



The Children's Sport Participation and Physical Activity Study (CSPPA Study)

REPORT 1



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The Children's Sport Participation and Physical Activity Study (CSPPA Study)

by

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GLOSSARY OF TERMS & ABBREVIATIONS

Area of Residence	The population density of where the individual lived, i.e. city, suburb, town or village.
20MST	The 20m shuttle run test or 'bleep test' is a field measure of estimated aerobic fitness
BMI	Body Mass Index= weight (kg)/height (m ²)
BP	Blood Pressure
Extra-school sport	Non school sport and physical activity clubs
CSPPA	Children's sport participation and physical activity
DTCS	Department of Tourism, Culture and Sport (formerly Department of Arts, Sport and Tourism)
DES	Department of Education and Skills (formerly Department of Education and Science)
DHC	Department of Health and Children
Extra-curricular sport	Physical activity or sport played before, during or after school, but not part of the curriculum.
ESRI	Economic and Social Research Institute
ISC	Irish Sports Council
Invasion Games	Invasion games are played on a court or field where the intent is that you invade your opponents' space in order to score a point in a goal or the end zone. Examples include football and basketball.
MVPA	Moderate to vigorous intensity physical activity
Physical activity	Any bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure
Physical Education	Systematic introduction to, and education in, sport, exercise, physical activity as part of a school curriculum.
SC	Household social class
SC 1-2	Either parent in the professional, managerial or technical job bracket.
SC 3-4	Either parent in the non-manual or skilled manual job bracket
SC 5-6	Either parent in the semi skilled or unskilled job bracket
SC 7-8	Unemployed or unknown
SES	Socio-economic status
SST	Sedentary screen time. A proxy measure for sedentary behaviour or sitting. Measured as minutes spent sitting in front of a TV/DVD/Video or computer screen.

EXECUTIVE SUMMARY



The Children's Sport Participation and Physical Activity study (CSPPA) was funded by the Irish Sports Council. It was a unique multi-centre study undertaken by Dublin City University, University of Limerick and University College Cork. It brought together expertise from physical education, sport and coaching studies and physical activity for health. The purpose of the study was to i) provide a national database of physical activity, physical education and sport participation levels of children and youth in Ireland, ii) assess indices of health and fitness in a sub-sample of the target population, iii) collect and analyse information on the factors influencing participation and iv) provide insight into issues surrounding volunteering in youth sports and activity clubs. The information collected will provide guidance to the development of policy in the areas of health, sport, education, transport and the environment all of which have important roles to play in getting Irish children more active more often.

CSPPA was a cross-sectional study that used self-report surveys, objective measures of physical activity and qualitative interviews to assess participation in physical activity, physical education, extra-curricular and extra-school sport among 10-18 year olds. It was designed as a follow-up to the "School Children and Sport in Ireland" study published by the Economic and Social Research Institute (ESRI) in 2005 (1). Research methods were replicated where possible with the addition of certain elements. These included a redesign of the original questionnaire and the use of motion sensors called accelerometers. Basic physical health measures were also collected to examine the relation between physical activity levels and health. Pupils' opinions, attitudes and views on the factors they deemed important in influencing their involvement in, or avoidance of, physical activity, physical education and sport were assessed through focus group interviews. The results of the focus group study are presented in a separate report. Finally, school administrators and volunteers responsible for providing sporting opportunities to 10-18 year olds were surveyed and a sub-sample were interviewed in order to gain an understanding of their motivations, needs and capacities. The results of the volunteers' study are presented in a separate report.

Summary of main findings

A total of 5397 children from 53 primary and 70 post-primary schools participated in CSPPA. The average age was 13.8 ± 2 years (range 10 to 18 years), 52% were female and 48% male. Post-primary students made up 76% of the sample, and 24% were from primary schools.

A total of 1275 primary school pupils from 5th and 6th class participated. The average age was 11.2 ± 0.7 years (range =10-12 years), 55% were boys and 45% were girls. Fifth class pupils made up 48%, and 52% were in 6th class. With reference to social class, 40% were in SC 1-2, 34% in SC 3-4, 12% in SC 5-6 and 14% in SC 7-8. Six percent of primary school pupils (n=80, 8% of boys and 5% of girls) reported that they had a physical or learning disability, or illness that affected their ability to participate in physical activity.

A total of 4122 post-primary pupils from years 1 to 6 participated in the study. The average age was 14.5 ± 1.7 years (range =12-18 years), 48% were male and 52% were female. Forty four percent of participants were in SC 1-2, 38% in SC 3-4, 9% in SC 5-6 and 9% in SC 7-8. Seven percent (n=269, 7% of males and 6% of females) reported that they had a physical or learning disability, or illness that affected their ability to participate in physical activity.

One hundred and three school administrators (principals or their nominee) completed a questionnaire on school sports participation, facilities and resources. Forty seven were from primary schools and fifty six were from post-primary schools.

Physical activity and health indices

- 19% of primary and 12% of post-primary school children met the Department of Health and Children physical activity recommendations – at least 60 minutes daily of moderate to vigorous physical activity (MVPA). These proportions have not improved since 2004 (1).
- Girls were less likely than boys to meet the physical activity recommendations.
- The likelihood of meeting the physical activity recommendations decreased with increasing age.
- One in four children were unfit, overweight or obese and had elevated blood pressure.
- Children who met the Department of Health and Children's physical activity recommendation of ≥ 60 minutes of MVPA daily had the best health profile of all children.

- The number of days per week that primary children reached the required 60 minutes of MVPA increased significantly if they took part in extra-school sport or physical activity, or if they actively commuted to school. Involvement in extra-curricular sport was also a significant determinant of minutes of MVPA for girls.
- Among post-primary pupils' participation in extra-curricular or extra-school sport or activity were significant determinants of daily bouts of ≥ 60 minutes of MVPA. Active commuting to school, and minutes of physical education were also significant determinants of participation for females.
- There was a significant correlation between the subjective (self-report) and objective (motion sensor) measures of physical activity (N=293, $r=0.37$ $p<0.001$), supporting the validity of the CSPPA data.

Physical education

- 35% of primary pupils and 10% of post-primary pupils received the Department of Education and Skills recommended minimum minutes of physical education per week.
- On average, primary pupils receive 46 minutes of physical education weekly; post-primary pupils receive 77 minutes. Most post-primary pupils receive double class periods of physical education.
- Since 2004, the time scheduled for physical education has increased by an average of 5 minutes per week in post-primary schools.
- Girls receive less physical education time than boys.
- Senior pupils receive less physical education time than junior pupils.
- Team games, particularly invasion games, are dominant in primary physical education. There is a mix of team and individual activities in post-primary.
- 81% of primary principals and 29% of post-primary principals reported not having access to an indoor multi-purpose hall on-site for the purpose of teaching physical education.

Extra-curricular sport

- 63% of primary and 73% of post-primary school pupils participate in extra-curricular sport at least one day a week. This proportion has increased since 2004.
- Non-participation in extra-curricular sport has remained at 24% among primary school pupils since 2004. In contrast, non-participation rates in extra-curricular sport among post-primary pupils have decreased by 6% since 2004.
- Boys are more likely to engage in extra curricular sport than girls.
- Participation in extra-curricular sport decreases with increasing age.
- Team games, particularly invasion games, are dominant in extra-curricular sport in primary and post-primary schools.

- Only GAA sports (Gaelic football, hurling, camogie and handball) and swimming show consistent participation levels in inter-school competitions at both the primary and post-primary level.
- The quality and expertise of human resources – coaches, teachers, sports development officers, administrators and volunteers – supporting extra-curricular sport and physical activity is unclear. Non-participation may be due to a lack of a quality, broad and balanced programme for participation rather than an active choice for children.

Extra-school sport

- Participation at least once a week in extra-school sport has increased by 2% (up to 83%) among primary school children. In contrast, participation rates in post-primary school children have decreased by 6% (down to 64%) since 2004.
- No gender differences exist in participation levels in extra-school sport at primary school. Boys participate more than girls at post-primary.
- Participation rates in extra-school sport are lower among children from lower social classes than children from higher social classes.
- Participation in extra-school sport decreases as children age.
- Traditional team sports (mainly the invasion games of Gaelic football, soccer, hurling and rugby) dominate male participation in extra-school sport. There is a mix of individual and team activities for girls.
- Feelings of incompetence and not having access to suitable sports/activities were key reasons for non-participation in extra school sport

Active travel

- 38% (31% primary, 40% post-primary) of children and youth walked or cycled to school in 2009. These proportions have increased from 26% (primary) and 30% (post-primary) in 2004.
- Age related declines seen in other types of physical activity do not exist in active commuting.
- Distance and time were the main barriers to active travel.

Sedentary behaviour

- Primary school children spend much less time sitting than post-primary youth.
- Few children (1%) spend less than two hours daily sitting viewing TV, videos or playing on the computer. This two hour threshold is recommended maximum during daylight hours, once exceeded there is a higher likelihood of developing health problems long-term.
- Active youth spend significantly less time in sedentary behaviour than inactive youth.

Recommendations

- Our sole recommendation is to significantly *increase participation* levels of all children and youth in sport and physical activity in Ireland. Table i outlines the *minimum* outcomes we consider necessary if this recommendation is to be met.



Table i. Recommendations of the Children's Sport Participation and Physical Activity Study.

Activity Type	Current Status (2009)	Activity Goal	Timeline	Responsibility
General Physical Activity	19% of primary children meet DHC health goal of ≥ 60 min MVPA daily.	Increase to minimum of 30%.	2020	DHC, DES, DTCS, DT, DEHLG.
	12% of post-primary children meet the DHC health goal of ≥ 60 mins of MVPA daily	Increase to minimum of 20%	2020	
Physical Education	35% of primary pupils received the DES minimum requirement of 60 minutes per week	Increase % meeting 60 minute requirement to 50%.	2020	DES
	10% post-primary pupils received the DES minimum of 120 minutes per week	Increase % meeting 120 minute requirement to 20%	2020	
Extra-Curricular Sport and Physical Activity	63% primary children participate at least once a week.	Increase to 73%. Focus on those who participate once a week or less often.	2015	DTCS, DES, DHC.
	24% never take part in extra-curricular activity clubs	Decrease to 20% by broadening range of activities available.	2015	
	73% post-primary pupils participate at least once a week.	Increase to 80%. Focus on those who participate once a week or less often.	2015	
Extra-School Sport and Physical Activity	16% never take part in extra-curricular activity clubs	Decrease to 10% by broadening range of activities available.	2015	DTCS, DEHLG, DES, DHC.
	83% primary children participate at least once a week.	Increase to 85%. Focus on those who participate only once a week or less often.	2015	
	11% never take part in community-based sports clubs	Decrease to 10% by broadening range of activities available.	2015	
Active Travel	31% primary children walked to school, 1% cycled.	Increase to 40% walking, 5% cycling.	2020	DT, DES, DEHLG, DHC.
	40% post-primary youth walked to school, 3% cycled.	Increase to 50% walking, 5% cycling	2020	
Sedentary Behaviour	Less than 1% of children and youth met the health recommendation of < 120 minutes of sedentary screen time during daylight hours.	Increase this to 10%.	2020	DHC, DES, DT, DTCS, DEHLG.

Note. DTCS – Department of Tourism, Culture and Sport (formally, Department of Arts, Sport and Tourism). DHC – Department of Health and Children. DT – Department of Transport, DES – Department of Education and Skills, DEHLG – Department of Environment, Heritage and Local Government.

CHAPTER 1: INTRODUCTION



The health enhancing properties of physical activity are evidence-based and widely accepted. Physical activity is any bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure (2). It includes active living, active play, sport, physical education and active transport. Current Department of Health and Children guidelines recommend that children and youth participate daily in at least 60 minutes of moderate to vigorous intensity physical activity (≥ 60 min MVPA). This activity should be developmentally appropriate, involve a variety of activities and be enjoyable (3).

Physical activity is important to children's current and future health, and adherence to the physical activity guidelines produces a range of direct and indirect benefits. It assists in the control of body weight by increasing energy expenditure, this is important in teaching children and young people how to achieve a healthy 'energy balance', and avoid developing adult obesity. It reduces the risk of developing premature cardiovascular disease, type-2 diabetes, metabolic syndrome and some site specific cancers. Weight bearing physical activity is important in bone formation and remodelling. In addition, physical activity reduces depression and anxiety (especially in shy children), enhances mood, self-esteem and quality of life (4-15).

Participation in regular health enhancing physical activity has also been found to reduce rule-breaking behaviour, and to improve attention span and classroom behaviour. It has positive effects on academic performance, including achievement in math tests and reading, academic grades and perceptual skills. Involvement in sport and physical education can play a significant role in the enrichment of a child's social life and the development of social interaction skills (4-14). Childhood provides a great opportunity to influence attitudes and participation levels positively towards physical activity. A child who emerges from school with confidence in their physical body and skills and who has been exposed to positive experiences in physical activity is more likely to adhere to an active lifestyle as they age.

Worldwide less than one third of young people are sufficiently active to benefit their current and future health (16). Females are less active than males. In addition, the proportion of children and young people who walk or cycle to school, a source of daily physical activity, is declining dramatically (17). Schools are an important setting for young people to take part in, and learn about, physical activity. Through physical education programmes, free play activity and extra-curricular sport, schools can provide time, facilities and guidance for children and youth to safely access physical activity opportunities and develop competence and confidence in an environment that is supported by teachers, parents and friends. Schools are also a setting for under-represented population sub groups to gain access to quality physical activity experiences. However, decreasing physical education programmes in schools, pressure from the school curriculum to reduce time spent in free play, lack of training and senior management support for teachers, particularly at the primary level, and the removal of dedicated green spaces or play areas in schools is an alarming trend worldwide (18, 19)

A large amount of youth physical activity occurs outside of the school in extra-school sports clubs (20). The factors supporting and encouraging a positive transition from compulsory school-based physical activity to sport beyond the school gates are poorly understood (21). Many national governing bodies of sport provide coaching sessions to school-aged children in the school setting (particularly evident in primary schools). This has resulted in the development of modified forms of their sport which have been successful in recruiting children at a young age.

The challenge of stemming the withdrawal of young people from structured clubs during their teenage years (particularly young girls) is daunting. For some children and youth, club involvement will give them an enriched experience to add to their physical education experience, for others it may lead to a discontinuation of sport. Participation in extra-school clubs is an important strategy to help children and young people achieve the recommended daily amount of physical activity. Innate gender differences, developmental differences among children with the same chronological age and the variety and quality of sport opportunities that children and youth are exposed to are some of the factors that make working with children and youth very challenging. It is important that teachers, coaches and club volunteers are provided with appropriate support to assist them develop their pedagogical and coaching skills in order to meet the demands of mixed ability. An understanding of the factors influencing successful involvement in physical activity, physical education and extra-school club sport is essential.



Physical inactivity is a major underlying cause of death, disease and disability (22). There is increasing concern at the rapidly decreasing levels of fitness in children and youth (23). Preliminary data from a World Health Organisation (WHO) study on risk factors identified a sedentary lifestyle as one of the ten leading global causes of death and disability, with more than two million deaths each year are attributable to physical inactivity (24). Children and young people need to be encouraged to reduce the amount of time spent in sedentary activities such as TV and video viewing, and playing computer games especially during daylight hours.

In addition to mortality, morbidity and quality of life costs, inactivity affects national economies. The WHO estimates that physical inactivity costs between €150-300 per citizen per year (24). These figures were based on a number of European studies where the annual costs – including those to the health system, days of absence from work and loss of income due to premature death – have been estimated to be €3-12 billion (in England) and €1.1-1.5 billion (in Switzerland) (25). Both of these estimates exclude the contribution of physical inactivity to overweight and obesity. In England, this is estimated to be €9.6-10.8 billion per year (26).

In Ireland the social aspects of sport alone –volunteering, subscriptions to sports clubs, attendance at sports events and costs of playing sports, including purchasing of equipment – have a combined economic value of €1.4 billion or 1.26 per cent of GNP in 2003. This estimate rises to approximately €2 billion annually if the economic impact of sport tourism is included (27).

The CSPPA study

In Ireland, there has been a limited amount of physical activity data collected from representative samples of children and even fewer studies have collected data where physical activity has been measured with precision (28, 29). Despite this lack of accurate data, suspicions that Irish children are insufficiently active are common. These are mostly based on indirect evidence, for example, suggestions that children are getting fatter.

The CSPPA (Children's Sport Participation and Physical Activity) study was designed as a follow-up to the "School Children and Sport in Ireland" research conducted on behalf of the Irish Sports Council by the Economic and Social Research Institute (1). CSPPA used multiple methods - self-report surveys, objective measures of physical activity and qualitative interviews - to assess participation in physical activity, physical education and sport among 10-18 year olds. This multi-centre study (Dublin City University, University of Limerick and University College Cork), in collaboration with the Irish Sports Council brought together expertise from physical education, sport and coaching studies and physical activity for health.

The CSPPA study involved data collection from children and youth, but also from individuals responsible for providing opportunities for participation for this cohort, namely school administrators and sport club volunteers. The study of the children and youth comprised of a survey, interview and collection of physical health data. In order to allow direct comparison and provide follow-up data, the CSPPA questionnaire was based on the 2004 ESRI study (1). Some modifications were made to the questionnaire. In addition, motion sensors were used to provide i) more precise estimates of overall physical activity levels, ii) time spent in light, moderate and vigorous activities and iii) patterns of physical activity throughout the day. Physical health measures – aerobic fitness, body mass index, waist circumference and blood pressure - were collected on a sub-sample of participants. The opinions, attitudes and views on the factors that participants deemed important in influencing their involvement in, or avoidance of, physical activity, physical education or sport were collected through qualitative research. The qualitative data also allowed us to critically examine the accuracy of the survey data (child, youth and principal). Results from the qualitative data are the subject of a separate report and will not be referred to in this document.

School administrators (principals / vice-principals) were surveyed to provide data on the challenges they face in the provision of quality physical education and extra-curricular sport. The relationship between school ethos, school sport and physical activity; and how principal and pupil perceptions of these activities differed were also examined.

The CSPPA study builds on an international and national body of knowledge investigating volunteering but takes a particular focus on the volunteer working in the child and youth context. The present study also investigated the motivations, needs, and capacities, of volunteers working with children and youth in an Irish sport context. Two online questionnaires were administered and six focus group interviews were conducted. Questionnaires were designed to explore volunteering from the perspective of volunteers and club administrators. Focus groups targeting the volunteers explored issues arising from the questionnaire and further examined programme design in children's and youth sport activities. The study on volunteers is the subject of a separate report and will not be commented on in this document.

The overall objectives of the CSPPA study were to:

1. Provide a national database for the Irish Sports Council and other interested public policy agencies of physical activity, physical education and sport participation levels of children and youth in Ireland.
2. Assess indices of health and fitness in a sub-sample of the target population.
3. Examine the complex interactions of factors influencing participation in physical activity, physical education and sport.
4. Provide insight into issues surrounding volunteering in sports and activity clubs in Ireland.

Limitations

The CSPPA study is a cross-sectional study; it provides a snapshot of participation levels in physical activity, sport and physical education by children and youth. It relies on self-report data in the questionnaire to assess levels of physical activity participation; however validity checks using motion sensors supported the accuracy of the self-report data. The findings from the CSPPA study are compared to the ESRI study (1) in order to assess change in participation levels over the last five years. For this purpose similar methods and measures were used to allow us to assess and compare trends that emerge from both sets of data. Some caution is noted in making direct comparisons between the 2004 and 2009 data. This is due to the participants being different (for example due to the inclusion of first year students the average age of the CSPPA study was younger than the ESRI study), the schools and regions of the country from which the students were recruited were different and the time of year for data collection moved from October/November (2004) to March-May (2009).

CHAPTER 2: THE POLICY CONTEXT



The CSPPA study examines current participation in physical activity, physical education and sport by children and youth in Ireland. In order to understand the context in which this participation occurs, it is necessary to examine how national policy supports participation in these areas. Encouraging physical activity, quality physical education and sport involvement is a component of many aspects of government policy for many reasons, including health, education, economic and social benefits. The purpose of this chapter is to provide an overview of policy in Ireland as it relates to physical activity, physical education and youth sport, and provide a basis for the discussions and interpretation of data in subsequent chapters.

Physical education

In Ireland, physical education is not a compulsory school subject, though in practice most children between the ages of 4 and 18 years are taught physical education. Physical Education is the only educational experience where the focus is on the body, physical activity and physical development (30). Physical Education has many goals; one that has been consistently reinforced over the last decade is its promotion of lifelong activities for the benefit of public health. The Irish physical education curriculum documentation is prepared by the National Council for Curriculum and Assessment (NCCA). The Department of Education and Skills (DES) has responsibility for the implementation of this curriculum in schools. In Ireland, the Physical Education curriculum is based on a holistic concept of physical activity, one that “recognises the physical, mental, emotional and social dimensions of human movement, and emphasises the contribution of physical activity to the promotion of individual and group well-being” (31, p. 2). There are a number of policy issues central to physical education currently that focus on i) the framework that supports physical education throughout the school cycle, ii) the physical education curriculum, the ideal and the actual taught programmes iii) time allocation for physical education, iv) qualifications of physical education teachers and non-physical education specialists and v) facilities and resources.

1. The framework that supports physical education throughout the school cycle

Developments in the physical education framework have been numerous over the last decade. The primary physical education curriculum was revised in 1999, and a new junior cycle physical education syllabus was implemented in 2003. There are currently two physical education courses in development; a non-examination curriculum framework for physical education in the senior cycle and a syllabus for examination (Leaving Certificate Physical Education) (32). The concept of physical education as an examinable subject, was reinforced by the Minister of Education and Science in 1998, when he indicated that physical education would be introduced into the Leaving Certificate curriculum in the school year 2001/2002. Since 1998, the examination syllabus for physical education has undergone extensive review in an attempt to meet the challenge of integrating practical aspects such as games or dance with the theoretical underpinnings of physical education (32). Educational policy now needs to conclude and implement developments in senior cycle and Leaving Certificate physical education.

2. The physical education curriculum, the ideal and the actual taught programmes

The physical education curricula consist of seven strands, namely athletics, outdoor and adventure activities, aquatics, dance, gymnastics, games and health related fitness in post-primary schools (33). The strands are designed to provide pupils with a rich, broad educational experience in physical education. However, the general quality of physical education is unknown due to the relative paucity of research in both primary and post-primary schools in Ireland. The research that has been undertaken suggests huge variability in the quality of children's experiences both across and within schools (1, 34). There was some evidence of discrepancies between the syllabus and what was actually taught during the physical education class. Physical Education activities were found to comprise mainly a small range of traditional team games, and activities such as dance or swimming were either not taught or provided infrequently (1, 34).

3. Time Allocation for physical education

The Department of Education and Skills (DES) recommends that primary children should receive at least 60 minutes of physical education per week (33) and post-primary 120 minutes. (31). Research indicates that pupils rarely receive this amount of physical education, with an average post-primary allocation of 69 minutes per week. Boys get slightly more minutes of physical education than girls, and minutes of physical education were found to decrease as pupils progressed through the school cycle (1).

4. Qualifications of physical education teachers and non-physical education specialists

Within the European Union, physical education is currently taught by a ‘specialist physical education’ teacher, a ‘physical education’ teacher or a ‘generalist’ teacher (19). The specialist is an individual whose teaching qualification is solely concerned with the teaching of physical education. The physical education teacher is qualified to teach both physical education and a second subject e.g. biology. The generalist teacher is qualified to teach a full range of subjects including physical education for a primary school setting. In Ireland, the DES has specified that in post-primary schools “qualified specialist teachers of physical education should be responsible for the development of the physical education course...” (31, p.11). However, the number of non-qualified teachers teaching physical education is a cause for concern (1). At primary level, physical education is delivered by the generalist teacher who has undertaken a physical education element in their basic professional teacher training or in-service training in physical education. It is recognised that primary school teachers receive inadequate time allocation within their teacher training programmes to adequately prepare them to teach physical education (19, 35, 36). Further, the intensification of work for primary school teachers over the last decade has exacerbated this situation. There is evidence to suggest that most schools struggle to meet the basic curriculum requirements(1, 34).



Support is offered to teachers through DES agencies such as the Primary Professional Development Service (37) (formally Primary Curriculum Support Programme), the Junior Cycle Physical Education Support Service (38). Education Centres and Communities of Practice which provide in-service training, resources and peer-led support to teachers. Other initiatives developed outside of the DES to supplement the physical education curriculum, include programmes like Buntus (developed by the Irish Sports Council), Action for Life (developed by the Health Services Executive) and Bizzy Breaks (developed by the Irish Heart Foundation). Though high quality initiatives, these do not support the entire physical education curriculum unlike the DES programmes, rather they offer assistance in a specific element (Buntus in games, Action for Life in health related activity, Bizzy Breaks in general physical activity). Policy needs to review current support provision by DES and other agencies to ensure that quality, holistic, pupil focused support is provided, and that the continuing professional development needs of teachers are met.

5. Facilities and resources

Recently, time allocation has become more of an issue in physical education than facilities (39). However, the varying availability of school physical education facilities affects the provision of physical education within schools, and has the potential to exacerbate inequalities. Basketball courts (or basic tar macadam areas) and grass pitches are widely available. However, despite the recommendation that all schools have access to a “suitable indoor space- sports hall with changing and shower areas” (31, 33) the poor provision of such indoor facilities has been identified (1). Middle-class schools may be able to alleviate their facility distress somewhat through fund raising or voluntary contributions. However, this may not be an option for schools in disadvantaged areas.

Extra-curricular and extra-school sport

Governments invest public monies in sport not only to assist the development of sport itself but to achieve improvements to the quality of life of their citizens (40). Investment in sport by the Irish Government has increased significantly. In 2008, it is estimated that the total allocation of central government funds to the sport budget of the Department of Tourism, Culture and Sport (DTCS) was approximately €311 million. The majority of this money went to elite sport (stadiums, horse and greyhound racing fund, and elite athletes), and a major proportion of what was left was spent on facilities through the sports capital programme, and to traditional team sports (41).



The development of sports and recreational policies to promote youth participation is overseen by DTCS, with specific responsibility falling to the Irish Sports Council. The DTCS strategy highlights participation, its goal is:

To increase participation and interest in sport, to improve standards of performance and to develop sports facilities at national, regional and local level, thereby contributing to healthier lifestyles and an improved overall quality of life, through a Departmental policy and resource framework in partnership with its Agencies, other Government Departments and the National Governing Bodies of Sport (42).

The mission statement of the Irish Sports Council (ISC) is 'to plan, lead and coordinate the sustainable development of competitive and recreational sport in Ireland' (p1). Echoing DTCS, the ISC strategy Building Sport for life 2006-2008 emphasised increasing children's participation rates in physical activity by 3% (43). It states that the ISC have a 'responsibility to ensure that the benefits of sport and physical activity are fully understood' (p4), and that achieving 'lifelong involvement of individuals in sport and physical activity is a core objective' (p5). Specifically, for young people the ISC vision indicates that 'young people will see sport as an integral and enjoyable part of their lives' (p10), and that every person, irrespective of ability or experience will 'increase participation' (p12). From these documents the importance of specific targeting of children and youth for physical activity interventions can be seen. This reflects a focus on of prevention of inactivity rather than one of cure of a sedentary behaviour once it has established. In order to achieve this, a national physical activity policy, one that clearly identifies strategies to increase participation is needed.

Extra-curricular sport

Extra-curricular sport is undertaken within the school setting and is provided more frequently than physical education. However, as not all children avail of extra-curricular sport it has less potential to reach children than physical education. Nonetheless, it is often considered an integral part of a child's schooling experience and in many cases it is deemed a highly important element of a school's programme. While it is technically not a part of the formal curriculum, and thus is believed to be outside the concerns of national education policy, in practice its relationship with physical education is complex and symbiotic. The Minister for Education and Science, Mary Hanafin, T.D., in launching the 'Active School Awards' in 2007 stated that:

'Apart from the formal curricula, schools can take a broad range of measures to encourage physical activity among students during the school day. Many schools provide extensive, broad-based programmes of co-curricular physical activities that are highly rewarding for both pupils and teachers alike' (44).

The delivery of extra-curricular sport relies heavily on the willingness of teachers (very often not formally trained in either physical education or coaching) to volunteer their time outside of their formal duties. The Irish Sports Council report "Ballpark Figures, Key Research for Irish Sports Policy" highlighted the need for more focus on the role of volunteer teachers and their importance in extra-curricular sport and physical activity delivery (27). In particular, volunteers' needs, motivations and capacities must be examined in order to provide them with adequate support. This is the focus of the study on sport volunteers and will be covered in a separate report. Additionally, policy that rewards teachers for giving their time to other after school activities e.g. homework clubs, must be scrutinised to ensure that disparities between physical activity and other school activities are removed rather than reinforced.



The extra-curricular sports and activities offered often focus on traditional team games, and this raises a concern that many pupils who have little interest in competitive team sport, particularly invasion games, and who might prefer more individual activities are poorly catered for (1, 34, 45). The ISC strategy 'building sport for life 2006-2008', recognised that a combination of team and individual activities are most likely to adequately equip children and youth to develop the motor skills and motivations necessary for lifelong participation in sport and physical activity (43).

The level of extra-curricular sport has been criticised for appealing to a few talented elite rather than the larger population of all young people (34). This is evident in the 'sports schools' concept, where a school is recognised for its excellence in only one or two sports, and is only deemed successful, by teaching staff, parents, peers and the local press, if these teams are winning. While a competitive spirit is to be commended, if the school policy is to support a highly active minority (the motor elite) at the expense of the inactive majority, this policy must be questioned. Connor (2003) in his review of youth sport in Ireland, called for extra-curricular sport to develop intra (and inter, [our addition]) -school leagues to cater for all levels of ability. These should be adequately resourced, and volunteers should be encouraged and rewarded/recognized for their contribution (34). Recently there has been a move to recognise this sort of school commitment with the Active Schools Flag, launched by the Minister of Education, Batt O'Keefe, T.D. in October 2009. The active school flag is a review process, one that asks schools to evaluate how they might enhance their provision of physical education, physical activity and school sport. Among its aims at the post-primary level, are 'to generate the support of management, teachers, students, parents and national governing bodies and the local sports partnerships in the promotion of physical education and co-curricular physical activities' (46).



Extra-school sport

In 2009, a submission was made to the Government on the future funding of sport in Ireland (47). The submission was produced by the Federation of Irish Sports, representing 68 national governing bodies, the Olympic Council of Ireland, the Paralympic Council of Ireland, Special Olympics of Ireland, 33 local sports partnerships, 1.1 million adults that actively participate in sport and 280,000 adults who volunteer in sport each week (p. 1). The reasons put forward for why sport (in its broadest sense) matters include that it improves public health, contributes to the economy, builds communities, establishes pride in Ireland at home and abroad, drives tourism and makes us feel good (p4-5). Again, a central theme is mass participation.

