

**Literature review to investigate the evidence underpinning the role of play for holistic health: Final Report.**

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## Executive Summary

This report examined through a critical review of literature two research questions: the evidence underpinning the role of play for holistic health improvement (to include physical, mental, social, emotional, psychological, cultural and spiritual health) and the effectiveness of play interventions in improving health outcomes for children and young people.

The review was conducted between December 2010 and January 2011, and included searching relevant electronic databases including for example *CINAHL*, *EBSCO*, *Psychology and Behavioural Sciences*, *PsycINFO*, *SportDiscus*, *Science Direct*, *PubMed*, *ISI Web of Knowledge*, *Cochrane Library*, *SocINDEX* and *Medline*. The search identified articles which included search terms such as children, play, health, well-being, intervention, and met the inclusion criteria of being written in English, Spanish, French or Italian, in either a peer-reviewed journal, or as a project/evaluation report from an organisation based within the UK, USA, Australia or Canada); published in or after 2000; used play as an intervention for the promotion of health and well-being; and included at least one health related outcome measure.

The initial search identified a possible 5160 citations which through a series of screening by the third author (De Rossi) was refined to 557 citations. A further refining of the search was undertaken by reviewing the full text of the identified articles by all authors, which resulted in  $N=26$  sources included in the review,  $N=15$  were identified for research question 1, and  $N=11$  for research question 2.

Findings in respect to research question 1 concur that there is evidence supporting the role of play for holistic health, and concludes that play has an important role in improving and enhancing physical, mental, social and psychological health of children and young people. In respect to research question 2, findings conclude that play can have a positive influence on different aspects of health, although the majority focus tends to be on physical health and on increases in moderate to vigorous physical activity. Interventions are varied and are typically school based and were characterised by setting, age-range and gender of participants; the length and type of intervention; and outcome measure.

An overall summary of the findings include:

- Evidence that play has a role in improving physical and social health, psychological wellbeing, creativity and divergent thinking, attention and cognitive functioning, child development and educational achievement and conduct.
- There are limited longitudinal studies assessing the longer term impact of play for health.
- Financially achievable interventions such as changes to the physical environment i.e. floor markings, appear more effective in increasing play and physical activity levels than more expensive, virtual video play, interventions.
- After schools programmes seem effective in the improvement of motor skills.
- There are few studies available, outside of health settings, which focus on children with special educational needs.
- There are many interventions in school settings but few situated in outdoor or community settings.
- There appears to be inconclusive evidence of the presence of adults in play settings and whether they enhance or hinder involvement both in play, and physical activity levels.

Conclusions and recommendations suggest that although there is evidence for the role of play for health and of specific interventions and their settings, there are opportunities for play and health professionals to develop strategic relationships to further enhance the awareness of this

evidence base, and subsequent practice. Suggestions are also made for the development of practice and research guidelines to ensure the development of effective play for health interventions, and to further develop the current evidence base.

## 1. Introduction

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Playwork Partnerships is part of the University of Gloucestershire and it aims to enrich children's and young people's lives and support their well-being through play. ([www.playwork.co.uk](http://www.playwork.co.uk)).

Two of its strategic priorities are:

- to promote awareness and understanding of play and Playwork, by acting as a conduit for information, communicating to people at all levels, within the profession and beyond, and;
- to promote the power and capacity of Playwork by supporting the Playwork development agenda regionally, nationally and internationally'.

This results in the Partnership being well situated to disseminate information to playwork professionals and allied professional groupings with an interest in promoting health and well-being amongst young people. This report, commissioned by Playwork Partnerships, is a literature review of the contemporary literature on the relationship between play and its role in health, and of the effectiveness of play interventions. It is intended to inform professionals involved in the development and promotion of playwork in its activities to promote the value of play for health, in the future.

### *Project Brief*

The University of Gloucestershire was appointed in December 2010 to undertake a critical evaluation of the literature in the area of play and health. The aim of this review was to provide Playwork Partnerships with a summary of the contemporary evidence with regard to the role of play for holistic health, and of the effectiveness of play interventions. In consultation with Playwork Partnerships, the project team from the University of Gloucestershire established two research questions (RQ):

- RQ 1: What is the evidence underpinning the role of play for holistic health (to include physical, mental, social, emotional, psychological, cultural and spiritual health)?
- RQ 2: Which play interventions are effective in improving health outcomes for participants?

### *Project Plan*

It was agreed with Playwork Partnerships that the findings in response to these research questions would be disseminated through the following outputs:

- A report on the academic and professional literature which addressed the research questions listed above);
- To conclude with a summary of the findings and conclusions and recommendations for practice, policy and research for playwork and playwork professionals.

## *Data Collection and Analysis*

In order to meet the demands of research question 1 the team identified, selected and assessed all previous literature on the role of play for health. The criteria agreed for this sifting of the literature are set out in Section 3 and the results are presented thematically in Section 4. To meet the requirements of research question 2, regarding the effectiveness of specific play interventions on health outcomes an equivalent systematic reviewing of published literature was undertaken. The details of the criteria applied are presented in Section 3 however at this juncture it is worth acknowledging consideration was given to peer-reviewed articles, project reports and evaluations on play interventions. The analysis identifies the effectiveness of the interventions and highlights current best practice for interventions which can be used to offer conclusions and recommendations for future policy and practice, which is presented in Section 5.

## 2. Background to the Literature Review

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### *Introduction*

The health and well being of children in the UK has been subject to much examination in recent years. Government policy (of the previous and incumbent administrations) has identified the need to address the life chances of young people and as a consequence, researchers in divergent disciplines have set about the task of evidencing the benefits of activity. Alongside this, professionals in different settings are advocates for the merit of working with children and young people to deliver provision that supports engagement and the subsequent accruing of the perceived benefits. Section 2 can not cover the breadth of the literature in this area due to its constraints of size and purpose, rather it will situate the current report within recent debates, policy and evidence. Readers are however referred to Lester and Russell (2008) should they require a comprehensive overview of the role play can have in the lives of children.

For health purposes the Chief Medical Officer (CMO) recommends children and young people are physically active at moderate intensity for 60 minutes seven days a week (DoH, 2004). This could include sport, physical activity and play. The recommendations set by the CMO have been supported subsequently by government policy. For example in England, *Choosing Activity: A physical activity action plan* (DoH, 2005) identified the role of school settings, communities and families could play in the promotion of healthy lifestyles. This was then followed by *Healthy Weight, Healthy Lives: A cross-government strategy for England* (DoH, 2008) which reinforced the need for action to address health issues in young people. Furthermore, the previous government situated much of its provision for children and young people within, amongst other things, the broader *Every Child Matters* agenda, healthy school initiatives and social marketing campaigns such as *Change4Life* and *Play4Life*. The 'health of the nation' has been subject to further scrutiny from the Coalition government with the White Paper *Healthy Lives, Healthy People* (DoH, 2010a) articulating the government's objective of improving the health and well-being of the nation and addressing health inequalities. Consideration is to be given to a range of health concerns including mental health, obesity and the wider determinants of health. The lifestyles and health of children is identified in this White Paper as part of efforts to promoting positive health behaviours. The detail underpinning the White Paper was set out in the accompanying *Our Health and Well-Being Today* (DoH, 2010b).

