



Rapport

Child monitor Sint Maarten

Health of children at Sint Maarten
aged 4-12

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In collaboration with JOGG

Mulier Instituut

Maaïke Heerschop

Nina Derix

For more information, please contact the Mulier Instituut.

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www.mulierinstituut.nl

info@mulierinstituut.nl

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Introduction

On Sint Maarten, there is increasing concern about the growing number of children who are overweight or obese. The government aims to reduce these numbers by implementing health programs in schools to promote healthy lifestyle habits among children. This study focuses on sixteen primary schools on Sint Maarten where such programs will be, or are being implemented. The aim is to tailor the program to better fit the needs of their school populations by assessing children's lifestyle behaviours.

Research question

What are the lifestyle behaviours of children aged 4-12 years on Sint Maarten?

Research methods

We used a questionnaire with the following subjects: sleep, nutrition, oral hygiene, exercise, screen time, and health at school. We distributed the questionnaire among parents of children aged 4-12 years. The response rate was 47 percent (1,873 out of 4,025).

Most important results

- Sleep: 25 percent of children sleep 9-12 hours per night, 73 percent sleep 6-9 hours, and 2 percent sleep less than 6 hours. 9-12 hours is recommended by the WHO.
- Nutrition: 53 percent of children drink four more glasses of water a day, which is the recommended amount by the WHO. 79 percent eat breakfast every day. 35 percent eat fruit daily, and 21 percent eat vegetables daily. Children in lower grades eat fruit more frequently, while those in higher grades eat vegetables more often.
- Oral hygiene: 71 percent of children brush their teeth at least twice a day, with children in higher grades brushing their teeth more frequently.
- Exercise: 58 percent of children participate in organized sports. 21 percent play outside almost every day, with younger children playing outside more frequently. 74 percent of children go to school by car, 9 percent walk.
- Screen time: on average, children have 3 hours of screen time per day.
- Health at school and after school care: 61 percent of parents think school should address exercise. 57 percent think after-school care should focus on healthy nutrition.



Introduction

In this introduction, we will describe the background, the aim and the research questions of this study.

1.1 Background

On Sint Maarten, there is growing concern regarding the increasing number of children being overweight or having obesity, mirroring a trend seen across many other (Caribbean) nations (UNICEF, 2013). In the coming years, the government of Sint Maarten therefore aims to stop this development and to reduce the number of children that are overweight and have obesity. More specifically, by implementing health programs within the school, the government aims to support healthy lifestyle habits in children, which in turn may lower the risk of weight problems.

In a previous current study, we took a closer look at the Foundation Catholic Education on Sint Maarten that had already started with the implementation of such a health program in their six primary schools. In the current study, we will add another ten schools to this study.

Within this health program the focus lies on improving children's general health and wellbeing by focussing on lifestyle behaviours. Additionally, there is a specific focus on reducing the risk of weight problems (i.e. being overweight or obese) in children and developing motor skills in children in their schools.

The current aim of the schools is to further tailor the program centred around lifestyle behaviours, in such a way that it will fit the needs of their student population. To ensure the success of these programs, an integrated approach is crucial. This involves making the living environment healthier through local collaboration with all relevant stakeholders: organizations, policymakers, and professionals.

In this study we therefore provide insight into the lifestyle behaviours of children. Additionally we will study parents' perception of their child's lifestyle behaviours. Because parents, especially for children in primary schools, are the most prominent key players in forming a child's lifestyle behaviours (Sanders & Turner, 2018).

Based on this assessment, schools can prioritize their efforts to promote children's lifestyles. Re-assessing children's lifestyle behaviours again in a few years can determine change.

1.2 Research question

What are the lifestyle behaviours of children aged 4-12 years on Sint Maarten?



Reading guide

In the next chapter, chapter 2, we describe the research method. In chapter 3 we provide the results of this research and in chapter 4 we describe the most important conclusions and recommendations.

Research method

This chapter provides the research method of the child monitor on Sint Maarten. First, we will describe the topics examined in the monitor. Subsequently, we will discuss the questionnaire, data collection, and analysis.

2.1 Monitor

We have developed a questionnaire based on Dutch public health service questionnaires. We have adjusted the questionnaire to the local context in collaboration with professionals on Sint Maarten. The questionnaire was made available in English, Spanish, Dutch and Haitian Creole. The topics for the baseline assessment of lifestyle behaviours of children aged 4-12 on Sint Maarten were:

- sleep;
- nutrition;
- oral hygiene;
- exercise;
- screen time;
- attention for health at school and after-school care.

Additionally, parents were asked how they view their child's health and wellbeing, and whether their child's behaviours fit a healthy lifestyle.

2.2 Data collection

A local contact person distributed the questionnaire and encouraged parents to complete it. The questionnaire was distributed among parents of sixteen primary schools at Sint Maarten.

The schools where the questionnaire was distributed are:

- The Sr. Regina School
- The Sr. Magda School
- The St. Dominic School
- The Sr. Borgia
- The St. Joseph School.
- The Sr. Marie Laurence School
- Methodist Agogig Centre BFM Browlia
- Asha Stevens Hillside Christian Schools
- Methodist Agogic Centre JAG John A. Gumbs
- Marie Genevieve de Weever School
- Helmich Snijders Hillside Christian Schools
- The Ruby Denise Labega Primary School
- The Oranje School
- The St. Maarten Seventh Day Adventist School
- The Dr. Martin Luther King Jr. School
- The Leonald Conner School

Parents with multiple children aged 4-12 years have filled out the questionnaire separately for each child. Parents could fill in the questionnaire online or on paper.

In total, 1,873 questionnaires were filled in between February and April 2025. This yields a response percentage of approximately 47 percent.

2.3 Analysis

We have analysed the questionnaire using IBM SPSS statistics and RStudio. We have broken down the data by gender, group and school. Because age and school group are strongly related, we will only present data by school group. But differences by group in the results may also be attributed to age. In groups 1 and 2, the children are mainly 4 and 5 years old. In groups 3 to 5, the children are mainly 6 to 8 years old. And in groups 6 to 8, the children are mainly 9 to 12 years old.

When available, we will show the global or national standards and/or guidelines with the results.

