

A photograph of three children playing soccer on a grassy field. The child in the foreground is wearing a white t-shirt with rainbow horizontal stripes and blue and white plaid shorts. A soccer ball is in the lower right foreground. Other children are visible in the background, one in a blue shirt and yellow shorts, and another in a white shirt and blue jeans. The background is a lush green field with trees.

# Play and Physical Activity in the Third Wave: *Emotions and Healthy Growth*

March 2022  
Findings from the Ontario Parent Survey

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[maximumcity.ca/play](https://maximumcity.ca/play)



## Acknowledgements

We gratefully acknowledge the participation of caregivers who completed the survey, as well as the contribution of many parent/caregiver and child/youth organizations across the province who assisted with the launch, communication, and marketing of the Ontario Parent Survey. Funding for the survey was provided by the Public Health Agency of Canada to Drs. Andrea Gonzalez and Harriet MacMillan, along with support from the Canada Research Chairs program to Andrea Gonzalez.

A special thank you to Dr. Andrea Gonzalez and Dr. Marc Jambon at McMaster University for their collaboration.



## Introduction & Methods

### Introduction

This report summarizes findings on children and youth's physical activity and outdoor play levels, and their associations to emotions and healthy growth, as found in the second Ontario Parent Survey (OPS).

The survey was conducted in the spring and early summer of 2021 during the third wave of the pandemic in Ontario. The OPS focused on issues related to the health and well-being of caregivers, their children, family functioning, and the impact of COVID-19 across a number of domains.

A report on the broader study can be found [here](#).

### Methods

A convenience sample of caregivers with children aged 0-17 years was recruited through multiple crowdsourcing techniques – advertisements online and social platforms, as well as email announcements through public health units, Ontario EarlyON Centres, participating school boards, and municipal, community and professional organizations across Ontario. Caregivers from the first OPS (conducted in the spring of 2020) who provided their contact information were also invited to take part in this survey. The survey was available online in both English and French. It is important to note that the crowdsourcing method of data collection does not use a probability sampling design; therefore, findings cannot be generalized to the Ontario population. From May 4 to July 3, 2021, a total of 10,778 caregivers with an average 2 children participated, highlighting the experiences of over 22,000 children across the province. This report focuses on responses from parents and caregivers representing the 7,910 children and youth between the ages of 5-17.

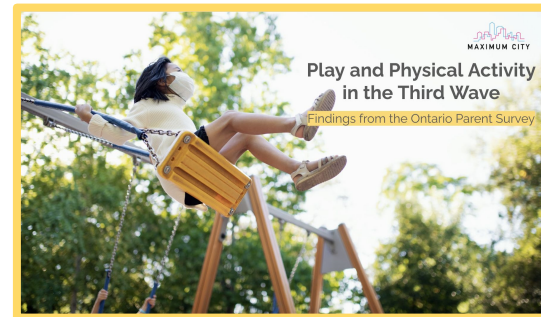




## March 2022 Update

In December 2021, Maximum City published [Play and Physical Activity in the Third Wave](#), a summary analysis of the activity levels of nearly 8,000 Ontario children and youth during the third wave of the pandemic. The report showed that a notable majority of children and youth were not meeting recommendations for moderate to vigorous physical activity, light physical activity, and outdoor play. Age, schooling type, and dwelling type showed significant correlations to differences in physical activity and outdoor play levels.

This March 2022 report focuses on associations between meeting the physical activity/outdoor play recommendations and emotions and healthy growth. While it is clear that there are many different experiences during the pandemic, including contrasting experiences within individuals, a clear pattern of correlations emerged in this round of analysis.



Rae, E., Gillespie, M. & Fullan, J. (2021). [Play and Physical Activity in the Third Wave](#). Toronto: Maximum City.

## March 2022 Update

### Five Key Findings

- ✏ Fewer than 1 in 10 children and 1 in 20 youth met the combined recommendations for physical activity and outdoor play.
- ✏ Consistent correlation between greater reporting of negative emotions and not meeting the recommendations for physical activity and outdoor play.
- ✏ Consistent correlation between in-person school and higher rates of meeting the recommendations for physical activity and outdoor play.
- ✏ A correlation between greater reporting of healthy growth/no weight change and meeting the recommendations for physical activity and outdoor play.
- ✏ Nearly three quarters of parents/caregivers report that the pandemic has negatively impacted their children's mental and emotional health, while more than 4 in 5 report recent feelings of happiness in their children.



## Meeting the Physical Activity and Outdoor Play Recommendations





## Physical Activity & Outdoor Play Standards

### MVPA (Moderate to Vigorous Physical Activity)

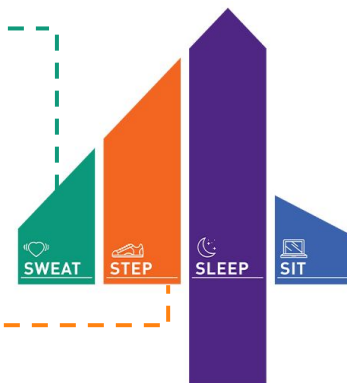
- [CSEP guidelines](#) recommend an accumulation of at least 60 mins per day.
- The analysis in this report applies a standard of at least 60 mins per day of moderate to vigorous physical activity for 6 out of 7 days in the previous week.

### LPA (Light Physical Activity)

- Recommended CSEP guidelines of “several hours per day,” which has been interpreted elsewhere as more than 2 or 3 hours daily.
- The analysis in this report applies a standard of at least 2.5 hours of light physical activity on a typical weekday in the previous week.

### Outdoor Play

- No established guidelines in Canada.
- ParticipACTION operationalizes sufficient “active play” as more than 2 hours per day.
- The analysis in this report applies a recommendation of more than one hour of outdoor play on a typical weekday in the previous week.



[Canadian 24-Hour  
Movement Guidelines for  
children and youth 5-17](#)

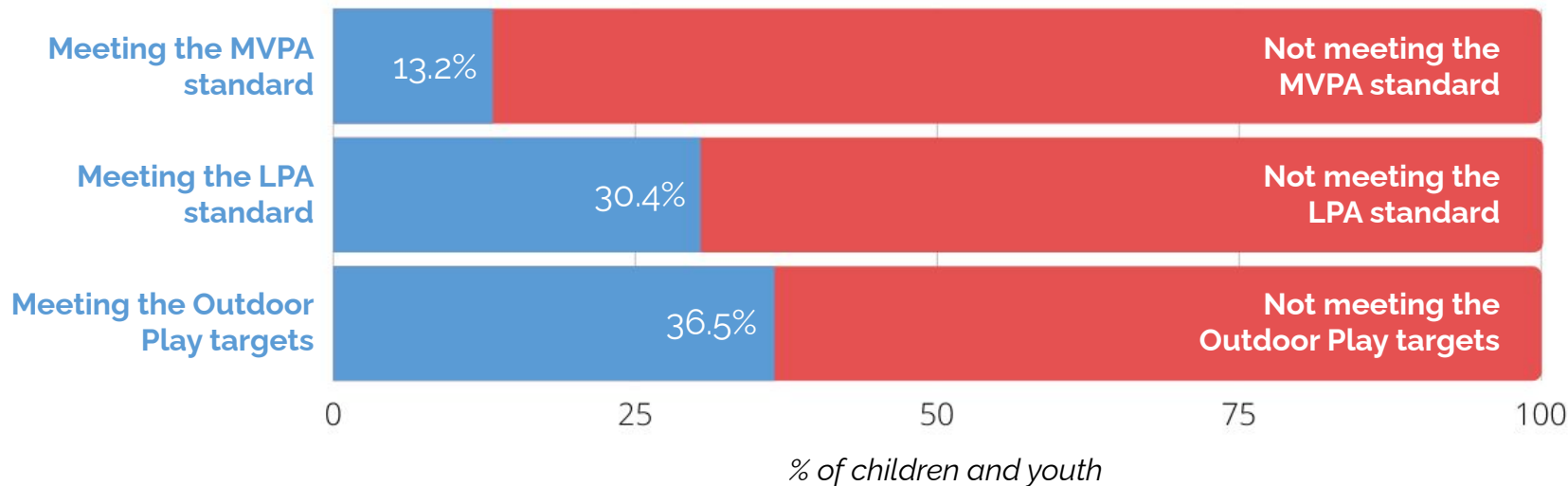
*Canadian Society for  
Exercise Physiology (2021)*

## Meeting the Physical Activity & Outdoor Play Recommendations

Fewer than 1 in 7 children and youth met the MVPA standard.

Fewer than 1 in 3 children and youth met the LPA standard.

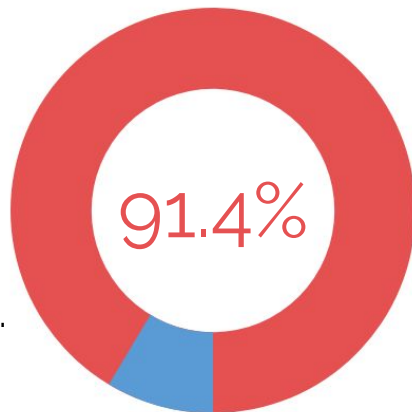
Just over 1 in 3 children and youth met the Outdoor Play targets.



