The guideline aims to support occupational therapists' decision making and clinical reasoning. Being based on evidence, it cannot cover all aspects of occupational therapy and play.

Recommendations should not be taken in isolation and must be considered with the contextual information provided, together with the details on the strength and quality of the recommendations and in line with principles of evidence-based practice. The statements are graded based on the Grading of Recommendations Assessment, Development and Evaluation (GRADE) process (GRADE Working Group 2004) as described in the Royal College of Occupational Therapists' *Practice guideline development manual* 4th edition (RCOT 2020). All recommendations have been scored as a 1 (strong), and the quality of the supporting evidence graded on a scale of A (high) to C (low). It is strongly advised that readers review section 10 to understand the guideline methodology, together with the evidence tables in Appendix 2, to be fully aware of the outcome of the literature search and available evidence.

This guideline focuses on the broad stages of a structured occupational therapy process. As such, recommendations have been categorised under the following headings:

- Assessment
- Intervention
- Outcome.

Recommendations by category

The overall quality of evidence grade reflects the robustness or type of research supporting a recommendation, but not necessarily the recommendation's significance to occupational therapy practice.

For all recommendations, benefits appear to outweigh the risks (or vice versa) for the majority of the target group; therefore most people who access services should be offered this intervention or action.

Assessment	
1. If using a standardised assessment of play, it is recommended that occupational therapists consider the psychometric properties of the measure and their suitability to the clinical and cultural context of the child. (Romli and Wan Yunus 2020 [A])	1A
2. When assessing play of 0-5 year olds, it is recommended that occupational therapists consider both the child's attendance (i.e. 'being there') as well as the child's involvement in play (i.e. externally observed behaviour suggestive of the child's lived experience of play). (Mobbs et al 2021 [B])	1B

<p>3. When assessing play, it is recommended that occupational therapists consider the impact of the physical environment (wheelchair use, play items and equipment) and the social environment (other people) on participation in play.</p> <p>(Rousseau-Harrison and Rochette 2013 [A]; Engelen et al 2013 [A]; Sondag and Gretschel 2016 [C]; Guerette et al 2013 [C])</p>	1A
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Intervention	
<p>4. For children and young people with, and at risk of, mental health concerns, it is recommended that occupational therapists match the desired therapy outcome with appropriate play-based and occupation-based interventions.</p> <p>(Cahill et al 2020 [A])</p>	1A
<p>5. For children with intellectual impairments, developmental delays, and learning disabilities, it is recommended that occupational therapists promote positive mental health outcomes through activity-based interventions including social skills programming and play, leisure, and recreational activities.</p> <p>(Arbesman et al 2013 [A])</p>	1A
<p>6. For children with specific learning difficulty, it is recommended that occupational therapists consider group therapy-led peer play activities including practice play, symbolic play, and games with rules to improve executive function skills and behaviour regulation.</p> <p>(Esmaili et al 2019 [A])</p>	1A
<p>7. For children with attention deficit hyperactivity disorder (ADHD), it is recommended that occupational therapists consider a structured intervention in peer-to-peer interactions to improve social play skills.</p> <p>(Wilkes-Gillan et al 2016 [A])</p>	1A
<p>8. For hospitalised children, it is recommended that occupational therapists promote play opportunities to reduce the stress of being in hospital.</p> <p>(Potasz et al 2013 [A]; Mohammadi et al 2021 [A])</p>	1A
<p>9. It is recommended that occupational therapists consider the use of gaming technology across a range of settings to support the development of children's motor skills, perception of motor ability and sensorimotor functioning.</p> <p>(Bonney et al 2017 [A]; Hammond et al 2014 [A]; Salem et al 2012 [A]; Wang et al 2011 [A]; Axford et al 2018 [C])</p>	1A

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Outcome	
<p>10. It is recommended that occupational therapists evaluate children and young people's participation in play as a therapy outcome.</p> <p>(Mohammadi et al 2021 [A]; Rousseau-Harrison and Rochette 2013 [A]; Schaaf et al 2018 [A]; Moore and Lynch 2018 [C]; Stanton-Chapman and Schmidt 2017 [C]; Sondag and Gretschel 2016 [C], Guerette et al 2013 [C])</p>	1A
<p>11. It is recommended that occupational therapists evaluate changes in the social context of play and their impact on children and young people's play participation alongside measures of play performance (if these are used), when assessing therapy outcomes.</p> <p>(Kent et al 2021 [A]; Wilkes-Gillan et al 2016 [A]; Brussoni et al (2021) [B]; Ramugondo et al 2018 [B]; Stagnitti et al 2012 [C])</p>	1A
<p>12. It is recommended that occupational therapists elicit the child and young person's perspective on play participation when evaluating therapy outcomes, alongside objective measures of play performance if these are used.</p> <p>(Rousseau-Harrison and Rochette 2013 [A]; Kolehmainen et al 2015 [B]; Bartie et al 2016 [C]; Graham et al 2019 [C])</p>	1A
<p>13. It is recommended that occupational therapists consider adults' perspectives regarding children and young people's play participation when evaluating therapy outcomes, alongside objective measures of play performance if these are used.</p> <p>(Engelen 2013 [A]; Coussens et al 2020 [B]; Kolehmainen et al 2015 [B]; Graham et al 2015 [C]; Román-Oyola et al 2018 [C])</p>	1A

Best practice suggestions

Where the evidence is still emerging and so the risks and benefits are more closely balanced, or there is uncertainty in the values and preferences of people who are likely to access services, a best practice suggestion rather than a recommendation for practice can be developed. Suggestions are graded as '2' (conditional).

Best practice suggestion	
<p>10. It is suggested that when assessing children with a motor impairment, potentially modifiable factors (across body function/structure, activity, environmental and personal factors) are observed.</p> <p>(Kolehmainen et al 2015 [B]; Stanton-Chapman et al 2018 [C])</p>	2B

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It is recommended that occupational therapists use the audit tool (see Section 7) to audit their practice/service delivery against the above recommendations and best practice suggestion.

1 Background

1.1 Practice requirement for the guideline

This guideline is intended to support occupational therapists who work with children and young people aged 0-18.

1.2 Topic identification process

In 2019 RCOT identified that 'play' was an occupation with sufficient evidence for a guideline despite no UK-focused guideline existing for occupational therapists using play in their practice. A group of RCOT members, public contributors and a Royal College of Paediatric and Children's Health representative developed the guideline scope in consultation with stakeholders, occupational therapists and children and young people, confirming the timeliness and need for a guideline on play.

The National Institute for Health and Care Excellence (NICE) has accredited the process used by the Royal College of Occupational Therapists to produce its practice guidelines. Accreditation is valid for five years from January 2018 and is applicable to guidance produced using the processes described in the *Practice guideline development manual* 4th edition (RCOT 2020).

1.3 Context of service delivery

The United Nations Convention on the Rights of the Child Article 31 states that every child has the right to relax, play and take part in a wide range of cultural and artistic activities (UNICEF 1989). Across the nations of the UK documents have outlined the importance of play for all children, for example:

- NICE guideline on Autism Spectrum Disorder (2013) states that psychosocial interventions should consider play-based strategies and include techniques to expand interactive play.
- NICE guideline on social and emotional wellbeing (2012) in the early years states children's readiness for school is achieved through processes of play as well as interaction with parents.
- Active play for all children is promoted in the NICE guideline on physical activity (2009).
- The Department for Children, Schools and Families children's plan also puts play at the heart of their ambition to secure the health and wellbeing of children and young people (Department for Children, Schools and Families 2007).

Other practice guidelines also support the use of play in assessment and interventions for children and young people with disabilities (Jackman et al 2022, Cahill and Beisbier 2020, Blank et al 2019, RCPCH 2017).

Play can take place in any of the child or young person's everyday environments, home, community, playgroup, school or college. Local UK communities are expected to provide safe outdoor play resources which are accessible (NICE 2021). The child's cultural, social and family background, and their attitudes to the benefits of play, will also influence the play

opportunities that the child experiences.

2 The occupational therapy role

The primary and unique goal of occupational therapy is to enable participation in meaningful occupations and play is a primary occupation of childhood (WFOT 2012, RCOT 2021a). Occupational therapists promote and enable children and young people to participate in play for its own sake as a meaningful occupation and to facilitate development and learning. Occupational therapists work to ensure there is occupational balance between activities of daily living, instrumental activities of daily living, health management, rest and sleep, education, work, social participation, leisure and play (American Occupational Therapy Association 2020).

Children's play develops and changes over time; in the early years sensorimotor and exploratory play predominate, with functional, constructive play and social play developing over the years. They learn to play with other children for longer periods and in larger groups and develop the ability to participate in games with increasingly complex rules. Occupational therapists need to understand the development of play occupations that children and young people typically engage in across developmental stages to facilitate appropriate play development and opportunities.

Occupational therapists work with parents, carers, teachers and others providing guidance on techniques and strategies to enable the co-occupation of play. Parents are helped to interact with their children and respond to playful cues. Occupational therapists enable children and young people to explore and participate in a wide range of play activities. They may work directly with children and young people, and with peers and family members to promote and develop the child and young person's play experiences and skills.

At times the role of the occupational therapist in play is targeted and they work in a uni-professional way. More often, occupational therapists work in partnership with multidisciplinary colleagues and family members to meet a shared goal of participation in play.

3 Objective of the guideline

The guideline objective is:

To describe the high-quality, contemporary evidence on the occupation of play and the use of play in occupational therapy assessment, intervention and as an outcome of therapy, to inform occupational therapy practice for those working with 0-18 year olds in the United Kingdom to inform the delivery of evidence-based services.

This guideline should be used with the current versions of the following professional practice documents (knowledge of and adherence to these standards is assumed):

- *Standards of conduct, performance and ethics* (Health and Care Professions Council [HCPC] 2016).
- *Standards of proficiency – occupational therapists* (HCPC 2013, revised version available September 2023).
- *Professional standards for occupational therapy practice, conduct and ethics* (RCOT 2021a).

Occupational therapists must only 'provide a service that is within [their] professional competence, appropriate to the needs of those who access the service, and within the range of activities defined by [their] professional role' (RCOT 2021a, p12). This guideline should be used with the therapist's clinical expertise and the recognition of children and families' needs. The therapist is responsible for the interpretation of the recommendations within their service context.

4 Guideline scope

4.1 Clinical question

The key question identified in the scope for this guideline was:

What is the evidence for the use of play in occupational therapy during assessment, intervention and as an outcome with 0-18 year olds?

This guideline looks at all aspects of play, for example, play being used as an assessment, intervention, or outcome within occupational therapy. In other words, it is interested in play as both a means and an end. While play as an occupation is a lifelong activity, the guideline will focus on play for those aged 0-18, as this is when play as a fundamental human occupation is more prominent and provides a clear focus for the guideline.

Play is any activity a person chooses to do for enjoyment or amusement, following their own ideas and interests. For the purposes of this guideline, play is defined as:

...activities that are intrinsically motivated, internally controlled, and freely chosen and that may include suspension of reality (e.g., fantasy; Skard and Bundy 2008), exploration, humour, risk taking, contests, and celebrations (Eberle 2014, Sutton-Smith 2009). Play is a complex and multidimensional phenomenon that is shaped by sociocultural factors (Lynch et al 2016).

(American Occupational Therapy Association 2020, p34)

4.1.1 Key outcomes

The following key outcomes have been identified:

- Occupational therapists are aware of the importance of play as a primary childhood occupation.
- Occupational therapists use occupation-focussed assessment and intervention to support children, young people and their families.
- Occupational therapists enable children and young people to participate in play.
- All stakeholders confidently engage in conversations about play and drive service change.
- Children, young people and their families have choice and control, and can recognise the potential for play to have a positive outcome in terms of health and wellbeing.

4.1.2 Key areas for inclusion in the guideline scope

Key areas for inclusion are:

- Peer-reviewed evidence on play, including gaming, used as an assessment, intervention or outcome for children and young people aged 0-18.

4.1.3 Key areas for exclusion from the guideline scope

The following areas are excluded from the scope of this guideline:

- Play not in conjunction with occupational therapy.
- Research conducted exclusively among participants over 18 years of age.
- Research conducted exclusively on leisure.
- Research conducted prior to 2011.

4.2 Target population

The target population is children and young people aged 0-18. While play as an occupation is a lifelong activity, the guideline will focus on play for those aged 0-18. This is when play as a fundamental occupation is most prominent.

4.3 Target audience

The principal audience for this guideline is occupational therapists working with children and young people aged 0-18 in the United Kingdom.

This guideline is also relevant to a wider audience:

- children and young people, and their parents and carers
- occupational therapists working across all age groups
- other health and social care professionals who incorporate play into their practice, such as play specialists, play therapists, music therapists, paediatricians, neurologists, child psychologists, educational psychologists, psychiatrists, CAMHS practitioners, speech and language therapists, physiotherapists, residential childcare officers, parent coaches, social workers, youth workers, and health visitors, and any associated professional body
- service commissioners and providers
- public health bodies
- educators and education providers, including those working in schools and nurseries
- youth organisations and charity and voluntary organisations that work with children and young people
- national and local policy makers, particularly in health and the built environment
- those interested in social inequalities
- occupational therapy and other allied health and social care education providers
- commercial businesses who encourage children to engage in play (for example by selling toys or through gaming).

5 Recommendations and supporting evidence

The recommendations are underpinned by the evidence available to date which supports the delivery of occupational therapy for children and young people. Details of the guideline methodology, including the development process and the literature search strategy, are set out in sections 9 and 10.

This guideline focuses specifically on play as an assessment, intervention, or outcome within the scope of occupational therapy practice. Recommendations have been categorised in the following areas:

- Assessment
- Intervention
- Outcome.

While the recommendations have been set out within these categories, it should be noted that there are overlaps. Individual recommendations must not be considered in isolation, but in the wider context.

The strength of the recommendations is identified via a scoring of 1 (strong), and the quality of the supporting evidence via a grading on a scale of A (high quality) to C (low quality). A recommendation grading considers the consistency in the direction of the outcomes from the individual items of evidence used to support that recommendation (see Section 10.4 for more detail).

