The Play Return:

A review of the wider impact of play initiatives

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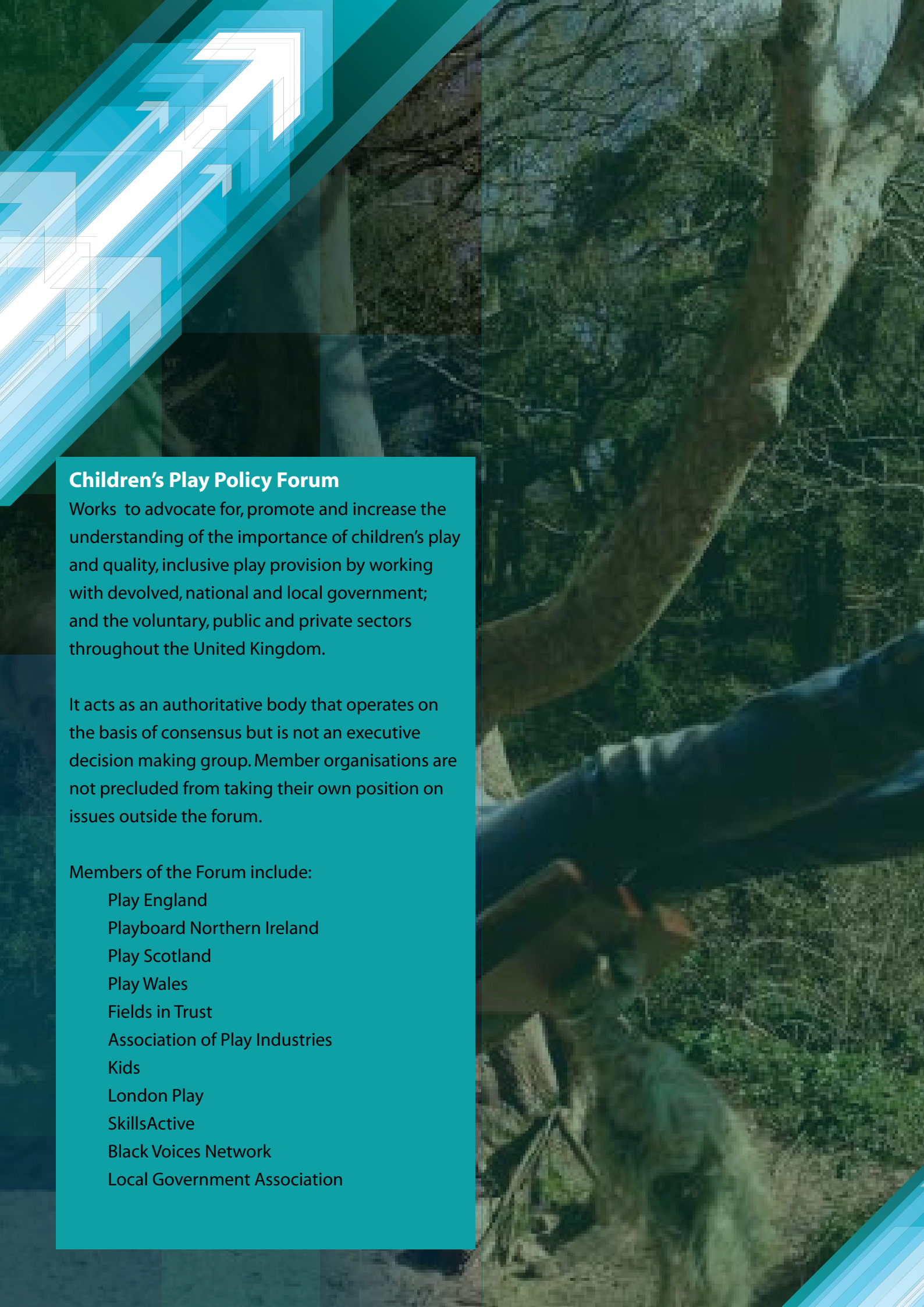

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Introduction

This review was produced in response to a meeting that was held with Nick Hurd MP, Former Minister for Civil Society at the Cabinet Office and representatives of the play sector on 29th October 2013. It was organised by the Children's Play Policy Forum (CPPF) and sponsored by the Association of Play Industries (API). The CPPF commissioned Tim Gill to carry out the work which was submitted to Nick Hurd on the 29th May 2014.

On reviewing the final draft the CPPF felt that this work would be of relevance and value to a wider audience, not only across the field of play, but also across political agendas. Indeed interest has already been expressed internationally. Children's play is of fundamental importance to the lives of children, not only in terms of their development and well-being but also their enjoyment of childhood. This document provides supporting evidence which will add to conversations around the subject of play. We hope and believe that it will also be of interest to the general public, parents, carers and teachers alike.

Robin Sutcliffe,
Children's Play Policy Forum Chairman
24th June 2014

About the author

Tim Gill is an independent researcher, writer and consultant. His book No Fear: Growing up in a risk averse society was published in 2007. His clients include the Mayor of London and the National Trust. He was director of the Children's Play Council (now Play England) from 1997 until 2004. Tim's website is at **www.rethinkingchildhood.com**

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1 Summary

This report presents evidence to build the case for improving the play opportunities of children and young people. Its focus is on children of school age, and on free play that takes place out of doors. It looks at quantitative evidence of the wider outcomes and impact of play interventions and initiatives. Hence it complements rather than duplicates other recent policy reviews.

