

Written submission to the House of Commons Health Committee Inquiry into the impact of physical activity and diet on health

17 December 2014

Introduction

This evidence is submitted on behalf of a group of researchers who took part in a recent workshop on Childhood Sport Participation in London, November 2014. The aim of our workshop was to review current knowledge on the topic from a range of perspectives, in order to identify gaps in policy and knowledge and to articulate questions for future research in the broad field of physical activity and sport for children. We represent an interdisciplinary research group with diverse interests in the field and include representatives from several universities including Birmingham, Stirling and Queen Mary University of London. Our fields of interest include efficacy of physical activity interventions; the impact of sport participation and/or traumatic injury on lifelong health; and the importance of sufficient data collection for monitoring risk and benefit in physical activity.

We are of the view that there is a need for robust evidence-based policy to maximise benefits and minimise risk to children as the government seeks to increase physical activity across all ages, but particularly children. Before further investment in sport participation is made, there are areas where evidence for effective interventions can be improved. At this time we have not seen a comprehensive set of recommendations on childhood physical activity in the UK. We identified key areas for further investigation as part of our discussion which we hope the Committee will consider.

Executive Summary

- Multiple governments make claims for the benefits of sport and exercise for obesity and weight reduction but fail to provide evidence for this. There is a need for greater evidence and transparency about the sources of evidence in future policy recommendations for physical activity.
- With the present emphasis on obesity reduction or weight management alongside sport participation, caution should be employed used normative data on weight gathered and assessed concerning the extent to which weight norms may vary with different sports: rugby, boxing, swimming, athletics or aerobics.
- The government is prioritising and funding collaborations with five key sports (rugby union, rugby league, football, cricket and tennis) through partnerships with Sport England and Youth Sport Trust without having provided good evidence for a) their selection and prioritisation relative to other sports and b) in respect of relative benefits and harms. Team sports are narrowly represented by these five sports and core physical skills, such as might be provided by athletics, gymnastics, dance and the benefits of non-traditional PA such as Zumba, parkour and board sports are not much in evidence.
- There needs to be greater scrutiny of governance of sporting bodies in respect of duty of care for children including a) sponsorship and b) how the Laws and Rules are then translated

into the school curriculum and partnerships with the NHS and PHE and local authorities such as sponsorship of key sports in deprived communities.

- Childrens' voices need to heard and properly represented in respect of their wants regarding physical activity play and perceptions of different sports and their relative benefits and harms.
 - The impact of improved physical activity for any age should move beyond a goal of decreasing individual body weight/population prevalence of obesity and focus on a wider range of health outcomes such as mental wellbeing, cognitive ability and classroom behaviour.
 - Similarly the goal of interventions for physical activity should encompass a more holistic concept of current and future health and wellbeing rather than a focus on weight management. The long-term benefit of activity in childhood such as reduced risk of Type 2 diabetes and cardiovascular disease should be emphasised.
 - Physical activity, exercise and sport and play are conflated but need to be clearly defined and separated out in order to better understand benefits, harms, priorities and interventions relevant to all or each as appropriate.
 - Locations of interventions should be considered carefully in light of mixed evidence indicating at best small, short term changes in physical activity following school-based interventions. The role of family or peer support as a component of successful interventions, and its incorporation into future projects needs to be considered.
 - Sedentary behaviour needs to be assessed alongside physical activity/movement/play as it has independent effects on cardio-metabolic health.
 - Explore a socio-ecological approach to behaviour change which incorporates aspects of both the social and physical environments.
 - Recommend intersectoral policy approaches to promoting positive social and physical environments, supporting positive behaviour change in individuals. Incorporate physical activity opportunities into the built environment when undertaking new/re developments.
 - Review needs to explore whether our approaches to tackling health inequalities are addressing or compounding the issues.
 - Improve data collection on formal and informal sport or physical activity participation among children.
 - Improve data collection on physical activity or sport-related injury in hospitals by incorporating it into routine data collection practices, capturing greater detail on the type of activity, mechanism of injury and associated outcome.
 - Identify injury and physical activity 'hotspots' through geospatial analysis: seek to understand what is unique about these areas.
- (1)** It would be beneficial to engage with objective data on where, when and in what way children participate in sport and physical activity within their normal daily lives. Technology allows researchers to track spatial movement (for example, GPS devices) and PA levels (an accelerometer device) which enables objective data to be generated. The data could be used to inform intervention development and evaluate the effectiveness of such interventions. The SPACES study started at MRC/CSO SPHSU is moving towards developing such a database [1].