The focus on health and well-being is justified based on current activity levels, evident health inequalities and concern over the prevalence of certain health conditions. For example, the *Foresight Report* (2008) addressed not only the issue of obesity in the UK population but also identified a sustainable response to the issue over the long term, including the identification of effective interventions. In 2009 the Office for National Statistics published a Working Paper on measuring children's well-being as part of a wider work programme to address the measurement of societal well-being. This considered both the need to better understand children's well-being but also the challenges of measuring it successfully (Thomas, 2009). The Marmot Review (2010) *Fair Society, Healthy Lives* was commissioned to identify the challenges in England to address health inequalities and propose evidence-based strategies to address those inequalities within the context of fairness and social justice. The Review highlights priority objectives which would give 'every child the best start in life'. The objective includes the aims of reducing 'inequalities in the early development of physical and emotional health, and cognitive, linguistic, and social skills' and building 'the resilience and well-being of young children across the social gradient' (p. 22).

This 'scene setting' has focused on England, however, the issues of health inequalities and promoting activity are acknowledged across the Home Countries. The Welsh Assembly

Government has published *Climbing Higher: The Welsh Assembly Government Strategy for Sport and Physical Activity* (WAG, 2005) and *Our Healthy Future* (WAG, 2010). The Scottish Parliament has published, for example, *Let's Make Scotland More Active: A Strategy for Physical Activity* (Physical Activity Task Force, 2003). In each instance enhancing opportunities for children and young people to engage in activity is acknowledged. These issues are also prevalent and of concern to Government agencies across the European Union.

### *Children and Young People: Health and Well-Being*

Recent increases in childhood obesity have dominated interests in children's health, with consideration often given to young people's sedentary behaviour and how that compares to their activity levels (Biddle & Smith, 2008). However, there are a range of lifestyle factors which have been identified as underpinning the obesity figures. Material changes to living environments, technology-driven leisure behaviours, the availability and consumption high energy food and drink, notions of safe spaces and levels of active travel all impact on energy expenditure. There is limited evidence to suggest increasing physical activity and reducing sedentary time is effective in the prevention and management of obesity in children but research is suggesting current activity levels in young people are not sufficient to prevent the condition being a public health issue (Fox, 2004).

The evidence suggests childhood obesity is a public health concern however the issue has (perhaps) attracted emotive headlines in the media which has distorted the extent of the problem. Whilst the trend data since the 1990s has been of an increasing percentage of young people classified as obese, more recent figures suggest a plateau (Health Survey for England, 2008). In light of forecasts indicating stability in figures in childhood health measures (but not a reverse in the overall trend), there is a case to be made for sustaining and further developing opportunities to promote activity amongst young people. This has the potential to address not only health issues in childhood but also support the notion of encouraging lifelong participation. The latter point leads onto a wider concern of health inequalities and associated life chances.

The broader indicators of the health and well being of children and young people in the UK in recent years have been set out in the work of Save the Children (Bradshaw & Mayhew, 2005) and the Unicef report (2007). With respect to the former, consideration was given to issues such as the relationship between health and ethnicity in the younger population. For example, the reporting of general health was highest amongst black African and white children (92% and 91%, respectively) compared to 85% for black Caribbean and 86% for Pakistani and Bangladeshi children (Beresford, Sloper, & Bradshaw, 2005). With regard to the Unicef report, when compared with 21 industrial countries, the UK was cited as the worst place to grow up. The seventh *Report Card* published by Unicef presents data that summarises each country's performance against six dimensions of well-being and the UK languishes at the bottom of the table in contrast to the level of well-being achieved by The Netherlands and other Scandinavian countries.

Whilst these substantive reports addressed broad issues of health and well being, identifying how the lives of children and young people can be influenced by individual differences and environmental factors, health outcomes resulting specifically from play activities is less well articulated or evidenced.

### *Play and Playwork*

The Playwork Principles endorsed by Skills Active in 2004 establish the framework for playwork, offering the 'playwork perspective' on work with young people. The eight principles articulate what is unique about play and they advocate the potential to children and young people's development if offered access to an array of environments and play opportunities. The

principles can be found in Appendix 1 however the essence of the case being proposed by the principles is supporting play as something that is freely undertaken. Playworkers have a role to facilitate the play process and navigate 'adult-led agendas' whilst retaining the integrity of the play experience. The latter requires retaining a focus on play that has risk, well-being and developmental benefits at its core. For the purposes of this review the definition of play adopted was taken from the Playwork Principles (Playwork Principles Scrutiny Group, 2005) which concludes that:

- Play is a biological, psychological and social necessity, and is fundamental to the healthy development and well being of individuals and communities.
- Play is a process that is freely chosen, personally directed and intrinsically motivated. That is, children and young people determine and control the content and intent of their play, by following their own instincts, ideas and interests, in their own way for their own reasons

### *Play, Health and Well-Being*

The case for the potential health gains of physical activity (in its broadest sense) has a developing evidence-base. However the environments and types of activities which might foster and sustain the interest of children and young people, in order to ensure health gains and offer the foundations for lifelong participation in activity, is much debated and examined critically within the sport, physical activity and PE literature (see for example Cale & Harris, 2006, Green, Smith, & Roberts, 2005, Smith, Green, & Thurston, 2009). The challenges of engaging children and adolescents in formal sport and physical education are well documented with issues such as general interest, self-esteem, body image and efficacy identified as barriers to participation. In parallel there are those arguing for promoting children's access to unstructured, free play and pretend play (see for example, Ginsburg et al., 2007 and McArdle, 2001). There are equally some challenges to be addressed with engaging children in play with contemporary literature examining how access to play spaces, socio-economic status, gender and ethnicity are amongst a range of social and individual differences that can impact on the opportunity for play; both in terms of use of designated play spaces and wider public spaces.

For example, the influence of ethnicity on the use of space has received scant attention in the UK but work in the nineties indicated in some urban settings young Asian people 'see 'white areas' as too risky to enter' (Hill & Tisdall, 1997:109). Further research by O'Brien et al. (2000 cited in Quilgars, 2005) also indicated different usage of public space by ethnicity and gender. The reasons offered for these differences included factors such as fear, racism, personal preference and restraint from parents. McArdle (2001) argued even minimal environmental and social infrastructure would support child well-being but that this was not always secured for children living in disadvantaged or urban settings. Further participatory research by Sutton (2008) with children from divergent social background also identified how access to personal resources, public space and local community development planning and policing decisions have implications for children's well-being. The paper drew on other literature on childhood poverty, independent, risk and safety. In concluding her paper Sutton argues government policy is concerned with enhancing the life chances of children in lower socio-economic backgrounds rather than giving attention to their experience of childhood. The position adopted by Sutton and others (for a Canadian study see Irwin et al., 2006) goes beyond an appreciation of the health outcomes of play but such work does suggest environments and children's engagement with them might be influencing social well-being as well as physical health. A number of Demos reports further support this position (see Beunderman, Hannon, & Bradwell, (2007) Thomas & Hocking (2003) Thomas & Thompson (2004).