Results

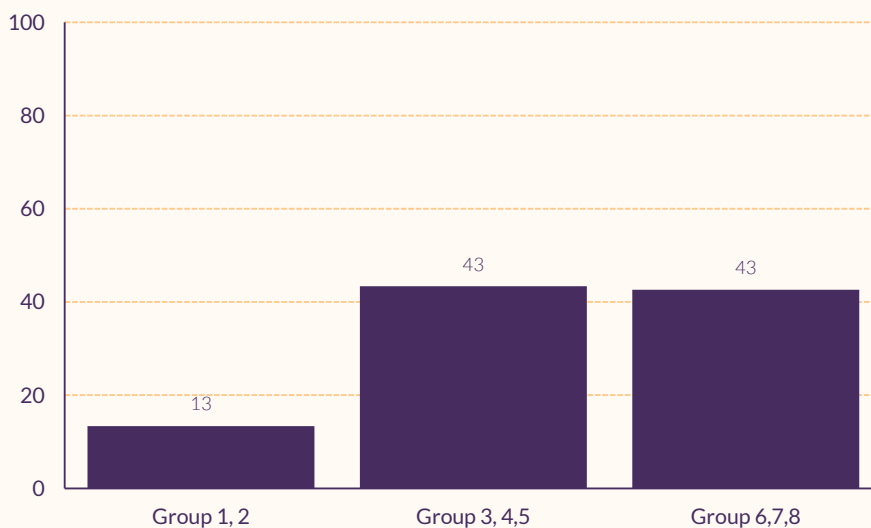
In this chapter, we will describe the results of the questionnaire in the different health-related themes: sleep, nutrition, oral hygiene, exercise, screen time, and health at school and after school care.

3.1 Participants' characteristics

Age and group

The average age of children in this research is 8.7 years old. The children in the lowest school groups (group 1 and 2) are underrepresented (13%). [figure 3.1](#) shows the distribution of children by group.

Figure 3.1
Distribution of children by group
(percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

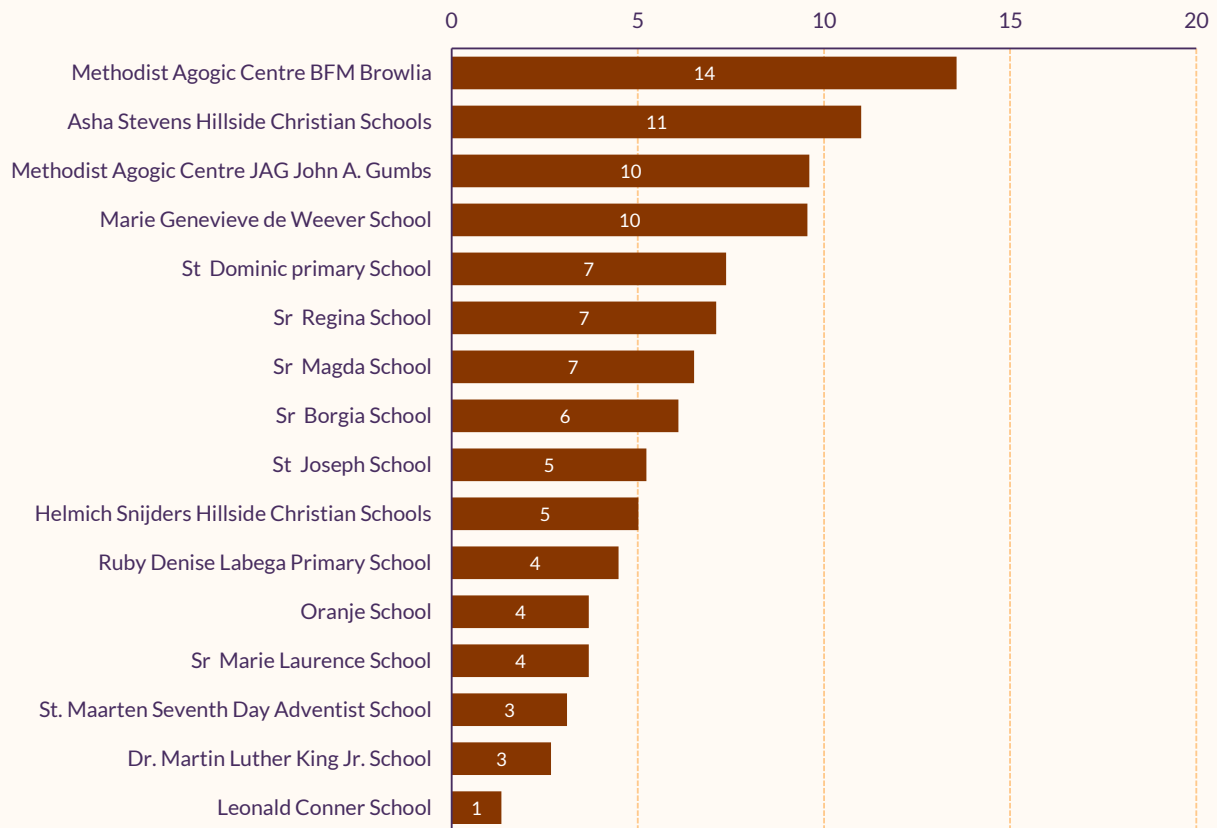
Gender

Slightly more girls are included in this research than boys (girls: 52%, boys: 48%).

School

The schools with the highest response rates are the Methodist Agogic Centre BFM Browlia and the Asha Stevens Hillside Christian Schools ([figure 3.2](#)).

Figure 3.2
Distribution of children by school*
(percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

* The response of the Prins Willem Alexander School was zero and therefore not added to the graph.

Education of the parents

The educational level of the parents is quite varied. Most parents have finished secondary education (17%), after that most parents finished hbo or university (13%).

3.2 General health and happiness

In general, parents find their child (very) healthy (77%). Nearly one in five parents find their child reasonably healthy (21%). Very few parents (2%) find their child unhealthy.

Parents were asked to indicate their children's general feeling using the icons shown in [figure 3.3](#). The percentages describe the distribution of their answers. Most parents (88%) selected the green faces indicating their child is happy or very happy.

Figure 3.3

General feeling of children according to their parents

(Percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

Most parents believe that the responsibility for a child's health lies with the parents themselves (average grade: 9.3 out of 10). The responsibility of the school, the grandparents and the after-school care are equally rated (average grade: 6.8, 6.9 and 6.7 respectively). Parents believe that the child itself and the government are least responsible (average grade: 6.2).