The report looks at four types of intervention that each involve setting aside time and space for children to play: improving opportunities for free play in school break times, unstaffed public play facilities, supervised out-of-school play provision and street play initiatives. The vast majority of relevant studies and evaluations of interventions focus on play in school. However, findings from school-based studies have wider relevance, so this report also draws wider conclusions from these findings.

Playground break time initiatives are amongst the most promising interventions for improving levels of physical activity, as shown by a number of recent authoritative systematic reviews. They are also linked to a range of improvements in academic skills, attitudes and behaviour, and to improved social skills, improved social relations between different ethnic groups, and better adjustment to school life.

Unstaffed public play facilities are linked to increases in children's physical activity. They are also linked to improved family well-being, and to reductions in levels of anti-social behaviour and vandalism. Play in supervised out-of-school provision is linked to increases in levels of physical activity, and in children's levels of well-being. Supervised play provision also stimulates increased volunteering and social action. Street play initiatives are linked to increased physical activity, and increased interest in volunteering.

There are significant gaps in the evidence base, mainly due to difficulties in carrying out empirical studies but also due to limitations in this review. Hence the picture that emerges is partial, and may underestimate the wider benefits of play initiatives.

Drawing on this review of the empirical evidence, the report reaches the following conclusions about the wider impact of play initiatives:

- Play initiatives lead to improvements in children's physical and mental health and well-being, and are linked to a range of other cognitive and social developmental benefits. While evidence of beneficial outcomes is strongest for play in schools, it is reasonable to expect that they will also be seen in other contexts where children have comparable play experiences.
- Families and communities also benefit from play initiatives – and want action to improve them. Play initiatives generate high levels of volunteering and community action. This finding is echoed by the consistently strong support for play provision stated in opinion polls over the years.
- Play initiatives are associated with inter-related benefits across a range of health and developmental domains. These benefits need to be thought of as a whole rather than in a piecemeal fashion.
- The improvement in opportunities for play is a valid outcome in its own right. There is enough empirical evidence for policy makers to be confident that initiatives that lead to improved play opportunities will also reliably lead to the wider benefits discussed in this report.

2 Introduction and methodology

This report presents evidence to build the case for improving the play opportunities of children and young people. It is a response to a meeting in October 2013 organised by the Children's Play Policy Forum (CPPF) between organisations interested in play and Nick Hurd MP, Minister for Civil Society at the Cabinet Office. The Minister expressed an interest in children's play, and asked for evidence of its relevance to Government policies and goals.

2.1 Focus on outdoor free play and school age children

The focus of this report is on free play that takes place out of doors (or at least, where there is the option of playing out of doors), and on initiatives that are aimed at children of school age. In keeping with other policy-oriented reviews (discussed in the next section) this report sees free play as implying high degrees of choice and control by children. Furthermore, it sees play as an expression of children's own interests, inclinations and impulses: in other words, it is intrinsically rather than extrinsically motivated.

This review includes evidence on adolescent children. The word 'play' may not be one that teenagers would use, or one that adults would use about what teenagers might choose to do in their free time. But unstructured time and informal recreation play an important part in the daily lives of older young people (Schubotz and McCooey 2013).

2.2 Findings from other policy reviews

A number of relevant policy-oriented literature reviews on play have been published in recent years, including reports commissioned by Play England (Gleave and Cole-Hamilton 2012, Beunderman 2010, Lester and Russell 2008), Play Scotland (Cole-Hamilton 2012) and a government-funded evaluation of the last government's play strategy (Frearson et al 2013). These published reports have followed a similar approach: they have pulled together a range of qualitative and quantitative evidence, theoretical arguments and authoritative assertions to support claims about the value and benefits of play. In addition, a number of evaluations of National Lottery play programmes have also been carried out, including Smith and Day (2011), Ecotec (2010), Youlden and Harrison (2006), Ludvigsen et al (2005) and Creegan et al (2004).

These policy reviews and evaluation reports have concluded that playing leads to a wide range of interconnected beneficial outcomes for children. These include:

- Cognitive development (including language skills, problem solving and independent learning skills, self-efficacy, gaining perspective, representational skills, memory and creativity);
- Physical health and development (including physiological, cardiovascular and fine and gross motor skills development as well as increased physical activity);
- Mental health, happiness and emotional well-being (including building confidence, improved child-parent attachments, coping with stress, tackling anxieties and phobias, aiding recovery in therapeutic contexts, and alleviating the symptoms of ADHD for some children);

- Social development (including working with others, sharing, negotiating and appreciating others' points of view);
- Risk management and resilience through experiencing and responding to unexpected, challenging situations.

Furthermore, it has been claimed that the benefits of playing can be seen in evidence from brain studies and neuroscience (Cole-Hamilton 2012, Lester and Russell 2008).

This report reviews the extent to which these claims are borne out by empirical evidence on the wider outcomes and impact of play interventions and initiatives. It also looks for evidence of benefits that extend beyond children themselves and into their families and the wider community. Because its evidence base focuses solely on play interventions – not on play per se – this report complements rather than duplicates these other published reviews.

