

ROCKWOOL® FOUNDATION RESEARCH UNIT

Children spend five times as long in front of TV and computer screens as they do taking exercise

More than six hours in school, nearly three hours in front of a screen and half an hour of exercise. Such is the average school day for Danish children aged 12 to 17. Hence, Danish children spend between five and six times as much time in front of a screen watching TV or DVDs/videos or playing computer games as they do taking exercise.

The picture is almost the same for children aged 7 to 11. On average, they spend a little more time each day – almost seven hours – in school or at an after-school institution, spend a little less time watching screens (two hours), and exercise for only around twenty minutes.

On an average school day, Danish children aged 7 to 11 are in school for a little less than five hours, and in after-school centres for under one and a half hours. Children aged 12 to 17 spend a little longer time in school, almost five and a half hours. But, they do not spend much time in after-school centres – less than fifteen minutes per day on average. Taking travel to and from school into account, these differences mean that the older children actually have more free time than the younger children on an average school day.

At the weekends, the older children spend an average of four and a half hours per day watching TV or playing computer games, while exercise occupies less than forty minutes. Children aged 7 to 11 spend three and a quarter hours in front of screens, but only half an hour taking exercise. Thus, on an average weekend day, children spend around seven times as much time sitting in front of a TV or computer as they do taking exercise.

Not enough exercise

The Danish National Board of Health recommends that children and teenagers

To a large extent, the children who do well at school are those who make good use of their time – irrespective of family background.

should be ‘moving around’ for at least one hour per day. Average Danish schoolchildren do not meet this target, either on weekdays or at weekends, even though ‘moving around’ is a rather broader concept than ‘exercise’. Depending on their age group and the day of the week, children spend between 19 and 37 minutes per day exercising, which is well below the recommended amount.

‘The problems are greatest in those families where both father and mother have a weak degree of attachment to the labour market and have little or no education beyond compulsory schooling. At the same time, however, in these families as in all others, it is those children who get enough sleep, who eat breakfast, who take exercise, and who do not spend too much time on television or computers who do best at school,’ says Jens Bonke, Senior Research at the Rockwool Foundation Research Unit.

The analyses of children’s time use, wellbeing and scholastic results are published in the book *Bruger skolebørn tiden hensigtsmæssigt?* (Do schoolchildren make good use of their time?).

TABLE I

Time spent on various activities by Danish schoolchildren. 2009.

Hours: minutes	An average school day		An average weekend day	
	Age 7-11	Age 12-17	Age 7-11	Age 12-17
School and other institutions ¹	6:51	6:16	0:08	0:07
TV, DVDs/videos and computer games	2:01	2:49	3:17	4:27
Exercise and sports	0:19	0:35	0:30	0:37
Other leisure activities ²	3:12	3:57	7:29	6:15

¹Including time spent travelling to and from schools and institutions.

²Includes shopping, visiting the hairdresser, visiting the doctor, time with parents, family or friends, playing, reading, telephoning, listening to the radio, listening to music, playing games, relaxing, going to scouts, going to the cinema, and visiting cafés – and transport in connection with these activities.

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

When Danish schoolchildren are not at school, they spend a large part of their time watching TV or DVDs/videos or playing computer games, and very little time taking exercise. On an average school day, schoolchildren spend between two and nearly three hours watching TV or playing video or computer games, while they devote only between 20 and 35 minutes to exercise and sports.

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Bruger skolebørn tiden hensigtsmæssigt? Om søvn, spisning, motion og trivsel (Do schoolchildren make good use of their time? On sleep, diet, exercise, contact and wellbeing) with English Summary

By Jens Bonke and Jane Greve

University Press of Southern Denmark, January 2013.

136 pages. DKK 148. ISBN 978-87-7674-6872

Children's health-related life-styles: How parental child care affects them

By Jens Bonke and Jane Greve

– University Press of Southern Denmark, January 2013.

– Review of the Economics of the Household. B01 10.1007/811150-012-9157-6. 2012

24 pages. DKK 60. ISBN 978-87-90199-75



Do Danish school children make good use of their time?

On an average weekday, Danish schoolchildren sit in front of a television or computer for a very long time – over half of all 12- to 17-year-olds spend more than three hours watching TV or computer screens. At the same time, many children get too little sleep.

These are some of the findings revealed by a new analysis of time use among Danish schoolchildren conducted by the Rockwool Foundation.

The analysis also shows that one child in ten is left alone to a large extent, that over half of all children do not exercise daily, and that many do not spend any time on breakfast – this last being the case for nearly one in six of all 12- to 17-year-olds on a normal school day.