Community based sports programmes are faced with similar challenges to extra-curricular sport. Gender inequality is evident. More boys than girls participate, more variety is offered to boys than girls, the types of activity offered are from historically male pursuits, and resources (in terms of coaches, equipment and funding) are not evenly allocated between boys and girls (1, 34, 45, 48, 49).

Social disadvantage has been largely ignored in relation to sports provision. Children and youth from higher socio-economic backgrounds participate more than those from lower socio-economic backgrounds (1). Current community based sports participation in Ireland may reflect and even exaggerate disparities amongst social class groupings (34). Connor (2003) felt that the choice between learning a sport or leisure activity is not simply a question of free choice and individual taste; it is socially constructed, reflecting the possession and deployment of varying degrees and combinations of economic, cultural and symbolic capital (p.199).

The large drop in the number of youth participating in extra-school sports following the transition out of school is an issue that current sports policies and strategies seem to have failed to address (50, 51). There has been little in the way of strategic planning to retain this high risk group in extra-school sport. The need for focus on more individual, as opposed to team activities have been shown to be favoured during this transition period (1). Similarly to extra-curricular sports, there is a need to empower communities, to move away from direct provision to a more fostering or enabling approach, where the youth, parents and local people develop the skills and initiative to run their own clubs. Policies and programmes can be conceived nationally, but they must be owned and delivered locally (40). Local Sports Partnerships have begun to tackle this challenge through improved partnerships linking key agencies that work with youth such as schools, clubs and local government.

Clearly education policy and sports policy are linked in terms of responsibility in youth sport. The study seeks to investigate identified issues and highlight the areas which are at present most in need of attention from this collaboration.

Physical activity

The preceding sections of this chapter have underlined the importance of education policy and sports policy in the realm of children's sport. However, it must be pointed out that children do a great deal of their physical activity outside the constructs of formal education or extra-school sports programmes.

A great deal of responsibility for children and youth physical activity can be attributed to the Department of Health and Children and its affiliated agencies. The National Children's Strategy identified the need for children and youth to have more opportunities for sport, play, leisure and cultural activities (52). As a direct result, Ready! Steady! Play! A National Play Policy was written (53). The objective of this policy was to plan for an increase in public play facilities and thereby improve the quality of life of children living in Ireland, by providing them with more (quality) play opportunities (p8). The target group of interest were children under 12 years of age. In 2007, Teenspace: A National Recreation Policy: for young people between the ages of 12 and 18 was developed (54). Under objective two of this policy, Local Sports Partnerships and the Irish Sports Council were charged with developing increased opportunities for dance and physical activity, and to tackle gender issues around provision in sport.

One of the key ways in which people can be more physically active is through walking and cycling as part of everyday life (55). Many aspects of transport policy support a shift away from motorised transport and towards active transport that includes walking and cycling. The Department of Transport is responsible for the development and implementation of initiatives aimed at increasing the number of children and young people who actively commute to and from school everyday. This involves developing safe travel by increasing cycle friendly routes, reducing traffic congestion around schools, providing better bike parking facilities and introducing safe cycle skills courses within schools.



Walking and cycling are supported by the new transport policy for Ireland, Smarter Travel – A Sustainable Transport Future 2009-2020 (56). For children and youth, within this policy the Green School initiative is encouraging schools to have an active travel plan, one that encourages pupils to use alternatives to the car when it comes to travelling to school. Ireland's first – National Cycle Policy Framework cites a vision of a strong cycling culture in the cities, towns, villages and rural areas of Ireland (57). This policy is working to ensure the structures, resources and supports are in place to deliver on this vision. These policies and the actions by Government demonstrate the importance of this issue and demonstrate how these are needed to impact on the public's health. The Department of Environment Heritage and Local Government must direct their efforts towards providing supportive and conducive physical activity environments such as safe footpaths, playgrounds and skate parks. Other agencies, for example the National Heart Alliance an independent non-governmental organisation, who recently launched a position paper entitled 'Building Young Hearts – young people, physical activity and the physical environment' all have a role to play in facilitating active lifestyles among children and youth (58).

In summary, it is of utmost importance that physical activity and sport receive multi-agency policy support from all relevant sectors. The benefits of enabling a physically active lifestyle for children are undeniable. In 2005, a study funded by the National Children's Office, asked primary and post-primary children to photograph their perceptions of what contributes to their wellbeing; sport and exercise activities were ranked 3rd after friends (1st) and family (2nd) (59). This highlights the level of importance children attach to physical activity and sport (59). Supportive policy in the area of physical activity, physical education and sport can improve children's health, wellbeing and quality of life. However, policy needs to address the issues that have been highlighted in this chapter. This policy development should be guided by a global idea of increasing the amount of time spent in sport or activity by all children and youth. Appropriate intervention design should be underpinned by a local strategic targeting approach that aims to identify key at risk groups (i.e. the in-actives) and understand the experiences, orientations and preferences of these individuals.

This section has emphasised the importance of policy in all avenues of activity and sport for children including physical education, extra-curricular sport, extra-school sport and general physical activity. Results from the current study will allow further exploration of these areas in subsequent chapters and uncover future areas for policy focus in the area of children and youth sport.

CHAPTER 3: METHODOLOGY



The CSPPA study used a cross-sectional research design. It provides information from 10-18 year old children and youth on their physical activity levels, physical education, extra-curricular sport participation, and extra-school club participation. Data were also collected from school administrators to allow further investigation of perceptions and challenges. This chapter outlines sampling and recruitment of participants, the measures utilised and the data collection and analysis methods.

Sampling and recruitment

School sampling

The sampling frame included all primary and post-primary schools in the Republic of Ireland. Special schools, junior-only primary schools and colleges of further education were removed from the database as they were not within the age cohort, or target population of this study.

Schools were stratified by:

- **Gender:** (male, female or mixed)
- **Socio-Economic Status:** (Designated disadvantage versus non-designated)
- **Area of Residence:** (Categorised by population density: Urban = Dublin city or county, and the cities of Cork, Waterford, Galway, Limerick. Rural = All other areas of the country)
- **Type:** (Post-primary: secondary, community, comprehensive or vocational)
- **School classification** (Post-primary only: Free education or fee paying)

A systematic, one-stage cluster method was used to sample schools and obtain a nationally representative sample. Over-sampling was applied to allow for refusal to participate. A recruitment letter was sent to all sampled schools (n=324). Researchers followed up with a phone call to school principals within 7 days. A total of 123 schools agreed to take part (N=53 primary, N=70 post-primary).

Recruitment of principals

Once a school was recruited, the principals (or their nominee) consent was sought to complete a short questionnaire. One hundred and three (47 primary and 56 post-primary administrators) school administrators completed the questionnaire, representing a response rate of 80%. The majority of respondents (94%) were principals, the remainder were vice principals, or physical education teachers.

Primary school sample

Primary school children made up 24% of the sample. In primary schools (N=53), 1275 pupils participated in CSPPA. Half of the sample (48%) was in 5th class; the remainder were in 6th class. The average age was 11.4 years (± 0.7 : range =10-13 years), and 55% were boys, 45% were girls. The majority were in social class (SC) 1-2 (40%), 34% were in SC 3-4, 12% were in SC 5-6, with 14% defined as other (SC 7-8, see glossary of terms for clarity of social class categories). Six percent of children (n=80, boys=8%, girls=5%) reported that they had a physical or learning disability, or illness that affected their participation in physical activity.

Post-primary school sample

In post-primary schools (N=70), 4122 pupils from 1st to 6th year participated in CSPPA. The average age was 14.5 years (± 1.7 : range =12-18 years), and 48% were male. Forty four per cent of participants were in SC 1-2, 38% in SC 3-4, 9% in SC 5-6, and 9% in SC 7-8. Seven percent (n=269, 7% of males and 6% of females) reported that they had a physical or learning disability that affected their ability to participate in physical activity.

Ethics

The study protocol was approved by the Research Ethics Committee at Dublin City University, University of Limerick and University College Cork.

Measures

Principals' questionnaire

School principals in participating schools completed a questionnaire to determine i) their perceptions of sport and physical education, ii) the challenges they face in providing physical education, and iii) their perceived relation between school ethos and school sport or physical activity. Separate questionnaires were used for primary and post-primary schools. The questionnaires were originally used by the Economic and Social Research Institute for the 2004 study (1) and minor changes were made.

Pupils' questionnaire

The CSPPA primary (5th and 6th class) and post-primary (1st-6th year) questionnaires were multi-section, self-report instruments; developmentally appropriate for the population being surveyed. For comparative purposes the questionnaire was based on the Economic and Social Research Institute (ESRI) study (1), the Take PART study (49) and other published instruments. Completion time was approximately 45 minutes.

The collection of the questionnaire data in primary and post-primary schools was completed in groups ranging from 3 to 86 participants in each year or class group. The ratio of researchers to pupils was approximately 1 to 20 for questionnaire completion. The purpose of the study was briefly outlined, instructions were provided on how to complete the questionnaire and applicable definitions were explained. Participants were informed that their responses would be treated in strictest confidence and that their names would not be associated with the data. They were encouraged to reflect upon their answers, ask for assistance if needed and to be as honest as possible. Woods and colleagues used a similar methodology in the Take PART study (60).

Pupils physical measures

In schools selected to partake in physical measures, the ratio of researchers to pupils was approximately 1 to 10. Following questionnaire completion, the participants' height, weight, waist circumference and blood pressure were measured. In addition participants that were determined as eligible, via completion of a Physical Activity Readiness Questionnaire (PAR-Q), completed a continuous incremental shuttle run test (the 20 metre shuttle run test, or bleep test) to estimate their aerobic fitness. The full protocols adhered to for the measurement of physical health can be obtained from the first author.

Objective physical activity (motion sensors)

A sub sample of participants were asked to wear an activity monitor for 7 days to allow for objective assessment of habitual physical activity and validation of self report measures. A combination of inactive and active participants were selected by the physical education teacher for this additional element of the research. Actigraph accelerometers and pedometers were used. Actigraph accelerometers are small motion sensors that record changes in acceleration and convert them to physical activity 'counts', allowing the researcher to quantify the duration, frequency and intensity of activity performed by the wearer (61). Pedometers are small devices which record acceleration and deceleration of movement in a single plane. Both devices provided information on physical activity in the form of step count data.

Data analysis

Data analysis was undertaken using the Statistical Package for Social Sciences (SPSS 15.0). Descriptive statistics were calculated via means, standard deviations, minimums, maximums and percentages where appropriate. Chi square, independent t tests, Mann-Whitney, one-way ANOVAS with Games Howell post hoc tests and regression analyses were used to examine differences between key elements of the study, such as physical activity level and gender.

The distribution of variables of interest was examined according to household social economic class and area of residence. Household social class was determined by parental occupation and broken into four categories, professional/managerial (SC 1-2), unclassified non-manual and skilled manual (SC 3-4), semi- and unskilled manual (SC 5-6), and unemployed or unknown (SC 7-8). For the post-primary sample, area of residence was measured by each individual selection of one of four possible population density categories to reflect where they lived. The categories were i) a big city >70,000 inhabitants, ii) suburbs, large town or outskirts of city <70,000, iii) town (< 20,000 inhabitants) and iv) village / rural area < 3,000 inhabitants.

CHAPTER 4: PHYSICAL ACTIVITY



The Department of Health and Children's (DHC) 2009 physical activity guidelines state that children and youth should participate in moderate to vigorous physical activity for at least 60 minutes everyday (≥ 60 mins MVPA daily). This activity should be developmentally appropriate for the age of the child, it should involve a variety of activities and it should be enjoyable (3). These guidelines also exist in the US, Australia and all member states of the European Union. Participation in this amount of regular health enhancing physical activity has many benefits for children and youth. These are discussed in chapter 1 (4-14). Despite these benefits many national and international population studies have found that a high proportion of children and youth do not meet the established recommendations. Males are more active than females, and participation in MVPA declines with age - as older children are less likely to meet the 60 minutes of MVPA daily, than younger children (7, 8, 62, 63).

The purpose of this chapter is to present the physical activity data collected from self-report and motion sensors in order to i) determine the proportion of children and youth currently meeting the physical activity recommendations ii) compare current physical activity prevalence to that collected in 2004 (1) and iii) to evaluate factors that may influence adherence to the recommendations such as gender, age and social class. Some caution must be noted in making a direct comparison between 2004 (1) and 2009 data as although both were large population studies, a different sample of schools and pupils participated, the age groups were different as the current study included first year students and the time of year for data collection moved from October-November (2004) to March-May (2009). Physical health data collected on a sub-sample of the population will also be presented; the purpose of this was to investigate the relation between physical activity and health.

Key physical activity findings

- 19% of primary and 12% of post-primary school children met the minimum physical activity recommendations – at least 60 minutes of moderate to vigorous physical activity (MVPA) daily. These proportions have not improved since 2004 (1).
- Girls were less likely than boys to meet the physical activity recommendations.
- The likelihood of meeting the physical activity recommendations decreased with increasing age.
- Socio-economic status did not influence the proportion of children meeting the physical activity guidelines.
- One in four children had a poor aerobic fitness level, were overweight or obese and had an elevated blood pressure.
- Children who met the Department of Health and Children's physical activity recommendation of at least 60 minutes of MVPA daily had the best health profile of all children.
- The number of days per week that primary children reached the required 60 minutes daily of MVPA increased significantly if they took part in extra-school sport or physical activity, or if they actively commuted to school. Involvement in extra-curricular sport or physical activity was also a significant determinant of minutes of MVPA but only in girls.
- Among post-primary pupils' participation in extra-school or extra-curricular sport or physical activity were significant determinants of daily bouts of ≥ 60 minutes of MVPA. Active commuting to school and minutes of physical education were also a significant determinant of participation for females.

Comparison between 2004 and 2009

In 2009, 14% of children and youth met the DHC recommendations for physical activity. This was made up of 19% of the primary and 12% of the post-primary participants. These proportions have not changed since 2004(1) (Table 1). The gap between primary and post-primary pupils meeting the recommendation remains evident.

Table 1. Proportion of primary and post-primary pupils meeting physical activity recommendations in 2004 and 2009

Proportion meeting physical activity recommendations		
	2004	2009
Primary Participants (%)	20	19
Post-primary Participants (%)	12	12

Prevalence of physical activity

The current physical activity recommendations of ≥ 60 minutes of MVPA daily are not beyond the reach of Irish children. Ninety eight percent of primary, and 93% of post-primary children achieved this amount of physical activity once a week. Eighty percent of primary, and 65% post-primary achieved it three days per week, and 39% primary and 25% post-primary engaged in MVPA for 60 minutes on 5 days per week (Figure 1).

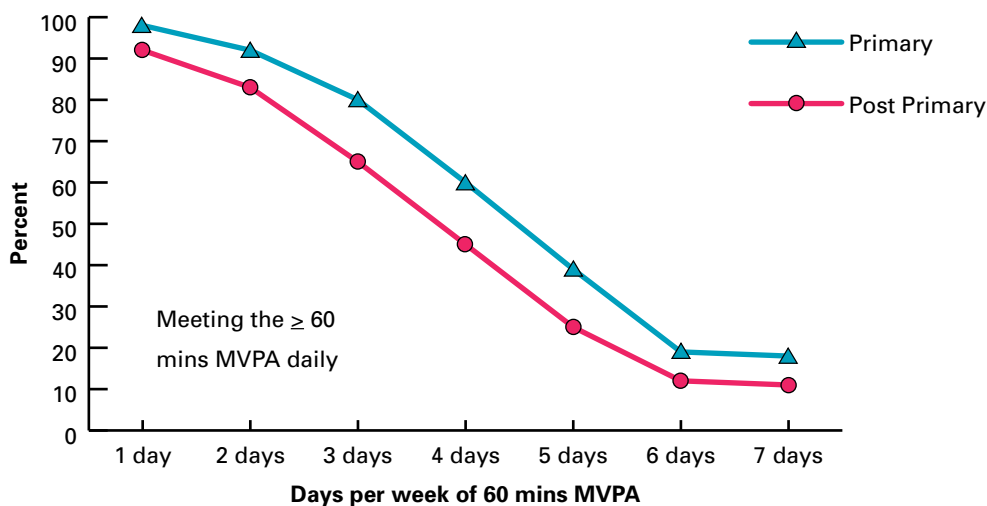


Figure 1. Proportion of children who undertake ≥ 60 minutes of MVPA per day on 1-7 days per week

Gender

Girls were less likely than boys to meet the physical activity recommendations (10% v. 18%; $p < 0.001$). This difference was evident in both the primary (13% vs. 27%) and post-primary (9% vs. 15%) schools. Figure 2 shows the proportion of children by gender achieving ≥ 60 minutes of MVPA daily on 1-7 days per week. Among primary school children no gender difference existed up to three days of the week; however from 4 days onwards a higher proportion of boys, than girls, met the threshold. For post-primary children, the percentage of females achieving the threshold on 1-7 days is consistently lower than males.

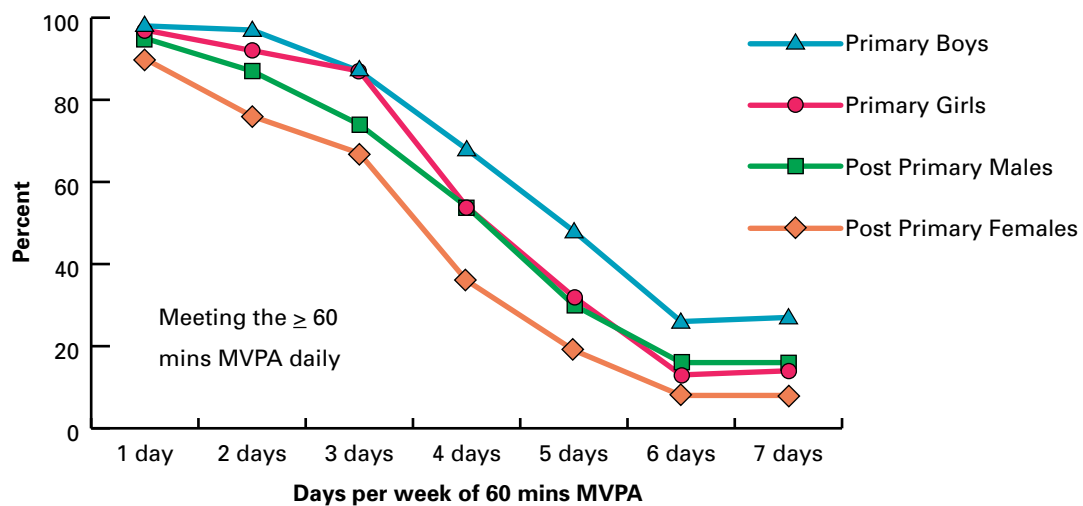


Figure 2. Proportion of participants by gender who undertake ≥ 60 minutes of MVPA per day on 1-7 days per week.

Note: MVPA = Moderate to Vigorous Physical Activity. Guideline ≥ 60 minutes daily of MVPA.



Age

The likelihood of meeting the physical activity recommendations decreased with age in both boys and girls (Table 2; $p < 0.001$). Younger children were more likely to meet the DHC physical activity recommendations than older children. Among males, the proportion meeting the guidelines dropped from 27% at ages 10-12 to 7% by ages 16-18, this represents a 75% decrease with increasing age. For females, the decrease was 46%, overall a 68% decrease was recorded with increasing age.

Table 2. Proportion of primary and post-primary school boys and girls between the ages of 10-18 years who meet the current physical activity recommendations

	Males Meeting physical activity recommendations	Females Meeting physical activity recommendations	All Meeting the physical activity recommendations
10-12 years (%)*	27	13	19
12- 13 years (%)	24	13	18
14-15 years (%)	16	8	12
16-18 years (%)	7	6	6

Note. *Primary school children

Table 3 shows the mean (\pm SD) number of days the participants engaged in bouts of MVPA for at least 60 minutes according to age category and gender. Participants were active on average 4.0 (\pm 1.8) days per week (girls 3.6 \pm 1.7; boys 4.4 \pm 1.7). Different durations of activity were found across the age groups and for boys and girls. Independent of gender, the amount of MVPA decreased significantly with increasing age, 10-12 year old children were the most active.

Table 3. Number of days per week that boys and girls between the ages of 10-18 years accumulate \geq 60 min of MVPA.

	Age			
	10-12 years*	12-13 years	14-15 years	16-18 years
Male	5.02 (1.5)	4.94 (1.6)	4.45 (1.7)	3.85 (1.5)
Female	4.37 (1.5)	4.15 (1.7)	3.57 (1.7)	3.1 (1.7)

Note. Values are means (\pm SD); *Primary school children

Socio-economic status

No significant differences were found in the proportion of children, across all social class categories, who reached the recommended minimum amount of physical activity. Table 4 shows the average number of days the participants engaged in bouts of MVPA for at least 60 minutes according to gender and social class. Different durations of activity were found across the social class groups for boys and girls. The amount of MVPA was lower for girls, than boys, in all social class categories. Males in lower social classes achieved marginally fewer days of adequate MVPA duration than those in higher social classes; for females the pattern was mixed (Table 4).

Table 4. Number of days per week that boys and girls within the different social class categories accumulate ≥ 60 min of MVPA

Social Class Categories (SC)				
	SC 1-2	SC 3-4	SC 5-6	SC 7-8
Male	4.56 (1.6)	4.50 (1.6)	4.45 (1.6)	4.2 (1.6)
Female	3.89 (1.6)	3.72 (1.8)	3.85 (1.8)	3.6 (1.9)

Note. Values are means (\pm SD)

Disability

Children who reported having a disability or illness that affected their ability to participate in physical activity (N=349) had a similar profile in terms of physical activity participation to those without a disability. Fifteen percent of children with a disability (17% of boys; 13% of girls) met the DOHC recommendations for physical activity. Table 5 shows the mean (\pm SD) number of days the participants engaged in bouts of MVPA for at least 60 minutes according to age category and gender. Similar to the general population, boys were more active than girls, and the likelihood of meeting the physical activity recommendation decreased with increasing age.

Table 5. Number of days per week that boys and girls between the ages of 10-18 years with a disability accumulated ≥ 60 minutes of MVPA.

Age				
	10-12 years*	12-13 years	14-15 years	16-18 years
Male	4.93 (1.6)	4.44 (1.8)	4.3 (1.7)	3.74 (2.0)
Female	4.13 (1.6)	4.04 (1.8)	3.9 (1.7)	3.36 (1.7)

Note. Values are means (\pm SD); *Primary school children

Validation of self-report

In order to validate the CSPPA physical activity data, a sub-sample of children (N=293; 70% female, average age 12.5 years \pm 2.1) wore motion sensors (either an accelerometer or a pedometer) and simultaneously completed the self-report physical activity measure. The average step count per day was correlated against the self report of minutes of physical activity per day to establish comparability of the data. There was a significant correlation between the subjective (self-report) and objective (motion sensor) measures of physical activity ($r=0.37$ $p<0.001$), supporting the validity of the CSPPA data. According to motion sensor analysis, 19% percent of the participants met the MVPA recommendation; this was similar to the proportion found in the self report results (14%). Males were more likely to overestimate meeting the recommendations in their self-report data (22% met the criteria via motion sensor data, 27% via self report). Females were more likely to underestimate meeting the criteria (17% met the criteria as measured by motion sensors, 13% indicated they had met the criteria via self report).



Health outcomes and physical activity

Sample

Physical health measures were collected from participants in 25% of schools. Over one thousand (N=1215) participants, 51% male, with an average age of 13.4 ± 2.1 years (range 10-18 years) completed all physical health measures. Thirty three percent of participants were from primary schools, 67% from post-primary. Thirty nine percent were from urban areas, 61% from rural areas. Twenty one percent were from boys' schools, 26% from girls' schools and 53% from mixed schools. Participants were excluded if they had an illness or disability that affected their ability to participate in physical activity (n=101, 53% had asthma, 14% had learning disabilities, 3% had heart problems, 2% had back problems, 3% had diabetes, 10% had other conditions e.g. cystic fibrosis and 18% did not specify their disability). A similar proportion of males and females reported having a disability (9.1 vs. 7.5%) and individuals with a disability had higher body mass index (21.6 vs. 20.5 kg.m², $p < 0.005$) and higher waist circumference (71.2 vs. 68.8 cm, $p < 0.05$) than those without a disability.

Criteria for health profile

Aerobic fitness (estimated using a 20 metre shuttle run test), systolic and diastolic blood pressure (BP, mmHg), waist circumference (cm) and body mass index (kg/m²) were assessed to measure physical health. Each variable was coded 0 for unhealthy and 1 for healthy, and summed to create a health profile where 0 was least healthy and 4 was most healthy. The criteria for determining healthy versus unhealthy for each physical health variable is shown in Table 6.

Table 6. Criteria for establishing health profile.

	Reference for criteria	Unhealthy = 0 and Health = 1
Body Mass Index (BMI)	Cole et al. (2000) (64)	Underweight = BMI \leq 5th percentile in each age and gender subgroup. Overweight and obese – based on age and gender specific criteria, e.g. for females, age 16, ≥ 29.56 is obese.
Waist	Taylor et al. (2000) (65)	Age and gender specific criteria, e.g. for males, age 15, ≥ 81.1 cm is unhealthy.
CV fitness	FitnessGRAM Standards Lobelo et al. (2009) (66)	Age and gender specific criteria. E.g. ≥ 42 mL.kg. ⁻¹ .min ⁻¹ is fit for boys aged 12 yrs.
Blood Pressure	National High BP Education Program Working Group on High BP in Children and Adolescents (67)	Both systolic and diastolic BP > 90th percentile for age, gender and percentile of height.

Health outcome

Three out of four participants had a healthy body mass index (77%), 18% were overweight, 4% were obese and 1% were underweight. Similarly, three quarters had a healthy BP (75%) and aerobic fitness (77%). The majority had a healthy waist circumference (85%).

The four health outcomes (fitness, body mass index, blood pressure and waist circumference) were summed to provide a health profile for each participant (range=0 to 4; 0 = least healthy to 4 = most healthy). The average health profile for primary pupils was 3.3 ± 0.8 , for post-primary pupils it was 2.9 ± 1.1 . There was a relation between participation in physical activity and the health profile of participants (Figure 3). This applied equally to males and females. The best health profile was found in children and youth who met the current Department of Health and Children physical activity recommendations (≥ 60 MVPA minutes daily) (3)

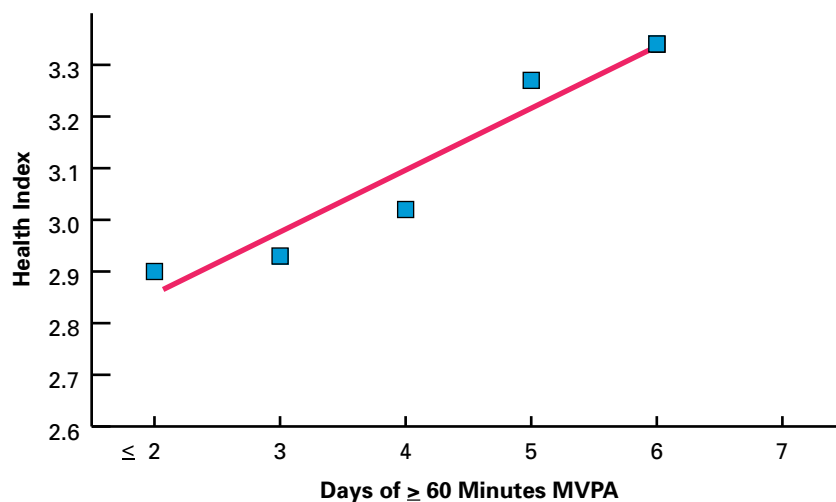


Figure 3. Relation between health profile and the number of days that participants accumulated ≥ 60 minutes of MVPA

Influence of physical education, active commuting, extra-curricular and extra school sport on daily minutes of MVPA.

In order to determine what physical activity behaviours predicted the number of days that participants achieved at least 60 minutes of MVPA, and to control for the potential influence of socio-demographic factors (age, gender, socio-economic status), a standard linear regression analysis was used. The physical activity behaviours included in the analysis were i) minutes of physical education per week, ii) participation in extra-curricular sport or physical activity, iii) participation in extra-school sport or physical activity and iv) active commuting to school. The models were run separately for males and females, and for primary and post-primary school children.

Active commuting was categorised as walking or cycling, inactive commuting was categorised as using the car, bus or train to get to school. Minutes of physical education was recorded as the total number of minutes a participant indicated that they received for physical education each week. Participation in extra-curricular or extra school sport/physical activity was categorised being a current participant (irrespective of times per week/month) or never participating in either type of physical activity.

Participation in extra-school sport or physical activity, and actively commuting to school has a significant influence on the number of days that primary pupils reached the goal of ≥ 60 minutes MVPA recommended by the DHC. Participation in extra-curricular sport was also an important influence, but only for girls. Attending schools located in rural areas positively influenced the amount of physical activity engaged in for both boys and girls. Age was a significant factor for boys only, increasing age led to increased physical activity. Physical education did not influence the overall amount of MVPA engaged in by primary school pupils. The regression tables are located in appendix 2.

Participation in extra-curricular and extra-school sport/physical activity has a significant influence on the number of days that post-primary pupils reach the 60 minutes of MVPA required to improve their health. Increasing age was a negative determinant to increased physical activity. Neither active commuting nor physical education influenced the number of days that post-primary males achieved ≥ 60 minutes of MVPA. In contrast, both active commuting and minutes of physical education are important for post-primary females to meet their 60 minute MVPA threshold. The regression tables are located in appendix 2.

Discussion

Adherence to physical activity recommendations

Only 14% (18% males and 10% females) of 10 to 18 year olds in Ireland are currently meeting the DHC recommendations of a minimum of 60 minutes of moderate to vigorous physical activity (MVPA) daily. This means that 86% of children and youth are insufficiently active to benefit their current and future health.

Differences in methodological approaches can sometimes make it difficult to directly compare results between different studies. This point is illustrated by the recently published 'The Health Behaviour in School-aged Children (HBSC) study 'Inequalities in young people's health' (68). This study was undertaken by the World Health Organisation, and involved 11, 13 and 15 year old youth from 41 countries and regions. Even though the same methodology was used across all areas, there were large cross-national variations in reported levels of daily MVPA. These ranged from 15% (Switzerland) to 46% (Slovakia) for 11 year olds, 12% (France) to 42% (Slovakia) for 13 year olds, and 8% (Israel) to 37% (Slovakia) (68) for 15 year olds.

The CSPPA findings are comparable to the 2004 ESRI study (1), the Take PART study (49) data from Northern Ireland (69), and the average proportion of children achieving ≥ 60 mins MVPA daily across all 41 countries/regions involved in the HBSC (21%) (50). However, they are lower than the 2008 HBSC data for Ireland which found that 32% (39% of males; 25% of females) met the DHC physical activity recommendations (50). Differences between CSPPA and HBSC could be due to age differences in both populations as the CSPPA data includes information on 16, 17 and 18 year olds, who we know are more inactive than younger 11-15 year old age group of HBSC.

