

Nielsen, G., Grønfeldt, V., Toftegaard-Støckel, J., Andersen, L. B. (2012).
Predisposed to participate? The influence of family socio-economic
background on children's sports participation and daily amount of
physical activity. *Sport in Society*, 15, 1-27.

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www.tandfonline.com: <http://dx.doi.org/10.1080/03031853.2011.625271>

Predisposed to participate? The influence of family socio-economic background on children's sports participation and daily amount of physical activity

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From a Bourdieu-inspired understanding of how personal resources ('capitals') enable certain practices in certain contexts, the links between families' cultural, social and economic capitals, and children's daily physical activity were investigated in 500 suburban Danish school-children using questionnaire data and accelerometer measures. Family SEP was found to be positively associated to children's participation in organised sport, which could be explained by differences in family capitals. In contrast, this study found no relationship between families' SEP and the amounts of general physical activity in children. This reflected the tendencies for club-organised sport to contribute a relatively small amount to the overall amount of physical activity in children, and for children of low SEP to be equally active in other settings such as school-breaks, day-care and neighbourhood playgrounds.

Keywords: Children's physical activity, Accelerometry, Social class, Sports participation, Inequality, Resources, Health

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Introduction

This study investigates how children's family background influences their participation in physical activity in general, and in organised sports more specifically, across a large sample of Danish school children.

An increasing body of research suggests that the amount of children's daily physical activity affects their health.¹ However, in Danish welfare and leisure politics, special emphasis is placed on increasing the already relatively high rates (approx. 70%, dependent on age) of club sports participation among children. Sports club activities are not only seen as contributing to children's daily physical activity; they are also valued for their contribution to children's socialisation through democratic participation in local civic society, social integration and network (social capital) building.² Furthermore, participation in sports at club level in childhood is often focused on performance and acquiring skills³ which, particularly for technical and results-orientated sports, may be an important pre-requisite for participation in these sports in later life.⁴

Socio-cultural family background is often considered an important determinant of children's physical activity. This may be partly due to traditional socialisation⁵ and child development theories⁶ which give family socialisation a strong role as a determinant of children's development and daily praxis. It is perhaps also due to empirical studies which have shown that family social stratifications, such as social class, status or position, are associated with the prevalence of being overweight⁷ and rates and types of sports participation in both adults and children.⁸ However, the understanding of the linkages between socio-economic position and

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children's sports participation and physical activity is limited in two important ways.

Firstly, while some studies show a relationship between socio-economic family background and children's sports participation⁹ and others have found a relationship with children's general physical activity,¹⁰ none of these studies explain empirically which factors mediate this association. Whether social inequalities in sports participation are due to differences in material resources, taste or cultural competencies, social networks or other factors is not well researched beyond the theoretical level. This is problematic, as understanding the pathways and reasons for inequalities in sports participation and physical activity is important if they are to be understood and overcome.

The second limitation in this research field (especially in the Danish context) is that sociological studies of determinants of the amounts of physical activity among Danish children are based on questionnaire surveys which usually focus on participation in organised sports.¹¹ This is highly problematic as such self-report methods have been found to be inaccurate and to provide unreliable measures of the total amounts of children's daily physical activity.¹² Children's total amount of physical activity is a product of many more activities than their leisure time participation in organised sports, including their play activities in school grounds, in after-school day care, in streets and parks, as well as transport activities. As many of these activities are unstructured, informal and highly sporadic they are difficult for children to remember, let alone to quantify and report¹³.

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For these reasons, this study uses both questionnaire data on parents' and children's participation in organised sports and accelerometer data to gain objective measures of the amounts of children's physical activity. These two data types are used to investigate how children's physical activity is associated with their parents' socio-economic position and their parents' material, cultural and social resources of relevance to physical activity and sports.

As a conceptual framework for creating meaningful hypotheses and categories for exploring the data, this study draws on Pierre Bourdieu's understanding of how personal resources (so-called 'capitals') make certain practices in certain social arenas possible, namely the arenas of children's sport and physical play.¹⁴ The study aims to explore how a number of such resources of theoretical importance to participation in the social arenas of children's sports and physical activity are unequally distributed among families of different socio-economic positions, and how this is related to differences in the sports participation and physical activity of children.

Theoretical perspective, concepts and hypotheses

General mechanisms of parental influence on children's behaviour

In general terms children's social development can be understood as an internalisation or embodiment of experiences. Often these are experiences of how the challenges in their surroundings or social world can be solved and, perhaps more importantly, how they are expected to be solved.¹⁵ For this reason, a child's dispositions (tastes and competences in terms of what the child likes to and can do) must be regarded as influenced by the social

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structures and dynamics present in his/her social environment during childhood.¹⁶ According to the extensive quantitative and qualitative sociological and anthropological research of P. Bourdieu and his associates, the different norms attached to different social classes (in Bourdieu's perspective 'positions' in society) are important social structures in this socialisation process.¹⁷ A child's internalisation of norm and meaning structures is dependent on where in the social-cultural and sub-cultural groups in society s/he grows up and forms his/her subjectivity. Children's subjective taste and system of dispositions, their habitus, is influenced by their parents' socio-economic position.¹⁸ In this way, every group in society identified as having similar socio-economic conditions and resources can also be considered as a group of common class habitus in terms of its preferences, tastes, dispositions and habits, which are formed by the social circumstances connected to its social position in society.¹⁹ Thus, society's stratum of different social positions and groups becomes a stratum of different lifestyles, of different tastes, resources and praxis. This seems also to be the case regarding the praxis of sport²⁰ and may therefore also apply to children's general physical activity.

An important point in socialisation theory is that the socialising influence of parents and others does not only take place through intentional socialisation activities, such as articulated expectations, instructions, approval and corrections.²¹ The more un-reflected habits and praxis, the habitus, carried out in the child's social surroundings are also sources of information, guiding a knowledge-seeking child's perception of what are meaningful, correct and valid ways of action and behaviour. Even

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in the institutionalized childhoods of Scandinavia, parents must be regarded as some of the first and most constant orientation points on which small children base their perception of normality and meaning. Parents are early role models for children's formation of habitus on both an intentional and conscious level, and on a sub-conscious level.²²

Furthermore, beyond their socialising influence, parents' dispositions and resources influence where children live, go to kindergarten, school etc. and therefore also have an influence on which secondary socialisation agents children meet and are influenced by outside the home.

This social class dependent part of children's development may explain why dispositions and resources, and hence interests, possibilities, competencies and praxis, including sports and other physical activities, are different in different positions in the social stratum of society: they are reproductions of an individual's socio-economic background. It is a theoretical perspective that leads to the hypothesis that some of the sources of variation in daily praxis and behaviour, including sports and other physical activities, can be found in a child's position and participation in different socio-cultural settings in society, which are dependent on family background.

Children's sports and play as social arenas

In order to understand socialisation and the variations it creates in human action, for example participation in sports and other physical activities, it is useful to apply Bourdieu's term 'field'.²³ Bourdieu uses this concept to provide a model of society as consisting of a number of social fields of high

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independence and autonomy. In these fields, specific types of logic reign, which can be more or less independent of the logic of other fields within society. Often-used examples are the fields of arts, religion and school systems, but organised sports can also be considered to be a field in society.²⁴ As the socialising processes within such fields and their local social arenas qualify and make their participants interested in and able to participate 'in the game' of common practise, purpose, and meaning, they also exclude individuals who have not acquired the necessary competencies or interest in participating. Using Bourdieu's concepts, a field habitus dialectic is taking place in such social arenas, creating both self-perpetuating exclusion and inclusion processes. It is an individual's socialisation and biography that makes participation in a certain social setting interesting and natural to a person²⁵, while at the same time participation socialises and enables the individual to participate further²⁶.