All recommendations were agreed by the guideline development group as being strong; that is, most children and young people should be offered the intervention or action stated. Additional details on individual studies (for example, on study design, methodological limitations, recruitment numbers and statistical significance) can be accessed in the evidence tables (Appendix 2).

Recommendations have been written based on the appraised evidence and will not cover the full scope of paediatric occupational therapy practice. Additionally, it may be that certain groups could benefit from some of the recommendations, even if not specifically named, but the guideline development group was not able to add this to the recommendation because of a lack of evidence.

Very little evidence was found on children and young people aged 11 and older, and those articles that were found pertaining to this age group also included younger children. As such, no recommendations could be developed specifically for this age group.

Generalisability and social determinants of health associated with the recommendations are outlined in section 5.5. Potential financial and organisational barriers are discussed in section 7.1.

5.1 Assessment recommendations

5.1.1 Introduction

Assessment is fundamental to effective occupational therapy. It underpins all subsequent decisions including agreeing individual goals and selecting appropriate interventions. In paediatric occupational therapy in particular it is essential to assess play, as play is a key area of childhood occupation (Tanta and Knox 2015).

There are a vast number of assessment measures which purport to assess children and their ability to engage in play. In some cases, these measures capture play skills and the component skills that facilitate play, for example motor skills, communication skills, adult interactions. In other cases, participation in play as an occupation is the focus. Measures of participation in play most often capture how often a child plays, using frequency measures. Critiquing individual play assessments is outside the scope of this guideline. Other papers that undertake a review of play assessments (for example Phillips et al 2013) are available.

Assessment	
<p>1. If using a standardised assessment of play, it is recommended that occupational therapists consider the psychometric properties of the measure and their suitability to the clinical and cultural context of the child.</p> <p>(Romli and Wan Yunus 2020 [A])</p>	1A
<p>2. When assessing play of 0-5 year olds, it is recommended that occupational therapists consider both the child's attendance (i.e. 'being there') as well as the child's involvement in play (i.e. externally observed behaviour suggestive of the child's lived experience of play).</p> <p>(Mobbs et al 2021 [B])</p>	1B
<p>3. When assessing play, it is recommended that occupational therapists consider the impact of the physical environment (wheelchair use, play items and equipment) and the social environment (other people) on participation in play.</p> <p>(Rousseau-Harrison and Rochette 2013 [A]; Engelen et al 2013 [A]; Sondag and Gretschel 2016 [C]; Guerette et al 2013 [C])</p>	1A

5.1.2 Recommendation 1: Psychometric properties and clinical and cultural context

Romli and Wan Yunus (2020) conducted a systematic review of play instruments to identify which are relevant to occupational therapy and their psychometric properties. The review included 30 studies mostly from Western countries. The studies underwent methodological quality assessment, and the psychometric properties of each instrument was assessed using a checklist to extract the clinical utility of each instrument. In total eight play instruments were extracted, and the authors found that most of these focussed on extrinsic elements such as developmental elements, behaviour and attitude, and skills performance and focused on pre-school and school aged children.

The review identified that there were several play assessments available for occupational therapists and the development of assessments is constantly evolving and improving. The authors concluded that good clinical reasoning should be exercised by occupational therapists when selecting a play instrument to use in practice, considering several aspects such as the person's needs, support, and facility condition.

Evidence summary

The study demonstrated that exercising good clinical reasoning in the selection of play assessment instruments and considering each child's individual context are equally important in the assessment

of play. This recommendation is supported by one high level systematic review.

5.1.3 Recommendation 2: Attendance and involvement of the child

Mobbs et al (2021) conducted a systematic review of participation measures for infants and toddlers aged from birth to 23 months. The review aimed to identify and evaluate the psychometric properties of participation measures for this age group and four measures were found that met their inclusion criteria and methodological assessment of quality and validity. The COnsensus-based Standards for selection of health Measurement Instruments (COSMIN) checklist was used to examine the psychometric quality of the measures.

Each of the measures measured 'attendance' and three of the four also measured 'involvement'. The authors defined 'attendance' and 'involvement' according to the Family of Participation Related Constructs (Imms et al 2017), where they are described as the two key elements of participation. "'Attendance' pertains to the number of activities or frequency of taking part in activities and 'involvement' pertains to the "in the moment' experience of participation" (Imms et al 2017, p33).

The review identified that the Child Engagement in Daily Life measure had the best reliability and validity for children aged 18 months to five years and the Daily Activities of Infants Scale had the best validity for infants under 12 months of age, but its use as a participation measure was under researched. The authors concluded that further research is required to explore infant and toddler participation, helping to describe attendance and involvement.

Evidence summary

The study demonstrated that the definition of participation used, and the elements of attendance and involvement are important considerations in the assessment and selection of measures of participation in infants and toddlers. This recommendation is supported by one moderate level systematic review.

5.1.4 Recommendation 3: Impact of physical and social environments

Rousseau-Harrison and Rochette (2013) conducted a systematic review to explore the impacts of wheelchair acquisition on children's social participation, personal factors, and social environment. The review included studies of children from birth to 12 years of age where the intervention was the acquisition of a powered wheelchair. In total, nine studies were reviewed.

While most of the studies analysed observed the children's perceptions, the collated results of the studies showed a trend towards improved participation in mobility, play, interpersonal relationships, and personal care. The review identified that data regarding the effect on the development of cognitive functions was contradictory. However, for the social environment the authors reported that a positive change in parents' attitude was also observed, along with their own social participation after their child tried a powered wheelchair. The authors propose that the results support therapists to suggest mobility options to children with the appropriate profile.

Engelen et al (2013) conducted a cluster randomised controlled trial (RCT) of 221 children aged 5-7 years from 12 Australian primary schools. The study aimed to explore the effects of a school-based play intervention for increasing children's physical activity. The 13-week intervention comprised altering the school playground by introducing loose materials and a teacher-parent intervention exploring perceptions of risk associated with children's free play. Schools were randomly allocated to intervention or control conditions. The outcome measures were total accelerometer counts and moderate-vigorous physical activity (MVPA) during break times.

The authors identified that children in the intervention group had a small but significant increase on total counts and minutes of MVPA ($p < 0.006$) and a decrease in sedentary activity ($p < 0.01$) during

break times. The authors concluded that capturing children's intrinsic motivations to play while simultaneously helping adults reconsider views of free play as risky increased physical activity during break times. In one intervention school, children retested after two years were found to have maintained the gains in increased physical activity.

Sunday and Gretschel (2016) explored the way recently acquired powered mobility impacted on exploratory play of two children with significant motor impairments based on perspectives obtained from parent interviews. Results revealed two themes. The theme 'Opportunity to play' illustrated how powered mobility gave the child new opportunities to play, including less stationary play and more self-directed play than they had accessed previously. The theme 'My child was transformed' illustrated how the powered wheelchair enabled the child to become more autonomous and allowed different aspects of their personality to come through.

Guerette et al (2013) conducted a cohort study of 23 children aged 18 months to 6 years who either had cerebral palsy or an orthopaedic disability severely limiting their locomotion. The study aimed to document objective and subjective evidence on the impact of providing early powered mobility (wheelchair) on children's social skills, verbal and mobility interactions and play. Data on social skills using the Adaptive Social Behaviour Inventory (ASBI) was collected pre- and post-delivery of a wheelchair and follow up data collected six months later. The data collected also included behaviour scales, frequency of mobility play activities, quality of play and parents' perceptions of their child's social skills.

The results of the study indicated an increase in mobility activities in the children during free play and improvement in the quality of outdoor play ($p < 0.04$). Parents of younger children perceived their child's social skills more positively after receiving a wheelchair and across younger and older children no negative changes to social skills were found. While no difference was indicated in the children's interaction with toys or objects nor changes in verbal interactions during indoor or outdoor free play ($p < 0.26$, $p < 0.89$, respectively), this study supports the potential positive impact of early powered mobility.

Evidence summary

The four studies demonstrated the importance of the physical environment (including wheelchair provision/access, play items and equipment) which provides new opportunities for children to play, and the social environment (other people) that may impact on children's participation in play. This recommendation is supported by one high level RCT, one high level systematic review, one low level qualitative study and one low level cohort study.

5.2 Intervention recommendations

5.2.1 Introduction

In the process of translating research evidence into clinical practice, it is vital that occupational therapists consider the contextual differences between controlled research environments and real-world, clinical contexts. The generation of many forms of empirical evidence depends on intervention delivery following structured protocols and process. The translation of this evidence during intervention is significantly informed by the complexity of the occupational therapist's role (Pentland et al 2018).

Play is a prime example of the way in which occupational therapists use an occupation as both means and goal. The challenges of defining play, together with the fluid nature of individualised experiences of play, leads to particular complexity in the implementation of generalised intervention

recommendations. However, since play is the primary meaningful occupation of childhood (Kuhaneck and Spitzer 2022), occupational therapists have a professional responsibility to incorporate play into their interventions.

Kuhaneck and Spitzer (2022) remind us that ‘the meaning of the activities we engage in with our clients is the key to intervention effectiveness’ (p18). This aligns closely with evidence-based practice (Satterfield et al 2009). It is the responsibility of the occupational therapist to use their clinical expertise and therapeutic skill to ensure the appropriate delivery of evidence-based play interventions (Satterfield et al 2009). These guidelines address some of the key requirements for facilitating the use of play as a meaningful intervention modality as opposed to an occupational goal.

Intervention	
<p>4. For children and young people with, and at risk of, mental health concerns, it is recommended that occupational therapists match the desired therapy outcome with appropriate play-based and occupation-based interventions.</p> <p>(Cahill et al 2020 [A])</p>	1A
<p>5. For children with intellectual impairments, developmental delays, and learning disabilities, it is recommended that occupational therapists promote positive mental health outcomes through activity-based interventions including social skills programming and play, leisure, and recreational activities.</p> <p>(Arbesman et al 2013 [A])</p>	1A
<p>6. For children with specific learning difficulty, it is recommended that occupational therapists consider group therapy-led peer play activities including practice play, symbolic play, and games with rules to improve executive function skills and behaviour regulation.</p> <p>(Esmaili et al 2019 [A])</p>	1A
<p>7. For children with attention deficit hyperactivity disorder (ADHD), it is recommended that occupational therapists consider a structured intervention in peer-to-peer interactions to improve social play skills.</p> <p>(Wilkes-Gillan et al 2016 [A])</p>	1A
<p>8. For hospitalised children, it is recommended that occupational therapists promote play opportunities to reduce the stress of being in hospital.</p> <p>(Potasz et al 2013 [A]; Mohammadi et al 2021 [A])</p>	1A
<p>9. It is recommended that occupational therapists consider the use of gaming technology across a range of settings to support the development of children’s motor skills, perception of motor ability and sensorimotor functioning.</p> <p>(Bonney et al 2017 [A]; Hammond et al 2014 [A]; Salem et al 2012 [A];</p>	1A

5.2.2 Recommendation 4: Mental health concerns

Cahill et al (2020) conducted a systematic review of activity and occupation-based interventions to improve behaviour, social participation and mental health of children and young people. The review included 62 studies and aimed to identify evidence for occupational therapy interventions for children and young people with or at risk for mental health concerns. The studies underwent methodological quality assessment and were categorised into type of activity or intervention for mental health, positive behaviour, and social participation. This included categories for outdoor camps, video and computer games, animal assisted interventions, creative arts, productive occupations and life skills, play, sports, yoga, and meditation.

The review identified that the evidence for the use of yoga and sports was moderate to strong. For the use of play and creative arts the evidence was moderate, and for the other remaining categories listed above the evidence was of low quality. The authors reported that there is substantial evidence to support the use of activity and occupation-based interventions for children and young people who have mental health, behavioural and social participation concerns.

Evidence summary

The study demonstrated that offering a range of activities and occupation-based interventions are important for the improving the behaviour, social participation and mental health of children and young people. However, it is important to match the activity intervention with the desired therapy outcome. This recommendation is supported by one high level systematic review.

5.2.3 Recommendation 5: Intellectual impairments, developmental delays and learning disabilities

Arbesman et al (2013) conducted a systematic review to understand the effectiveness of activity-based interventions for mental health promotion, prevention, and intervention with children and young people. The review included 124 articles which provided evidence within the scope of occupational therapy practice.

Strong evidence supported the benefit of social skills programming and play, leisure, and recreational activities for children with intellectual impairments, developmental delays, and learning disabilities. For children with autism spectrum disorder, diagnosed mental illness and serious behaviour disorders who require intensive services, strong evidence was found to support the effectiveness of social skills programmes to improve social behaviour and self-management.

Evidence summary

The study demonstrated evidence supporting the benefit of play, leisure, recreational activities and social skills programming for children with intellectual impairments, developmental delays, and learning disabilities, requiring intervention at different levels. This recommendation is supported by one high level systematic review.

5.2.4 Recommendation 6: Specific learning difficulty

Esmaili et al (2019) conducted a single-blinded randomised controlled trial of 49 children in Iran,

aged 7-11, who had a specific learning difficulty (SLD). The study investigated the effect of peer-play activities on the executive function skills of behaviour regulation and metacognition, perceived occupational values and competence in children with SLD.

Twenty-five children were randomly assigned to the intervention group and 24 to the control group. The intervention was conducted in small groups of 3-5 children and included two, 3-hour sessions each week for nine weeks. Sessions were led by an occupational therapist and included symbolic play, practice play and games with rules. During the intervention phase the control group did not receive any treatment, but afterwards the control group received five sessions of peer-play activities.

The Behaviour Rating Inventory of Executive Function and the Child Occupational Self-assessment (COSA) were administered to intervention and control group participants pre- and post-intervention.

The findings showed that the intervention group's occupational values and competence did not change ($p>0.05$). However, their executive functioning significantly improved.

Evidence summary

The study demonstrated the value of group therapy-led peer play activities on improving the executive function and behaviour regulation of children with a specific learning difficulty. This recommendation is supported by one high level randomised controlled trial.

