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Report No.3

Take Charge: Exercise and wellbeing in New Zealand

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Developed in partnership with Sovereign

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Take Charge: Exercise and wellbeing in New Zealand

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Introduction

The Survey

The Sovereign Wellbeing Index (SWI) is a survey conducted by AUT University's Human Potential Centre every two years in partnership with Sovereign. In 2014, a total of 10,012 adults aged 18 years and over completed the web-based survey about their wellbeing, health and lifestyle. The 149-item survey is based on the Personal and Social Wellbeing module from the 2012 European Social Survey (European Social Survey, 2012) and includes scientifically validated survey questions on a broad range of wellbeing indicators, along with questions on health, lifestyle and demographics. The web-based survey methodology ensures complete anonymity for respondents which minimizes social desirability bias in responses about their psychological wellbeing and health.

Our analysis in 2015 found that those who engage in exercise were much more likely to be in the top wellbeing group (Mackay, Schofield, Jarden, & Prendergast, 2015). This report takes a more in-depth look the relationship between wellbeing and the type of exercise and the contexts in which it is undertaken.

A copy of the *Sovereign Wellbeing Index: 2015* report and methodology report can be downloaded from www.mywellbeing.co.nz

Wellbeing¹

The 2014 SWI survey contained a comprehensive module of wellbeing scales. For this report four key wellbeing outcome measures are used to explore the relationship between wellbeing and exercise.

- *Awesome* – used to describe those with the highest levels of wellbeing. This classification is based on an international scale of 10 survey items developed and validated to assess wellbeing as a multi-dimensional construct and includes wellbeing characteristics such as: happiness, emotional stability, vitality, optimism, resilience, self-esteem, engagement, competence, meaning, and positive relationships.
- *Depressed Mood* – measured using the internationally recognised CESD-8 depression scale. This classification represents those who in the previous week experienced higher than typical depressive mood symptoms. These symptoms include: feeling depressed, that everything was an effort, restless sleep, happiness, loneliness, life enjoyment, sadness, and could not get going.
- *Happiness* – a single item measure of positive affect. Those that felt happy all or almost all of the time were classified as happy.
- *High Energy* – a single item measure of vitality. Those that reported having a lot of energy at least most of the time were classified as having high energy.

Sample Characteristics

This mini report presents data from the respondents participating in the Sovereign Wellbeing Index, Wave 2, 2014.

- A total of 10,012 adults aged 18 years and over completed the survey (48.4% male).
- 32.4 percent of respondents were aged under 35 years, 38.3 percent aged 35-54 years, and 29.3 percent aged 55 years and over.
- 74.9 percent identified as European or Other ethnicity, 12.5 percent as Māori or Pacific Peoples, and 12.5 percent as Asian.
- 60.9 percent of respondents were employed, 7.9 percent unemployed, and 31.2 percent not in the labour force.
- 40.2 percent of respondents earn a combined household income of \$70,000 or more.

Exercise and wellbeing

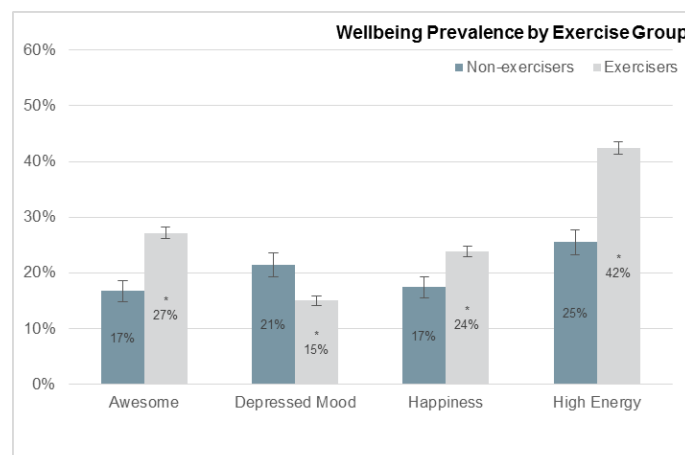
Regular physical activity is one of the most important lifestyle behaviours to incorporate in daily routines for optimising health and quality of life. Extensive research has shown how regular physical activity can reduce the risk of many chronic health conditions, including heart disease, stroke, high blood pressure, some cancers, type 2 diabetes, and osteoporosis (Bassuk & Manson, 2010; Lee et al., 2012; Warburton, Charlesworth, Ivey, Nettlefold, & Bredin, 2010). Research also shows how being physically active contributes positively to adults' mental health, particularly through reduced depressive symptoms and stress, as well as improved mood (Fox, 1999; Galper, Trivedi, Barlow, Dunn, & Kampert, 2006; Kull, 2002; Pickett, Yardley, & Kendrick, 2012).

