



**SPORT
NEW ZEALAND**
IHI AOTEAROA

Effects of the first year of the COVID-19 pandemic on adult participation in Aotearoa

—
December 2021

Acknowledgements

This report focuses on the effects of the first year of the COVID-19 pandemic on adult participation (aged 18-plus) from April 2020, when the country was in its first nationwide lockdown, to April 2021, when the country was at Alert Level 1.

It reports on changes in the main participation statistics from a cohort of 1945 adults who completed all four phases of the Active NZ re-contact survey (April 2020, June 2020, September 2020 and April 2021) and who took part in the Main Active NZ survey in 2017 and/or 2018 and/or 2019.

How participation has changed, ways of participating and barriers are based on cross-sectional analysis from the Active NZ re-contact surveys and the Main Active NZ survey:

- before the COVID-19 pandemic in the Main Active NZ survey, combining April 2017, April 2018 and April 2019 as a baseline for a 'typical April' for 3021 adults
- the April 2020 Active NZ re-contact survey between 16 and 28 April from 11 242 adults
- the April 2021 Active NZ re-contact survey between 6 and 22 April from 5342 adults.¹

We express special thanks to all those who have provided feedback to guide the development of this report and the thousands of New Zealanders who took part in the Active NZ survey.

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Wellington: Sport New Zealand.

Active NZ resources are available at sportnz.org.nz/ActiveNZ

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¹ The Active NZ re-contact survey was also undertaken between June 23 June and 6 July 2020 with 7457 adults, and between 9 and 24 September with 6296 adults.

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Glossary

Adult	Respondents aged 18-plus.
Being active	Refers to being physically active in play, active recreation, and sport.
Deprivation	Low deprivation 1–3, medium deprivation 4–7, high deprivation 8–10, based on the NZDep2013 index of socioeconomic deprivation. A value of 10 indicates the most deprived 10 percent of areas in New Zealand. Note: NZDep2013 estimates the relative socioeconomic deprivation of an area and does not directly relate to individuals.
Ethnicity	Results by ethnicity throughout this report – European, Māori, Pacific (including Samoan) and Asian (including Indian and Chinese) – are based on respondents' self-identification.
Non-participants	People who have not been physically active in play, exercise, active recreation, or sport in the past seven days.
Participation in competitive and non-competitive sports or activities	Participating through an organised structure, for example, in a league or club competition, tournament or competitive event. Non-competitive participation refers to sports or activities undertaken outside of a league or club competition, tournament, or competitive event.
Participants	People who have been physically active in play, active recreation (including exercise) or sport in the past seven days, where this participation excludes any physical activity undertaken for work or chores. Participation can include physical activity undertaken to get from one place to another if the respondent considers it to be for sport or active recreation.
Play, active recreation, and sport	Play, active recreation and sport are used throughout this report for simplicity. However, participation is multi-faceted. Play and active recreation are terms used by Sport New Zealand to capture participation in activities not considered to be sport, for example, playing with friends or alone, dance and tramping. Sport can be undertaken in an organised structure, for example, in a competition or tournament, or informally outside an organised structure. Sport is associated with being competitive, but individuals differ in their degree of competitiveness, irrespective of how they participate.
Respondents	People who took part in the survey.
Weekly participation	Refers to being physically active in play, exercise, active recreation, or sport at least once in the past seven days.

Effects of the first year of the COVID-19 pandemic on participation

This report focuses on changing participation throughout the first year of the COVID-19 pandemic from April 2020, when the country was in its first nationwide lockdown, through to April 2021, when the country was at Alert Level 1.

About this report

It reports changes in the key participation statistics by drawing on data collected from a cohort of 1945 adults who completed all four phases of the Active NZ re-contact survey (April 2020, June 2020, September 2020 and April 2021), and who also took part in the Main Active NZ survey in 2017 and/or 2018 and/or 2019.

How participation changed, ways of participating and barriers are based on cross-sectional analysis from:

- before the COVID-19 pandemic in the Main Active NZ survey, combining April 2017, April 2018 and April 2019 as a baseline for a 'typical April' for 3021 adults
- the April 2020 Active NZ re-contact survey between 16–28 April from 11 242 adults
- the April 2021 Active NZ re-contact survey between 6–22 April from 5342 adults.