Family capital as enabling resources for children's sports participation and physical activity

Bourdieu's concept and theory of 'capital' can help in understanding how socio-cultural family background factors are related to the activity of the children in this study if it is adjusted to the context of Danish school children's everyday life. In this study specific types of capital thought to be of relevance in the current social arenas of children's physical activity and sport are constructed and their influence is investigated.

From their social environment in childhood, children inherit and build different personal resources and competencies that enable different types

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of activities in different social fields within society.²⁷ Bourdieu calls such personal resources 'capitals' to illustrate two important points: that high amounts of one type of capital can be exchanged into capital of another type, and that these capitals are often passed on within families and affect the individual's ability to act, as is the case with the more conventional understanding of 'capital' in financial terms. Bourdieu and associates described three main types of capital - Economic, Social and Cultural Capital - which their studies identified as closely related to an individual's status, opportunities, empowerment, taste and praxis in French and Algerian societies from 1960 to 1980.

This study's subjects are Danish children of 6-11 years all of whom live in a family home with one or two parents and are therefore influenced by the decisions taken and the resources present in their home/family. The resources available in a child's family (among his/her parents) may influence the child's daily agency, both in a direct situational way through the resources available for the child's use 'here and now', but also in a more indirect socialisation-based way where earlier family capital influenced practise has given the child certain personal resources and dispositions, i.e. capital and habitus, for interaction and agency in the present. This study investigates how such family capital is unequally distributed among different social classes and how this creates differences in children's participation in sports and other physical activities.

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Sporting Capital – a cultural resource for children's sport participation

In the arenas of Danish children's play and sports, one can imagine a type of sporting or physical activity capital that describes the knowledge, experience and competencies relevant to successful participation in sports and other physical activities, built up and inherited from a childhood environment. Such sporting capital would form an enabling capital for participation in the fields of sports or other physical activities later in life. This kind of sports-specific cultural capital, where practical experience with sports and other physical activities is embodied in the individual's habitus, must be regarded as comprised of both bodily movement competencies and social competencies.

Both physical sporting competencies, such as motor skills and sporting techniques, and more cognitive cultural and social competencies, such as practical understanding of how sports clubs and school yard play activities function on an organisational and social level, are to be considered as enabling resources in the context of children's physical activities. They form a personal physical activity or sporting capital enabling children to be physically active.

Parents' sporting capital, in terms of their experience and knowledge of sports club practices, codes etc., can be imagined to be of direct use when selecting a suitable sports club and sports discipline for the child to join and in understanding how to support the child's participation. In addition, parents' sports participation may also affect children's possibilities and interests for sports participation in a more indirect way by the earlier described role modelling and other socialisation influences.

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Educational Capital

In Bourdieu's studies and theory education is a central part of an individual's cultural capital and in many other types of research it is often used as an indicator of overall socio-economic position (SEP). The educational resources within a family in terms of the parents' education level can be hypothesized to be an enabling resource for children's participation in sports and physical activity on two levels. Firstly, because education provides qualifications for work and is often related to job position, it has a direct impact on an individual's (and the family's) financial resources, status, influence and possibilities in civic life, including sports participation. But, secondly, parental educational resources also have a more direct independent influence as a knowledge resource, making it more likely that information on, for example, the importance of children's physical activity and other public health messages are read, understood and dealt with. Such normative resources could and will however also be measured more directly as the amount of importance the parents put on their children's physical activity and sports.

Social Capital

In Bourdieu's conceptual framework, individuals' social capital consists of their social contacts and personal networks which they can use to gain influence and opportunities in society. Within a child's family, factors such as the amount of everyday parental support, the number of siblings for the child to play with and whether the child lives in one or more homes are

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indicators of such social capital that may affect their participation in sports and other physical activities.

Economic and Material Capital

Family economic capital and material resources are indicators of socio-economic position, but they can also directly affect children's sports participation which can be expensive, requiring fees, equipment, car transport etc. However, in Danish society economic capital may also have negative influences on children's physical activity. For example, car ownership may reduce the amount that a child walks and bikes. While, in contrast, living in rented accommodation in an apartment block (often associated with low economic resources) often provides a playground and other children to play with – two resources of high importance to children's self-organised physical play.

So, seen from a theoretical perspective, the relationship between family resources and children's general physical activity has ambiguities. Other potential complexities pointed out by Bourdieu's sociology, are that the ownership of capitals are interdependent, and therefore each capital or specific resource can have both independent effects on children's praxis and interact with the effects of other capitals or the effect of general socio-economic position. Another important point is that conditions on the objective level often become conditions on the subjective level²⁸; i.e. that a certain social position, with its objective material, social and educational attributes (economic, cultural and social capitals), is also associated with more subjective parameters such as norms, values and taste, developed by

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the availability of resources, which then create and maintain differences in everyday praxis within different groups of society.

For these reasons, this study subdivides the often-used parameter, socio-economic position into its components of material, social and cultural resources and norms, and then uses multiple regression models to analyse their influence individually as well as interdependently on children's participation in sports and physical activity.

Firstly, the associations between families' general socio-economic position and their possession of resources of potential relevance to children's physical activities are investigated. Secondly, the study explores whether general socio-economic position and different resources are related to children's physical activities. Thirdly, the extent to which associations between socio-economic position and children's physical activities can be explained by ownership of different resources or capital of relevance to children's physical activities is examined.

Materials and methods

Participants

Measures of physical activity and questionnaire data were collected from 704 out of 1024 children from 18 schools in two suburban municipalities in the greater Copenhagen area participating in the COSCIS study.²⁹ Data were collected when the children were going to pre-school (age 6–7 years) and again three years later when they were in third grade classes (age 9–10).

Questionnaire data about the children's family environment and sporting habits

A questionnaire assessing family background in terms of lifestyle, resources, socio-economic conditions, the parents view on the child's physical activity, as well as the daily habits, values and preferences of the child and its parents was developed and piloted.³⁰ The questionnaire was filled in by the parents and children together.

Measures of families' socio-economic position

The theoretical term socio-economic position (SEP) can be seen as referring to the position an individual takes up in society, which is associated with certain economic, social and cultural capital and hence status, tastes, chances and power in the job market as well as in civic society. In this study, parents' formal job qualifications were chosen as indicators of the family's overall SEP as they are related to education level, chances of employment and economic income (cultural, social and economic capital). The highest qualification level of the two parents was used to classify families into four socio-economic groups, reflecting the main categories of qualification level, salary and job security in the Danish work force:

1. No Formal Job Qualification: Persons with no formal education or qualification beyond primary or secondary school.
2. Trades Person: Persons formally qualified for a trade, such as carpenters, electricians, auto mechanics etc. In Denmark, this level and type of job qualification is most often acquired through four years of

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combined formal training and schooling, following 9 years of primary school.

3. Short Tertiary Education: Persons having job qualifications at the bachelor degree level, such as nurses and school teachers etc. In Denmark, this is most often acquired through tertiary education of 3-4 years at college, after having obtained a high school ('gymnasial') degree of 3 years.
4. Long Tertiary Education: University Masters degrees of at least 5 years duration, after having obtained a high school degree.