To achieve health benefits, the World Health Organization and New Zealand's Ministry of Health recommends that adults should be incorporating a minimum of 150 minutes of moderate-intensity aerobic physical activity throughout the week. The guidelines also recommend that additional health benefits can be achieved through more physical activity (both in duration and intensity), and that muscle-strengthening activities should be done at least twice a week (Ministry of Health, 2015; World Health Organization, 2010).

In New Zealand, national data from the New Zealand Health Survey show that 14.3 percent of adults engage in less than 30 minutes of physical activity per week (Ministry of Health, 2014). Our data from the 2014 SWI indicate similar levels of inactivity, with 15.7 percent of the sample not engaging in any form of exercise on a weekly basis. On the other hand, 84.3 percent of the sample are engaging in exercise at least 1 day per week (exercisers²), and are feeling the better for it.

Key Finding: 27.1 percent of exercisers were Awesome compared with 16.7 percent of non-exercisers.

Compared with non-exercisers, a greater proportion of those who engaged in some exercise were *awesome*, experienced *happiness* and *high energy*, and fewer experienced *depressed mood*. The greatest wellbeing benefit of exercise was for energy levels; 42.4% of exercisers experienced *high energy* compared with 25.5% of non-exercisers.



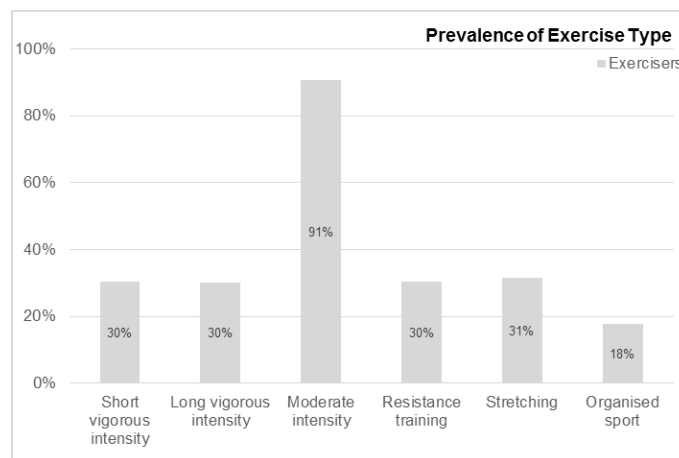
Non-exercisers: do not engage in any form of exercise; Exercisers: engage in at least one session of exercise per week. Error bars: 95% Confidence interval; * indicates estimate is significantly different from non-exercisers (95% confidence interval does not overlap).

In the 2014 SWI, respondents answered 3 key questions on their exercise habits³. These were the **type** of exercise, the **social context** of their exercise and the **environmental context** of their exercise.

Types of exercise	Social context	Environmental context
<ul style="list-style-type: none"> • Short duration vigorous exercise (e.g., high intensity intervals, sprint training, cross fit). • Long duration vigorous exercise (e.g., running, cycling, swimming). • Moderate activities (e.g., walking, hiking, cycling). • Strength, weight or resistance training. • Stretching or flexibility. • Organised sport. 	<ul style="list-style-type: none"> • With family, friends or colleagues • With my team • On my own • With a group of people (e.g., a group class) • With a personal trainer or instructor 	<ul style="list-style-type: none"> • Indoor sport or fitness settings • Indoors at home • Outdoors in built settings (e.g., streets, cycle lanes, or sports fields) • Outdoors in natural settings (e.g., beach, bush, park)

Types of Exercise

Almost all exercisers (90.6%) engaged in moderate intensity activity and the median frequency of participation was 3 to 4 days per week. Less than a third of exercisers participated in the other forms of exercise, and just 17.6 percent participated in organised sport.