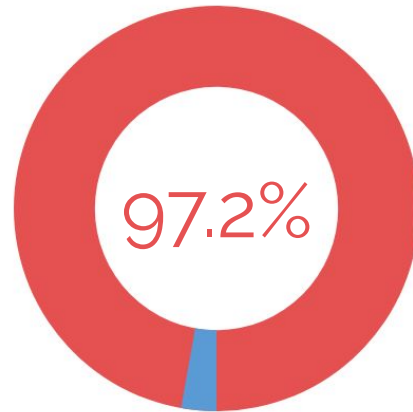
### Meeting the Physical Activity & Outdoor Play Recommendations

Only **8.6%** of children (ages 5-11) and **2.8%** of youth (ages 12-17) met all three physical activity & outdoor play recommendations.

**91.4%** of children  
did **not meet**  
all 3 of the  
recommendations.



**97.2%** of youth  
did **not meet**  
all 3 of the  
recommendations.





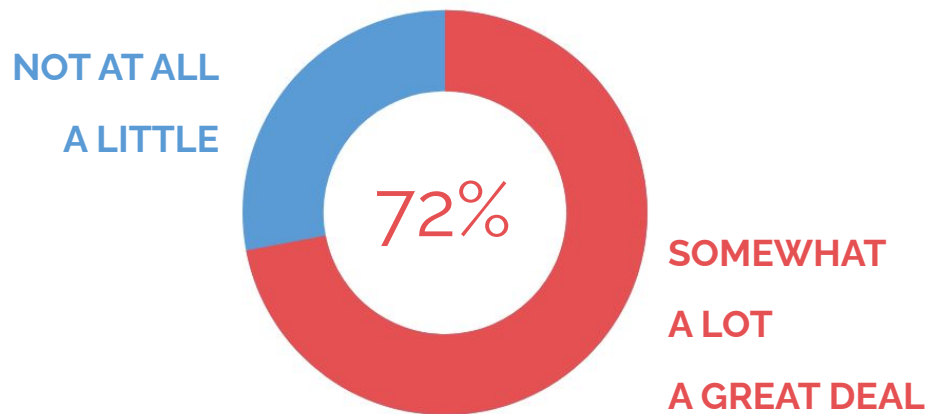
## Emotions & Feelings



## Emotions & Feelings

## Overview

Nearly  $\frac{3}{4}$  of all respondents felt that, overall, COVID-19 and its changes to daily life had affected their child(ren)'s mental and emotional health in a negative way.



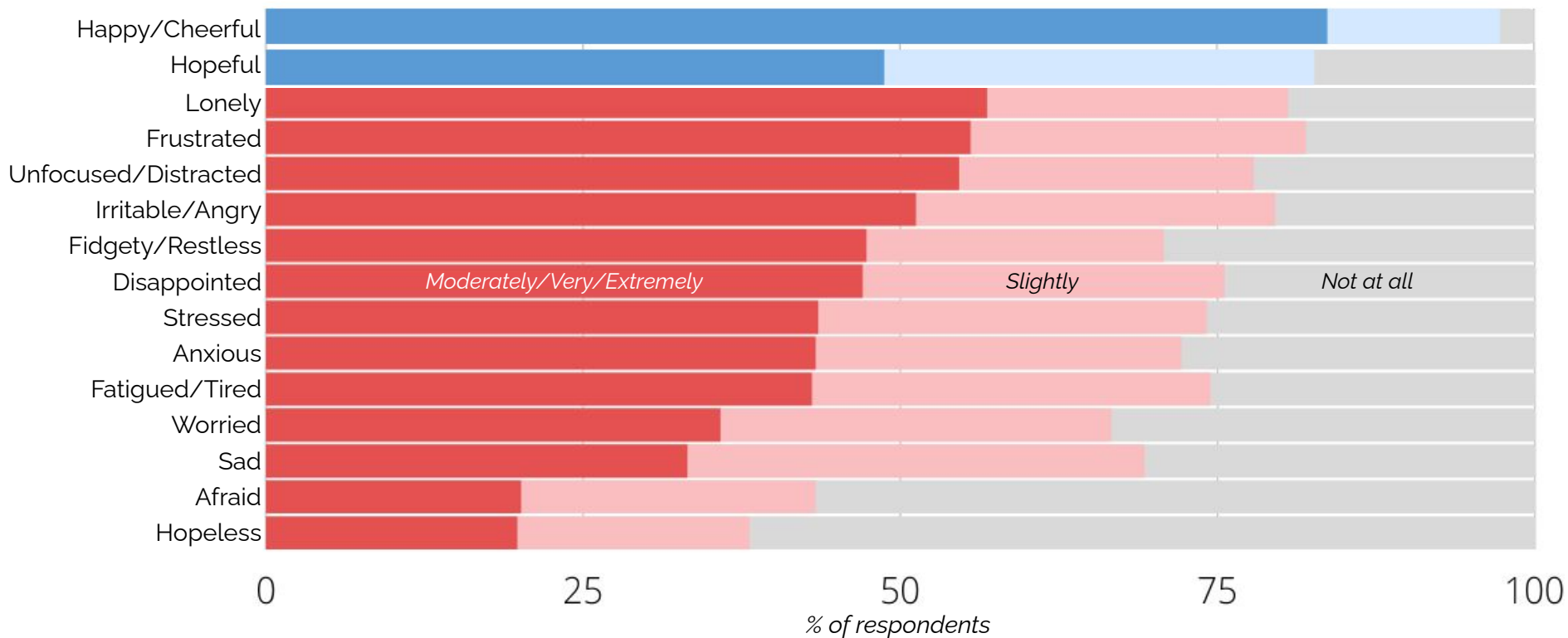
**Negative Impact of COVID-19 on Mental/Emotional Health**

# Play and Physical Activity in the Third Wave: Emotions and Healthy Growth

## Emotions & Feelings

## Positive & Negative Affect

Respondents reported both **positive and negative emotions** over the past two weeks among children and youth.





## Emotions & Feelings

In examining the associations between meeting the activity/outdoor play recommendations and parent-reported feelings of children/youth, this report finds:

- Correlation between the reporting of **positive** emotions and **meeting** each of the activity recommendations (MVPA, LPA, and Outdoor Play).
- Correlation between the reporting of many **negative** emotions and **not meeting** the recommendations.

*Respondents were asked to what extent fifteen different emotions and feelings describe how their child(ren) felt over the previous 2 weeks, based on a 1 - 5 ranking scale.*

*For our analysis, responses of 3 (moderately), 4 (very), and 5 (extremely) were considered as the presence of a given emotion, while 1 (not at all) and 2 (slightly) were not.*

## Correlating Emotions & Activity



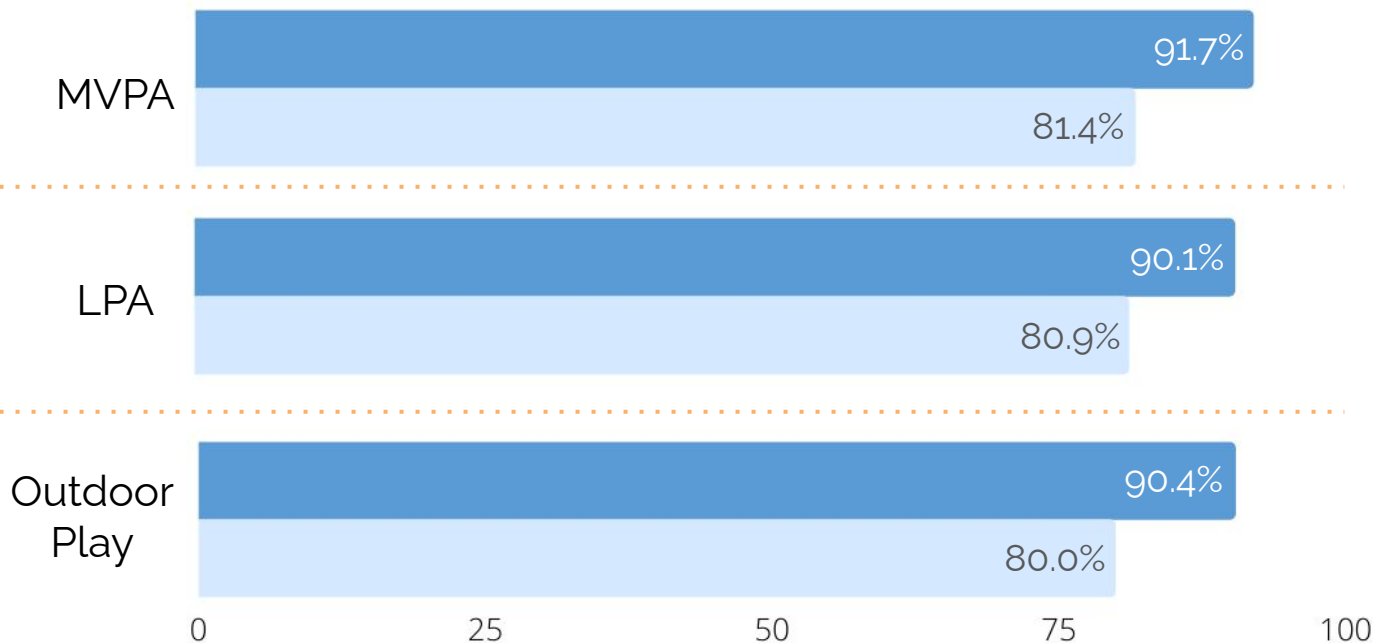
## Emotions & Feelings

## Positive Affect Emotions

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) as HAPPY:

### HAPPY 😊

Respondents whose child(ren) **met** the physical activity and outdoor play recommendations were about **10% more likely** to describe their child(ren) feeling moderately, very, or extremely happy over the past two weeks.