However, extensive research on equality in Denmark has shown that, regarding resources, the Danish welfare society is broadly divided so that about 15% of the population has considerably fewer resources than the remaining group, which are on the other hand fairly homogenous regarding many types of resources.³¹ Therefore, a dichotomous indicator of the SEP was also created, with the lack of a formal job qualification being used as an indicator of low, less well-off and slightly marginalised SEP of the family.

Measures of family capitals of relevance to children's participation in physical activity and organised sports

Specific resources with the potential to enable children's participation in sports and general physical activity were measured using questionnaire indicators.

Family ownership of a house, garden and car were used as indicators of material capital of relevance to children's sport and PA because these can provide space for movement and transportation to organised sports. The

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family's annual pre-tax income was also used as a measure of material capital but was not included in the summation of total material resources, as income is a pre-requisite and therefore a proxy variable for the other more specific material resources

Children's access to a playground was also considered a material resource but was not included in the summation of total family material capital since it is often a consequence of living in rented accommodation in apartment blocks and hence the playground is a publicly funded and owned resource rather than a family resource.

Whether children had siblings, were living in one or two parent families, and were living in one place or alternating places (between parents' homes) were chosen as measures of social resources of relevance to children's PA and sports participation.

Whether parents had graduated from high school and whether they had university degrees were used as indicators of the amount of educational resources in the family.

Parents' participation in organised sports, both currently and as children, was used as a measure of sporting capital in the family.

Finally, to reflect normative resources in terms of values in the family that might affect children's participation in sports and PA, the parents' views on the importance of their child being physically active and their views on the importance of school PE were used as indicators of family attitude to the value and meaningfulness of children's sports and PA.

To reflect families' total amount (and hence variance) of these different types of capitals the number of specific indicator resources under each

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capital was added up. Finally the total sum of all resources (except education as this is highly correlated to overall SEP) was used as a measure of the family's total capital of relevance to children's participation in sports and other physical activities.

Measures of participation in organised sports

Questions on where the children did sports on a weekly basis were used to determine whether children were participating in organised sports or not. Children reporting institutional settings such as sports clubs, dance or riding schools were categorised as participating in club-organised sports.

Measurements of physical activity (PA)

The children's habitual PA was measured using MTI 7164 accelerometers (Actigraph, Fort Walton Beach, Florida, USA). Accelerometers are physical activity monitors that provide precise measurement of children's daily activity levels, overcoming children's lack of ability to recall and quantify their physical activities in detail. Accelerometers have been well validated in children against a range of outcomes³² and compare favourably with other similar objective measuring instruments³³. The monitors record body movement as a combined function of the frequency and intensity of the movement allowing for the detection of normal human motion and rejecting high frequency vibrations encountered in activities such as car or bus transport. In order to best reflect the distribution of school days and school-free days (weekends and holidays) in school children's lives, two working days and two weekend days were selected for the measuring

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period. To minimize any biasing effect from the novelty of wearing an activity monitor, the MTI monitors were worn by the children for one day before recording. Data were corrected for variation in sleeping patterns, periods when the accelerometers were not worn, and were only included in the final dataset if the monitor had recorded more than eight hours of valid recordings a day for at least three days (pre-school: 4 days $n=466$, 3 days $n=128$, third grade: 4 days $n=379$, 3 days $n=139$).

Data transformation to physical activity variables

To obtain information on the activity levels of the children in their various daily contexts, data were analyzed for Total Time (7am - 11pm on all the measured days), School Time (defined by the schedule of the class, typically weekdays from 8.00am to 14.00pm) and Free Time (all other time than School Time). Time spent in activity of at least moderate intensity (2500-5000 counts per minute reflecting an energy expenditure of approximately 4-6 times resting metabolic rate and medium exertion, e.g. walking approximately 5.2 km/h) and vigorous intensity (>5000 counts per minute reflecting an energy expenditure above 6 times resting metabolic rate and a high level of exertion, e.g. running faster than 6.4 km/h) was calculated. Defining and categorizing children as being physically active was based on current health-related PA recommendations³⁴ of one hour a day of activity of at least a moderate level recommended by many health organizations and authorities (including the Danish National Board of Health).

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Statistical analysis

All data were analyzed using the statistical software PASW 18 (formerly known as SPSS). The relation between several factors in interplay and PA and sports was assessed by multiple logistic and linear regression or General Linear Models, dependent on the nature of the variables. *P* values less than 0.05 were considered statistically significant. To analyse which family attributes are of importance to children's physical activity and sports, while taking into account that a family's socio-economic position and specific resources are often interconnected, full models of children's sports participation and PA, regressed on the measures of SEP as well as the amounts of different resources, were applied.

Results

Characteristics of the sample

594 of the 704 participating children at pre-school (age 6-7), and 518 children three years later in third grade (age 9-10), had sufficient accelerometer data to be included in the analysis. These children and their families represent a broad range of socio-economic positions, rental apartment and house dwellers as well as ethnic minorities (see Table 1), and are broadly representative of the Danish population.³⁵

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Table 1. The study population

	Pre-school	Third grade
N	594	518
Age (in mean years, SD)	6.3(0.35)	9.5(0.83)
Male	310 (52%)	266 (51%)
Other ethnic background than Danish ^a	67 (12%)	58 (11%)
Have a parent with no tertiary education	127 (28%)	108 (21%)
No tertiary education as highest parental education	51 (9%)	30 (6%)
Qualified trades person as highest parental education	258 (46%)	177 (34%)
Short tertiary education as highest parental education	149 (27%)	209 (40%)
Long tertiary education as highest parental education	102 (18%)	110 (21%)

Data for age are presented as Mean (SD), the distribution of all other attributes are expressed as n (%).
^aNon-Danish ethnic background is defined as having one or two parents who have immigrated to Denmark.

Distribution of family capitals among different socio-economic positions

As described in the conceptual framework, different social, cultural and material resources can be understood as capitals that make certain practices in certain contexts possible. Such capitals are often unequally distributed among the different socio-economic positions in society and their value/relevance are context dependent, resulting in general lifestyles of social practice such as sporting activities often being socially stratified. Hence, in order to analyse and understand any potential relationship between family socio-economic position and children's participation in sports and PA, one must acquire knowledge about how such capitals of relevance to the contexts of children's sport and other physical activities are

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distributed among the different SEPs the children belong to through their parents.

As shown in Table 2, most resources were indeed unequally distributed across the 4 SEPs, often with the biggest divide between families with no formal job qualifications and the rest of the socio-economic stratum. This discrepancy becomes clearer and more statistically significant, when comparing families in which one or both parents have no formal job qualifications with families where both parents have some level of formal job qualification, leaving more statistical power to detect statistically significant differences. Families with at least one parent without formal job qualifications had lower amounts of material, educational, social and sporting capitals (Table 3). In detail (Table 4), these families have a lower rate of car and house ownership, and access to gardens, while having somewhat equal (tending towards more) access to playgrounds, probably due to rented apartments often providing these facilities. These families also have low rates of tertiary university and high school degrees and more often live in one-parent families, and hence their children more often alternate between living in two different places. Regarding family sporting capital (sporting knowledge, experience and taste), measured as the parents' participation in sports as adults and as children, a socio-economic divide can mainly be observed in whether the parents did sports as children.

It is worth noting, that the values that parents held towards the importance of their children's PA and physical education in school (PE) and the material resource of having access to a playground were equally distributed among the socio-economic groups.