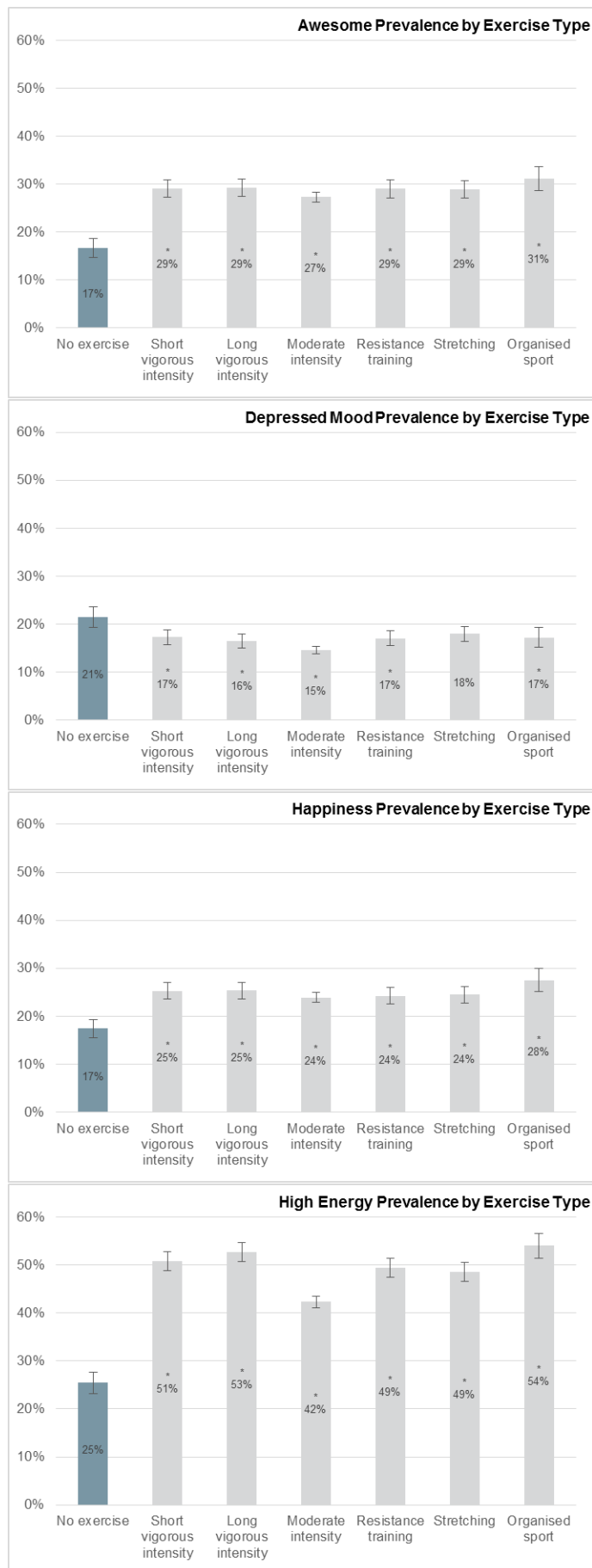


Exercisers: engage in at least one session of exercise per week. Multiple responses were possible therefore totals do not add to 100 percent.

Compared with non-exercisers, most exercise types were associated with a higher prevalence of being *awesome*, *happiness*, and *high energy*, and a lower prevalence of *depressed mood*.

Key Finding: Over 50% of those engaging in these exercise types: vigorous intensity exercise (either short or long) and organised sport, reported high energy.