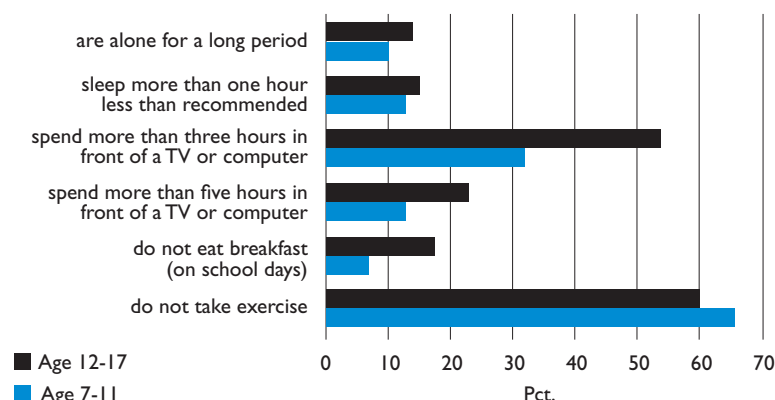
A special risk group

A small group of children – six percent of the total – have particularly problematic daily lives. In an average Danish school class there will be one or two children who on the same day will display not just one or two, but *three* ‘problem factors’. They skip breakfast, spend too much time in front of a TV or computer screen, and are left on their own to a large degree, while there are others who have too little sleep or too little exercise.

The study shows that the everyday lives of a considerable proportion of Danish children can be problematic with regard to both their health and their development – and that those children who skip breakfast, often spend a lot of time alone and spend the most time in front of screens constitute a special risk group.

The method used in the study, which obtained information about children's time use on one weekday and one weekend day, means that lack of reported participation in a specific activity, for example physical exercise, does not necessarily indicate that the child concerned did not participate in that activity on other days.

Proportions of schoolchildren who, on a weekday:



Notes: Children aged 7-11 are considered to be left on their own to a large extent if they are alone for more than 3.4 hours on a particular day. Children aged 12-17 are considered to be left on their own to a large extent if they are alone for more than 4.4 hours on a particular day. 'Do not take exercise' refers to children who do not participate in physical exercise on two particular days of the week.

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

The figure shows the proportion of Danish children who have problematic daily lives. For example, 32% of children aged 7-11 and 54% of children aged 12-17 spend more than three hours every day watching TV or playing computer games.

The procedure used

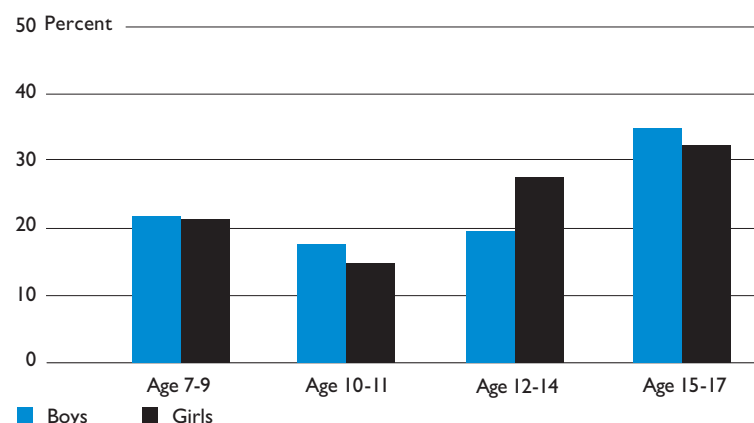
During the period April 2008 to May 2009, the Rockwool Foundation Research Unit carried out the most comprehensive investigation to date of how Danes spend their time.

A total of 7,075 adults and 1,326 children living at home and aged between 7 and 17 responded to a questionnaire and completed diaries showing time use on two selected days, one weekday and one weekend day. The diaries were used to detail everything they did from the time they got up in the morning to the time they went to bed in the evening.

Children aged 12 to 17 completed the diaries themselves, while those aged between 7 and 11 received help from their parents.

Many schoolchildren get far too little sleep

FIGURE 2
Proportions of boys and girls who sleep much too little on an average school day. 2009.



Note: Children who sleep one hour or more less than the recommended amount are considered to sleep much too little.

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

Between one seventh and one third of all Danish schoolchildren get too little sleep on an average school day. 22% of 7- to 9-year-old boys and girls sleep much too little, as do 32-34% of boys and girls aged 15-17.

Over one third of all Danish schoolchildren have had too little sleep when they arrive at school.