- (2) Further, there needs to be clarity about who takes responsibility for ensuring communication about what is known, and not known, about the relative risks and benefits of sport at all levels. This is clear at an elite level, but it is not clear there is central oversight of whether these responsibilities are adequately discharged. It is less clear at lower levels of participation with schools, healthcare providers, authorities, and individuals such as referees or teachers who act as organisers or in loco parentis all potentially responsible. Clear guidance and oversight is required.
- (3) The government should reconsider its apparent emphasis on competitive sport and the preparation of athletes for the Olympics and other mega events [2,3]. There should be greater emphasis on promoting increased physical activity resulting from a range of approaches including team, individual and non-competitive activity. There is also a need to pay greater attention to changing global patterns of youth and adult sport participation from evidence collated in other national contexts. In Australia for example, reports [4] have highlighted a decline in interest and participation in many traditional team sports, with more individual lifestyle and fitness activities becoming more popular. Similar evidence is available from the UK [5].
- (4) One size does not fit all. The evidence to support a focus on competitive team-games over other more individualistic sports physical activities is lacking. The needs of girls in particular are often different to boys; in a recent report, 45% of girls find sport 'too competitive' [5]. Rugby Football Union surveys have shown that children want the game to be fun and to be safe and enjoyable with a sense of camaraderie, and are less concerned about winning than adults. We recommend that children's needs and views are considered in the curriculum development and prioritisation of sports.
- (5) A recent report on women and sport found that women are more likely to participate in individual sport or non-team activities [5]. For example, running on their own (not as part of a organised club) which means that this activity is outside of sport governing bodies, and therefore will not benefit from funding from the government to support their activity.
- (6) There is a need to engage with young people themselves. To explore their understandings of physical activity, exercise and sport, and learn about the barriers and facilitators of participation. One study at MRC/CSO SPHSU learned that children's use of parks was influenced by concerns about personal safety and, in the extreme, gang territories [1].
- (7) There is currently an emphasis on physical activity as means of combating rising obesity, despite the absence of evidence to this effect. The Swedish government (via their HTA equivalent) has recently reviewed the evidence for middle-aged overweight adults and criticise this linkage. The evidence for a therapeutic link between exercise and obesity reduction in children is based on short follow-up. It is our view that there should be an emphasis on the wider positive health benefits of exercise – such as cardiovascular fitness, mental health and diabetes prevention.
- (8) Recent reviews indicate that ensuring that children achieve adequate levels of physical activity and fitness is likely to be crucial for successful cognitive development and academic achievement, in addition to physical benefits [6].
- (9) Physical activity is a broad term that encompasses all human movement and includes sport, exercise and activities of daily living. Caspersen et al. (1985) defined exercise with reference to the following factors: body movement produced by skeletal muscles; resulting energy expenditure varying from low to high (so far, these points are the same as for physical

activity); "very positively correlated with physical fitness"; "planned, structured and repetitive bodily movement" (p. 127); the objective is to maintain or improve physical fitness [7].

- (10) Sport is a sub-set of physical activity, and often exercise too, whereby the activity is rule governed, structured, competitive, and involves gross motor movement characterised by physical strategy, prowess and chance [8]. Additionally there are more informal 'sports' such as action and lifestyle sports [9] such as skateboarding that involve less competitive and organised activities.
- (11) The majority of interventions to change childrens' physical activity, sedentary behaviour, or diet, have been delivered during curriculum time at school. However, systematic reviews have shown that such interventions have generally been ineffective, and at best have generally only led to small, short term changes in behaviour, and may not affect behaviour outside of school time. New approaches are needed.
- (12) For young people, parents and the broader home environment are likely to be central to the establishment of healthy lifestyles. Many sedentary behaviours and most food intake takes place with family and/or in the home. There is, however, a shortage of research focusing on how families as a unit can engage in more physical activity and less sedentary behaviour. For example, a systematic review of physical activity interventions found only four family-based studies and concluded there is insufficient evidence on the utility of this approach. The evidence reviews for the NICE (2008) guidance on promoting physical activity, play and sport in children and adolescents also reported limited evidence for family based studies but did highlight that effective family based interventions were based in the home (as opposed to requiring attendance at a centre), had small and specific behavior change targets (e.g., 2000 steps per day), and employed information packs [10].
- (13) Sedentary behaviour (defined as 'sitting time') is a new public health focus. This is because sedentary behaviour may be an important precursor of chronic disease in adults and young people, independent of how much moderate-to-vigorous physical activity they do. For example, even if young people are active for 60 mins/day, it is quite possible that large proportions of the remaining time will be sedentary. Outside the occupational situation, people who spend higher amounts of time in sedentary behaviours have a greater risk of having metabolic syndrome. Thus reducing sedentary behaviours is potentially important for the prevention of metabolic syndrome [11]. New public health guidelines in the UK state that sedentary behaviour should be limited. Reducing sedentary behaviour should be considered alongside interventions to increase moderate-to-vigorous physical activity but changes in one will not necessarily lead to changes in the other. This is because sedentary behaviour is likely to be replaced by light physical activity or standing, and different strategies will be needed to promote sufficient MVPA.
- (14) There is some evidence that interventions to change sedentary behaviour can be effective in young people, but the changes are small and mostly centred around screen use. A broader range of behaviours and strategies are needed. In adults, there is emerging evidence that sitting can be reduced at work through environmental changes, such as the introduction of standing desks/workstations. However, business culture often impedes changes.
- (15) Understanding the nature of the influence of family and home factors on physical activity, sedentary behaviour and diet is central to the development of new intervention strategies. Interventions with a whole family approach are likely to be important, and could target adult behaviours as well. Qualitative work with participants in the Football Fans in Training (FFiT) programme has found that increasing the physical activity of fathers can have an impact on the

whole family's physical activity levels, particularly their children's. Hence, working with parents/families can impact on young people's healthy activity [12].