The overall objective is to understand the effects of the COVID-19 pandemic and restrictions on participation. It focuses on:

- changes in adult participation patterns and profiles
- barriers and opportunities resulting from the COVID-19 pandemic.

All reported differences are statistically significant at the 95 percent confidence level unless noted.

Active NZ cohort study²

Using responses from adults who had historically completed the Main Active NZ survey, as well as all four re-contact surveys, we undertook a pragmatic cohort analysis. This meant we were able to look at multiple key participation indicators from the same people over time (longitudinally), which in turn provides a stronger evidence of causation (and higher confidence in results).

Main Active NZ survey³

Sport New Zealand's Main Active NZ Survey measures nationwide participation in play, active recreation and sport.

April 2021 Active NZ re-contact survey⁴

The April 2021 Active NZ re-contact survey surveyed respondents from previous Active NZ surveys who had given permission to do more research and provided an email address. It is an online-only survey and not a continuation of Active NZ, with all its rigor. It is an effective, pragmatic approach to obtaining a cross-sectional population measure of participation during COVID-19 Alert Level 1 New Zealand.

² For further information on sample, analysis and caveats for the Active NZ cohort study, refer to Appendix A.

³ For further information on method, sample and objectives for the Active NZ survey, see the Technical Report: <http://sportnz.org.nz/activenz>. Sport NZ, *Active NZ Technical Report for Data Collected in 2019*. Wellington, Sport NZ, 2019, and Appendix B for a summary overview.

⁴ For further information on the method, sample and objectives, analysis and caveats for the Active NZ re-contact survey, refer to appendices C–E.

Executive summary

Introduction

This report focuses on changing adult participation throughout the first year of the COVID-19 pandemic, using data captured during the nationwide lockdown in April 2020 and through to April 2021.⁵

The objective is to understand the effects of the COVID-19 pandemic and restrictions on participation.

Key findings

What the key participation statistics say

Adult participation has not rebounded to pre-COVID levels. Statistics comparing pre-COVID participation with April 2021 – one year after the country’s first nationwide lockdown – show adults are doing less, with large changes evident across the key participation statistics.

- Weekly participation has dropped by 3.4 percent.
- Average number of hours spent being physically active has dropped by 15.6 percent.
- Average number of sports and activities participated in has dropped by 22.1 percent.
- The proportion of adults meeting the physical activity guidelines has dropped by 8.3 percent.
- Variation is evident in the effects of COVID-19 by population sub-groups.

Key demographic differences

- The first COVID-19 lockdown (April 2020) had an inequitable effect on both time spent being physically active as well as the number of activities and sports participated in.
- Those aged 18–24 and 65-plus, males, and those from highly deprived communities were more severely affected during the initial lockdown.
- Across the course of the pandemic (evident in all four waves of the re-contact survey), the effect on time spent being physically active and number of sports and activities participated in was more pronounced for those from highly deprived communities.
- The inequities across these two measures have subsequently (in April 2021) returned to pre-pandemic levels.

How participation and ways of participating in sports and activities have changed

The lockdown caused changes in participation in sports and activities, as well as in ways of participating.

- Participation in walking increased significantly during the country’s first lockdown in April 2020. This surge has not been sustained and, in April 2021, fewer adults were walking compared with April 2020 as well as a typical April (before the pandemic).
- The increase in participation in yoga, evident during the lockdown, has not been sustained, with participation rates returning to a typical April level.
- The increase in running and jogging during the lockdown has also not been sustained, with levels in April 2021 lower than during lockdown and a typical April.
- April 2021 saw the return to in-person training, compared with April 2020.

⁵ See Appendix F for detail on data used to inform this report.

Participation in group fitness classes and individual workouts using equipment was consistent with pre-pandemic levels, during lockdown in April 2020, and one year later in April 2021.

How barriers to participation have changed

Barriers to increasing participation have changed throughout the course of the pandemic, affected by periods of lockdown and increased alert levels.

- Prioritising other commitments as a barrier reduced over the first 12 months of the pandemic and was at its lowest at Alert Level 4 in April 2020.
- Being too tired, getting out of the habit and being injured through sport, exercise or active recreation were higher barriers in April 2021, compared with April 2020 and a typical April.
- Struggles with motivation, not being fit enough, the activity of choice not fitting my routine, no one to do it with, injury from something other than sport, exercise or active recreation, and poor health all changed over the course of the first year of the pandemic (April 2020 to April 2021).
- A decrease occurred in the preference of adults to spend time on other interests or hobbies in the past year, even though an increase occurred during Alert Level 4 in April 2020.
- Adult perceptions of 'already doing a good amount of physical activity' have been unchanged by the pandemic.