Regular participation in MVPA in children and youth is essential to help develop their current and future health. The present study found that, on average, participants engaged in bouts of MVPA for at least 60 minutes about 4.0 days per week. This figure is higher than the thirty two country average of 3.82 days per week recorded by the HBSC study in 2009; but lower than the average for Ireland which is 4.4 days per week (63). This may be due to the age difference of both populations as the CSPPA data included children of 10-18 years of age, a much broader range than the HBSC's 11-15 year olds. However, results from all of the studies indicated that very few of the children or youth are currently meeting the 7 days per week recommended by the DHC.



There is growing concern that the 60 minute threshold may be insufficient to i) enhance bone health, ii) prevent the increasing levels of obesity, iii) provide adequate cardiovascular protection (70, 71). This has prompted the Department of Health in Canada to recommend a minimum of 90 minutes of daily MVPA for children and youth. The 2008 Canadian Physical Activity Levels Among Youth study (CANPLAY) found that only 13% of children met the recommendation of 90 minutes of MVPA daily, and they aim to raise this level of participation significantly over the next decade (72). This has prompted the Active Healthy Kids Canada initiative, a report card providing a comprehensive assessment of the current state of physical activity among Canadian children and youth (73).

Age related declines in daily levels of MVPA were similar to the HBSC data (63). The HBSC found that the number of days per week that youth accumulated the recommended ≥ 60 minutes of MVPA dropped from 3.8 to 3.6 to 3.2 for 11, 13 and 15 year old girls, and from 4.3 to 4.2 to 3.9 for 11, 13 and 15 year old boys respectively. Similar declines were found in CSPPA, with more dramatic effect due to the wider age group recorded (Table 3).

In CSPPA, the gender gap was evident as girls were less active than boys. This was true across all age categories, and this finding is supported by international research (HBSC, CANPLAY, and the Youth Risk Behavior Surveillance System 1991-2007). Neither socio economic status nor presence of a disability influenced how many children met the DHC guidelines for physical activity.

All of these studies used the same self-report measure of physical activity. However, comparisons should be interpreted cautiously due to varied sampling methods and procedures for assessment of physical activity. Additionally, the difference in the average days of physical activity reported in the HBSC and CSPPA studies may be partly explained by different age ranges of both populations. The addition of objective motion sensors to validate physical activity data strengthens the findings of the CSPPA study.

Relationship between physical activity and health

Twisk and colleagues (5; p. 619) proposed that the relationship between physical activity in youth and adult health is three fold. They suggested that:

- (i) Physical activity during youth is related to youth health which is a predictor for adult health
- (ii) Physical activity during youth is related to physical activity in adulthood which is in turn related to adult health
- (iii) Physical activity during youth is directly related to adult health.

In the recent SLAN surveys, the percentage individuals who were overweight in Ireland has risen from 31% to 33% to 36% in 1998, 2002 and 2007 respectively. Obesity levels have also increased since 1998 but have remained steady since 2002 (11%, 15% and 14%) (74). Ireland, along with Israel and Portugal, has the highest prevalence of overweight children in comparison to a number of other European and developed countries (75). One child out of every five in Ireland is either overweight or obese (49). Being overweight as a child can have a significant impact on the development of future chronic disease (9).

The CSPPA data shows that children who are active every day for at least 60 minutes have higher levels of aerobic fitness, are less likely to be overweight or obese and have a healthier blood pressure profile than those who are less active. Establishing active lifestyles from a young age is an important goal. Ensuring that children develop physical activity habits, learn basic motor skills, and enjoy positive early experiences of physical activity is essential (76-79). This can be achieved through physical education, extra-curricular sport, extra-school clubs and general physical activity. The next chapters in this report will focus on the 'three pillars' (1) of physical education, extra-curricular sport and extra-school clubs as methods of helping children to achieve this goal.



Types of physical activity

Providing children and youth with the opportunity to participate in all forms of physical activity is important. This study found that the patterns of physical activity are related to gender, and whether the participant attended primary or post-primary school. Participation in extra-school sport is a determinant of MVPA for all primary and post-primary pupils. Participation in extra-curricular sport is a determinant of MVPA for girls, but not boys at primary level, it is important for all pupils in post-primary schools. Active commuting is a determinant of MVPA for all pupils attending primary school, but only for girls at the post-primary level. Physical education minutes determine the amount of MVPA for girls only, and only at post-primary level. In summary, active commuting, extra-curricular, extra-school sport/physical activity and physical education are all important in helping Irish children and youth to accrue at least 60 minutes of MVPA daily.

Physical education focuses on learning skills, introducing a wide variety of sport and physical activities to children and developing qualities like co-operation, fair-play, competition and enjoyment of physical activity. Basically, it's about generating the right frame of mind and requisite skill set for children and youth to pursue active, healthy lives in their out of school time. Physical education, as it is currently delivered to primary pupils is not a major influence on the overall amount of MVPA that is accumulated. This is worrying, as there is far more potential for children to be introduced to sport and physical activity through their physical education curriculum, than through extra-curricular or extra-school sport. Although the purpose of physical education is concerned with learning skills and developing competence in a wide range of activities, this can be achieved while engaging in moderate to vigorous physical activity. The chapter on physical education will provide information on the duration, frequency and content of physical education in schools in Ireland.

At the post-primary level, physical education was a significant contributor to the minutes of MVPA that females engage in, but not males. This is significant and worrying especially for females in senior cycle. Significant, as the level of participation in physical activity is lower overall in senior in comparison to junior females or males; worrying in that just as physical education becomes most important it is most likely to be reduced or removed from the timetable. There is a need to examine physical education provision in the primary and post-primary school systems in Ireland, to determine what supports or barriers exist for schools to provide quality physical education. Additionally, the content of the current physical education curriculum in comparison to what is taught to children needs to be examined, and finally the link between physical education and extra-curricular or extra-school based sport and physical activity needs to be more fully understood. These topics will be addressed in the chapter on physical education.

Recommendations and policy implications

The goal of increasing the physical activity participation levels of Irish children and youth is written into the policy documents of the Department of Tourism, Culture and Sport (42), the Department of Education (80), the Department of Health and Children (52, 53), the Department of Transport (56) and various other agencies. The achievement of this goal is not optional, as inactivity in youth has serious health consequences for the current and future health of a child. We strongly recommend:

Activity Type	Current Status (2009)	Activity Goal	Timeline	Responsibility
General Physical Activity	19% of primary children meet DHC health goal of \geq 60min MVPA daily.	Increase to minimum of 30%.	2020	DOH, DES, DTSC, DT, DEHLG.
	12% of post-primary children meet the DHC health goal of \geq 60 mins of MVPA daily	Increase to minimum of 20%	2020	

Note. DTCS – Department of Tourism, Culture and Sport (formally Department of Art, Sport and Tourism). DHC – Department of Health and Children. DT – Department of Transport, DES – Department of Education and Skills, DEHLG – Department of Environment, Heritage and Local Government.

- A halt in the decline in physical activity; prevent active children becoming inactive. Target the key at-risk sub-groups, older youth and females.
- Provision of a broad and balanced range of activity choices for children. These choices should include individual and team activities, quality physical education, extra-curricular and extra-school sport and physical activity and walking or cycling to school.
- Monitor changes in physical activity levels through robust national surveillance systems. This data will then allow accurate evaluation of progress.
- Set achievable goals that are aligned to relevant policies, for example, the National Physical Activity Guidelines.

The CSPPA study highlights the fact that there has been little progress made to date in terms of increasing physical activity levels. This is an issue that calls for immediate policy attention through promotion and development of all avenues for physical activity. Achievement of increased minutes of physical activity for youth will require an alliance, a shared vision supported by common acceptable goals, by numerous government departments and their relevant agencies.

CHAPTER 5: PHYSICAL EDUCATION



Photo provided by Sportfile

Physical Education provides children with learning opportunities through the medium of movement and contributes to their overall development by helping them to lead full, active and healthy lives. “It recognises the physical, mental, emotional, and social dimensions of human movement, and emphasises the contribution of physical activity to the promotion of individual and group wellbeing” (31, p2). Physical education is a springboard for involvement in sport and physical activities throughout life. It is a source of communication with others and, in addition, can involve an appreciation of the natural environment as well as contributing to moral education and development (19, p.30).

The physically educated person is physically literate. They have acquired culturally normative skills enabling engagement in a variety of physical activities, which can help them to maintain their health and well-being throughout their lives; they participate regularly in physical activity because they find it enjoyable; and they understand and value physical activity and its contribution to a healthy lifestyle (19, p30). The physical education curricula (both primary and post-primary) consist of a number of areas of study called strands, namely athletics, outdoor and adventure activities, aquatics, dance, gymnastics, games and health related fitness (33). Each strand has particular characteristics and contributes to the attainment of the overall aim of physical education. Schools are encouraged to adopt a flexible approach in planning for their involvement in physical education, and to offer a range of individual and team based choices to pupils (33).

The Department of Education and Skills (DES) recommends that every post-primary pupil should have 2 hours of physical education per week, and every primary pupil 1 hour per week of physical education. Average weekly time allocation for physical education across the European Union is 109 minutes (range of 30-240 minutes) with clusters around 60 and 90 minutes in primary schools, and 101 minutes (range 45-240 minutes) with a cluster around 90 minutes in post-primary schools (19, p6). The most physical

education time per week is allocated to 9-14 year olds, with time allocation decreasing with increasing age, especially in final years of schooling, when it either becomes an optional subject or it disappears from the timetable (19)

There is a general belief that physical education in schools is dominated by team games and that too little time is spent in more individual-based physical activities (81). The result is that too much emphasis is placed on performance and winning, rather than on learning and individual improvement. Ross and colleagues (1985) defined individual activities as those that may be 'readily carried into adulthood because they generally need only one or two people' (20, p46). They noted that although there was an upward trend across age groups, only a small amount of the physical education curriculum was devoted to participation in lifetime physical activities. The reasons for this may include large class sizes, inadequate facilities and a lack of teacher confidence in teaching all the areas in the curriculum resulting in a neglect of other strands of the physical education curriculum.

The purpose of this chapter is to examine the frequency, time and type of physical education classes offered to Irish children and youth. The content of physical education classes and facilities available to schools to teach these content areas will also be examined. Where possible, the 2009 data will be compared to that published in the 2004 report (1). However, in interpreting this data caution is needed as the sample of schools and pupils are different, and the time of year for data collection has moved from October/November (2004) to March/May (2009). Nonetheless, both studies involve large populations and assessed the previous year's physical education content and therefore it is acceptable to compare data.



Key physical education findings

- 35% of primary pupils and 10% of post-primary pupils were timetabled with the Department of Education and Skills recommended minimum minutes of physical education per week.
- On average, primary pupils receive 46 minutes of physical education weekly; post-primary pupils receive 77 minutes. Most receive double class periods of physical education.
- Since 2004, the time scheduled for physical education has increased by an average of 5 minutes per week in post-primary schools.
- Girls receive less physical education time than boys.
- Senior pupils receive less physical education time than junior pupils.
- Team games, particularly invasion games, are dominant in primary physical education. There is a mix of team and individual activities in post-primary.
- Almost 1 in every 2 principals (45%) felt that their physical education and sport facilities were 'not at all adequate'.
- 81% of primary principals and 29% of post-primary principals reported not having access to an indoor multi-purpose hall on-site for the purpose of teaching physical education.
- More than half of school principals (58%) indicated that a major investment in sports facilities was needed, and a further 28% said a minor investment was needed to improve their sports facilities.

Primary school physical education results

Changes in frequency of physical education since 2004

The frequency of physical education classes offered to primary children has increased since 2004 (Figure 4). In 2004, 31% of principals reported offering physical education 2-3 days a week (1). This has increased to 53% in 2009. Consequently, the proportion participating in physical education only once a week has declined from 62% in 2004 to 42% in 2009.

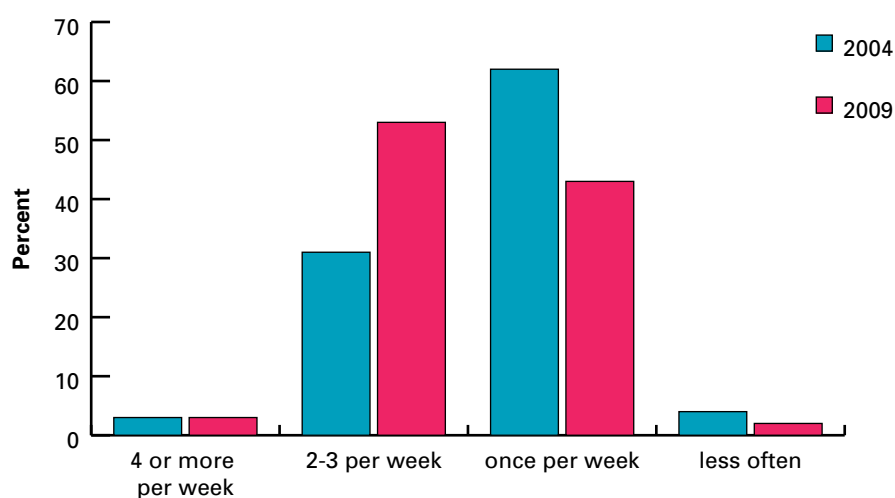


Figure 4. Physical education frequency in primary schools in 2004 and 2009.

Time spent in physical education at primary level

The average time spent in physical education per week was 46 minutes (Range 10-140 minutes). Children in sixth class received less minutes of physical education per week than those in fifth class (43 mins Vs 49 mins, $p < 0.01$). Boys and girls received equal minutes of physical education per week. The number of minutes of physical education timetabled per week was not influenced by individual socio-economic status, by school gender (boys only, girls only or mixed gender), by school location (urban or rural) or by being designated as a disadvantaged school.

Content of physical education classes

Table 7 shows the range of activities in physical education since the beginning of the school year. Basketball was the most common activity (68%), followed by Gaelic football (64%) soccer (61%), rounders (55%) and swimming (50%). Soccer, Gaelic football and basketball were the three most common activities among boys. Among girls the three most common activities were basketball, Gaelic football and dance. Most of these activities are from the games strand of the primary school physical education curriculum. Participation in the other physical education strands is lower with 89% of children not reporting any exposure to the outdoor and adventure activities strand, 70% indicating no gymnastics, 57% no dance, 50% no aquatics and 42% no athletics during their physical education class in the past twelve months.

Between 2004 and 2009 there has been an increase in frequency of participation in physical education by primary school children in gymnastics (up 19%), athletics (up 12%), dance (up 12%) rugby (up 9%) tennis and rounders (both up 6%) (Table7). Conversely there has been a decrease in participation in physical education in hurling (down 14%), soccer (down 11%), hockey (down 9%), and aerobics/exercise classes (down 8%). The final column of Table 7 shows the difference in proportions of participation for all activities.



Table 7. Range of activities covered in primary physical education

Sport/Activity	Year								
	2009	2004		2009	2004		2009	2004	Difference 2009-2004
	Boys			Girls			All		All
Basketball (%)	65	67		71	71		68	69	-1
Gaelic football (%)	71	75		58	64		64	69	-5
Soccer (%)	77	82		49	61		61	72	-11
Rounders/Baseball (%)	56	51		55	49		55	49	6
Swimming (%)	54	50		47	57		50	53	-3
Athletics (%)	43	34		47	32		45	33	12
Dance (%)	27	24		56	39		43	31	12
Rugby (%)	44	30		26	20		34	25	9
Gymnastics (%)	23	9		35	13		30	11	19
Hockey (%)	20	35		27	31		24	33	-9
Hurling (%)	49	48		0	25		22	36	-14
Camogie (%)	0	2		37	30		20	16	4
Tennis (%)	15	11		22	14		19	13	6
Handball (%)	18	25		20	22		19	24	-5
Badminton (%)	12	7		13	5		13	6	7
Cross country running (%)	14	16		12	17		13	17	-4
Aerobics/exercise class (%)	10	18		12	20		11	19	-8
Adventure activities (%)	12	16		10	11		11	14	-3
Martial arts (%)	6	7		8	8		7	7	0
Squash (%)	4	3		6	2		5	3	2
Horse riding (%)	5	1		3	2		4	2	2
Weight training (%)	2	1		1	0		1	1	0
Any other sport (%)	26	16		26	17		26	17	9

Profile of those that do not do physical education in primary

Only 2% (N=28) of primary pupils did not receive timetabled physical education in school. Of these, 57% were male (n=16) and 43% were female (n=12). All twenty eight pupils were from two mixed gender schools, one large and one medium in size.

Only 10% of primary pupils who did not participate in physical education met the physical activity recommendations, this is lower than the average of 19% for the full sample. More than half of this cohort were active outside of physical education with 74% reporting participation in extra-curricular and 93% reporting participation in extra-school sport or physical activity at least once a week. The mean health profile was 3.4 (Range=0-4). Social support from family and friends was almost twice as strong as social support from teachers in encouraging this cohort to be active.

Swimming

Seven percent of primary school children reported that they could not swim (Table 8). The majority classified themselves as 'intermediate' swimmers. One in three participants who reported that they could swim selected the front crawl as their favourite stroke (34%). This was followed closely by the breast stroke (27%) and the back stroke (12%).

Table 8. Swimming level of primary school boys and girls

Swimming Level				
	Non swimmer	Beginner	Intermediate	Competitive
Male (%)	7	14	61	18
Female (%)	6	11	65	17
All (%)	7	12	63	18



Post-primary physical education results

Changes in physical education duration from 2004 to 2009

The average weekly minutes of physical education was 77 minutes when averaged across year one through year six (Range 0-160 minutes). For comparative analysis to the 2004 data, the 2009 data were averaged with first year pupils removed. When compared to the ESRI 2004 survey there was a 5 minute increase in the average weekly minutes of physical education. This increase in minutes of physical education was evident in males and females and across most school years (Table 9).

Fourth year students received significantly more minutes of physical education than all other year groups, and senior students (5th and 6th years) received less minutes of physical education in comparison to all other year groups ($F(5) = 148.6, p < 0.001$) (Figure 5). This data supports the 2004 findings, particularly the notion of the transition year bounce. Similar to the 2004 data, males received more minutes of physical education per week than females (81 minutes vs. 74 minutes, $p < 0.0010$), and this gender difference was evident across all school years.

Table 9. Average minutes of weekly physical education among post-primary students

	Gender					
	Male		Female		ALL	
	2004	2009	2004	2009	2004	2009
1st Year	-	85 (22)	-	83 (20)	-	84 (21)
2nd Year	75	79 (26)	65	75 (25)	70	77 (25)
3rd Year	77	85 (13)	62	76 (21)	70	80 (17)
4th Year	121	98 (19)	100	90 (18)	110	94 (19)
5th Year	56	71 (35)	49	57 (31)	52	64 (34)
6th Year	60	59 (35)	49	47 (35)	54	53 (35)
All	75	81 (28)	64	74 (27)	69	77 (28)

Note Values are means (\pm SD)

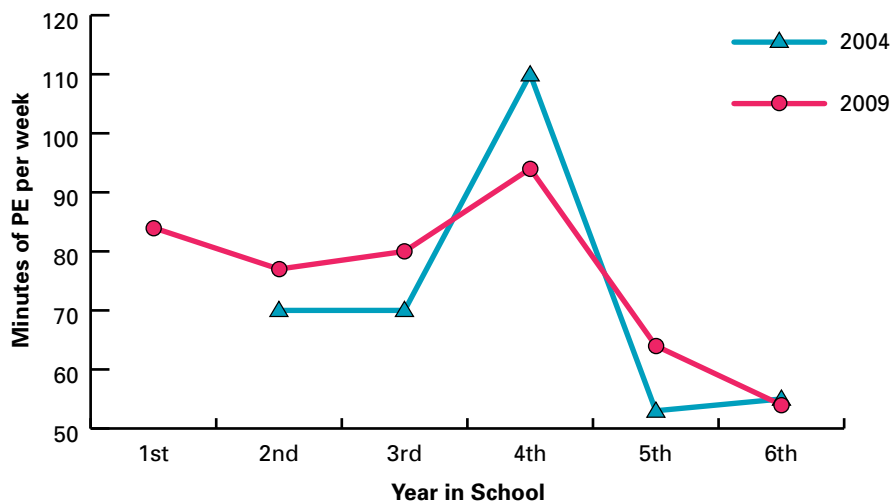


Figure 5. Minutes of physical education in post-primary schools by year group

Females attending mixed gender schools reported significantly more physical education minutes than those in single gender schools. School gender had no influence on physical education minutes amongst males. Participants' social class, the area of residence of where they lived or presence of a disability showed no significant influence on physical education minutes received per week.

Type of physical education classes

Physical education can be timetabled as a single, a double or a triple class period. A double period of physical education per week is the recommended minimum. This allows sufficient time for pupils to change into their physical education uniform and engage in the lesson. In this study the majority of pupils received a double period of physical education per week (Table 10). Females were twice as likely, as males, to receive single periods of physical education (34% vs. 18%). This data was supported by the Principal's responses.

Table 10. Timetabled physical education classes per week for post-primary pupils

Timetabled Class Periods Per Week				
	None	Single	Double	Triple
Males (%)	6	18	80	7
Females (%)	4	34	65	3
All (%)	5	27	72	5
Principals (%)	3	22	70	5

Note. Since some pupils had both single and double class periods of physical education on their timetable, numbers do not add up to 100%.

Table 11 shows that only 4th year pupils receive a triple physical education period, and this contributes to a transition year bounce. As pupils moved through the post-primary school cycle they were less likely to receive double periods and more likely to never be involved in physical education. Girls were more likely to be timetabled for single periods of physical education than boys, or to never have physical education. This was particularly evident in the senior years (5th and 6th year).

Table 11. Physical Education class periods for male and female pupils throughout the post-primary school cycle.

Year	Male				Female			
	None	Single	Double	Triple	None	Single	Double	Triple
1 (%)	0	19	96	0	0	14	94	0
2 (%)	4	20	85	0	1	44	60	0
3 (%)	0	11	100	0	0	28	81	0
4 (%)	0	11	42	52	0	13	58	30
5 (%)	14	30	72	0	11	59	38	0
6 (%)	24	4	72	0	31	61	8	0

Note. Some pupils had both single and double class periods of physical education on their timetable, hence the numbers do not add up to 100%.

Profile of those that do not do physical education in post-primary

Five percent (N=193) of post-primary pupils received no timetabled physical education in school. Of these, 55% were male (n=107) and 45% were female (n=86). They were mainly senior pupils (51% from 5th year and 34% from 6th year), 63% lived in a village/rural area, 28% in a town and 9% in suburbs. Pupils attending community schools were less likely to have timetabled physical education than those attending other schools (community 38%, secondary 28% and vocational schools 34%). Pupils attending mixed schools were less likely to have physical education than those attending single sex schools (6% of pupils attending mixed schools, 3% of girls' schools and 2% of boys' schools).

Only 7% of post-primary pupils who did not receive any timetabled physical education met the physical activity recommendations, this is lower than the average of 12% for the full sample. More than half of this cohort was active outside of physical education with 68% reporting participation in extra-curricular and 57% reporting participation in extra-school sport or physical activity at least once a week (these rates of participation are lower than those of the rest of the post primary sample where 70% participated in extra-curricular and 64% participated in extra-school sport). The mean health profile for this group was 2.5 (Range=0-4; this is lower than the 2.9 average for the full post-primary sample). Fear of injury was their greatest barrier to being active, followed by lack of skill. Social support from peers was almost twice as strong as social support from teachers in encouraging this cohort to be active.

Content of physical education classes

Table 12 shows the range of activities undertaken by pupils in post-primary physical education in the past twelve months. Basketball was the most common activity (56%), followed by soccer (54%), rounders (47%), badminton (46%) and athletics (43%). For males, soccer, basketball, badminton and athletics were the most common activities. For females, basketball, rounders, badminton and athletics were the most common activities. For comparative purposes, hurling and camogie, and athletics and cross-country running are reported separately. When combined their participation levels are 20% and 58% respectively. Similar to the primary school data, most of these activities are from the games strand of the physical education curriculum. Other strands however appear to be largely ignored, 85% of post-primary pupils reported no exposure to swimming, 76% no exposure to outdoor and adventure activities, 76% no exposure to dance, 72% no exposure to gymnastics and 42% no exposure to athletics during their physical education in the past twelve months.

Between 2004 and 2009 there has been an increase in frequency of participation by post-primary pupils in adventure activities (up 14%), athletics (up 11%), dance (up 10%) gymnastics and aerobics (both up 9%) and rounders (up 6%). Conversely there has been a decrease in participation in physical education in soccer (down 20%), hockey (down 17%), Gaelic Football (down 13%) and basketball (down 12%). The final column of Table 12 shows the difference in proportions of participation for all activities.

Table 12. Range of activities in post-primary physical education

Sport/Activity	Year								
	2009	2004		2009	2004		2009	2004	Difference 2009-2004
	Males			Females			All		All
Basketball (%)	47	60		63	77		56	68	-12
Soccer (%)	62	83		46	65		54	74	-20
Rounders/Baseball (%)	35	29		57	54		47	41	6
Badminton (%)	38	37		53	54		46	45	1
Athletics (%)	38	35		48	30		43	32	11
Gaelic football (%)	32	50		27	34		29	42	-13
Gymnastics (%)	21	13		34	26		28	19	9
Hockey (%)	20	35		34	53		27	44	-17
Aerobics/exercise class (%)	17	8		31	24		25	16	9
Dance (%)	12	4		35	24		24	14	10
Adventure activities (%)	22	10		26	9		24	10	14
Tennis (%)	17	11		29	27		23	19	4
Rugby (%)	26	30		20	21		23	25	-2
Handball (%)	24	18		21	19		22	18	4
Cross country running (%)	13	13		16	12		15	13	2
Swimming (%)	14	15		15	13		15	14	1
Hurling (%)	15	22		9	8		12	15	-3
Weight training (%)	14	10		7	4		11	7	-4
Camogie (%)	4	1		12	13		8	7	1
Martial arts (%)	5	6		8	4		6	5	1
Squash (%)	6	3		6	3		6	3	3
Horse riding (%)	3	2		5	3		4	3	1
Any other sport (%)	6	13		7	12		7	12	-5

Swimming

Almost one in ten post-primary children reported that they could not swim (Table 13). The majority of participants categorised themselves as intermediate swimmers. Just over a quarter of the participants who were able to swim selected the front crawl as their favourite stroke (27%). This was followed by the breast stroke (23%) and the back stroke (13%).

Table 13. Swimming level of post-primary pupils

	Swimming Level				
	Non swimmer	Beginner	Intermediate	Competitive	All
Male (%)	10	13	59	18	100
Female (%)	9	14	62	16	100
All (%)	9.5	13	60	17	100

The DES physical education guidelines

Thirty five percent of primary school pupils received the DES recommended 60 minutes of physical education per week (Figure 6). In comparison, only 10% of post-primary pupils were allocated the DES recommended 120 minutes of physical education per week (Figure 6). Fewer females (8%) than males (12%) received the recommended minimum minutes of physical education per week ($p < 0.001$).

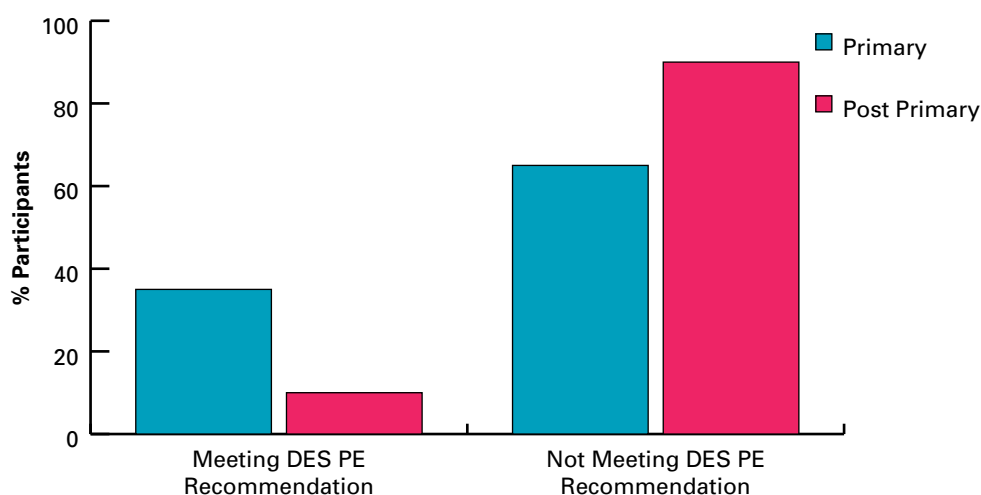


Figure 6. Proportion of primary and post-primary pupils meeting the DES recommended minutes of physical education per week

Post-primary principals were asked whether they thought the amount of sport or physical education undertaken during school hours by pupils was 'too little', 'about right' or 'too much', referring separately to junior cycle and senior cycle pupils. The majority of principals indicated that the amount of junior cycle physical education was about right (58%). In contrast, more respondents reported that there was too little senior cycle physical education (59%) (Figure 7). None of the principals reported that there was too much physical education at either junior or senior cycle.



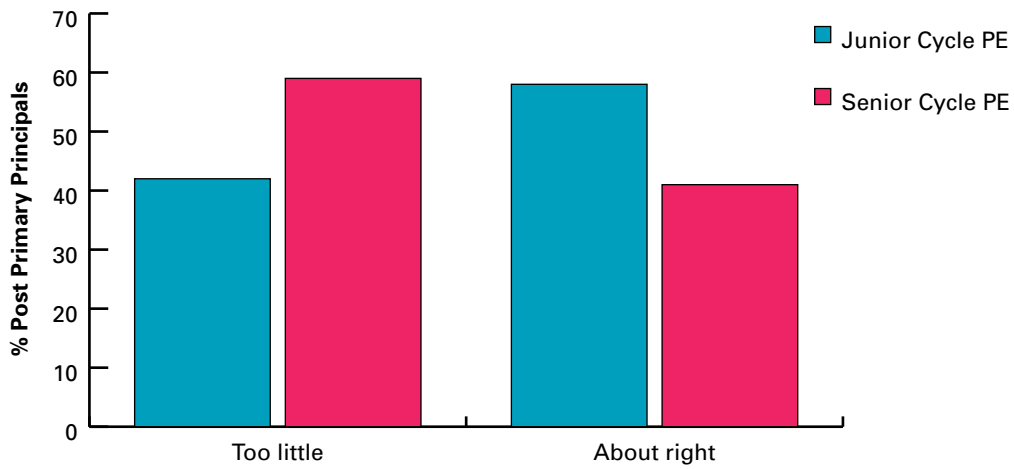


Figure 7. Post-primary school principals' perception of student time spent in physical education / sport

Post-primary principals who indicated that 'too little' time was allocated during school hours for physical education/sport, were subsequently asked to indicate the 'single most important reason' for their response (they were provided with four options and had to select one). Time pressure due to school work was the most common reason cited for the allocation of 'too little' physical education/sport during school hours at both senior and junior cycle (Figure8). Other common reasons, for the allocation of 'too little' physical education/sport during school hours were lack of facilities, lack of interest by the pupils and lack of teachers. The only 'Other' reason given by principals was that physical education was not offered on the school timetable. These results reflect the pressure of a crowded curriculum, especially as pupils move into senior cycle.