Depending on their age, and on individual differences, schoolchildren should sleep between eight and eleven hours – but many do not do so. This remains true even if we reduce the recommended period of sleep by one hour and take into account only those who sleep less than that. The study of children's time use shows that between 14% and 34% of schoolchildren spend much less time sleeping than they should.

Over one fifth of the youngest schoolchildren – those aged 7-9 – sleep much too little on an average school day, while this is the case for around one third of children aged 15-17.

In the middle groups, consisting of children aged 10-11 and 12-14, the proportion who sleep far too little is between 14 and 27 percent.

Girls in particular miss out on sleep

While the study shows that there are no great differences between the proportions of girls and boys who sleep much too little, this is not true for children who sleep 'only' a short time less than the recommended amount.

The difference between the genders is most evident in the 12-14 age group. While 33% of boys aged between 12 and 14 get too little sleep, this is the case for 49% of girls of the same age. The differences between boys and girls are significantly less, at around 3-5 percentage points, among children aged 7-9, 10-11 and 15-17.

These figures must be considered with the proviso that there are individual differences in how much sleep schoolchildren need.

TABLE 2
Proportions of boys and girls who sleep less than recommended on an average school day. 2009.

Percent	Girls	Boys
Age 7-9	53.0	48.0
Age 10-11	39.4	33.7
Age 12-14	48.9	33.3
Age 15-17	61.1	58.1

Note: The recommended amount of sleep is 10-11 hours for children aged 7-9, 9-10 hours for those aged 10-11, 9 hours for children aged 12-14 and 8-9 hours for children aged 15-17.

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

Between approximately one third and one half of all schoolchildren get too little sleep on an average school day. 48% of 7- to 9-year-old boys and 53% of girls in the same age group sleep too little. The same applies to 58% of boys aged 15-17 and 61% of girls of the same age.

Correlation with parents' sleep

The sleeping habits of the parents can be significant in determining how much their children sleep. There are, however, differences in how strong the relationships are between the sleeping habits of fathers and mothers and the amounts of sleep that their sons and daughters get.

Thus, fathers' sleeping habits are reflected in those of their sons. If the father sleeps too little, i.e. more than one hour less than the recommended amount of sleep, then the probability of his son sleeping much too little is significantly greater than in the case of fathers who get the recommended amount of sleep. However, there appears to be no corresponding relationship between the sleeping habits

of fathers and their daughters.

In the case of mothers, a tendency to get far too little sleep is correlated with a similar sleeping pattern among both sons and daughters. The probability of this relationship existing increases more quickly with the mother's diminishing amount of sleep than is the case with fathers who sleep too little.

Most schoolchildren eat breakfast

Breakfast forms an integral part of the day's programme for the majority of Danish schoolchildren.

Nine out of ten 7- to 17-year-olds (88%) eat breakfast on an average school day.

Research has shown that breakfast is an important meal, particularly for schoolchildren. Children who eat breakfast are better prepared for school and more receptive to teaching.

Children who have not eaten breakfast make up 12% of a Danish school class, corresponding to two or three children in each class. These children risk doing less well in school than others, and may also have problems with overweight. These and other possible consequences of skipping breakfast are described in more detail in the book *Bruger skolebørn tiden hensigtsmæssigt? With English Summary*.

Breakfast, yes or no?

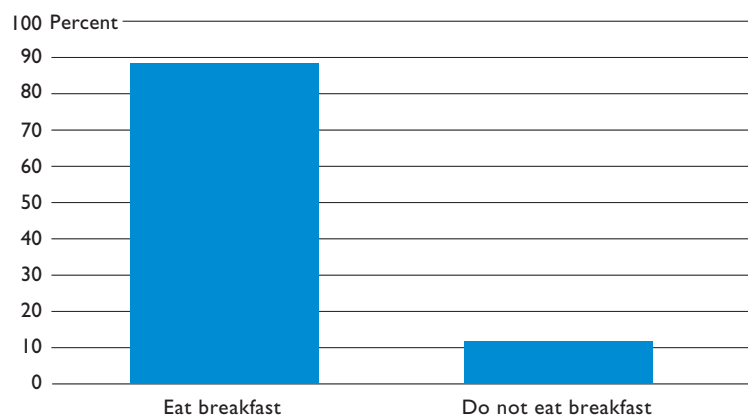
Two factors play a role in determining whether or not 7- to 17-year-olds eat breakfast on a school day.

First, it makes a difference whether or not the child lives with both of his or her parents. Almost one child in five who lives with just one parent does not eat breakfast. In contrast, only around one child in ten living with both parents skips breakfast.