5.2.5 Recommendation 7: Attention deficit hyperactivity disorder (ADHD)

Wilkes-Gillan et al (2016) conducted a randomised controlled trial of 29 children in Sydney, Australia, aged 5 to 11 years with attention deficit hyperactivity disorder (ADHD). The study examined the effectiveness of a 6-week play-based intervention for improving the social play skills of children with ADHD in their peer-to-peer interactions. Children participating in the study invited a typically developing playmate to the play sessions and one parent of each child with ADHD also attended the clinic-based play sessions and completed home-based activities with their child.

Fifteen children with ADHD were randomised to the intervention-first group and 14 children with ADHD to the control-first group, which received the intervention after a 10-week wait period. The intervention included six clinic-based one-hour sessions, home play sessions facilitated by the child's parents in line with the home modules training programme, and four parent-facilitated peer play dates. Pre, post and one month following the intervention the children were assessed using the Test of Playfulness (ToP) and parents completed the Conners Comprehensive Behaviour Rating Scales (CCBRS). Results showed that the children's play skills in the intervention-first group improved significantly from pre- to post-intervention. For both groups all ToP social items improved significantly from pre- to post-intervention and improvement was maintained at one month follow up.

Evidence summary

The study demonstrates the value of structured intervention in peer-to-peer interactions to improve the social play skills of children with attention deficit hyperactivity disorder. This recommendation is supported by one high level randomised controlled trial.

5.2.6 Recommendation 8: Hospitalised children

Potasz et al (2013) conducted a randomised clinical trial of 53 children aged 4-14 years of age

hospitalised for respiratory disease in Brazil. The study aimed to help children cope with the stress of hospitalisation, using unstructured play as an intervention. Children were divided into three subgroups according to their age and randomised into Playing Group (PG) and Non-Playing group (NPG). The children in the PG played in the hospital's toy library for the first five days of hospitalisation and the NPG did not attend play activities but were taken out of their room each day. Using a variety of outcome measures including urine cortisol levels (as an indicator of stress) pre and post-intervention, the results for the study showed the most significant decrease in cortisol levels in children from the 7-11 years old Play Group. The authors identified that further research regarding younger children may be required to understand more about useful play activities for hospitalised pre-school children as a tool in reducing the stress of hospitalisation.

Mohammadi et al (2021) conducted a randomised controlled trial of 25 children with cancer aged 7-12 years undergoing in-patient chemotherapy in Iran. The study investigated the effect of play-based occupational therapy on symptoms and participation in daily life activities of hospitalised children undergoing chemotherapy.

The children were randomised into two groups, intervention (12 children) and control (13 children), and both groups received traditional occupational therapy as requested by the paediatric oncologist. The intervention group also received eight 1-hour sessions on four consecutive days over a two-week period that included 45 minutes of play-based occupational therapy and 15 minutes of free play. Sessions were designed based on each child's play preferences and parent-reported therapeutic goals.

Results showed that the intervention group's mean score of participation in daily life activities, in the diversity of activities, intensity of participation, enjoyment and parents' satisfaction were significantly higher post-intervention than the control groups. In both groups children's symptoms, pain, anxiety, and fatigue decreased over time and this was significantly improved in the intervention group.

Evidence summary

Two studies demonstrated how play interventions, including free play during a hospital stay, can benefit children by helping to reduce their levels of stress and other symptoms such as pain, anxiety, and fatigue. This recommendation is supported by two high level randomised controlled trials.

5.2.7 Recommendation 9: Gaming technology

Bonney et al (2017) conducted a randomised controlled trial of 111 children aged 6-10 years with developmental coordination disorder (DCD) and their typically developing (TD) peers.

Using a Nintendo Wii™ program, the study aimed to evaluate the effects of two types of practice on the transfer of motor skills in children with and without DCD. The interventions took place in a classroom in the children's school in South Africa, using Nintendo Wii Fit consoles and balance boards.

Following randomisation 56 children were assigned to the variable practice group and 55 to the repetitive practice group. The interventions took place for 20 minutes twice a week over a period of 5 weeks and included repetition of the exergame ski slalom for the repetitive practice group and 10 different Wii games for the variable practice group. Intervention sessions were under the guided supervision of trained therapists. None of the children had previous experience of using or owned a commercially available console for active computer games.

Pre and post-intervention, children in both groups were assessed using the Movement Assessment Battery for Children-2 (MABC-2), Bruininks Oseretsky Test of Motor Proficiency – 2nd edition (BOT2) for running, agility and balance measures, Functional Strength Measurement (FSM), and

measurements of sprinting speed and agility.

The authors found that both DCD and TD children, irrespective of the type of practice group they were assigned to, showed the same rate of transfer of skills acquired in an exergame to real life skills.

Hammond et al (2014) conducted a randomised crossover-controlled trial of 18 primary school-aged children with movement difficulties or Development Coordination Disorder (DCD), recruited from two primary schools in England. The children were already taking part in a 'Jump Ahead' programme for children with movement difficulties.

The study aimed to evaluate if regular school-based movement experience sessions using a Nintendo Wii Fit would lead to benefits in motor and psychological domains in children with DCD.

The ten children randomised to the intervention group took part in three 10-minute sessions per week for one month, using Wii Fit during their lunch break. The comparison group continued with the 'Jump Ahead' programme only. Following pre- and post-intervention assessments of motor proficiency, self-perceived ability and satisfaction and parental assessment of emotional and behavioural problems, results showed that the intervention group had significant gains in motor proficiency, their perception of their motor ability and emotional well-being.

Salem et al (2012) conducted a single blinded randomised controlled trial of 40 children aged 39 to 58 months with a developmental delay who attended a segregated or integrated pre-school in the USA. The study aimed to determine the feasibility, safety, and preliminary effectiveness of using Nintendo Wii in the rehabilitation of children with developmental delay, with a focus on improving motor skills and balance and coordination.

The 20 children randomised into the experimental group took part in two individual weekly clinic sessions of 30 minutes for 10 weeks. This included balance, aerobic and strength training games using the Nintendo Wii Sports and Nintendo Wii Fit. The children in the control group received traditional physical and occupational therapy rehabilitation sessions.

The timed up and go test, single leg stance test, five-times-sit-to-stand test, timed up and down stairs test, 2-minute walk test, grip strength and the Gross Motor Function measure and gait speed were measured 1-week pre and post-intervention.

The results indicate that the use of a commercially available gaming system can be beneficial and safe as a potentially effective tool to enhance the rehabilitation of young children with developmental delay. Further investigation is suggested by the authors for applicability across other settings such as home use and in rural settings.

Wuang et al (2011) conducted a quasi-experimental study of 155 children in Taiwan who were aged 7-12 years and had a diagnosis of Down's Syndrome. The study compared standard sensorimotor training with the effect of virtual reality technology, on sensorimotor performance. Fifty children were randomised to the control group, where they received standard occupational therapy. One hundred and five children randomised into the intervention group received individual one-hour sessions with an experienced occupational therapist twice a week for 24 weeks. During the sessions they used virtual reality Wii gaming technology (VRWii) Wii Sports.

Observations were conducted pre and post-intervention using the Bruininks-Oseretsky Test of Motor Proficiency – 2nd edition (BOT-2), the Developmental Test of Visual Motor Integration (VMI) and the

Test of Sensory Integration Function (TSIF).

The findings indicated that post-intervention the children in the VRWii group had the greatest pre-post change on sensory integrative functioning, visual-integrative abilities and on motor proficiency. While the authors suggest that further follow up studies are important to verify the functional outcomes of VRWii, the intervention potentially could be used alongside proven rehabilitative interventions.

Axford et al (2018) conducted a non-randomised controlled trial which included 53 children aged 5-6 years from two pre-primary classes in Australia. The study examined the impact of tablet applications on performance of motor skills over a 9-week school term. In the experimental group tablet activity for 30 minutes each school day was built into the curriculum. The teacher selected one of three apps from each curriculum area daily which covered a range of motor skills. The observations included the Beery-Buktenica Test of Visual Motor Integration, the Hawaii Early Learning Profile, and the Shore Handwriting Screen.

Results showed that the children in the experimental group had a statistically and clinically significant improvement in their motor coordination standard scores ($p < 0.001$) and improvement in their occupational performance in daily tasks.

Evidence summary

Five studies explored and evaluated the effects of gaming technology as an intervention to support the development of children's motor skills, perception of motor ability and sensorimotor functioning. The results demonstrated improvements across these domains, and the application of gaming technology as an intervention in a range of settings such as schools, home and clinic settings. This recommendation is supported by two high level randomised controlled trials, one high level randomised cross-over study, one high level quasi experimental study, and one low level non-randomised controlled trial.

5.3 Outcome recommendations

5.3.1 Introduction

Recognising that play is the primary occupation for children and young people, their participation in play, and changes to participation over the course of an intervention, are relevant to occupational therapy as outcomes in their own right. However, play is often measured as a performance (how well a child or young person plays) instead of participation (whether a child or young person plays).

Performance measures are standardised, observation-based objective tools that typically measure the diversity of play activities, their intensity, duration and who the child plays with. These tools give a picture of how 'well' a child or young person plays, but often do not capture their enjoyment, motivation or autonomy to choose, which are fundamental to play (American Occupational Therapy Association 2020).

A child-centred approach challenges assumptions about what 'good' play looks like and consequently what is measured. Outcomes need to focus on the child or young person's experience of play: how it feels to them, what it means, and their sense of autonomy and choice (Graham et al 2019, Graham et al 2018, Watts et al 2014). Changes in play performance may not be meaningful to the child. For instance, it might be possible to measure a physical change, but this may not reflect the child's experience or perceived participation in play.

Furthermore, while some parents and adults working with children value play as a therapy goal or as

part of therapy, often participation in play is not referenced as a goal in and of itself. Adults also may have pre-determined ideas about what play looks like or the ability of children and young people to play depending on their circumstances (Brussoni et al 2021, Angelin et al 2018, Graham et al 2014). Measuring change in parent and adults' perceptions about the value of participation in play and what that play looks like could be relevant to occupational therapy outcomes. Likewise, occupational therapy outcomes include enabling play through a change in peer perspectives of play or the social context of play.

Outcome	
<p>10. It is recommended that occupational therapists evaluate children and young people's participation in play as a therapy outcome.</p> <p>(Mohammadi et al 2021[A]; Rousseau-Harrison and Rochette 2013 [A]; Schaaf et al 2018 [A]; Moore and Lynch 2018 [C]; Stanton-Chapman and Schmidt 2017 [C]; Sondag and Gretschel 2016 [C], Guerette et al 2013 [C])</p>	1A
<p>11. It is recommended that occupational therapists evaluate changes in the social context of play and their impact on children and young people's play participation alongside measures of play performance (if these are used), when assessing therapy outcomes.</p> <p>(Kent et al 2021 [A]; Wilkes-Gillan et al 2016 [A]; Brussoni et al (2021) [B]; Ramugondo et al 2018 [B]; Stagnitti et al 2012 [C])</p>	1A
<p>12. It is recommended that occupational therapists elicit the child and young person's perspective on play participation when evaluating therapy outcomes, alongside objective measures of play performance if these are used.</p> <p>(Rousseau-Harrison and Rochette 2013 [A]; Kolehmainen et al 2015 [B]; Bartie et al 2016 [C]; Graham et al 2019 [C])</p>	1A
<p>13. It is recommended that occupational therapists consider adults' perspectives regarding children and young people's play participation when evaluating therapy outcomes, alongside objective measures of play performance if these are used.</p> <p>(Engelen 2013 [A]; Coussens et al 2020 [B]; Kohlemainen et al 2015 [B]; Graham et al 2015 [C]; Román-Oyola et al 2018 [C])</p>	1A

5.3.2 Recommendation 10: Participation in play

As summarised previously, **Mohammadi et al (2021)** conducted a randomised controlled trial of children with cancer who were undergoing chemotherapy. The study investigated the effect of play-based occupational therapy on symptoms and participation in daily life activities of hospitalised children undergoing chemotherapy. The intervention group participated in sessions of play-based occupational therapy and free play and children's play preferences and therapeutic goals were taken into consideration when designing the sessions. Compared to the control group, the intervention group's mean score of participation in daily life activities, in the diversity of activities, intensity of

participation, enjoyment and parents' satisfaction were significantly higher post-intervention.

Rousseau-Harrison and Rochette (2013), as discussed above, conducted a systematic review to explore the impacts of wheelchair acquisition on children's social participation, personal factors, and social environment. The nine studies reviewed showed a trend towards increased participation in play, and a positive change in parents' attitude along with their own social participation.

Schaaf et al (2018) conducted a systematic review examining the efficacy of occupational therapy using Ayres Sensory Integration to support functioning and participation. Five studies were included. Outcome measures included the Revised Knox Preschool Play Scale (1997) (one study) and Goal Attainment (two studies). The authors conclude that the best evidence is for outcomes that focus on areas of functioning and participation that are meaningful to parents and families, including play.

Moore and Lynch (2018) carried out a survey exploring 65 paediatric occupational therapists' perspectives on play within their practice. Whilst most used play as a means to an end, as a tool in home/school programmes or as a reward, very few focused on play as a therapy outcome. The authors highlight tensions for occupational therapists who recognise play as a meaningful occupation but who do not evaluate play participation as a therapy outcome.

Stanton-Chapman and Schmidt (2017) carried out a mixed method interviews with parents or caregivers of young disabled children to find out whether playground equipment met their child's needs. Caregivers felt that the playground was not appropriate for a child with a disability and said that their child was not able to fully engage with the equipment that was available. They hoped for an inclusive playground that met their child's needs to enable them to play at the playground.

Sunday and Gretschel (2016), summarised above, conducted a qualitative study to understand how acquired powered mobility impacted exploratory play. Interviews with parents of two children with significant motor impairments showed how powered mobility allowed for new opportunities to play, and how the children became more autonomous allowing different aspects of the personality to unfold. The findings suggest that play participation was an important outcome for the children who took part.

Guerette et al 2013, described above, conducted a cohort study of 23 children aged 18 months to 6 years who either had cerebral palsy or an orthopaedic disability severely limiting their locomotion. Looking at evidence on the impact of providing wheelchairs on children's social skills, the results of the study demonstrate the positive impact on the children's participation in play, quality of play outdoors and during free play.