Conclusion

The effect of the COVID-19 pandemic on participation is substantial, and big drops occurred for adults across the key participation statistics. These have not re-bounded to pre-pandemic levels.

While the ongoing effect of the pandemic on participation is still to be investigated, it is concerning that New Zealand is, at the time of writing, experiencing a longer period at increased alert levels, compared with 2020.

Increases and preferences for activities that emerged during the first nationwide lockdown in April 2020 have not been sustained with, at best, most returning to pre-lockdown or remaining below these levels.

Barriers to participation changed notably over the first 12 months of the pandemic. A watching brief will be in place for how these evolve over the next 12 months.

Population sub-groups that saw positive changes to their physical activity levels during the first lockdown have fared worse one year later, struggling to reach pre-pandemic levels.

1. What the key participation statistics say

This section reports key participation statistics from the Active NZ cohort study that followed the same people over time, from their historical response to the Main Active NZ survey, and their responses to all four Active NZ re-contact surveys: April 2020, June 2020, September 2020, and April 2021.

Insights

Adult participation has not rebounded to pre-COVID participation levels. Statistics comparing pre-pandemic participation with April 2021 – one year after the country’s first nationwide lockdown – show adults are doing less, with large changes in the key participation statistics.

- Weekly participation has dropped by 3.4 percent.
- Average number of hours has dropped by 15.6 percent.
- Average number of sports and activities has dropped by 22.1 percent.
- The proportion of adults meeting the physical activity guidelines has dropped by 8.3 percent.

Key demographic differences

- The initial COVID-19 lockdown (April 2020) had an inequitable effect on both time spent being physically active as well as the number of activities and sports participated in.
- Those aged 18–24 and 65-plus, males, and those from highly deprived communities were more severely affected during the initial lockdown.
- Across the course of the first year of the pandemic (evident in all four waves of the re-contact survey), the effect on time spent being physically active and the number of sports and activities participated in was more pronounced for those from highly deprived communities.
- The inequities across these two measures have subsequently (in April 2021) returned to pre-pandemic levels.

Active NZ’s cohort study followed the same people over time (from their historical responses to the Main Active NZ survey and to all four Active NZ re-contact surveys). Results from the study paint a challenging picture for participation levels amongst adults in New Zealand one year (April 2021) after the country’s first nationwide lockdown (April 2020). At an overall level, comparing pre-pandemic results with April 2021 results:

- the proportion of adults participating each week dropped by 3.4 percent
- the average number of hours spent participating dropped by 15.6 percent
- the average number of sports and activities participated in each week dropped by 22.1 percent
- the proportion of adults who meet the physical activity guidelines through active recreation and sport dropped by 8.3 percent (table 1).

Table 1: Summary of changes in key participation statistics from the Active NZ cohort study analysis⁶

	Pre-pandemic	April 2021	Difference (%)
Weekly participation	83.7%	80.8%	-3.4
Average number of hours being active	6.80	5.74	-15.6
Average number of sports and activities	2.62	2.04	-22.1
Meeting the physical activity guidelines ⁷	73.6%	67.6%	-8.3

Key demographic differences

- The first COVID-19 lockdown (April 2020) had an inequitable effect on both time spent being physically active as well as the number of activities and sports participated in.
- Adults between ages 18–24 and 65-plus, males, and those from highly deprived communities were more severely affected during the initial lockdown.
- Across the course of the pandemic (evident in all four waves of the Active NZ re-contact survey), the effect on time spent being physically active and number of sports and activities participated in was more pronounced for those from highly deprived communities.

The inequities across these two measures by age, gender and deprivation had returned to pre-pandemic levels in April 2021.

Looking more closely at the key participation statistics from the Active NZ cohort study, we see that average time spent and average number of sports and activities across all re-contact waves (April, June, September 2020, and April 2021) were lower than pre-pandemic levels.