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Table 2. Family resources by SEP of family (highest tertiary education level in family)

	Long tertiary education	Short tertiary education	Qualified trades person	No education
Amount of material resources ^{a**}	2.68 (0.73)	2.57 (0.81)	2.29 (0.98)	2.02 (1.17)
Total family income in kr./year ^{**}	664,000 (204,875)	554,828 (189,140)	520,661 (174,835)	422,222 (252,610)
Amount of social resources ^b	3.71 (0.59)	3.56 (0.77)	3.54 (0.76)	3.10 (1.04)
Amount of educational resources ^{c**}	1.92 (0.27)	1.77 (0.42)	0.48 (0.50)	0.44 (0.50)
Amount of sporting capital ^d	2.59 (0.92)	2.68 (0.82)	2.48 (0.94)	2.38 (1.17)
Amount of parental normative resources ^e	1.46 (0.79)	1.47 (0.74)	1.46 (0.78)	1.45 (0.74)
Total amount of family resources ^{f**}	10.05 (1.29)	9.62 (1.62)	9.08 (1.67)	8.70 (2.46)
Total amount of family resources (- ed.) ^{g**}	9.14 (1.29)	8.92 (1.51)	8.54 (1.53)	8.17 (2.18)

Data is presented as mean (SD) number of each type of resources in the families when the children were attending pre-school. ^aHouse, garden, car. ^bTwo parent family, siblings, live in one place, non-divorced. ^cNumber of parents graduated from high school + number of parents with a university degree. ^dNumber of parents that do sports + number that did sport as children. ^eWhether parents find either or both children's PA and PE very important. ^fMaterial + social+ sporting+ normative +educational resources. ^gMaterial+ social +sporting + normative resources.

* Differences between SEP groups is significant at $p < 0.05$. ** Differences between SEP groups is significant at $p < 0.01$.

Table 3. Family resources by tertiary education in family (at pre-school age)

	Both parents have formal job qualifications	1 or both parents have no formal job qualification
Amount of material resources ^{**}	3.24 (0.79)	2.94 (0.94)
Income (mean, SD) ^{**}	596,428 (178,549)	485,344 (204,090)
Amount of social resources ^{**}	3.70 (0.60)	3.44 (0.80)
Amount of educational resources ^{**}	1.32 (0.79)	0.70 (0.72)
Amount of sporting capital [*]	2.59(0.91)	2.30 (0.98)
Amount of parental normative resources	1.49 (0.75)	1.43 (0.80)
Total amount of family resources ^{**}	9.64 (1.50)	8.41 (2.05)
Total amount of family resources – ed. ^{**}	8.92 (1.40)	7.96 (1.89)

*Difference between the two groups is significant at $p < 0.05$. **Difference between the two groups is significant at $p < 0.01$.

Table 4. Specific family resources, habits and values by tertiary education in family (at pre-school age)

	Both parents have formal job qualifications	1 or both parents have no formal job qualification
Has a car*	90.1%	84.1%
Lives in a house**	79.9%	63.8%
Has access to a garden**	85.9%	72.4%
Has access to a playground	68.0%	72.4%
2 parent family*	95.5%	89.8%
Lives in one place*	96.4%	81.6%
Has siblings	86.5%	87.4%
One or both parents are high school graduates (gymnasial udd.) **	73.0%	46.0%
One or both parents have a degree (bachelors or masters) **	60.2%	23.6%
Mother does organised sports	34.7%	29.2%
Father does organised sports	38.0%	29.9%
Both parents do organised sports	20.2%	14.2%
Mother did organised sports as a child	79.0%	74.8%
Father did organised sports as a child*	77.5%	66.9%
Both parents were sports active as children*	87.9%	78.5%
'Very important that our child is physically active'	70.7%	70.6%
'School PE is very important'	78.4%	72.8%
Find both PA and PE important	64.6%	62.4%
Parent's play outdoors with child at age 6-7	96.7%	93.7%
Parent's play outdoors with child at age 9-10	82.9%	75.0%

*Difference between the two groups is significant at $p < 0.05$. **Difference between the two groups is significant at $p < 0.01$.

Family socio-economic position and children's physical activity and sports participation

No differences were observed in the chances of children meeting the recommended amounts of PA or in general activity levels when looking at the whole stratum of SEPs or when comparing the low resourced families with lack of job qualifications to the more affluent families where both parents had job qualifications (Table 5 and Figures 1 & 2). However, at third grade, children from resource deprived families with a lack of job qualifications had a borderline significant tendency to be more active overall ($P=0.060$) and were significantly more active in their free time ($P=0.012$ for total free time, $P=0.010$ for free time outside after-school day care and potential sports participation) (see Fig. 2). The data from pre-school age (Fig. 1) showed the same tendencies however only at borderline significant levels ($P=0.062$ for total time, $P=0.088$ for total free time, $P=0.051$ for free time outside after-school day care and potential sports participation).

In contrast, comparisons between children's participation in organised sports consistently revealed significant differences between socio-economic groups, with the main stratification and division seen between families where one or both parents are without any formal job qualification and families where both parents have formal job qualifications. Children from families where both parents have job qualifications had 1.87 (95%CI 1.23;2.84, $P<0.001$) times higher odds for participating in club organised sports at pre-school age and 1.80 (95%CI 1.12;2.91, $P<0.001$) times higher odds at third grade (Table 5).

Table 5. Indicators of socio-economic background and chances (odds ratios) for children being physically active and participating in sports

	Pre-school		Third grade	
	Active > 1hour daily	Participate in organised sports	Active > 1hour daily	Participate in organised sports
Both parents have formal job qualifications vs. one or two parents have none	0.69 (0.39:1.21)	1.87 (1.23:2.84)**	0.83 (0.47:1.45)	1.80 (1.12:2.91)*
<i>Highest family education:</i>				
Qualified tradesperson vs No tertiary education	1.46 (0.66:3.23)	1.20 (0.65:2.20)	0.80 (0.25:2.53)	0.98 (0.41:2.34)
Short tertiary education vs No tertiary education	1.13 (0.49:2.58)	1.37 (0.72:2.63)	0.70 (0.23:2.17)	1.04 (0.44:2.48)
Long tertiary education vs No tertiary education	1.02 (0.43:2.42)	1.66 (0.83:3.32)	0.52 (0.16:1.68)	2.14 (0.81:5.62)

Data are presented as odds ratios (95% CI) for participation, unadjusted. *Difference between the two groups is significant at p<0.05. **Difference between the two groups is significant at p<0.01.

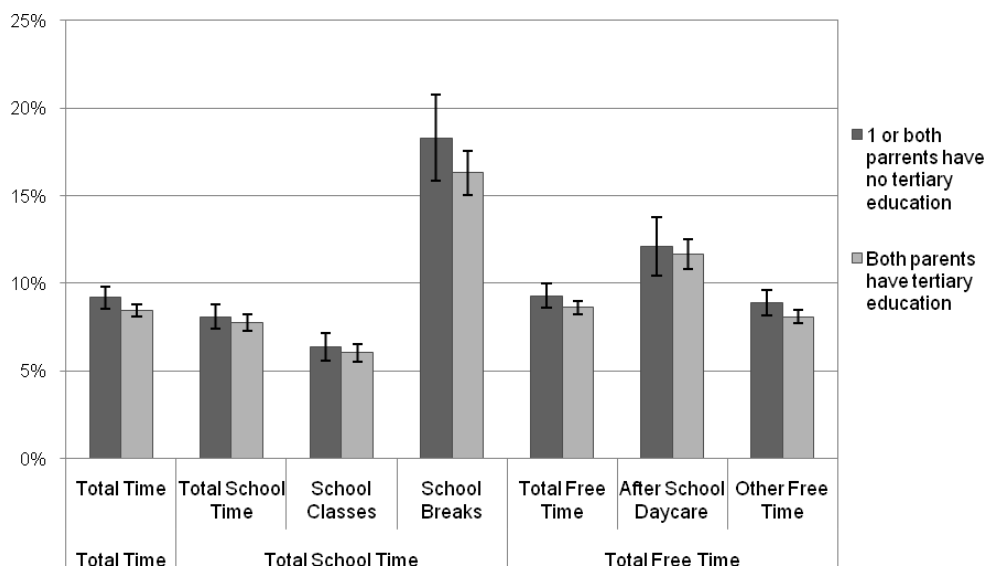


Figure1. 6-7 year old children's activity levels in different contexts

Data are presented as the mean percentage of time the children (participating in the contexts) are physically active. Error bars express 95% CI.