Evidence overview

A number of studies measured intervention outcomes by evaluating changes in play participation. Whilst the focus and findings of studies vary, they demonstrated that evaluating play outcomes is a meaningful and useful way to demonstrate the impact of occupational therapy with children and young people. The evidence supporting this recommendation consists of one systematic review, three randomised controlled trials and three qualitative studies, ranging from high to low levels of evidence.

5.3.3 Recommendation 11: Changes in social context

Kent et al (2021) conducted a randomised controlled trial examining the effectiveness of a peer-mediated intervention to improve play in autistic children. The intervention comprised weekly, 1-hour clinic intervention sessions for 10 weeks plus a home play session facilitated by the parents of the child with ASD between clinic sessions. Follow-up clinic and home assessments were conducted 3-

months after completion of the intervention. Primary outcome measures were the Test of Playfulness (ToP), Home and Community Social Behaviour Scales (HCSBS), Parenting Relationship Questionnaire (PRQ) and the School Social Behaviour Scales (SSBS) (completed by a teacher). Results showed a significant moderate intervention effect from pre to post-intervention ($p < 0.016$), which was maintained at 3-months and that generalised to the home environment. This study demonstrates that evaluating changes in the social context in which autistic children play, alongside objective measures of play performance, is a useful way to measure therapy outcomes.

Wilkes-Gillan et al (2016), as previously noted, conducted a high quality randomised controlled trial examining the effectiveness of a 7-week parent-delivered play-based intervention to improve the peer-to-peer play skills of children with ADHD. The Test of Playfulness (ToP) was the primary outcome measure. Children's play skills increased significantly from pre to post-intervention and from pre-intervention to one month follow up. ToP social items improved significantly for children with ADHD and their peers from pre to post-intervention and from pre-intervention to one month follow up. This study shows the value of evaluating changes in the social context of play provided by peers for children with ADHD, in addition to objective measures of play performance when measuring therapy outcomes.

Brussoni et al (2021) carried out a randomised controlled trial evaluating the efficacy of two versions of an intervention to reframe mothers' perceptions of risky play and facilitate changes in parenting behaviour. Interventions were a web-based or in-person workshop and included a series of self-reflection and goal-setting exercises. The primary outcome tool was the Tolerance for Risk in Play Scale (TriPS). Secondary outcome measures were self-reported progress towards the goal mothers set for themselves as part of the risk reframing intervention. Mothers receiving the web-based intervention had significantly higher tolerance of risky play at one week ($p = 0.004$) and three months post-intervention ($p = 0.007$). Mothers attending the in-person workshop had significantly higher tolerance of risky play at one week after the intervention ($p = 0.02$). The authors concluded that the web-based intervention was effective in increasing mothers' tolerance for risky play. This study shows that evaluating changes in the social context of play as facilitated by mothers is an appropriate way to measure the outcome of parent-focused play interventions.

Ramugondo et al (2018) conducted a randomised controlled trial evaluating the feasibility and preliminary effectiveness of a play-informed, caregiver-implemented, home-based intervention for children with HIV and progressive HIV encephalopathy living in challenging socioeconomic areas in South Africa. The intervention comprised 10 monthly sessions facilitated by an occupational therapist involving group discussions with caregivers and periods of experiential play. The aim was to enable caregivers to engage playfully with their children to support their playfulness. The Test of Playfulness (ToP) was the primary outcome measure. ToP scores increased from baseline to post-intervention in the intervention group, but this was not statistically significant. This study demonstrates that evaluating changes in the social context of play as facilitated by caregivers is a useful and relevant way to measure the outcome of parent-focused play interventions.

Stagnitti et al (2021) conducted a cohort study investigating changes in the relationship between play, language and social skills of children aged 5–8 years before and after taking part in the 'Learn to Play' intervention programme with other disabled peers. Participants were 19 children with additional needs, including 10 with autism. The intervention was a 6-month, child-led play-based group intervention to develop self-initiated pretend play. Data was collected at baseline and after six months of intervention. Outcome measures were the Child-Initiated Pretend Play Assessment (ChIPPA), the Penn Interactive Peer Play Scale (PIPPS) and the Preschool Language Scale. Results indicated that the 'Learn to Play' program was associated with increases in children's social interaction, decreases in children's social disconnection and increases in language over a 6-month period. This study shows the value of evaluating changes in the social context of play provided by

peers, alongside objective measures of play performance when measuring therapy outcomes.

Evidence overview

A number of studies demonstrated that assessing the impact of changes to the context in which play takes place is appropriate when evaluating the outcome of play interventions. The focus of contextual changes varies between studies and the level of evidence ranges from high to low. The evidence supporting this recommendation includes two high, two moderate and one low level study measuring the impact of changes to the social context of play provided by play partners and peers.

5.3.4 Recommendation 12: Eliciting the child and young person's perspective on play participation

Rousseau-Harrison and Rochette (2013), as summarised above, conducted a systematic review to explore the impacts of wheelchair acquisition on children's social participation, personal factors, and social environment. In the nine studies reviewed most observed the children's perceptions and some included their parents' perceptions too. The results demonstrated the importance of a child's personalised view and insight into the impact wheelchair acquisition had on their participation in daily activities, play, interpersonal relationships, and personal factors.

Kohlemainen et al (2015) conducted a cohort study of 195 children aged 6-8 years with motor impairments who were mobilising independently and were seen by physical or occupational therapist. The study aimed to identify body function and structure, activity, environmental and personal factors related to participation in physical play and leisure (PPP). Children and their parents were recruited from six regions in the UK.

The authors collected self-reported data using the Children's Assessment of Participation and Enjoyment and conducted child-friendly, semi-structured face-to-face interviews. Therapists provided a problem list of each child's difficulties according to their observations and standardised assessment, and parents were invited to complete a questionnaire on physical environmental factors, family support and relationships, and goals and beliefs relating to their child's PPP.

They found that children's play was mainly recreational rather than active. However, children reported a strong preference for active play but said that their participation was regulated by adults. This study highlights the importance of eliciting the child and young person's perspective when examining the outcome of play interventions.

Bartie et al (2016) carried out a qualitative study examining play opportunities, activities, equipment, toys and the play environment for typically developing 5–6-year-olds living in a deprived community outside a small town in South Africa. The aim was to better understand the nature of play in this environment. The researchers used participant observation along with photovoice methods to capture children's play experiences. Children were free to decide what they wished to play and do, and whether they included the researcher in their games. Two themes emerged: "neighbourhood children find ways to play" and "context influences play." Children participated in extensive outdoor play. Their games were highly social and involved the imaginative use of found items as toys. Children also used play to make sense of social hazards. While the photovoice methodology had some limitations when used with young children, its use in this study highlights the value of exploring children's views and experiences when evaluating play outcomes.

Graham et al (2019) interviewed six children with cerebral palsy aged 6-12 years. The research aimed to understand the experience of play for children with high levels of disability due to cerebral palsy. Findings indicate that making choices and being able to control play were important. Children

also experienced play differently to their peers and used humour and communication skills to connect with others while playing. This study demonstrates the importance of evaluating play outcomes from the perspective of the player, as each person's experience of play is unique.

Evidence overview

The four studies demonstrated that eliciting children's voices in research about play outcomes is possible and can provide useful information to inform practice. The evidence supporting this recommendation consists of one high level systematic review, one moderate level cohort study, and two low level qualitative studies. Occupational therapists should include children's perspectives when evaluating the outcome of interventions focusing on play participation, rather than relying on objective measures of play performance alone.

5.3.5 Recommendation 13: Adults' perspectives

Discussed previously, **Engelen et al (2013)** carried out a clustered, randomised controlled trial exploring the effects of a school-based intervention for increasing physical activity. 226 typically developing Australian children aged 5-7 years took part in a 13-week intervention that included introducing loose materials into the playground. A teacher-parent intervention group explored perceptions of risk associated with free play. Helping adults reconsider views of free play as risky increased children's physical activity at break times.

Coussens et al (2019) carried out a systematic scoping review, synthesising peer-reviewed literature examining barriers and facilitators to play participation from the perspective of parents of children younger than 6 years with attention deficit hyperactivity disorder, autism spectrum disorder, and/or developmental coordination disorder. Thirteen articles were included. Parents reported that limitations in feeding or toileting hindered children's participation in leisure and play activities. Parents experienced more efficacy and satisfaction regarding their child's participation when interventions were embedded in family routines and settings. Parents also identified training as important in their perception of children's gains; they highly valued training that facilitated their skills in improving communication, play, and behavioural outcomes. Parents valued play as an occupation and as a means of promoting social communication.

Kolehmainen et al (2015), as noted earlier, examined factors related to participation in play. The study identified that the children's participation in physical play and leisure was mainly recreational rather than physically active. In interviews the children reported a strong preference for active play but indicated that adults regulated their PPP. Their parents reported mostly positive beliefs about their child's PPP and various levels of family PPP were found. The results indicated that children's participation is related to the activity orientation of the family rather than only the parent or child.

Graham et al (2015) carried out in-depth, semi-structured interviews with parents of seven children with cerebral palsy aged 3 months to 9 years. The research explored parents' understanding of play and how play was used as a therapeutic tool and home programmes. Four themes emerged: 'typical play', 'burden of play', 'expanding the concept of play', and 'therapy and play'. With 'typical play', parents discussed how play was the primary occupation of the child and that they played in similar ways to typically developing children. In 'burden of play', parents noted how they needed to facilitate and engage their child's play. For many this stemmed from their child's physical disability and inability to manipulate toys. 'Expanding the concept of play' emerged from parents noting how their child participated in play vicariously and play through communication. Finally, some parents saw therapy as a form of play ('therapy and play'). The study highlights enabling parents' understanding of facilitating 'play for play's sake' as an appropriate way to evaluate the outcome of occupational therapy.

Román-Oyola et al (2018) carried out a qualitative study exploring the perspectives of parents of autistic children regarding play experiences and self-efficacy during play encounters. The authors reported differences between mothers and fathers in their motivation for playing with their child, with mothers motivated to play to promote children’s progress, while fathers were motivated to play for emotional connectivity. Promoting parental self-efficacy by increasing parents’ understanding of play and playfulness was identified an appropriate occupational therapy outcome.

Evidence overview

Five studies demonstrated that including parents’ perspectives when evaluating the outcome of play interventions provides valuable information about factors that affect play participation. The evidence supporting this recommendation consists of one high level randomised controlled trial, one moderate level systematic scoping review, one moderate level cohort study and two low level qualitative studies.

5.4 Best practice suggestion

Where the evidence is still emerging and so the risks and benefits are more closely balanced, or there is uncertainty in the values and preferences of people who are likely to access services, a best practice suggestion rather than a recommendation for practice can be developed.

The suggestion below has moderate levels of evidence and should still inform best practice, with occupational therapists supporting people who access services to arrive at a decision that is consistent with the benefits and their values and preferences.

Best practice suggestion	
<p>10. It is suggested that when assessing children with a motor impairment, potentially modifiable factors (across body function/structure, activity, environmental and personal factors) are observed.</p> <p>(Kolehmainen et al 2015 [B]; Stanton-Chapman et al 2018 [C])</p>	2B

5.4.1 Suggestion 1: Modifiable factors observed during assessment

Summarised previously, **Kohlemainen et al (2015)** examined potentially modifiable, specific factors across body function and structure, activity, environmental and personal factors, related to participation in physical play and leisure in children with motor impairments. Play-related outcomes were measured using the Children’s Assessment of Participation & Enjoyment. Results indicated that children’s participation in physical play/leisure was mainly ‘recreational’ (such as, pretend play, playing with pets) rather than ‘active physical’ (such as, riding a bike or scooter).

Stanton-Chapman et al 2018 conducted a qualitative study which included observations of all children aged 5-12 years who attended two nearby American playgrounds. Data was collected over 13 days to explore the similarities and differences in activity levels for boys and girls. Using the System for Observing Play Activities in Youth, observational coders recorded children’s physical activity types, locations, and activity. The study findings showed that there was no statistical significance between girls’ and boys’ activity intensities in either playground. However, playground context (such as, location and other competing play areas) plus type of playground equipment

available and amount of free space may influence active play choices and social interaction for children. The findings support the influence of physical environment structures on play.

Evidence overview

Two studies demonstrated the importance of outside factors on play participation. This recommendation is supported by one moderate level cohort study and one low level qualitative study.

5.5 Potential impact of the recommendations

The RCOT *Occupational therapy and play* practice guideline represents a change in approach for practice and education. This is the first occupation focused guideline produced by RCOT. As such there is a fresh emphasis on the potential impact of the delivery of occupational therapy for children and young people. It is expected that this guideline will be a catalyst for change within the profession.

5.5.1 Generalisability

Due to the broad scope of the guideline objective, the studies included in the evidence review were heterogeneous, with variations in sample populations, in the type, amount and frequency of specific interventions, and in the availability of occupational therapy services within the service model.

Geographical variations in the core domains of occupational therapy practice have been taken into account in the development of the recommendations, to ensure that findings are pertinent to the UK context. Additionally, variation in intervention approaches and evidence outcomes have been reviewed in detail when judging the generalisability to the culturally-varied UK population. Despite the core evidence being drawn from diverse contexts, all of the children and young people within the individual studies were within the guideline scope.

Very little evidence was found on children and young people aged 11 and older, and the articles that were found also included younger children. As such, no syntheses were developed for children and young people aged over 11, and no recommendations could be developed specifically for this age group.

5.5.2 Social determinants of health

Information and resources on play should be available in a range of formats to empower families. A family-centred approach to play is more likely to recognise social inequities and support families to access play. Occupational therapists should challenge traditional Western conceptualisation of play to improve inclusivity and diversity. For example, occupational therapists can assure parents that the quantity of toys is not a barrier to play, and that play without toys is possible.

6 Parent perspectives

The target audience of the full guideline document is primarily occupational therapists working with children and young people. While of potential interest to parents and children, the guideline development group acknowledged that it was not written specifically for members of the public.