The average number of hours spent being active and average number of sports and activities participated in were both lower in April 2020, compared with pre-pandemic levels (9.4 percent and 15.6 percent respectively). The difference grew through the June 2020 wave and both measures remained lower in April 2021. The average number of hours remained 15.6 percent lower than pre-pandemic levels and the average number of sports and activities remained 22.1 percent lower

In April 2020, weekly participation and meeting the physical activity guidelines mirrored pre-pandemic levels before following the same pattern. In June, weekly participation was 5.7 percent lower than pre-pandemic levels. It recovered slightly through September 2020 and then April 2021, but, one year on from the first lockdown, remained 3.4 percent lower, compared with pre-pandemic levels.

The proportion of the cohort meeting the physical activity guidelines followed a similar pattern to weekly participation 2020 but subsequently followed the pattern of the other key participation statistics, falling back in June 2020 before ending up 8.3 percent lower in April 2021, compared with pre-pandemic levels.

Table 2: Changes in key participation statistics from the Active NZ cohort study analysis across the four waves (percentage difference compared with pre-pandemic)

	April 2020	June 2020	September 2020	April 2021
Weekly participation	1.3 ⁸	-5.7	-4.5	-3.4
Average number of hours being active	-9.4	-14.6	-12.0	-15.6
Average number of sports and activities	-22.9	-21.1	-18.3	-22.1
Meeting the physical activity guidelines ⁹	-1.4 ¹⁰	-7.3	-6.2	-8.3

⁶ The cohort is more active than the New Zealand adult population. Results should be interpreted in the context of magnitude of change and not as updated metrics.

⁷ Meeting the physical activity guidelines is based on 150 minutes per week recommendations.

⁸ This is not a statistically significant difference compared with pre-pandemic levels.

⁹ Meeting the physical activity guidelines is based on 150 minutes per week recommendations.

¹⁰ This is not a statistically significant difference compared with pre-pandemic levels.

2. How participation and ways of participating in sports and activities have changed

This section explores variation (and consistency) in participation in different sports and activities. It uses results from the Active NZ re-contact survey and draws comparisons between a typical April, April 2020 during the country's first lockdown and April 2021.

Insights

Lockdowns have caused changes in participation in sports and activities as well as in ways of participating.

- Participation in walking increased significantly during the country's first lockdown in April 2020. This surge has not been sustained and, in April 2021, fewer adults were walking, compared with April 2020 as well as a typical April (before the pandemic).
- The increase in participation in yoga, evident during lockdown, has not been sustained, with participation rates returning to a typical April level.
- The increase in running and jogging during lockdown has also not been sustained, with levels in April 2021 lower than during lockdown and a typical April.
- April 2021 saw the return to in-person training, compared with April 2020.

Participation in group fitness classes and individual workouts using equipment was consistent with pre-pandemic levels, during lockdown in April 2020, and one year later in April 2021 (table 3).

Table 3: Participation in sports and activities

	Combined April 2017 + 2018 + 2019	Re-contact survey April 2020	Re-contact survey April 2021
Walking	62.93%	68.67%	56.24% ▼▼
Individual workout using equipment	23.22%	23.15%	22.14%
Running/jogging	22.33%	24.67%	18.84% ▼▼
Gardening	27.26%	15.63%	14.72% ▼
NET: Cycling (excluding BMX and e-bikes)	13.58%	19.37%	12.37%
Group fitness class (eg, aerobics, Crossfit)	9.64%	8.11%	9.13%
Yoga	7.20%	14.37%	7.58% ▼
Swimming	9.64%	0.38%	6.71% ▲▼

Base: All respondents ages 18-plus (combined April n=3020; re-contact April 2020 n=11242; re-contact April 2021 n=5342) HQ13/HQ8AQ97. Which of the following have you done in the last 7 days?

Arrows show significant increase/ decrease over time

* Cycling (Net) includes road cycling and mountain biking (it excludes BMX and e-biking)

▲ ▼ Significantly higher/lower than re-contact April 2020

▲ ▼ Significantly higher/lower than combined April

April 2021 saw the return to in-person training, compared with April 2020. The use of activity trackers and apps was consistent in April 2020 and April 2021 (table 4). In April 2021, adults most likely to use technology were females (55 percent) and aged 18–49 (18–24, 62 percent; 25–34, 62 percent; 35–49, 53 percent).