Second, it turns out that the father's education has an influence on children's eating habits. Of children whose fathers have no education beyond compulsory schooling, 17% do not eat breakfast. Among children whose fathers have completed vocational training or a medium-length course of further education, 11% and 6% respectively do not eat breakfast.

There is no relationship between the

FIGURE 3
Proportions of children aged 7 to 17 who spend time on eating breakfast on an average school day. 2009.



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Nine out of ten children aged 7 to 17 spend time on eating breakfast on an average school day.

education of the mother and the likelihood of children eating breakfast.

A quarter of an hour

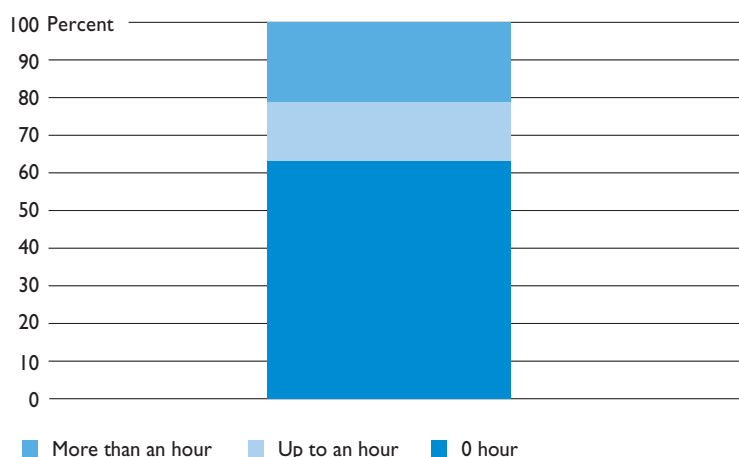
'Breakfast' is defined in the study as a meal eaten between five and ten o'clock in the morning. Those children who take breakfast spend an average of between 15 and 20 minutes eating it.

The time use studies show that there is a certain correlation between how much time parents spend eating and the length of time spent by their children on the same activity. This is the case for all meals.

The correlation is not particularly strong, however. In fact, a mother has to spend a full hour extra on eating on an average day before it can be expected that her children will spend an additional 9 minutes on the same activity.

Two out of three children do not take exercise daily

FIGURE 4
Exercise by 7- to 17-year-olds on an average day. 2009.



SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

The majority of children aged 7-17 do not exercise on an average day. However, 16% of them exercise for up to one hour, while 21% exercise for more than an hour.

On an average day, two out of three schoolchildren take no exercise. Thus, for any given day, 63% of 7- to 17-year-olds state that they have not done any physical exercise at all.

The information about the exercise habits of Danish schoolchildren is based on their completion of two diaries on which they listed their activities for a day. Physical exercise appears as just one among many different activities. Only those activities that the children themselves categorise as sport or exercise are counted as exercise for the purposes of the study.

This means that the proportion of children who engage in exercise as re-

ported in the study should be regarded as a minimum estimate. Exercise that children get through other activities – such as games in the school playground, membership of scout groups, cycling to and from school – is not counted.

However, though 63% of schoolchildren do not engage in physical exercise on an average day, 16% exercise for up to an hour, and 21% devote more than an hour to exercise.

Boys are the most active

Both gender and age are relevant factors in determining the extent to which schoolchildren engage in physical exercise on an average day. The proportion of boys who take exercise is greater than the proportion of girls, and older schoolchildren take more exercise than the younger ones.

While 37% of boys aged 7 to 11 take exercise, the same is true of only 30% of girls of the same age. The same picture – that boys take more exercise than girls – is found among older schoolchildren too. Both boys and girls in the 12-17 age group exercise more than younger boys and girls, but once again boys are more likely to exercise than girls; 41% of the boys in this age range state that they take exercise on an average day, as opposed to 38% of the girls.

Parents are role models

The time use study was set up in such a way as to make it possible to investigate correlations between the exercise habits of parents and their children. For every child who filled in the diaries, the parents also completed corresponding diaries.

Comparing the exercise habits of parents and their children suggests – perhaps not surprisingly – that parents act as role models for their children (unless, of course, it is the other way round, and the children influence their parents' behaviour).

If the father exercises for more than 30 minutes a day, the probability that the son or daughter will take exercise is sig-

TABLE 3
Proportion of schoolchildren who engage in physical exercise on an average day. 2009.

Percent	Girls	Boys
Age 7-11	30	37
Age 12-17	38	41

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

The proportion of schoolchildren who exercise is dependent on both gender and age. Boys engage in exercise activities more than girls do, and older children exercise more than younger ones.

nificantly greater than if the father does no exercise at all.