Among exercisers, there was little difference in the prevalence of wellbeing outcomes between each type of exercise. The largest difference was seen for *high energy* with the highest prevalence observed for organised sport (54.0%), long duration vigorous intensity exercise (52.7%), and short duration vigorous intensity exercise (50.8%). These estimates are substantially greater than for non-exercisers (25.5%) and for moderate intensity activity (42.3%).

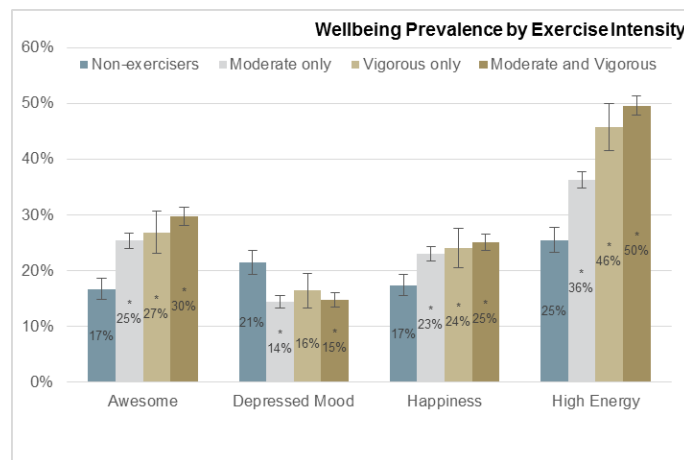


Error bars: 95% Confidence interval; * indicates estimate is significantly different from non-exercisers (95% confidence interval does not overlap).

However, when we look individually at each type of exercise, there are some differences in the prevalence of wellbeing outcomes between those who do that exercise and those that don't (but do other types of exercise). Some of these differences were polarising:

- While participants of organised sport had a greater prevalence of being *awesome*, *happiness*, and *high energy* than exercisers not engaging in organised sport, they also had greater levels of *depressed mood* (17.2%; although still lower than non-exercisers, 21.4%).
- Similarly, participants of short vigorous intensity exercise had a greater prevalence of *high energy* than exercisers not engaging in short vigorous exercise, but they had poorer wellbeing outcomes in terms of *depressed mood* (17.3%; although still lower than non-exercisers, 21.4%).

Respondents that participated in both moderate intensity activity as well as more vigorous intensity activities (short duration, long duration, and/or organised sport)⁴ had a greater prevalence of being *awesome* and *high energy* than exercisers doing just moderate intensity activity. However, there were no differences in rates of *depressed mood* or *happiness* for the different exercise intensity groups.



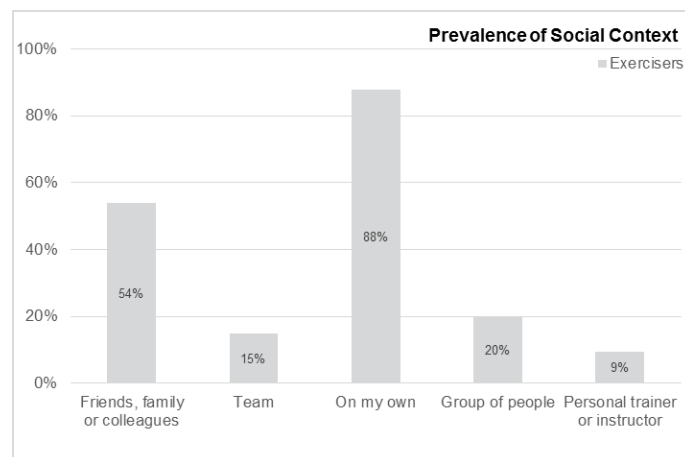
Error bars: 95% Confidence interval;