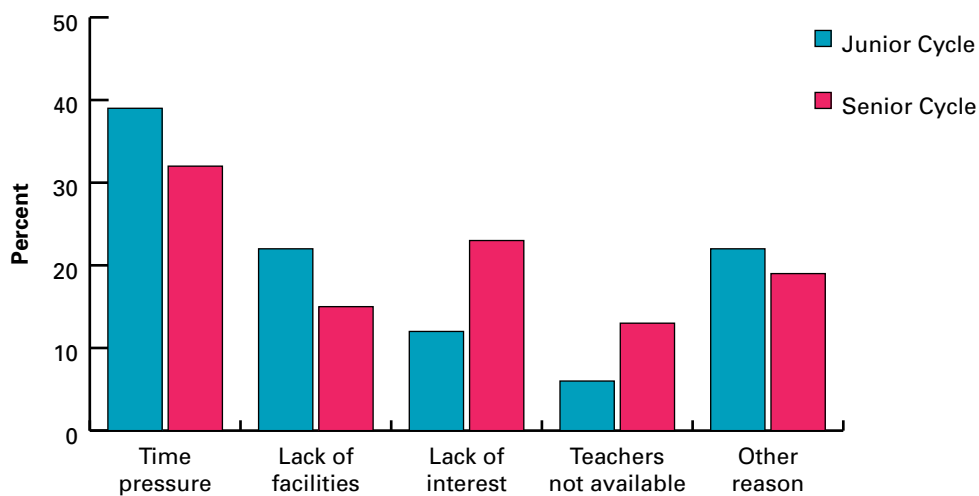


Figure 8. Reasons given by post-primary principals for allocating too little time during school hours for physical education/sport.

Facilities for physical education and sport in Irish schools

School principals reported on the provision of on and off-site facilities for different types of physical activity and sport (Figures 9 and 10). Basketball courts, multi-purpose indoor floor space, GAA pitches, soccer pitches and tennis courts were the most common on-site facilities in post-primary schools. Almost one third of post-primary principals reported not having a multi-purpose hall on-site or off-site. Gymnastics equipment was available in 75% and weight training equipment in 45% of post-primary schools. No details were provided on the quality or quantity of the equipment.

Basketball courts and GAA pitches were the most common on-site sport facility in primary schools. Eight out of every ten primary school principals reported not having access to an indoor multi-purpose hall on-site for the purpose of teaching physical education, and 51% reported no access to a multi-purpose indoor hall either on-site or off-site. Gymnastics equipment was available in 47% of primary schools, although no details were provided on the quality or quantity of this equipment.

Access to sport and physical activity facilities off-site provides additional resources to the teachers and pupils. The most widely available off site facilities for both primary and post-primary schools were GAA pitches and swimming pools. For the primary schools, access to rugby pitches, handball courts, swimming pools, hockey pitches and squash courts were almost, if not entirely, off site only. Similarly, for post-primary schools access to swimming pools, squash and handball courts were in most cases off site.

Perceptions of facilities

School principals were asked to evaluate their school's sports facilities. In the primary schools, 9% stated that their sports facilities were 'very adequate', 40% indicated that they were 'fairly adequate', whilst 49% felt facilities were 'not at all adequate' and 2% were unsure. Principals from designated disadvantaged schools were more likely to rate their facilities as 'not at all adequate' than those from non disadvantaged schools.

The majority of post-primary principals perceived their facilities to be either 'very adequate' (28%) or 'fairly adequate' (27%), although 41% indicated their facilities to be 'not at all adequate'. The proportion of post-primary principals who perceived their facilities to be 'very adequate' has increased 20% since 2004 (Figure 11). Fifty eight percent of principals indicated that a major investment in sports facilities was needed. A further 28% indicated that a minor investment was needed to improve their sports facilities.

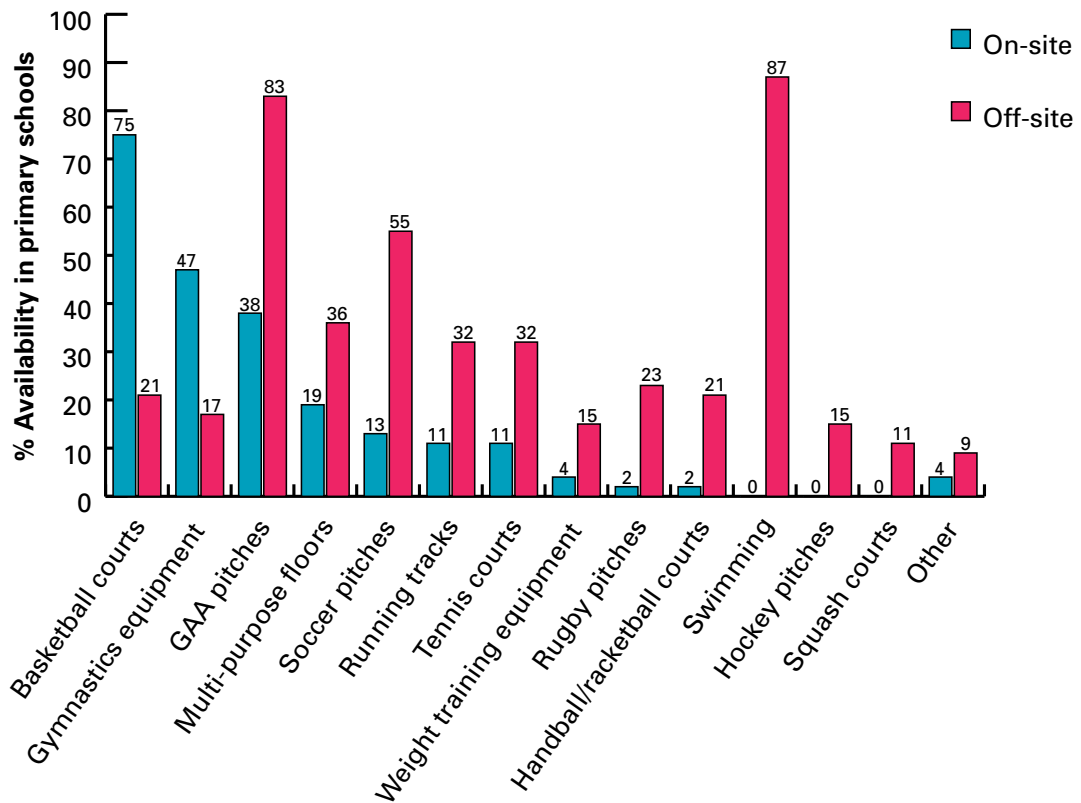


Figure 9. Facilities available to primary schools

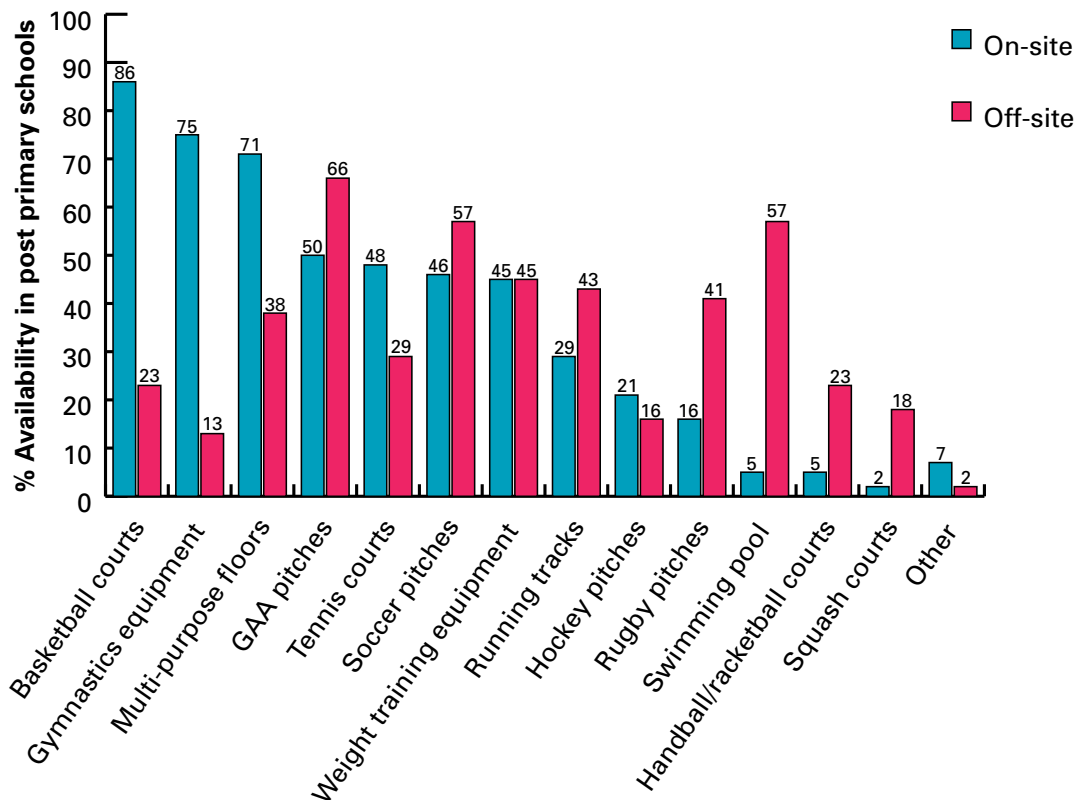


Figure 10. Facilities available to post-primary schools

Pupils with disabilities did not feel that school sports facilities were any less adequate than those without disabilities. A larger proportion of male than female pupils (19% vs. 11%; $p < 0.001$) perceived the sports facilities in their school to be 'not at all adequate'.

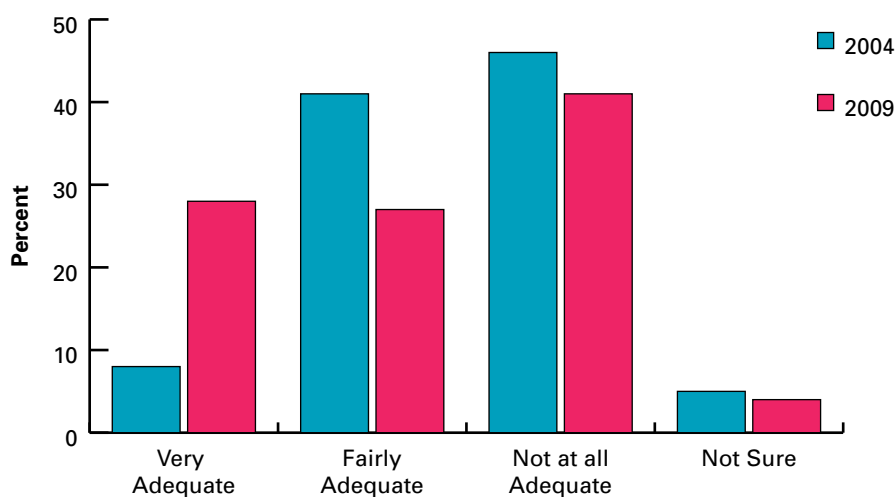


Figure 11. Post-primary principals' perception of school sport facilities




Discussion

The Department of Education and Skills (2003) recommend that primary children should get 60 minutes (33), and post-primary 120 minutes of physical education weekly (31). The rationale for primary children to be allocated only half of the post-primary minutes for physical education is unclear, and at odds with the European Union average of 109 minutes for primary schools (19). Currently, 35% of primary and 10% of post-primary pupils are allocated the recommended minutes of physical education weekly. This is consistent with findings from MacPhail and Halbert (2005) who reported that the shortage of time was a larger barrier to provision of quality physical education at the post-primary level than inadequate facilities, equipment, qualified teachers, or student interest (81, 82)

The average duration of weekly physical education allocated to post-primary pupils (years 2-6) has increased by 5 minutes since 2004. Although the overall increase is small, it is a step in the right direction. All year groups, with the exception of 4th year had increases in the average duration of physical education.

Boys received more minutes of physical education than girls in both primary and post-primary schools. Boys' only primary schools allocated more minutes of physical education weekly in comparison to their mixed gender counterparts. In contrast, female only post-primary schools allocated fewer minutes of physical education weekly in comparison to their mixed gender counterparts. With the exception of fourth year pupils, the time allocated to physical education decreased as pupils moved through the school cycle. This reduction in class time for physical education for both boys and girls reaffirms MacPhail and Halbert's (2005) report highlighting that while the number of subjects students undertake at senior cycle is lower, than at junior cycle, the high stakes nature of the Leaving Certificate has caused a reduction in curricular time as examinable subjects take precedence (82).

The majority of pupils in post-primary schools receive one double class (or 2 class periods back-to-back) as opposed to two single class periods. Double periods of physical education are recommended over single classes as they allow adequate time for changing into the physical education uniform, and tuition. Fourth year pupils were the only year group to receive triple physical education periods.



In the DES (1997) document, 'Issues and recommendations in relation to physical activity, physical education and sport' a key recommendation was to provide each child with the opportunity to play and enjoy a wide range of sporting activities both in school and community under the guidance of suitably qualified personnel and to a level which is suitable to ability and talent (83). To help physical education teachers accomplish this, there are several strands to the physical education curriculum (as mentioned already). Several publications over the past two decades have reported that games dominate the physical education curriculum in Irish schools (82, 84). The current study shows similar results. The top physical education activities in primary schools were from the games strand (particularly invasion games) of the physical education curriculum. In contrast, the bottom physical education activities were individual-based activities. Similar results were found in post-primary schools. Although similarities exist between the top five physical education activities between 2004 and 2009 (1), there appears to have been a move towards a more balanced physical education curriculum as demonstrated by the increase in the proportion of individual based activities. Unfortunately, no information is currently available on the duration of the exposure to each activity, so whether children are receiving one class or a whole semester on one sport/activity is unclear.

It is recommended that the post-primary physical education programme should establish continuity with the primary school programme (33). Participation rates in specific activities in physical education are lower in post-primary as opposed to primary schools; this may be due to a broader curriculum being offered in post-primary physical education. There is good continuity between primary and post-primary school physical education programmes for some activities, and poor continuity for others. For example, basketball is the most frequently participated in physical education activity among females and soccer for males in both primary and post-primary schools. In contrast, participation rates were much higher for swimming, Gaelic football and dance in primary than in post-primary school.

The fact that individual, or lifetime activities track better into adulthood than team games has implications for lifetime physical activity. It has been suggested that sport and education policy makers should examine ways to increase the range of sports and physical activities offered to all youth, but particularly girls, in post-primary physical education (85). An evaluation of how the strands of physical education - athletics, aquatics, dance, games, gymnastics, health related fitness and outdoor and adventure activities - are being taught is warranted. The findings from this study suggest that some strands are largely being ignored. There is a need to provide opportunities to engage with individual sports that are more appealing to girls and that track into adulthood. It has also been suggested that we need to provide a student voice in the selection of physical education content offered across the curriculum (86).

The Department of Education and Skills (2003) recognises that the availability of facilities and resources will, to some extent determine the ability of schools to offer a fully balanced course (33). Nonetheless, they state that every effort should be made to ensure pupils receive a comprehensive range of activities. Access should be available to a variety of facilities on a regular basis and should include a suitable indoor space, i.e. a sports hall with changing and shower areas. However, half of primary principals, and 11% of post-primary principals reported not having access to a multi-purpose hall either on-site or off-site. A suitable outdoor space including a grass pitch and hard court areas large enough to work efficiently and safely is also recommended by the Department of Education and Skills (33). The lack of access to on-site and off-site outdoor space indicated by school principals is an issue that needs to be addressed.

Research has shown that social disadvantage begins to reduce levels of participation in sport and physical activity. Lunn (2006) recommended the development of a policy on schoolchildren's sport to counteract the impact of disadvantage (87). A higher proportion of primary school principals in disadvantaged schools reported that their sports facilities were 'not at all adequate' compared to principals from non disadvantaged schools. CSPPA found no differences in minutes of physical education provided to children and youth across all social class categories, further examination of participation levels in extra-curricular and extra-school sport may shed more light on this topic.

Issues in relation to children with disabilities and physical activity were highlighted in 1997 by the Department of Education and Skills (80, 83). It was recommended that adequate equipment and quality facilities be provided for this cohort. Our results show that there is no difference in perception of adequate sports facilities for those with disabilities and those without.

Physical self-concept, competence and confidence are important determinants in engagement in physical activity and sport (88). If pupils do not develop the skills required to participate in the activity, when given the choice they will not continue to participate and due to lack of exposure incompetence will follow (88). The physical education programme has a role to play in preparing students for physical activity pathways beyond the classroom. Quality physical education should be available to all school going children both at primary and post-primary levels. Physical education provides the bedrock on which safe and sustainable physical activity patterns are established (89). Investment is needed in qualified teachers who are competent and confident in a broad spectrum of games and physical activities. Although the benefits of regular physical activity are well established, 2% of primary and 5% of post-primary participants are not doing any physical education in school. The main barriers these youth reported to participation in physical activity were 'fear of injury' and 'lack of skill'.

One of the main issues arising from discussions with various agencies and the DES was the need to significantly increase the value and emphasis on physical education and sport at school with a view to providing an appropriate balance for pupils (83). The results from the present survey indicate that this balance has not yet been achieved. Principals reported that time pressure, especially at senior cycle was the primary reason for too little timetabled physical education. Deenihan (2005) also acknowledged shortage of curricular time as a barrier to provision of quality physical education in Ireland (90). Physical education teachers must be provided with high level continuing professional development to allow them to meet these challenges, to help them to maintain their skills and so offer a broad and balanced range of activities, within the constraints of the current educational system.

Recommendations and policy implications

Good quality physical education programmes are an important preventative antidote to high cost health risks and to anti-social behaviour in children and youth (19). They contribute to all round individual development, and have been shown to enhance children's quality of life. However, this research has shown that the provision of quality physical education programmes in Ireland requires intervention. We strongly recommend:

Activity Type	Current Status (2009)	Activity Goal	Timeline	Responsibility
Physical Education	35% primary pupils received the DES minimum requirement of 60 minutes per week	Increase % meeting 60 minute requirement to 50%.	2020	DES
	10% post-primary pupils received the DES minimum of 120 minutes per week	Increase % meeting 120 minute requirement to 20%	2020	

- The school system must obtain sustained government support for physical education. Physical education must be recognised as a mandatory, essential and properly resourced curriculum-subject. Physical education is the only educational experience to focus on the body, its movement and development. To deny children this experience is unacceptable.
- The minimum DES recommended time for physical education must be provided to pupils.
- The removal of the age inequality that currently exists in the provision of physical education to senior pupils in post-primary schools.
- The removal of the gender inequalities that currently exist in physical education allocation in post-primary schools.
- The DES requires physical education teachers or generalist teachers to develop and offer a broad balanced physical education curriculum at both primary and post-primary level.
- The provision of adequate numbers of appropriately trained and qualified physical education teachers.
- The number of children who are able to swim competently before they leave primary school be increased by 1% per year.
- The monitoring of changes in physical education through robust national surveillance systems. This data will allow accurate evaluation of progress.
- The setting of achievable goals that are aligned to relevant policies, for example, the National Physical Activity Guidelines.

CHAPTER 6: EXTRA-CURRICULAR SPORT



Extra-curricular sport refers to the provision of activities outside of the formal physical education curriculum, most often after-school and at lunch times, but also in some schools at weekends and/or before school (91). For the purpose of this study, extra-curricular sport will include dance, gymnastics and other forms of physical activity that are conducted in the school setting but outside of the formal physical education curriculum. Extra-curricular sport and physical activity are a central focus of the life and identity of many schools and play a major role in defining what Lynch called the 'hidden curriculum' (the ethos and informal structures and processes that play a large role in defining the character of schools and the overall educational experience encountered by pupils) (92, 93)

The extent and quality of extra-curricular sport varies across schools and is highly dependent on the school ethos, expertise available, staff commitment to the process and availability of resources and facilities. The focus is often on one particular sport, rather than providing a broad programme of activities similar to what is on offer in a physical education programme. Fahey and colleagues (1) found that most children regularly participated in extra-curricular sports or extra-school clubs outside school. They also found that extra-curricular sports were concentrated on a limited range of team based sports and cited soccer, Gaelic football and basketball as the most common extra-curricular sports. Involvement in extra-curricular sport was found to decline with age, and be gender biased (1).

Extra-curricular sport relies heavily on a teacher's willingness to take on extra-curricular activities outside their formal teaching duties. As the main delivery mechanism for school sport, volunteer teachers are therefore central to how much sport children play, what sports are offered, and how effectively sessions are organised and supervised. The number of teachers who volunteer is much lower in some schools than in others (1).

In this chapter the 2009 data will be compared to the 2004 study (1). It is important to note that the recall timeframe was different for both studies. In the 2004 study pupils were asked to recall extra-curricular sport participated in since the beginning of the school year. In contrast, primary and post-primary school pupils in the 2009 study were asked to recall extra-curricular sport or physical activity participated in the past 12 months (this change was to allow for seasonal variation over the full school year). Questionnaire administration was October/November in 2004, and February/May in 2009. However, the long recall period in 2009 includes the same timeframe as 2004, and therefore comparison between groups is acceptable.



Key extra-curricular findings

- 63% of primary school pupils and 73% of post-primary school pupils participate in extra-curricular sport at least one day a week. This proportion has increased slightly since 2004.
- Non-participation in extra-curricular sport has remained at 24% among primary school pupils since 2004. In contrast, non-participation rates in extra-curricular sport among post-primary pupils have decreased 6% since 2004 (22% v 16%).
- Boys are more likely to engage in extra-curricular sport than girls.
- Participation in extra-curricular sport decreases with increasing age.
- Traditional team-based invasion games are the dominant extra-curricular sport in primary and post-primary schools.
- Only GAA sports (Gaelic football, hurling, camogie and handball) and swimming show consistent participation levels in inter-school competitions at both primary and post-primary level.
- Support for extra-curricular sport is perceived by principals as good, particularly in terms of school ethos and assistance received from local clubs. However, facilities in school for sport are perceived as inadequate.
- The quality and expertise of human resources – coaches, teachers, sports development officers, administrators and volunteers – supporting extra-curricular sport and physical activity is unclear. Non-participation may be due to a lack of a quality, broad and balanced programme for participation rather than an active choice for children.

Primary school extra-curricular sport results

Changes in participation in extra-curricular sport in primary schools from 2004-2009

Table 14 reveals that little has changed in relation to extra-curricular sport participation by primary school children since 2004 (1). Sixty three percent participate in extra-curricular sport at least once a week, compared to 62% in 2004. Twenty four percent of children never participate in extra-curricular sport; this was 25% in 2004 (1).

Table 14. Frequency of participation in extra-curricular sport in primary school

	Year	
	2004	2009
4 or more days (%)	16	18
2-3 days (%)	23	24
1 day a week (%)	23	21
Less often (%)	12	13
Never (%)	25	24
Total (%)	100	100

Note. Participation in extra-curricular sport or physical required help or supervision from a teacher among primary school sample.



Gender

Participation rates have remained constant since 2004 (Table 15). Among participants, more girls participate in extra-curricular sport at least once a week than boys (65% girls vs. 61% boys), this difference was not significant. Boys participate more frequently than girls (4 or more times per week - 23% boys vs. 14% girls). No gender differences were found in the proportion of non-participants.

Table 15. Frequency of participation in extra-curricular sports by gender in primary schools

	Year				
	2004	2009		2004	2009
	Boys			Girls	
4 or more days (%)	18	23		13	14
2-3 days (%)	21	19		25	28
1 day a week (%)	20	19		26	23
Less often (%)	13	15		11	12
Never (%)	26	24		24	23
Total (%)	100	100		100	100

Note. Participation in extra-curricular sport or physical required help or supervision from a teacher among primary school sample.



Age

The likelihood of participation in extra-curricular sport increased between the ages of 10-12 in primary school boys, and decreased in girls (Figure 12). The primary reason given for this was because 'I already do enough sports/activities outside of school', followed by 'my school does not offer any activities outside of school time that I like'.

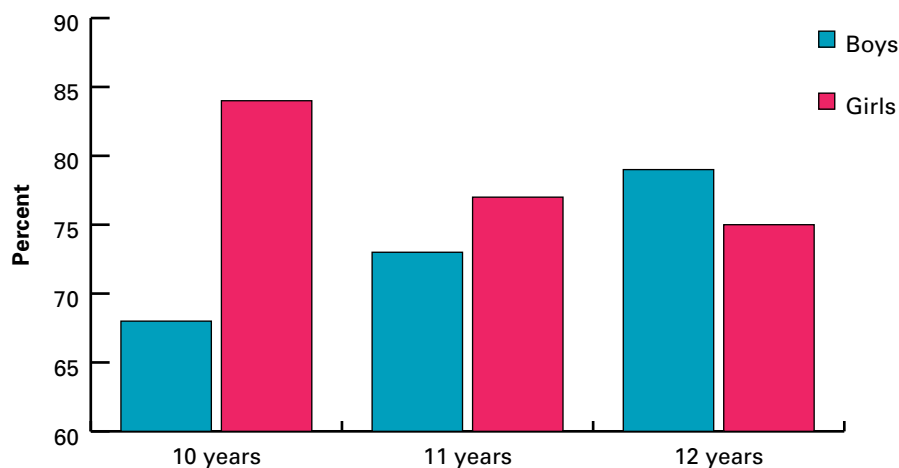


Figure 12. Participation in extra-curricular sport by primary school boys and girls.

Social class and area of residence

Area of residence influenced participation rates in extra-curricular sport for boys only. One quarter of boys attending rural primary schools participated in extra-curricular sport 4 or more times per week compared to only 16% of those who attended urban schools ($p < 0.001$). Social class had no significant effect on the pupil's frequency of participation in extra-curricular sports.

Range of extra-curricular sports

Gaelic football was the most popular extra-curricular sport among boys and girls (Table 16). Among boys, the next four most popular extra-curricular activities were soccer, hurling, basketball and swimming, and among girls, dance, swimming, basketball and soccer. For the purposes of comparison to 2004 data (1), hurling and camogie, and athletics and cross country running have been reported separately, however if combined these activities would rank higher. Traditional team games make up four out of the top five extra-curricular sports.

Participation in extra-curricular sport has remained relatively constant between 2004 and 2009. There was no difference in the participation rates for Gaelic football, swimming, camogie, cross country running and badminton. Participation rates decreased slightly in soccer, basketball, handball and adventure activities. These differences are mainly attributable to the decrease in participation amongst girls. There was a small increase in activities such as dance, rounders, athletics, hockey, hurling, rugby and tennis. The gender gap was more evident in 2009 than in 2004 (1). In 2009, higher proportions of boys were more likely to play soccer and rugby than girls. In contrast, girls were more likely than boys, to participate in dance, swimming and hockey.



Photo provided by Sportsfile

Table 16. Range of weekly extra-curricular sport and physical activities at primary schools

Sport/Activity	Year								
	2009	2004		2009	2004		2009	2004	Difference 2009-2004
	Boys			Girls			All		All
Gaelic football (%)	38	36		32	32		34	34	0
Soccer (%)	36	35		16	25		18	18	-5
Swimming (%)	15	18		20	18		18	18	0
Basketball (%)	17	20		18	28		17	24	-7
Hurling (%)	25	21		8	9		16	15	1
Dance (%)	4	9		24	17		15	13	2
Baseball/Rounders (%)	12	9		11	11		12	10	2
Athletics (%)	10	9		12	9		11	9	2
Rugby (%)	14	9		5	6		9	8	1
Hockey (%)	4	6		10	6		8	6	2
Camogie (%)	1	1		11	13		7	7	0
Gymnastics (%)	6	2		7	3		6	3	3
Handball (%)	4	7		5	7		5	7	-2
Tennis (%)	3	3		5	3		4	3	1
Cross country running (%)	3	4		5	3		4	4	0
Aerobics/exercise class (%)	3	3		4	4		4	3	1
Horse riding (%)	2	1		4	1		3	1	2
Martial arts (%)	3	2		3	2		3	2	1
Badminton (%)	3	2		2	2		2	2	0
Adventure activities (%)	2	3		2	2		2	3	-1
Squash (%)	2	1		2	1		2	1	1
Weight training (%)	1	1		1	0		1	0	1
Any other sport (%)	7	5		8	7		7	6	1

Post-primary extra-curricular sport results

Changes in participation in extra-curricular sport from 2004 to 2009.

The proportion of post-primary school pupils participating in extra-curricular sport, at least once a week has increased from 70% in 2004 to 73% in 2009 (Table 17). The greatest changes were seen in those participating 4 or more days a week; a 9% increase since 2004, and in those who never participate in extra-curricular sport, a 6% decrease since 2004. The improvements were equal for both males and females (Table 18).

Table 17. Comparison of participation in extra-curricular sport between 2004 (1) and 2009 in post-primary schools

	Year	
	2004	2009
4 or more days (%)	22	31
2-3 days (%)	30	26
1 day a week (%)	18	16
Less often (%)	8	11
Never (%)	22	16
Total (%)	100	100

Note. Participation in extra-curricular sport or physical did not require help or supervision from a teacher among post-primary sample.



Gender

A higher proportion of males than females participate in extra-curricular sport at least once a week (79% males vs. 67% females; Table 18). More females, than males, choose not to participate in any extra-curricular sport ($p < 0.001$). Since 2004 (1), the proportion of males and females choosing not to participate in any extra-curricular sport has decreased by 5% and 8% respectively.

Table 18. Participation in extra-curricular sport by gender in post-primary schools

	Gender			
	Male		Female	
	2004	2009	2004	2009
4 or more days a week (%)	33	41	10	21
2-3 days a week (%)	29	26	30	27
1 day a week (%)	15	12	23	19
Less often (%)	7	11	9	12
Never (%)	16	11	29	21
Total (%)	100	100	100	100

Note. Participation in extra-curricular sport or physical activity did not require help or supervision from a teacher among post-primary sample.

Age

Participation in extra-curricular sport decreased as students progressed through post-primary school. This drop out from extra-curricular sport with increasing age is more prevalent in females than males. The non-participation rates for 12 -13 year old, 14-15 year old and 16-18 year old females are 14%, 20% and 30% respectively. These values are approximately double those of males in each age group (8%, 10% and 15% respectively).