## Emotions & Feelings

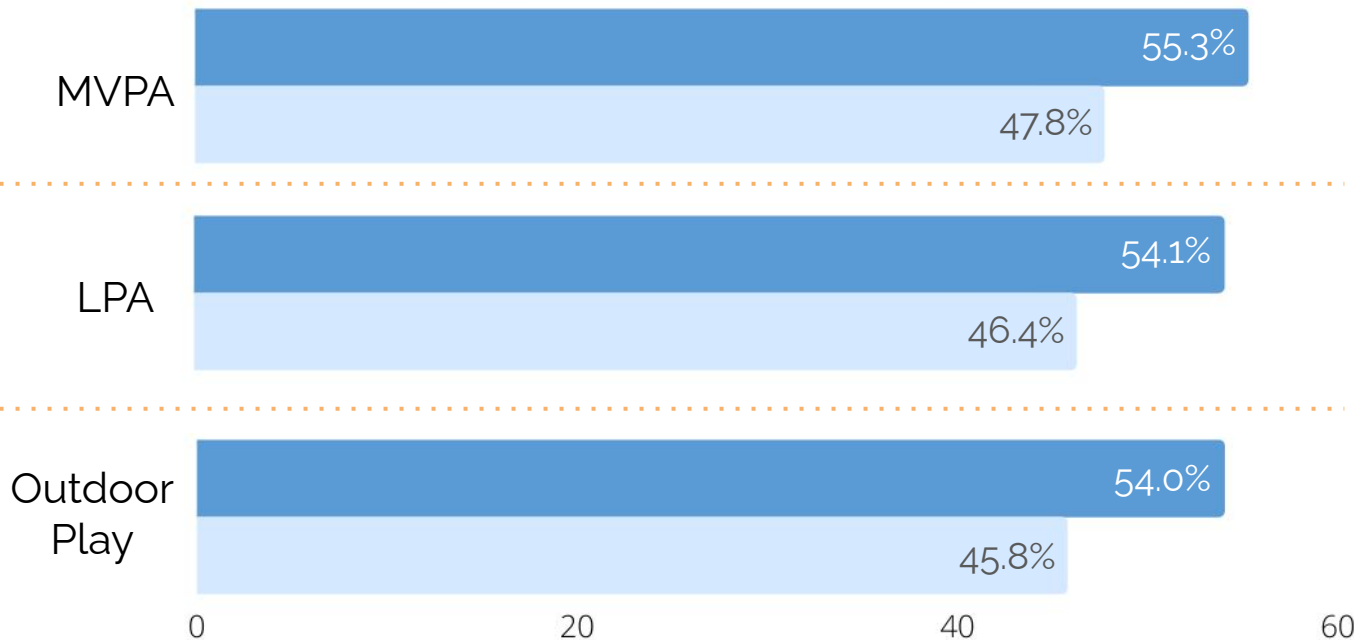
## Positive Affect Emotions

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) as HOPEFUL:

### HOPEFUL



Respondents whose child(ren) **met** the physical activity and outdoor play recommendations were about **7-10% more likely** to describe their child(ren) feeling moderately, very, or extremely hopeful over the past two weeks.





## Emotions & Feelings

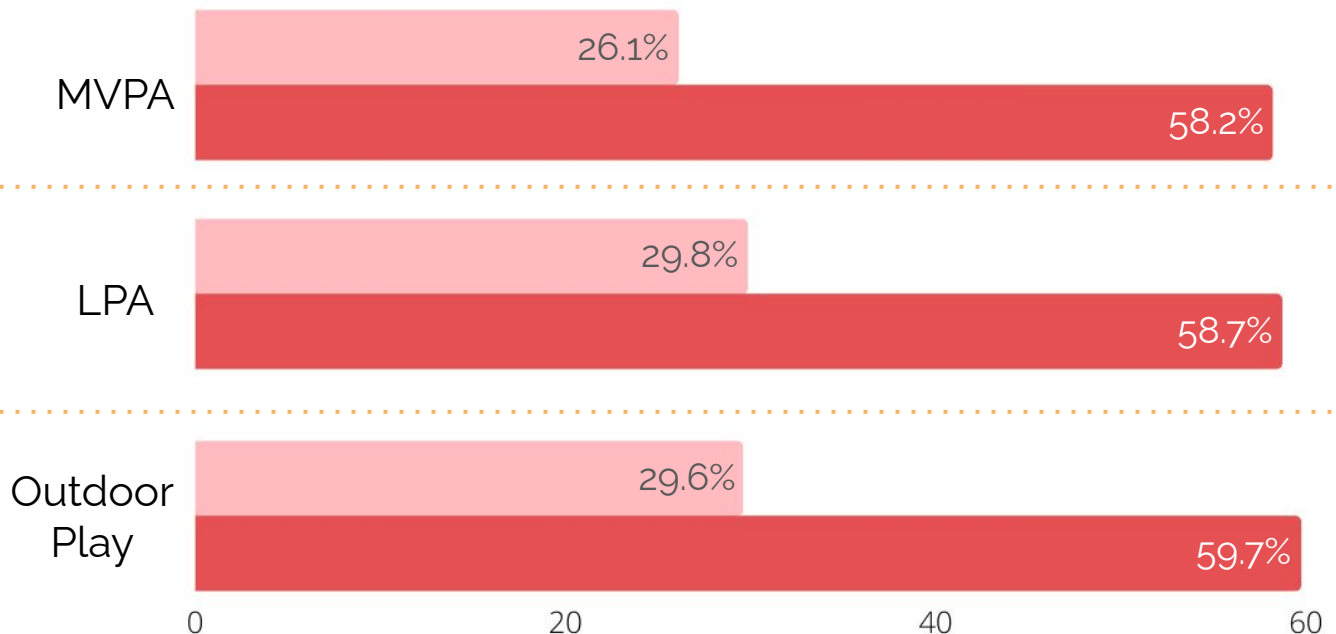
## Negative Affect Emotions

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) as LONELY:

### LONELY



Respondents whose child(ren) did **not meet** the physical activity and outdoor play recommendations were about **twice as likely** to describe their child(ren) feeling moderately, very, or extremely lonely over the past two weeks.



## Emotions & Feelings

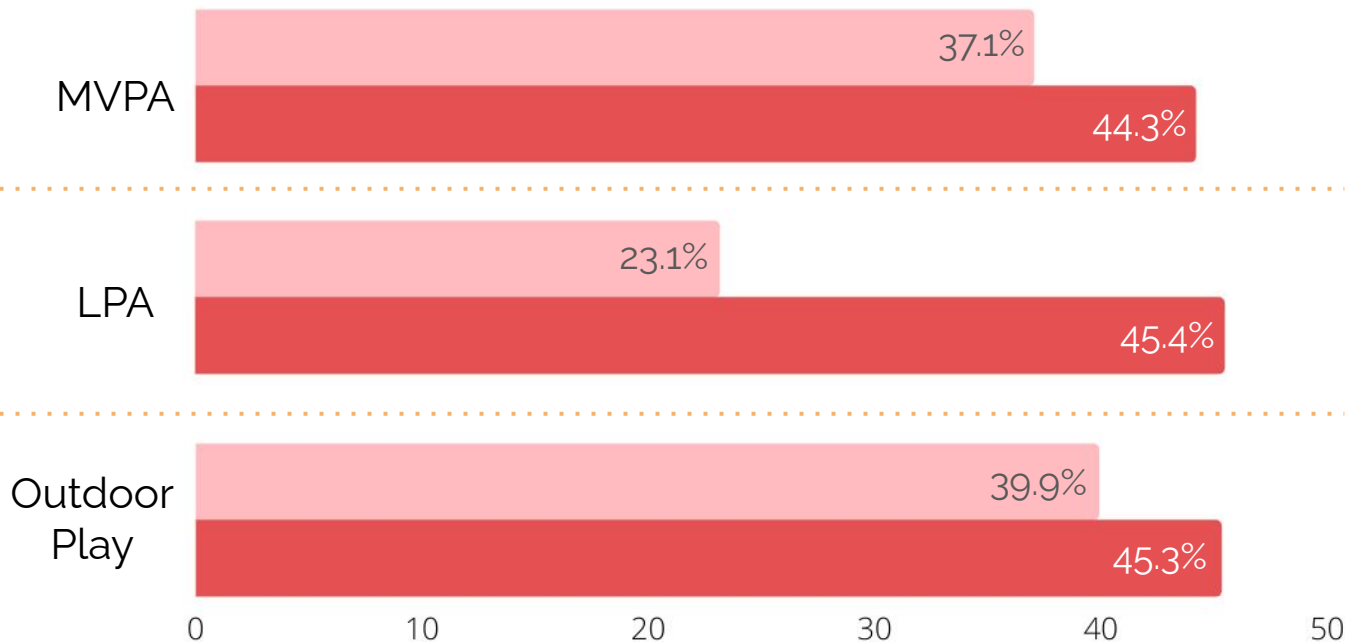
## Negative Affect Emotions

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) as ANXIOUS:

### ANXIOUS



Respondents whose child(ren) did **not meet** the recommendations were **more likely** to describe their child(ren) feeling moderately, very, or extremely anxious over the past two weeks, most notably for those who didn't meet light physical activity (LPA) standards.



## Emotions & Feelings

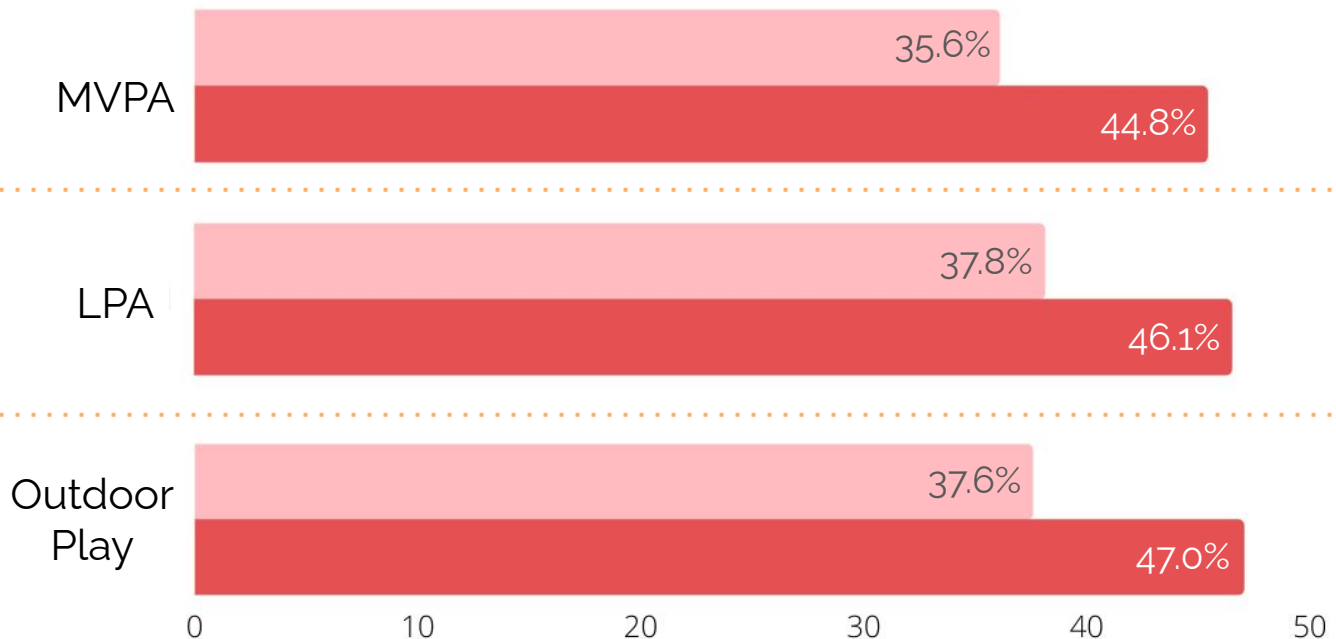
## Negative Affect Emotions

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) as **STRESSED**:

### STRESSED



Respondents whose child(ren) did **not meet** the physical activity and outdoor play recommendations were about **10% more likely** to describe their child(ren) feeling moderately, very, or extremely stressed over the past two weeks.



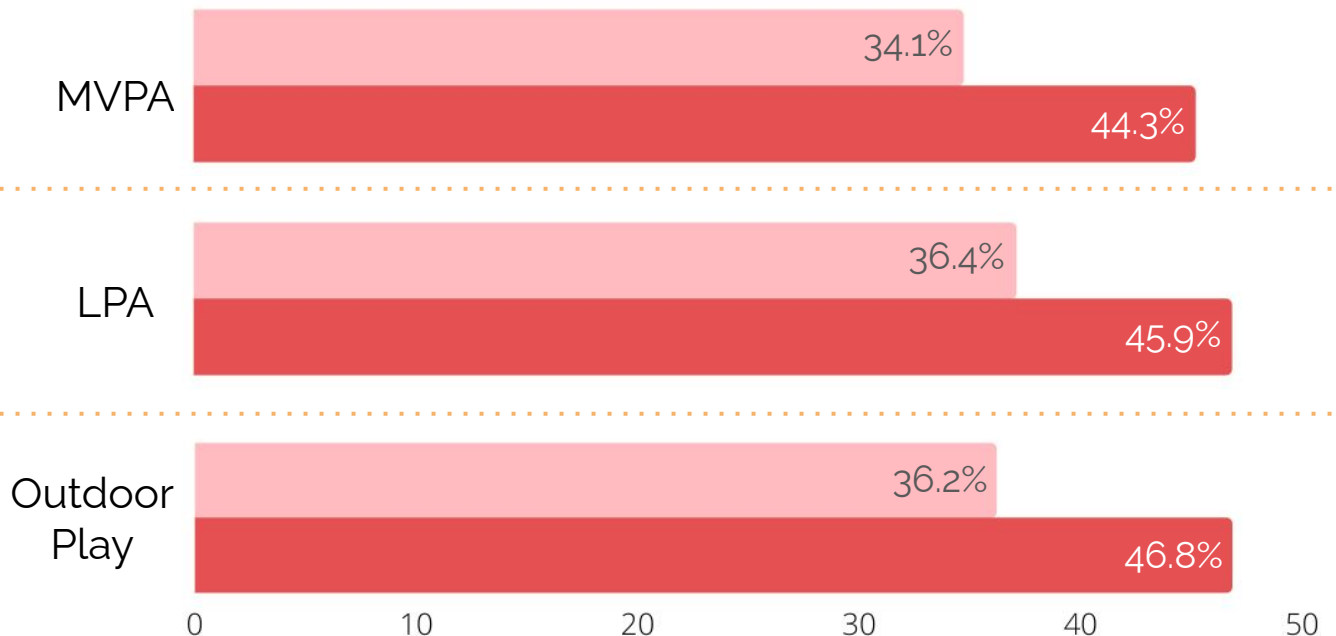
## Emotions & Feelings

## Negative Affect Emotions

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) as **TIRED**:

### **TIRED** 😞

Respondents whose child(ren) did **not meet** the physical activity and outdoor play recommendations were about **10% more likely** to describe their child(ren) feeling moderately, very, or extremely tired over the past two weeks.





## Emotions & Feelings

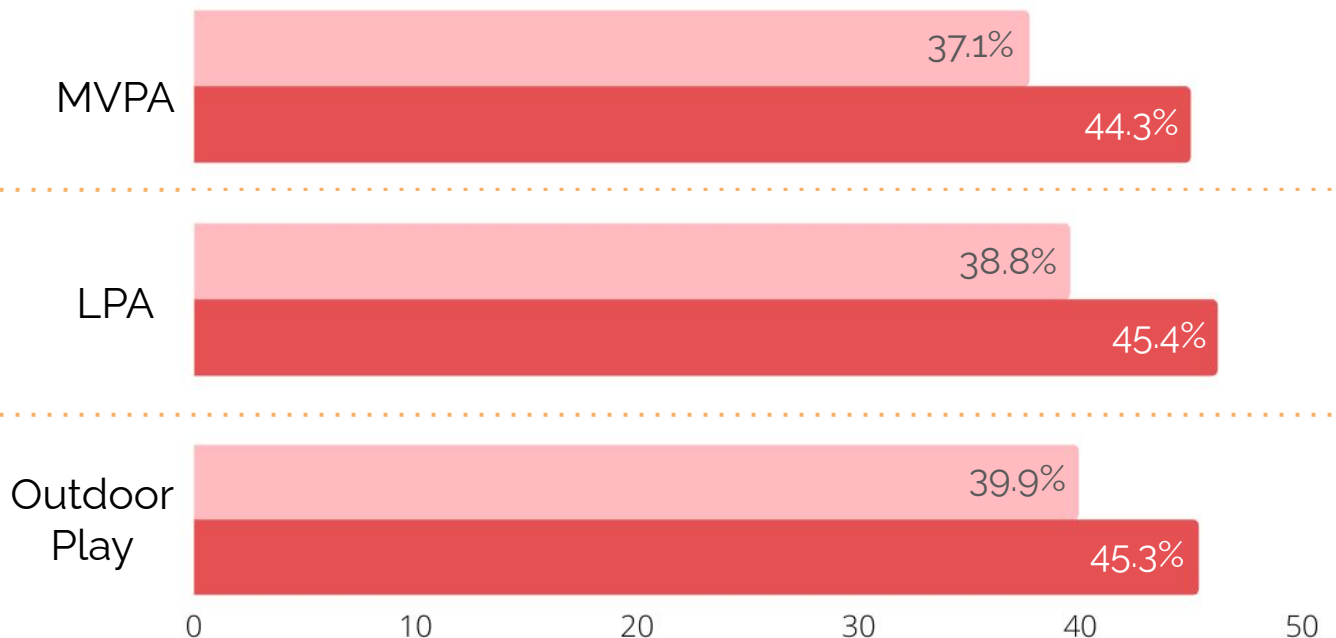
## Negative Affect Emotions

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) as **ANGRY**:

### ANGRY



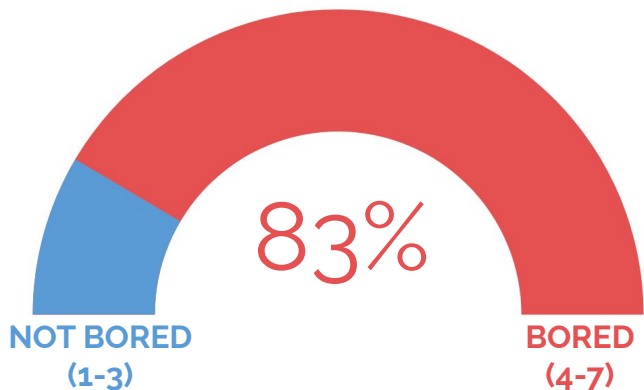
Respondents whose child(ren) did **not meet** the physical activity and outdoor play recommendations were **more likely** to describe their child(ren) feeling moderately, very, or extremely angry over the past two weeks.



## Emotions & Feelings

In a separate question about emotions and feelings, parents/caregivers were asked to rank (on a scale of 1-7) their agreement with the following statement:

*"At least one of my children is **bored** because of restrictions due to COVID-19."*



## Negative Affect Emotions – Boredom



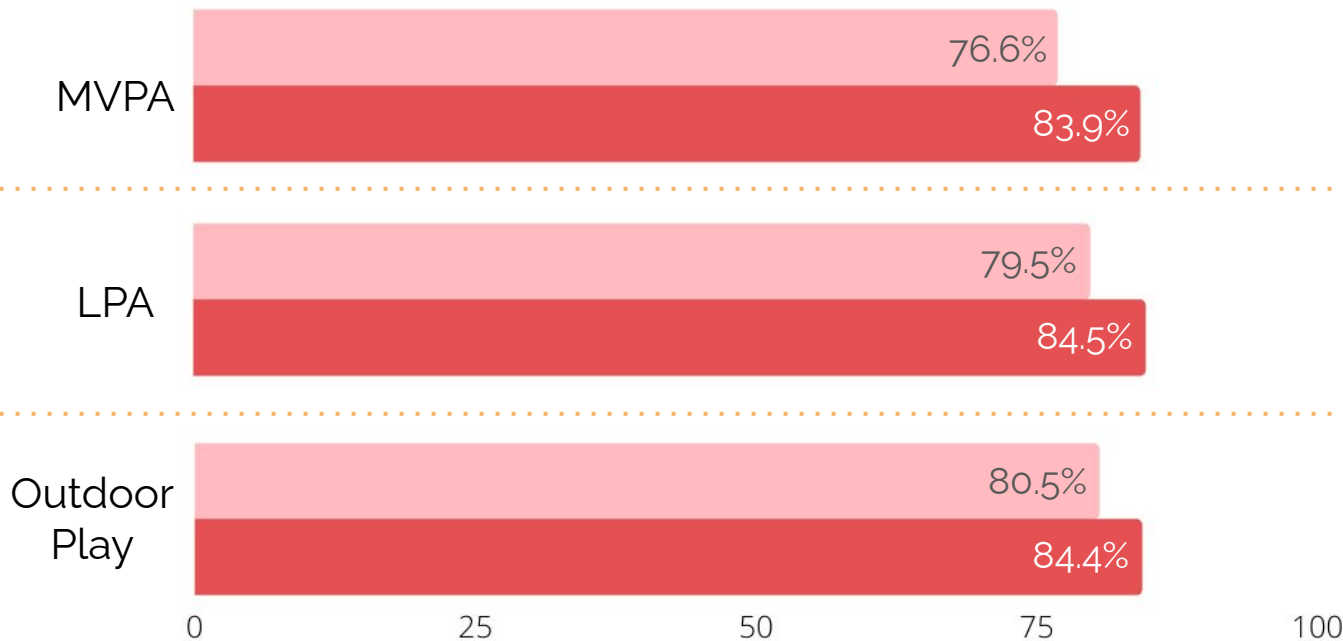
## Emotions & Feelings

## Negative Affect Emotions – Boredom

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) as BORED:

### BORED 😞

Respondents whose child(ren) did **not meet** the physical activity and outdoor play recommendations were **more likely** to describe their child(ren) as bored because of restrictions due to COVID-19.



## Healthy Growth & Weight Change





### Healthy Growth & Weight Change

### Reporting Rationale

Respondents were asked to report on their child(ren)'s weight change over the previous year.

A large majority (69.2%) of respondents reported healthy growth or no weight gain in their child(ren). Another quarter of respondents (24.7%) reported that their child(ren) gained more than expected. A smaller percentage (6.1%), reported that their child(ren) lost more weight than expected over the same period (see figure on next page 26).

Looking more closely at the first two groups of responses, this report examined associations between those reporting healthy growth/no weight gain and weight gain with how they were meeting or not meeting the recommendations for physical activity and outdoor play.

*Healthy Growth / No Weight Gain* was reported at a significantly higher rate (over 15-20%) by the parents of children who met the recommendations for physical activity and outdoor play.

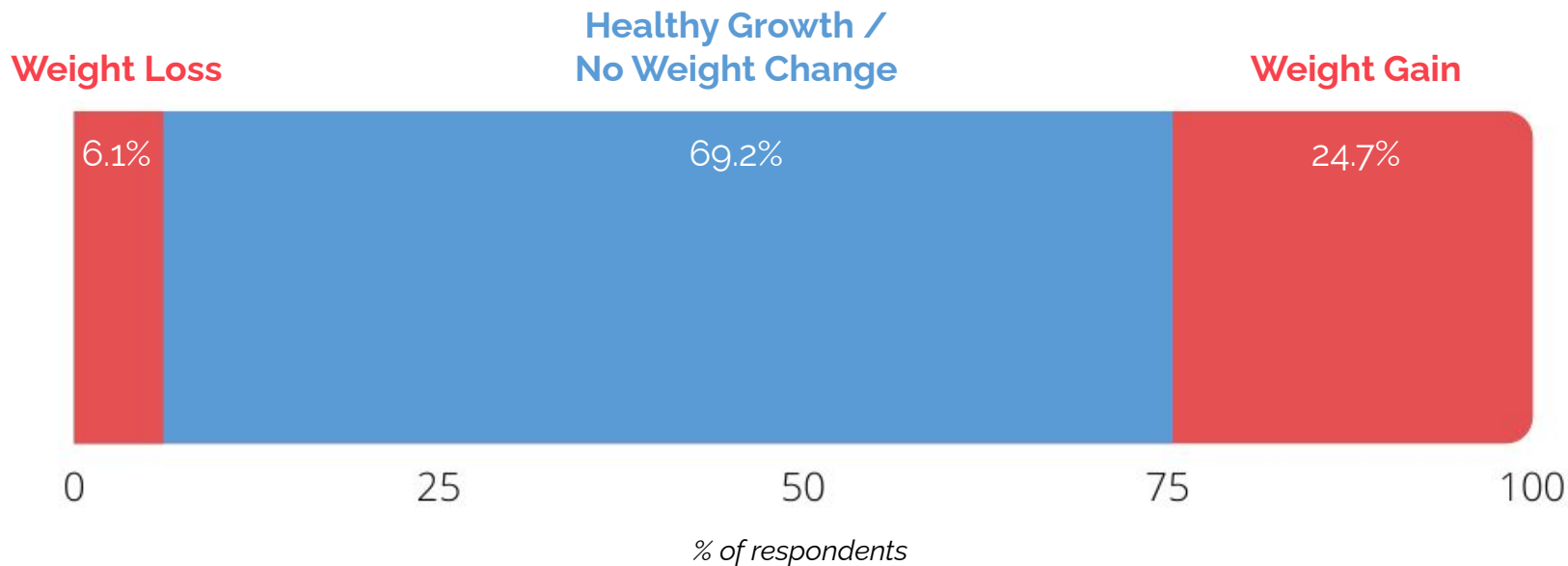
*Gained More Weight Than Expected* was reported more frequently by the parents of children who did not meet the recommendations for physical activity and outdoor play, with the most significant discrepancy (over 15%) between those who met or did not meet MVPA guidelines.