This approach has been taken for two reasons. First, it adds new material and perspectives that have not so far been well explored. Second, it moves into territory that policy makers are likely to be particularly interested in. It takes the debate on from discussions about values and theories and into the realm of real-world impact. Hence it helps to give a more empirically grounded view of the difference that initiatives, programmes and policies could make.

This approach has its limitations. One problem is that empirical evidence is limited when compared with the qualitative, discursive and theoretical literature. The gaps are discussed further in section 4 below. This inevitably leads to a partial picture of the potential impact of play interventions – though with reasonable assumptions, the picture can be fleshed out.

2.3 Methodology

This report draws on a range of sources, including published reviews, material from academics and experts known to the author, and material identified as a result of a call for evidence via the membership of the Children's Play Policy Forum (CPPF) and via the author's networks and website. This call for evidence used the following inclusion criteria:

- Primary material with quantitative data;
- Credible methodology;
- Relevant to a UK context (though it could be from beyond the UK);
- Addresses outcomes that are of interest to Government. These could include:
    - Mental and physical health and well-being
    - Child development
    - Learning and academic attainment
    - Crime and anti-social behaviour
    - Community cohesion and volunteering;
- Relevant to the following kinds of facilities and interventions:
    - Improving opportunities for free play in school break times
    - Unstaffed public play facilities
    - Staffed adventure playgrounds, play ranger schemes and other supervised out-of-school play provision
    - Street play initiatives.

The facilities and interventions chosen each involve time and space being provided or set aside for children to have opportunities for play (sometimes including physical features and 'loose parts'). Some also involve the presence of supportive adults. Each is illustrated in the video resources at the end of this report.

The evidence submitted was supplemented by a selective literature search for peer-reviewed studies. This search focused on finding robust research reviews such as systematic literature reviews (reviews based on sets of studies that meet strict selection criteria) and meta-analyses (where data from different studies is combined and re-analysed). The limited time and resources available meant that it was not possible to carry out a new systematic literature review. Studies and reports have been selected based partly on the quality of the evidence, and partly on the insights and new perspectives that they offer.

The National Institute for Clinical Excellence (NICE) carried out a review of primary quantitative studies in 2007 (Biddle et al 2007). However, a number of important quantitative academic studies have been published since then. These include systematic literature reviews of interventions by bodies such as the internationally renowned Cochrane Collaboration (Dobbins et al 2013). The findings of this and other reviews are discussed in the relevant sections below.

The discussion aims to provide sufficient information about studies and other material to enable readers to make informed judgements about the quality and relative strength of the evidence.

There is an extensive literature on play in early years contexts. However, it is not easy to summarise the findings. Studies adopt a variety of theoretical perspectives, and look at a range of types of intervention – not all of them focusing on free play. Hence it was decided to exclude studies and evaluations on pre-school children from this review. This exclusion may lead to an underestimate of the benefits of play initiatives.

2.4 Interpreting the evidence: the significance of play in school

The vast majority of studies and evaluations of interventions focus on play in school break times. This is understandable. Setting up studies and interventions, gathering data, and exploring different factors and variables are all more straightforward in school than in family or community contexts.

Clearly when children play in schools, the outcomes will have some relationship to what happens when they play in community settings or in public spaces. So findings from school-based studies do have wider relevance. Equally clearly, there may be important differences between play in schools and in other settings. After reviewing each of the contexts under consideration – schools, public spaces, supervised provision, and streets – this report considers what wider conclusions can reasonably be drawn. Play in schools is seen as a 'field trial': a test of the potential outcomes that may or may not arise elsewhere.

3 Evidence of wider impact

3.1 Play in school break times

This section looks at the impact of play initiatives and interventions in school during break times (also called playtime or – in some countries – recess). Some studies have taken the form of randomised controlled trials: the most sound and reliable method (but also the most resource-intensive) for testing claims about the outcomes and impact of interventions. The findings are summarised below, followed by a more detailed discussion of each outcome.

3.1.1 Overview

- Playground break time initiatives are amongst the most promising interventions that lead to increased physical activity. Moreover, traditional playground activities lead to higher levels of physical activity than use of active video game play, and can involve higher levels of physical activity than organised sports.
- Play activities in break time are linked with a range of improvements in academic skills, attitudes and behaviour. Levels of physical activity do not appear to be a significant factor in this link.
- Play activities in break time are linked with improved social skills, improved social relations between different ethnic groups, and better adjustment to school life.

3.1.2 Physical activity

The vast majority of relevant studies look at physical activity. There is good evidence that making changes to school playgrounds leads to an increase in children's levels of physical activity. This evidence includes material from systematic literature reviews and meta-analyses. Various forms of intervention have been shown to give this outcome, including changes to marking, the addition of play equipment, making available games equipment (such as balls and bats) and the introduction of loose materials such as scrap and recycled office equipment. Some studies suggest that children are more physically active during free play than during sport or PE lessons (Mackett and Paskins 2008).

One systematic review on child obesity analysed 600 peer-reviewed studies across 24 different policy and environmental intervention strategies, to score and rank the strategies based on the strength of the evidence and the potential impact, taking into account reach, effectiveness, adoption, implementation and maintenance. School physical activity policies and environments (including break time initiatives) achieved the highest ranking in the system (Brennan et al 2014).