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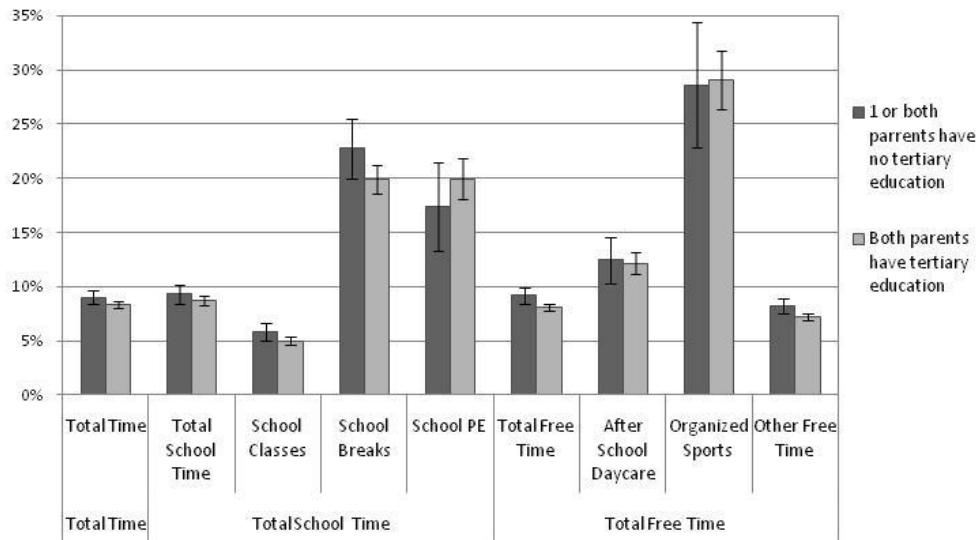


Figure 2. 9-10 year old children's activity levels in different contexts

Data are presented as the mean percentage of time the children (participating in the contexts) are physically active. Error bars express 95% CI.

Relations between sports participation and physical activity

It is perhaps surprising that the lower rate of organised sports participation among children from the under-resourced low SEP families did not result in these children being less physically active.

However, as seen in Table 6, children participating in sports neither had higher daily amounts of moderate or vigorous physical activity, nor higher chances of meeting the recommended 1 hour of daily PA than children who did not participate in sports.

Looking into the details of these children's everyday lives and physical activity provides some explanation to why organised sports are not a significant contributor to the general amount of children's PA. The children

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in this study were physically active on average 9.9 hours weekly at pre-school age and 9.5 hours weekly at third grade, while the sports active children's time used in club organised sports only amounted to an average of 1.7 hours weekly at pre-school age and 2.9 hours weekly at third grade of which they were actually physically active on average 28% of the time. In comparison, children in these age groups spent many hours (pre-school mean = 15 h/week, third grade mean = 17 h/week) in self-organised settings for physically active play and sports, such as school breaks and after-school day care, and, as depicted in Figures 1 and 2, these are settings in which mean PA levels can also be rather high.

Table 6. Children's amounts of physical activity by participation in organised sports

	Pre-school		Third grade	
	Sports active (n=355)	Non sports active (n=239)	Sports active (n=400)	Non sports active (n=118)
Weekly hours spent at sport	1.66 (1.56:1.76)	0	2.91 (2.74:3.07)	0
Weekly minutes of activity ^a	9.72 (9.32:10.12)	9.83 (9.34:10.33)	9.53 (9.19:9.87)	9.26 (8.64:9.89)
Weekly minutes of vigorous activity	2.31 (2.16:2.46)	2.31 (2.11:2.50)	2.71 (2.55:2.87)	2.51 (2.25:2.77)
Active ^a more than 1 hour daily	77.24%	79.73%	78.19%	70.87%

^aOf at least moderate level. No significant differences were found between sports active and non sports active children.

Associations between family resources and children's participation in sports and general physical activity

To investigate possible family structural explanations for the observed differences between socio-economic groups with regards to children's

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sports participation, and to check which family resources may affect children's participation in PA in general, Tables 7 and 8 show the associations between different family capitals and children's participation in PA and sports.

The only family resources found to be associated with the chances of children being physically active were parental values regarding the importance of children's PA, which increased the odds of children being physically active at pre-school age, and local access to a playground, which was positively related to the odds of children being physically active at third grade age when adjusting for SEP (data not shown).

Table 7. Family resources and the likelihoods (odds ratios) of children being physically active more than 1 hour daily

	Pre-school		Third grade	
	Unadjusted	Adjusted for SEP ^a	Unadjusted	Adjusted for SEP ^a
Amount of material resources	0.99 (0.78:1.25)	1.22 (0.97:1.53)	0.94 (0.73:1.21)	0.95 (0.73:1.24)
Income in total kr./year	0.99 (0.88:1.12)	1.00 (0.87:1.16)	1.02 (0.89:1.17)	1.11 (0.96:1.29)
Total amount of social resources	0.84 (0.63:1.13)	0.78 (0.52:1.18)	1.04 (0.73:1.49)	1.10 (0.77:1.58)
Amount of sporting 'capital'	0.93 (0.70:1.25)	1.01 (0.74:1.39)	1.19 (0.87:1.62)	1.20 (0.86:1.68)
Amount of value resources	1.43 (1.09:1.88)**	1.39 (1.02:1.88)*	1.05 (0.78:1.41)	0.96 (0.69:1.33)
Total amount of family resources ^b	1.02 (0.87:1.21)	0.98 (0.84:1.14)	0.98 (0.82:1.18)	1.03 (0.85:1.26)

Data are presented as odds ratios (95% CI) with absence of the mentioned resource as a reference category except from the income-PA relationship where the odds ratio is expressed as per 100,000kr increase from 100,000 to 900,000kr. ^aWhether both parents have formal job qualifications or not. ^bMaterial+ social +sporting +normative resources.

*Difference between groups is significant at $p < 0.05$. **Difference between groups is significant at $p < 0.01$

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In contrast, children's participation in organised sports was found to be strongly correlated with both the amounts of material, social, educational and sporting capitals as well as the perceived importance of PA within their families at both ages 6-7 and 9-10 years (Table 8).

Looking at material resources specifically, income, as well as living in a house and having access to a garden, all increased the likelihood of children being active in sports both in pre-school and in third grade (data not shown). This was also the case when adjusted for SEP.

Regarding social capital, the strongest predictor of sports participation among children in pre-school and third grade was whether children were living in two parent families. However, all associations between social capital and children's sports participation became weaker and statistically insignificant when adjusted for SEP, indicating that the main effect of social resources is that they are connected to low SEP.