## Healthy Growth & Weight Change

## Overview

*Over the past year, has your child(ren)'s weight changed?*

*Have they lost more weight than expected, gained more weight than expected, or had healthy growth/no weight change?*



## Healthy Growth & Weight Change

In examining associations between meeting the activity and outdoor play recommendations and weight change over the past year, this report finds:

- Correlation between greater reporting of **healthy growth/no weight change** and **meeting** each of the activity recommendations (MVPA, LPA, and outdoor play).
- Correlation between greater reporting of **weight gain** and **not meeting** the recommendations.

## Correlating Behaviour & Activity



# Play and Physical Activity in the Third Wave: Emotions and Healthy Growth



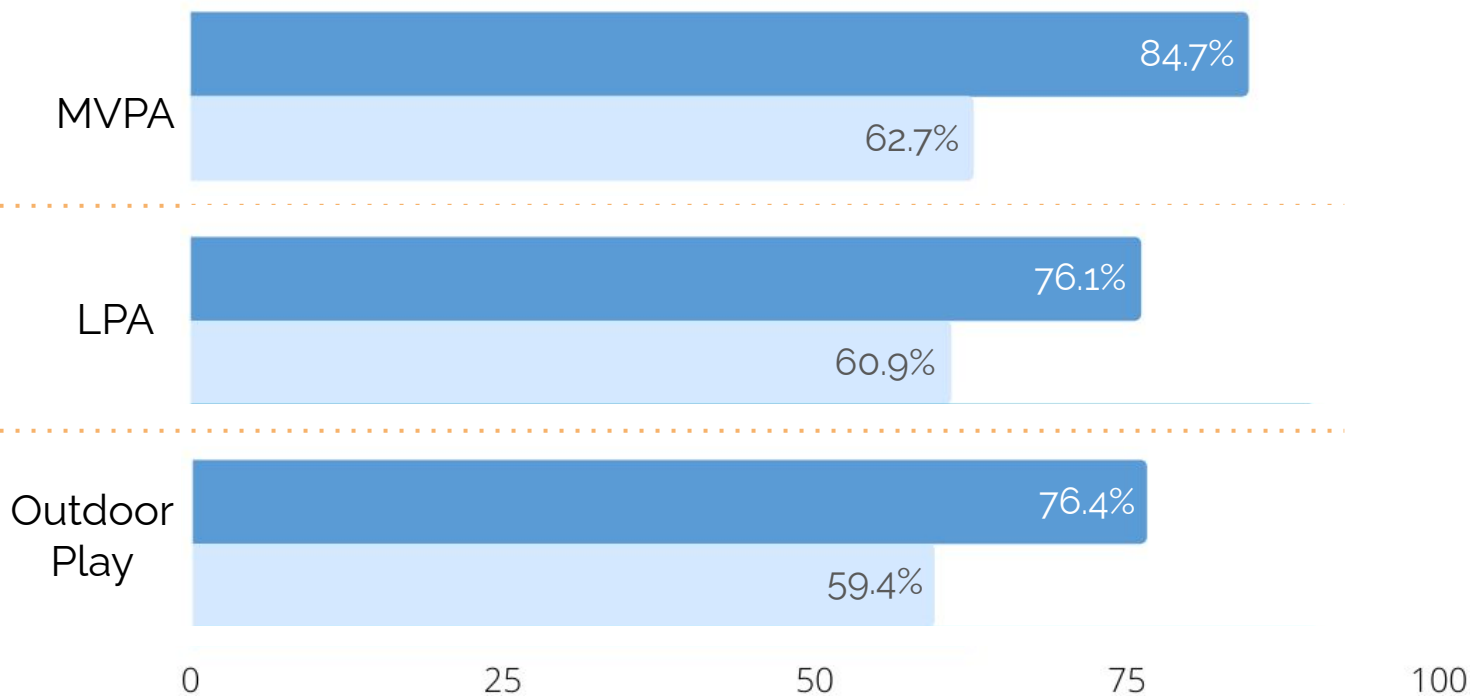
## Healthy Growth & Weight Change

## No Weight Change

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) with **HEALTHY GROWTH** or **NO WEIGHT CHANGE**:

Those who **met** the MVPA standard were **22% more likely** to report healthy growth/no weight change compared to those who did not meet them.

Those who **met** the LPA and Outdoor Play recommendations were **over 15% more likely** to report healthy growth/no weight change compared to those who did not meet them.





# Play and Physical Activity in the Third Wave: Emotions and Healthy Growth

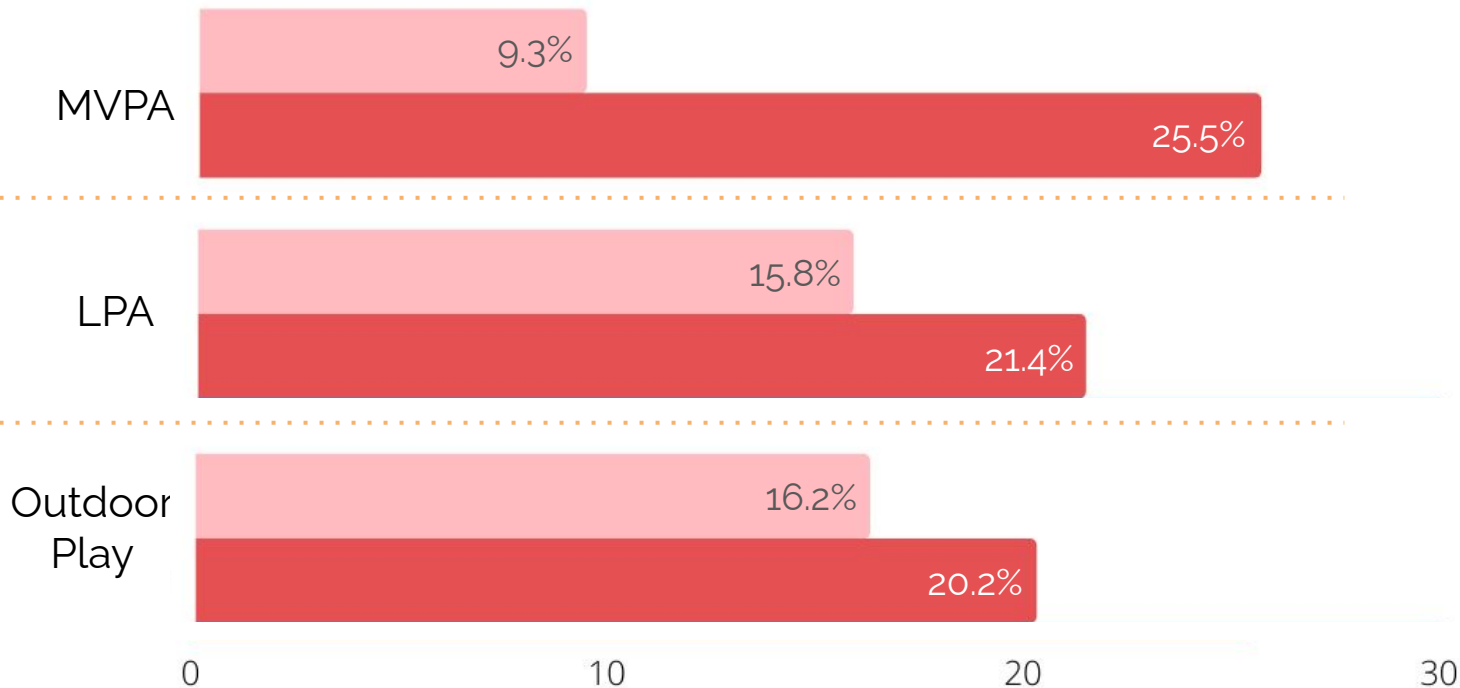
## Healthy Growth & Weight Change

## Gained More Weight Than Expected

Of those **meeting** or **not meeting** the recommendations, the % of respondents reporting child(ren) who **GAINED MORE WEIGHT THAN EXPECTED**:

Those who did **not meet** the MVPA guidelines were **over 16% more likely** to report more weight gain than expected.

Those who did **not meet** the LPA or Outdoor Play recommendations were about **5% more likely** to report more weight gain than expected.