3.3 Sleep

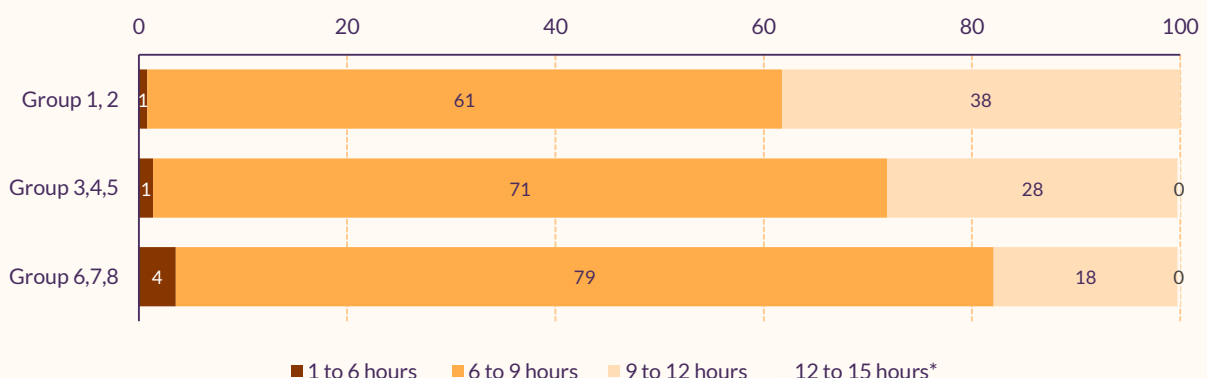
Hours of sleep per night

The children at Sint Maarten sleep 8.8 hours on average per night. Most children sleep between 6 and 9 hours per night (73%). A quarter of children sleep between 9 and 12 hours per night (25%). Because the average is close to 9, we know that most of the children in the 6 to 9 hours group are at the upper end of this range ([figure 3.4](#)).

Figure 3.4

Hours of sleep per night*

(percentages, n=1861)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

In groups 3, 4 and 5 and 6, 7 and 8, the proportion of children sleeping 12 to 15 hours was 0.26%. This is shown as 0% in the figure due to rounding conventions.

Children in higher school groups are more likely to sleep 6 to 9 hours per night than children in lower groups: they tend to sleep longer.



Sleep recommendations (Paruthi et al., 2016)

- 4-5 years old: 10-13 hours
- 6-12 years old: 9-12 hours

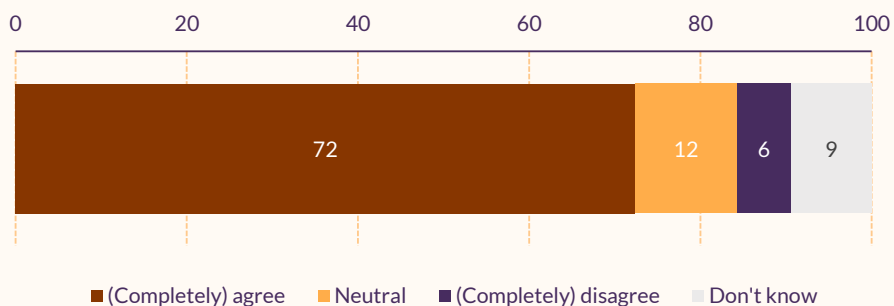
Parents' perception of sleeping

The majority of parents thinks their child gets enough sleep (72% (completely) agree [figure 3.5](#)).

Figure 3.5

Parents' response to statement: 'I think my child gets enough sleep'

(percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

Problems with sleeping

One in five children has trouble sleeping (21%). The most common problem is the child not wanting to go to bed (9%) ([figure 3.6](#)).

Figure 3.6

Children's problems with sleeping, according to their parents

(percentages, n=400)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

3.4 Nutrition

Drinking habits

Half of the children (53%) drink four or more glasses of water a day. More than a third of the children drink two to three glasses of water a day (38%; [table 3.1](#)).

More than half of the children (57%) consume either no sugary drinks or (less than) one glass a day. A third of the children drink two to three glasses a day (37%), and only a few drink more (4%). The vast majority of children do not or barely consume sugar-free drinks (87%).

Table 3.1

Number of glasses children drink a day, according to their parents

(percentages, n=1873)

	Water	Sugary drinks	Sugar-free drinks
(Almost) none	1	13	69
Less than one, or one glass a day	6	43	17
Two or three glasses a day	38	37	7
Four or more glasses a day	53	4	2
I don't know	3	3	5

Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.



Drinking recommendations (NHS, 2022)

- 4-8 years old: 5 cups of water per day
- 9-13 years old: 6-8 cups of water per day

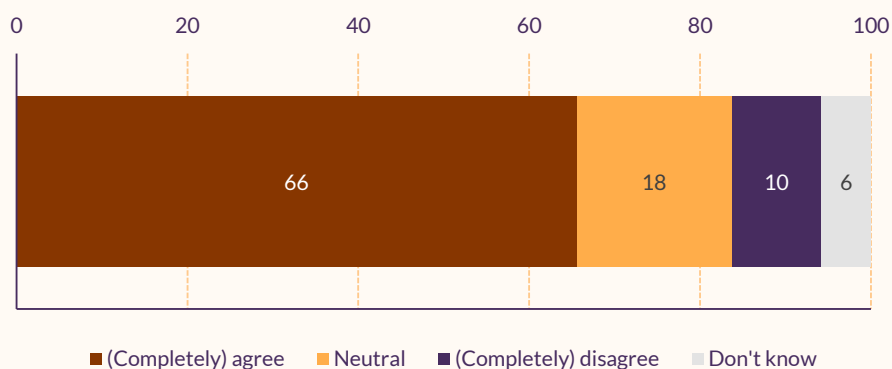
We have found no differences for gender in the number of glasses of sugary and sugar-free drinks a day. Children in groups 6 to 8 do drink more glasses of water per day (58% four or more glasses per day) than children in groups 1 to 5 (49% four, five or more glasses per day).

Most parents think their child drinks enough water (66% agree/completely agree ([figure 3.7](#))).

Figure 3.7

Parents' response to statement: 'I think my child drinks enough water'

(Percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

Eating habits

Most children eat breakfast every day (79%). There is a slight decrease in the higher grades (1-5: 83%, 6-8: 74%). A very small percentage of children (almost) never eats breakfast (2%) or less than one day a week (1%).

One third of children eat fruit every day (35%) and one in five (21%) eat vegetables every day ([table 3.2](#)).

There does seem to be a difference in school groups: children in the lower groups are more likely to eat fruit on a daily basis than children in the higher groups (groups 1, 2: 46%; groups 3-5: 35%; groups 6-8: 31%). For the intake of vegetables, we found no association with school groups.

Table 3.2
Frequency of eating fruit and vegetables
 (percentages, n=1873)

	Fruit	Vegetables
One day or less a week	14	25
Two, three or four days a week	30	37
Five or six days a week	18	14
Every day	35	21
I don't know	3	3

Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

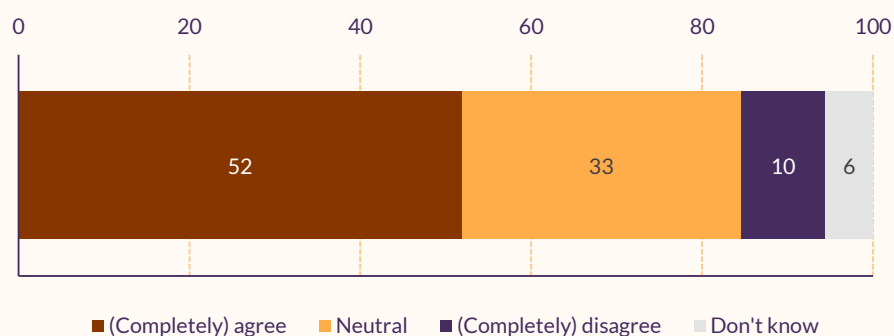


Eating recommendations (WHO, 2020)

- Daily breakfast
- 400 grams or five portions of fruit and vegetables per day

Half of the parents (52%) feel like their child eats healthy ([figure 3.8](#)). There seem to be no differences in group or gender.

