

Reconsidering current objectives for physical activity within physical education

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26 **Abstract**

27 Children's participation in physical activity (PA) has important positive benefits for
28 their health and academic outcomes. Within the school day, physical education (PE)
29 is increasingly endorsed as a key time for children to accumulate PA. Despite this
30 increasing emphasis, research papers and policy documents frequently identify PE
31 lessons as 'not active enough'. However, contemporary objectives for sufficient PA in
32 PE may not be based on the highest quality evidence. Furthermore, while the
33 objectives appear compatible, they contain profound differences. Continued pursuit
34 of these objectives may be detrimental to achieving positive experiences of PA in
35 PE. For instance, an exclusive focus on PA objectives may encourage teachers to
36 prioritise fitness-based activities over others that young people enjoy. Pursuing
37 short-term goals for PA also risks investing limited lesson time to develop important
38 elements of physical literacy that only become developed after prolonged
39 engagement and practice. Importantly, what is at stake is not only achieving
40 sufficient PA in PE, but also encouraging lifelong participation in PA and the long-
41 term health of today's children.

42

43 Even though physical activity (PA) contributes to better health, many young people
 44 fail to achieve the target of 60-minutes per day (1). The whole school day, and within
 45 that Physical Education (PE), are increasingly seen as important opportunities to
 46 accumulate PA (1-3). Paradoxically, even though school days including PE are more
 47 active than those that are not (3), PE is frequently identified as insufficiently active
 48 (4). Research papers and policy documents commonly use two objectives,
 49 advocated by organisations within the UK (3) and the USA (5), to ascertain if PE is
 50 active enough (Table 1). However, each objective lacks grounding in contemporary
 51 evidence and, despite assumptions of their equivalence, contain profound
 52 differences. Furthermore, over-diligent pursuit of these objectives by research and
 53 policy may result in teachers prioritising fitness-based activities over others, such as
 54 those that develop physical literacy (6). This is despite increased fundamental
 55 movement skill competency, a key component of physical literacy, predicting
 56 increased adolescent PA (6).

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Table 1: A summary of objectives to increase activity within physical education

Organisation	Objective for ‘sufficient’ PA
Association for Physical Education (AfPE) (3)	Students should be <i>actively moving</i> for at least 50-80% of the available learning time
The U.S. Department of Health and Human Services (HHS) (5)	Students should engage in moderate-to-vigorous physical activity (<i>MVPA</i>) for >50% of the time they spend in PE class

60

61 The evidence underpinning current objectives (Table 1) is anachronistic, particularly
 62 as objective measures of PA are now used to evaluate PA in PE (4). The Association
 63 for Physical Education (AfPE) objective fails to cite evidence that informs the
 64 recommended duration and intensity of PA in PE (3). The US Department for Health
 65 and Human Services (HHS) objective is based on a combination of evidence - all of
 66 it low quality; self-reported time spent playing sport, expert advice, interpretations
 67 drawn from behavioural theory and a selection of exemplary practice (2,7). This
 68 misalignment, predominantly arising from the discrepancy between self-report and
 69 objective measurement of PA, may be one explanation why few contemporary PE
 70 lessons are deemed ‘*active enough*’ (4,8).

71

72 A plethora of research, including our own (8), fails to recognise and/or acknowledge
 73 these important differences between objectives. This issue is best illustrated by a
 74 recent meta-analysis (4), which concluded; objectively measured PA during PE met
 75 neither the HHS nor the AfPE objectives for >50% of PE in moderate-to-vigorous
 76 physical activity (MVPA). However, Table 1 clearly shows how only HHS specified a
 77 threshold of MVPA intensity.

78

79 As we move towards research informed practice, it is essential that objectives for PA
 80 in PE are appropriate. The uncompromising pursuit of these objectives by research
 81 and policy (4,8) is concerning as it may cause teachers to focus on PA, at the
 82 expense of fostering an enjoyment of PA or developing physical literacy (2,6). This
 83 pursuit has already led to unsubstantiated calls by OFSTED (within the UK, 9) for
 84 teachers to engage pupils in sustained periods of high-intensity PA. However,

85 adherence literature demonstrates how sustained, high intensity PA can reduce
86 subsequent motivation for PA.

87

88 A contextualised example highlights the difficulties a teacher may face when trying to
89 achieve the multifaceted outcomes of PE. Imagine this common lesson scenario; the
90 teacher asks pupils to consider how to effectively penetrate a defence in an invasion
91 game. In addition to being '*active enough*', children must consider a tactical
92 appreciation of the task, communicate with teammates, allocate roles and
93 responsibilities, and review their success. In this example, the teacher is pursuing an
94 appropriately wide range of learner experiences, alongside encouraging PA. While
95 some of this lesson content may have caused inactivity - and conflict with PA
96 objectives - it may be essential to develop the physical literacy that contributes to
97 adolescent PA (6).

98

99 Current objectives for PA in PE need refining as they are underpinned by low-quality
100 evidence and contain unacknowledged differences in PA intensity and duration (2).
101 Research must move beyond considering levels of MVPA in isolation. Future
102 research may be warranted to develop an appreciation of how much objectively
103 measured MVPA can be achieved within a typical PE lesson, while meeting the other
104 multifaceted aims of PE, for instance, the need for developing physical literacy.
105 While the quest for PA is important, this must not be at the expense of developing
106 physically literate young people.

107

108 Finally, while PE may be reasonably expected to make a substantial contribution to
109 children's daily PA, this must not sacrifice other important PE outcomes. Given their
110 long-term value, these other markers of PE quality - such as the enjoyment of PA, or
111 the development of physical literacy - need to be afforded renewed priority, perhaps
112 by explicit integration into future objectives (2,10). To support the development of
113 objectively determined PA objectives, in tandem with achieving the multifaceted
114 requirements of PE, it is essential that education makes a full contribution to these
115 public health debates. Acknowledging that interventions within PE generate only
116 small increases in PA (10), it is now time to look beyond PE as a "silver bullet" for
117 resolving the inactivity crisis, toward all segments of the school day. Importantly,
118 what is at stake is not just achieving PA in PE, but encouraging lifelong participation
119 in PA and the long-term health of children.

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