- (16) Town planning should encourage neighbourhoods to help promote children's physical activity by creating safe routes for children to actively commute to school with walking and cycling routes that are separate from roads. Neighbourhoods could create online spaces to communicate information about local opportunities to participate in sport: for instance those taking in community centres, community schools, parks, church halls and nightclubs. Recommending this approach at a local level is important at this time with the opportunities of action through health and well being boards as local public health has moved to local government which has responsibility for example for planning.
- (17) A recent systematic review concluded that some interventions are effective at reducing socioeconomic inequalities in obesity for adult populations [13]. This review could be replicated with a focus on interventions for children to ensure that interventions are beneficial for all socioeconomic groups.
- (18) There is no comprehensive dataset on sport or physical activity participation among children. This is important in light of priorities to increase activity (based on data from national surveys) and to understand how common injury resulting from sport may be. Sport injury makes up a significant portion of the overall injury burden, although data from the UK on this are scarce. Figures from the last year (2002) of the now discontinued hospital emergency department (ED) based Home and Leisure Accident Surveillance System (HASS/LASS) record sport outside of education as the most frequently recorded activity associated with leisure injury, accounting for 24.1% of all leisure injuries for all ages. [14] Routinely collected Hospital Episode Statistics (HES) data records that in financial year 2012-13 there were 322,120 sport injury emergency department (ED) attendances at NHS hospitals in England, 6.9% of all ED injury attendances, this is likely however to be an underestimate. [15]
- (19) Data from 2012-14 identified 63,877 emergency department attendances recorded for injury at John Radcliffe and Horton General hospitals, 32.7% of patients were under 20 years and 55.3% were male. For all ages, 11,622 of injuries were sport related of which 47.5% of patients were under 20 years and 70.2% were male. The five year age group with the highest percentage of sport injuries was 10-14 year olds where 43.4% of all injuries were sport related, for 10-14 year old boys this figure was 48.6%. [16]
- (20) Of these sport related injuries, the main sports were football (28.8% of sport injuries recorded), rugby union (9.6%) and horse-riding (4.6%). For males only the main sports were football (37.9%), rugby union (12.7%) and rugby league (3.9%). For 10-14 year old males, the most frequently sport injured group, football was responsible for 35.7% of injuries, rugby union 17.6% and rugby league 6.1%. [16]
- (21) In May 2007 the Council of the European Union recommended that EU member states develop national injury surveillance and reporting systems to monitor injury trends and evaluate the effectiveness of injury prevention initiatives. [17] The most recent data returns to the European IDB had to rely on HES data, which are designed for administrative purposes and are generally incomplete, of poor quality, and lack sufficient detail on key fields such as location (no road category) and mechanism of injury (no falls category).
- (22) Generally, current information on emergency care in the UK is unacceptably poor—in the words of the House of Commons Health Committee we are “flying blind.” [18] The College of Emergency Medicine's minimum dataset provides better quality data on emergency care and

this will be the template for a dataset upgrade that has been agreed for England by the Secretary of State for Health. This will require detailed recording of the actual sport involved in injury if prevention initiatives are to be planned and evaluated from this data.

- (23)** The issue of concussion in sport is a particularly good exemplar for need to better understand and manage the risks associated with sport-related injury. Concussion is a recent 'hot-topic' in the media, largely as a result of two high profile lawsuits in the United States. This has led to a cross party call for a parliamentary inquiry into concussion in sport by five prominent members of government (Lord Addington, Mr Chris Bryant, Mr John Glen, Baroness Grey-Thompson, Mr Chris Heaton-Harris). Two of the key messages from this document highlight the need for independent peer-reviewed research into concussion and for better coordination between sports, schools, colleges and doctors [19].
- (24)** There is a much greater need to understand and manage the risk of concussion in sport. However, the evidence base required to properly evaluate and manage these risks is lacking. Whilst we know children are at greater risk for concussion and its consequences, there are many unanswered questions in the literature that are critical to understand in order to inform policy. For example, we do not know what is an acceptable level of exposure to repetitive head impact in children as their nervous systems develop. We do not fully understand the consequences of repeated head impact on learning and child development. We do not fully understand either when it is safe to return to play following an injury or the long-term consequences of exposure to repeated head injury. We recommend that further research should be carried out in these areas.
- (25)** Much of the evidence for concussion in sport comes from studies in North America. In the UK, there are no clear guidelines for concussion protocols across different sports and, as a result, the management of concussion in children varies widely from school to school and club to club. Similarly, education and concussion awareness programs vary between sports. Further understanding can only be achieved with a better evidence base. From this evidence base it will be possible to inform policy and make sensible decisions about managing risk. Children should be encouraged to engage in sport, but sensible decisions based on evidence must be made to determine how the sport is practised.

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