Parent and children's perspectives are integral to the guideline development process and involvement took place through consultation on the draft scope and draft guideline (see Section 9.4).

To be updated post-consultation.

7 Implementation of the guideline

This practice guideline aims to support occupational therapists by providing specific recommendations to support the use of play in occupational therapy with children and young people aged 0-18 years.

Familiarity with the guideline document will be an important first step for both individual practitioners and their managers. It is, therefore, imperative that occupational therapists and managers working in this area take responsibility for reviewing the guideline recommendations within the context of their practice.

Bringing the guideline to the attention of colleagues within the multidisciplinary team and service commissioners should also be a priority.

A further action to facilitate implementation must be for lead therapists to consider the 'levers' and 'barriers' within their local organisation and culture that may have an impact on any changes that may be necessary to practice. Section 7.1 identifies some potential barriers that may be applicable, while section 7.2 provides details of resources to facilitate implementation.

7.1 Organisational and financial barriers

The recommendations stated within this guideline are intended to help occupational therapists to deliver occupation-focused practice. It is recognised, however, that there will be potential barriers, including cultural, organisational and financial, which may influence application of the recommendations. It is important that occupational therapists take these into account, alongside their clinical reasoning when implementing this guideline. The barriers most likely to be encountered are described below.

- **Accessibility of guideline information:** As a first step, the guideline needs to be accessible to occupational therapists for the recommendations to be implemented. New evidence takes time to embed into practice, and evidence that is accessible is critical for closing this time gap.
- **Pressure on time and resources:** The time and resources available to occupational therapists may present a barrier to implementing the recommendations. Services may not have the financial resources to provide access to further training, tools and potentially licences, or the specialist equipment needed to facilitate play. Additionally, time may place a constraint on implementation. Under-resourced occupational therapy services may find it difficult to reflect on their practice and how it may need to be adapted. It is anticipated that the implementation of the recommendations will be planned and delivered in a local, specific context, based on service need, funding resources and the overall contributions of occupational therapists within their setting.
- **Service limitations:** Some services may have an impairment focus, or one that prioritises self-care or physical access to education. It may be difficult to direct limited resources to the fundamental need for children to have access to and support for play. Additionally, some occupational therapists may find themselves constrained by what is written on a referral and therefore hampered in their efforts to promote play.
- **Organisational culture:** The culture of organisations occupational therapists work within

may also impede implementation, particularly if hierarchical work structures prevent modifications to services or do not encourage suggestions for change.

- **Cultural humility:** In multi-cultural Britain occupational therapists engage with families from a range of backgrounds. Occupational therapists will maintain a therapeutic focus which prioritises the cultural world-view of the child and their family. Understanding the family's cultural perspective is essential to achieving the best outcomes for children and young people. A lack of understanding may impede the implementation of the recommendations.
- **Social inequities:** Finally, occupational therapists will need to consider the resources of the families they are working with. Some may not have the toys, access to play facilities or time to fully participate in occupational therapists' recommendations.

7.2 Implementation resources

Three core implementation resources are available to support this practice guideline.

7.2.1 Quick reference and implementation guide

The quick reference and implementation guide is intended to be used by practitioners as an easily accessible reminder of the recommendations and suggestions for implementing them. It should ideally be used once the practitioner has read this full guideline document, to ensure an understanding of the context and development of the recommendations.

7.2.2 Audit form

It is recommended that occupational therapists use the RCOT audit tool that supports this guideline.

The audit form provides a template for individual occupational therapists or services to audit and review their current service provision against the recommendations. The aim is to encourage reflection on current practice and to consider, where this does not follow the recommendations, the clinical reasoning in place to support decisions.

A baseline assessment conducted using the audit tool can be repeated to enable review of progress on actions identified from the audit. It can be useful to undertake a routine audit every one or two years to monitor ongoing change. The audit form, while initially providing a tool for use within an individual/service context, offers the potential for future benchmarking and wider comparative analysis.

Recommendations, for which there is a transdisciplinary component, may be usefully audited jointly with other members of the multidisciplinary team.

7.2.3 Continuing professional development/knowledge transfer resource

The continuing professional development resource is interactive and can be tailored for local use. The session can be used for group or self-directed learning, or for raising awareness of the guideline at multidisciplinary meetings, study days or events.

Accessing the implementation resources

The quick reference guide, audit form and continuing professional development session resources are available as separate documents.

These can be downloaded, together with the full guideline document, from the Royal College of Occupational Therapists' website: <https://www.rcot.co.uk>

7.2.4 Implementation in practice

The development of this guideline serves to bring together the large body of evidence that contributes to occupational therapists' use of play while working with children and young people. It is beyond the scope of this guideline to specify models for occupational therapy services or provide discrete recommendations for specific assessment tools or interventions.

8 Recommendations for future research

During the process of drafting the recommendations, guideline development members identified areas where further research is needed. These should be considered in context with other occupational therapy research priorities, such as the top ten research priorities for occupational therapy in the UK (RCOT 2021b) and child-centred research priorities (Morris et al 2015, McPin Foundation 2018).

Underpinning these recommendations is the belief that children and young people must be part of the research process. Incorporating the voices of children and young people into research questions, methods and outcomes of play and occupational therapy research is essential for good quality, relevant research.

- **What does play mean for all children and young people, regardless of physical, learning or mental health needs?** Occupational therapists working with children and young people need to understand their perspectives on play. They can then ensure person-focused care with interventions and outcomes that are meaningful to the child or young person.
- **What does play look like for young people aged 11-18?** Much of the appraised literature focused on play for children, with little exclusively focusing on young people. It is important to understand how young people aged 11 and over conceptualise play and its meaning to them when providing person-focused care.
- **How can occupational therapists measure outcomes of play from the perspective of children and young people and their families?** Research is needed to develop tools for measuring outcomes from the perspective of the child, young person or family members.
- **Are occupational therapists addressing play as an important occupation?** Further understanding of how occupational therapists are incorporating play into their practice is needed to be able to address any challenges to play being recognised as a primary occupation for children and young people.
- **What do occupational therapists, parents, teachers, and other adults assume about play and how does this impact participation for children with additional needs?** Research by Kolehmainen et al (2015) found that children felt their play participation is regulated by adults. More research exploring the attitudes and ideas about play of parents and adults working with children and young adults with additional needs can help to understand if these present barriers to participation in play.
- **What impact do occupational therapy interventions focused on changing the social environment and attitude of parents or peers have on children or young people's play participation?** Changes in the social environment can have an impact on play participation. Psychological research around attachment theory demonstrates the impact of social environment and interaction on children's development (Bretherton 1992, Porges 2009), but this research often lacks an occupational therapy focus nor is it widely referenced within the profession. Evaluating occupational therapy interventions that focus on changing the social environment, attitude of parents or peers and the impact of this on children's play participation is needed. These types of interventions might include directly influencing parents to enable the child's participation in play (such as Brussoni et al 2021).

- **What is the occupational therapy role in universal play interventions and playground or toy design and how does that impact upon children's participation?** While much research exists on powered mobility, there are other environmental changes that can affect participation in play, such as the design of community playgrounds to ensure universal accessibility. Occupational therapists can use their experience and expertise to create universal access to play, but they need to have the evidence to influence this area.
- **How can occupational therapists better understand the cultural context of play for individual children and apply this to their assessment, intervention, and outcomes of therapy?** In a diverse United Kingdom, occupational therapists will encounter children from different backgrounds and potentially with different language needs. Understanding their cultural context is necessary to ensure occupational therapy services are accessible and meet their needs.
- **How are occupational therapists in practice using play-based interventions and what impact do they have on children and young people?** There is limited high level evidence studies around play-based intervention across populations and occupational therapy settings, but particularly in a mental health setting.
- **What is the impact of occupational deprivation on play participation?** Occupational deprivation can have many causes, from the COVID pandemic to socioeconomics, geography to government policy. Understanding the impact these have on participation in play can help occupational therapists to overcome these challenges.

9 Guideline development process

Information on the following steps in the guideline development process can be found in the *Practice guideline development manual* 4th edition (RCOT 2020).

9.1 Guideline development group

The core guideline development group comprised eight occupational therapists with expertise in play, one of whom took on the additional role of equality and diversity representative, a public contributor, a play therapist and a representative from the Royal College of Paediatrics and Child Health (Appendix 4), along with supporting RCOT officers.

The occupational therapy core group members were all practising therapists, educators, or researchers. All group members undertook guideline development work in their own time, with some support from employers (for example to attend meetings).

Twenty-seven individuals who were involved in paediatric research and practice or RCOT employees were co-opted as additional evidence appraisers.

9.2 Consultation responses from stakeholders, parents, children and young people and occupational therapists

All comments received from stakeholders, parents, children and young people and occupational therapists on the draft scope and draft guideline document were reviewed by the guideline development group. Where appropriate, revisions were incorporated into the scope form or guideline document. Conflict of interest declarations were noted and reviewed for any necessary action.

Details of the comments submitted as part of the consultation activities are available on request from the Royal College of Occupational Therapists.

9.3 Stakeholder involvement

Stakeholders expected to have an interest in the guideline topic were identified by the core group membership at the preliminary guideline meeting. Specific attention was paid to identifying professional bodies that represent those working with children, young people and their parents, and national charitable or voluntary organisations that may represent people who access services.

9.3.1 Scope consultation with stakeholders

The following stakeholders were invited to comment on a draft of the scope document:

- Professional bodies: Royal College of Paediatrics and Child Health, Health Play Specialists Education Trust, British Psychological Society – Division of Educational and Child Psychology
- Academic centres: PENCRU, Exeter University
- Charities: Girlguiding UK, The Scout Association, Embracing Complexity Coalition, The

Disabled Children's Partnership, International Play Association, Play England, Play Wales, Play Scotland

- The Children's Commissioner for England, Children's and Young People's Commissioner Scotland, the Children's Commissioner for Wales, the Commissioner for Children and Young People in Northern Ireland.

9.3.2 Draft guideline consultation with stakeholders

The draft guideline was sent to each of the stakeholders who had been contacted as part of the scope consultation (section 9.3.1) for their review and comment.

TBC

9.4 Involvement with people who access services

9.4.1 Scope consultation with children, young people and parents

A children and young person's comment form was developed to gather their opinions on the scope. Question topics included the following:

- the guideline title
- whether play is important
- whether it is important for occupational therapists to help children play
- barriers to play
- who will be interested in the guideline.

The form was distributed through the guideline development group's networks which included charities they volunteered or worked with, and via the Nasirat Ahmadiyya, which is made up of Muslim girls 7-14 years of age.

Parents were also asked for their comments on the guideline scope via a parent's comment form. These, along with the scope, were distributed through the guideline development group's networks.

As a result of the comments from children, young people, and parents, teachers were added to the list of those who would be interested in the guideline.

9.4.2 Draft guideline consultation with children, young people and parents

TBC

9.5 Consultation with occupational therapists

9.5.1 Scope consultation with occupational therapists

Members of the Royal College of Occupational Therapists were invited to participate in the scope consultation via advertisement on RCOT's website, social media channels, and Highlight. A copy of the scope was provided with a feedback and conflicts of interest form.

9.5.2 Draft guideline consultation with occupational therapists

TBC

9.6 External peer review

TBC

9.7 Conflicts of interest

All guideline development group members (core group and co-opted), stakeholders, occupational therapist respondents to the consultations and peer reviewers were required to declare any pecuniary or non-pecuniary conflicts of interest, in line with the guideline development procedures (RCOT 2020).

The nature of the potential or actual conflicts made in the declarations (Appendix 5) was not determined as being a risk to the transparency or impartiality of the guideline development.

9.8 Declaration of funding for the guideline development

As a membership organisation, the major source of funding for the Royal College of Occupational Therapists is through membership fees. Other sources of income are primarily advertising and events.

The development and publication of this practice guideline were funded by the Royal College of Occupational Therapists. RCOT provided specific resources to cover the meeting software, literature search, and editorial, publication and promotional support.

There were no external sources of funding.

The project lead was a member of the Royal College of Occupational Therapists Specialist Section – Children, Young People and Families, but was not a National Executive Committee member so had no direct decision-making relationship with the allocated funding for the project.

The editorial lead for the guideline was an officer at the Royal College of Occupational Therapists, who attended guideline meetings as an ‘officer in attendance’. The recommendations and guideline content were developed and finalised by the guideline development group with the involvement of stakeholders, parents, occupational therapists and external peer review. The views of the Royal College of Occupational Therapists have not, therefore, unduly influenced the final recommendations in this guideline.

9.9 Appraisal and ratification process

The guideline scope and final document were reviewed and subsequently ratified by the Royal College of Occupational Therapists’ Practice Publications Group, in line with the requirements of the *Practice guideline development manual* 4th edition (RCOT 2020).

The scope was approved by the RCOT Publications Group in August 2020 and the final version of the guideline was approved by the RCOT Publications Group in **TBC**.

10 Guideline methodology

10.1 Guideline question

What is the evidence for the use of play in occupational therapy during assessment, intervention and as an outcome with 0-18 year olds?

The PICO framework (Huang et al 2006, Richardson et al 1995) was used to assist in developing the specific practice question further (Table 10.1). PICO describes the specific care group or condition being studied, and the nature of the intervention to be investigated. A comparative treatment can be specified where applicable, together with the anticipated outcomes (the desired/undesired or expected results of the intervention). This level of specificity is important in developing the question so that it addresses the requirements of the scope (RCOT 2020).

Table 10.1: PICO framework

Patient (person who accessed services), Population or Problem/circumstance	Children and young people aged 0-18 years
Intervention under investigation or action	Occupational therapy interventions
Comparison , which is an alternative intervention or action	None
Outcome desired	<ul style="list-style-type: none"> • Occupational therapists are aware of the importance of play as a primary childhood occupation. • Occupational therapists utilise occupation focussed assessment and intervention to support children, young people and their families. • Occupational therapists enable children and young people to participate in play. • All stakeholders confidently engage in conversations about play and drive service change. • Children, young people and their families have choice and control, and can recognise the potential for play to have a positive outcome in terms of health and wellbeing.