### *Concluding Comments*

This report outlines contemporary research on the role play can have for the holistic health of children and young people, including their physical, mental, emotional, social and spiritual well-being. Consideration in the extant literature has been given to cognate areas of interest. As indicated in this section, researchers have examined children's engagement in physical activity and the arguments for promoting activity to young people are well rehearsed. Though not all childhood health conditions track into adulthood, there is some evidence for the impact physical activity *per se* in childhood has on patterns of lifelong participation.

Whilst play for play's sake may promote freely undertaken activity that may not be easily assessed or monitored, a limited numbers of authors have conducted research which examines critically the health value of play. Collectively, the work suggests a range of (sometimes simple) interventions which can be incorporated into community and educational settings to promote health and well-being for children and young people. However, whilst much can be said for the *potential* for play's role in promoting holistic health, the evidence base in support of this still needs to be developed.

### 3. Literature Review: Design and Method

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This review examines the literature on the role of play for holistic health and was undertaken using the following four stages:

1. Agreement of inclusion criteria;
2. Search strategy;
3. Types of studies included;
4. Analysis

#### *Inclusion Criteria*

In agreement with Playwork Partnerships the following inclusion criteria were used to examine the contemporary literature. Studies presented for consideration in the remainder of the report met these criteria. All studies:

- were published in English, Spanish, French or Italian, in either a peer-reviewed journal, or as a project/evaluation report from an organisation based within the UK, USA, Australia or Canada);
- were published in or after 2000;
- used play as an intervention for the promotion of health and well-being;
- included at least one health related outcome measure.

In discussion with Playwork Partnerships an age-related criteria was also included however there was a distinction made between RQ1 and RQ2 with regard the age range accepted. The first research question included literature on play for all ages, including work with pre-school children. The second research question included literature that was limited to children aged between 5-15 years.

Respectively, the criteria adopted ensured that the final report included: an element of quality assurance in the selection process; reflected the breadth of concepts and areas covered by the notion of holistic health and well-being; considered the potential breadth of health-related outcomes accrued through active play; and addressed the full age range of young people playworkers could be working with.

In agreeing these inclusion criteria with Playwork Partnerships a decision was made to exclude research papers on play therapy. This specialist area of provision was not featured as it was deemed to have a clinical rather than holistic health outcome. It is acknowledged research in this area represents a significant proportion of the literature available however its particular focus requires that it sit outside this review.

#### *Search Strategy*

The search strategy included identifying a variety of sources for research evidence. These include electronic bibliographic databases, and reference and citation lists from primary and review articles, conference proceedings, research registers, and the internet, for example project reports. Electronic bibliographic databases in the search included: *CINAHL*, *EJS EBSCO*, *PsychArticles*, *Psychology and Behavioural Sciences*, *PsycINFO*, *SportDiscus*, *Science Direct*, *ASSIA*, *PubMed*, *ISI Web of Knowledge*, *Cochrane Library*, *SocINDEX*, *Proquest (South West Region)*, *Embase and Medline*. Furthermore, references of related reviews and articles were

searched using Google scholar, and by hand, to find additional studies/articles/reports that met the inclusion criteria. The databases covered a range of subject areas including health, sport, physical activity, play, and applied social sciences.

Given the breadth of coverage of the critical review of literature the report's authors have been able to consider both the academic literature, for example peer-reviewed articles and the professional literature, for example project/evaluation reports.

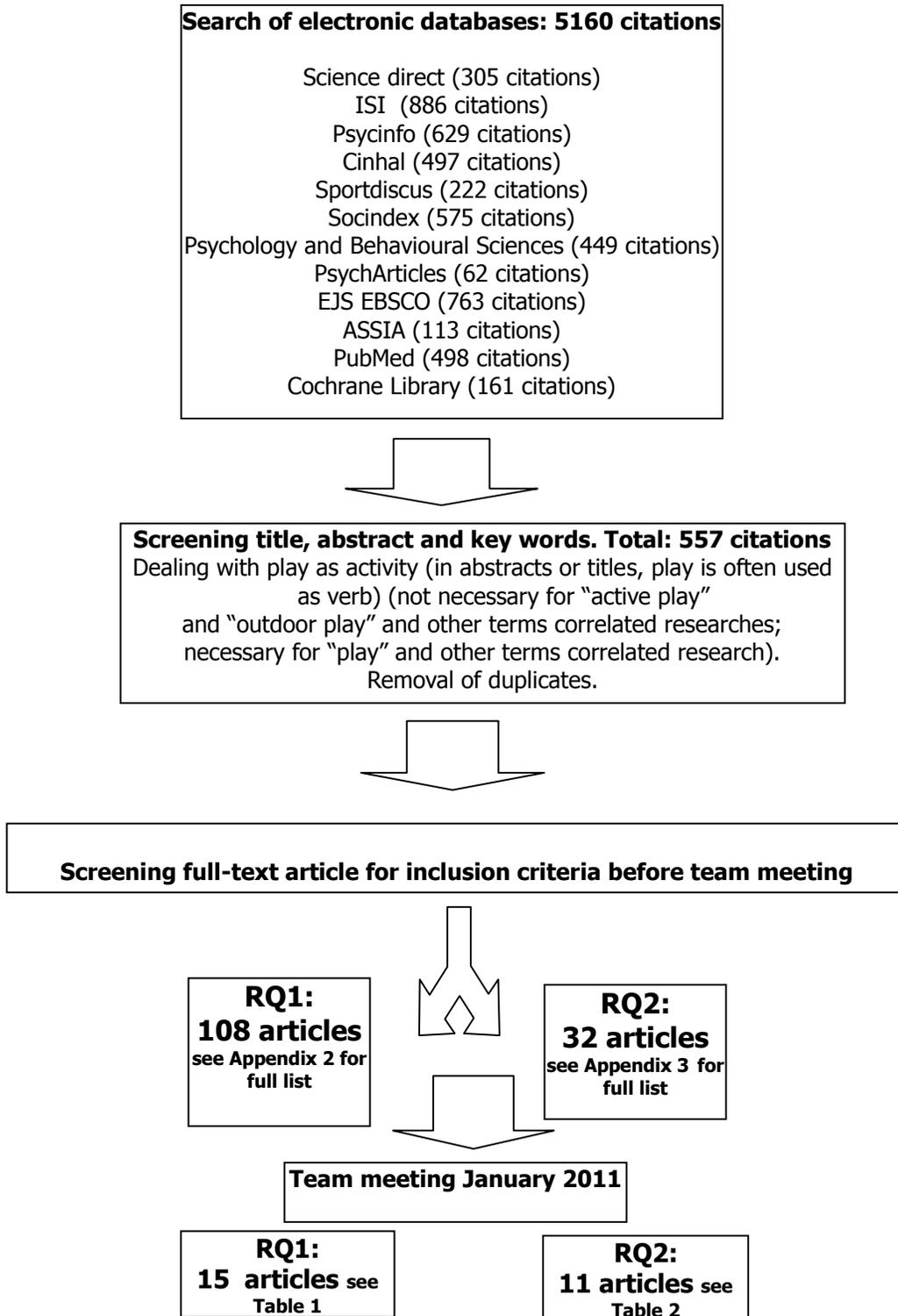
The literature search was undertaken December 2010-January 2011 and considered the following agreed search terms:

- Children/child
- Play/active play/outdoor play
- Health; physical, mental, social, emotional, psychological, cultural and spiritual
- Well-being
- Play research
- Intervention
- Child development (related to health rather than educational or pedagogical outcomes).