Table 4: Use of technology

	Re-contact survey April 2020	Re-contact survey April 2021
Used an activity tracker (eg, Smartphone, Fitbit and so on)	33%	34%
Used an activity app	17%	16%
Accessed online information (eg, Podcasts, YouTube, videos) about being active	20%	15% ▼
Received advice from online forums or social media groups about being active	11%	7% ▼
Done training or exercise that is open to anyone online or shown on television	21%	6% ▼
Received workout programmes via email, text, messenger or similar	11%	5% ▼
Done group training just for my team/group with an instructor online	7%	2% ▼
Done group training just for my team/group without an instructor online	2%	1%
Had one-on-one training with an instructor online	4%	1%
NET: Used technology	64%	49% ▼
Done group training just for my team/group with an instructor (in person)	0%	17% ▲
Had one-on-one training with an instructor in person	1%	6% ▲
Got information from books/magazines about being active	5%	4%
I haven't done any of these	16%	39% ▲
Done other things	22%	3% ▼

Base: All respondents aged 18-plus (re-contact April 2020 n=10 446; re-contact April 2021 n=4817)
Q142. In the last 7 days (not including today), have you...

Arrows show significant increase/decrease over time

▲ ▼ Significantly higher/lower than re-contact April 2020

3. How barriers to participation have changed

This section identifies changes in barriers to participation. It uses results from the Active NZ re-contact survey and draws comparisons between a typical April, April 2020 during the country's first lockdown and April 2021.

Insights

Barriers to increasing participation have changed throughout the course of the pandemic, having been affected by periods of lockdown and increased alert levels.

- Prioritising other commitments as a barrier reduced over the first 12 months of the pandemic and was at its lowest at Alert Level 4 in April 2020.
- Being too tired, getting out of the habit and being injured through sport, exercise or active recreation were higher barriers in April 2021, compared with April 2020 and a typical April.
- Struggles with motivation, not being fit enough, the activity of choice not fitting my routine, no one to do it with, injury from something other than sport, exercise or active recreation and poor health all changed over the course of the first year of the pandemic (April 2020 to April 2021).
- A decrease is evident in the preference of adults to spend time on other interests or hobbies in the past year, even though we saw an increase during Alert Level 4 in April 2020.

Adult perceptions of 'already doing a good amount of physical activity' have been unchanged by the pandemic (table 5).

Table 5: Barriers to participation

	Combined April 2017 + 2018 + 2019	Re-contact survey April 2020	Re-contact survey April 2021
Other commitments are taking priority (eg, work, family)	62.94%	34.54%	56.27% ▲ ▼
I am too tired or don't have the energy	24.44%	16.57%	28.87% ▲ ▲
I struggle to motivate myself	24.06%	21.81%	25.88% ▲
I've got out of the habit	17.26%	14.80%	20.28% ▲ ▲
I prefer to spend my time on other interests/ hobbies	17.02%	12.34%	14.47% ▲ ▼
I already do a good amount of physical activity	13.77%	12.98%	13.27%
I'm not fit enough	12.23%	10.15%	12.97% ▲
The activity of my choice is too expensive	13.70%	4.86%	11.05% ▲ ▼
The activity of my choice doesn't fit my routine	11.48%	6.01%	10.65% ▲
The weather	14.98%	10.13%	9.57% ▼
I am injured from an injury caused by sport, exercise, or recreational physical activity	6.90%	5.39%	8.62% ▲ ▲
I have no one to do it with	7.72%	6.54%	8.54% ▲
I am injured from an injury caused by something else	7.56%	4.81%	8.32% ▲
I don't have the equipment I need	6.01%	12.99%	7.49% ▼
My health is not good enough	6.56%	5.03%	7.40% ▲
I have no transport to get to places	3.47%	2.35%	2.82%

Note: Only showing top 15 barriers
 Base: All respondents aged 18-plus (combined April n=3018; re-contact April 2020 n=11 242; re-contact April 2021 n=5342)
 Q32. For what reasons are you not doing as much physical activity as you would like? / For what reasons **do you not want** to do more physical activity than you are currently doing?
Arrows show significant increase/decrease over time
 Significantly higher/lower than re-contact April 2020
 ▲ ▼ Significantly higher/lower than combined April 2017 + 2018 + 2019

Appendices

Appendix A – Active NZ cohort study: Sample, analysis and caveats

Changes in the key participation statistics in this report are based on the longitudinal cohort study that followed the same respondents over time.

These results should be used to report the magnitude of change and not as updated participation statistics.