Figure 3.8
Parents' response to statement: 'I think my child eats healthy'
 (percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

Snacking behaviour

There is variation in the number of moments children eat snacks (for example chocolates, sweets, cookies or chips) during a day ([table 3.3](#)). Almost half of the children has one snack moment or less than one a day (46%).

Table 3.3

Number of snacking moments for children

(percentages, n=1873)

Number of snack moments	Percentage of children
One time a day or less	46
Two or three times a day	37
Four or five times a day	14
I don't know	4

Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

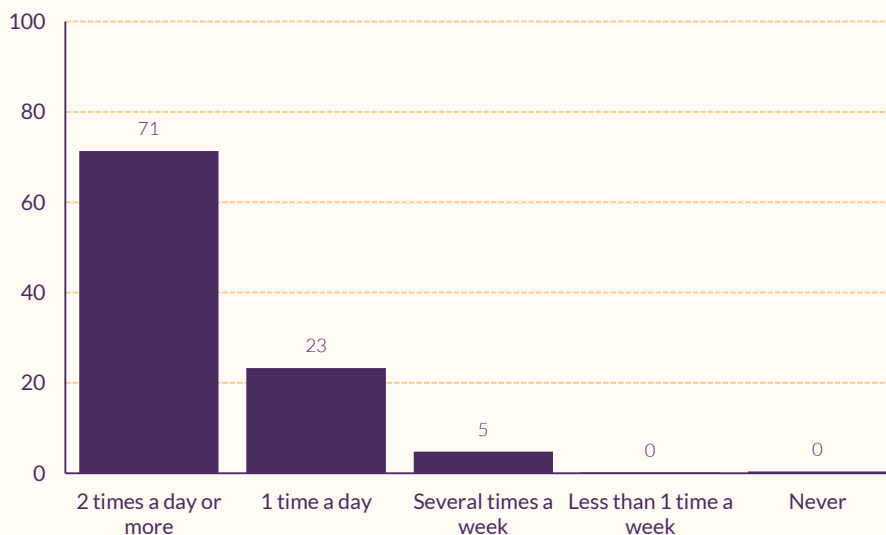
3.5 Oral hygiene

The majority of children brush their teeth, or get their teeth brushed, at least two times a day (71%, [figure 3.9](#)). Almost a quarter of children brush their teeth once a day (23%).

Figure 3.9

Number of times children brush their teeth (or get their teeth brushed by parents) in a day

(percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

3.6 Exercise

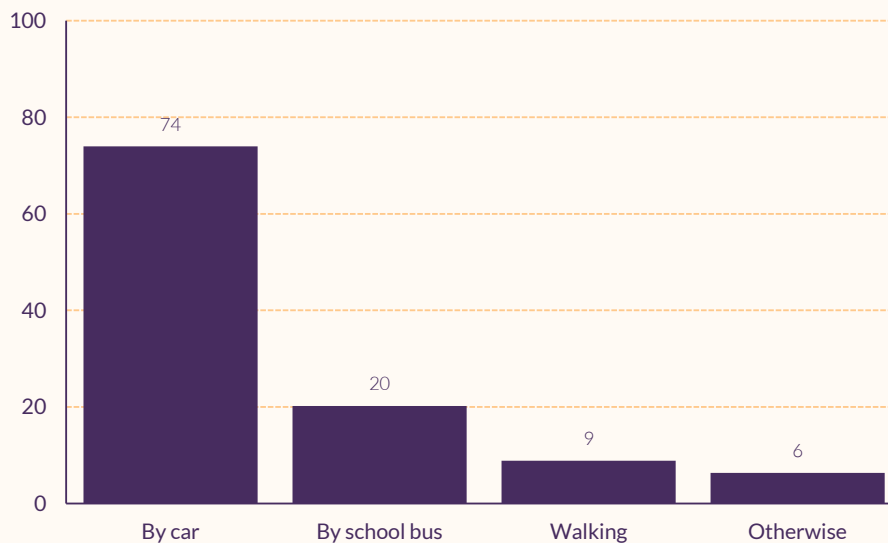
Mode of transportation to school

The vast majority of children go to school by car (72%; [figure 3.10](#)). Nearly one in ten children walk to school (9%). Just over six in ten of these children walk to school daily (62%).

Figure 3.10

Mode of transportation to school

(percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

We found no differences in mode of school transportation between school groups and gender. The most commonly mentioned other mode of transport to school is by private bus.

Sports

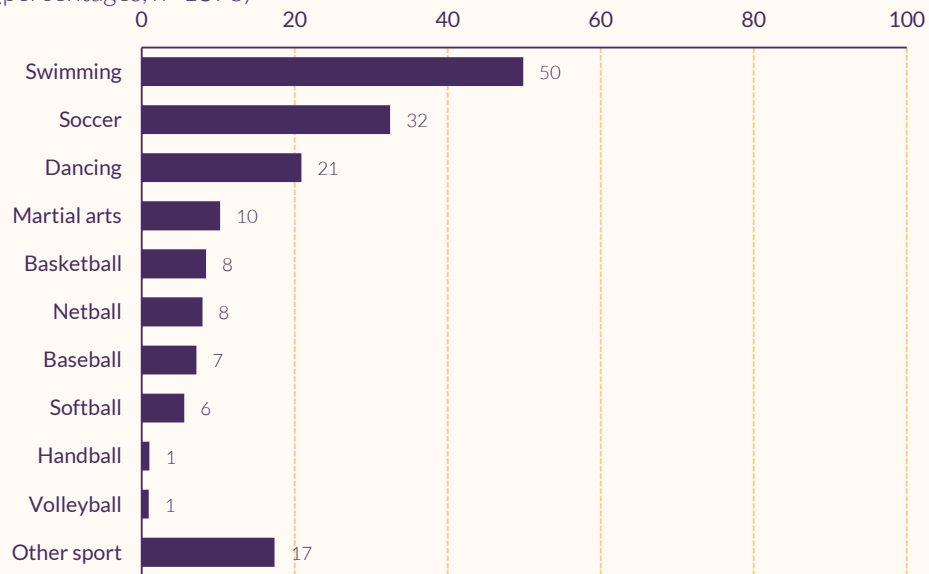
More than half of the children participate in organized sport activities on the island (58%). Of those, children in the lower school groups mostly participate in organized sports one or two days a week (groups 1 and 2: 70%; groups 3 to 5: 58%). Children in the higher school groups (6 to 8) mostly participate in organized sports two to five days a week (71%).