### *Structure of Analysis*

The report follows the structure of other published literature reviews (see Ellis, Crone, Davey, & Grogan, 2006). The initial search identified a possible 5160 citations. Through an initial screening of titles, key words and abstracts the search was refined to 557 citations. A further refining of the search was undertaken by reviewing the full text of the identified articles. A final resource list of 25 sources was confirmed. Figure 1 sets out the full detail of the screening process.

Figure 1. The literature screening process



### *Types of Studies Included*

The fifteen papers included in response to research question 1 were characterised by age-range, aspect of health and the type of play being considered. The age-range was 3 – 16 years and the aspects of health addressed included physical, mental, psychological and social health. No studies addressed spiritual or cultural aspects of health and well-being. Twelve papers considered active, unstructured and outdoor play, one considered pretend play, one addressed play materials and one considered computer-based play. Fourteen papers focused on play in group settings whilst one paper addressed solitary play. The outline details of the fifteen papers discussed in Section 4 are listed in Table 1.

The 11 studies included in the report under research question 2 were largely quantitative, being reported as experimental or quasi-experimental ( $N = 8$ ). The remaining studies were qualitative ( $N = 2$ ), utilising observation and in-depth interviews or mixed-method ( $N = 1$ ). The sample size varied between 15 to 3006 children. The outline details of the 11 papers discussed in Section 4 and are listed in Table 2.

The literature was further characterised by: the setting of the studies; the age-range of participants; the gender-mix of participants; the length and type of intervention; and the outcome measure. The majority were focussed on school settings ( $N = 8$ ) and other settings associated with work with children and young people ( $N = 3$ ). No studies were situated in health settings. The age-range was five to thirteen years old and there was a consistent approach to ensuring a gender-mix in the studies ( $N = 11$ ). The health outcomes measures included physical health ( $N = 9$ ), psychological benefits ( $N = 1$ ), cognitive development (i.e. enhanced creativity) ( $N = 1$ ).

No study addressed or identified multiple health outcomes. All studies considered at the screening meeting in January 2011, including those finally selected for the review, are included with full references, in Appendix 2 (for research question 1) and Appendix 3 (for research question 2).

## 4. Results

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### *Introduction*

Section 4 presents the findings to the two research questions. The results for each search are presented in turn, with the commentary structured around the themes set out in Section 3. A final sub-section articulates those issues, challenges and opportunities that underpin the conclusions and recommendations set out in Section 5.

At the end of the screening process, 26 articles met the inclusion criteria; N=15 for RQ1, and N=11 for RQ 2. These were published in English, Spanish, French or Italian, in either a peer-reviewed journal, or as a project/evaluation report from an organisation based within the UK, USA, Australia and Canada. All papers used play as an intervention for health and well-being and included reference to children and young people across the age range (participants aged between 5 and 15 years for RQ 2). All papers articulated at least one health related outcome measure.

### *Research Question 1*

What is the evidence underpinning the role of play for holistic health (to include physical, mental, social, emotional, psychological, cultural and spiritual health)?

### *Play and holistic health*

Reviewing the fifteen articles included in the findings for research question 1, it can be concluded that there is a role for play in improving physical, mental, social and psychological health. From this review it is evidenced from the selected papers that play can enhance the holistic health and well-being of children and young people. Four of the articles cited here are focused on the outcome of physical health (Brockman, Jago, & Fox, 2010, Brown *et al.*, 2009, Cardon *et al.*, 2008 and Willenberg, et al., 2010). Three considered social aspects of health (Durkin & Barber, 2002, Paechter & Clark, 2007, Sutton, 2008) and three considered the development of creativity and divergent thinking (Celebi Oncu & Unluer, 2010, Lloyd & Howe, 2003, Russ, 2003). Two examined play's relationship with broader notions of child development; Dwyer *et al.* (2009) reviewed how children were principally active through the context of play; and McHale et al., (2001) examined adjustment in early adolescence, school grades, conduct and depression symptoms within the context of free time activities, including play. The area of children's attention and cognitive health whilst playing in different outdoor environments was examined by Martensson *et al.*, (2009). Finally, two general reports (Burdette & Whitaker, 2005, McCurdy *et al.*, 2010) consider play as beneficial for children's holistic, physical and mental well-being. Table 1 provides a summary of the findings of each article included in the review for RQ1.

Table 1: Sources for Research Question 1

Authors and Date	Type of play	Health outcome	Age
1. Brockman R., Jago R. & Fox K. (2010)	Active play	Physical	10-11
2. Brown W. H. <i>et al.</i> (2009)	Outdoor	Physical	3,4,5
3. Burdette H. & Whitaker R. (2005)	Active, unstructured and outdoor	Holistic well-being (physical, emotional, cognitive and social)	
4. Cardon, G. <i>et al.</i> (2008)	Outdoor	Physical (gender differences)	5.3 ± 0.4
5. Celebi Oncu E. & Unluer E. (2010)	Focus on play material	Creativity	4,5,6
6. Durkin K. & Barber B. (2002)	Computer play	Social	16
7. Dwyer G., Baur L. & Hardy L. (2009)	Active	Child development and physical activity	3,4,5
8. Lloyd B. & Howe N. (2003)	Solitary play	Cognitive – convergent and divergent thinking	4 - 5
9. Martensson F., Boldemann, C, Söderström, M Blennow, M., Englund, J-E., & P.Grahn, P. (2009)	Outdoor play	Attention	4.5 – 6.5
10. McCurdy L.E., Winterbottom, K. E., Mehta, S. S., & Roberts, J. R. (2010).	Unstructured, outdoor play	Physical and mental health	Report
11. McHale S.M, Crouter A.C., & Tucker C. J. (2001)	Outdoor play as part of free-time activities	School grades, conduct and depression symptoms	10.9
12. Paechter C. & Clark S. (2007)	Active play	Social influence in play behaviour	9-11
13. Russ S.W. (2003)	Pretend play	Divergent thinking and creativity	Review of literature
14. Sutton, L. (2008)	Structured and free play	Social	8-13
15. Willenberg <i>et al.</i> , (2010)	Free play	Physical	9-11

The review concludes that different studies have demonstrated how active play can improve physical health, specifically the amount of moderate to vigorous physical activity (MVPA). Amongst the articles selected the physical outcome is studied either from a quantitative perspective (i.e. time and intensity) or from a qualitative one (i.e. the development of motor skills). For example, using accelerometers Brockman, Jago and Fox (2010) studied the quantity of moderate to vigorous physical activity and the activity levels (counts per minute, CPM) of 747 children aged 10-11 years old from Bristol, and their frequency of active play through self-reports. The authors concluded active play was related with more minutes of MVPA and higher mean activity levels, even if there were differences for time periods (more during weekdays after school than during weekend) and gender (boys more physically active than girls). Cardon *et al.* (2008) studied the steps per minute of 415 boys and 368 girls of mean age 5.3 during recess time in 39 different preschools. They also found a difference between boys and girls amount of physical activity, with the girls being less active than the boys.