These results indicate that doing any exercise is good for our wellbeing. However, there may be a small effect of the type of exercise on various aspects of wellbeing, such as the higher intensity activities may lead to greater energy levels. Previous research on the types of exercise and wellbeing is fairly limited, however the research has not shown any difference in wellbeing outcomes by the type of exercise (Brown et al., 1995; Parfitt & Gledhill, 2004). For optimal wellbeing, it may be more important for individuals to engage in the type of exercise that they like and prefer. Research shows that when individuals engaged in their preferred exercise condition they experienced greater wellbeing outcomes, less fatigue, and lower levels of psychological distress compared to their less preferred exercise condition (Parfitt & Gledhill, 2004). When individuals engage in exercise they like, they essentially create a positive feedback loop. For example, an individual's preferred choice of exercise is more likely to match their personal competencies; which in turn maximises the potential for positive outcomes and greater success at long term behaviour change (Parfitt & Gledhill, 2004).

Social Context of Exercise

While exercising independently was reported by most exercisers (87.9%), over 50 percent of exercisers exercised with people they were close to (friends, family or colleagues). Exercising with a personal trainer or instructor at least once per week was the least common context for exercise. This is quite a new area of wellbeing and exercise research, with little known about how the people we exercise with influences our wellbeing. It is widely thought that exercising with others may help to develop and strengthen relationships and broaden our social networks which are important for wellbeing (Mental Health Foundation, 2013). On the other hand, exercising independently can offer opportunities for meditation, mindfulness and savouring practices which are known to positively influence our wellbeing (Mental Health Foundation, 2013). There is also extensive research to show that social support is an important enabler for starting out

in exercise and maintaining regular exercise habits (Bauman et al., 2012; McNeill, Kreuter, & Subramanian, 2006).



Exercisers: engage in at least one session of exercise per week. Multiple responses were possible therefore totals do not add to 100 percent.

Overall, most of these social contexts were associated with a higher prevalence of being *awesome*, *happiness*, and *high energy*, and a lower prevalence of *depressed mood* than non-exercisers.

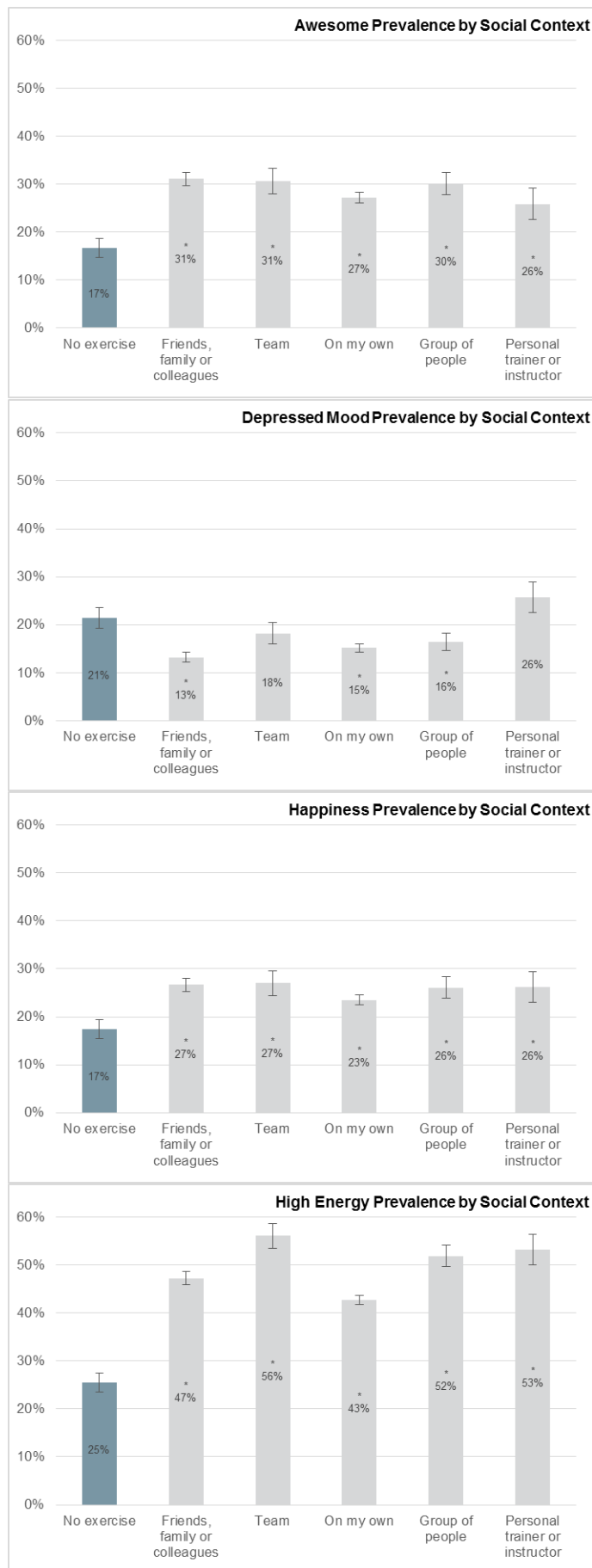
Key Finding: 31.1 percent of exercisers who exercise with friends, family or colleagues were *Awesome*