Year in school

Participation in extra-curricular school sport decreases gradually as pupils progress through the school cycle (Table 19). Conversely, the proportion of pupils who never participate increases with progress through the school cycle. Senior students are twice as likely never to participate in extra-curricular school sport in comparison to juniors. These results mirror those of the 2004 study (1). However, across all the school year groups, the proportions of pupils who never participated in extra-curricular sport have decreased from 2004 to 2009 (Figure 13).

Table 19. Frequency of participation in extra-curricular sport by year in school

Year in School							
2009	1st year	2nd Year	3rd Year	4th Year	5th Year	6th Year	All
4 or more days (%)	38	32	28	28	21	21	31
2-3 days a week (%)	26	29	25	30	23	22	26
1 day a week (%)	16	15	19	15	15	17	16
Less often (%)	8	10	10	14	15	15	11
Never (%)	12	14	18	13	26	25	16
Total (%)	100	100	100	100	100	100	100
2004	1st year	2nd Year	3rd Year	4th Year	5th Year	6th Year	All
4 or more days (%)	-	25	25	18	18	17	22
2-3 days a week (%)	-	36	28	32	26	24	30
1 day a week (%)	-	17	19	20	20	16	18
Less often (%)	-	6	8	8	9	10	8
Never (%)	-	15	20	21	28	34	22
Total (%)	-	100	100	100	100	100	100

Note. Participation in extra-curricular sport or physical did not require help or supervision from a teacher.

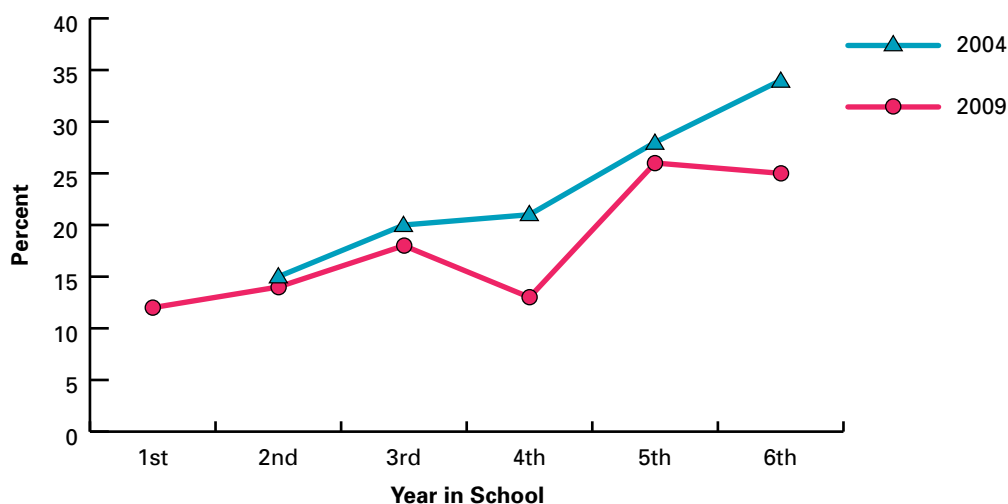


Figure 13. Proportion of post-primary pupils who never participate in extra-curricular sport by year in school in 2004 and 2009.

Social class and area of residence

Individual social class and area of residence were not significant determinants of involvement in extra-curricular sport at post-primary level. In addition, the designation of a school as disadvantaged did not influence participation rates in extra-curricular sport.

Range of extra-curricular sports

Individually, soccer, basketball, Gaelic football and athletics are the most popular extra-curricular activities among post-primary pupils (Table 20). Athletics and cross-country running, if combined would rank alongside soccer as the most popular extra-curricular sport. Almost 1 in 4 (23%) of extracurricular sports activities among boys and girls attending post-primary schools involves Gaelic games (hurling, camogie, Gaelic football and handball). Soccer was the most popular male activity, followed by Gaelic football, basketball and hurling. The most popular female activity was basketball, followed by Gaelic football and athletics (tied).

Between 2004 and 2009, athletics recorded the largest increase in participation (3%). There was a small (1-2%) increase in participation rates in dance, tennis, swimming, cross-country running, gymnastics and rounders. Badminton, rugby and weight training remained unchanged. Participation rates decreased in soccer, basketball, Gaelic football hockey and hurling. This decrease was seen in the drop in recorded participation levels of both males and females.



Table 20. Range of weekly extra-curricular sport and physical activities at post-primary

	Year								
	2009	2004		2009	2004		2009	2004	Difference 2009-2004
	Male			Female			All		All
Soccer (%)	17	28		7	11		12	20	-8
Basketball (%)	9	12		14	20		12	16	-4
Gaelic football (%)	12	22		9	12		11	17	-6
Athletics (%)	7	5		9	5		8	5	3
Badminton (%)	5	4		6	6		5	5	0
Hurling (%)	8	12		3	1		5	7	-2
Rugby (%)	7	9		3	1		5	5	0
Baseball/Rounders (%)	4	2		5	4		5	3	1
Dance (%)	2	1		6	4		4	2	2
Hockey (%)	2	3		6	11		4	7	-3
Swimming (%)	3	3		4	4		4	3	1
Tennis (%)	3	2		5	3		4	2	2
Cross country running (%)	3	3		5	3		4	3	1
Camogie (%)	1	1		6	6		3	3	1
Martial arts (%)	5	2		4	2		4	2	2
Aerobics/exercise class (%)	2	1		4	2		3	1	2
Gymnastics (%)	2	1		3	3		3	2	1
Handball (%)	3	2		2	2		3	2	1
Adventure activities (%)	2	1		2	1		2	1	1
Weight training (%)	3	3		1	1		2	2	0
Horse riding (%)	1	1		2	1		2	1	1
Squash (%)	2	1		1	0		1	0	1
Any other sport (%)	3	4		3	4		2	4	-2

Support for extra-curricular sport

School ethos

Every principal surveyed felt that extra-curricular sport was important to the ethos of their school, with most describing it as ‘very important’ (62% primary, 79% post-primary), or ‘fairly important’ (38% primary, 21% post-primary).

Pupil – teacher ratio in sport


The pupil-teacher ratio for sport involvement is much larger at post-primary level in comparison to primary schools (Table 21). In primary schools, out of a total average staff of 12 teachers per school, 7 were involved in sport, representing a pupil-teacher ratio of 27:1 (compared to 25:1 in 2004) (1). In post-primary schools, out of a total average staff of 39 teachers per school, 6 were involved in sport, representing a pupil-teacher ratio of 78:1 (compared to 93:1 in 2004) (1) (Table 21). There is a wide range of variation around these averages, indicating that some schools were much better supplied with teacher support for sport than others.

Table 21. Availability of teachers involved in sports according to school principals.

	School					
	Primary (N=46)			Post-primary (N=56)		
	Mean	Min	Max	Mean	Min	Max
Number of full time teachers / school	10	2	42	32	4	80
Number of part-time teachers /school	2	0	11	7	0	30
Total number of teachers / school	12	2	53	39	4	110
Number of teachers involved in sport	7	0	35	6	0	20
Total number of pupils / school	186	10	795	470	56	1156
Sport involved teacher: pupil ratio	1:27	0:10	1:22	1:78	0:56	1:58

Inter-school competition

According to principals, Gaelic football was the most common sport played in inter-school competition, with similar proportions of schools competing at the primary (80%) and post-primary (90%) level (Figure 14). Other team sports such as soccer, basketball, hurling, rugby and camogie were all well represented in inter-school competition. Seven out of the top 10 activities were from team based invasion games. Inter-school competition is not, however, restricted to the dominant team events. Athletics, cross country running and swimming were also among the top 10 most common sports and activities entered into inter-school competition.

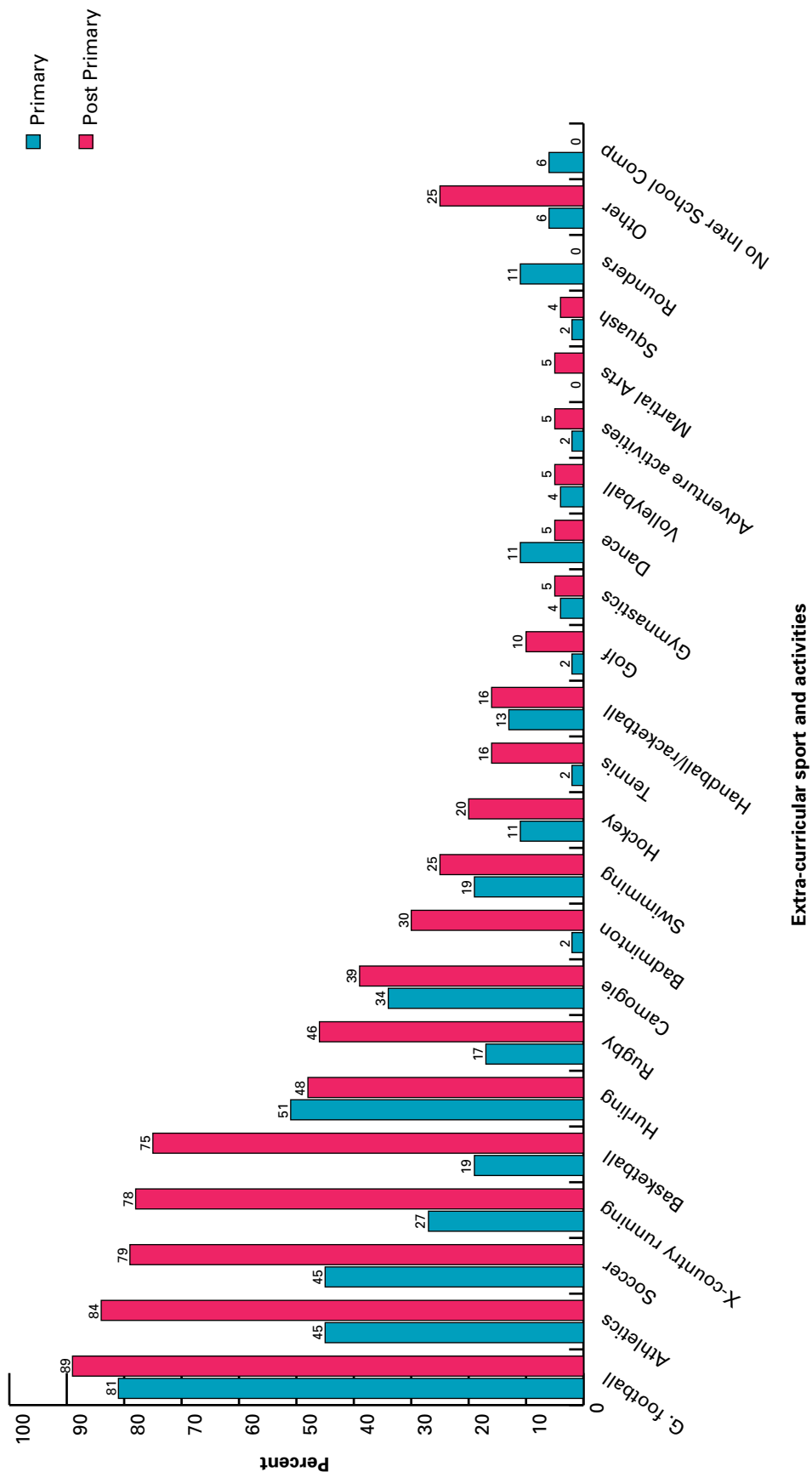


For most activities, post-primary schools are much more likely to engage in inter-school competitions than primary schools (Figure 14). The principle exceptions are the GAA sports (football, hurling, camogie and handball) and swimming where the proportions participating in inter-school competitions are similar at primary and post-primary level. Primary schools participate more than post-primary schools in dance and rounders/baseball, although the proportions participating in these activities are low. Very few schools participate in inter-school competitions in gymnastics, dance, adventure activities, volleyball, rounders or martial arts. Other inter-school sports listed by principals included cricket, rowing, water polo and table tennis although the proportion of schools competing in these activities was low.

The pattern of inter-school competition in 2009 is different to that reported in 2004. The top five inter-school sports played in primary schools in 2004 were Gaelic football, basketball, soccer, rounders, and hurling. In contrast, Gaelic football, hurling, soccer, athletics and camogie were the top five inter-school sports played in 2009. Both basketball and rounders move to position seven and eleven respectively. The proportions participating in inter-school competitions for all sports appear to have decreased between 2004 and 2009. This is particularly evident amongst basketball (82% in 2004 to 19% in 2009), rounders (67% in 2004 to 11% in 2009) and dance (60% in 2004 to 11% in 2009).

In post-primary schools, the top five activities in 2009 remain unchanged from those listed in 2004 (namely, Gaelic football, basketball, cross country running, athletics and soccer). However their order is different with basketball and cross country running dropping in place, and athletics and soccer improving. The overall participation rates by post-primary schools in inter-school competition have also improved since 2004. Gaelic football (75% in 2004 to 89% in 2009), soccer (58% in 2004 to 79% in 2009), athletics (70% in 2004 to 84% in 2009), cross country running (70% in 2004 to 78% in 2004), basketball (70% in 2004 to 75% in 2009), hurling (45% in 2004 to 48% in 2009), camogie (70% in 2004 to 78% in 2009) and rugby (28% in 2004 to 46% in 2009).

Swimming and athletics were the only individual sports in the top five competitive activities, in 2004 and 2009 respectively. Golf and volleyball are represented among inter-school competitions for the first time in 2009. Inter-school golf competitions were played by 2% of the primary schools and 10% of post-primary schools, and volleyball by 4% of primary and 5% of post-primary schools.



Extra-curricular sport and activities

Figure 14. Percentage of primary (N=47) and post-primary (N=56) schools participating in inter-school competition

Support from local clubs

Principals were questioned on the support they received from local clubs for coaching or access to facilities. Ninety two percent of primary school principals acknowledged that they receive help from local sports clubs, with 28% saying that they get a lot of help and 64% reporting that they get a little help. Similarly, 80% of post-primary principals reported receiving either a lot (29%) or a little help (52%). Eight percent of primary and 20% post-primary schools indicated that they received no help from local sports clubs. The proportion of post-primary schools receiving 'a lot of help' has doubled from 15% in 2004 to 29% in 2009, and the proportion receiving no help remains unchanged.

Influence of substitute teacher restrictions on sports provision

Almost half (46%) of the principals indicated that the new restrictions on substitute teachers will impact, in a negative way, on the delivery of extra-curricular sports/activities programme. Comments were centred on less staff meaning less sports teams and limiting of extra-curricular activities in general.

Understanding participation in extra-curricular sport and physical activity

Social (peer, parent, teacher), environmental (school gender, school type, school size), behavioural (minutes of physical education, active commuting, extra-school club involvement and minutes spent sitting) and personal (barriers to participation namely perceptions of time pressure, lack of energy, low willpower, lack of skill, fear of injury and lack of resources) factors were entered into a bivariate logistic regression model that predicted participation versus non-participation in extra-curricular sport. Participation was defined as taking part in extra-curricular sport or physical activity at least once a week. The models were run separately for boys and girls, and each model controlled for age, socio-economic status, area of residence and disability. Regression tables can be seen in Appendix 2.

Primary pupils

Behavioural, environmental (school) and social factors predicted extra-curricular (χ^2 (df=14) = 41.17, $p < 0.001$) sport and physical activity involvement by primary school boys. Minutes of physical education were significant, for every minute increase in physical education there was a 1% increase in the likelihood of primary boys participating in extra-curricular sport. School factors were also important; in comparison to small schools children who attend large schools were significantly less likely to become involved in extra-curricular sport (decrease by 61%). The social support provided by teachers was significantly and positively associated with participation, leading to as much as a 13% increase in the likelihood of boys engaging in extra-curricular sport.

Behavioural and social factors predicted involvement in extra-curricular (χ^2 (df=14) = 51.1, $p < 0.001$) sport and physical activity among girls. Participation in extra-school sport increased the likelihood of involvement in extra-curricular sport by 27%. Teacher social support was crucial to increasing the likelihood of girls' involvement in extra-curricular sport and physical activity (approximately a 12% increase).

Post-primary pupils

Behavioural and environmental factors predicted extra-curricular sport and physical activity involvement by post-primary males (χ^2 (df=24) = 154.11, $p < 0.001$). Minutes of physical education and involvement in extra-school sport were significant predictors. For every minute increase in physical education there was a 1% increase in the likelihood of post-primary males participating in extra-curricular sport. Extra-school sport has a much stronger influence on participation in extra-curricular sport, for example if males are active in an extra-school sports club then there is a 93% increase in the likelihood of them engaging in extra-curricular sport in school. The social support provided by peers and teachers was positively associated with participation. Peer and teacher influence could increase participation levels by 7% and 9% respectively. Family social support, personal or school factors were not influential in participation in extra-curricular sport or physical activity for post-primary males.


Behavioural, social and personal factors predict involvement in extra-curricular sport and physical activity among females attending post-primary school ($\chi^2(24) = 251.27$, $p < 0.001$). Participation in extra-school sport increased the likelihood of involvement in extra-curricular sport by 58%. Similar to males, peer and teacher support was important in influencing participation in extra-curricular sport, each leading to a 12% and 8% increase respectively. Females' perceptions of the energy required to meet the demands of a particular extra-curricular sport or physical activity influenced their participation level. A 13% increase in the likelihood of participation in extra-curricular sport or physical activity was recorded if females felt they had enough energy (i.e. were not too tired) to participate. The likelihood of participation in extra-curricular sport decreased by 9% due to a perceived lack of resources (adequate facilities, opportunities to be active and expense incurred)

Discussion

The present study has found that the participation rates in extra-curricular sport 'at least once a week' are high among both primary and post-primary youth. However, little has changed since 2004, when similar participation levels were recorded (1). Approximately one in four children in primary schools does not participate in extra-curricular sport. This figure is high and has remained constant since 2004, and indicates that interventions to encourage primary school children into supervised sport or physical activity at break times or before or after school have made little impact over the last five years. Post-primary schools appear to have been more successful in addressing the problem of non-participation in extra-curricular sport. The non-participation rate is now approximately 1 in 6 children, which is a decrease from the 1 in 4 recorded in 2004.

Gender and age are significant and negative determinants of participation rates in extra-curricular sport. Girls are less likely to participate than boys, and older children are less likely to participate than their younger peers. Age is a more significant deterrent from involvement in participation for girls compared to boys, as dropout rates for girls from age 12-18 are much higher than for boys of the same age. These findings support those reported in the 2004 study (1).

Participation in extra-curricular sport declined throughout the school cycle. This supports the physical education findings, and the 2004 study (1). The increase in physical education in year 4 was not mirrored by an increase in participation in extra-curricular sport. The absence of a 'bounce' in extra-curricular sport during 4th year could be due to the relatively high timetabled provision for physical education in this year cohort.



The types of extra-curricular sports played were different for males and females, and these differences appeared to be more exaggerated than in 2004. For primary and post-primary schoolboys, the main extra-curricular sports and activities offered were the team-based invasion games of Gaelic football, soccer, basketball and hurling, these have not changed since 2004 (1). Gaelic football, dance and swimming were popular extra-curricular activities for primary girls; among post-primary females it was basketball, Gaelic football and athletics. The Growing up in Ireland study revealed that a high proportion of 9-year-old girls enjoyed involvement in cultural activities such as dance, ballet, drama (94) and this is reflected in dance being a popular extra-curricular activity for primary school girls, but the likelihood of participating in dance at post-primary level dropped dramatically. For post-primary females' athletics was the main individual activity offered. There is a need for an extra-curricular programme to be broad in its range of activities and balanced between team and individual pursuits, as for some children and youth fear of injury and preference for games with limited physical contact may deter extended engagement in these activities.

The role of sport and physical activity in building a positive school ethos was acknowledged as important by all school principals. However, a ratio of 1:27 (primary) and 1:78 (post-primary) teachers to pupils for sport raises questions about the ability of schools to deliver a quality extra-curricular sport and physical activity programme. Additionally, the increased strain of the new substitute restrictions could mean fewer staff are available to provide a broad and balanced programme of extra-curricular activities. Thus, caution must be noted, and a critical analysis of activity choices in extra-curricular sport must be taken, as type of activity is a critical factor in extra-curricular participation. What children are doing currently may not represent what they would like to do if facilities or resources did not limit their possibilities (95).

In addressing this issue the human resources available need consideration, as good teachers matter most (96). The quality of extracurricular programmes in most cases is dependent on the goodwill of teachers. As indicated by the large teacher pupil ratios, these staff members are hard to attract, they may also be limited in what they can offer. These and other factors will increase the schools' reliance on local sports clubs. Indeed, it is the more traditional sports and established clubs that have the infrastructure to invest in development officers and coaches that influence what is offered in extra-curricular programmes. Principals acknowledged the supportive role of local sports clubs play in staffing and providing expertise in these programmes. However, if the range of programmes is to expand, more investment in some of the smaller less established team and individual sports is required. Support at a local and national government level is needed to formalise and support this initiative.

Policy implications and recommendations

Similar to physical education, good quality extra-curricular sport and physical activity opportunities are important in developing good health and social behaviours among our children and youth. They also provide youth with opportunities to enhance their quality of life and enjoy living. However, these opportunities are in need of intervention. From the data we recommend:

Activity Type	Current Status (2009)	Activity Goal	Timeline	Responsibility
Extra-Curricular Sport and Physical Activity	63% primary children participate at least once a week.	Increase to 73%. Focus on those who participate once a week or less often.	2015	DTCS, DES, DHC.
	24% never take part in extra-curricular activity clubs	Decrease to 20% by broadening range of activities available.	2015	
	73% post-primary pupils participate at least once a week.	Increase to 80%. Focus on those who participate once a week or less often.	2015	
	16% never take part in extra-curricular activity clubs	Decrease to 10% by broadening range of activities available.	2015	

Note. DTCS – Department of Tourism, Culture and Sport. DHC – Department of Health and Children. DES – Department of Education and Skills.

- The human resources –teachers, coaches, development officers and volunteers – associated with extra-curricular and youth sport and physical activity are developed. All individuals should be trained appropriately, acknowledged for their commitment and provided with a support network that will allow them to share good resources and build capacity. Although this intervention does not need to be high cost, it will require more equity in funding across sports and activities for the training and deployment of, development officers, coaches and volunteers to work within the school environment.
- Remove the gender inequalities that exist by facilitating more girls to become more involved in extra-curricular sport and physical activity.
- Halt the decline in participation in extra-curricular sport by preventing participants from dropping out as they move through the prepubescent and adolescent years.
- Examine the long-term impact of new substitute restrictions, poor facilities and high student to teacher ratio in the supervision and coaching of extra-curricular sport in order to determine how schools are coping with these challenges in their effort to deliver high quality extra-curricular sport opportunities to their pupils.
- Monitor changes in extra-curricular sport and physical activity through robust national surveillance systems. This data will then allow accurate evaluation of progress.
- Set achievable goals that are aligned to relevant policies, for example, the National Physical Activity Guidelines.

The solutions to these issues will lie in partnership between Government departments, local councils, schools, parents and local sports clubs. National, regional or local organisations need to share a common consensus of what good practice in extra-curricular activity involves. National Governing Bodies of sport and Local Sports Partnerships, developed by the Irish Sports Council, are bodies that could potentially take the lead on many of these initiatives.

CHAPTER 7: EXTRA-SCHOOL SPORT



Extra-school sport clubs are run external to the school system, and are an important element in the institutional structure of sports participation in Ireland (97). A number of studies have illustrated their popularity and prevalence among children and youth. The 2004 study found that extra school sport had higher participation levels than extra-curricular sport (1). The Health Behaviours of School-aged Children study found that 27% of boys and 23% of girls aged 10-11 years, exercised 4-6 times a week, outside of school (50). Similarly, the Growing up in Ireland study found that three-quarters of 9-year-olds were involved in organised sports/fitness clubs outside school (94).

This chapter will i) provide information on the participation levels in extra-school sport, ii) evaluate the factors that influence participation such as age, gender, social class and area of residence, iii) provide information on the range of sports children and youth participate in, iv) explore the roles which post-primary participants take on within community based clubs, and v) explore motivations and barriers to participation in extra-school sports clubs.

In this chapter the 2009 data will be compared to the 2004 study (1). It is important to note that the recall timeframe was different for both studies; in 2004 pupils were asked to recall involvement in extra-school sports clubs since the beginning of the school year, in 2009 they were asked to recall their past 12 months participation (this change was to allow for seasonal variation over the full school year). Questionnaire administration was October/November in 2004, and February/May in 2009. However, the long recall period in 2009 includes the same timeframe as 2004, and therefore comparison between groups is acceptable.

Key extra-school sport findings

- Participation at least once a week in extra-school sport has increased by 2% (up to 83%) among primary school children. In contrast, participation rates in post-primary school children have decreased by 6% (down to 64%) since 2004.
- No gender differences exist in participation levels in extra-school sport at primary school. Boys participate more than girls at post-primary.
- Participation rates in extra-school sport are lower among children from lower social classes than children from higher social classes.
- Participation in extra-school sport decreases as children age.
- Traditional team sports (mainly the invasion games of Gaelic football, soccer, hurling and rugby) dominate male participation in extra-school sport. There is a mix of individual and team activities for females.
- Within current extra-school sport participants, 37% indicated that by the age of 4 they were already a member of an extra-school sports club, by age 7 this jumps to 80% and 93% by age 9.
- The link between activities offered in school and what is available in the community is varied. Some activities have better pathways and are more successful at recruiting and engaging children than others.
- To keep fit and for something to do were key motives for participation in extra school sport.
- Feelings of incompetence and not having access to suitable sports/activities were key reasons for non-participation in extra school sport
- 74% of primary and 73% of post-primary pupils participate in a combination of extra-curricular and extra-school sport or physical activity on at least two days per week. This makes them very important in terms of helping children and youth reach their physical activity goals.

Primary school extra school sport results

Changes in participation in extra-school sport in primary schools from 2004-2009

There has been an increase in participation in extra-school sport by primary school children since 2004 (1). Eighty three percent of primary children participate in extra school sport at least once a week; this compares to 81% in 2004 (Table 22). Eleven percent of children never participate in extra-school sport; this was 12% in 2004. All children reported receiving coaching at their club to help them improve in their sport.

Table 22 shows that the frequency of participation '4+ days a week' has increased, whilst participation '1 day a week' has decreased since 2004. This statistic reveals that the already active children are now participating more often, however current interventions appear to be having little impact on recruiting new participants.

Table 22. Comparison of participation in extra-school sport between 2004 and 2009 in primary schools.

	Year	
	2004	2009
4+ days a week (%)	19	25
2-3 days a week (%)	37	39
1 day a week (%)	25	19
Less often (%)	7	6
Never (%)	11	11
Total (%)	100	100

Gender

No gender differences were recorded, 82% of boys and 84% of girls participate at least once a week in extra-school sport (Table 23). Similar proportions of both gender reported never participating in club sport. The proportion of non-participation increased slightly for boys, but decreased for girls from 2004 to 2009.

Table 23. Frequency of participation in extra-school sport by gender in primary schools

	Year				
	2004	2009		2004	2009
	Boys			Girls	
4 + days a week (%)	21	28		16	23
2-3 days a week (%)	39	37		34	40
1 day a week (%)	23	17		28	21
Less often (%)	6	6		7	5
Never (%)	10	12		14	11
Total (%)	100	100		100	100

Age

A trend of decreased participation in extra-school sport was recorded with increasing age at primary school level. This was evident for both boys and girls.

Social class and area of residence

More children from lower social class groups (SC5-6) reported never participating in extra-school sport in comparison to those in upper and middle social class groups (SC 1-4, $p < 0.001$). Location (urban or rural) did not significantly influence frequency of participation in extra-school sport.

Range of sports experienced in extra-school clubs in 2004 and 2009

Gaelic football was the most popular extra-school sport for primary pupils (36%), followed by soccer (31%), swimming (25%), dance (25%) and hurling (16%) (Table 24). The top five extra-school sports for boys were soccer, Gaelic football, hurling, swimming and rugby. For girls, they were dance, Gaelic football, swimming, camogie and soccer (joint 4th) and basketball. Hurling and camogie, athletics and cross-country running have been reported separately, but if combined 24% and 18% of primary pupils respectively would have participated in these activities in community based clubs. Traditional team games, mainly invasion games, dominate boys participation in extra-school sport, for girls there is more of mix between team and individual pursuits.

In comparing the 2004 to the 2009 data, most sports show an increase in participation levels over this timeframe (Table 24). The largest increases were in dance, Gaelic football and athletics. A slight increase, 1-2%, was recorded in all other activities. There was only one exception; this was badminton which recorded a decrease in participation levels from 2004 to 2009 by 1%.

Table 24. Range of extra-school sport and physical activity undertaken at least once a week by boys and girls in primary schools.

	Year								Difference 2009-2004
	2009	2004		2009	2004		2009	2004	
	Boy			Girl			All		All
Gaelic football (%)	44	37		30	22		36	30	6
Soccer (%)	50	40		16	16		31	29	2
Swimming (%)	20	20		29	29		25	24	1
Dance (%)	5	3		39	29		24	16	8
Hurling (%)	32	24		4	5		16	15	1
Basketball (%)	10	8		14	13		12	11	1
Athletics (%)	11	8		13	10		12	9	3
Rugby (%)	19	15		3	2		10	8	2
Camogie (%)	0	1		16	13		9	7	2
Horse riding (%)	5	4		13	12		9	8	1
Tennis (%)	7	5		9	8		8	7	1
Cross country running (%)	4	5		8	6		6	5	1
Martial arts (%)	8	6		4	5		6	6	0
Hockey (%)	3	3		7	3		5	3	2
Gymnastics (%)	2	1		6	6		4	3	1
Adventure activities (%)	5	4		4	4		4	4	0
Baseball/Rounders (%)	4	3		4	4		4	3	1
Handball (%)	7	3		1	3		4	3	1
Badminton (%)	3	4		3	5		3	4	-1
Squash (%)	3	2		3	2		3	2	1
Aerobics/exercise class (%)	1	1		12	2		2	1	1
Weight training (%)	3	2		2	1		2	1	1
Any other sport (%)	10	7		9	6		10	6	4

Post-primary extra-school sport results

Changes in participation in extra-school sport in post-primary schools from 2004 to 2009.

Fewer youth participated at least once a week in extra-school sport in 2009 in comparison to 2004 (64% vs. 70%, Table 25). Further examination reveals that more youth participated 4 or more days a week and less once a week in 2009 than in 2004. Significantly higher levels of non-participation in extra-school club sport were recorded in 2009 in comparison to 2004 (34% vs. 21%, $p < 0.01$).

Table 25 supports the findings in Extra-Curricular sport (Table 17) which revealed that among participants there was increased frequency with more youth playing 4+ days a week than was previously recorded. As there are lower numbers available to play (proportion never participating has also increased), the same children are now playing more often to make up the deficit.

Table 25. Comparison of participation in extra-school sport between 2004 and 2009 in post-primary schools.