The sport most children participate in is swimming (50% of the children who participate in organized sport activities). This is followed by soccer (32%) and dancing (21%). [figure 3.11](#) shows the percentage of children who play sports, broken down by the type of sport they participate in. Among the children engaged in a 'different sport', the most practiced sports are gymnastics and track and field.

Figure 3.11

Sports practiced by children

(percentages, n=1873)

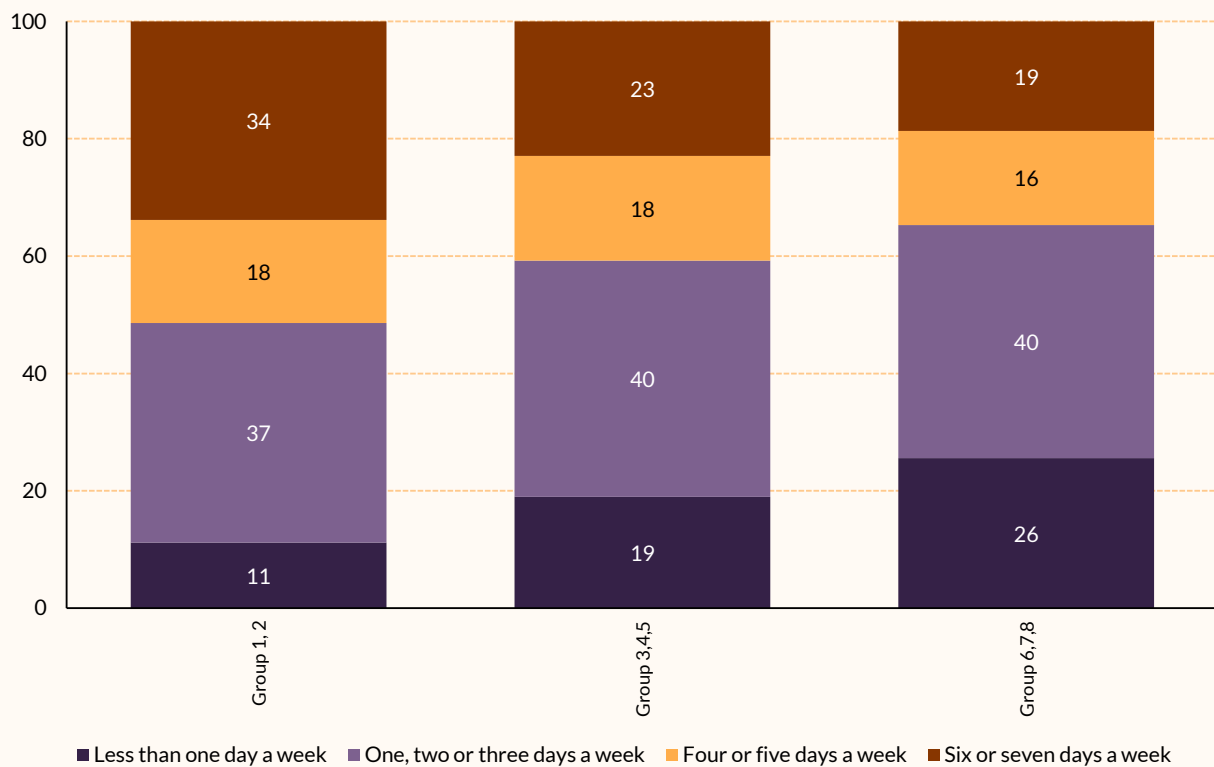


Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

Playing outside

One in five children play outside less than one day a week (21%). A quarter of children play outside almost every day (six or seven days, 23%). Children in the lower school groups (1 and 2) play outside more often (34% six or seven days a week) than children in the higher school groups (groups 3-5: 26%; groups 6-8: 15%) ([figure 3.12](#)).

Figure 3.12
Number of days children play outside
 (percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

We have asked parents about the outdoor play opportunities in their neighbourhood. Most parents indicate that children can play outside in their own outdoor space (garden, balcony, terrace; 72%). Besides that, children can mainly play in a playground with play equipment (23%) or in the school playground (22%). Children also play outside the most in these three types of outdoor play areas.

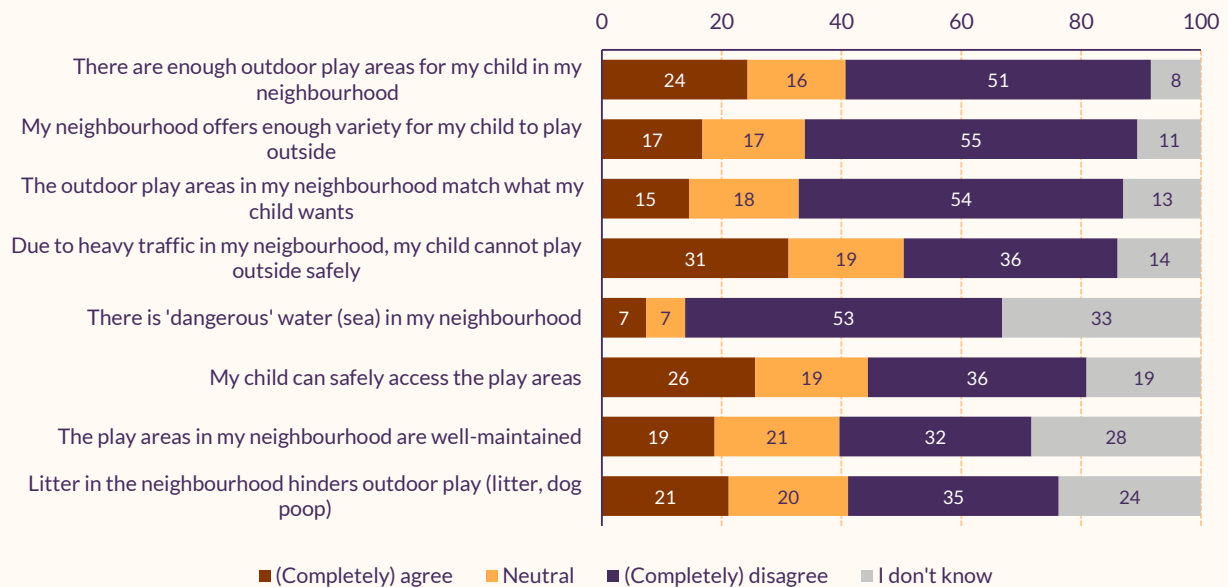
[figure 3.13](#) shows parents' opinions on the outdoor play opportunities for their child. The statement most agreed on by parents is: 'Due to heavy traffic in my neighbourhood, my child cannot play outside safely' (31% (completely) agree). The statements most parents disagreed with is about the neighbourhood offering enough variety to play for a child (55% (completely) disagree) and that the outdoor play areas match with what their child wants (54% (completely) disagree).