10.2 Literature search strategy and outcomes

The literature search was carried out by the Royal College of Occupational Therapists' librarians, using a search strategy defined following discussion and agreement with the guideline development group. Two searches were carried out: one conducted in September 2020 (the original search) and one conducted in January 2022 (the top-up search).

The top-up search was an addition to the guideline development process. Due to the COVID pandemic and the resulting impact on RCOT's priorities and the availability of the guideline

development group members, more time elapsed than planned between the original literature search and anticipated publication date. To mitigate the chance that any high-level, significant research had been published, and decrease the time between a literature search and the publication date, a top-up search was conducted.

10.2.1 Key terms

The overall search strategy involved combining concept groups of key words. Six key categories or concepts and their related terms were identified: intervention/assessment/outcome terms, play related terms, population, occupational therapy terms, occupation terms and cost effectiveness terms (Appendix 6, Tables A6.1 and A6.2). The combination of strings searched aimed to identify the most relevant results to meet the requirements of the guideline scope.

Further search terms were employed for the top-up search, which was only concerned with finding recent, high-level evidence, such as randomised controlled trials and systematic reviews, that had been published after the cut-off date for the original literature search.

For both searches, specific exclusions were material published pre-2011, grey literature and language other than English (due to lack of resources for translation).

The databases searched reflected the most likely sources of published peer-reviewed occupational therapy and play evidence. For the original search, 12 core databases were searched from 1 January 2011 to the dates the individual searches were carried out as detailed in Table 10.2.

For the top-up search, OTDBASE and Otsearch were not searched because of the high level of overlap with other databases. OTSeeker was not searched because it was no longer being maintained by the publisher. Search dates were from September 2020 to the date of the search.

Table 10.2: Database searches

Core databases	2020 search	2022 top-up search
Cumulative Index to Nursing and Health Literature (CINAHL)	21/09/20	04/01/22
MEDLINE		
Allied and Complementary Medicine (AMED)	21/09/20	04/01/22
Social Policy and Practice		
Health Management Information Consortium (HMIC)		
PsycINFO		
Cochrane Library	22/09/20	04/01/22
ERIC	25/09/20	05/01/22
OTDBASE	21/09/20	No search undertaken
OTSearch	28/09/20	No search undertaken

OTSeeker	24/09/20	No search undertaken
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Hand-searching was not systematically employed.

Searches included title, abstract or descriptor fields. The date of each search, search fields and search result numbers are detailed in Appendix 6 (Tables A6.3 – A6.6). Full search histories are available on request from the Royal College of Occupational Therapists.

10.2.2 Original and top-up search results and screening

The original search identified a total of 3,796 results. These were scrutinised for duplicates, both within-database searches and cross-database search returns, by the RCOT's Research and Development Officer. A total of 2,298 duplicates were removed.

The guideline development group then screened the resulting 1,498. Ten per cent of the results (n=150) were double screened independently by two members of the guideline review group. The rest (n=1,348) were screened by one member.

The top-up search identified 629 articles. After removing duplicates and out-of-scope results (for instance, conference proceedings), 168 articles were available for screening. Screening was conducted by RCOT staff, with 10% of articles double screened independently (n=17) and 151 screened by one person.

10.2.3 Criteria for inclusion and exclusion of evidence

The guideline development group screened articles against the following inclusion and exclusion criteria:

- Inclusion criteria:
 - Research conducted with children or young people aged 18 or younger.
 - Research on play, including gaming, as an intervention, outcome, or assessment.
 - Research related to occupational therapy.
 - (Top-up search only) Research that used a systematic review or randomised controlled trial methodology.
- Exclusion criteria:
 - Play not in conjunction with occupational therapy.
 - Research conducted exclusively among participants over 18 years of age.
 - Research conducted exclusively on leisure.
 - Research published before 2011.
 - Research not published in English.
 - Grey literature.

The allocation process ensured that articles were not screened for inclusion by authors or co-authors. Where the screeners had a variation in opinion as to whether an abstract should be included or excluded for appraisal, the abstract was further reviewed against the eligibility criteria by the reviewers to come to a consensus decision.

Through this process, articles were identified as potentially relevant to the guideline and to include for critical appraisal.

10.2.4 Critical appraisal of original literature results

Following screening of the original literature search results, 1,091 articles were further excluded, resulting in a total of 407 items identified for full paper review and critical appraisal.

During the critical appraisal process, 169 articles were identified as out of scope, resulting in 238 articles which were fully critically appraised. Twenty-seven items of evidence were subsequently used in developing the recommendations.

An overview of the original literature search outcomes is provided in Figure 10.1.

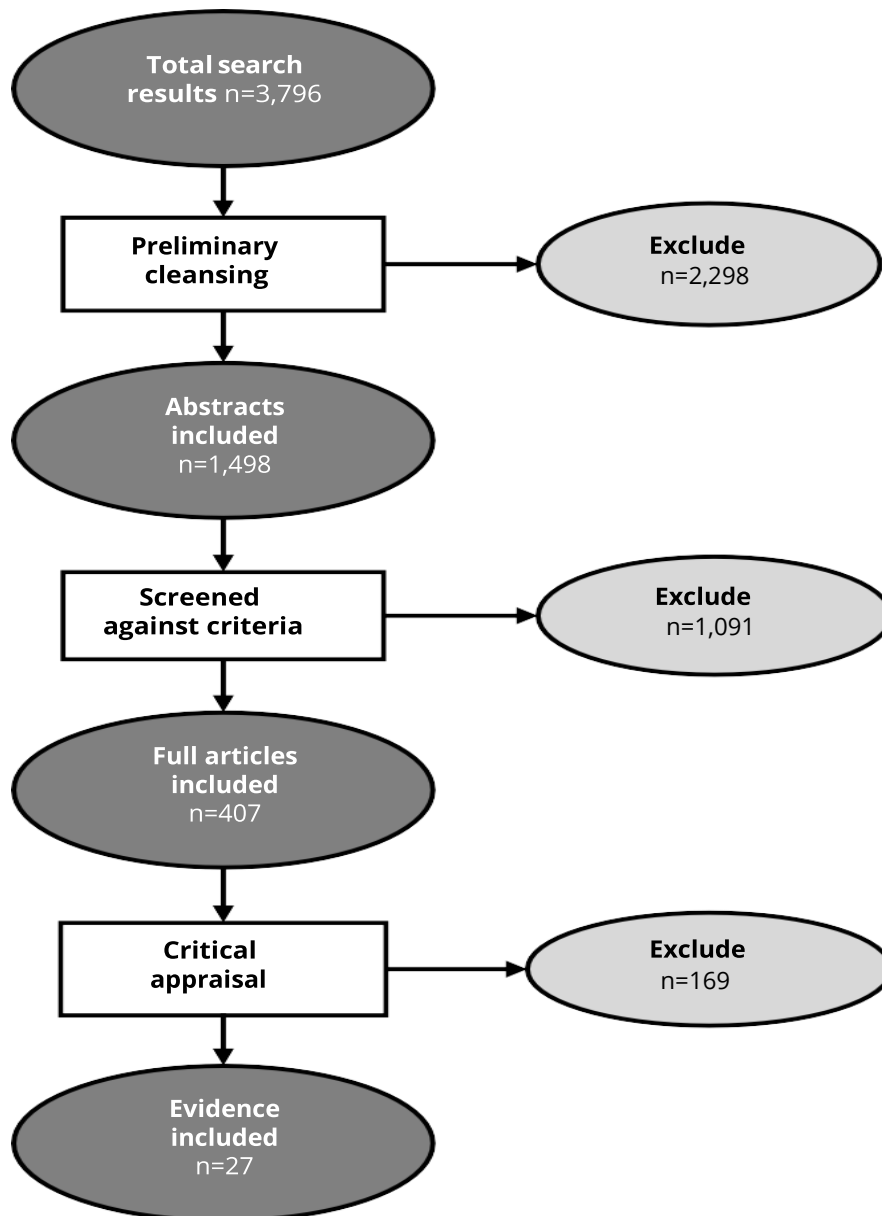


Figure 10.1 Original literature search outcomes

10.2.5 Critical appraisal of top-up search literature results

Screening of the top-up search literature resulted in 149 articles screened out, leaving 19 articles for critical appraisal. A further six articles were found to be out of scope or unavailable for review during the critical appraisal process. Thirteen articles were fully appraised and three used for recommendation evidence.

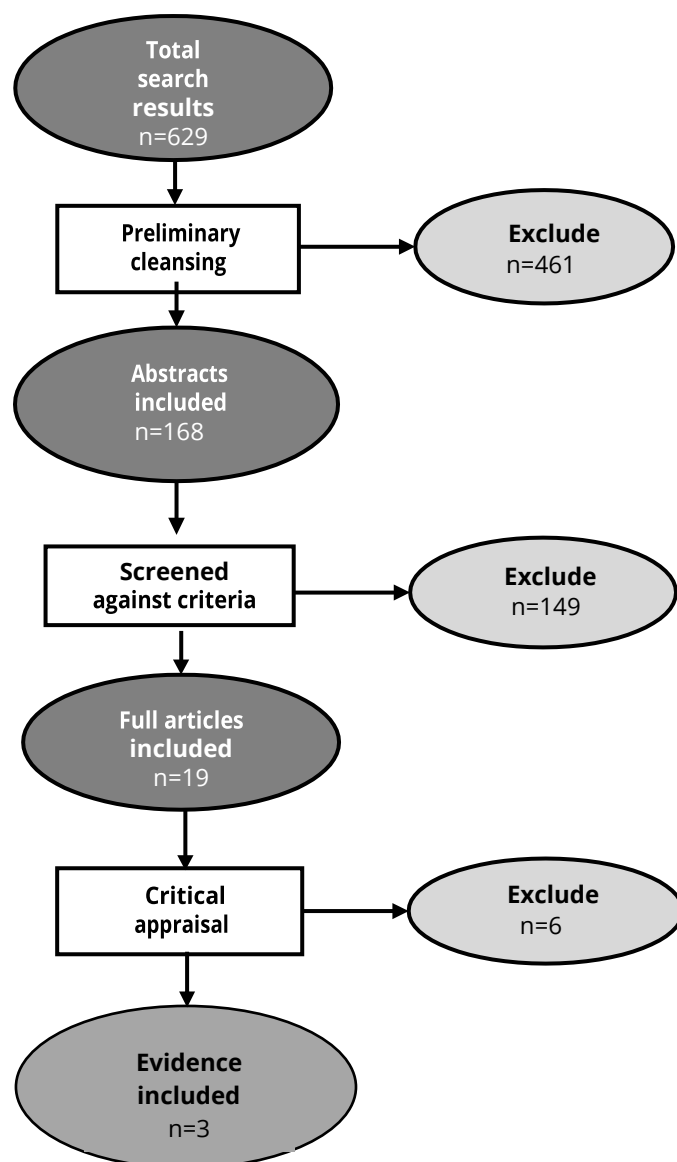


Figure 10.2 Top-up literature search outcomes

10.3 Strengths and limitations of body of evidence

Nearly 25% (n=101) of the articles identified in the original and top-up searches as potential evidence was critically appraised by two independent reviewers, while the rest (n=325) were appraised by one reviewer. Appraisals were undertaken by all members of the guideline development group, with additional support provided by co-opted members. The allocation process ensured that reviewers did not appraise any evidence that they had authored or co-authored. Any discrepancy in grading was discussed and the final grading agreed and confirmed via consensus or by a third reviewer.

The quality of the evidence was initially assessed and recorded using forms based on the Critical Appraisal Skills Programme (CASP) checklists (CASP 2013). Appraisal considered factors such as the appropriateness of the study design and recruitment strategy, procedural rigour in data collection and analysis, confounding factors and potential biases, transferability, precision of results and the value of the findings.

A quality of evidence grade was assigned to each individual article using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach, as defined

within the *Practice guideline development manual* 4th edition (RCOT 2020). The grading reflects the research design and the confidence in the research findings.

The initial grading was allocated as follows:

- randomised controlled trial/systematic review = High
- observational study = Low
- any other evidence = Very Low.

Limitations in the design of a study or its implementation may, however, bias the estimates of the treatment effect. If there were serious limitations, then downgrading of the quality of the evidence was considered, as in Table 10.3.

Table 10.3: Grading evidence up or down (after GRADE Working Group 2004)

Decrease grade if	<ul style="list-style-type: none"> • Serious or very serious limitation to study quality. • Important inconsistencies in results. • Some or major uncertainty about directness of the evidence. • Imprecise or sparse data (relatively few participants and/or events). • High probability of reporting bias. <p>Each quality criterion can reduce the quality by one or, if very serious, by two levels.</p>
Increase grade if	<ul style="list-style-type: none"> • Magnitude of the treatment effect is very large and consistent. • Evidence of a large dose–response relation. • All plausible confounders/biases would have decreased the magnitude of an apparent treatment effect. <p>Only studies with no major threats to validity should be upgraded.</p>

A decision to increase or decrease the initial grade of the evidence was recorded and justified on the critical appraisal forms. A moderate category became relevant only if there was a suggested change in the initial grading of an article due to upgrading or downgrading. Evidence was ultimately graded in one of four categories as detailed in Table 10.4.

If there was no reason to upgrade or downgrade the evidence, then the original grading remained.

Table 10.4: GRADE quality of evidence grading (after GRADE Working Group 2004)

Quality of evidence	Grading	Characteristics	Confidence
High	A	Based on consistent results from well-performed randomised controlled trials, or overwhelming evidence of an alternative source, e.g. well-executed observational studies with strong effects.	True effect lies close to that of the estimate of the effect. Further research is very unlikely to change confidence in the estimate of the effect.

Moderate	B	Based on randomised controlled trials where there are serious flaws in conduct, inconsistency, indirectness, imprecise estimates, reporting bias or some other combination of these limitations, or from other study designs with special strengths.	True effect likely to be close to the estimate of the effect but the possibility that there could be a substantial difference. Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.
Low	C	Based on observational evidence, or from controlled trials with several very serious limitations.	True effect may be substantially different from the estimate of the effect. Further research is very likely to have an important impact on confidence in the estimate of the effect and is likely to change the estimate.
Very Low	D	Based on case studies or expert opinion.	Any estimate of effect is very uncertain and may be far from the true effect.