Mårtensson *et al.* (2009) found the outdoor play can have a positive influence on attention. In their study 198 children aged 4.5-6.5 years of age from different preschools with outdoor environment in Stockholm area acted as participants. They were rated by the schools staff for inattentive, hyperactive and impulsive behaviours. The children who played in large, green and well-integrated outdoor areas showed less often inattentive behaviours.

Despite the small sample of papers, playing is regarded as an important element of children's well-being; with key attributes of play being its child-led nature and it not being directed by adults (though see Coleman, *et al.* 2008 in RQ2). Play is considered what children and young people do when they can use time and space in their own way, for their own reasons and without external goal.

#### *Play, play type and play space*

“Undirected play is also important for healthy brain development; children learn how to work in groups, share, negotiate, resolve conflicts and to learn self-advocacy skills” (Ginsburg, 2007, p. 183).

The fifteen papers covered a range of play types, though the majority considered unstructured, outdoor play ( $N = 12$ ), three examined pretend play, play materials and computer-based play.

The key characteristic of most commentaries on the benefits of play for health is the emphasis on free, outdoor and active play. The impact of interventions related to modifications to the play environment are covered under research question 2 so in this section only the nature of the evidence and the case to be made for such play is outlined. For example, Brockman, Jago and Fox (2010) claimed to be the first UK study to assess the contribution of active play to MVPA and total daily physical activity levels amongst 10-11 year olds. Whilst the study indicated some gender differences it concluded active play could make a 'significant contribution to health-enhancing physical activity of many primary school-aged children and therefore may be a valuable focus for future interventions' (p. 147).

This finding is mirrored by Cardon, *et al.* (2008) regarding activity levels in younger children and the factors that influence those levels. Gender again had an impact on aspects of play but overall it was suggested pre-schools should 'provide sufficient play space, to encourage supervisors to promote activity during recess, and to organize several recess periods during the day'. Brown *et al.* (2009) also assessed activity amongst pre-school children (3-5 year olds) and the role outdoor play can play in increasing MVPA. Environmental factors such as giving 'careful attention to the availability of particular outdoor materials and sufficient open space' (p. 53) and

social factors such as child-initiated activities were important in promoting a MVPA. This was not to say that there is not a role for adults in increasing activity rather in many instances there is a case for 'strategic adult involvement by organizing, modelling, encouraging, and acknowledging children's physical activity with a goal of preschoolers becoming more active may be warranted for many children' (p. 54). The promotion of child-initiated free and active play is further supported as part of a child's development by Dwyer, Baur and Hardy (2009).

An earlier paper by Burdette and Whitaker (2005) further encouraged outdoor play to be 'restored' as a part children's life arguing for the benefits for emotional well-being, affiliation and attention alongside physical health. The important role of the outdoor play in improve mental-cognitive health is also demonstrated in Mårtensson *et al.* (2009), who found outdoor play could have a positive influence on attention. Attention being considered an aspect of cognitive functioning that involves inhibition and impulse control, and can enhance learning.

Many of the studies have considered active play within the context of pre-school or school settings, however, opportunities to enhance social health and well-being are offered by access to wider public spaces. Sutton (2008), for example, considering the social background of children and access to organised activities and public spaces and the impact this has on well-being. The experiences of the children from lower socio-economic backgrounds suggests access to neighbourhood spaces is important and street play need be further valued and recognised by policy makers and planners, especially if play has a contribution to make to holistic health. McCurdy *et al.* (2010) further cites the benefits to physical and mental health of unstructured activity in natural environments (i.e. a decrease in BMI, some protection against the 'biological effects of poverty-related stress' (p. 108) and a more positive mood).

Amongst the smaller sample of papers ( $N=3$ ) that considered other forms of play it was suggested play can have a positive effect on stimulating creativity. Russ (2003) in her literature review on the relationship between play and creativity, question if the play processes only reflected cognitive and affective processes that are important in creativity or also facilitated creative abilities. She concluded research studies have suggested play can facilitate creativity. There is some evidence of a relationship between play processes and creativity, while other studies have found relations between affective processes in play and creativity as well. The few longitudinal studies in this area have found that cognitive processes, not affective processes, relate to creativity over time. No longitudinal study has determined if play facilitates creativity over time.

Celebi Oncu and Unluer's (2010) study examined creativity in children's play and their preference of play materials, in 40 children (20 female, 20 male, 4-5 and 6 years old) selected from four preschools in Turkey. The research project consisted of two studies. In the first the children's preference of toys and real objects as play materials in a pre-organised play area was observed. In the second study three weeks later, children's views about real objects (i.e. a whisk, nutcracker, colander, wrench, hanger, and a badminton shuttlecock) as play materials were evaluated. The results showed most of the children were not be able to demonstrate creative expressions with different kinds of play materials in their play, In the first study the results showed children preferred to use toys as play materials. In the second study it was found most of the children were unable to use real objects as play materials creatively.

Durkin and Barber (2002) considered computer-based games which might be argued is one of those developments highlighted as impacting negatively on the activity levels of children and adolescents. Indeed in Section 2 of this report reference is made to the role of technology-driven leisure behaviours and sedentary lifestyles are playing on health. However, this paper suggests some of the negative outcomes feared by observers are not always evident, in fact this

study of 16 year olds in Australia suggests game players scored favourably compared to non-games players on measures such as social health and positive mental health. The paper concluded game playing was 'one manifestation of an active and well-adjusted lifestyle' (p. 389).

Fourteen papers considered play within the context of group activity. In the one paper which addressed solitary play Lloyd and Howe (2003) studied the relationship between multiple forms of solitary play and convergent and divergent thinking. Seventy-two children's (42 boys, 30 girls, 4-5 years old) play behaviour was observed. The result showed some solitary play experiences were associated with children's convergent and divergent thinking, indicating that not all forms of solitary play are associated with a negative developmental prognosis.

This review, of fifteen selected peer reviewed academic articles, concludes that in reviewing the evidence underpinning the role of play for holistic health, concludes that play has an important role in improving and enhancing physical, mental, social and psychological health of children and young people.

## Research Question 2

Which play interventions are effective in improving health outcomes for participants?

For the purpose of this review an intervention is defined as an instant where there has been an influence on or a change to a situation or setting. This might include intervening in the environment in which play takes place (i.e. the construction of play equipment or the redesigning of a play context through the addition of or changes to the playground markings) or the act of intervening as a result of the actions or presence of an adult play worker. It is evident from the small sample of papers included in this section that the environment is a key factor in promoting play which can lead to health outcomes. Furthermore, whilst intervention might imply inhibiting free, unstructured play many of the interventions highlighted would support the value of free play. The papers indicate that (often simple) changes to the environment can facilitate health gains in young people and that these do not need to compromise the principle of promoting unstructured play.

### *Setting, Age, Gender Issues, Type and Length of Intervention*

The articles presented suggest play can have a positive influence on different aspects of health, although the majority focus is on physical health and increases in moderate to vigorous physical activity (MVPA). The literature was characterised by: the setting of the studies; the age-range of participants; the gender-mix of participants; the length and type of intervention; and the outcome measure.