Another systematic review of 22 cross-sectional and five intervention studies found that "access to loose and fixed equipment, playground markings, size of and access to play space and the length of school break time were all positively associated with changes in school break time physical activity in intervention studies" (Stanley et al 2012). A further systematic review of 53 papers concluded that "providing access to school facilities, providing unfixed equipment, and identifying ways to promote encouragement for physical activity have the potential to inform strategies to increase physical activity levels during

recess periods" (Ridgers et al 2012). A meta-analysis of 13 break time intervention studies found "a positive and significant" improvement in levels of physical activity (Erwin et al 2013). A wider Cochrane Collaboration review with more rigorous selection criteria found "some evidence to suggest that school-based physical activity interventions are effective in increasing the number of children engaged in moderate to vigorous physical activity, as well as how long they spend engaged in these activities" (Dobbins et al 2013).

Four primary studies give a flavour of the findings that have emerged. A Danish study used accelerometers to measure physical activity over two to five days in children aged from five to 12 years from seven schools with different permanent play facilities (such as adventure play equipment, swings, trees, playground marking, courts and sandpits). The study found that "the number of permanent play facilities in schools … was positively associated with all measures of activity" and concluded that "increasing the number of permanent play facilities at schools may offer a cost-effective and sustainable option for increasing physical activity in young children." (Nielsen et al 2010).

A Portuguese study of children aged six to 12 found that introducing loose outdoor play equipment and floor patterns for playground games – without any instruction or explanation – led to greater levels of physical activity. The researchers concluded that "successful recess interventions to improve physical activity for children in elementary scholars are possible by providing relatively inexpensive play equipment" (Lopes et al 2009). An American study using pedometers found that levels of physical activity were on average 30 per cent higher during break times than organised gym periods (Beresin 2012). A British study compared free play with active video gaming with children aged ten to 11 years. It found that children engaging in

active video game play were less physically active than the controls undertaking 'traditional' recess activity, and concluded that "active video game play does not appear to be a sustainable means to enhance children's physical activity" (Duncan and Staples 2010).

3.1.3 Learning and educational outcomes

A modest number of studies have looked at the impact of break time initiatives on children's learning and related outcomes. Reviews of these studies show a positive effect. The US Centers for Disease Control and Prevention carried out a systematic review of 50 studies of the links between physical activity and academic performance, including eight studies of break time. The analysis showed that "all eight studies found one or more positive associations between recess and indicators of cognitive skills, attitudes, and academic behaviour; none of the studies found negative associations" (CDC 2010). The 'life stage: school years' chapter of the 2013 Chief Medical Officer's report included a section on play and physical activity, which stated: "Evidence is accumulating on the types of physical activity and the programmes that deliver an increase in physical activity rates along with associated positive health and psychosocial benefits, including offering intrinsic motivation for children to sustain their physical activity levels into adolescence. Physical activity programmes in schools can have positive influences on cognitive performance, with demonstrable positive results in academic attainment, concentration, memory and classroom behaviour. Participation in physical activity also appears to be an important component in creating school satisfaction and school connectedness" (Chief Medical Officer 2013, Chapter 7).

A paper reviewing experimental psychological research into break time reached similar conclusions, stating that "recess breaks during the school day both maximise students' attention to subsequent class work and facilitate children's peer relationships as they make the transition into primary school" (Pellegrini 2009). One American study using a large, nationally representative sample of children aged eight to nine years showed a positive association between school breaks and teacher scores of classroom behaviour (Barros et al 2009).

3.1.4 Social skills

A handful of studies have looked at the relationship between break time and the development of social skills and competences. One authoritative review stated that "games and playground activities are particularly important for the development of a wide range of skills associated with interactions with people of similar status, including social-cognitive skills ... This is simply because there appear to be few opportunities for these skills and relationships to be developed elsewhere inside or outside of school without the presence of a potentially over-dominating adult" (Baines and Blatchford 2010). A longitudinal study involving the same researchers found that "playground activities can have a positive role in social relations between different ethnic groups" (Blatchford et al 2003). An Australian intervention study on the effect of introducing loose materials into primary school playgrounds found improvements in children's enjoyment of intra-personal play (Hyndman et al 2014).

Case studies: four school break time play interventions

Playground improvements, including natural play
A before-and-after study of the impact of playground improvements (including a naturalistic play space and new all-weather ball pitch) at a primary school in Glasgow showed a significant decrease in playtime accidents, injuries and bullying. The overall number of incidents fell from 130 in a two-week baseline period to eight incidents in a comparable period after the intervention (based on monitoring reports by playground staff). Teacher assessments showed improvements across a range of classroom learning and behaviour issues, including: punctuality, settling time, mood, concentration in class, attainment levels, quality of social interaction with other pupils and the teacher, outdoor learning and incidents of difficult behaviour. Pedometer data showed a significant increase in physical activity levels (Groves and McNish 2011).

OPAL (Outdoor Play and Learning) programme
The OPAL (Outdoor Play and Learning) programme aims to enhance opportunities for children's play in primary schools. It involves schools addressing their culture and practice around supervision, as well as their outdoor space and use of materials and equipment. An external evaluation of a pilot scheme in South Gloucestershire found that the scheme dramatically shifted schools' attitudes to play, which was of benefit to pupils who returned to the classroom 'ready to learn'. Asked to rate their experiences on a scale from 0 ('wish we hadn't done it') to 10 ('the best move we ever made'), eight of the schools gave a score of 8 or more, and five gave a maximum score of 10 (scores were in all but one case from the school headteacher). One head stated, "I have been in education for 15 years, and by a long way this is the most successful and rewarding project I have ever been involved with." (Lester et al 2011).