One in four parents think there are enough play areas for their child (24%). One in four parents think their child can safely access the play areas (26%).

Figure 3.13

Parents' response to statements on outdoor play opportunities

(percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.



Exercise recommendations (WHO, 2010)

- At least 60 minutes of moderate to vigorous intensity of physical activity per day

Parents' perception of exercise

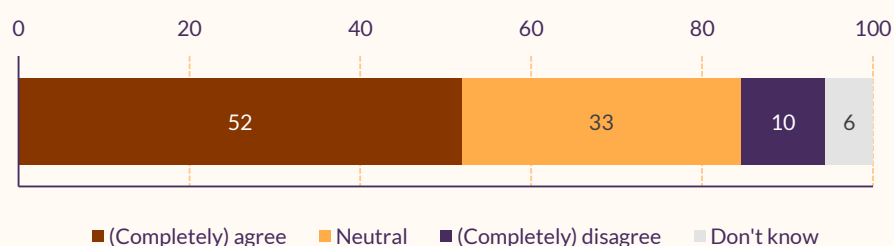
A majority of parents (57%) think their child gets enough exercise ([figure 3.12](#)).

Only 10 percent of parents believe their child does not get enough exercise. Gender appears to influence these ratings. The parents of boys are more likely to think their child gets enough exercise (boys: 55%; girls: 47%).

Figure 3.14

Parents' response to statement: 'I think my child gets enough exercise'

(percentages, n=1873)



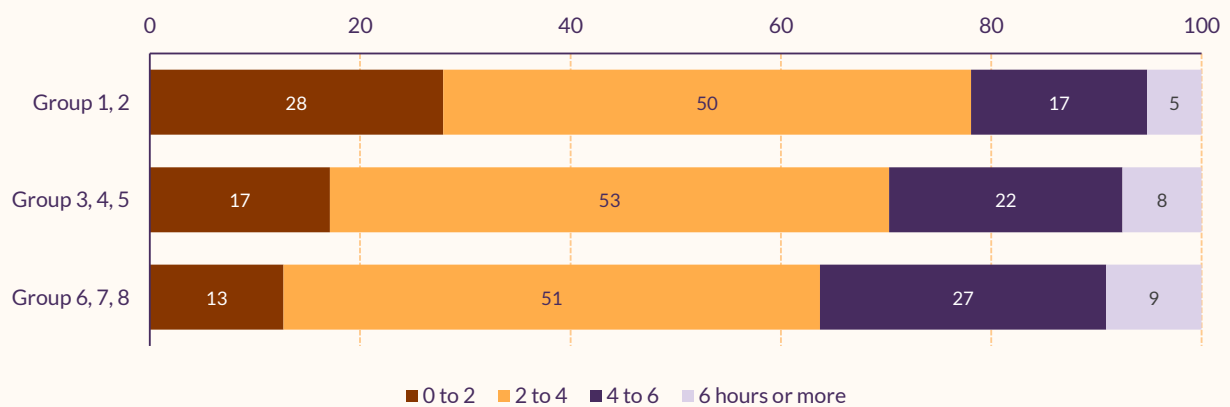
Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

3.7 Screen time

The average screen time of children is 3 hours per day. We have found that almost half of the children watch television, movies or series every day (44%), almost a third spends time on a smartphone daily (28%), and one in five children play electronic games daily (27%).

The higher the group a child is in, the more screen time they have ([figure 3.14](#)). 36 percent of children in the higher school groups (6,7 and 8) have four hours or more hours of screen time a day.

Figure 3.14
Hours of screen time in children's free time
(percentages, n=1868)

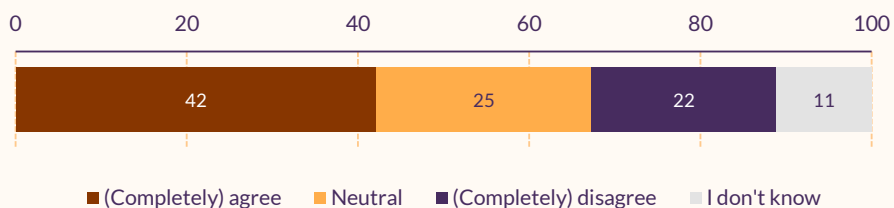


Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

Parents' perception of screen time

Two in five parents think their child spends too much time watching screens (42%; [figure 3.15](#)).

Figure 3.15
Parents' response to statement: 'I think my child spends too much time watching screens (e.g. TV, phone)'
(percentages, n=1873)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

3.8 Health at school and after school-care

School

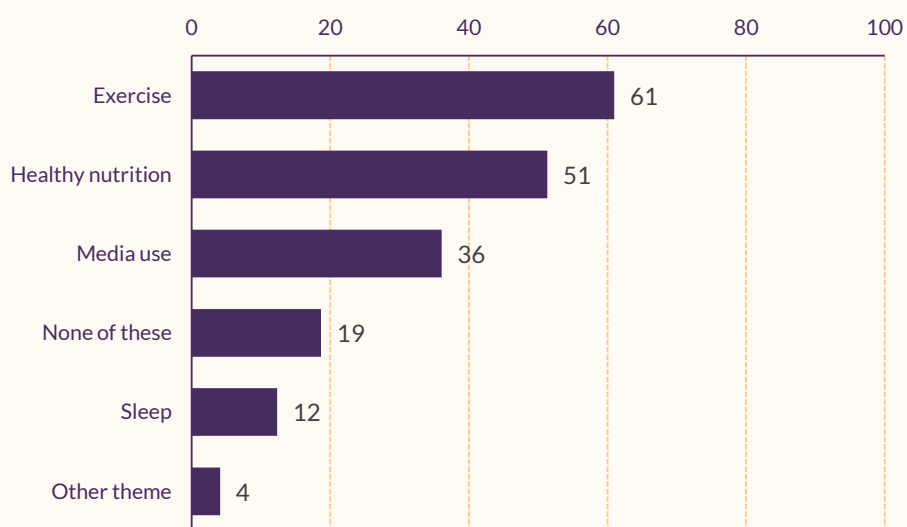
Two-thirds of the parents (61%) think schools should pay attention to exercise. 74 percent of those parents believe that the school their child attends pays enough attention to exercise.