Total sporting capital in families, as well as most individual indicators of family sporting capital, were associated with higher probabilities of children participating in sports also when adjusted for SEP. Interestingly, child sports participation in pre-school was strongly dependent on whether both parents did sports when they were children (odds ratio=4.69, $p=0.029$, when adjusting for parents' current sports participation), while sports participation in third grade was more affected by the current sports participation of parents (odds ratio=4.74, $p=0.008$, when adjusting for parents' sports participation as children). Normative family resources, in terms of parents' views on the importance of children's PA, were also associated with the children's rates of sports participation in pre-school and

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third grade and this effect was not confounded by SEP. Whether parents find children's PA important had a particularly strong effect on children's sports participation in third grade, with a more than fourfold increase in the odds of sports participation if parents hold this view.

Finally, it can be seen at the bottom of Table 8 that the total amount of family resources was significantly related to children's participation in sports in both pre-school and third grade and that this relationship was not confounded by socio-economic position.

Table 8: Family resources and the odds ratios of children participating in sports

	Pre-school		Third grade	
	Unadjusted	Adjusted for SEP ^a	Unadjusted	Adjusted for SEP ^a
Amount of material resources	1.56 (1.30:1.86)**	1.41 (1.14:1.75)**	1.34 (1.09:1.64)**	1.32 (1.06:1.64)*
Income in total kr./year	1.29 (1.17:1.42)**	1.24 (1.10:1.40)**	1.24 (1.08:1.43)**	1.21 (1.02:1.43)*
Total amount of social resources	1.28 (1.04:1.58)*	1.02 (0.77:1.36)	1.52 (1.12:2.07)**	1.34 (0.96:1.87)
Amount of sporting 'capital'	1.73 (1.35:2.22)**	1.60 (1.22:2.09)**	1.79 (1.29:2.48)**	1.74 (1.23:2.45)**
Amount of value resources	1.89 (1.51:2.36)**	1.94 (1.50:2.49)**	1.81 (1.37:2.40)**	1.85 (1.35:2.53)**
Total amount of family resources ^b	1.48 (1.29:1.69)**	1.43 (1.24:1.65)**	1.53 (1.29:1.82)**	1.54 (1.23:1.86)**

Data are presented as odds ratios (95% CI) with absence of the mentioned resource as a reference category except from the income-sports relationship where the odds ratio is expressed as per 100,000kr increase from 100,000 to 900,000kr. ^aWhether both parents have formal job qualifications or not. ^b Material+ social +sporting +normative resources

*Difference between groups is significant at $p < 0.05$. **Difference between groups is significant at $p < 0.01$

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Mediators of the association between socio-economic position and children's sports participation and PA

As family SEP has been shown to be related to family resources, which in themselves have been shown to affect children's sport participation, the next important question is whether the observed unequal distribution of material, social, sporting and value resources, especially when comparing the recourse deprived families of low SEP to the more affluent families of medium-high SEP, can explain the differences between these two groups regarding their children's chances of participating in sports.

Table 9 shows the increased chances for children's participation in sports and PA when both parents have formal job qualifications and how this association decreases when adjusted for different family resources. Both at ages 6-7 and 9-10, adjusting the association between family SEP and children's sports participation for the total amount of family resources, leads to the association disappearing completely, even when educational resources (due to their high co-variance with SEP) are not included in the analyses. Looking in more detail at the mediating effects of specific types of resources, it can be seen that especially parental sporting capital explains large parts of the difference between socio-economic positions regarding their children's sport participation, to the point that the association becomes insignificant in both pre-school and third grade when adjusting for this type of capital. However, when the children were in third grade, also adjusting for normative capital in the families decreased the SEP effect to a level where it became insignificant.

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Table 9. Odds ratios for children participating in sports when comparing children from middle-high SEP families with children from low SEP families, unadjusted and when adjusting for amounts of different types of family resources

	Odds ratios for child participating in organised sport at age 6-7 years	Odds ratios for child participating in organised sport at age 9-10 years
SEP ^a unadjusted	1.87(1.23:2.84)**	1.80 (1.12:2.91)**
SEP adjusted for number of material resources	1.70(1.11:2.61)**	1.59 (0.96:2.62)*
SEP adjusted for number of social resources	1.86(1.22:2.84)**	1.75 (1.08:2.84)*
SEP adjusted for amount of family sporting capital	1.28(0.75:2.20)	0.85 (0.41:1.77)
SEP adjusted for total amount of normative resources	1.79(1.16:2.77)**	1.29 (0.72:2.31)
SEP adjusted for total amount of resources ^b	1.11(0.63:1.94)	0.73 (0.34:1.57)

Data are presented as odds ratios (95% CI) with absence of the mentioned resource as a reference category. ^aBoth parents have formal job qualifications vs. one or two parents have no formal job qualifications. ^bMaterial+ social +sporting + normative resources.

*Difference between the two SEP groups is significant at $p < 0.05$. **Difference between the two SEP groups is significant at $p < 0.01$.

These steps of multiple analyses reveal that the lower rates of sports participation observed among children from low SEP families can be explained by the lower amounts of capital in these families. Especially the difference in sporting capital, with parents of the higher SEP more often having been sports active as children, appears to be a major contributing factor to the social inequality in sports participation among children. However, it should be emphasised that each of the resources found to be unequally distributed between the families of low and medium-high socio-economic position, contributed a small part to the inequality in their children's sports participation, and that only adjusting for the total sum of

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social, material and sporting capital was able to decrease the SEP-sports participation association to an odds ratio of 1 (no association).

No association between SEP and the daily amounts of physical activity was found when taking differences in resources into account. In other words, the socio-economic groups analysed were equally physically active with a borderline statistically significant tendency (pre-school $p=0.058$, third grade $p=0.051$) for the lowest SEP to be more active, although they participate in club organised sports to a lesser degree.

Another way to analyse which family attributes are of importance to children's physical activity and sports, while taking into account that a family's socio-economic position and specific resources are often interconnected, is to make full models of children's sports participation and PA regressed on the measures of family SEP, as well as the amounts of material, social, sporting and normative resources. When adjusting for resource interdependency in this way, the amounts of family material, sporting and normative capitals are significant predictors of children's sports participation in pre-school, while only sporting and normative resources are significant predictors of their sports participation in third grade (Table 10).

Again, normative resources are the only significant predictors of children being physically active when adjusting for multiple confounders, and this is only the case in pre-school.

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Table 10. Full models of participation in sports and being physically active regressed on family SEP and number of resources

	Age 6-7 years		Age 9-10 years	
	Odds ratios for child participating in organised sport ^a	Odds ratios for child being active > 1 hour daily ^b	Odds ratios for participating in organised sport ^a	Odds ratios for child being active > 1 hour daily ^b
SEP (both parents have formal tertiary job qualifications vs. one or both parents have none)	1.18 (0.66:2.12)	0.62 (0.29:1.31)	0.70 (0.32:1.51)	0.49 (0.22:1.10)
Number of material resources	1.61 (1.19:2.17)**	1.09 (0.75:1.58)	1.33 (0.88:2.00)	0.99 (0.67:1.46)
Number of social resources in family	0.87 (0.57:1.31)	0.65 (0.36:1.17)	1.46 (0.87:2.45)	1.05 (0.62:1.77)
Total amount of sports capital	1.49 (1.13:1.97)**	0.95 (0.69:1.31)	1.67 (1.17:2.38)**	1.21 (0.86:1.69)
Total value score	1.82 (1.32:2.50)**	1.40 (0.97:2.02)	1.72 (1.16:2.54)**	0.98 (0.66:1.45)

*Association is statistically significant at $p < 0.05$. **Association is statistically significant at $p < 0.01$.^aThe factors found significant in this model were also found left as significant factors when using automatic backwards selection of a final model. Furthermore excluding educational resources from the model (due to its close relation to SEP) did not alter which factors were significant predictors and only increased the parameter estimates of the other factors slightly. ^bNo factors were found to be significantly associated with being active >1hour daily when using backwards selection (both Values and social resources were left in model at $p < 0.1$). Furthermore regressing amount of physical activity in minutes in total and during school time and free time on these measures of resources and SEP did not show any significant associations, neither did a model of total minutes of vigorous activity regressed on these parameters.