While the exercise habits of fathers generally have the same effects on both sons and daughters, there appear to be large differences between the exercise habits of sons and daughters when the mother takes exercise. If the mother exercises for more than 30 minutes per day, there are many more boys who also exercise for more than 30 minutes per day than there are girls. For both sexes, however, there is a positive correlation between the time spent exercising by the mother and by the children.

The mother's education

The mother's education is also a significant factor in determining whether or not schoolchildren take exercise. The time use studies show that there is a greater probability of children of mothers with vocational training taking exercise than is the case for children of mothers with no education beyond compulsory schooling.

The children of mothers who have completed a medium-length course of higher education are also more likely to take exercise.

The level of education completed by fathers was not found to have any effect on their children's exercise habits.

Schoolchildren are heavy TV and computers users

Danish schoolchildren spend between two and four hours in front of a television or computer screen on an average day.

It is particularly older schoolchildren who use their time in this manner. While children aged 7 to 11 watch TV or play computer games for around two and a half hours each day, these activities take up between three and four hours daily for children aged 12 to 17.

In general, boys devote more time than girls to television and computers. This difference between the sexes is most pronounced among children aged 12 to 17; boys in this age range spend less than an hour more than girls in front of screens.

Mostly at weekends

School activities set a natural limit on how much time children can devote on weekdays to their favourite TV programmes or computer games. At the weekends, in contrast, many children have greater freedom to indulge in such activities.

Among boys, 35% of 7- to 11-year-olds and 53% of those aged 12 to 17 spend *at least* five hours watching TV or playing computer games on a weekend day.

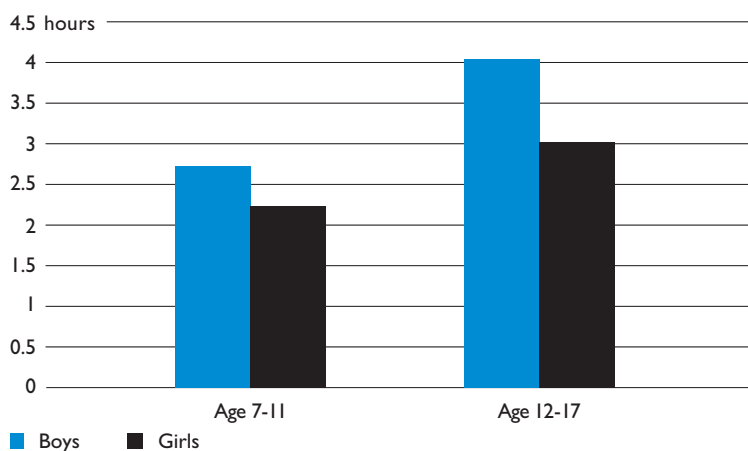
The corresponding proportions are somewhat lower among girls, with one girl in five aged 7 to 11 and approximately one in three aged 12 to 17 spending five hours or more watching TV or playing computer games on a weekend day.

Links with parents' habits

There is a correlation between the time spent by parents and by their children in front of TV and computer screens. The amount of time children devote to watching TV or playing computer games is also related to whether or not their parents live together, what education their parents have, and their father's relationship to the labour market.

The study reveals that for every additional hour that a father and mother spend in front of a TV or computer screen each

FIGURE 5
Time spent by schoolchildren on watching television or playing computer games on an average day. 2009.



SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

On an average day, children aged 7 to 17 spend between two and four hours in front of a TV or computer screen.

TABLE 4

Proportion of children who watch TV or play computer games for five hours or more on an average weekend day, 2009.

Percent	Boys	Girls
Age 7-11	35	20
Age 12-17	53	39

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

At the weekends, a considerable proportion of 7- to 17-year-olds spend five hours or more per day watching TV or playing computer games. For example, more than half of all boys aged 12 to 17 spend five hours or more in front of the TV or computer on an average weekend day.

day, their children spend an additional 10 minutes in the same way. In other words, there is a correlation, but it is not a strong one – there is no one-to-one relationship in the behavioural patterns of parents and their children. Regardless of the strength of the correlation, however, it does seem that parents act as role models with respect to the use of TV and computers.

Ten percent more of those children

who live together with both their parents spend more than three hours daily watching TV or playing computer games than is the case for children who live with only their mother or their father.

There is also a link between parents' education and the time children spend in front of the TV or computer screen. If either the father or the mother has completed a medium-length course of higher education, or if the mother has taken vocational training, the probability of their children watching more than three hours of TV per day is ten to twenty percent lower than for parents with no education beyond compulsory schooling.