The evidence used to develop the recommendations is provided in Table 10.5. A summary of each piece of evidence can be found in Appendix 2.

Table 10.5: Summary of evidence used to develop the recommendations

Topic area	Author	Year	Evidence quality
Assessment	Engelen et al	2013	A
	Romli and Wan Yunus	2020	A
	Rousseau-Harrison and Rochette	2013	A
	Mobbs et al	2021	B
	Guerette et al	2013	C
	Sonday and Gretschel	2016	C
Intervention	Arbesman et al	2013	A
	Bonney et al	2017	A
	Cahill et al	2020	A
	Hammond et al	2014	A
	Esmaili et al	2019	A
	Mohammadi et al	2021	A
	Potasz et al	2013	A
	Wilkes-Gillan et al	2016	A
	Wuang et al	2011	A
	Salem et al	2012	A

Topic area	Author	Year	Evidence quality
	Axford et al	2018	C
Outcome	Engelen et al	2013	A
	Kent et al	2021	A
	Mohammadi et al	2021	A
	Rousseau-Harrison and Rochette	2013	A
	Schaaf et al	2018	A
	Wilkes-Gillan et al	2016	A
	Brussoni et al	2021	B
	Coussens et al	2020	B
	Kolehmainen et al	2015	B
	Ramugondo et al	2018	B
	Bartie et al	2016	C
	Graham et al	2019	C
	Graham et al	2015	C
	Guerette et al	2013	C
	Moore and Lynch	2018	C
	Román-Oyola	2018	C
	Sonday and Gretschel	2016	C
Stagnitti et al	2012	C	
Stanton-Chapman and Schmidt	2017	C	

10.4 Method used to arrive at recommendations

Evidence tables summarising the appraised articles were developed, and each article was categorised according to the age of the children or young people studied, and whether the article included play as an assessment, intervention, outcome or none of these. The guideline development group agreed that they would not consider any evidence graded as a D when developing recommendations because this was the lowest level of evidence.

Once the categorisation and exclusion of articles graded D had been agreed, evidence syntheses were conducted for the following categories:

- Assessment aged 0-5
- Assessment aged 5-11
- Intervention aged 0-5
- Intervention aged 5-11
- Outcome aged 0-5
- Outcome aged 5-11.

Very little evidence was found on children and young people aged 11 and older, and the

articles that were found also included younger children. As such, no syntheses were developed for children and young people aged over 11, and no recommendations could be developed specifically for this age group.

The evidence tables and syntheses were used to judge the potential contribution of each piece of evidence and as the basis for developing the recommendations. Once a recommendation had been developed, an overall quality of evidence rating was determined. This overall rating was established as follows:

- Where the evidence outcomes pointed in different directions towards benefit and towards harm, the lowest quality of evidence determined the overall quality grade of evidence.
- Where the outcomes pointed in the same direction towards either benefit or harm, the highest quality of evidence was appropriate to recommend an intervention and determined the overall quality of evidence.
- In circumstances where the balance of benefits and harm was uncertain, the lowest grade of quality of evidence was assigned.

Strength of recommendation was the second element of the GRADE system applied, using the categories ‘strong’ or ‘conditional’ to reflect the strength (Table 10.6).

Table 10.6: Strength of grade (after Guyatt et al 2008)

Strength	Grade	Benefits and risks	Implications
Strong	1 ‘It is recommended. . .’	Benefits appear to outweigh the risks (or vice versa) for the majority of the target group.	Most people who access services would want or <i>should</i> receive this course of intervention or action.
Conditional	2 ‘It is suggested. . .’	Risks and benefits are more closely balanced, or there is more uncertainty in the likely values and preferences of people who access services.	The majority of people who access services would want this intervention but not all, and therefore they should be supported to arrive at a decision for intervention consistent with the benefits and their values and preferences.

The development of the recommendations, including assignment of the overall quality and strength grading, was a consensus decision obtained at the guideline development group meeting and by subsequent email correspondence as required. There were no recommendations that were not agreed by all members, so that no formal voting system was required.

A recommendation judged to be ‘conditional’ was subsequently not included as recommendation, but instead separately categorised as a ‘best practice suggestion’. The guideline development group reasoned that as this statement had only moderate levels of evidence, it should not form part of the recommendations.

Thirty items of evidence were used to develop the recommendations, and two pieces of evidence were used to form the best practice suggestion.

A recommendation decision form was completed for each recommendation. This recorded information about the evidence used to form the basis of that recommendation, the overall allocation of the quality of evidence and strength of the recommendation. Any judgement by the guideline development group was documented as part of this decision-making process (the forms are available on request from the Royal College of Occupational Therapists).

10.5 Limitations and any potential bias of the guideline

Evidence included in the development of the guideline recommendations and suggestion for best practice was sourced from published, peer-reviewed journal articles.

Studies of high or moderate quality made up 64% of the evidence:

Grade A= 48% (n=15)

Grade B =16% (n=5)

Grade C = 35% (n=11)

The guideline development group downgraded four of the studies, initially graded A, due to limitations identified from the appraisal and a resultant lack of confidence in the estimate of the research effect. One study was upgraded from a C to a B because of the quality of the research. These decisions and comments on individual studies are noted in the evidence tables (see Appendix 2).

The Royal College of Occupational Therapists developed, authored, and funded this guideline (see Section 9.8). The potential for any bias in development and authoring was, however, minimised through the rigorous nature of the guideline development process. This was achieved through the systematic methodology adopted, the contributions of stakeholders and people who access services, the opinions of the external peer reviewers and occupational therapists, and the judicious management of any potential or actual conflicts of interest.

11 Updating the guideline

The Royal College of Occupational Therapists is responsible for the review of this guideline, scheduled to be completed in 2028. The review may happen earlier, however, if there is significant new evidence that impacts on practice or the recommendations. Monitoring significant new evidence is conducted via yearly literature searches that are subsequently screened by RCOT members with knowledge of the guideline and the clinical area.

Appendix 1: Glossary and abbreviations

Attention deficit hyperactivity disorder (ADHD)	<p>'Attention deficit hyperactivity disorder (ADHD) is a condition that affects people's behaviour. People with ADHD can seem restless, may have trouble concentrating and may act on impulse.'</p> <p>https://www.nhs.uk/conditions/attention-deficit-hyperactivity-disorder-adhd/</p>
Attendance	<p>'Being there' and measured as frequency of attending, and/or the range or diversity of activities in which an individual takes part.'</p> <p><i>Imms et al 2017 p20</i></p>
Assessment	<p>'The occupational therapy process is based on initial and repeated assessments. The occupational therapist together with the person they are working with focus on individual and environmental abilities and problems related to activities in the person's daily life.'</p> <p>'Assessment includes the use of standardised procedures, interviews, observations in a variety of settings and consultation with significant people in the person's life.'</p> <p>https://wfot.org/about/about-occupational-therapy</p>
Autistic spectrum disorder (ASD)/autism	<p>'Autism is a lifelong developmental disability that affects how people perceive the world and interact with others. Autism is a spectrum condition.'</p> <p>http://www.autism.org.uk/autism</p>
BAOT	<p>British Association of Occupational Therapists</p> <p>BAOT is the professional body for all occupational therapy staff in the United Kingdom.</p> <p>https://www.rcot.co.uk/about-us/governance/how-we-are-run</p>
CASP	<p>Critical Appraisal Skills Programme</p> <p>The Critical Appraisal Skills Programme supports the development of skills in the critical appraisal of scientific research and provides a number of critical appraisal tools to support this activity.</p> <p>http://www.casp-uk.net</p>
Cerebral palsy	<p>'Cerebral palsy is a condition that affects muscle control and movement caused by an injury to the brain before, during or after birth. Children with a diagnosis of cerebral palsy may have difficulties in controlling muscles and movements as they grow and develop.'</p> <p>http://www.scope.org.uk/support/families/diagnosis/cerebral-palsy</p>

CI	<p>Confidence interval</p> <p>‘There is always some uncertainty in research. This is because a small group of patients is studied to predict the effects of a treatment on the wider <i>population</i>. The confidence interval is a way of expressing how certain we are about the findings from a study, using statistics. It gives a range of results that is likely to include the “true” value for the population. ‘The CI is usually stated as “95% CI”, which means that the range of values has a 95 in a 100 chance of including the “true” value. For example, a study may state that “based on our <i>sample</i> findings, we are 95% certain that the ‘true’ population blood pressure is not higher than 150 and not lower than 110”. In such a case the 95% CI would be 110 to 150.</p> <p>‘A wide confidence interval indicates a lack of certainty about the true effect of the test or treatment – often because a small group of patients has been studied. A narrow confidence interval indicates a more precise estimate (for example, if a large number of patients have been studied).’</p> <p>Glossary: http://www.nice.org.uk/website/glossary/glossary.jsp</p>
Co-occupation	<p>Co-occupations are caregiving activities in which parents and their children actively engage that address children’s needs but also support the developing parent–child relationship.</p>
Developmental coordination disorder (DCD)	<p>‘Developmental co-ordination disorder (DCD), also known as dyspraxia, is a condition affecting physical co-ordination. It causes a child to perform less well than expected in daily activities for their age, and appear to move clumsily.’</p> <p>https://www.nhs.uk/conditions/developmental-coordination-disorder-dyspraxia/</p>
Developmental delay	<p>‘The term ‘developmental delay’ or ‘global development delay’ is used when a child takes longer to reach certain development milestones than other children their age. This might include learning to walk or talk, movement skills, learning new things and interacting with others socially and emotionally.’</p> <p>https://www.mencap.org.uk/learning-disability-explained/conditions/global-development-delay#:~:text=The%20term%20'developmental%20delay'%20or,with%20others%20socially%20and%20emotionally.</p>
Down’s or Down Syndrome	<p>A genetic condition caused by having an extra chromosome 21 in some or all of the body’s cells. Down syndrome is marked by growth, developmental, and learning delays that vary from mild to severe.’</p> <p>https://www.cancer.gov/publications/dictionaries/cancer-terms/def/down-syndrome</p>
Dyspraxia	<p>See ‘Development coordination disorder’.</p>

GRADE	<p>Grading of Recommendations Assessment, Development and Evaluation</p> <p>GRADE is a systematic and explicit methodology to assist in the judgement of the quality and strength of guideline recommendations. http://www.gradeworkinggroup.org</p>
Involvement	<p>‘The experience of participation while attending that may include elements of engagement, motivation, persistence, social connection and affect.’ <i>Imms et al 2017 p20</i></p>
Intervention	<p>‘Intervention focuses on programs that are person oriented and environmental. These are designed to facilitate the performance of everyday tasks and adaptation of settings in which the person works, lives and socialises. Examples include teaching new techniques and providing equipment which facilitate independence in personal care, reducing environmental barriers and providing resources to lessen stress.’ https://wfot.org/about/about-occupational-therapy</p>
Intellectual disability or intellectual impairment	<p>‘Intellectual impairment is classified as a neurodevelopmental disorder that begins in childhood and is characterised by deficits in cognition and adaptive functioning, with onset during the developmental period.’ https://m1psychology.com/what-is-intellectual-impairment</p>
Learning difficulty	<p>‘A person with a learning difficulty may be described as having specific problems processing certain forms of information.’ https://www.learningdisabilities.org.uk/learning-disabilities/a-to-z//learning-difficulties</p>
Learning disability	<p>‘Having a learning disability means that people find it harder to learn certain life skills. The problems experienced vary from person to person, but may include aspects such as learning new things, communication, managing money, reading, writing, or personal care.’ https://www.learningdisabilities.org.uk/learning-disabilities/a-to-z//learning-disabilities</p>
Motor impairment	<p>‘Motor impairment is the partial or total loss of function of a body part, usually a limb or limbs. This may result in muscle weakness, poor stamina, lack of muscle control, or total paralysis.’ https://www.neuromodulation.com/motor-impairment#:~:text=Motor%20impairment%20is%20the%20partial,muscle%20control%2C%20or%20total%20paralysis.</p>
NHS	<p>National Health Service</p> <p>The NHS refers to the publicly-funded healthcare systems in the United Kingdom.</p>
NICE	<p>National Institute for Health and Care Excellence</p> <p>NICE (formerly the National Institute for Health and Clinical Excellence) provides national guidance and advice to improve health and social care. http://www.nice.org.uk</p>

Occupation	'Everyday tasks or activities.' https://www.rcot.co.uk/about-occupational-therapy/what-is-occupational-therapy
Occupational therapist	'An occupational therapist helps people of all ages overcome challenges completing everyday tasks or activities.' https://www.rcot.co.uk/about-occupational-therapy/what-is-occupational-therapy
Outcome	Outcomes are the end result of intervention or action, or lack of it, on an individual or on a population group.
p value	Probability 'The p value is a statistical measure that indicates whether or not an effect is statistically significant. 'For example, if a study comparing two treatments found that one seems more effective than the other, the p value is the <i>probability</i> of obtaining these results by chance. By convention, if the p value is below 0.05 (that is, there is less than a 5% probability that the results occurred by chance) it is considered that there probably is a real difference between treatments. If the p value is 0.001 or less (less than a 1% probability that the results occurred by chance), the result is seen as highly significant. 'If the p value shows that there is likely to be a difference between treatments, the <i>confidence interval</i> describes how big the difference in effect might be.' Glossary: http://www.nice.org.uk/website/glossary/glossary.jsp
Parent	Parent refers to the primary caregivers for the child or young person rather than the biological mother and father. For brevity in the document the word parent is used.
Participation	Participation is defined by the World Health Organization's International Classification of Functioning, Disability and Health for Children and Youth (ICF-CY) as 'involvement in a life situation'. <i>WHO 2007, p9</i>
Royal College of Occupational Therapists (RCOT)	We're RCOT, the Royal College of Occupational Therapists. We've championed the profession and the people behind it for over 80 years, and today, we are thriving with over 35,000 members. Then and now, we're here to help achieve life-changing breakthroughs. For our members, for the people they support, and for society as a whole. https://www.rcot.co.uk/about-us/governance/how-we-are-run
RCT	Randomised controlled trial 'A study in which a number of similar people are randomly assigned to 2 (or more) groups to test a specific drug, treatment or other intervention. One group (the experimental group) has the intervention being tested, the other (the comparison or control group) has an alternative intervention, a dummy intervention (placebo) or no intervention at all. The groups are followed up to see how effective the experimental intervention was. Outcomes are measured at specific times and any difference in response between the groups is assessed statistically. This method is also used to reduce bias.' Glossary: http://www.nice.org.uk/website/glossary/glossary.jsp

<p>Specific learning difficulties</p>	<p>'Specific Learning Difficulties affect the way information is learned and processed. They are neurological (rather than psychological), usually run in families and occur independently of intelligence. They can have significant impact on education and learning and on the acquisition of literacy skills.</p> <p>'SpLD is an umbrella term used to cover a range of frequently co-occurring difficulties, most commonly known as:</p> <ul style="list-style-type: none"> • Dyslexia • Dyspraxia or Developmental Coordination Disorder (DCD) • Dyscalculia • Dysgraphia • Attention Deficit Disorder or Attention Deficit Hyperactivity Disorder' <p>https://www.dyslexia.uk.net/specific-learning-difficulties/</p>
<p>Systematic review</p>	<p>'A review that summarises the evidence on a clearly formulated review question according to a predefined protocol, using systematic and explicit methods to identify, select and appraise relevant studies, and to extract, analyse, collate and report their findings. It may or may not use statistical techniques, such as meta-analysis.'</p> <p>Glossary: http://www.nice.org.uk/website/glossary/glossary.jsp</p>

All websites in the glossary were accessed on 21/09/2022.