Discussion

In this sample of more than 500 Danish suburban school children, no clear association was found between SEP and PA at either pre-school or third grade age. Furthermore, no significant associations were found between the material, social and sporting resources of families and their children's PA. The only measurable association found between family background and

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children's PA levels resulted from parents' normative values regarding PA, which was associated to children's amount of PA at pre-school age. There have been very few studies that have used objective measures of children's amounts of daily physical activity to investigate social inequalities and these have reported mixed results ranging from a weak negative association³⁶, through no association³⁷, to a weak positive association³⁸.

On the other hand, this study confirms previous research on adolescents³⁹, which showed that family background influences the rates of adolescent participation in organised sports.

However this study was able to identify factors explaining these trends. The association between SEP and children's sports participation could be fully accounted for by differences in the total amounts of material, social and sporting capital available in the families. In particular, parents' sports participation experience, as well as car ownership and other material resources, affected the chances of whether their children participated in organised sports. However it was shown that although children of low SEP had lower rates of sports participation, they were not less physically active due to high activity levels in other contexts. This finding can be seen as encouraging in the sense that many other health factors, such as obesity and smoking, are socially stratified.⁴⁰ But perhaps more importantly, it also suggest that children's physical activity can be promoted in other ways than trying to obtain even higher participation rates in organised sports. Since this has been public policy for many years in Denmark and has not been very successful in engaging children from families with low socio-economic resources, it suggests that new directions may be called for.

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That children's participation in sports clubs was highly socially stratified is however worrying for two reasons. Firstly, participation in local sports clubs is often considered important for children's social integration into local community networks across traditional social class divisions; and, secondly, participation in sports clubs is also considered important for children's development of bodily and social sporting skills which increase their chances of participation in these club settings later in life. For these reasons, it is important to investigate why many children from families with especially low socio-economic resources do not participate in club organised physical activity when they seem to have both the motivation and resources required to be active in other settings. In understanding why this is so, a closer look is needed at the different nature of children's club organised sports compared to their self-organised physical activities in terms of the resources that each require. As described in the theoretical framework, physical activity, like other daily activities, is often habit and tacit knowledge-based praxis and dependent on taste and dispositions (*habitus*), developed by a child's interaction with the social structures of norms and resources present in the sub-cultures, socio-economic groups and families they grow up in.

However, while leisure-time organised sport in Denmark takes place in the private sphere in civic society, where parental social background has been shown to influence children's activities, children also spend many hours of their lives, including their playtime, in public institutions and peer group settings, in which family background may play a smaller role in determining their activities.

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When observing children's various physical activities, in club organised sports and in un- or rather self-organised free play, one is really observing activities and arenas of different degrees of organisation and creativity.⁴¹ Although the physical activities of children in streets, schoolyards, day care institutions etc., are sometimes sports-inspired and draw on sets of rules and experiences from both the self-organised settings for play and more formal sports rules and norms, children's self-organised physically active play is observed to be different from children's organised sport in clubs in a number of important ways.

Many of children's self-organised play and sports activities in streets, back yards, school yards, and day care institutions are not primarily orientated towards pre-defined performance goals and sporting achievement, but towards an experimenting and negotiating interaction with the physical and social environment.⁴² In these play settings, children have to develop both the rules and the aims (story) of their games in interaction with other children and the physical environment; this demands certain creative, social and cultural competencies, such as negotiation skills and knowledge of games and play activities⁴³ as well as an adequate number of useful play facilities.⁴⁴ In contrast, organised sports for children focus on developing and testing skills that are pre-defined by the aims of performance in the individual sports and therefore, for success, require a level of sport-specific bodily skills, as well as knowledge of the official and unofficial rules and aims of the sporting activity.⁴⁵

In this study results showed that children from the lowest socio-economic groups had less sporting capital in their family in terms of their

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parents' experience with club sports participation and that this was a large part of the explanation for their lower participation rate in sports. However, children from these generally under-resourced families tended to have more access to playgrounds near the home which increased activity levels (at age 9-10) and, perhaps for this reason, these children tended to be slightly more physically active in their spare-time. Children's general amount of physical activity has indeed shown to be dependent on inspirational play facilities in their daily outdoor settings⁴⁶, especially in school grounds⁴⁷. It is however likely that club sports participation requires material resources of a different kind.⁴⁸ The results of this study showed that house and car ownership, as well as higher yearly income, increased the odds for children participating in sports and explained large part of the differences between SEP groups. While car ownership is important for children's transport to sports practise and competition, and higher income allows the payment of fees, house ownership might be important too as it is related to living in suburban areas where the concentration of sports clubs per capita is high. In other words, living in a suburban or rural villa with a garden, car and money might increase the likelihood of sports participation a few nights a week, but may not compensate for the daily physically active play one can observe among children in rented apartment blocks with well equipped courtyards and many other children to play with.

From a cultural and cognitive perspective, free play activities are facilitated by children having some knowledge and experience of specific inspiring games to play, and how these can be developed and altered to fit the specific social and material context⁴⁹, while successful participation in

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organised sports demands a certain understanding of the specific rules, aims and meaning of the sport.⁵⁰ In this study, parents' sports experience and hence sporting knowledge was shown to increase the chances of their children's participation even when controlling for the parents' values and norms regarding the importance of children's PA and PE. This indicates that family sporting capital, in terms of knowledge of how sports clubs operate and function, is unequally distributed among families and often dependent on SEP which could explain some of the inequality in children's chances of participating.

In other words, children's play and sports activities, as two differently organised types of physical activity, require different resources for participation and therefore might include some children and exclude others dependent on their access to and ownership of such resources. So, while children's club sports are organised in their free time and demand that families pay fees, provide transport and have some knowledge of how to support their children's participation, each of which is related to the family's general socio-economic position, children's large range of other daily physical activities is not dependent on such family resources and is therefore not dependent on socio-economic background.

Practical implications

The identification of the specific family resources that explained the social inequality in children's sports participation may be useful knowledge for the many current initiatives aiming at getting more children, of marginalised background, involved in Danish club sports; a setting in civic society often

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considered of potential benefit to the integration and empowerment of marginalized and low resourced groups.