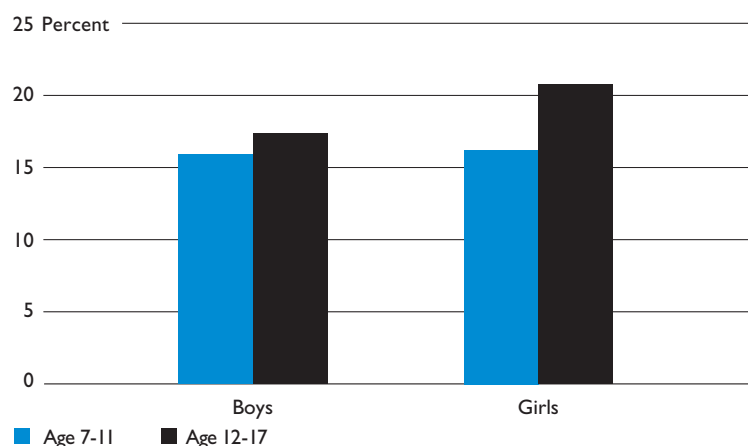
Finally, the study shows that the father's attachment to the labour market is relevant in this context. If the father is unemployed or has withdrawn from the labour market, the probability that the children spend more than three hours daily watching television or playing computer games is more than 30% larger than is the case for children whose fathers are in employment.

Every day, one young Danish schoolchild in seven is alone for a long period

On an average school day, 16% of the youngest group of schoolchildren – those aged 7 to 11 – are on their own for three hours or more.

FIGURE 6

Proportion of schoolchildren aged 7-17 who spend three hours or more on their own on an average school day, 2009.



SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

Between 16 and 21% of schoolchildren aged 7-17 spend three hours or more on their own on an average school day.

Time alone is defined as time when children are not together with either their parents or friends, when they are not in school or any other institution, and when they are not asleep. This means that schoolchildren may actually be in the company of other people, and yet be regarded for the purposes of the study as being alone. The crucial point is that the children themselves have declared that they do not have any close relationship to these people, who therefore cannot be expected to have any influence over the children's behaviour or any effect on their sense of being on their own.

Older schoolchildren are alone even more

The older schoolchildren are, the more time they report that they are on their own. Fully 16% of boys aged 7 to 11 and 17% of girls of the same age are alone for three hours or more on an average school day. For the older schoolchildren – those aged 12 to 17 – the corresponding figures

are 17% and 21%, respectively.

This fact – that it is more common for older schoolchildren to be alone – is also reflected in the average amounts of time for which schoolchildren are on their own. While children aged 7 to 11 are alone on average for a little more than an hour on schooldays, the older children – those aged 12 to 17 – are alone for an average of between one and one and a half hours per day.

The greatest numbers are alone in the afternoons

On weekdays, schoolchildren are typically alone at three times of the day: before starting school, around lunchtime, and when they come home from school.

They are alone most frequently in the afternoons. Thus, nearly 15% of schoolchildren aged 7 to 11 and 17% of those aged 12 to 17 are on their own in the afternoons. In the mornings and at lunchtime nearly 10% of 7- to 11-year-olds and 15% of 12- to 17-year-olds spend time alone.

Too little sleep, too much time in front of the screen and poor wellbeing often go hand in hand

Young schoolchildren who sleep too little and spend too much time in front of the TV or computer screen are much more likely to suffer from poor wellbeing than children who get enough sleep and spend only moderate amounts of time watching TV or playing computer games.

In the study of time use by schoolchildren conducted by the Rockwool Foundation Research Unit, children were asked to respond to a series of questions on how they feel about their lives.

Their answers enabled researchers to assess any relationships between their time use and their feelings about their own wellbeing.

The responses to the questions on wellbeing were converted to values from 0 to 100, where 0 was an expression of very poor wellbeing, and 100 very good. The great majority of children participating in the study had scores of around 80.

Children scoring 66 or below on the

TABLE 5
Average time spent alone by schoolchildren on school days. 2009.

Hours:minutes	Girls	Boys
Age 7-11	1:09	1:07
Age 12-17	1:20	1:26

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

The unemployed and people outside the labour market

An investigation of the significance of the socioeconomic situation of the parents – their education, attachment to the labour market and income – reveals that two factors are particularly relevant to whether children spend time alone.