Scrapstore Playpod

An independent evaluation of the Scrapstore Playpod scheme (which also involves the introduction of materials alongside change in the supervision of break times) found that nine out of 10 primary headteachers felt that the initiative had helped to improve learning, while all 10 agreed that it had helped with inclusion, creative play, self-confidence of staff and children, and risk management and problem solving (James 2012).

LEAP (Lunchtime Enjoyment Activity and Play) intervention

This Australian study showed that the introduction of loose materials into a primary school playground led to significant increase in physical activity levels compared to a control school – an increase that was still evident after eight months. The study also found improvements in some measures of children's enjoyment and quality of life self-ratings. Unlike the OPAL and Scrapstore Playpod initiatives, this scheme involves little or no staff training or development: the key measure is bringing loose materials (of a similar type to the above initiatives) into the school playground to stimulate active play (Hyndman et al 2014).

3.2 Unstaffed public play facilities

This section reviews evidence of the impact of unstaffed play interventions in parks and public open spaces. These include play areas and informal youth and sports facilities. When looking empirically at the outcomes of play initiatives in public space, the research task is more complex than in schools. Children's activities are harder to measure. What is more, there are more factors to consider, including the characteristics of the neighbourhood (perceived and objective), parental attitudes and fears, social and community factors (such as levels of trust) and various aspects of the provision of public spaces and the wider built environment.

As with play in schools, the bulk of studies have focused on physical activity, and include a number of systematic reviews. However compared to play in schools, fewer studies have been carried out, and very few have used the most robust methodologies such as controlled trials. Again, the findings are summarised here, followed by more detailed discussion for each outcome.

3.2.1 Overview

- Public play facilities are linked to increases in children's physical activity, over and above the impact of the provision of public open space.
- Parents associate playing in playgrounds with family well-being, and those who live near playgrounds and visit often report higher levels of family well-being.
- Play and youth facilities in public spaces have led to reductions in levels of anti-social behaviour and vandalism.

3.2.2 Physical activity

The systematic review already discussed – on child obesity across 24 policy and environmental intervention strategies – also reviewed evidence relating to park and recreation facilities. As with school-based interventions, initiatives that improve the availability of park and recreation facilities were ranked highly in terms of their potential impact (Brennan et al 2014).

A recent systematic literature review (Oliveira et al 2014) found that "facilities and parks/playgrounds are mostly positively associated with children's PA." The findings echoed those of an earlier literature review by Davison and Lawson (2006). De Vet et al (2011), in a review of reviews, found that physical activity in young people was positively influenced by facilities in the neighbourhood. These findings are echoed in a report on obesity and the environment published by Public Health England, which

stated that "safe, accessible and pleasant outdoor spaces can enhance children's active outdoor play" (Cavill and Rutter 2013).

One Canadian study using GIS data found that "children with a park playground within 1 km were almost five times more likely to be classified as being of a healthy weight rather than at risk or overweight compared to those children without playgrounds in nearby parks." It concluded that "availability of certain park facilities may play a more important role in promoting physical activity and healthy weight status among children than availability of park space in general" (Potwarka et al 2008).

A study of children in Bristol used GPS and accelerometers to measure activity within green environments for children aged 11 to 12, including tracking activities in two parks with play facilities. The results showed that the parks "were used for as much as 30 per cent of outdoors moderate-vigorous activity at weekends and use was consistent across seasons" (Lachowycz et al 2012).

3.2.3 Family well-being

The American NGO KaBOOM! carried out market research into parental attitudes about playgrounds, and found links to self-reported measures of family well-being. The survey showed "three-quarters of parents agree that the more time they spend together at a playground, the better their sense of family well-being. Furthermore, parents who live near a playground and visit often with their child report higher levels of family well-being than parents who do not live near a playground or do not visit playgrounds often" (KaBOOM! n.d.).

3.2.4 Anti-social behaviour and vandalism

A number of evaluation reports and good practice guides have found evidence of an impact of play facilities on anti-social behaviour and vandalism. An evaluation of Community Spaces, a £57.5 million Big Lottery Fund programme run by Groundwork UK in which playgrounds and youth recreation spaces were a major component, concluded that "all 'major issue' indicators have improved since the completion of the projects, with the most significant reduction being antisocial behaviour and vandalism" (Hall Aitken 2013).

A guide produced by Thames Valley Police cited significant reductions in vandalism and petty crime following the installation of play facilities and youth shelters. In Banbury, the cost of repairs to young children's play equipment dropped by 25 per cent (£10,000) in the first year after installing youth facilities. In Burnley, a youth shelter was built in response to complaints about anti-social behaviour, after which reports of nuisance behaviour dropped by 29 per cent (across the whole town) and 50 per cent (near the park). The costs due to vandalism to play equipment dropped 87 per cent from £580 to £70 (Hampshire & Wilkinson 2002).