In general, the findings suggest the need to consider how sports clubs can become more open, inviting, familiar and inspiring to families that do not already have sport expertise and knowledge, perhaps by trying to make the many often unofficial rules, expectations and codes of conduct⁵¹ more official and visible. They call for consideration on how the economic barriers to sports participation can be lowered, perhaps by lending equipment during the initial membership period and by decreasing the geographical range of tournaments and hence car transport demands. However, it is open to debate whether it is reasonable to try to engage children from backgrounds unfamiliar with organised sports, and often under-resourced, to participate in this field. On the one hand, from a Bourdieuan perspective, it can be regarded as a sort of 'symbolic violence' when teachers, project managers and other well meaning agents, often of middle-class background, try to make children from other backgrounds join their concept of physical activity in terms of sports as an organised rule-based approach to physical activity. On the other hand, it is likely that sports participation creates sporting as well as social and symbolic capital⁵² and hence is of some importance to the success and welfare of the individual, as the lower participation rates of lower SEP families may hinder their social mobility. However, with reference to the current health discourse, projects that try to engage children from low-resourced families are of little merit if these children are as physically active as others but just in a different way. The need is for projects that empower children who do not participate in

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traditional organised sports clubs and which help them become active in a social way that fits their resources and interests regarding physical activity. In such projects, school, day-care staff and the architects who design these spaces seem to be key agents as large parts of children's daily PA takes place in schools and day care institutions and are dependent on the social and material structures for physical activity presented in these.⁵³

Conclusion

This study supports previous research showing that family background influences the rate of children's participation in organised sports. Children from the lowest SEP had a significantly lower participation rate in organised sports. This study was further able to show that this association could be fully accounted for by differences in the total amounts of material, social and sporting capital available in the families. In particular, parents' sports participation experience, as well as car ownership and other material resources, affected the chances of whether their children were participating in organised sports.

However despite inequalities in sports participation, no association was found between families' SEP and their children's physical activity as children were equally active in many other settings for physical activity such as school-breaks, afterschool day-care and neighbourhood playgrounds and as club-organised sport contributed a relatively small amount to the overall amount of physical activity of the children. These findings have important implications for both health promotion and social integration work through physical activity.

Notes

¹ Andersen et al., 'Physical activity and clustered cardiovascular risk in children'; Dencker and Andersen, 'Health-related aspects of objectively measured daily physical activity in children'.

² Anderson, 'Civil Sociality - Children, Sport and Cultural Policy in Denmark; Ibsen and Ottesen, 'Foreninger som læringsrum for demokrati og sundhed'; Pestoff, 'Making citizenship meaningful in the twenty-first century'; Seippel, 'Sport and Social Capital'.

³ Horne, Tomlinson, and Whannel, 'Socialisation - social interaction and development'; Orlick, 'Evolution in Children's Sport'; Stelter and Rønholt, 'Børn og Idræt et psykosocialt perspektiv'.

⁴ Horne, Tomlinson, and Whannel, 'Socialisation - social interaction and development'; Kjønneksen, Anderssen and Wold, 'Organized youth sport as a predictor of physical activity in adulthood'.

⁵ e.g. P. Bourdieu.

⁶ e.g. M. Mahler, J. Bowlby & D. Stern.

⁷ Batty and Leon, 'Socio-economic position and coronary heart disease risk factors in children and young people'; Lobstein and Millstone, 'Context for the PorGrow study: Europe's obesity crisis'.

⁸ Engström, 'Idrott som social markör'; Horne, Tomlinson, and Whannel, 'Social stratification and social division in sport'.

⁹ Horne, Tomlinson, and Whannel, 'Social stratification and social division in sport'; Larsson and Nilsson, 'Ungdom - fritid - idrott'; Pilgaard, 'Tradition og fornyelse i aktivitetsmønstret'.

¹⁰ Hesketh et al., 'Associations between family circumstance and weight status of Australian children'.

¹¹ Holstein, Ito, and Due 'Physical exercise among school children'; Ibsen, 'Børns idrætsdeltagelse i Københavns Kommune'; Nielsen and Ibsen, 'Kommunale forskelle på børns idrætsdeltagelse'.

¹² Harro and Riddoch, 'Physical activity'; Kohl, Fulton, and Caspersen, 'Assesment of physical activity among children and adoltscents'; Sallis and Saelens, 'Assessment of physical activity by self-report'.

¹³ Baily et al., 'The level and tempo of children's physical activities'; Dencker and Andersen, 'Health-related aspects of objectively measured daily physical activity in children'; Nilsson et al., 'Assessing physical activity among children with accelerometeres using different time sampling intervals and placements'.

¹⁴ Bourdieu, 'Distinction'. Bourdieu, 'Practical reason'.

¹⁵ Elkonin, 'Towards the problem of stages in the mental development of the child'; Vygotskij, 'Om barnets psykiske udvikling'.

¹⁶ Elkonin, 'Towards the problem of stages in the mental development of the child'.

¹⁷ Bourdieu, 'Distinction'.

¹⁸ Bourdieu, 'Practical reason', 23.

¹⁹ Ibid., 52.

²⁰ Engström, 'Idrott som social markör'; Horne, Tomlinson, and Whannel, 'Social stratification and social division in sport'.

²¹ Connell, 'Gender in Personal Life'.

²² Bourdieu, 'Distinction'; Bourdieu and Passeron, 'Reproduction in education, society and culture'.

²³ Bourdieu and Johnson, 'The field of cultural production'.

²⁴ Clément, 'Contributions of the sociology of Pierre Bourdieu to the sociology of sport'; Munk and Lind, 'Idrættens kulturelle pol'.

²⁵ Bourdieu, 'Distiction', 172.

²⁶ Bourdieu and Passeron, 'Reproduction in education, society and culture'.

- ²⁷ Bourdieu, 'Distinction'.
- ²⁸ Bourdieu, 'Practical reason': 21.
- ²⁹ Eiberg et al., 'Maximum oxygen uptake and objectively measured physical activity in Danish children 6-7 years of age'.
- ³⁰ Grønfeldt, 'Børn, fysisk aktivitet og læring'.
- ³¹ e.g. Jæger, Munk, and Ploug, 'Ulighed og Livsforløb'.
- ³² Ekelund et al., 'Physical activity assessed by activity monitor and doubly labeled water in children'.
- ³³ de Vries et al., 'Clinimetric review of motion sensors in children and adolescents'.
- ³⁴ Strong et al., 'Evidence based physical activity for school-age youth'.
- ³⁵ www.danskstatistik.dk (Danish Statistics).
- ³⁶ Riddoch et al., 'Objective measurement of levels and patterns of physical activity'.
- ³⁷ Kelly et al., 'Effect of socioeconomic status on objectively measured physical activity'; Batty and Leon, 'Socio-economic position and coronary heart disease risk factors in children and young people'.
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- ⁴⁰ Osler, Godtfredsen, & Prescott, 'Childhood social circumstances and health behaviour in midlife'; Starfield, et al., 'Social class gradients in health during adolescence'.
- ⁴¹ Engström, 'Idrott som social markör', 15-33.
- ⁴² Andersen and Kampmann, 'Børns legekultur'; Corsaro, 'Early childhood education, children's peer cultures, and the future of childhood'; Farver, 'Activity Setting Analyses'; Löfdahl, 'Kamratkulturer i förskolan en lek på andras villkor'.

⁴³ Farver, 'Activity Setting Analyses'; Löfdahl, 'Kamratkulturer i förskolan en lek på andras villkor'.

⁴⁴ Nielsen et al., 'Permanent play facilities in school playgrounds as a determinant of children's activity'.

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⁴⁸ Limstrand, 'Environmental characteristics relevant to young people's use of sports facilities: a review'.

⁴⁹ Corsaro 'Early childhood education, children's peer cultures, and the future of childhood'.

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⁵² Engström, 'Idrott som social markör'; Bourdieu, 'Practical reason'.

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