If either the father or the mother is not in employment, the children spend less time alone. This finding is fairly predictable, since not employed parents – all else being equal – have greater opportunities than those who are working to spend time with their children when they are not at school. The same is true for fathers who have retired from the labour market, though not – rather surprisingly – for mothers in the same situation.

index were regarded as experiencing a poor level of wellbeing. Between 6% (girls) and 8% (boys) of 7- to 11-year-olds and between 9% (boys) and 15% (girls) of children aged 12 to 17 had such low scores that they were classified as having a poor level of wellbeing. In the case of the younger schoolchildren, this means that one or two children in each Danish school class of 25 pupils suffer from poor wellbeing. In the case of older school pupils, there are between two and four in each class who do not enjoy a good state of wellbeing.

Behaviour and wellbeing

It is not just the combination of too little sleep and too much TV and computer time that can increase the risk of poor wellbeing. Other combinations of imprudent behaviour can lead to poor wellbeing among children.

TABLE 6

The correlations between poor wellbeing and skipping breakfast, failing to exercise and spending a lot of time alone. 2009.

Children who do not eat breakfast are:	<ul style="list-style-type: none"> • more likely to feel fearful or distressed than children who eat breakfast • more likely to feel miserable • more likely to be angry or bad-tempered • more likely to feel bored • more likely to be tired • more likely to feel very anxious • more likely not to feel wide awake • more likely to be depressed • less likely to feel full of energy
Children who do not exercise are:	<ul style="list-style-type: none"> • more likely not to feel wide awake than children who exercise • more likely to feel very anxious
Children who spend a lot of time alone are:	<ul style="list-style-type: none"> • more likely not to feel wide awake than children who spend more time together with others • less likely to feel full of energy

Note: The relationships between breakfast and poor wellbeing and between being alone and poor wellbeing are calculated for school days. The relationship between lack of exercise and poor wellbeing is calculated for an average day.

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

Children who skip breakfast are more likely to experience feeling fearful and distressed, to be miserable, and to display anger and bad temper than children who eat breakfast.

Children aged 7 to 11 who do not exercise and who spend a lot of time alone are at a significantly greater risk of suffering poor wellbeing than their peers.

Children aged 12 to 17 who skip break-

fast and spend a lot of time alone have a significantly greater risk of suffering from poor wellbeing. Those who skip breakfast and spend too much time in front of TV or computer screens have a similarly high risk of poor wellbeing.

Breakfast and wellbeing

Breakfast is an important indicator of problems of wellbeing among children, whether it is the meal itself or the circumstances surrounding it that are significant.

Schoolchildren who skip breakfast have a greater risk of not feeling wide awake and alert than those who do eat breakfast. They also have a greater tendency to be anxious, bored, miserable, sad, tired, frightened, distressed, angry and bad-tempered than those of their peers who have eaten breakfast.

The study also shows that children who do not exercise, who spend more time in front of the television or computer screen than the average, or who spend a great amount of time alone, have a greater risk of experiencing poor wellbeing.

Even though the study of children's daily lives cannot show anything about causality – for example, whether skipping breakfast results in poor wellbeing, or whether the children's poor wellbeing has taken away their appetites – there is a clear correlation between eating breakfast and a good sense of wellbeing.

Overweight children have other problems too

If children are overweight, it is also probable that they sleep and take exercise too little, skip breakfast, spend a lot of time alone and spend long periods watching TV or playing computer games.

For example, schoolchildren who get less than the recommended amount of sleep are much more likely to be obese than are children who sleep for the recommended time. Children who skip breakfast are more likely to be overweight than children who eat breakfast, and children who take no exercise are more likely to be overweight than children who do take exercise.

Furthermore, there are links between overweight and the amount of time for which children are alone, and the amount

of time they spend watching TV or using computers.

Other research also suggests that exercise, breakfast and a limit on the amount of time spent in front of a screen are all good for health.

TV and overweight

The relationship between overweight and the amount of time children spend in front of TV and computer screens is illustrated in Figure 7.