Appendix 2: Evidence tables

Each item of evidence used to support the recommendations has an associated evidence table.

The evidence tables are detailed in a separate document, *Practice guideline supplement: Evidence tables*, which can be downloaded from the Royal College of Occupational Therapists' website at: <https://www.rcot.co.uk/practice-resources/rcot-practice-guidelines>

Appendix 3: Assessment list

Table A3.1 presents standardised assessments focused on play that were utilised in the evidence underpinning the recommendations. These assessments are not endorsed by the guideline development group or RCOT.

Table A3.1: Standardised assessments from the recommendation evidence

Child Engagement in Daily Life Measure (CEDL)
Child-Initiated Pretend Play Assessment (ChIPPA)
Children's Assessment of Participation and Enjoyment (CAPE)
Daily Activities of Infants Scale (DAIS)
Iranian Children Participation Assessment Scale
McDonald Play Inventory (MDPI)
My Child's Play (MCP)
Penn Interactive Peer Play Scale (PIPPS)
Play Assessment for Group Setting (PAGS)
Play History Interview (PHI)
Revised Knox Preschool Play Scale (Knox PPS)
Takata Play History Questionnaire
Test of Playfulness (ToP)
Tolerance for Risk in Play Scale (TRiPS)
Young Children's Participation and Environment measure (YC-PEM)

Appendix 4: Guideline Development Group

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The guideline development group was supported by RCOT officers.

Appendix 5: Conflicts of interest declarations

Declarations were made in line with the conflicts of interest procedures (RCOT 2020, Section 3.2) as follows:

- Guideline group members, co-opted critical appraisers and occupational therapists involved in the consultation activity identified their membership of one or more professional organisations or specialist neonatal-related forums, which included the Royal College of Occupational Therapists Specialist Section – Children, Young People and Families, RCPCH, Sensory Integration Network UK and Ireland, National Handwriting Association, European Academy for Childhood Disability, National Association of Health Play Specialists, and the Elizabeth Casson Trust.
- One member of the guideline sits on a NICE guideline development panel.
- The editorial lead was an RCOT employee.
- Stakeholder and peer reviewer declarations included interests related to paediatric organisations, services and research/publications.

The nature of declarations made by all those involved in the guideline development was related to professional interests and expertise in clinical practice, education or research.

There were no conflicts of interest declared by parents, other than personal experience of occupational therapy services.

No commercial or financial interests were declared.

The adherence to the Royal College of Occupational Therapists' conflicts of interest policy, the nature and management of the above declarations, together with the robust guideline development methodology, mean that the potential for any bias has been taken into account and mitigated.

Appendix 6: Literature search strategy

Table A6.1: Original search terms and strings

String 1 Intervention/ assessment / outcome terms	String 2 Related play terms	String 3 Population	String 4 Occupational therapy terms	String 5 Occupation terms	String 6 Cost effectiveness terms
<p>1a Title, subject, abstract: Play*</p> <p>1b Full text/all searchable fields: Play*</p>	<p>Game OR Games OR Gaming OR Sport* OR Recreation*</p>	<p>(birth n2 year*) OR infant* OR infancy OR neonat* OR new born* OR newborn* OR new-born* OR baby OR babies OR toddler* OR pre-school* OR preschool* OR Child* OR young people OR young person* OR Juvenile* OR Youngster* OR teen* OR youth* OR adolescen* OR paediatric* OR pediatric*</p>	<p>4a Title, subject, abstract: Occupational therap*</p> <p>4b Full text/all searchable fields: Occupational therap* (for broader search)</p>	<p>5a Title, subject, abstract: Occupation OR Occupations</p> <p>5b Full text/all searchable fields: Occupation OR Occupations</p>	<p>Econom* OR Cost* OR Financ* OR Money OR Monies OR Saving* OR Price OR Prices OR Pricing OR Priced OR Expenditure* OR Fund OR Funds OR Funding OR Funded OR (Value N2 money) OR Budget* OR Afford OR Affordable OR Payment*</p>

Table A6.2: Top-up search terms and strings

String 1 Intervention/ assessment / outcome terms	String 2 Related play terms	String 3 Population	String 4 Occupational therapy terms	String 5 Occupation terms	String 6 Cost effectiveness terms	String 7 High level evidence terms
<p>1a Title subject, abstract: Play*</p> <p>1b Full text/all searchable fields: Play*</p>	<p>Game OR Games OR Gaming OR Sport* OR Recreation*</p>	<p>Birth n2 year* OR infant* OR Infancy OR Neonat* OR New born* OR Newborn* OR New-born* OR Baby OR Babies OR Toddler* OR Pre-school* OR Preschool* OR Child* OR Young people OR Young person* OR Juvenile* OR Youngster* OR Teen* OR Youth* OR Adolescen* OR Paediatric* OR Pediatric*</p>	<p>4a Title, subject, abstract: Occupational therap*</p> <p>4b Full text/all searchable fields: Occupational therap* (for broader search)</p>	<p>5a Title, subject, abstract: Occupation OR Occupations</p> <p>5b Full text/all searchable fields: Occupation OR Occupations</p>	<p>Econom* OR Cost* OR Financ* OR Money OR Monies OR Saving* OR Price OR Prices OR Pricing OR Priced OR Expenditure* OR Fund OR Funds OR Funding OR Funded OR (Value N2 money) OR Budget* OR Afford OR Affordable OR Payment*</p>	<p>RCT OR "Randomised control* trial*" OR "Randomized control* trial*" OR "Control* clinical trial*" OR "Systematic review*" OR meta-analys* OR "meta analys*" OR metaanalys*</p>

Core databases or platforms

The tables below show the literature search results by string combinations searched.

Table A6.3: Core databases or platforms: original search

Database or platform and search date	EBSCO	Ovid	Cochrane
	21.09.2020	21.09.2020	22.09.2020
Search term strings (below) and fields searched (right)	Title, abstract, subject; and full text for 1b, 4b, and 5b	Title, abstract, descriptor, subject word heading, article identifier, MeSH subject headings; and all subject fields for 1b, 4b, and 5b	Title, abstract and key word
Strings: 1a AND 3 AND 4a	593	186	93
Strings: 1a AND 3 AND 4b	1,349	805	110
Strings: 1a AND 3 AND 5a	448	166	131
Strings: 1a AND 3 AND 5b	483	500	35
Strings: 1b AND 2 AND 3 AND 4a	44	27	21
Strings: 1b AND 2 AND 3 AND 4b	223	224	25
Strings: 1b AND 2 AND 3 AND 5a	42	26	34
Strings: 1b AND 2 AND 3 AND 5b	45	107	9
Strings: 1a AND 4b AND 6	501	144	55
Strings: 1a AND 5b AND 6	303	296	20
Strings: 1b AND 2 AND 4b AND 6	79	38	15
Strings: 1b AND 2 AND 5b AND 6	19	43	9
Total results	4,129	2,562	557
Removed via platform de-duping and/or filter options (date/language)	2,997	989	0
Total for cleansing	1,132	1,573	557

Medline, CINAHL – accessed via EBSCOHOST platform

AMED, HMIC, APA PsycINFO, Social Policy and Practice – accessed via Ovid platform

Table A6.4: Core databases or platforms: top-up search

Database or platform and search date	EBSCO	Ovid	Cochrane
	04.01.2022	04.01.2022	04.01.2022
Search term strings (below) and fields searched (right)	Title, abstract, subject; and full text for 1b, 4b, and 5b	Title, abstract, descriptor, subject word heading, article identifier, MeSH subject headings; and all subject fields for 1b, 4b, and 5b	Title, abstract, key word
Strings: 1a AND 3 AND 4a AND 7	31	15	0
Strings: 1a AND 3 AND 4b AND 7	71	31	3
Strings: 1a AND 3 AND 5a AND 7	26	11	0
Strings: 1a AND 3 AND 5b AND 7	29	18	0
Strings: 1b AND 2 AND 3 AND 4a AND 7	4	2	1
Strings: 1b AND 2 AND 3 AND 4b AND 7	15	7	3
Strings: 1b AND 2 AND 3 AND 5a AND 7	7	1	2
Strings: 1b AND 2 AND 3 AND 5b AND 7	8	4	1
Strings: 1a AND 4b AND 6 AND 7	18	2	1
Strings: 1a AND 4b AND 6	100	25	2
Strings: 1a AND 5b AND 6 AND 7	13	3	0
Strings: 1a AND 5b AND 6	96	62	0
Strings: 1b AND 2 AND 4b AND 6 AND 7	0	2	3
Strings: 1b AND 2 AND 4b AND 6	20	6	3
Strings: 1b AND 2 AND 5b AND 6 AND 7	2	0	1
Strings: 1b AND 2 AND 5b AND 6	2	9	1
Total results	442	198	21
Removed via platform de-duping and/or filter options (date/language)	216	67	0
Total for cleansing	226	131	21

Table 6.5: Specialist databases or platforms: original search

Database or platform	Fields	Terms	Number retrieved	Date of search
OT Search	Title	Play OR Game OR recreation OR sport OR subject Play OR Game OR recreation OR sport	196	28.09.20
OTSeeker	Title and abstract	String 1a Strings 1b AND 2 AND 3 Strings 1b AND 6 Strings 2 AND 3 AND 6 [Age Group] like 'Paediatric / adolescent' AND string 1a [Age Group] like 'Paediatric / adolescent' AND strings 1b AND 2 Total	15 5 2 1 12 4 39	24.09.20
OTDBASE	Topic and title	[Topic] Paeds [subtopic] Leisure [Topic] Paeds [subtopic] Play [Topic] Paeds [subtopic] Sport [Title] Leisure [Title] Play / Playing / Play [Title] Sport Total	3 105 2 1 3 2 116	21.09.20
Eric		("occupational therapy" OR "occupational therapist" OR "occupational therapists") AND (play OR played OR plays OR playing OR playful OR playfulness OR game OR games OR gaming OR sport OR sports OR recreation OR recreational) - Limited by either 'children' or 'young children' "occupational" AND (play OR played OR plays OR playing OR playful OR playfulness OR game OR games OR gaming OR sport OR sports OR recreation OR recreational) - Limited by 'occupational therapy' Thesaurus search: "occupational therapy"	48 42 55	28.09.20

		- Limited by 'children'		
		"Play" (title) and "occupational therapy"	12	
		Play occupational		
		-Limited by 'occupational therapy'	26	
		Total:		
				183

Table A6.6: Specialist databases or platforms: top-up search

Database or platform	Fields	Terms	Number retrieved	Date of search
Eric		("occupational therapy" OR "occupational therapist" OR "occupational therapists" OR "occupational") AND (play OR played OR plays OR playing OR playful OR playfulness OR game OR games OR gaming OR sport OR sports OR recreation OR recreational) - Limited by either 'children' or 'young children'	16	05.01.22
		"occupational" AND (play OR played OR plays OR playing OR playful OR playfulness OR game OR games OR gaming OR sport OR sports OR recreation OR recreational) - Limited by 'occupational therapy'	13	
		Thesaurus search: "occupational therapy", "play", "playground activities", "playgrounds" - Limited by either 'children' or 'young children'	208	
		"Play" (title) and "occupational therapy"	4	
		Play occupational -Limited by 'occupational therapy'	10	
		Total	251	

Appendix 7: Acknowledgements

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A7.1 Parent consultees

- TBC

A7.2 Stakeholders

XX organisations or individuals commented on the draft guideline consultation. The following wished to be acknowledged in the guideline:

- TBC

The following organisations commented on the guideline scope:

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- Play Wales
- Cath Hubbuck, Senior Play Specialist, Great Ormond Street Hospital for Children

A7.3 External peer reviewers

Two independent reviewers appraised the draft guideline:

- TBC

A7.4 Co-opted critical appraisers

- Dr Helga Abernathy, Member RCOT Specialist Section – Children, Young People and Families
- Lelanie Brewer, Member RCOT Specialist Section – Children, Young People and Families
- Dr Rob Brooks, Member RCOT Specialist Section – Children, Young People and Families
- Charlotte Done, Member RCOT Specialist Section – Children, Young People and Families
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- Dr Catherine Willson, Member RCOT Specialist Section – Children, Young People and Families

A7.5 Occupational therapists

- TBC

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