Case study: Halton youth space

In Halton, Merseyside, a youth-oriented play space was created using challenging equipment aimed at older young people. Kritene Karaski, Regeneration Officer, Cosmopolitan Housing describes the impact: "In the six months before the play area was built there were 44 incidences of ASB by young people in this area. In the six months after the play had been built, this had reduced to four." (Quote from Proludic video – see Video Resources, Section 6.2 below)

3.3 Play in supervised out-of-school provision

This section looks at the impact of interventions in out-of-school contexts where children can play freely, while being under a degree of adult supervision. The settings covered include staffed adventure playgrounds, out-of-school clubs, and park-based and mobile play programmes. Note that this section does not review evidence of the economic benefits of out-of-school childcare (for instance, in improving parents' access to the job market), because these benefits arise not from the play opportunities on offer, but from the childcare service that is being provided.

Evidence from academic studies is very limited. Hence the findings also take into account project and programme evaluations. Again, the findings are summarised here, followed by more detailed discussion for each outcome.

3.3.1 Overview

- Children are more physically active in free play sessions than in organised activities, and more active than they would be at home – and engagement with parents leads to increased physical activity at home as well.
- Children's well-being is promoted through playing in a playwork setting with a strong focus on outdoor play in the natural environment.
- Supervised play provision stimulates increased volunteering and social action.

3.3.2 Physical activity

An American study of 144 children aged seven to 11 in seven after-school settings has found greater levels of physical activity in free play sessions than organised activities. The researchers concluded that encouraging free play activities "could make a substantial impact on the after-school setting for promoting healthy lifetime behaviours in young children" (Coleman et al 2008).

3.3.3 Well-being

An external evaluation of Fort Apache, a playwork space in an area of disadvantage in Torbay, found evidence of an impact from the project on children's psychological, emotional, biophilic, social and physical well-being. The evaluation used an innovative, creative approach that takes into account the limitations of written methods (as noted above) and instead relies on 'embedded observation' by an external artist/researcher who engaged children in conversations as they were playing (Wright 2013).

3.3.4 Social action and volunteering

An independent evaluation of a government-funded programme to increase social action in support of children's play showed that it created over 30,000 new volunteering opportunities and recruited over 20,000 new volunteers. The programme was funded by the Cabinet Office, delivered by 12 local and four national voluntary organisations involved in supervised play provision across England, and coordinated by Play England (Grotz et al 2013.

Table 1 below gives more detail.

Table 1: Selected monitoring data from Social Action Fund play programme

Indicator	Numbers (2012)
Number of new volunteer opportunities created	33,229
Total number of new volunteers recruited	20,539
Number of first time volunteers	5,259
Duration of volunteering (hours)	118,758
Total other social action opportunities created	19,449
Number of participants in other social action opportunities	26,293

Case study: Indigos Go Wild

Indigos Go Wild is an environmental play project on a derelict wooded site adjacent to a local school that was created, staffed and managed by a group of local parents in Brixham, Devon. With the support of the school they gained permission to lease the land for 25 years. Indigos has worked with adult volunteers, children and young people to create a play space where children and young people can build dens, make fires, cook, grow plants and climb trees. Parents are encouraged to volunteer to help and in so doing develop new skills. The parents have sustained the project since 2003 through successful fundraising and have worked with other agencies including children's services and other voluntary and community groups (Greatorex 2011).

3.4 Street play initiatives

This section looks at interventions that increase children's play opportunities in residential streets, through regular, temporary road closures organised by local residents (typically for two to three hours once a week, fortnight or month). Studies are limited, because the model is novel and has yet to be researched or evaluated extensively. The findings draw on two evaluations, including one that used accelerometers to measure levels of physical activity. Again, the findings are summarised here, followed by more detailed discussion for each outcome.

3.4.1 Overview

- Children are more physically active when taking part in street play sessions than at similar times of day when the streets are not closed.
- Projects lead to increased interest in volunteering to support sessions.

3.4.2 Physical activity

Researchers have found that during sessions children spend more time being out of doors, and are more physically active, than comparable children on an average school day. The research team from Bristol University used GPS devices and accelerometers to study the activity of 66 children aged two to 13 during sessions in two residential streets in the city. They found that the children spent 30 per cent of their time in moderate to vigorous physical activity, and 15 per cent in light activity (compared to five per cent for children of a similar age). The children were out approximately 70 per cent of the time during the session (compared to 20 per cent for Bristol children of a similar age as a whole) (Page and Cooper, undated).

3.4.3 Volunteering

A survey-based evaluation of a street play project in Belfast found that 71 per cent of respondents felt the project had increased children's opportunity to play on the street, while 48 per cent were available to volunteer as part of the project, compared to only 18 per cent before the scheme (PlayBoard Northern Ireland 2012).

Case study: Playing Out

Playing Out is a community interest company set up to promote street play through regular, resident-led road closures. The group supports a growing network of local groups across the UK, and is a partner in a Department of Health-funded project. At two Playing Out projects in Bristol, researchers from Bristol University found significant levels of physical activity (as stated above), as well as qualitative evidence of strong engagement and support from parents, and greater interaction with other neighbours, including those without children (Page and Cooper, undated).

4 Gaps in the evidence base

For the reasons set out in the introduction, this report has only considered a limited set of outcomes, has only looked at quantitative studies and evaluations, and has focused on play interventions (not play per se). It is a partial map of its territory, using just a proportion of available routes, and surveying just a subset of potential features and landmarks. The partial nature of this survey is particularly clear when compared with the richness of the qualitative literature, and the wide variety of theoretical claims made for the value of play. However, absence of evidence is not evidence of absence.