The majority were focussed on school settings ( $N = 8$ ) (Coleman, 2009, Duncan & Staples, 2010, Farley, *et al.*, 2007, Garaigordobil, 2006, Lopes, Lopes, & Pereira, 2009, Matvienko & Ahrabi-Fard, 2010, Moore & Russ, 2008, Stratton, 2000). The remaining studies included divergent settings and activities associated with work with children and young people ( $N = 3$ ) (Fjørtoft, 2001, Hodgkins *et al.*, 2008, Miller & Reid, 2003). Fjørtoft (2001) was based in a forest in close proximity to a kindergarten, Hodgkins *et al.*, (2008) was lab-based but was focused on the design of fixed playground equipment and MVPA whilst Miller and Reid (2003) considered virtual reality play. No studies were included that were situated in health settings, and it is worth noting again the literature review does not include play therapy due to the adoption of the definition of play for this review, detailed previously on page 8. Table 2 provides a summary of the findings of each article included in the review for RQ2.

Table 2: Sources for Research Question 2

Authors and Date	Participants, age and gender	S.E.N.	Length of intervention	Type of intervention	Setting	Outcome measure
1. Coleman K. et al. (2008)	<i>N</i> = 144 / 8-12 years old / female and male	N/A	6 days (3 observations in fall semester and 3 observations in the spring semester)	Observation using the System for Observing Play and Leisure Activity in Youth (SOPLAY)	After-school programme	More time spent in MVPA (moderate and vigorous physical activity) during free play than in organised activities
2. Duncan M. & Staples V. (2010)	<i>N</i> = 30 / 10-11 years old / 12 boys and 18 girls	N/A	6 weeks	Intervention group undertook active video play activity – control group normal recess activity	Recess time (school lunch time)	In the first week physical activity (steps/min) was greater for the intervention group, in the 3 <sup>rd</sup> and 6 <sup>th</sup> week physical activity for the intervention group was lower than the control one
3. Farley T. et al. (2007)	N/A given nature of the research	N/A	Two years	Provision of 'attendants' to offer a 'safe play space'. Plus control school	Inner-city school playground	Relative increase in physical activity
4. Fjortoft I. (2001)	<i>N</i> = 75 (46 experimental group and 29 control group), 5-7 years old	N/A	Everyday 1-2 hrs. throughout the whole school year	Free play and versatile activities	Forest next to the kindergarten	The children in the experimental group performed better in the motor fitness tests than the children that used a traditional playground.
5. Garaigordobil M. (2006)	<i>N</i> = 86 (54 experimental / 32 control) / 10-11 years old / girls and boys	N/A	Weekly two hour intervention session throughout the school year	Play sessions based on cooperative and creative games	School	Play sessions have a positive effect on verbal and graphic-figural creativity
6. Hodgkins P. et al. (2008)	<i>N</i> = 15 Age and gender not	N/A	N/A	An experimental study consisting of	Lab-based	Cardiovascular response

	specified			three 5-min sessions on fixed kit in its design phase		
7. Lopes L., Lopes V., & Pereira B. (2009)	158 / 6 – 12 years old / girls and boys		1) pre-intervention (first week); 2) post-intervention (second week). In both periods, each student was measured for 30 minutes (recess period between 10:30 and 11:00 am).	The intervention consisted of the introduction of extra outdoor play equipment, in the playground. During the intervention children were allowed to play freely with the equipment. No stimuli to its utilisation or explanations on how to play with the equipments were given.	School playground	Providing play equipment during school recess is effective in increasing children's PA level
8. Matvienko O. & Ahrabi-Fard I. (2010)	<i>N</i> = 70 ( <i>N</i> = 42 intervention, <i>N</i> = 28 control) / 5 – 7 years old / girls and boys	N/A	A 4-weeks daily programme	After school physical activity lesson with supervised unstructured active play	School	The intervention group scored significantly better on some, fitness and all motor skill tests at 4 weeks. At 4 months, differences between the groups diminished but remained significant, with better scores for the intervention group on some tests.
9. Miller S. & Reid D. (2003)	<i>N</i> = 19 / 8 – 13 years old / 7 girls and 12 boys	Cerebral palsy	2 to 6 virtual reality play interventions followed by 15min interview	Virtual reality play	N/A	After engaging in VR play participants described experiencing feelings of increased self-worth, confidence, and competence in their

						abilities not only when playing in VR but in everyday life situations.
10. Moore M. & Russ S. W. (2008)	<i>N</i> = 50 (17 in affect play intervention, 19 in imagination play intervention, and 14 control) / 6 - 8 / 30 girls and 20 boys	N/A	5 x 30min. Individual session in 3 to 5 weeks + follow-up 2 to 8 months after	Play with toys in the three groups (affect play intervention, imagination play intervention, and control)	School	Improved play in the imagination group, no difference with the control group in subjective well-being, emotional understanding, or emotion regulation ability
11. Stratton G. (2000)	<i>N</i> = 47 / 5-7 years old Experimental group included 14 boys and 13 girls; control group included 9 boys and 11 girls	N/A	Not specified	Playground markings in one school, plus one control school	School	Increase in moderate to vigorous physical activity (MVPA), vigorous physical activity (VPA) and mean heart rate

The age-range across the sample of papers was five to thirteen years old. In most instances the age range was small, with the sample covering children of similar ages (i.e. Duncan & Staples (2010) included 10-11 year olds and Stratton (2000) included 5-7 year olds). The exceptions to this were Miller and Reid (2003) (8-13 year olds), Coleman, *et al.* (2008) (8-12 year olds), and Lopes *et al.* (2009) (6-12 year olds). There was a consistent approach to ensuring a gender-mix in the studies ( $N = 9$ ) with only Hodgkins *et al.* (2008) and Farley *et al.* (2007) not citing any demographic information for participants. The latter was a two year observation study in mix-sex school playgrounds and therefore whilst specific data were not included it can be assumed that an age and gender mix was achieved. Some studies distinguished their results based on gender (i.e. Lopes, *et al.*, 2009). However, it would appear that there is scope to further examine how gender might influence the health gains to be achieved through play.

Given the focus on school-based settings the primary intervention was centred on provision in or changes to playgrounds. The modifications included simple amendments to the physical environment such as changes to floor markings (i.e. Stratton, 2000), increasing play equipment and stimuli (Lopes, *et al.*, 2009) and the provision of play 'attendants' (Farley, *et al.*, 2007). The latter project was designed to offer 'safe play spaces' rather than to control or stifle the children's play experience which might be argued can happen in environments where adults are present. For example, Coleman *et al.* (2008), in their study on the opportunities of MVPA and health eating in after-school environments in the U.S.A., observed, using the System for Observing Play and Leisure Activity in Youth (SOPLAY), that the 144 children aged between 8 and 11 years of age. Participating in the study spent more time of MVPA during free play than in organised adult-led activities. Interestingly they also noted there was more discouragement of physical activity by the leaders during adult-led sessions compared to the free play sessions.