Most parent (51%) find it important for schools to address healthy nutrition to children ([figure 3.16](#)). One third of these parents (29%) believe that schools currently pay insufficient attention to healthy nutrition. Mental health and emotional wellbeing is another theme that parents find important for schools to pay attention to.

Figure 3.16

Health aspects to which school should pay attention, according to parents

(percentages, n=1873, multiple answers possible)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

After-school care

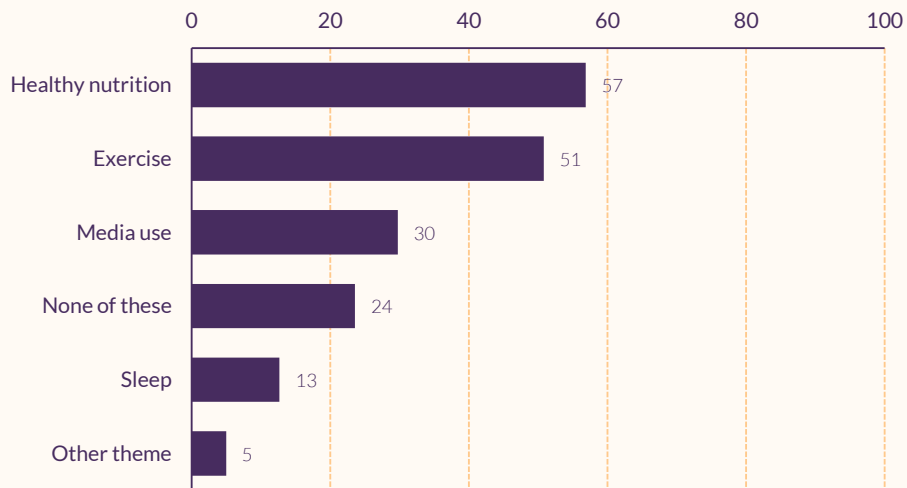
We have found that parents find it primarily important that after-school care pays attention to healthy nutrition (57%) and exercise (51%) ([figure 3.17](#)). Some of these parents believe that the after-school care currently pays too little attention to healthy nutrition (22%) and to exercise (17%).

More parents of children in groups 6 to 8 think that after-school care should pay attention to screen time (36%) than in groups 1 and 2 and 3 to 5 (24% and 27%). In exercise we see a differences in the opposite direction. More parents from children in groups 1 and 2 (63%) find it important for after-school care to pay attention to exercise than parents from children in groups 3 to 5 (52%) and groups 6 to 8 (43%).

Figure 3.17

Areas of focus for after-school care, according to parents

(percentages, n=926, multiple answers possible)



Source: Questionnaire among parents of 16 schools at Sint Maarten, 2025.

3.9 Significant differences between schools

General Health

Parents of children attending the Sr. Regina School report higher ratings of their children's health compared to parents of children in the other schools. 88 percent of parents at the Sr. Regina School rate their child's health as (very) healthy, whereas the overall average is 77 percent.

Nutrition

We compared the results regarding breakfast between the schools. On average, 79 percent of children eat breakfast daily. Schools who present significant lower percentages for children eating breakfast daily are: Leonald Conner School (56%), Ruby Denise Labega Primary School (68%) and St. Maarten Seventh Day Adventist School (67%).

Five schools stand out in terms of the number of days children eat fruit. Children attending the St. Joseph School, the Sr. Regina School and the St. Dominic primary School are more likely to eat fruit every day (44%, 44% and 49%) than in the other schools (average: 35%). Children attending Dr. Marthin Luther King Jr. School and Oranje School are less likely to eat fruit daily than in other schools (20% and 22%). When looking at the number of days children eat vegetables, the Sr. Marie Laurence School and Oranje School stand out. Only 12 percent of children at these schools eat vegetables every day, whereas the overall average is 21 percent.

Exercise

The percentage of children participating in organized sports is very low among children attending the Sr. Marie Laurence School, Marie Genevieve de Weever School and Oranje School. 39, 36 and 38 percent of children of these schools participate in organized sports, whereas the overall average is 58 percent. In addition, only 35 percent of parents in the Sr. Marie Laurence School think their child gets enough exercise. We see the same result for the Oranje School (36%) and the Martin Luther King Jr. School (36%). The average of all schools is 57 percent.

In the St. Dominic School and the Leonald Conner School, children play outside less than in the other schools. The average percentage of children playing outside almost every day is 23 percent. At the St. Dominic School, this percentage is 13 and at the Leonald Conner School this percentage is 12.

The St. Joseph School stands out positively in the opinions on outdoor play areas. Parents of children at this school are significantly more positive on the outdoor play areas matching their child's wishes, on children being able to get to the play areas safely, and on how well-maintained the areas are, compared to the other schools. Parents of children attending the St. Maarten Seventh Day Adventist School express more positive views on the safety of access to play areas and how well these areas align with their children's preferences.

Screen time

The percentage of children watching television, movies or series every day in their free time is higher among those attending the Sr. Magda School (66%), Sr. Marie Laurence School (57%) and Helmich Snijders Hillside Christian Schools (59%) than among those attending other schools (average: 44%). This percentage is lower among those attending the Oranje School (28%) and Leonald Conner School (28%).

Health at school

Of the parents who think school should pay attention to exercise, more parents of children in the St. Dominic primary School (33%), in the Ruby Denise Labega Primary School (33%) and in the Methodist Agogic Centre BFM Browlia (36%) find that the school does not pay enough attention to exercise than in other schools (22%).

Conclusions & recommendations

In this report, we have described the lifestyle behaviours of children at sixteen primary schools on Sint Maarten. In this chapter, we will list the most relevant results on each theme and compare them to children's health guidelines or reference data from other countries.

Conclusions and interpretation

Children sleep less than recommended

The vast majority of children in this study (73%) sleep less than 9 hours a night. The average of all children is 8.8 hours per night, so we must interpret this result with caution. These children do not get enough sleep, but most children are reasonably close to the recommended hours of sleep.

Children in higher school grades and older children are likely sleep 6 to 9 hours. Surprisingly, the majority of the parents feel that their child does get enough sleep during the night. This suggests that parents may be unaware of how much sleep a child needs a night.

The results are worrisome, as getting enough sleep is important for a child's development. Sleeping the recommended number of hours on a regular basis has been positively associated with physical and mental health outcomes, including improved behaviour, attention, memory, learning and emotional regulation, and a general better quality of life (Paruthi et al., 2016). On the other hand, sleep deprivation has been linked to several health risks in children, such as high blood pressure (Sparano et al., 2019) and the development of obesity (Miller et al., 2018).