	Year	
	2004	2009
4+ days a week (%)	18	24
2-3 days a week (%)	34	30
1 day a week (%)	18	10
Less often (%)	9	2
Never (%)	21	34
Total (%)	100	100

Gender

Males are more likely than females to participate in extra school sport at least once a week (70% males vs. 57% females). Females are more likely to never participate in extra-school sport (40% females vs. 28% males) (Table 26). These differences were significant. Since 2004, male participation rates of at least once a week dropped by 8% (from 78% in 2004 to 70% in 2009) and female rates dropped by 6% (from 63% in 2004 to 57% in 2009). Non-participation rates increased by roughly the same amounts for both genders (up by 13%).

Table 26. Frequency of participation in extra school sport in post-primary school

	Gender			
	Male		Female	
	2004	2009	2004	2009
4 + days a week (%)	25	30	11	17
2-3 days a week (%)	39	33	30	28
1 day a week (%)	14	7	22	12
Less often (%)	8	2	10	3
Never (%)	15	28	28	40
Total (%)	100	100	100	100

Age

Participation in extra-school sport decreases with increasing age. Participation at least once a week decreased significantly from 70% to 65% to 57% for 12-13, 14-15 and 16-18 year olds respectively. Among males, there was a large drop off after 13 years of age, but after this participation levels remained constant (males 77% to 68% to 67%). Among females the drop off continued across all three age categories and increased in intensity with increasing age (females 66% to 60% to 50%). The proportion of those who choose never to participate in extra-school sport increases with age from 25% to 34% to 41% of 12-13, 14-15 and 16-18 year olds.

Year in school

As pupils progress through the school cycle, participation in extra-school sport gradually decreases. Participation rates in club sport at least once a week drops from 69% in 1st year to 50% in 6th year (Table 27). Fourth year pupils, even though in senior cycle, do not adhere to this decreasing trend and participate to the same level as 1st and 2nd years. In comparison to the 2004 data, 2009 participation rates across all year groups (except fourth year) are lower. Consequently non-participation rates across all years are higher in 2009 than they were in 2004 (Figure 15).

Table 27. Frequency of participation in extra-school club sport by year

	Year						
2009	1st year	2nd Year	3rd Year	4th Year	5th Year	6th Year	All
4 or more days (%)	27	26	23	21	16	19	23
2-3 days a week (%)	30	31	29	33	30	25	30
1 day a week (%)	12	10	8	12	8	6	10
Less often (%)	2	1	3	2	1	3	2
Never (%)	29	32	37	32	45	47	35
Total (%)	100	100	100	100	100	100	100
2004	1st year	2nd Year	3rd Year	4th Year	5th Year	6th Year	All
4 or more days (%)	-	21	20	19	14	14	18
2-3 days a week (%)	-	33	35	36	35	33	34
1 day a week (%)	-	20	18	14	17	18	18
Less often (%)	-	7	6	9	11	10	9
Never (%)	-	18	21	22	23	25	21
Total (%)	-	100	100	100	100	100	100

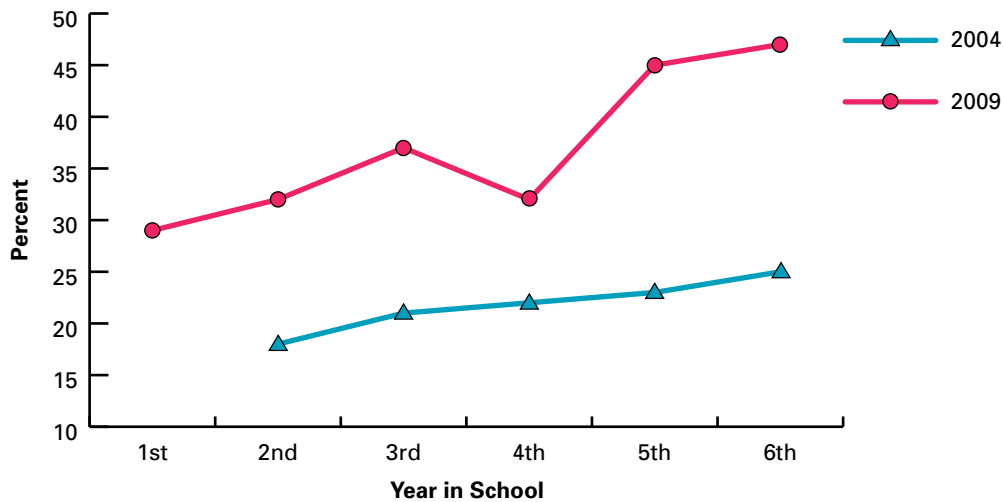


Figure 15. Proportion of post-primary pupils who chose to never participate in extra school sport in 2004 and 2009.

Social class and area of residence

More youth from higher social classes (SC 1-4) chose to participate in extra-school clubs than in comparison to youth from lower social class (SC 5-6). Similarly, more youth from villages (area of residence of less than 3,000) were participants than from more urban areas. These findings were both significant.

Range of extra-school sport and physical activity.

Gaelic football (22%) was the most popular extra-school club sport that youth participated in on a weekly basis (Table 28). This was followed by soccer (20%), swimming (15%), dance (14%) and hurling (11%). Hurling and camogie, and athletics and cross-country running are reported separately for comparative purposes, but if taken together they would yield a participation rate of 18%, and 13% respectively. The most common male activities were soccer, Gaelic football, hurling, rugby and weight training. Dance, swimming, Gaelic football, camogie and soccer were the most popular among females. Similar to the primary school data, traditional team sports, particularly invasion games, dominate male extra-school sport participation. Females have a mix of individual and team based activities.

Between 2004 and 2009, numbers recorded participating in individual activities has increased moderately (Table 28). This is at odds with the overall drop in participation rates, but can be explained by the fact that a single child can engage in more than one activity and this is recorded in the increase in the number of times per week that children are participating. The largest increase in participation is recorded by swimming and dance (both up by 7%). This is followed by athletics (up 4%), rugby, tennis and adventure activities (all up by 3%). The remainder of sports all reveal increases in participation of 1-2%. Only soccer and badminton have remained constant since 2004.

Table 28. Range of weekly extra-school sport at post-primary level.

	Year								
	2009	2004		2009	2004		2009	2004	Difference 2009-2004
	Male			Female			All		All
Gaelic football (%)	27	29		17	14		22	21	1
Soccer (%)	32	31		10	9		20	20	0
Swimming (%)	11	7		19	9		15	8	7
Dance (%)	4	1		23	13		11	10	7
Hurling (%)	17	18		5	2		11	10	1
Athletics (%)	9	5		8	4		8	4	4
Basketball (%)	6	5		7	6		7	6	1
Rugby (%)	12	8		3	1		7	4	3
Weight training (%)	12	7		3	2		7	5	2
Camogie (%)	1	0		11	9		6	4	2
Horse riding (%)	3	2		9	6		6	4	2
Tennis (%)	5	3		7	3		6	3	3
Cross country running (%)	4	3		5	2		5	3	2
Martial arts (%)	6	5		4	4		5	4	1
Aerobics/exercise class (%)	2	0		6	4		4	2	2
Adventure activities (%)	3	1		4	1		4	1	3
Badminton (%)	4	4		4	4		4	4	0
Baseball/Rounders (%)	4	1		6	1		3	1	2
Gymnastics (%)	1	0		5	2		3	1	2
Hockey (%)	2	1		4	2		3	2	1
Handball (%)	3	2		2	1		3	1	2
Squash (%)	1	1		2	1		2	1	1
Any other sport (%)	10	5		10	3		10	4	6

Understanding the youth role within extra-school sports clubs

Recruitment

Within current extra-school sport participants, 37% indicated that by the age of 4 they were already a member of an extra-school sports club, by age of 7 this jumps to 80% and 93% by age 9 (Figure 16). In terms of recruitment strategies, the primary school age group are very important as the likelihood of recruiting new individuals past the age of 9 drops significantly. This also has significant implications for the link between school and community, as by the time post-primary pupils begin their physical education programmes they are (or should be) skilled athletes entering an investment stage in their sport.

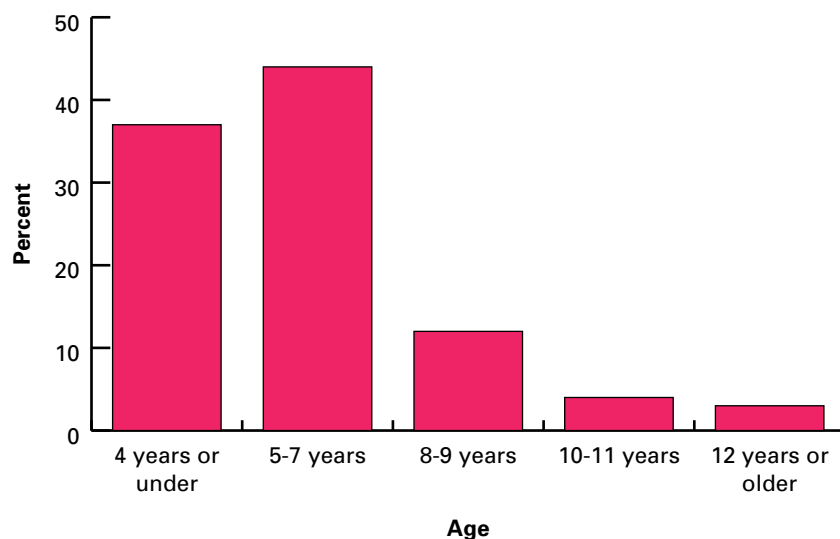


Figure 16. Age of recruitment to club sport.

Children who were younger when they tried sport or physical activity formally for the first time were significantly more likely to be currently meeting the physical activity recommendations (≥ 60 minutes of MVPA daily), than their peers who were older when the first got involved in sport or physical activity clubs (Figure 17).

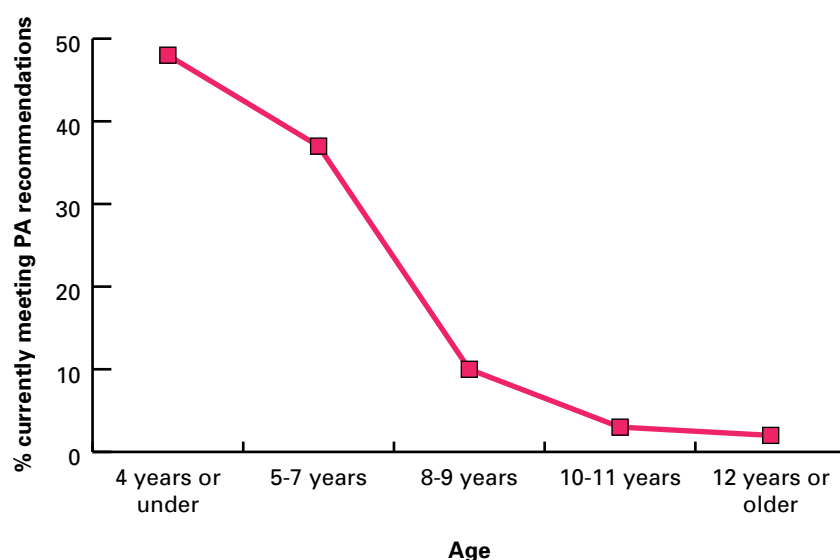


Figure 17. Age of recruitment to club sport by current achievement of physical activity recommendations.

Role

Out of all the youth currently involved in extra-school sport, 95% said they were an active participant or player, 5% were involved as coaches, 2% as administrators and 2% as officials (some youth had dual roles so figures do not add up to 100%).

Level

Eighteen percent of youth were involved with extra-school sport clubs at a basic level (for recreation purposes), 57% were involved at a competitive level (club competitions) and 25% were elite (competing at regionally and nationally recognised standards). Males were more likely than females to report participation at the elite level, females more likely to report involvement at the basic level ($p < 0.001$).

Club Membership

Current membership of an extra-school sport or activity club is associated with less time in sedentary behaviour (4.0 v 4.7 hours per day, $p < 0.001$) and more time in moderate to vigorous physical activity (4.4 v 3.2 days of ≥ 60 minutes MVPA per week) for children and youth.

Extra-curricular and extra-school sport and physical activity combined: A composite measure of participation

In order to determine children and youth participation levels in sport and physical activity outside of physical education, pupil's reported frequency of participation in extra-curricular sport was combined with their frequency of participation in extra-school sport and physical activity. Thus, each child was given a 'composite' measure of participation in sport and physical activity. For example, a child who participated in extra-curricular sport 4+ days a week but never participated in extra school sport was given a 4+ rating to represent his/her overall participation across both types of physical activity. This information is useful as it provides a more holistic picture of who is participating and how frequently they are engaging in sport and physical activity.

Primary pupils

Data from primary pupils reveals that 35% (41% of boys and 30% of girls) participate in sport or physical activity four or more days a week, with an additional 39% (35% of boys and 42% of girls) engaging on two to three days of the week. When combined this reveals that 74% of the primary pupils play sport or physical activity on at least two days a week, this figure rises to 91% who play a minimum of once a week (Table 29). Only 5% (4% of boys and 6% of girls) chose never to participate in sport or physical activity. Although boys engage in sport and activity more often than girls, there is very little gender difference in participation levels at primary school.

Table 29. Composite measure of Non-PE sports participation by gender for primary pupils

	Gender		
	Boys	Girls	All
4+ days a week (%)	41	30	35
2-3 days a week (%)	35	42	39
1 day a week (%)	16	18	17
Less often (%)	4	4	4
Never (%)	4	6	5
Total (%)	100	100	100

Five percent of primary children do not participate in organised sport or physical activity, 26% participate in either extra-curricular or extra-school sport or physical activity and 69% participate in both types of activity.

Post-primary pupils

The post-primary data for the composite measure is shown on Table 30. Forty one percent of all pupils participate four or more days per week, with an additional 32% participating at least 2 days a week and a further 12% participating at least once a week. Thus, 85% of the sample report engaging in sport or physical activity at least once a week. This figure is higher than the 83% participation data recorded in 2004. The proportion of youth, who opt never to participate in either extra-curricular or extra-school sport or physical activity, has remained constant at 10%.

Table 30. Composite measure of Non-PE sports participation by year

	Year	
	2004	2009
4+ days a week (%)	46	41
2-3 days a week (%)	26	32
1 day a week (%)	11	12
Less often (%)	6	6
Never (%)	10	10
Total (%)	100	100

Gender

Males are more likely than females to participate in sport at least once a week (89% males vs. 79% females). Females are more likely to never participate (14% females vs. 6% males) (Table 31). These differences were significant. Since 2004, male participation rates of four plus days a week have dropped by 8%, and appear to shift more to the 2-3 days a week category (up by 6%). For females, the proportions participating in each category of days is very similar at both time points. The proportion of youth opting to never participate in sport for both genders remains unchanged since 2004.

Table 31. Composite measure of Non-PE sports participation by gender

	Gender			
	Male		Female	
	2004	2009	2004	2009
4 + days a week (%)	60	52	31	29
2-3 days a week (%)	23	29	31	34
1 day a week (%)	7	8	16	16
Less often (%)	4	4	8	7
Never (%)	6	6	14	14
Total (%)	100	100	100	100

Year in school

As pupils progress through the school cycle, participation in sport and physical activity gradually decreases. Participation rates of at least once a week drop from 89% in 1st year to 72% in 6th year (Table 32). Fourth year pupils, even though in senior cycle, do not adhere to this decreasing trend and participate to the same level as 1st and 2nd years. In comparison to the 2004 data, 2009 participation rates across all year groups (except fourth year) are lower. Consequently non-participation rates across all years are higher in 2009 than they were in 2004.

Table 32. Composite measure of Non-PE sports participation by year in school

Year in School						
2009	1st year	2nd Year	3rd Year	4th Year	5th Year	6th Year
4 or more days (%)	49	42	37	37	30	30
2-3 days a week (%)	29	33	31	37	31	30
1 day a week (%)	11	11	14	11	13	12
Less often (%)	3	5	7	8	9	10
Never (%)	7	8	12	7	17	19
Total (%)	100	100	100	100	100	100
2004	1st year	2nd Year	3rd Year	4th Year	5th Year	6th Year
4 or more days (%)	-	53	49	46	40	37
2-3 days a week (%)	-	26	25	28	28	27
1 day a week (%)	-	11	11	12	11	12
Less often (%)	-	4	6	4	8	8
Never (%)	-	6	9	11	12	16
Total (%)	-	100	100	100	100	100



Understanding participation in extra-school sport and physical activity

Behavioural, environmental, social and personal determinants of participation

Social (peer, parent, teacher), school (gender, type, size), behavioural (minutes of physical education, active commuting, extra-curricular sport and minutes spent sitting) and personal (barriers to participation, namely perceptions of lack of time, lack of energy, low willpower, lack of skill, fear of injury and lack of resources) factors were entered into a bivariate logistic regression model that predicted participation versus non-participation in extra-school sport. The models were run separately for males and females, and each model controlled for age, socio-economic status, area of residence and disability. Tables showing regression results are in appendix 2.

Primary school

Behavioural, environmental (school) and social factors predicted extra-school sport and physical activity involvement by primary boys (χ^2 (df=14) = 78.5, $p < 0.001$). For every additional minute of physical education provided to primary boys, there was a corresponding increase in their likelihood of engaging in extra-school sport by 2%. Family social support can be explained as a family member (mum, dad, sibling or significant other) providing encouragement, playing with the child, providing transport to and from the sport venue, watching the child play or telling them that they are doing well. This type of support was important; it led to an increase of 40% in the likelihood of a primary school boy engaging in extra-school sport.

Behavioural, environmental and social factors predicted involvement in extra-school sport and physical activity among girls (χ^2 (df=14) = 86.9, $p < 0.001$). Participation in extra-curricular sport increased the likelihood of involvement in extra-school sport by 18%. Attending a girl's only school increased participation by 73%, and attending large primary school in comparison to a small school increased participation by 7%. Similar to boys, family social support was crucial (25% increase).

Post-primary pupils

Behavioural, environmental and social factors predicted extra-school sport and physical activity involvement by post-primary males (χ^2 (df=24) = 303.61, $p < 0.001$). Participation in extra-curricular sport increased likelihood of involvement in extra-school sport by 99%. Sedentary behaviour was a negative influence, as for every minute a youth spent sitting, the likelihood of their participation in extra-school sport decreased by 1%. The social support provided by family (not peers or teachers as in extra-curricular) was positively associated with participation (increase by 14%). Among personal factors, having the willpower and feeling competent in one's skill level increased likelihood of involvement by 14% and 9% respectively, whilst fear of being injured reduced the likelihood of being involved by 8%.

For post-primary females extra-school sport involvement was predicted by behavioural, environmental, social and personal factors (χ^2 (df=24) = 593.98, $p < 0.001$). Participation in extra-curricular sport led to a 60% increase in the likelihood of involvement in extra-school clubs. Females who attended designated disadvantaged schools were significantly less likely to be part of extra-school sport clubs, a 56% decrease. The social support provided by both peers and family were very important to girls. Peer social support increased the likelihood of participation in extra school sport by 7%, family social support increased likelihood of participation by 17%. Willpower was the only significant personal factor, with a 17% increase in the likelihood of participation in extra-school sport as willpower increased.



Understanding non-participation in sport and physical activity

Primary pupils

Five percent (N=64) of primary school children chose never to take part in either extra-curricular or extra-school sport or physical activity. The reasons given by these individuals for not participating are shown on Figure 18. The top three reasons given by boys for not participating were that they already do enough activity, lack of competence and transport difficulties. For girls the reasons were no suitable activities being offered, transport difficulties and feelings of incompetence. Other barriers included time pressure, not liking sport or activity or never having been asked.

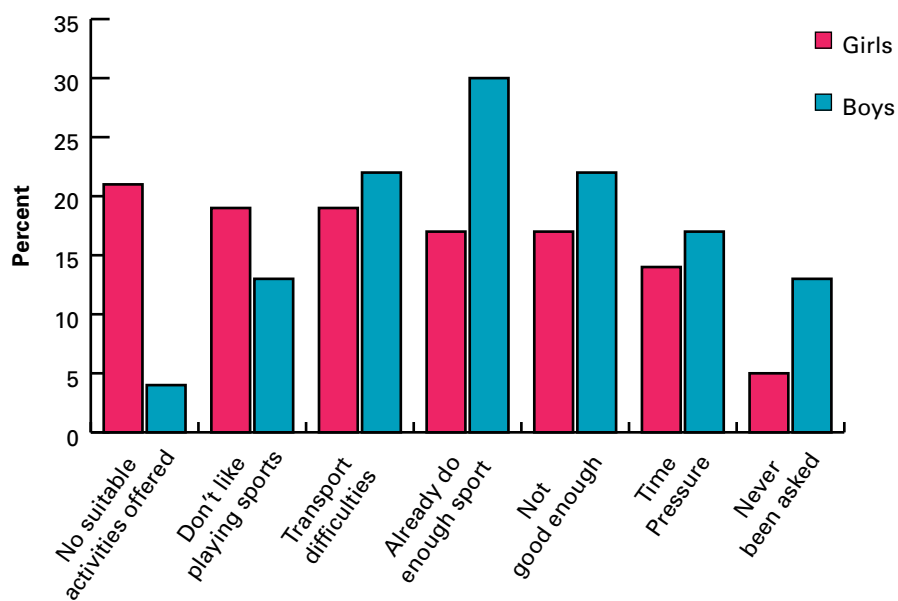


Figure 18. Reasons for not taking part in more activities/sport by primary children

Post-primary pupils

Ten percent (N=412) of post-primary pupils chose not to participate in extra-curricular or extra-school sport or physical activity. The reasons given for not taking part are shown on Figure 19. Lack of time was given as the main barrier, followed by feelings of incompetence, not being able to find a sport they liked and no particular reason. Gender differences exist on barrier rating. Males rank time pressure, no reason, and feelings of incompetence as their top three barriers. Females rank time pressure, feelings of incompetence and not liking sport as their main barriers. All barriers increased with increasing age except for 'too expensive' which was equally distributed across all ages.

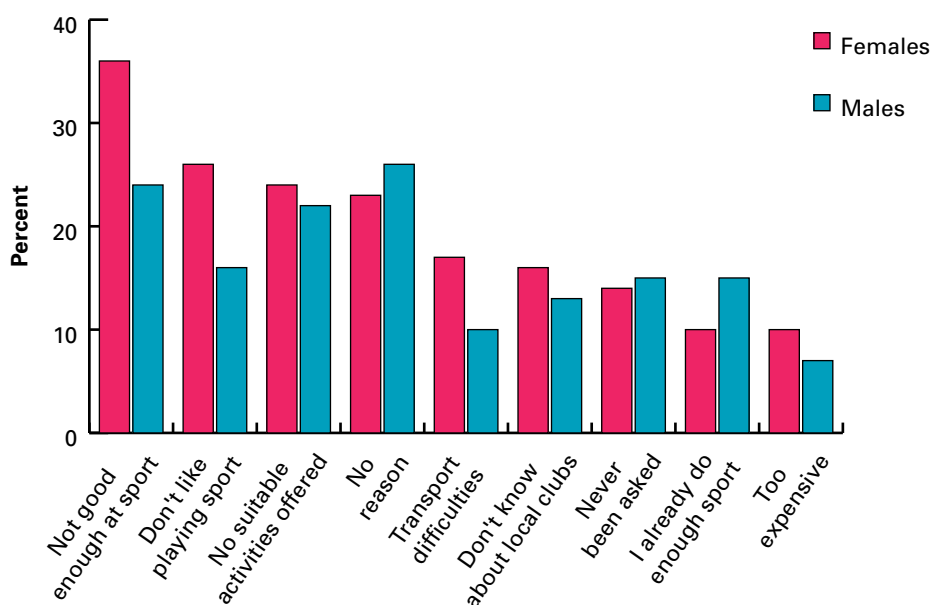



Figure 19. Reasons for not taking part in more activities/sport by post-primary youth

Note: Lack of time is not depicted in Figure 19.

Supply or demand: An exploration of how we cater for youth needs in sport and physical activity

To determine if it is a 'supply or demand' issue that drives the activities that are offered to children and youth for participation in sport or physical activity is complex. Are the activities offered due to the ability of coaches and adults to provide or supply them? Or, are the activities offered a result of the demands placed by children and youth to have access to these activities, i.e. demand driven? In order to explore this issue further, and for comparative purposes Tables 33-36 present the proportions of children participating in



a range of individual and team-based activities across all three pillars, physical education, extra-curricular and extra-school sport. This information is useful as it shows differences in how sports or activities are engaging youth across the pillars. However, the question of supply or demand can only really be answered by asking the children and youth involved in this study what they experience, this was a purpose of the focus groups and the results are presented in the qualitative report on the student voice.

Pathways for participation from physical education to extra-curricular and extra-school sport

The proportions of children and youth who participate in specific sports or physical activities, irrespective of frequency of participation, are listed on Tables 33-36. All three pillars of activity, namely physical education, extra-curricular and extra-school sport and physical activity are represented. This allows for direct comparison between each type of activity. Overall, participation rates in extra-curricular and extra-school sport are lower than in physical education. This is to be expected considering that physical education is a school-based subject and therefore not an optional activity for most children. However, it is also reasonable to assume that the exposure to activities during physical education would be of shorter duration due to requirements to cover all seven strands of the physical education curriculum.

Primary school

Table 33 presents the primary boys' participation patterns. Team sports dominate. Soccer has high participation levels with 50% of all primary boys engaged in extra-school soccer. This is followed closely by Gaelic football, hurling and rugby. Among individual activities, swimming, athletics and martial arts are the most commonly engaged in activities; however the proportion of boys in these activities is much lower than it is in team games. Many sports and activities are provided only in the physical education setting. For example, very few boys engage in gymnastics, hockey, dance, rounders, cross-country running, badminton and adventure activities in either extra-curricular or extra-school clubs relative to physical education.

Table 33. Participation levels in extra-school sport, extra-curricular sport and physical education among *primary schools boys*.

	Type of Activity		
	Extra-School	Extra-Curricular	Physical Education
Soccer (%)	50	36	77
Gaelic football (%)	44	38	71
Hurling (%)	32	25	49
Swimming (%)	20	15	54
Rugby (%)	19	14	44
Athletics (%)	11	10	43
Basketball (%)	10	17	65
Martial arts (%)	8	3	6
Tennis (%)	7	3	15
Handball (%)	7	4	18
Dance (%)	5	4	27
Adventure activities (%)	5	2	12
Horse riding (%)	5	2	5
Rounders/Baseball (%)	4	12	56
Cross country running (%)	4	3	14
Hockey (%)	3	4	20
Badminton (%)	3	3	12
Gymnastics (%)	2	6	23
Squash (%)	3	2	4
Weight training (%)	3	1	2
Aerobics/exercise class (%)	1	3	10
Camogie (%)	0	1	0
Any other sport (%)	10	7	26

Table 34 presents the primary girls' participation patterns. Unlike the boys, there is good participation recorded in both individual and team activities. Dance is the most popular activity, followed closely by Gaelic football and swimming, then there is a sharp drop with few young girls participating in camogie, soccer, basketball and athletics. Similar to the boys' data many sports and activities appear only to be provided for in the physical education setting. For example, very few girls engage in gymnastics, rugby, hockey, rounders, badminton and handball in either extra-curricular or extra-school clubs relative to physical education.

Table 34. Participation levels in extra-school sport, extra-curricular sport and physical education among *primary schools girls*.

	Type of Activity		
	Extra-School	Extra-Curricular	Physical Education
Dance (%)	39	24	56
Gaelic football (%)	30	32	58
Swimming (%)	29	20	47
Camogie (%)	16	11	37
Soccer (%)	16	16	49
Basketball (%)	14	18	71
Athletics (%)	13	12	47
Horse riding (%)	13	4	3
Aerobics/exercise class (%)	12	4	12
Tennis (%)	9	5	22
Cross country running (%)	8	5	12
Hockey (%)	7	10	27
Gymnastics (%)	6	7	35
Rounders/Baseball (%)	4	11	55
Rugby (%)	3	5	26
Hurling (%)	4	8	0
Adventure activities (%)	4	2	10
Martial arts (%)	4	3	8
Badminton (%)	3	2	13
Squash (%)	3	2	6
Weight training (%)	2	1	1
Handball (%)	1	5	20
Any other sport (%)	9	8	26

The link between activities offered in school and what is available in the community for primary school children is varied. Some activities have better pathways and are more successful at recruiting and engaging children than others. For example, 1 in 2 primary school boys play soccer, 1 in 10 plays basketball and 1 in 100 is involved in gymnastics. For a lot of primary school children the only exposure they have to many sports and activities is in physical education. This emphasises the need for physical education to be a compulsory part of primary education, and for physical education to follow the curriculum as specified by the DES. For community based physical activity and sport, sports policy needs to evaluate why there are such stark differences in provision of opportunities (or uptake of existing opportunities) for children and youth. Are the differences in participation due to lack of demand or interest by the children? Or are the differences due to a lack of available opportunities, that are inexpensive, good quality and within local communities?

Post-primary school

Tables 35 and 36 show the post-primary participation rates across all three pillars of activity. It is evident from these tables that fewer post-primary youth are engaging in sport and physical activity in comparison to primary youth. For example, 50% boys in primary school play soccer and this decreases to 32% in post-primary males; 39% of primary girls participate in dance clubs and this decreases to 23% among post-primary females. This pattern of participation supports the decrease in sport and physical activity as children age.



Table 35 presents the post-primary males' participation patterns. Continuing the trend of primary school, invasion team-games dominate. Soccer and Gaelic football, dominate, with hurling and rugby following close behind. The most common individual activities are weight training and swimming, however the proportions of youth engaged in these activities are lower than the team activities. Many sports and activities are provided only in the physical education setting. For example, very few boys engage in basketball, badminton, gymnastics, hockey, dance, rounders, cross-country running, badminton and adventure activities in either extra-curricular or extra-school clubs relative to physical education.

Table 35. Participation levels in extra school sport/activity, extra-curricular sport/activity and physical education among *post-primary males*.

	Type of Activity		
	Extra-School	Extra-Curricular	Physical Education
Soccer (%)	32	17	62
Gaelic football (%)	27	12	32
Hurling (%)	17	8	15
Rugby (%)	12	7	26
Weight training (%)	12	3	14
Swimming (%)	11	3	14
Athletics (%)	9	7	38
Basketball (%)	6	9	47
Martial arts (%)	6	5	5
Tennis (%)	5	3	17
Baseball/rounders (%)	4	4	35
Badminton (%)	4	5	38
Dance (%)	4	2	12
Cross country running (%)	4	3	13
Adventure activities (%)	3	2	22
Handball (%)	3	3	24
Horse riding (%)	3	1	3
Hockey (%)	2	2	20
Aerobics/exercise class (%)	2	2	17
Gymnastics (%)	1	2	21
Camogie (%)	1	1	4
Squash (%)	1	2	6
Any other sport (%)	10	3	6

Table 36 presents the post-primary females' participation patterns. The top five activities remain unchanged from primary school, although the proportions participating are much lower. The top two activities are individual pursuits – dance and swimming, followed by the invasion games of Gaelic football, camogie and soccer. Less than one in ten girls participates in athletics, basketball, tennis, aerobics and rounders. Less than one in 20 opts to participate in cross-country running, gymnastics, adventure activities, badminton, hockey, martial arts or rugby in community sports clubs.