All respondents to the Main Active NZ survey (since 2017) were asked to provide contact details if they agreed to be re-contacted for future research purposes. The 37 000 adults who agreed to be re-contacted for future research in the Main Active NZ survey formed the sampling frame for the cohort study that was established at the beginning of the pandemic.

In total, 1945 adults completed all four waves of the Active NZ re-contact survey (April, June and September 2020 and April 2021) and had completed the Main Active NZ survey pre-pandemic.

When comparing the pre-pandemic data for cohort respondents and non-cohort respondents, those who took part in the Active NZ cohort study were a more active group at the pre-pandemic baseline.

Despite this, the sample had a reasonable spread across age, gender, ethnicity and deprivation. Results should be interpreted in the context of magnitude of change and not as updated metrics.

Results are not weighted to population characteristics because the rigour is based on the longitudinal approach where actual changes for the same individuals are reported.

Appendix B – Main Active NZ survey

This research aims to:

- collect information on the ‘who’, ‘what’, ‘how’ and ‘where’ young people and adults participate
- identify and describe links between participation (and non-participation) and other influential factors; the ‘why’ and ‘why not’ people participate
- measure the quality of participation and the contribution participation makes to an individual’s health and well being
- understand the value placed on participation by people in New Zealand.

Survey method

The survey method uses online and postal self-completion using sequential mixed methods, we are targeting 20 000 adults and 5000 young people per annum.

Fieldwork period

The 2017 survey was conducted between 5 January 2017 and 4 January 2018. The 2018 survey was conducted between 5 January 2018 and 4 January 2019. The 2019 survey was conducted between 5 January 2019 and 4 January 2020.

Completed responses

Across the three years, responses have been received from n=74 160 adults aged 18-plus and n=16 398 young people aged between 5 and 17.

Weighting

Results have been weighted to the total New Zealand Regional Sports Trust population using 2013 census statistics.

A sequential mixed methodology is used for this research

Electoral roll	Invitation letter	Reminder postcard 1	Survey pack	Reminder postcard 2
Sample selected from Electoral Roll	<p>Invitation letters are sent to the named adults (aged 18-plus) inviting them to complete the questionnaire online (with instructions and log-in provided).</p> <p>A postcard is included, to encourage young people aged 12 to 17 to complete the children and young people’s questionnaire online.</p> <p>A 0800 number and email address are provided for questions.</p>	<p>About a week later, a reminder postcard is sent thanking respondents and acting as a reminder to those still to respond.</p> <p>This communication is targeted to adults only.</p>	<p>A week after the postcard, non-respondents are sent a survey pack with a hardcopy of the questionnaire, letter and a reply-paid envelope.</p> <p>A flyer is included for ages 12 to 17 to complete the survey online (no paper questionnaire is available for the children and young people’s survey).</p>	A final reminder is sent to adults who have not yet taken part in the survey.

Note: Parents or caregivers are asked to respond on behalf of children aged 5–11 in their household (and encouraged to do this with their child and/or check responses with them). Sixty-three percent of tamariki were involved in answering. Rangatahi (aged 12–17) are invited to respond. Forty-two percent of rangatahi involved their parent/caregiver when completing the survey.

Appendix C – Active NZ re-contact survey

Approach

The Active NZ re-contact survey is a new, separate piece of research with New Zealanders who have previously responded to the Main Active NZ survey and given permission to be re-contacted via email to take part in more research, that is, as a sub-group of the total Active NZ sample. The re-contact surveys are cross-sectional point-in-time measures and were conducted online only.

In April 2021, respondents who in April 2020, June 2020 or September 2020 said they no longer wished to participate in future surveys were excluded.

Tamariki and rangatahi between ages 5–17 were recruited through adults. The first email invitation included a link to the adult survey and three links to a survey for tamariki and rangatahi. The adult was encouraged to pass these links on to the young people in their household (in April 2021 preferably to the same young person who completed in April, June and/or September 2020). In April 2021, invitations were also sent to email addresses collected from young people aged 15–17 in the April Active NZ re-contact survey.

Three reminders were sent during fieldwork, to encourage responses from adults still to complete the survey (in a similar format to the initial invitation). A slightly different reminder was sent to adults who had completed the survey, and who had tamariki and rangatahi in their household, and who had not responded.

Sample source – Active NZ

The sample source comprised all Active NZ respondents who agreed to be re-contacted via email from the 2017 to 2020 Active NZ surveys aged 15-plus. Many at the time of surveying were adults aged 18-plus.