The studies were further characterised as small scale interventions over the short to medium-term. For example, Miller and Reid (2003) was based on two to six virtual reality play interventions, and Duncan and Staples (2010) was an intervention lasting six weeks. There is limited evidence of longitudinal studies ( $N = 3$ ) which might offer policy makers and practitioners with more substantive data on what might be done to enhance play environments and associated practice. Fjørtoft (2001) and Garaigordobil (2006) were undertaken over a school year but it was only Farley *et al.*, (2007) which ran over a two year period. However a feature of some studies was to include follow-up testing or assessments. For example, the Moore and Russ (2008) study was originally five weeks with follow up activities taking place at two and eight months. Furthermore, Matvienko & Ahrabi-Fard (2010) assessed the children at four weeks and then again at four months.

### *Play Spaces : Facilities and Equipment*

As suggested above in the discussion on the type of intervention the emphasis appears to have been focussed on more simple modifications to the built and physical environment, including engagement with natural settings. Lopes, Lopes and Pereira (2009) measured the impact of play equipment and floor marking for playing traditional games could have on physical activity levels during recess time in 158 participants aged between 8 and 12 years of age. Their conclusion was that when the children had the opportunity to play freely with the equipment provided they did not improve significantly their time in moderate physical activity (MPA) but they increased significantly ( $F(1, 150) = 54.790; p=0.001$ ) their time in vigorous and very vigorous physical activity (VVVPA). This result varied also according to the different age groups, gender and Body Mass Index. The time spent in MPA decreased in boys and increased in girls and, significantly in the obese/overweight group of girls. The time in VVVPA increased more in boys than girls, the younger ones (6 to 7 year olds) increased more than the older ones, and the obese/overweight boys significantly more than the normal weight boys.

While inexpensive simple marking and play equipment have a positive effect on the physical activity of children, expensive Nintendo Wii equipment does not have the same effect. Duncan and Staples (2010) studied the effect of an active video play activity on physical activity levels in fifteen children aged 10-11 years old (15 children were in the control group that undertook normal recess activity). They found out that in the first week physical activity (steps/min) was greater for the intervention group, but in the third and sixth weeks physical activity for the intervention group was lower than the control group.

The studies that are focused on the relationship between play and the development of motor skills and fitness showed how play has a positive influence on the development of such skills and fitness assessments. Matvienko and Ahrabi-Fard (2010) studied the influence of four weeks after-school programme, the NutriActive curriculum, based on physical activity lesson with an emphasis on motor skill development, health lesson and unstructured active play, on motor skills and fitness. The participants were 70 children aged 5 to 7 years of age; with 42 of them in the intervention group (28 were part of a control group). They found that the intervention group scored significantly better in all motor skill tests (jumping, kicking and throwing) and some of the fitness tests (push up and long jump) after the four weeks intervention. After four months the differences between the groups diminished but the intervention group still scored better in the motor skill tests.

Fjørtoft (2001) studied the relationship between the structure of a natural landscape, its affordances for play and the impact on motor development in children. The participants in this Norwegian study were children aged 5 to 7 years of age ( $N = 75$ ); 46 in the experimental group and 29 in the control group. The experimental group used the forest for 1-2 hours every day throughout the year. The results were that the children in the experimental group performed better in the motor fitness tests than the children that used a traditional playground. They performed significantly better in the Flamingo balance test (standing on one foot) and the Indian skip (clapping right knee with left hand and vice versa).

Miller and Reid (2003) investigated the personal experiences of children with cerebral palsy who engage in a virtual reality play intervention programme. The qualitative study involved in-depth interviews with 19 participants aged 8–13. This study showed that children with physical disabilities do not have the opportunity to engage in play experience as to their peers without physical disabilities. The children increased their self-competence and self-efficacy, experienced a sense of control and mastery over the virtual environment and could explore and challenge their abilities in a safe way. They also reported perceived physical changes and increased social acceptance from both peers and family.

Garaigordobil (2006) reported the results of a play activities programme aimed to stimulate creativity in children. Part of this project were 86 children aged 10 and 11 years ( $N = 54$  experimental and  $N = 32$  control). The programme's activities were intended to stimulate verbal, graphic-figural, constructive, and dramatic creativity. The results suggested the intervention programme based on cooperative-creative play stimulated an increase in verbal creativity in originality and graphic-figural creativity in several of its aspects such as originality, or aptitude for presenting novel, statistically infrequent ideas or solutions that are far from obvious, common, or established. The programme also showed a significantly greater change in the experimental participants who demonstrated a low level of creativity before the intervention.

Moore and Russ (2008) conducted a study of the effects of a pretend play intervention (affect play, imagination play and control group) on first and second grade children ( $N = 50$ ) with follow up assessments at two and eight months post-intervention. The study found the play intervention resulted in improved play at follow-up for the imagination group. This showed play

could be improved through a systematic intervention. However, the intervention groups did not differ significantly from the control group on any of the other outcome variables that were intended to measure subjective well-being, emotional understanding, or emotion regulation ability.

### *Play Spaces: The Role of the Environment*

Different studies showed that active play can improve physical health, specifically the amount of moderate to vigorous physical activity (MVPA) (Coleman *et al.*, 2008; Farley, *et al.*, 2007, Lopes *et al.*, 2009, Stratton, 2000). What is of interest is that such studies indicate play interventions which did not use expensive equipment have positive results in the amount of time children spent playing. This compares favourably to play interventions that used expensive equipment (i.e. Nintendo Wii) (Duncan & Staples, 2010). The role of adults alongside children in the environment is also a consideration but different results in terms of encouraging children to be active, with adult 'attendants' facilitating increased activity levels in a study in an inner-city school setting (Farley, *et al.*, 2007) yet Coleman *et al.*, (2008) suggested that during free play the children were more active than during organised adult-led activities.

Active play is related to the development of a wide variety of motor skills, which, from a physical health perspective, are more important than fitness. Whilst fitness is a temporary state, motor skills are learned permanently (Matvienko & Ahrabi-Fard, 2010). Fjørtoft's (2001) particularly highlighted the strong influence outdoor play can have on the development of motor skills and physical literacy.

This review, of eleven selected peer reviewed academic articles, concludes that play interventions can have a positive influence on different aspects of health, although the majority focus tends to be on physical health and on increases in moderate to vigorous physical activity. The literature was characterised by a number of characteristics including the setting, mostly school based, age-range and gender of participants; the length and type of intervention; and as previously stated, outcome measure. Conclusions suggest that interventions can increase play activity and levels of physical activity, and that these can be achieved through non-expensive interventions such as changes in floor markings in play grounds.

## 5. Summary of the Review: Conclusion and Recommendations

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This review has sought to understand, through a comprehensive review of the available peer reviewed literature, more about the evidence base for the role of play in holistic health of children and young people, and of the effectiveness of play interventions. A review in these two areas has been presented and this section of the report presents a summary of the findings, and conclusions and recommendations in the area of research, policy and practice. In doing so it challenges Play professionals, researchers and policy makers to consider the role of play for health in a more overt and defined manner, than previously. The health and well being of children and young people are pertinent concerns in society, and understanding the role of activities such as play is critical to developing a society and a community that enhances and encourages the attainment of health and wellbeing in this population group.