Many of the benefits that are claimed to arise from playing are difficult to study empirically, as other reviews have recognised. This is partly because of what one review calls "the contextual, elusive and fluid nature of play" (Frearson et al 2013). Research methods that might work well with other learning processes can struggle to capture the complexities of free play. One evaluation report notes: "children come and go as they please and the methodology for the action research had to be flexible and stretch according to their needs and interests. In addition some of the methods tried worked better than others – generally paper based and electronic questionnaires and games worked less well. Children and adults at Fort Apache like to do things, not read things" (Wright 2013).

Indeed one literature review has stated that "the 'outcomes' of playing cannot be externally determined and measured" and that the attempt to do so will "inevitably frustrate the very qualities inherent in children's play" (Lester and Russell 2008). This report, like the studies whose evidence it reviews, takes the more conventional view that measuring the impact of play interventions is feasible (though it can be difficult).

Another gap in this report is that the exclusion of qualitative evidence makes it difficult to explore the richness and complexity of the processes involved when children play, and the chains of cause and effect involved. Furthermore the focus on free play interventions for children of school age means that research on other types of intervention (such as hospital play), other age groups, and tangential factors – such as the significance of natural outdoor environments – cannot be fully explored.

The empirical evidence base does allow the study of important mediating and moderating influences, such as gender and age. However, this report has not analysed these influences, because of resource constraints and priorities. One moderating influence that is not well explored in the quantitative literature is around disability and inclusion (though it has been examined in some qualitative evaluations, such as Ludvigsen et al 2005).

A number of studies explore the links between free play, physical activity and wider neighbourhood built environment characteristics such as traffic levels and walkability, in response to concerns about the decline in children's independent mobility (Shaw et al 2013). These raise questions about the value of taking a holistic, area-wide approach that addresses children's mobility, and hence their access to play opportunities of various kinds, rather than just focusing on play facilities. This more holistic approach – involving planning, health, transport and housing policy – has been advocated by some play agencies, and was taken forward in the last government's play strategy (DCSF 2008). It is also evident in the Welsh government's ongoing approach to play (Welsh Assembly Government 2006). However, a review of such approaches is beyond the scope of this report (again due to resource constraints and priorities).

Evidence does not exist in a vacuum. It needs to be seen in the light of values and understandings about what matters, and what is worth measuring. There is a debate to be had about whether policy and practice should be based on outcome-oriented frameworks, or whether they should be based on other rationales for supporting play, including rights-based approaches such as those grounded in the UN Convention on the Rights of the Child (Article 31 of which recognises the child's right to play). However, these debates are not pursued further in this report.

5 Conclusions

This section sets out four concluding statements about the wider impact of play initiatives and interventions. These are based largely on the empirical evidence reviewed in this report, and on reasonable extrapolations from that evidence. They also draw on discussion from other policy reviews.

5.1 Health and developmental benefits

Play initiatives lead to improved health outcomes for children, and are also linked to a range of other developmental benefits. The strongest conclusion from this report is on the clear, positive health benefits that arise from break time interventions in schools. Systematic reviews suggest that these could be amongst the most effective initiatives in promoting physical activity (with some studies suggesting a greater impact than sport or PE initiatives). The supporting evidence includes the most robust study methodologies, increasing confidence that the desired outcomes can be realised. Moreover, there is good evidence of other benefits from break time play interventions, in mental health, cognitive and social domains. Taken as a whole, these findings make a strong case for a more sustained focus on what is arguably a neglected, undervalued time in children's lives.

The picture from the other types of intervention reviewed in this report – parks and public play spaces, supervised out-of-school provision and street play – is more patchy and fragmented, mainly because of the comparative lack of studies and evaluations. Nonetheless, the findings around physical activity are reinforced, along with modest evidence of other benefits.

As stated in the introduction to this report, play in schools can be seen as a 'field trial' of theoretical claims about the impact of improving play opportunities more generally. It is reasonable to extrapolate the benefits found in school play to other contexts, where they offer similar kinds of play opportunities. In schools, the essential characteristics for play are likely to include: outdoor space with features that encourage play, a reasonable period of time for play, other children to play with, and an atmosphere or ethos that permits active play (Lester et al 2011). If these four key factors – time, space, other children and a supportive adult attitude – are in place, then it is reasonable to expect that the health and developmental benefits shown to arise from play in schools will result.

5.2 Families and communities: benefits and concerns

Families and communities also benefit from play initiatives – and they want action to improve play opportunities. Evidence from public space, supervised play and street play interventions in particular points to benefits that reach beyond children themselves and into families and the wider community. Again, this should not be surprising. Parents are concerned about their children's health and well-being, and understand that play can help. A baseline survey for the last government's play strategy found that "more than nine in ten of the parents surveyed thought that regular outdoor play and playing sport is very important for children and young people's health and development" (Frearson et al 2013). An earlier government-funded evaluation similarly concluded that, "parents wanted children to have the opportunity to play as well as achieve" (Edwards et al 2006).