The figure shows the proportions of children aged between 12 and 17 who are of normal weight, overweight and obese and who spend much more time than the average watching TV or playing compu-

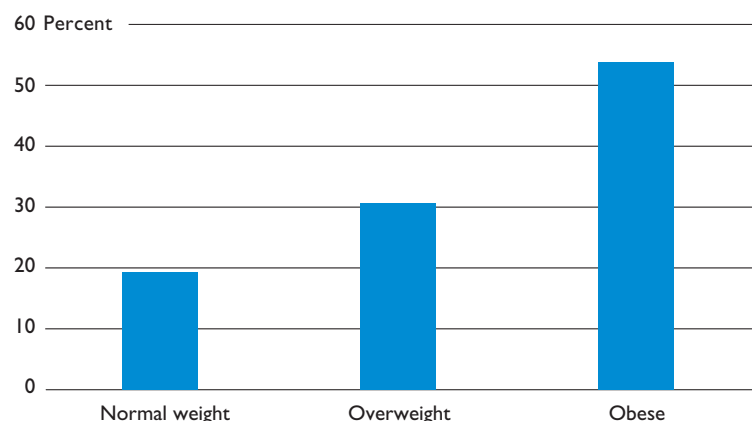
No conclusions possible on causality

The time use studies cannot give any immediate indication of causality. It is not possible to state, for example, that children spend a lot of time watching TV because they are overweight, or that they are overweight because they spend time in front of the television.

ter games.

A total of 19% of children of normal weight spend more time than the average on TV and computers. The corresponding proportion of children who are overweight is 30%; of children who are obese, it is 54%.

FIGURE 7
Proportions of 12- to 17-year-olds who spend much more time than the average on watching TV and playing computer games. 2009.



Note: The children's Body Mass Index (BMI) levels are used as a measure of overweight. There are different BMI weight categories for girls and for boys, and for different age groups.

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

Over half of all obese children aged 12-17 spend much more time in front of a TV or computer screen than other non-obese children of the same age.

Children who do well at school also make sensible use of their time – regardless of their family background

Children of mothers who have taken a course of higher education do better in school than other children. This relationship is already well known, and the study of children's time use by the Rockwool Foundation Research Unit confirms it yet again.

However, the Rockwool Foundation study goes a step further, in that it seeks to explain why this relationship exists. In principle, there are two plausible types of explanation.

The first is the obvious one: that women who are capable of undertaking higher education pass on their abilities – in this case, useful abilities – to their children.

The other type of explanation is that women who have taken higher education are better than others at navigating the stream of information available to them about children's health and upbringing. In other words, this explanation suggests that the children of well-educated mothers do better at school because their mothers make them go to bed early, eat breakfast, take exercise, watch only a reasonable amount of television, and so on.

Differences exist in upbringing, but even so ...

While the analysis cannot confirm the first (genetic) type of explanation, because it includes no information relevant to such an explanation, it does indicate that the second (behavioural) type of explanation should be modified – at least in part – to a conclusion that it is to the advan-

TABLE 7
Average time use by children on different activities, shown according to mother's level of education. 2009.

	Mother has higher education	Mother does not have higher education
Exercise and sport (average day)	29 minutes	32 minutes
Time spent watching TV or playing computer games (average day)	174 minutes*	190 minutes
Proportion who skip breakfast	16%*	25%
Proportion who do not get enough sleep	26%	27%

* Indicates that there is a statistically significant difference between the time spent on this activity by children with mothers who have taken higher education and that spent by other children.

SOURCE: THE ROCKWOOL FOUNDATION RESEARCH UNIT

tage of all children to have structured and active daily lives.

The study certainly does show that there are differences in behaviour between the children of mothers who have higher or lower levels of education. Children of mothers with higher education spend an average of 174 minutes (just under three hours) in front of the TV or computer screen on an average day. By way of comparison, other children spend an average of 190 minutes (over three hours) in front of the screen.

In the same way, there are differences in the degree to which children skip breakfast. While 16% of children of well-educated mothers do not eat breakfast, this is the case for 25% of other children.

Thus, children of mothers who have taken longer courses of education spend less time in front of the television, and a greater proportion of them eat breakfast.

But even though there are significant differences in these respects, the study shows that these differences are not sufficiently large to explain the differences in the children's scholastic results. The elements considered in this study of the everyday lives of *all* children – whether they get enough sleep, eat breakfast, take exercise, or spend too much time watching TV or playing computer games – have a direct relationship with how well they perform at school.

Children's behaviour and scholastic results

As part of the study, children were asked to assess how good they felt themselves to be at maths and reading.

Comparisons with the children's own evaluations and their time use showed – not surprisingly – that there is a connection between children's school results and the way they spend their time.

The more time a child reported spending on watching TV and playing computer games, the worse they felt themselves to be at reading.

There is also a negative correlation between children's sleeping habits and the results for reading. Children who sleep too little do not consider themselves to be as good at reading as children who get enough sleep.

A negative correlation also exists between skipping breakfast and results for maths.

In contrast, there is a positive correlation between children's exercise habits and their level of success in maths. The more children exercise, the better they think they are at mathematics – or it could also be the case that success in school gives children the energy to exercise.

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