Using the total sample available to be re-contacted provided a large base, enabling sub-group analysis and exploration of the development of a cohort study to track individual behaviour changes over time.

Sample source – External panels

During the April 2020 re-contact survey, fieldwork responses for ages 12–17 were low. External panel providers Toluna and Dynata were used to boost the sample for this age group. However, the sample sourced from external providers was removed from the final analysis to enable comparison with Active NZ data.

Final numbers

- **Invited:** 33 266 adults and 1336 young people aged 15–17 years (their age *in* 2017–2020).
- **Completed responses:** 5342 adults and 531 young people.
- For adults: 5291 came from the adult re-contact sample and 51 came from the young people re-contact sample.
- For young people: 43 came from the young people re-contact sample and 488 came from the adult re-contact sample.
- The response rate from the n=33 266 adults was 16 percent (5291 / 33 266).
- The response rate from the n=1336 young people was 7 percent ((51+43) / 1336).
- Of the 488 who came from the adult re-contact sample (9 percent of the adult completes), 364 were adults who completed the survey on behalf of their young people between ages 5–11.
- The breakdown of young people by age was:
 - ages 5–11: n=364
 - ages 12–14: n=58
 - ages 15–17: n=109.

Appendix D – Active NZ re-contact survey: Analysis, weighting, and reporting

Comparisons with past Active NZ data

The results from the April 2021 Active NZ re-contact survey are compared with findings from the April 2020 re-contact survey and combined results from April in 2017, 2018 and 2019, sourced from the Active NZ survey (ie, April 2017 + April 2018 + April 2019). For adults, only the results for those who had agreed to be re-contacted were included in the combined April results.

In determining the appropriate baseline, we considered:

- known seasonality in participation data
- recency
- sufficient sample for sub-group comparisons.

For the April 2020 and June 2020 re-contact surveys, we reviewed monthly results over the past three years, that is, 2017–2019, to understand how April and June varied to quarter 2 (April–June) results, other months of the year and annual averages, before determining what was the best approach.

We used the same approach for the April 2021 Active NZ re-contact survey.

Weighting

The combined results for April 2017 + April 2018 + April 2019, the April 2020 re-contact survey results and the April 2021 re-contact survey results have been weighted to population data from the 2013 census using the same variables and approach as in the Main Active NZ Survey. For more information, please refer to the most recent Active NZ Technical Report.¹¹

Questionnaire

The questionnaire was a cut-back version of Active NZ with a few additional questions. It was important to keep it short, especially as we want respondents to continue doing future surveys as we monitor their participation over time.

The average length for adults was 15 minutes (April 2020, June 2020 and September 2020 were 17, 18 and 16 minutes respectively). The average length for young people was 11 minutes (April 2020; and June 2020 was 12 minutes and September 2020 was 11 minutes); 10 minutes for ages 5–11 (completed by the adult) and 14 minutes for ages 12–17.

Reporting

Throughout the Active NZ re-contact survey report, differences are highlighted by population sub-group for young people or adults, plus differences between the time periods.

Note that results for adults and young people are drawn from two separate surveys: one for young people between ages 5–17 and one for adults aged 18-plus. Any commentary about differences between young people and adults is based on observations rather than statistical testing between the two data sets.

Within the three data sets, reported differences are statistically significant at the 95 percent confidence level. Significance testing means we can be sure the differences reported are not due to random variation because we are using a sample and not conducting a population census. Knowing a difference is statistically significant does not mean the difference is important, and only meaningful differences have been commented on.

¹¹ See the Technical Report: <http://sportnz.org.nz/activenz>. Sport NZ, *Active NZ Technical Report for Data Collected in 2019*. Wellington, Sport NZ, 2019, which can be found, at <https://sportnz.org.nz/assets/Uploads/Active-NZ-Technical-Report-2018.pdf>.

Appendix E – Active NZ re-contact survey: Caveats and notes

The April Active NZ re-contact survey was the first time a re-contact survey of this scale had been undertaken with previous Active NZ respondents. Due to the time constraints and requirement to be in field during Alert Level 4, our approach had several limitations that are important to consider. The same approach was used for the June and September re-contact surveys for consistency.

Approach

The April 2020 re-contact survey was not a continuation of Active NZ, with its complex sampling framework and mixed method to appeal to a range of New Zealanders. It was not intended to continue the time series, and we could not guarantee sub-group sample sizes or a similar representation as in Active NZ, both in demographic profile and participation levels.