Table 36. Participation levels in extra school sport/activity, extra-curricular sport/activity and physical education among *post-primary females*.

	Type of Activity		
	Extra-School	Extra-Curricular	Physical Education
Dance (%)	23	6	35
Swimming (%)	19	4	15
Gaelic football (%)	17	9	27
Camogie (%)	11	6	12
Soccer (%)	10	7	46
Horse riding (%)	9	2	5
Athletics (%)	8	9	48
Basketball (%)	7	14	63
Tennis (%)	7	5	29
Aerobics/exercise class (%)	6	4	31
Baseball/rounders (%)	6	5	57
Cross country running (%)	5	5	16
Gymnastics (%)	5	3	34
Hurling (%)	5	3	9
Adventure activities (%)	4	2	26
Badminton (%)	4	6	53
Hockey (%)	4	6	34
Martial arts (%)	4	4	8
Rugby (%)	3	3	20
Weight training (%)	3	1	7
Handball (%)	2	2	21
Squash (%)	2	1	6
Any other sport (%)	10	3	7


Whether the reason for differences in participation across the various types of activity is due to an issue of supply or one of demand is unclear. However, the need to make opportunities personally meaningful and socially relevant to children and youth is apparent, as unless children are motivated by what is being offered, they will never participate.

Discussion

The number of primary school children participating in extra-school sport at least once a week increased by 2% between 2004 and 2009. Over the same time period, the proportions of older children (post-primary pupils) participating in extra-school sport decreased by 6%. From a surveillance perspective it is imperative to monitor and highlight participation levels to ensure that an increasing trend is resourced and sustained, but equally that a decreasing trend is halted and changed.


A more detailed examination of the post-primary participation data revealed that although fewer youth were participating in extra-school sport and activity overall, those who were engaging reported higher frequencies of participation in 2009 in comparison to 2004 (higher numbers participating 2-3 and 4+ times per week). This increase was evidenced in the specific sports/activities statistics, where figures were shown to increase. Ultimately however, no actual increase in participation occurred. For example, one child who reported playing sport four or more times a week, could have reported participation in four different sports/activities, resulting in increased participation statistics for all of these different activities. However, it is still only one child, this individual is playing more often to make up the deficit left by those who have dropped out. This result emphasises the need for sports policy on participation to cautiously evaluate an increase in numbers attending sports clubs or physical activity groups as the primary or sole indicator that more children and youth are actually playing sport. What it could be more accurately reflecting is that the same children play lots of different sports and that the percentage of those who are unengaged is either remaining constant or increasing. Careful monitoring and evaluation is recommended. Sports policy needs to discuss what is a priority measure – numbers of participants in the club, numbers participating a minimum number of times per week/month or even numbers of youth not participating. A clear, simple and valid method of recording participation within and across clubs must be developed and used to systematically monitor change over time.

CSPPA found that gender did not significantly affect primary pupils' participation in extra-school sports clubs, but significantly fewer post-primary females than males reported extra-school sport participation. Gender inequality is evident, more boys than girls participate, more activities are offered to boys than girls, the types of activity offered are from historically male pursuits, and resources (according to the participants) are not evenly allocated. This finding is supported in the literature (1, 34, 45, 48, 49). Sports policy needs to tackle this issue.



CSPPA found that significantly more primary and post-primary participants from lower socio-economic backgrounds never participate in extra-school sport in comparison to those in higher socio-economic backgrounds. This is in contrast to both the physical education and the extra-curricular sport and physical activity, where no significant social gradient was obtained. In 2008, the ESRI recommended that, in order to tackle the impact of social disadvantage on participation in sport, policy makers need to consider the problem for children as young as 5-10 years of age (85). CSPPA data suggest that social disadvantage is still not being tackled in sports provision, and in fact lends support to Connor's research that stated in 2003 that community based sports participation in Ireland reflects and even exaggerates disparities amongst social class groupings (34). Sports policy in Ireland must cater for the economically disadvantaged and this data suggests that intervention, particularly at club level, is warranted.

In relation to the range of sports and activities that children and youth participate in, CSPPA found that there was a lack of breadth and balance. There was an over emphasis for boys, on team games, particularly invasion games. There appeared to be a good range of individual and team activities offered to girls, however, the proportion of girls participating in these activities was low, suggesting fewer opportunities or that those offered might not be personally meaningful or socially relevant for girls. The Youth Field Sports Programme is a sports council initiative directed at three national governing bodies of sport, the Gaelic Athletic Association (Gaelic games), the Football Association of Ireland (soccer) and the Irish Rugby Football Union (rugby). It aims to increase and support youth involvement in these three main sports. Although such initiatives are positive, competitive team-based sports are already dominant especially among boys. From the data, Gaelic football and soccer are the most successful at recruiting children and youth to their community-based clubs. This is not surprising as these are the sports with designated development officers, support and infrastructure. However, these sports are invasion games, and do not cater for youth who would like to participate in a team sport that does not involve collision. Fear of injury was a reason given for non-participation by youth in this study. In order to reach a goal of increased participation, DTCS and the ISC, DHC and DES through sport, education and health policy must channel a larger share of funding and effort, than is currently being given, towards development of a broader range of opportunities for children and youth. More opportunities for engagement in individual (swimming, athletics, gymnastics and dance) and small team (squash, tennis, badminton) sports and physical activities must be provided. In order to achieve this we recommend a move away from the currently dominant uni-sport model that exists in Ireland to a more multi-sport model both in terms of facilities and human resources.



CSPPA found that among current extra-school sport or physical activity participants, 80% of them had joined an extra-school sport or activity club by the time they were seven years of age. This highlights that most children begin their sporting life at an early age. There is a need for management of this introduction to sport, through the development of suitable pathways. We recommend that fundamental motor skill programmes would be developed by many national governing bodies (NGB) of sport, they would work together to develop a common programme, introducing the child to a multi-sport programme. This fundamental motor skills programme, aimed at 4-7 year olds for example, would provide entry into sport and lead to sustained involvement, due to increased competence and confidence over a range of activities.

The vast majority of post-primary participants are active participants in their club, but very few are involved as coaches, administrators or officials. This has implications for the long-term life of a club. It also suggests that the pedagogical model – sport education – is perhaps not being taught to its fullest potential in schools. In sport education the pupil learns about all components of sport, and the different roles – administrative, coaching, playing, first aid etc. – that are essential to sport. Clubs need to re-evaluate their structures to include, and possibly mandate, opportunities for youth to become more involved on a more organisational/coaching level. This may lead to a greater sense of investment and achievement within the club and may also contribute to counteracting the decrease in participation with age. This would also promote volunteering as youth move into adulthood, and develop positive role models for the younger players.

Family support is essential for participation in extra-school sport. For boys, physical education is influential, for girls exposure to extra-curricular sport was important. Both of these experiences help young children develop the skills and confidence necessary to galvanise the school-community link. In addition to family support, participation in extra-curricular sport and physical activity are important for youth attending post-primary schools. Possessing an adequate skill level, reducing sedentary behaviour and believing that you will not be injured as a result of engaging in extra-school sport are factors that influence boys. For girls, having active friends and engaging generally in an active lifestyle are important.

One third of all non-participants at post-primary level reported that they did not feel good enough to get involved in extra-school based sport. Mason (98) addressed this issue with regards to sports clubs and found that many clubs encourage the more able children to join their club, with very few encouraging the less able to join. Sports clubs need to dispel myths of the ‘motor elite’ only being welcome at their club, the concept of mass participation with clear reward and recognition strategies needs to be put in place, where individuals of all levels of ability are welcome, and where coaching and support will be given to assist in learning of new skills.

Participation rates in physical education are higher than they are in extra-school sport, but more children participate in their local community than do in extra-curricular sport. Additionally, the proportions participating in primary schools are much higher for both boys and girls than they are at post-primary level. The challenge is how to foster transition between all three types of activity, so that children and youth develop lifelong participation habits. This requires the development of pathways. The LISPA model provides a template for development of such pathways in an Irish context (99). The current pathways for sport and physical activity participation for children and youth are complex, and it is unclear if Irish children and youth know how they can sustain lifelong involvement in sport or physical activity should they choose to. Sports policy should adopt the LISPA model. This is advocated in the Irish Sports Council Strategy for 2009-2011 (114), and should be encouraged by the DHC and the DES.

Recommendations and policy implications

Good quality extra-school sport and physical activity programmes, similar to extra-curricular programmes and physical education, are important to the health and wellbeing of our children and youth. They help children achieve the recommended daily minutes of physical activity, and contribute to their all round development, enhancing their quality of life. However, the provision of quality extra-school sports and physical activity programmes requires intervention. We recommend:

Activity Type	Current Status (2009)	Activity Goal	Timeline	Responsibility
Extra-School Sport and Physical Activity	83% primary children participate at least once a week.	Increase to 85%. Focus on those who participate only once a week or less often.	2015	DTCS, DEHLG, DES, DHC.
	11% never take part in community-based sports clubs	Decrease to 10% by broadening range of activities available.	2015	
	64% post-primary pupils participate at least once a week.	Increase to 70%. Focus on those who participate once a week or less often.	2015	
	34% never take part in community-based sports clubs	Decrease to 20% by broadening range of activities available, and offering more for recreational athletes.	2020	

Note. DTCS – Department of Tourism, Culture and Sport. DHC – Department of Health and Children. DES – Department of Education and Skills, DEHLG – Department of Environment, Heritage and Local Government.

- The development of school-community link for sport and physical activity. This requires action on a number of fronts:
 - i) Develop a broader and more balanced extra-school sports / activity programme. Aim to increase the number of clubs that cater for individual activities or minority sports, and that cater for the recreational athlete.
 - ii) Refocus the benefits and outcomes of participation in sport for youth to fitness and learning new skills, mastering new tasks rather than performance in competition.
 - iii) Provide more equity in funding between sports for the training and deployment of development officers and coaches to work in the community and in the school.
 - iv) Foster and reward clubs that provide and support a variety of participation pathways for children and youth.
 - v) Engage youth in coaching, administrative and refereeing duties with extra-school sport and activity clubs.

- Girls participate less than boys in extra-school sport and physical activity. Dance was the most popular activity for girls, yet there is no National Governing Body for dance. This raises questions about the funding dance receives particularly in relation to its role in increasing participation in physical activity among children and youth.

- Children from lower social classes participate less than those from higher social classes. Social inequality in terms of provision need to be addressed.

- Family support is a crucial determinant of participation for all children and youth who wish to participate in extra-school support. National Governing Bodies of sport and other agencies that provide sport and physical activity opportunities to children and youth must evaluate how family friendly they are, and resources should be allocated to ensure inclusion rather than exclusion of families.

CHAPTER 8: ACTIVE TRAVEL



Active travel refers to either walking or cycling some or all of the way to a destination. Inactive travel refers to using motorised transport. The World Health Organisation states that walking can have significant benefits to health and is the nearest activity to perfect exercise (16). The journey to school can be an important means for establishing daily physical activity. This chapter examines how children travel to and from schools in Ireland to determine how many are walking or cycling on this journey. Data on the relation between active travel and participation in sport will be presented.

Active travel to school

Children who actively travel to school have higher levels of physical activity after school (100, 101), better cardiovascular fitness (101) and higher energy expenditure (102) than children who are brought to school by car. Promoting active travel not only reduces an inactive behaviour, but replaces it with a moderate intensity activity (103).

Irish figures relating to active travel to school are worrying. Only 27% of pupils aged between 13 and 18 who are usually resident in the state and attending school and college, travelled actively in 2006 (104). The main form of transport was by bus (36%) while 33% of pupils travelled by car. These figures are following a downhill trend as 42% of pupils actively commuted in 1991, 35% in 1996, and 29% in 2002. The gender breakdown of these results showed that males were more likely to actively commute than females (29% vs. 25%). Only 5% of males and less than 1% of females cycled to school in 2006. There was a marked difference in mode of transport by area of residence. Over 50% of rural pupils took a bus to school compared to 20% of urban pupils. The CSO data are limited by a focus on post-primary school children, therefore comparison data for 10-12 year olds are lacking.

If participants walked or cycled to or from school they were classified as active commuters. If they travelled by car or bus they were classified as inactive commuters. Where possible, comparisons have been made between the 2004 and the 2009 data. Caution is noted in interpretation as the sample of children are different, and the time of year in which the data were collected is different (2004 – October and November, 2009 – March, April and May), however sample sizes are representative and therefore trend differences within the data can be established.

Key active transport findings

- In 2009, 38% of children walk or cycle to school. Rates have increased since 2004.
- Journey durations were on average 15 minutes for active commuters.
- Age related declines seen in other types of physical activity do not exist in active commuting.
- Distance and time were the main barriers to active commuting.
- Active commuting has no influence on extra-curricular sport participation levels.



Primary and post-primary active travel results

Changes in active travel between 2004 and 2009

Thirty eight percent (31% primary, 40% post-primary) of children and youth walked or cycled to school in 2009. These proportions have increased from 26% (primary) and 30% (post-primary) in 2004. Only 1% (primary) and 3% (post-primary) cycled to school in 2009, primary figures have dropped (was 3% in 2004), post-primary remain the same since 2004 (Figure 20). Journey duration for active commuters took an average of 15 minutes for most children, this remains unchanged from 2004.

Age and gender

No gender differences exist for active commuting at primary school. In post-primary females were less likely to actively commute than males (38% vs. 43%, $p < 0.01$). The age related declines recorded in other types of physical activity were not evident in active commuting. Similar proportions of 10 to 18 year olds walked or cycled to school.

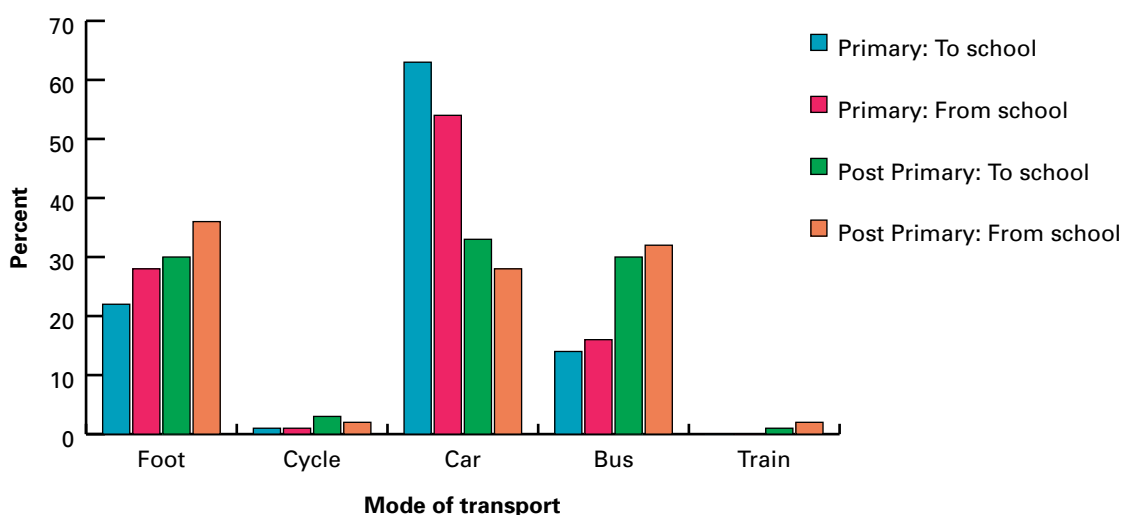


Figure 20. Proportion of primary pupils by mode of transport to school and from school

Social class and area of residence

More children from urban compared to rural areas, and more children attending single gender schools (i.e. girls only or boys only) actively commuted to school. This is thought to be due to the fact that single gender schools exist mainly in urban environments. More girls in higher social classes (SC1-4) actively commuted to school compared to those in lower social classes (SC 5-6, $p < 0.01$).

Barriers to active commuting

Distance was the number one barrier to commuting to school, reported by one third of primary (37%) and half of post-primary (54%) children (Table 37). Time was the second barrier, however fewer primary than post-primary children cited this. Time-related reasons included 'because when you are walking home it takes 15 minutes'. Traffic related danger was the third barrier for primary children and reported by 13% of the sample 'because cars go flying past where I live'. For post-primary pupils, convenience was the third reason 'because it's easier to get the bus than walk' or 'because my Mam goes out past the school on her way to work'.

Table 37. Reasons for inactive commuting to school.

School						
	Primary School			Post-Primary School		
	Boys %	Girls %	All %	Male %	Female %	All %
Distance	38	36	37	53	55	54
Time	14	13	13	19	20	19
Traffic Related Danger	14	13	13	7	5	6
Convenience	9	11	10	8	7	8
Weather	7	8	8	3	7	8
Other	7	7	7	4	4	4
Intrinsic Factor	7	3	5	2	2	2
Danger	3	6	5	1	1	1
Physical Environment	1	2	2	0	0	0
Bags	0	1	1	3	2	2
Total	100	100	100	100	100	100

Relationship between active commuting and participation in extra-curricular and extra-school sport.

No difference was found in extra-curricular sport participation between active and inactive commuters. Participation in extra-school sports was higher for boys who inactively commuted to school, in comparison to the active commuters (78% inactive vs. 71% active commuters, $p < 0.001$). A similar pattern existed for girls, but the difference was not significant. This can be explained by the fact that children living in densely populated areas had lower participation rates in extra-school sport, yet these are the children who are most likely to walk or cycle to school.

Discussion

The proportion of primary and post-primary pupils actively commuting to school has increased since 2004. The percentage of those cycling remains unchanged, at a very low 3% (with almost no girls). Walking and cycling are supported by the new transport policy for Ireland Smarter Travel – A Sustainable Transport Future 2009-2020 (56). For children and youth, within this policy the Green School initiative is encouraging schools to have an active travel plan, one that encourages pupils to use alternatives to the car when it comes to travelling to school. Ireland's first National Cycle Policy Framework cites a vision of a strong cycling culture in the cities, towns, villages and rural areas of Ireland (57). It is working to ensure the structures, resources and supports are in place to deliver on this vision. The impact of these policies and the actions by Government have yet to be fully realised, and continued monitoring of the transport choices of children and youth as they make their way to school every day is recommended. This will provide data to establish if the current positive trend can be maintained into the future.

It takes a quarter of an hour or less for active commuters, on average, to get to school. If children travel to and from school this accumulates to a total of 30 minutes daily, a significant contribution towards meeting the National guidelines of one hour of moderate to vigorous physical activity a day. This is supported by the fact that there is a positive association between active commuting and overall physical activity levels (105).

No age related decline was recorded for active commuting, as 18 year olds were as likely to walk or cycle to school as 10 year olds. This makes active transport a unique form of physical activity, one that could be used to ameliorate the established age-related decline in extra-curricular and extra-school sport found in this study.

More active commuters live in urban areas than rural areas. This is supported by Nelson and colleagues (2008) who revealed that Irish adolescents (15-17 year olds) living in more densely populated areas had greater odds of active commuting than those in the most sparsely populated areas (106). Boys who actively commute to school were less likely to participate in extra-school sport than their peers who inactively commute. This emphasises the importance of walking and cycling to school as a source of daily physical activity for a certain group of children. It also is further support to the finding that children living in heavily populated areas (>70,000) are not engaging in extra-school sport to the same level as those living in more rural areas. Department of Transport and the Department of Culture, Tourism and Sport need to work together to address the issue of non-participation in sport and active commuting.

Distance and time were the most cited reasons for not actively commuting to school. These factors are constant and cannot be changed. Nelson found that distance is an important perceived barrier to active commuting and a predictor of mode choice among adolescents (106). Beck and Greenspan (2008) found that distance was the main barrier to active commuting, but also fear of crime and traffic danger (17). This is similar to CSPPA, which found that 'traffic related danger' and 'convenience' were also cited as key barriers. To encourage children to actively commute to school, safer routes for walking and cycling need to be created. It is also important that parents and teachers promote active commuting to school among young people, so it becomes the norm for them and they do not develop reliance on lifts from their parents.



Recommendations and policy implications

Activity Type	Current Status (2009)	Activity Goal	Timeline	Responsibility
Active Travel	31% primary children walked to school, 1% cycled.	Increase to 40% walking, 5% cycling.	2020	DT, DES, DEHLG, DHC
	40% post-primary youth walked to school, 3% cycled.	Increase to 50% walking, 5% cycling	2020	

Note. DHC – Department of Health and Children. DT – Department of Transport, DES – Department of Education and Skills, DEHLG – Department of Environment, Heritage and Local Government.

- The age related decline in physical activity witnessed in physical education, extra-curricular and extra-school sport and physical activity was not evident in active commuting. This makes active transport a unique, viable and valuable form of daily physical activity. Transport, education and sport policies need to protect and encourage this form of activity.
- Very low levels of children cycle to school. Research needs to explore why this is the case, and establish possible interventions to put in place to reduce barriers to cycling.
- Evidence-based school and community programmes that support active commuting to school exist e.g. the ‘walking bus’ or ‘walk and cycle on Wednesdays’. Information on these interventions, and others, can be found at www.activelivingresearch.org, or at www.sustrans.org.uk/ and http://bikeweek.ie/at_school
- Continued monitoring of the transport choices of children and youth is recommended. This will provide data to establish if the current positive trend can be maintained into the future. It will also allow us to assess the impact of recent Government policy in this area.

CHAPTER 9: SEDENTARY BEHAVIOUR



More than two million deaths each year are attributable to physical inactivity. Sedentary behaviour is an independent risk factor for at least 35 chronic health conditions. It can promote obesity by displacing physical activity, and tracks better than physical activity from adolescence to early adulthood. Youth need to be encouraged to reduce the amount of time spent in sedentary activities such as TV and video viewing, and playing computer games (107).

Sedentary behaviour refers to activities that do not involve participation in physical activity (108). Among youth, these include TV and video viewing, playing computer games, using the internet, talking on the phone, sitting and talking with friends and listening to music (109). Males favour technological sedentary activities such as playing video or computer games, while females favour more social activities such as talking on the phone and sitting talking with friends (49). Although television watching is the dominant activity, it is no longer the only concern. The daily sedentary leisure habits of young people are becoming more complex and varied. It is recommended that the maximum number of minutes of exposure to sedentary screen time (i.e. TV, DVD/Video, and computer) should be < 120 minutes daily (110). However, no recommendations exist for other sedentary behaviours such as sitting during school breaks, talking on the phone, texting or sitting listening to music. Reducing sedentary behaviour as well as promoting physical activity is the key in addressing the inactivity problem among Irish youth.

Key sedentary behaviour findings

- Primary school children spend much less time sitting than post-primary youth.
- Few children (1%) spend less than two hours daily sitting viewing TV, videos or playing on the computer. This two hour threshold is recommended maximum, once exceeded there is a higher likelihood of developing health problems long term.
- Among post-primary children, active youth spend significantly less time in sedentary behaviour than inactive youth.
- Girls spend significantly more minutes on homework each day in comparison to boys.

Time spent in sedentary leisure pursuits

CSPPA found that primary school children spend 2.6 hours daily in sedentary leisure pursuits. No gender differences existed (boys = 2.7 and girls 2.6 hours per day), and as age increased from 10 to 12 years so did average time in sedentary activities for boys, but not girls (Table 38).

Table 38. Average hours spent in sedentary activities by gender and age

Average hours per day				
	10 years	11 years	12 years	All
Girls	2.6 (1.8)	2.4 (1.6)	2.7 (1.7)	2.6 (1.7)
Boys	1.9 (1.5)	2.5 (1.6)	2.9 (2.1)	2.7 (1.9)

Note. Values are mean (\pm SD)

Post-primary pupils spend on average 4.2 hours in sedentary leisure pursuits daily. Males spent significantly less time, than females (3.9 vs. 4.5 hours, $p < 0.001$), and as age increased so did time spent sitting for both genders (Table 39).

Table 39. Average hours spent in sedentary activities by gender and age

Average hours per day				
	12-13 years	14-15 years	16-18 years	All
Females	4.0 (2.7)	4.6 (2.8)	4.8 (2.6)	4.5 (2.7)
Males	3.4 (2.5)	4.0 (2.7)	4.1 (2.5)	3.9 (2.6)

Note. Values are means (\pm SD)

Sedentary screen time

Less than 1% of the sample met the health recommendation of < 120 minutes of sedentary screen time daily, or 99% exceeded this recommended maximum. The proportion of primary and post-primary participants who met this guideline by days per week is shown on Figure 21. Fewer post-primary than primary pupils met recommendation. Whereas 100% of primary pupils and 96% of post-primary pupils spent < 120 minutes of screen time one day week, this proportion dropped to 0% and 1% for 7 days per week respectively.

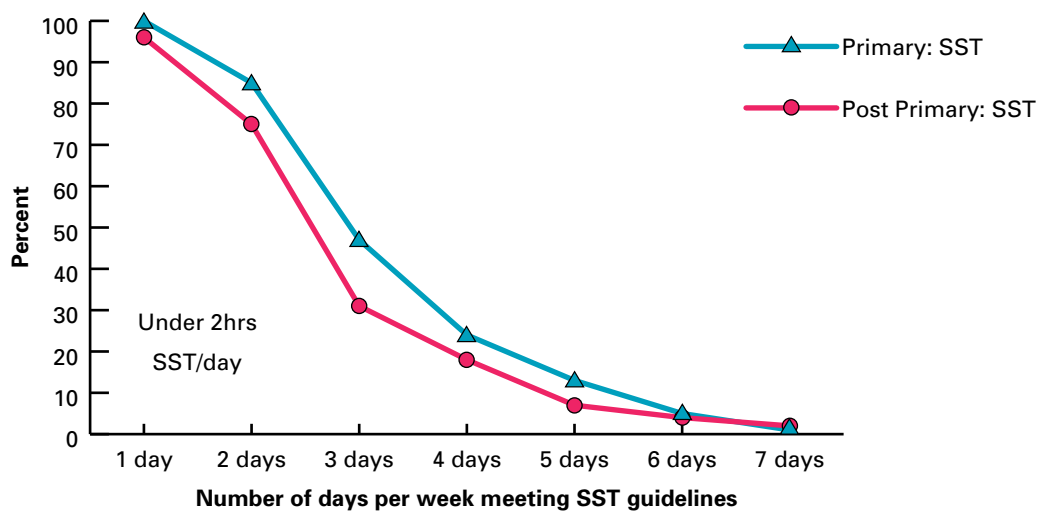


Figure 21. Proportion of primary and post-primary CSPPA participants achieving the recommended < 120 minutes of sedentary screen time daily.

Note: SST = Sedentary Screen Time, inclusive of TV, Video/DVD and computer. P=primary. PP=post-primary. Recommendations for SST < 120 minutes daily during daylight hours (110).

Sedentary behaviour and physical activity

Post-primary youth who met the recommended ≥ 60 minutes of MVPA daily had significantly lower minutes of sedentary activity than those who did not meet the recommendations (4.3 hrs vs. 3.9 hrs, $p < 0.05$). No difference was recorded among primary school children.

Time spent doing homework

Primary school children spent about 30 minutes per day doing homework (31 ± 22 minutes). Children in 6th class spent more minutes doing homework daily than those in 5th class (32 vs. 29 minutes, $p < 0.05$). Post-primary pupils spent just over an hour a day, on average, doing homework (67 minutes \pm 56). The amount of time spent doing homework per day by gender and year in school is shown on Table 40. In every school year females spent more time, than males, on homework ($p < 0.01$). Pupils in the exam years (3rd and 6th) spent the most time on homework. Homework minutes increased as youth progressed through school, apart from in 4th year where the time spent on homework is less than in any other year group ($p < 0.01$).

Table 40. Average minutes spent doing homework per day

Post-primary Year in School						
	1st	2nd	3rd	4th	5th	6th
Boys	55 (48)	54 (45)	90 (57)	14 (14)	55 (44)	89 (62)
Girls	64(51)	67 (52)	119 (73)	20 (24)	83 (61)	126 (77)
All	61 (50)	61 (49)	102 (66)	17 (21)	71 (56)	104 (71)

Note. Values are means (\pm SD)

Discussion

In addition to the 6 hours per day that children spend sitting at school, a significant proportion of their time is also spent in sedentary leisure habits. The CSPPA study found that only 1% of participants met the criteria of ≤ 120 minutes of sedentary screen time daily. Woods and colleagues (2007) reported that boys and girls aged 15-17 spent more than 4 hours per day pursuing sedentary leisure behaviours, with 78% of boys and 81% of girls watching television/video during a 7 day period (49). Other than sleep, television viewing represents the single greatest source of physical inactivity among children (111). Dietz suggests that television viewing may promote obesity by displacing physical activity and by increased dietary intake during viewing possibly as a result of food advertising (112). The HBSC study found that there was very little gender differences in television viewing patterns (50). They also found that most children viewed TV for at least 2 hours daily, which is supported by CSPPA. Fahey and colleagues found 4th year pupils had the highest level of TV viewing, CSPPA also supports this finding (1).

Girls study more than boys, and time spent doing homework increases as a child progresses through the school system (apart from 4th year). This finding was also supported by the ESRI study (1). Canada's Physical Activity Guides for Children and Youth recommend that children and adolescents decrease by at least 90 minutes per day the amount of time spent in inactive pursuits, such as watching television, watching videos, and sitting at a computer (113). CSPPA provides us with the beginnings of national norms for time spent in inactive pursuits by Irish children and youth. It is now time to set national targets for children to achieve in terms of establishing a healthy amount of inactive leisure time.

Recommendations and policy implications

Activity Type	Current Status (2009)	Activity Goal	Timeline	Responsibility
Sedentary Behaviour	Less than 1% of children and youth met the health recommendation of < 120 minutes of sedentary screen time during daylight hours.	Increase this to 10%.	2020	DHC, DES, DT, DTCS, DEHLG.

Note. DTCS – Department of Tourism, Culture and Sport. DHC – Department of Health and Children. DT – Department of Transport, DES – Department of Education and Skills, DEHLG – Department of Environment, Heritage and Local Government.

- There is a need to develop national guidelines for a maximum recommended amount of sedentary behaviour for children and youth.
- Time spent in sedentary behaviour increases as children age; this is paralleled by a drop in physical activity. Departments of health, education, transport, arts, sport and tourism need to combine efforts to decrease minutes of sedentary behaviour and to prevent drop-out from physical activity in children and youth.
- Monitor changes in behaviour in youth through robust national surveillance systems. This data will then allow accurate evaluation of progress.

CHAPTER 10: SUMMARY OF FINDINGS



This chapter is a summary of the factors that influence participation in physical activity, physical education, extra-curricular and extra-school sport and physical activity. As participation levels for males and females are different, the summary will report separately for each gender. It will also present the findings for primary and post-primary children separately as provision for sport participation is different in the two school systems.