### Summary of the review:

- There is evidence that play has a role in improving physical and social health, psychological wellbeing, creativity and divergent thinking, attention and cognitive functioning, child development and educational achievement and conduct.
- There are limited longitudinal studies assessing the longer term impact of play for health.
- Financially achievable interventions such as changes to the physical environment i.e. floor markings, appear more effective in increasing play and physical activity levels than more expensive, virtual video play, interventions.
- After schools programmes seem effective in the improvement of motor skills.
- There are few studies available, outside of health settings, which focus on children with special educational needs.
- There are many interventions in school settings but few situated in outdoor or community settings.
- There appears to be inconclusive evidence of the presence of adults in play settings and whether they enhance or hinder both involvement in play, and in physical activity levels.

### *Conclusions: Implications for Professionals. The development of evidence based practice*

The commentary presented here suggests gaps in the evidence regarding health outcomes associated with play however it also highlights the potential contribution play can make to promoting health and well-being. Fox (2004) proposes whilst governments in recent years have acknowledged childhood obesity as a public health issue funding in the UK for research remains 'relatively scarce' and has provided 'little sound evidence on which to base interventions' (p. 34). The small scale research presented in this report offers a sound evidence base to suggest play in different contexts can and does influence the multidimensional aspects of health. Specifically active play was set apart and positively related to benefiting aspects of physical health, but also social and psychological health. Moreover, the merits of outdoor play have been noted for the benefits to cognitive aspects of health, which supports the 'biophillic hypothesis' often associated with aspects of outdoor physical activity and exercise. The hypothesis proposes that humans have an innate desire for contact with nature, and postulates that 'being' in the outdoor environment provides added physical and psychological benefits for health (Countryside Recreation Network, 2005). This notion of 'being' could be translated to include play, and actually corresponds to the sole purpose of play, as cited in Playwork Principle (PP) 1 (see Appendix 1).

### *Conclusions: Policy and Practice: Opportunities at the local and national levels*

There are a number of ways in which the evidence from this report can shape future policy and practice in the Playwork field; what is presented here is meant for guidance only, as there is an appreciation of the realities of lobbying for change in the current political climate.

There is a sense that play and health agencies, both at national and local level, need to create effective working partnerships and prioritise links between play and health. This could be achieved through more open dialogue between play and health agencies. If this is already the case, then a clear set of guidelines for practice (see Recommendation 3 below) must be developed that informs policy and practice at both national and local level. With the emergence of the Coalition Government's *Big Society* and its emphasis on localism and, specifically, through the Department for Communities and Local Government, there is an opportunity to provide communities with clear guidance that relates to aspects of all aspects of lifestyle and holistic health, with play being a key feature in younger people's lives.

### *Conclusions: Guidelines for Commissioners of Play for Health Interventions*

The National Institute for Health and Clinical Excellence (2009) published *Promoting physical activity, active play and sport for pre-school and school-age children and young people in family, pre-school, school and community settings*. As part of this document, NICE set out fifteen gaps in the evidence, including an acknowledgement that 'the qualitative literature mainly promoting physical activity, active play and sport for pre-school and school-age children and young people in family, pre-school, school and community settings focuses on school and sport. There is little evidence on formal or informal activities outside school such as yoga, dance, aerobics and play, or activities in social settings' (p. 85). In terms of the evidence from this literature review it is clear there are synergies between this report and the guidance from NICE, as this report echoes many aspects raised by NICE. To add to this, the evidence suggests longitudinal studies need to feature more prominently in the future so that a comprehensive picture of play and health connections is created. Although set in the wider context of physical activity literature, NICE support this finding, stating that 'few longitudinal studies track the relationship between physical activity and health outcomes. Likewise, few interventions have been well-evaluated over the longer term' (p. 87).

Other issues that arose from this evidence base relate to the necessity for researchers and practitioners to create contexts that broaden the current agenda, and focus on holistic health *per se*. This is understandably difficult to emulate, but if play spaces could be created where play is combined with, for example, healthy eating opportunities this would go some way to achieving this. The evidence also suggests interventions that do not manipulate the play setting in an intrusive way, for example, changing or creating markings in a play area, can be as effective as those that do. This is worth noting, particularly in a time of financial cuts and insecurity; that is good research can be conducted with small budgetary costs in play spaces that are not reliant on facilities and equipment. Finally, there needs to be a coherency between researchers and practitioners in relation to how research is commissioned and conducted. There needs to be greater links between studies, and more evidence of how studies are building on the work of previous findings. This would guarantee clear progressions in research informing the field of Playwork, and enable the development of a coherent and effective evidence base for researchers, practitioners and policy makers.

## *Recommendations*

As a result of the review and subsequent conclusions, the following recommendations are suggested:

Recommendation 1: Promote the evidence between play and health and establish its relationship more widely within the Playwork field; this would be specifically pertinent for the development of evidenced based practice, and for enhancing the strategic direction and policy of future playwork.

Recommendation 2: to identify ways in which playwork might enhance opportunities for children to play in ways that are beneficial to their health. This may require looking at different play forms or the tensions/relationships between intrinsic and instrumental motivation/value of play.

Recommendation 3: Enhance the links and consider the development of strategic partnerships between play and health professionals, in both the statutory and voluntary sectors, both nationally and locally.

Recommendation 4: Consider the development of coherent guidelines for practice for all play settings that are evidence based, and that focus explicitly on the link between play, health and well-being, and complement the Playwork Principles.

Recommendation 5: Consider the development of guidelines for research in all play settings that could reinforce links between play and holistic health, serve to develop the current evidence base, and address the deficiencies in the literature, as identified by this review and previous guidelines for practice (i.e. NICE, 2009).

Recommendation 6: Reaffirm, through the dissemination of these findings, the importance of free and unstructured play, the outdoor environment, and that effective play interventions need not be expensive or complicated.

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## Appendices

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Appendix 1: Playwork Principles

Appendix 2: Bibliography Research Question 1

Appendix 3: Bibliography Research Question 2

1. All children and young people need to play. The impulse to play is innate. Play is a biological, psychological and social necessity, and is fundamental to the healthy development and well being of individuals and communities.
2. Play is a process that is freely chosen, personally directed and intrinsically motivated. That is, children and young people determine and control the content and intent of their play, by following their own instincts, ideas and interests, in their own way for their own reasons.
3. The prime focus and essence of playwork is to support and facilitate the play process and this should inform the development of play policy, strategy, training and education.
4. For playworkers, the play process takes precedence and playworkers act as advocates for play when engaging with adult led agendas.
5. The role of the playworker is to support all children and young people in the creation of a space in which they can play.
6. The playworker's response to children and young people playing is based on a sound up to date knowledge of the play process, and reflective practice.
7. Playworkers recognise their own impact on the play space and also the impact of children and young people's play on the playworker.
8. Playworkers choose an intervention style that enables children and young people to extend their play. All playworker intervention must balance risk with the developmental benefit and well being of children. <http://www.skillsactive.com/playwork/principles>

Any reference in writing or otherwise to the Playwork Principles should be attributed to the Playwork Principles Scrutiny Group, Cardiff 2005.

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### Appendix 3: Bibliography Research Question 2

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