We tried to mitigate this as much as possible, however, by going to a large sample, and we monitored sub-groups of interest during fieldwork. This resulted in a boost of young people between ages 12–17 from external panel providers (though it was later determined these would be excluded from the analysis in this report).

Rather, the April 2020, June 2020, September 2020, and April 2021 re-contact surveys were an effective, pragmatic means of obtaining a measure of participation during the different stages of COVID-19 restrictions.

Questionnaire

We used many of the same questions as for the Main Active NZ survey, even though we were aware some response codes were not applicable during this time.

This was for both simplicity and comparability of results over time, although we recognise it may have been annoying for some respondents.

Sampling frame

Our sampling frame did have limitations. For the April re-contact survey, due to the need to move quickly, we analysed the sampling frame (those who agreed to be re-contacted in Active NZ) in parallel to the set up of the research. Ideally, this would have been done prior. This provided important context for who responded and how the sampling frame differed from the total Active NZ sample and the New Zealand population.

Sample bias

We initially compared the April 2020 re-contact survey results for adults to all Active NZ adult results in the previous Aprils (2017 + 2018 + 2019). However, our sample analysis showed that those who agreed to be re-contacted were more active than those who did not, so the comparison was changed to be only those adults who completed Active NZ in previous Aprils and who agreed to be re-contacted. Likewise, we excluded samples sourced from external providers because they appear to be less active. The same approach was used for the June 2020, September 2020, and April 2021 re-contact surveys.

Weighting

Weighting is used to adjust for small imbalances in the achieved sample compared with the sampling frame when you are unable to control who does and does not respond. Statistically, we should weight the re-contact survey results to the results of those who have agreed to be re-contacted. However, we also wanted to be able to compare the results with previous population estimates from Active NZ, so we weighted to the New Zealand population. Ideally, we would have quota and/or weighted for participation levels, but this proved too difficult because the pandemic disrupted how people were physically active.

Weighting was applied in the following ways:

- household size at national level, split into a few bucket groups
- household income at national level, split into a few bucket groups
- ethnicity at national level, split into a few bucket groups
- region and national level, split into 17 regional sports trusts (RSTs), by age and by gender

Several adjustments were also made during the weighting process for each re-contact survey, including the following.

- Weighting assumes one adult per household completes the survey, but in a handful of cases two adult respondents were in a household (for example, a young person between ages 15–17 now qualifying as an adult), so these were removed from the data.
- In a small number of cases, data was incomplete data for age or date of birth, these were also removed.
- Some respondents selected an area outside an RST region, allocated to Auckland.
- No data was gathered for RSTs (assigned by address data in the electoral roll), so the region question was used as a proxy.
- Some RSTs were merged, for example, the four sub-regions in Auckland, to improve the weighting efficiency.

Appendix F – Data used to inform this report

Thirty-nine thousand adults aged 18-plus, who responded to the Main Active NZ in 2017, 2018 and 2019, who agreed to be re-contacted to do more research, and provided an email address, were invited to take part in an online survey. The invitation was extended at four separate points: April 2020 during the first nationwide lockdown (Alert Level 4), June 2020, September 2020 and through to April 2021, when the country was at Alert Level 1. In June 2020, New Zealand was at Alert Level 1 and in September 2020, Auckland was at Alert Level 2.5 while the rest of the country was at Alert Level 2.¹²

The data reports changes in key participation statistics from a cohort of 1945 adults who completed all four phases of the Active NZ re-contact survey (April 2020, June 2020, September 2020 and April 2021) and who also took part in the Main Active NZ survey in 2017 and/or 2018 and/or 2019.

To examine variation by population sub-groups, the report draws on data collected before the COVID-19 pandemic in the Main Active NZ survey, combining April 2017, April 2018 and April 2019 as a baseline for a 'typical April' (an average of April 2017, 2018, and 2019 from 3021 adults).

The report then makes comparisons by population sub-group at Alert Level 4 in April 2020, with a typical April and April 2021.

This report uses data collected through the April 2021 re-contact survey between 6 and 22 April 2021, from 5342 adults (aged 18-plus).

¹² For information on alert levels, refer to <https://covid19.govt.nz/alert-levels-and-updates/about-the-alert-system/>.