Participation Levels

There has been an increase in the proportion of children and youth participating in extra-curricular sport, and active travel to school since 2004. Additionally, the minutes timetabled for physical education for all children and youth has increased since 2004. Among primary school children, participation in extra-school sport has increased since 2004. The only decrease in participation since 2004 was recorded in extra-school sport and physical activity among post-primary pupils.

Demographic determinants of participation

Gender

Girls are less likely than boys to meet the physical activity recommendations for health (≥ 60 mins MVPA daily). Girls receive fewer minutes of physical education, and are more likely to be timetabled for single, as opposed to double class periods, than boys. These differences were evident across all school years and remain unchanged since 2004.

No gender differences were found for participation rates in extra-curricular sport, extra-school sport, or active travel to school among primary school children. Gender differences

were evident among post-primary pupils. Males were more likely than females to participate in both extra-curricular and extra-school sport and to walk or cycle to school.

More post-primary pupils (both males and females) reported participating at least once a week in extra-curricular sport and physical activity in 2009 in comparison to 2004. Participation rates in extra-school sport and physical activity have decreased by 8% for males and 6% for females over the same time period.

Age

Independent of gender, the amount of MVPA that children and youth participate in was found to decrease significantly with increasing age; 10-12 year old children are the most active. This age related decline was evident in physical education, extra-curricular and extra-school sport. Only active travel, or walking and cycling to and from school remained impervious to age. Similar proportions of 10 year olds up to 18 year olds walked or cycled to school.

In physical education, senior students, irrespective of gender, are more likely to receive single as opposed to double physical education classes. Fourth year pupils were the exception, as they received significantly more minutes of physical education than any other year group, and were the only pupils to receive triple periods of physical education.

Socio economic status

No significant differences were found in the proportion of children, across all social class categories, who reached the recommended minimum amount of physical activity. These were low across all categories.

A child's social class did not influence the minutes of physical education they were timetabled for each week, nor did it affect their participation in extra-curricular sport at primary or post-primary level. However, the higher a child's social class the more likely they were to participate in extra-school sports and physical activity clubs. Extra-school sport or physical activity is the most discretionary type of activity; children have to choose to engage in it and frequently there is a monetary commitment. Girls from higher social classes were more likely to walk to and from school compared to girls in lower social classes. This is thought to be due to perceptions of safety.

Area of residence

Participants' area of residence showed no significant influence on minutes of physical education timetabled per week. At primary school level, area of residence had no influence on extra-school sport, but was a determinant of participation in extra-curricular sport. At post-primary level, area of residence had no influence on extra-curricular activity, but was a determinant of extra-school sport. In both cases, more youth from villages (area of residence of less than 3,000) participated than from more urban areas. These findings were significant. This might be due to the reliance on a small number of children in villages or small towns for a high number of teams or activities. For walking and cycling to school the opposite was true, more children from urban, compared to rural areas, walked or cycled to school.

Disability

Children who reported having a disability or illness that affected their ability to participate in physical activity had a similar profile in terms of physical activity participation to those without a disability or illness. Boys were more active than girls, and the likelihood of meeting the physical activity recommendations and of participation in extra-curricular and extra-school sport decreased with increasing age.

Type of physical activity

Physical education was seen to provide children and youth with the broadest range or experiences in sport and physical activity out of all three pillars. On average, primary pupils received 46 minutes, and post-primary pupils receive 77 minutes of physical education per week. Time spent in physical education positively influenced primary boys' participation in extra-curricular and extra-school and sport and physical activity, it also influenced post-primary males' participation in extra-curricular sport. Physical education had no direct influence on engagement in extra-curricular or extra-school sport or physical activity for girls/females; it did however significantly influence how much MVPA was accumulated by post-primary females.

Sixty three percent of primary and 73% of post-primary pupils participated in extra-curricular sport or physical activity at least once a week. Eighty three percent of primary and 64% of post-primary pupils participated in extra-school sport or physical activity at least once a week. If you combine extra-curricular with extra-school participation, then 91% of primary children and 85% of post-primary youth reported doing some form of sport or physical activity at least once a week.

Soccer, Gaelic football, hurling and rugby dominate club participation among boys. Dance, swimming and Gaelic football dominate club participation for girls.

The majority of opportunities offered to children and youth, especially boys, are from the traditional invasive team-based sports. While other activities exist, the proportion of children availing of these opportunities is very low. One in two boys plays soccer, one in ten boys plays basketball and one in one hundred boys engages in gymnastics. One in four girls dance, one in ten girls play soccer and one in one hundred girls play rugby. This could be due to a lack of opportunities for engagement, or a lack of interest in the activity by the youth. What is clear is that the pathways that make it easy for a child to transition from a sport/activity in their school to their local clubs are poorly understood by children and youth. These pathways must be clear and ideally cater for the recreational, as well as the elite athlete. The LISPA model provides a template for such pathways (99). Hardman (2007) referred to the 'Participation Pathway Partnership' as a key term for the future, this vision involves using the school as a gateway for engaging the wider local community to help youth continue participating in physical activity after and outside school (19).

Behaviour, environmental, social and personal determinants of participation

Behavioural

The minutes of physical education received in school each week was an important determinant of extra-curricular and extra-school sport participation among all boys. Minutes of physical education received in school each week significantly contributed to post-primary females reaching the ≥ 60 min MVPA daily.

Participation in extra-curricular sport and physical activity was a significant determinant of participation in extra-school sport and minutes of MVPA accumulated each day for all girls, but only for males in post-primary schools.

Participation in extra-school sport and physical activity was a significant determinant of participation in extra-curricular sport and minutes of MVPA accumulated each day for all girls, but only for males in post-primary schools.

Walking or cycling to school was a significant determinant of minutes of MVPA accumulated each day for all primary school children, but only for females in post-primary schools.

Environmental (School)

Attending a 'girls only' school as opposed to a mixed gender school, and attending a large as opposed to a small school predicted participation in extra-school sport for girls in primary schools. Attending a designated disadvantaged school decreased likelihood of participation in extra-school and extra-curricular sport for post-primary females. Attending a large school decreased likelihood of participation in extra-curricular sport for boys. Attending a 'boys only' increased likelihood of participation in extra-school sport for post-primary males.

Social

Teacher support is crucial for extra-curricular participation. Family support is crucial for extra-school involvement. Peer support was important only at post-primary level, revealing that as children age their friends and what they think become more important.

Personal

Participation in sport and physical activity was motivated by willpower, energy and feelings of competence in one's skill level.

Non participation

The top three reasons given by primary school boys for not participating were that they already do enough activity, lack of competence and transport difficulties. For girls the reasons were no suitable activities being offered, transport difficulties and feelings of incompetence. Among post-primary pupils, males ranked fear of being injured, time pressure, no reason, and feelings of incompetence as their top barriers. Females ranked time pressure, feelings of incompetence and not liking sport as their main barriers. All barriers increased with increasing age except for 'too expensive' which was equally distributed across all ages.

RECOMMENDATIONS



We have one recommendation:

INCREASE PARTICIPATION.

Inactivity or low levels of participation in physical activity during childhood and youth can have lasting consequences on one's health and quality of life. We know that children should be moderately to vigorously active for at least sixty minutes daily. We know that this is achievable for most children some of the time, we need it to be achieved by all children most, if not all, of the time.

The CSPPA study highlights that there has been little progress made since the previous study in 2004 in terms of increasing physical activity levels of children and youth. This is an issue that calls for immediate attention through promotion and development of all avenues for physical activity. This will require multi-level partnership, collaboration and a common vision. While government departments should lead on facilitating these changes, they will require commitment from a range of agencies, institutions and organisations to achieve this change. From the findings of this study, we have one recommendation: **INCREASE PARTICIPATION**. Table 41 outlines the minimum outcomes we consider necessary if this recommendation is to be met.

Table 41. Recommendations of the Children’s Sport Participation and Physical Activity Study

Activity Type	Current Status (2009)	Activity Goal	Timeline	Responsibility
General Physical Activity	19% of primary children meet DHC health goal of ≥ 60 min MVPA daily.	Increase to 30%.	2020	DOH, DES, DTCS, DT, DEHLG.
	12% of post-primary children meet the DHC health goal of ≥ 60 mins of MVPA daily	Increase to 20%	2020	
Physical Education	35% primary pupils received the DES minimum requirement of 60 minutes per week	Increase % meeting 60 minute requirement to 50%.	2020	DES
	10% post-primary pupils received the DES minimum of 120 minutes per week	Increase % meeting 120 minute requirement to 20%	2020	
Extra-Curricular Sport and Physical Activity	63% primary children participate at least once a week.	Increase to 73%. Focus on those who participate once a week or less often.	2015	DTCS, DES, DHC.
	24% never take part in extra-curricular activity clubs	Decrease to 20% by broadening range of activities available.	2015	
	73% post-primary pupils participate at least once a week.	Increase to 80%. Focus on those who participate once a week or less often.	2015	
	16% never take part in extra-curricular activity clubs	Decrease to 10% by broadening range of activities available.	2015	
Extra-School Sport and Physical Activity	83% primary children participate at least once a week.	Increase to 85%. Focus on those who participate only once a week or less often.	2015	DTCS, DEHLG, DES, DHC.
	11% never take part in community-based sports clubs	Decrease to 10% by broadening range of activities available.	2015	
	64% post-primary pupils participate at least once a week.	Increase to 70%. Focus on those who participate once a week or less often.	2015	
	34% never take part in community-based sports clubs	Decrease to 20% by broadening range of activities available, and offering more for recreational athletes.	2020	
Active Travel	31% primary children walked to school, 1% cycled.	Increase to 40% walking, 5% cycling.	2020	DT, DES, DEHLG, DHC.
	40% post-primary youth walked to school, 3% cycled.	Increase to 50% walking, 5% cycling	2020	
Sedentary Behaviour	Less than 1% of children and youth met the health recommendation of < 120 minutes of sedentary screen time during daylight hours..	Increase this to 10%.	2020	DHC, DES, DT, DTCS, DEHLG.

Note. DTCS – Department of Tourism, Culture and Sport (formerly Department of Arts, Sport and Tourism). DHC – Department of Health and Children. DT – Department of Transport, DES – Department of Education and Skills, DEHLG – Department of Environment, Heritage and Local Government.



The following section provides strategic advice, based on the findings of this research study, on how to increase the participation levels of children and youth in physical activity and sport. This advice is how best we feel the activity goals listed on Table 41 can be achieved.

1. INVEST IN PEOPLE: THE HUMAN RESOURCE

We recommend that an ‘Active Schools Network’, with the aim of more children, more active, more often be established in Ireland. This evidence-based initiative would help achieve the increased participation goal. For example, in Scotland, the goal of the active school network was to offer all children the motivation and opportunities to get active. This initiative received seed funding of £24 million in 2004, and is still ongoing.

Active school co-ordinators would be employed, jointly by DES and DTCS, in primary and post-primary schools throughout the country. Their job would be to increase the number of opportunities for all children to participate in physical activity and sport, to build bridges with sports clubs and other community organisations, essentially developing pathways for pupils to continue their participation in sport and physical activity outside of the school gates. Programmes that active school co-ordinators could offer would include daily physical activity opportunities, school clubs, active travel, playground games, festivals and competitions and links to community programmes. They would build on the Active Schools Flag and Active Schools Week initiatives that are currently running in Ireland (www.activeschoolflag.ie). A successful active schools network would involve partnership with education, health promoting schools, green schools, Local Sports Partnerships, travel co-ordinators and road safety officers, sports development officers (at local and regional levels), recreation and leisure, local sports clubs and community groups. To date, an evidence base has been gathered that demonstrates the success of active schools

co-ordinators in increasing the number of children who are moderately to vigorously active for at least sixty minutes daily. In Scotland, this success was characterised by an increase in the:

- number of school clubs that were set up.
- number of volunteers engaged in youth sport.
- percentage of children and youth meeting the ≥ 60 minutes of MVPA daily.
- percentage engaging in at least one extra-curricular physical activity opportunity.
- Percentage engaging in active travel to and from school.

Volunteers are the lifeblood of Irish sport and physical activity. The proportion of people volunteering in Ireland is approximately 15% of the adult population. However, this is not a reason for an under supply of highly trained coaches and physical education teachers. There is a need for a combination of paid professionals and volunteers in order to ensure that the running of sport/physical activity is smooth and efficient. In order to provide youth with a quality balanced broad programme, a balance of staff to volunteers needs to be achieved. A study on the needs, motivations and capacities of volunteers in youth sport in Ireland is the focus of a separate report.

The investment made needs to be underpinned by an agreed focus and a shared agenda between those providing extra-curricular and extra-school sport opportunities for children and youth. For example, if a strategy of participation is adopted, then this will reward individual achievement, effort and improvement rather than performance results. The focus will be more on learning how to improve or master the skill of a sport, rather than winning a specific competition. Ultimately, this will lead to youth being encouraged and motivated to stay involved in the activity, however it may result in fewer trophies.

Family support is a crucial determinant of participation for all children and youth who wish to participate in extra-school support. Teachers that teach within the school are crucial in developing extra-curricular sport and physical activity opportunities for children and youth. National Governing Bodies of sport and other agencies that provide sport and physical activity opportunities to children and youth must evaluate whether they are family friendly, and resources should be allocated to ensure inclusion rather than exclusion of families.

Local communities need to be empowered to develop their sport knowledge and skills, so that they are confident and competent and will encourage their children and youth to bring activity from the school to their backyard, their local playground, their community halls, green spaces and footpaths. The physical education fraternity need to examine why there is such poor continuity between their curriculum and what is provided in extra-curricular sport. Their advice in finding a solution to this problem would be valuable.

2. BROADEN THE RANGE OF PROGRAMMES

This research has found that there is a lack of balance in the opportunities provided to children and youth for participation in physical activity. This lack of balance can be seen across all three pillars of participation, in extra-school and extra-curricular sport and physical activity, and in physical education. For example, in the games strand of physical education curriculum, the number of opportunities provided for participation in traditional team sports or invasion games outnumber the opportunities to participate in non-invasive court or fielding games. This is amplified at community level and in after school opportunities.

Non-engagement may reflect a lack of choice or a lack of interest. Either way, strategies need to be developed to assist in broadening the range of opportunities to include activities like gymnastics, dance, aerobics and martial arts. This will require significant changes in grassroots developments and sports policy development will need to drive these changes.

Educational policy must ensure that schools adhere to the full physical education curriculum with facilities expanded, where necessary, to accommodate this. This will introduce pupils to the full range of physical activities, including games (invasion, fielding and court), gymnastics, dance, aquatics, outdoor and adventure activities, athletics and health related fitness. This quality physical education programme must be supported by a broad and balanced extra-curricular and extra-school sport programme. The goal is to provide access to safe, fun and varied sport and physical activity opportunities. This requires policy to support more equity in funding between sports for the training and deployment of development officers and coaches to work in the community and in the school, enhancing the school-community link.

3. PATHWAYS TO PARTICIPATION: THE IMPORTANCE OF A MULTI-SPORT MODEL

There is a need in Ireland to remodel the locations for sport and physical activity participation and to move away from the currently dominant uni-sport model, that is one sport (or a limited number of similar sports), one club, one ground to a more multi-sport model, that is a variety of sports (individual and team based), numerous clubs, all catered for in one ground. A hypothetical situation would involve the full family going to a single location to partake in recreational and competitive dance, football, basketball, gymnastics, badminton and hurling. One venue, numerous interests catered for, one bill in terms of facility maintenance. This could have major participation, financial and social implications. Further research could determine the exact impact of this type of structure on Irish sport.

4. PATHWAYS TO PARTICIPATION: FUNDAMENTAL MOTOR SKILLS

From the age of four years children engage formally with extra-school sport. This is an important time in terms of their motor development, and it is essential that they have access to environments that help them develop a range of skills, kicking, throwing, locomotion, balance etc. Data from CSPPA suggests that a fundamental motor skills programme, not aligned to any one sport or activity, but whose purpose is to develop overall skills and abilities common to all sports and activities is needed in Ireland. This community based initiative would allow children of all ages to begin their journey into sport and exercise skill development in a fun and enjoyable way.

5. REMOVE GENDER, AGE AND SOCIAL INEQUALITIES

Address the low proportion of girls who are involved in regular physical activity. Importantly, the gender inequalities shown to exist in the timetabling of physical education in schools in Ireland must be removed. In many schools, this can be answered simply through timetabling rearrangement.

Participation rates decrease as children age. This was evident in physical education (senior pupils receive less physical education than juniors), in extra-curricular and in extra-school sport and physical activity. The large drop in the number of youth participating in extra-school sports following the transition out of school is an issue that current sports policies and strategies have failed to address. Although this study did not focus on life after school, it was evident that as children move into the senior years in school, participation has already begun to drop off. The pathways, or choices, that are available to children and youth in Ireland to encourage them to stay engaged in sport and physical activity need to be critically evaluated and redeveloped to avoid the drop out that is currently happening. Strategic planning needs to address how to retain this high risk group in extra-school sport.

Social disadvantage has been largely ignored in relation to sports provision. This study found that children and youth from higher socio-economic backgrounds participate more in extra-school sport than those from lower socio-economic backgrounds. Current extra-school sport and physical activity opportunities for participation in Ireland may reflect and even exaggerate disparities amongst social class groupings. For example, dance and swimming are the top two extra-school activities for girls; both require paying to use facilities (halls or swimming pools). Sports policy in Ireland must cater for the economically disadvantaged.

6. ENFORCE A MINIMUM PHYSICAL EDUCATION TIME

The Department of Education and Skills currently recommend that primary school pupils receive 60 minutes, and post-primary pupils receive 120 minutes of physical education per week. This study has found that the proportion of children and youth actually receiving this amount of time for physical education each week is much lower. Educational policy needs to change the word recommendation to 'requirement', and each child, irrespective of gender or age, must receive this required time. It is recommended by this research that a two hour time period, preferably double or triple classes, be allocated to physical education each week in both primary and post-primary schools.

7. TARGET SPORTS AND ACTIVITIES AT RISK OF DISAPPEARING:

From this study it is evident that some sports and physical activities are in danger of disappearing. For example, gymnastics is only taught to 28% of the post-primary children who were surveyed (most with a qualified physical education teacher in their school), and even fewer (3%) continue their involvement in either extra-school or extra-curricular clubs. These extremely low numbers will have implications for recruitment and training of future coaches to teach this important fundamental motor skill. It is recommended by this report that high risk sports and physical activities, such as gymnastics, should be identified for immediate intervention.

8. THE AMOTIVATED

High proportions of children and youth chose to never participate in extra-school sport. A greater understanding of the needs and motivations of these children is required. The focus group study, a part of the CSPPA study, will begin to address this issue. However, interventions to help these children find a sport or activity that they might enjoy and feel competent and confident in their ability to engage in this activity are needed. This will require looking at alternative forms of activities to suit the age, motor ability, development and interests of many children.

9. AGE OF RECRUITMENT AND THE ROLE OF THE UNDER-AGE PLAYER.

Only 5% of all youth involved in extra-school sport were engaged in coaching. This is a massive missed opportunity for clubs throughout Ireland. A change in the way young people are engaged needs to be developed. For example, responsible youth over the age of 14 years of age could be trained to work with young children, under the supervision of a member of staff. This will give them an opportunity to feed back into the club, to

develop their interpersonal and coaching skills, and to gain credit from their national governing body. This focus is along the lines of the sport education pedagogy curriculum model. This model is used in physical education classes, and during a single school term a particular sport or activity would be taught, every child within the physical education class would be exposed to a number of roles, these would include team captain, player, referee, coach, public relations officer, first aider and so on. It allows all children to feel included rather than excluded just because they did not make the team and gives all children the opportunity to experience and gain the benefits from well delivered authentic sport.

There is a massive untapped potential among young players involved in sports clubs all over Ireland. Clubs need to encourage, support and be rewarded if they invest time and effort in training their young players how to coach and work with young and inexperienced children in the club. Models of good practice need to be acknowledged, and communicated throughout the country. The solutions to these policy issues will lie in partnership between Government departments, local councils, schools, parents and local sports clubs. The local sports partnerships, developed by the Irish Sports Council, are a body that could drive such an initiative forward.

10. ACTIVE TRAVEL

Walking to school is a viable form of daily physical activity for children and youth. It is also the only form of activity that does not appear to decrease with increasing age as 18 year olds are as likely to walk to school as 10 year olds. Transport, education and sport policies need to protect and promote this form of activity.

11. SEDENTARY BEHAVIOUR

There is a need to develop national guidelines for a maximum recommended amount of sedentary behaviour for children and youth. Time spent in sedentary behaviour increases as children age; this is paralleled by a drop in physical activity. Departments of health, transport, arts, sport and tourism need to combine efforts to decrease minutes of sedentary behaviour and to prevent drop-out from physical activity in children and youth.

12. MONITOR CHANGE

There is need for a robust, surveillance system to be put in place. This system would carefully monitor the levels of physical activity of Irish children and youth to determine change, highlight any increasing risk of inactivity early for effective intervention, evaluate the success rates of interventions in achieving the activity goals identified earlier.

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Appendix 1: Sample characteristics

Recruitment of Pupils

In recruited schools, every child within a selected class group (i.e. 5th or 6th class in primary schools) or a selected year group (1st year through to 6th year in post-primary schools) were targeted for recruitment. A total of 5397 pupils took part in the research. The average age was 13.8 years (± 2 , range 10 to 18 years), 48% were male and 52% female. Seventy-five percent of the sample completed questionnaires only, 25% completed physical measures in addition to the questionnaire. A small number of pupils that completed the questionnaire or physical measures/questionnaire were also asked to wear a motion sensor device for a period of 7 days. A further 3% were chosen to take part in the qualitative element of the research by means of focus group interviews. Table A shows the primary school, and Table B the post-primary school DES sample in comparison to the study sample. Table C displays the demographic data of the primary pupils, and Table D the post-primary pupils.

Table A. CSPPA primary school sample vs. all primary schools in Ireland by gender, location and size

	Primary Schools in Ireland		CSPPA Primary Schools	
	(n)	%	(n)	%
Gender				
Mixed	2543	87	39	74
Girls	186	6	8	15
Boys	209	7	6	11
Location				
Rural	2543	87	44	83
Urban	395	13	9	17
Size				
Small	969	33	15	28
Medium	967	33	19	36
Large	1002	34	19	36
SES				
Disadvantaged	676	23	9	17
Non-disadvantaged	2262	77	44	83

Table B. CSPPA post-primary schools & all post-primary schools in Ireland by gender, location and size

	Post-primary schools in Ireland		CSPPA Post-primary Schools	
	(n)	%	(n)	%
Type of School				
Secondary	390	55	41	59
Vocational	228	32	21	30
Community	91	13	8	11
Gender				
Mixed	456	64	39	56
Girls	143	20	16	23
Boys	110	16	15	21
Location				
Rural	487	67	41	59
Urban	245	34	29	41
Size				
Small	234	33	18	26
Medium	234	33	22	31
Large	241	34	30	43
SES				
Disadvantaged	203	28	17	24
Non-disadvantaged	529	72	53	76
Fees				
Non fee-paying	654	92	66	94
Fee-paying	55	8	4	6

Table C. Demographics of primary pupils by age and gender

	N	Age (mean \pm SD)	Gender
Boys School	130	11.6 (.7)	100% Boys
Girls School	261	11.4 (.7)	0% Boys
Mixed School	884	11.4 (.7)	49% Boys
Disadvantaged	143	11.3(.8)	73% Boys
Non-Disadvantaged	1132	11.4 (.7)	41% Boys
Urban	367	11.3 (.7)	37% Boys
Rural	908	11.5 (.7)	47% Boys
5th Class	614	10.9 (.5)	43% Boys
6th Class	661	11.9 (.5)	46% Boys
Total	1275		

Table D. Demographics of post primary pupils by age and gender

	% (n)	Age (mean \pm SD)	Gender
Male School	18 (726)	15 (1.7)	100% Male
Female School	28 (1159)	14.5 (1.7)	0% Male
Mixed School	54 (2237)	14.6 (1.5)	55% Male
Disadvantaged	16 (670)	14.2 (1.6)	55% Male
Non-Disadvantaged	84 (3452)	14.7 (1.6)	46% Male
City	6 (229)	14.1 (1.3)	38% Male
Suburb	32 (1340)	14.5 (1.6)	42% Male
Town	24 (984)	14.8 (1.6)	56% Male
Villages	38 (1569)	14.6 (1.6)	48% Male
1st Year	28 (1166)	12.9 (.5)	41% Male
2nd Year	28 (1156)	13.9 (.6)	45% Male
3rd Year	7 (298)	14.8 (.6)	57% Male
4th Year	11 (481)	15.8 (.5)	57% Male
5th Year	19 (783)	16.5 (.7)	47% Male
6th Year	7 (283)	17.3 (.6)	57% Male
Total	4122		

Appendix 2:

Results from the physical activity chapter (chapter 4)

Table E. The influence of physical education, extra-curricular sport, extra-school sport and active commuting on number of days \geq 60 minutes MVPA per week for primary school children

Number of bouts of 60 minutes of MVPA engaged in by primary school participants				
	Boys		Girls	
Coefficient	^a Estimate	Std. Error	Estimate	Std. Error
Age	.101*	.105	.003	.094
Social Class	.003	.104	.036	.090
Area of residence	.090(*)	.180	.087*	.136
Minutes of PE	.002	-.036	-.051	.002
Extra-Curricular sport	-.022	.167	.139**	.155
Extra-school sport	.183**	.238	.140**	.220
Active commuting	.156*	.107	.078(*)	.137

Note. * Significant at 5% level. **Significant at 1% level. (*) Approaching Significance – 6%

^a Estimate = standardised coefficients – Beta.

^b Model value for boys was $F(7) = 3.6, p < 0.001$; 4% of variance explained, and girls $F(7) = 4.9, p < 0.001$; 5% of variance explained.

Table F. The influence of physical education, extra-curricular sport, extra-school sport and active commuting on number of days \geq 60 minutes MVPA per week for post-primary school children

Number of bouts of 60 minutes of MVPA engaged in by post-primary school participants				
	Boys		Girls	
Coefficient	Estimate	Std. Error	Estimate	Std. Error
Age	-.227**	.024	-.154**	.024
Social Class	-.016	.040	.002	.040
Area of residence	.006	.045	-.041	.041
Minutes of PE	.034	.001	.059**	.001
Extra-Curricular sport	.139**	.120	.073**	.093
Extra-school sport	.228**	.085	.278**	.079
Active commuting	.001	.075	.089**	.084

Note. * Significant at 5% level. **Significant at 1% level.

^aEstimate = standardised coefficients – Beta.

^b Model value for boys was $F(7)=45.4$, $p<0.001$; 15% of variance explained, and girls $F(7)=55.6$, $p<0.001$; 16% of variance explained.

Results: Extra-Curricular Sport (Chapter 6)

Table G. The influence of behavioural, environmental and social factors on participation in extra-curricular sport and physical activity among primary children.

Extra-Curricular		
	Boys	Girls
Minutes of physical education	1.007(*)	1.002
Participant in extra-school sport	1.735	2.274*
Active commuting to school	.636	1.207
Sedentary Behaviour	.998	1.000
School Gender		
Boys only	.845	
Girls only		1.078
School Designation		
Disadvantaged	.523	.554
School Size (small is reference)		
Medium	.639	.829
Large	.386*	.789
Social Support		
Friends	1.045	1.073
Family	.925	.995
Teacher	1.127**	1.116**
Constant	.036	2.980
R2	16%	14%
N	409	533

Note. * Significant at 5% level. **Significant at 1% level. (*) Approaching significance - 6%. Controlling for age, social class, disability and area of residence.

Table H. The influence of school, social and personal factors on participation in extra-curricular sport and physical activity among post-primary youth.

Extra-Curricular		
	Male	Female
Minutes of physical education	1.010**	1.001
Participant in extra-school sport	1.933**	1.580**
Active commuting to school	1.014	.954
Sedentary Behaviour	.999	1.000
School Gender		
Male only	.599	
Female only		.754
School Type (secondary as reference category)		
Vocational	1.932	1.386
Community/Comprehensive	1.111	1.337
School Designation		
Disadvantaged	.762	.504*
Social Support		
Friends	1.067(*)	1.114**
Family	1.030	.994
Teacher	1.092**	1.088**
Barriers		
Time	.963	1.000
Energy	.992	1.125**
Willpower	1.003	.986
Fear of Injury	1.079	.985
Skill level	1.015	1.036
Lack of Resources	1.008	.906*
Constant	.231	2.326
R2	22%	24%
N	1325	1500

Note. * Significant at 5% level. **Significant at 1% level. Controlling for age, social class, disability and area of residence.

Results: Extra-school sport (Chapter 7).

Table I. The influence of behavioural, environmental and social factors on participation in extra-school sport and physical activity among primary children.

Extra-School		
	Boys	Girls
Minutes of physical education	1.016*	1.001
Participant in extra-curricular sport	1.500	1.580**
Active commuting to school	.947	.954
Sedentary Behaviour	.999	1.000
School Gender		
Girls only		2.734**
Boys only	.832	
School Designation		
Disadvantaged	.747	2.408
School Size (small is reference)		
Medium	.352(*)	1.222
Large	.738	3.072**
Social Support		
Friends	1.090	1.058
Family	1.405**	1.254**
Teacher	.955	1.067
Constant	.001	4.893
R2	35%	33%
N	410	533

Note. * Significant at 5% level. **Significant at 1% level. Controlling for age, social class, disability and area of residence

Table J. The influence of behavioural, environmental and social factors on participation in extra-school sport and physical activity among post-primary children.

Extra-School		
	Male	Female
Minutes of physical education	.996	1.003
Participant in extra-curricular sport	1.997**	1.603**
Active commuting to school	.771	1.160
Sedentary Behaviour	.999**	.999
School Gender		
Male only	1.992**	
Female only		.917
School Type (Secondary reference category)		
Vocational	.706	1.377
Community/Comprehensive	1.191	1.530
School Designation		
Disadvantaged	.720	.432**
Social Support		
Friends	1.034	1.067**
Family	1.137**	1.174**
Teacher	.978	.979
Barriers		
Time	1.059	1.021
Energy	1.018	1.062
Willpower	1.144**	1.169**
Fear of Injury	.918*	1.004
Skill	1.094*	1.041
Lack of Resources	.930(*)	.950
Constant	.057**	.0069**
R2	30%	45%
N	1325	1500

Note. * Significant at 5% level. **Significant at 1% level. Controlling for age, social class, disability and area of residence

ADDITIONAL APPENDICES

The following appendices are available from Catherine Woods

Protocol for Questionnaire.

Copy of Questionnaire for primary and post-primary pupils.

Copy of Questionnaire for primary and post-primary principals.

Protocols for Physical Measures.

Protocol for motion sensors.

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