In addition to too little sleep, some children have problems with sleeping (21%). Young children (in grades 1 and 2) mostly struggle with falling asleep and waking up during the night. This is regarded as common sleeping behaviour at that age (Galland et al., 2012). Remarkably, children in grades 6, 7 and 8 also wake up more often during the night than children in grades 3, 4 and 5.

Variations in healthy nutrition of children

A healthy diet includes, among other things, having breakfast (Hoyland et al., 2009), consuming fruits and vegetables daily, drinking enough water, and limiting daily sugar intake (WHO, 2020). About half of the parents in our study believe their child has a healthy diet (52%).

One in five children do not have breakfast daily

The majority of children seem to meet the recommendations for breakfast. 79 percent of children eats breakfast every day. However, about a fifth (21%) does

not meet the recommendations. For these children, it is crucial to investigate what can be done to increase the number of times they eat breakfast per week. Having breakfast on daily is important, as it is vital for proper growth, immunity, physical and mental development, health and wellbeing (WHO, 2020).

Most children do not eat fruit and vegetables daily

The majority of children in this study do not meet the recommendations of the World Health Organisation regarding fruit and vegetable consumption. The children in this study that eat fruit and/or vegetables every day is considerably low. A bit more than two third of the children eat fruit every day, and only one in five children eat vegetables every day.

Fruits and vegetables are a good source of vitamins, minerals and fibres, which are the building blocks for growth. Eating fruits and vegetables therefore aids in a healthy development. Fruit and vegetables are also usually low in fat and calories. Eating them can therefore support maintaining a healthy weight. It has even been associated with lowering the risk of heart disease and other diseases such as cancer (NHS, 2022).

Most children in the study (53%) have one or two snack moments a day (with for example sweets, cookies or chips). One in six children have four or five snacks daily. It is important to minimize the intake of such snacks with (added) sugar, because they contribute to weight and dental problems.

Children drink too little water and too many sugary drinks

Water is regarded as the best choice of drink for children (WHO, 2022). The majority of the children in this study drink four or more glasses of water a day (53%). 22 percent drink five or more glasses of water a day and meet the guideline.

A third of the children drink two to three glasses of sugary drinks a day (37%). Children who consume many sugary drinks are more likely to become overweight. Moreover, sugar intake can lead to dental problems. Therefore, drinks with high sugar levels should be avoided or consumed with moderation (WHO, 2022).

Oral hygiene in young children can be improved

Children aged 4 and over are recommended to brush their teeth at least twice a day for about two minutes. This is essential for keeping a child's teeth free from decay. Before the age of 7, parents or caregivers are advised to brush their children's teeth. Older children should be able to brush their own teeth. However, parents are still advised to check that their children brush their teeth properly (NHS, 2022).

The majority of children in this study meet the recommendation of brushing their teeth twice a day. However, about one in five children do not brush their teeth enough, especially younger children (group 1 and 2).

Many children participate in sports, but few play outside daily

Active transport to school (cycling or walking) and participating in sports and active play (unstructured, outdoor physical activity in children's free time) can be major contributors to physical activity among children.

These contributors to physical activity show diverse results. The majority of children (58%) in the study participate in organized sports activities weekly. In the Netherlands, 62 percent of children participate in organized sports activities weekly (CBS, 2023).

Few children walk to school (9%). A quarter of children play outside almost every day (23%), while two in ten (21%) do so less than one day a week. Playing outside is a fun and accessible way to be physically active and to meet the WHO's physical activity guidelines. Therefore, limited outdoor play is a cause for concern.

The barriers for playing outside that parents report most often, are not enough variety in outdoor play areas (55%) and heavy traffic that makes playing outside unsafe (31%). About half of the parents feel like their child gets enough physical activity.

Together, these findings suggest that children on Sint Maarten may be at risk to engage into too little physical activity. This is worrying, because physical activity is essential for the physical, mental and social development of a child. Moreover, physical activity is a prominent determinant for musculoskeletal, cardiovascular, and metabolic health (WHO, 2010) and has been associated with prevention of childhood obesity and early metabolic risk factors (Kuzik et al., 2017; Moore et al., 2017).

Half of the children spend a lot of time looking at screens

There appear to be no strict guidelines for screen time for children over 5 years old. However, the overall recommendation is to be careful with screen time. Most parents report their child has 3 hours of screen on average time a day. One in five parents feel like their child spends too much time looking at a screen.

Parents are most responsible for their children's health

Parents rate themselves as having the most responsibility for their child's health. They also see some responsibility for the school, the after-school care and the government. School and after-school care should pay attention to exercise and healthy nutrition, according to most of the parents. Some of the parents think school and after-school care do not do this enough at the moment.

Strengths and limitations of the research

The response to the questionnaire was high (47%), reflecting the local effort invested in motivating parents to participate. Unfortunately, there were no data available on the distribution of characteristics of children at the primary schools at Sint Maarten. Therefore, we cannot determine whether the results are

representative for all children at the schools. Boys seem slightly underrepresented, as 52 percent of respondents were girls, while the population at Sint Maarten has slightly more boys (U.S. Census Bureau).

Furthermore, we can not say anything about the socioeconomic status of the parents who responded, nor the distribution at the six schools in this research. Since this can be a major predicator of a healthy lifestyle, this may have affected the overall results and might explain some of the differences between the schools.

The questionnaire stretched a wide range of health topics, but to reduce the burden and stimulate response, we had to be selective with the number of questions. Therefore, we cannot compare all results to international health norms.

Recommendations

Focus on sleep, fruit and vegetables, and physical activity

A few results stood out: most children do not sleep enough, most children do not eat fruit and vegetables as recommended, and very few play outside daily. The schools at Sint Maarten could think of ways to support improvements in these health behaviours.

It is important to involve parents and the government, because for some themes, the school's influence may be limited. For example, to stimulate playing outdoors, the environment may have to be made safer or more shade may need to be provided at playgrounds.

Educate parents on child health behaviours

Parents, especially of children in the school age, are the most prominent players in forming a child's lifestyle behaviours (Sanders & Turner, 2018). The parents of the children in this study agree, indicating that they feel highly responsible for their child's health.

Relatively few parents disagreed with statements on their child's healthy behaviours. For example, most parents think their child sleeps enough. However, the results suggest most of the children do not sleep enough. Therefore, it may be worthwhile to educate parents on guidelines on children's health, so parents can better stimulate their children's health behaviours and become more aware of the importance of a healthy lifestyle.

Monitor and evaluate efforts

We recommend repeating the assessment in some time, to track changes in health behaviour of school children at Sint Maarten. And, in addition, to record the efforts made to improve the lifestyle behaviours and environment. Based on the reflection on such results, the efforts of the health program can be adjusted to continue targeted interventions.



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Maike Heerschop
m.heerschop@mulierinstituut.nl

Nina Derix
n.derix@mulierinstituut.nl