Similarly, communities are concerned about the quality of outdoor play opportunities for children and young people. It is not hard to make the case that communities and neighbourhoods that provide good play opportunities tend to be places that work well for everyone. Opinion polls show that people place a high priority on improvements in play facilities and services for children and young people in their local area, and are more concerned about these than other services (Ipsos MORI 2013). Likewise, when given the opportunity to take action to improve facilities, local communities often place a priority on play provision. The Big Lottery Fund Community Spaces initiative (run by Groundwork UK and discussed above) illustrates this. The programme was demand-led: local communities made their own decisions about what spaces and projects they wanted to apply for. The programme evaluation showed 35 per cent of projects put forward were playgrounds, more than any other single category (Hall Aitken 2011).

5.3 The inter-related nature of benefits

The wider outcomes of play initiatives are inter-related. They not only range across health, well-being and developmental domains, but also need to be thought of as a whole rather than in a piecemeal fashion. This finding fits with theoretical perspectives on play as a learning and adaptive process. To quote from two researchers whose studies on play in schools have already been discussed: "play can be conceived as a natural inclination of an organism to learn, adapt, and develop the skills required for immediate and eventual later use. That is, play assists with the development and informal education of the child to adapt to their environment and learn the skills that will enable them to survive and succeed" (Baines and Blatchford 2010). Because play is freely chosen and intrinsically motivated, children's play choices and activities reflect their goal of being competent people who have some control over their own destinies. As one NICE review puts it, "there

is clear evidence throughout the psychological literature that motivation to indulge in behaviours of free choice, such as leisure-time physical activity, are associated with perceptions of intentions, confidence and competence" (Biddle et al 2007).

Hence it should be no surprise that the outcomes of play range across wide domains. Different children will have different motivations and interests, different inclinations, and different self-models and identities – and these expressions of self are themselves in a state of flux and influenced by external factors.

There is a tension between the self-determined quality of children's play and an adult-oriented focus on outcomes. Resolving this tension demands care. The potential of play is a consequence of its deep and complex connections with children's sense of themselves, their competences and the environment around them. Privileging one developmental domain (for instance physical activity) risks undermining others (Lester and Russell 2008). This danger is highlighted in one policy review, which stated, "If we view play primarily as a means to achieve long-term physical, psychological and social benefits we are in danger of losing sight of the essence of play as intrinsically motivated behaviour" (Gleave and Cole-Hamilton 2012). This view is echoed in a warning from researchers in the field of physical activity, who have stated: "in an effort to resurrect free play, we should enthusiastically promote it on its traditional merits – that play allows children to experience the joys of movement, creativity, and friendship. Though it seems urgent to emphasize that play improves energy balance, we may get further in obesity prevention by realizing that modern neurobiology supports grandmother's conventional wisdom and that the brain will naturally reinforce behaviours that make it healthy" (Burdette and Whitaker 2005).

5.4 Improving play opportunities: a valid outcome

The improvement of opportunities for outdoor play can and should be seen as a valid, worthwhile outcome in its own right. There may be a need for more quantitative research on the detailed relationship between various benefits and children's experiences of play. However, there is enough empirical evidence for policy makers to be confident that initiatives that lead to improved play opportunities will also reliably lead to the kinds of benefits discussed above.

Most adults would consider play to be an essential element of a good childhood, even if children themselves have little awareness of the 'outcomes' of play (these being incidental to their experiences of playing). Whatever its wider benefits – and this report argues that they are many and varied – play is also simply how children enjoy being alive in the world right now.

6 Two closing quotes

The overarching implication of this report is that playing is a powerful experiential process for children, and one that demands respect and careful consideration. Adults need to allow children enough freedom and responsibility to learn from their own efforts and mistakes, while being alive to what might go wrong.

The final message from this report draws not on research or data, but on the wise words of two people who, from their different perspectives, emphasise both the benefits of play, and the need for a balanced, considered approach.

> *"I am not idealistic about playgrounds; I know they can be rough. But … you hope … that this taste of a wider world will be a safe opportunity to learn how to get on with others … You want them to explore the world of chosen friendships – not just tutor groups – and understand how human relationships form and break, how to handle betrayal, conflict and envy, to show generosity and ignore slights … you … hope that in this brief freedom, your child will learn how to be an individual in society, not just a unit in an allocated team or class … Without playtime, these things will not happen during the long school day, and may be lost entirely to children who don't live close. School will be a workplace, only without the statutory breaks …" (Libby Purves in The Times, 8 May 2007).*

> *"Making friends, building relationships, experimenting, imagining, taking risks and making mistakes are important for the mental health and wellbeing of children... We need to allow children to have vivid lives and everyday adventures" (Rt Hon David Willetts MP, quoted in The Guardian, March 26 2007).*

7 References and resources

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7.2 Video resources

Online video resources that give a flavour of the initiatives covered in this report.

Play in schools

Scrapstore playpods: https://www.youtube.com/watch?v=nqi1KyJJeKg
Natural play interventions: https://www.youtube.com/watch?v=_pot8EhKUdI

Play in parks and public open spaces

Proludic Ltd video: http://www.youtube.com/watch?v=fqad6m3dmQI

Play in supervised out-of-school provision

Indigos Go Wild video: http://www.playengland.org.uk/resources/adventure-playgrounds-in-the-community-indigos-go-wild.aspx
And at: https://www.youtube.com/watch?v=v3ovziBWqFg

Play in streets

Playing Out: http://playingout.net/

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