## Other Findings



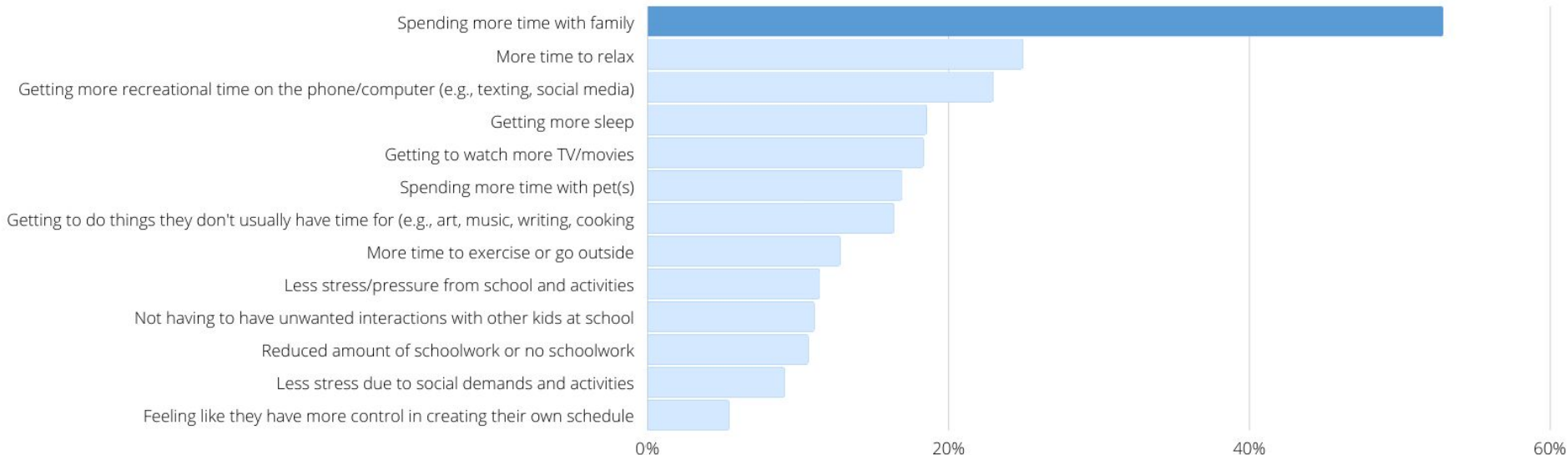


## Overall findings children and youth age 5-17

## Most positive event (COVID impact)

*What event or change to daily life has been the most positive for your child(ren)?*

*(Respondents could select all that apply)*



## Overall findings children and youth age 5-17

## % of Children & Youth Worried about COVID-19

When comparing findings on the percentage of children/youth worried about getting (or a loved one getting) COVID-19 throughout the first three waves of the pandemic, this report finds a significant difference between Waves 1 and 2 compared to Wave 3 reporting. As the figure on the next page (33) demonstrates, Wave 3 reporting shows a considerable drop from a large majority of respondents to only about a third reporting concern.

Importantly, however, the Wave 3 findings from the Ontario Parent Survey reflect the responses of parents *on behalf of* children/youth – what this collective data appears to reveal is that when children report on their own behalf, the report of concern is higher. A possible explanation for this discrepancy, with significant implications, is that parents are underestimating their child(ren)'s concerns around getting COVID, or having someone they care about get COVID. This finding also highlights **the importance of collecting data or input directly from children themselves when possible.**



### Wave 1 reporting

[COVID-19 CHILD AND YOUTH WELL-BEING STUDY: Canada Phase One Executive Report, June 2020](#)



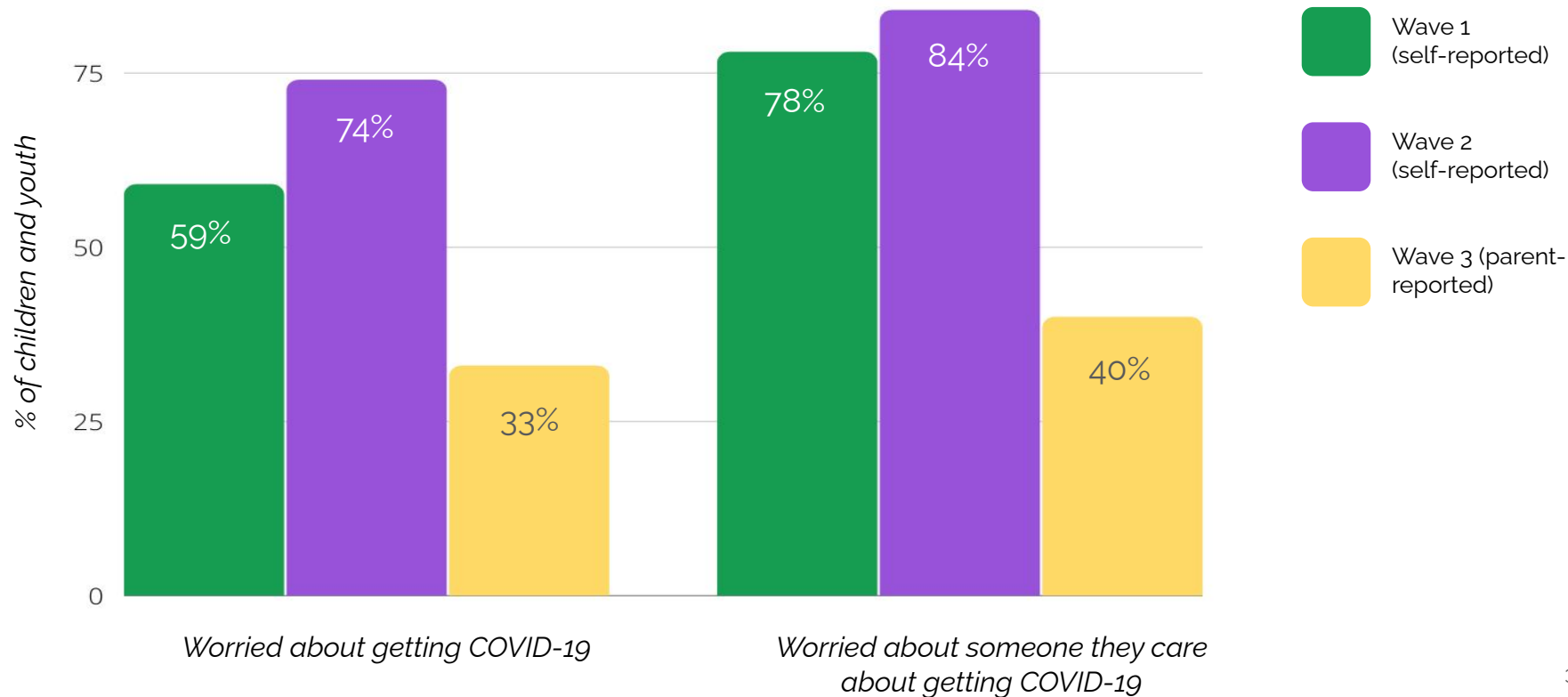
### Wave 2 reporting

[COVID-19 CHILD AND YOUTH STUDY: Self-Reported Healthy Behaviours, Well-Being, and School Experiences of Young Canadians during the Pandemic, February 2021 Update](#)



## Overall findings children and youth age 5-17

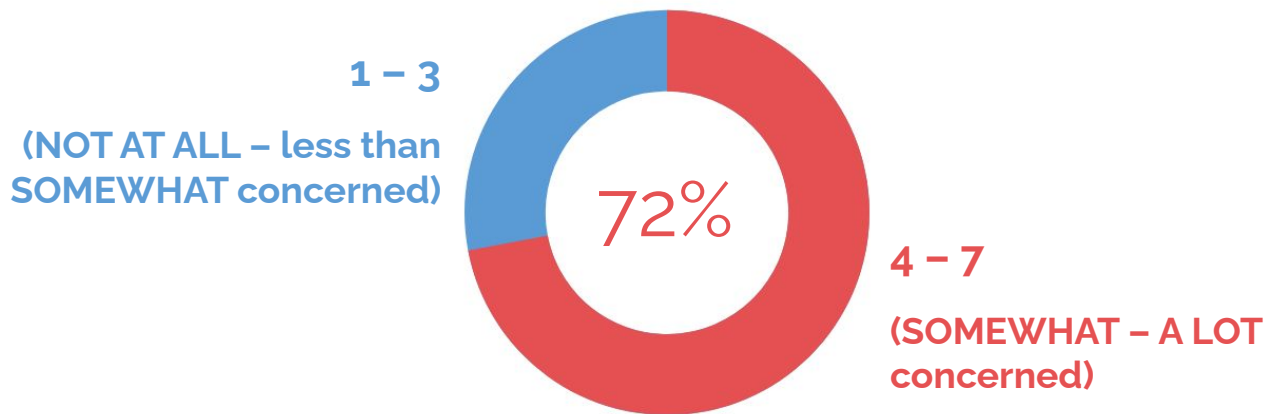
## % of Children & Youth Worried about COVID-19



## Managing Behaviour

## Overview

On a scale of 1 to 7, nearly  $\frac{3}{4}$  of all respondents felt *somewhat* (4) to *a lot* (7) of concern around managing their child(ren)'s behaviour, with half that group (36%) reporting *a lot* of concern.



**Concern over managing child(ren)'s behaviour**

## Subcategories of Analysis

## Schooling Type

In Person

Hybrid

Remote/Virtual

The majority of respondents from the survey (60.5%) were hybrid learners, attending a combination of in-person and online/remote school. Another fifth (20.7%) were in-person learners, and 18.8% were attending remote/virtual school exclusively.

Our initial reporting on schooling type found that children and youth at in-person school consistently had more relative amounts of physical activity and outdoor play compared to remote or hybrid learners. This report examines these findings further by comparing how in-person, hybrid, and remote learners were meeting or not meeting the MVPA, LPA, and outdoor play recommendations.

This report finds that in-person schooling was consistently associated with a higher rate of meeting the recommendations, with the biggest discrepancy in meeting outdoor play targets.

This report also finds that remote and hybrid schooling were consistently associated with the lowest activity levels – getting less than an hour of MVPA each day of the week, an hour or less of LPA per day, and 15 minutes or less of outdoor play per day. Once again, the biggest discrepancy between in-person and remote learners was in meeting or not meeting outdoor play targets. These findings seem to underscore the critical role of in-person school for meeting play and activity targets.



# Play and Physical Activity in the Third Wave: Emotions and Healthy Growth

## Subcategories of Analysis

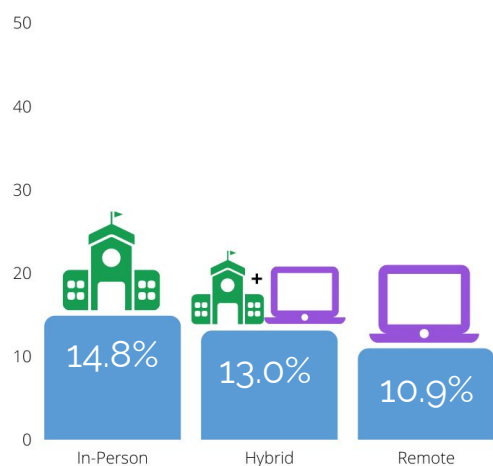
## Schooling Type

In Person

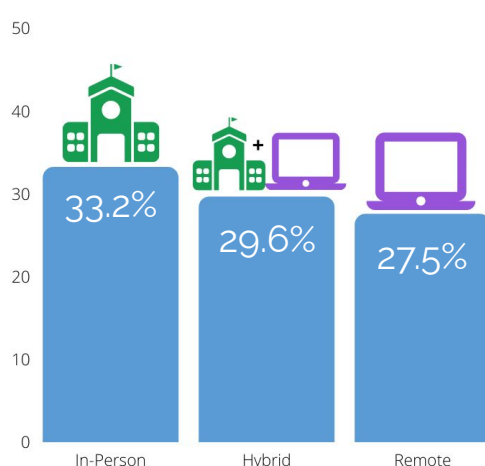
Hybrid

Remote/Virtual

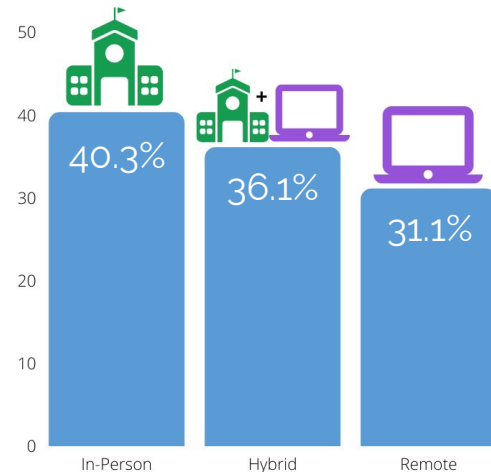
Children and youth at in-person school consistently had more relative amounts of physical activity and outdoor play compared to remote or hybrid learners.



*% of students meeting the MVPA standard*



*% of students meeting the LPA standard*



*% of students meeting the Outdoor Play target*

# Play and Physical Activity in the Third Wave: Emotions and Healthy Growth

## Subcategories of Analysis

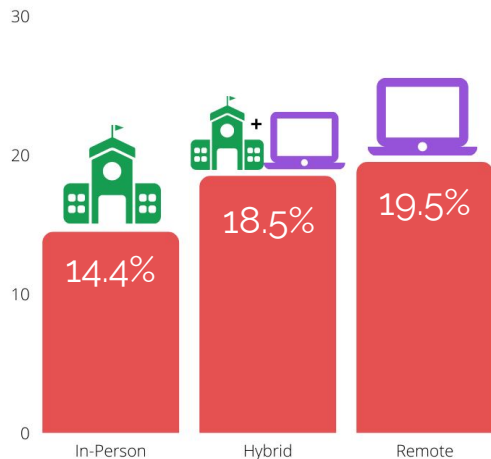
## Schooling Type

In Person

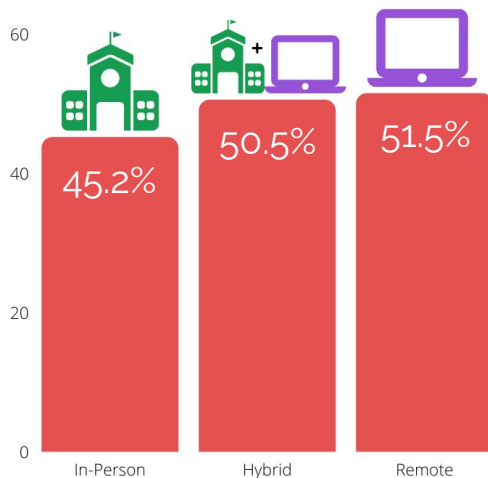
Remote/Virtual

Hybrid

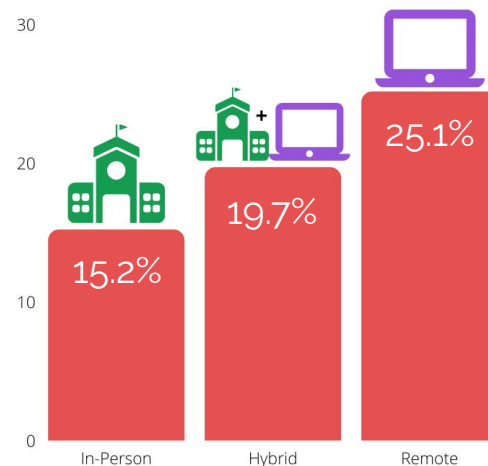
Children and youth in remote and hybrid schooling consistently had more relative amounts of the lowest activity levels for physical activity and outdoor play, compared to in-person learners.



*% of students getting  
under 1 hour of MVPA  
for all 7 days of the week*



*% of students getting  
1 hour or less of LPA per day*



*% of students getting  
15 minutes or less  
of Outdoor Play per day*



## Related Studies: Pre-Pandemic

Before the pandemic, in a 2014-15 study, **15%** of 5-17-year-olds met the combined 24-hour movement guidelines, which include physical activity, sleep, and screen time.<sup>1</sup>

A Statistics Canada report from 2017 found that over a third (**36.0%**) of children and youth met the MVPA recommendation by looking at recent historical data from the Canadian Health Measures Survey.<sup>2</sup>

1 [The 2020 ParticipACTION Report Card on Physical Activity for Children and Youth](#)

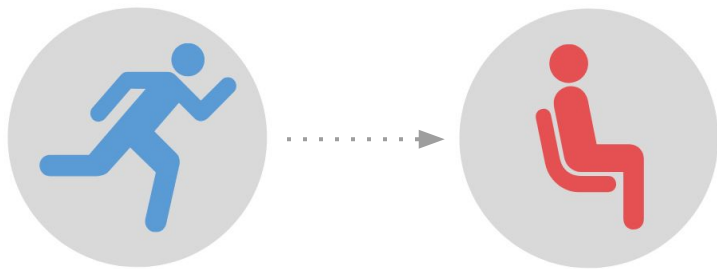
2 <https://www150.statcan.gc.ca/n1/pub/82-003-x/2017010/article/54875-eng.pdf>



## Related Studies: During Pandemic

### *24-hour Movement Guidelines*

In a national study conducted during the first wave of the pandemic, only **4.8%** of children (ages 5-11) and **0.6%** of youth (ages 12-17) met the combined 24-hour movement guidelines, which include physical activity, sleep, and screen time.



### *MVPA*

The same study found that **23.8%** of children and **13.2%** of youth met the moderate to vigorous physical activity guidelines.

Children were getting 30 minutes of MVPA just 3.6 days of the week, while youth were getting 30 minutes of MVPA just 2.6 days of the week.

Source: [Moore, S., Faulkner, G., Rhodes, R., Brussoni, M., Chulak-Bozzer, T., & Ferguson, L. et al. \(2020\). Impact of the COVID-19 virus outbreak on movement and play behaviours of Canadian children and youth: a national survey.](#)



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