Exercising with friends, family or colleagues was associated with the lowest levels of *depressed mood*, and the highest levels of being *awesome*. However prevalence of *high energy* was greatest among those exercising with a team, a group of people, or a personal trainer and lowest among those exercising on their own (although still higher than non-exercisers). Exercising with social networks (friends, family or colleagues) appears to be more beneficial than exercising alone; respondents who exercise with friends, family or colleagues had a greater prevalence of *being awesome*, *happiness*, and *high energy*, along with a lower prevalence of *depressed mood*, than did those exercising on their own.

Within each individual social context, there are some differences in the prevalence of wellbeing outcomes between those who exercise in that context and those that don't (but exercise in other contexts).

- Those who exercise with friends, family or colleagues had a greater prevalence of being *awesome*, *happiness*, and *high energy* and a lower prevalence of *depressed mood*, than those who did not exercise with friends, family or colleagues.
- Exercisers who train with a personal trainer or instructor had a greater rate of *high energy* but also greater rate of *depressed mood* compared with those who do not exercise with a personal trainer or instructor.

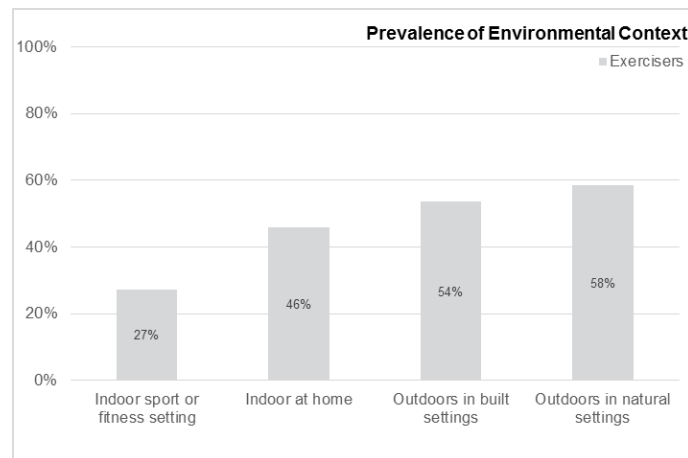
These results suggest that exercising with people we are close to is important for our wellbeing and this is possibly due to the wellbeing benefits of interacting socially with others. Exercise can be more fun with others and you are more likely to exercise if you have someone to do it with.



Error bars: 95% Confidence interval; * indicates estimate is significantly different from non-exercisers (95% confidence interval does not overlap).

Environmental Context of Exercise

Exercising outdoors in natural settings was most commonly reported by survey respondents (58.5%), followed by outdoors in built settings (53.5%) and indoors at home (45.8%). Just 27.3% of respondents reported exercising indoors in sport of fitness settings.



Exercisers: engage in at least one session of exercise per week. Multiple responses were possible therefore totals do not add to 100 percent.

Compared with non-exercisers, all environmental contexts for exercise were associated with a higher prevalence of being *awesome*, *happiness*, and *high energy*, and a lower prevalence of *depressed mood*.

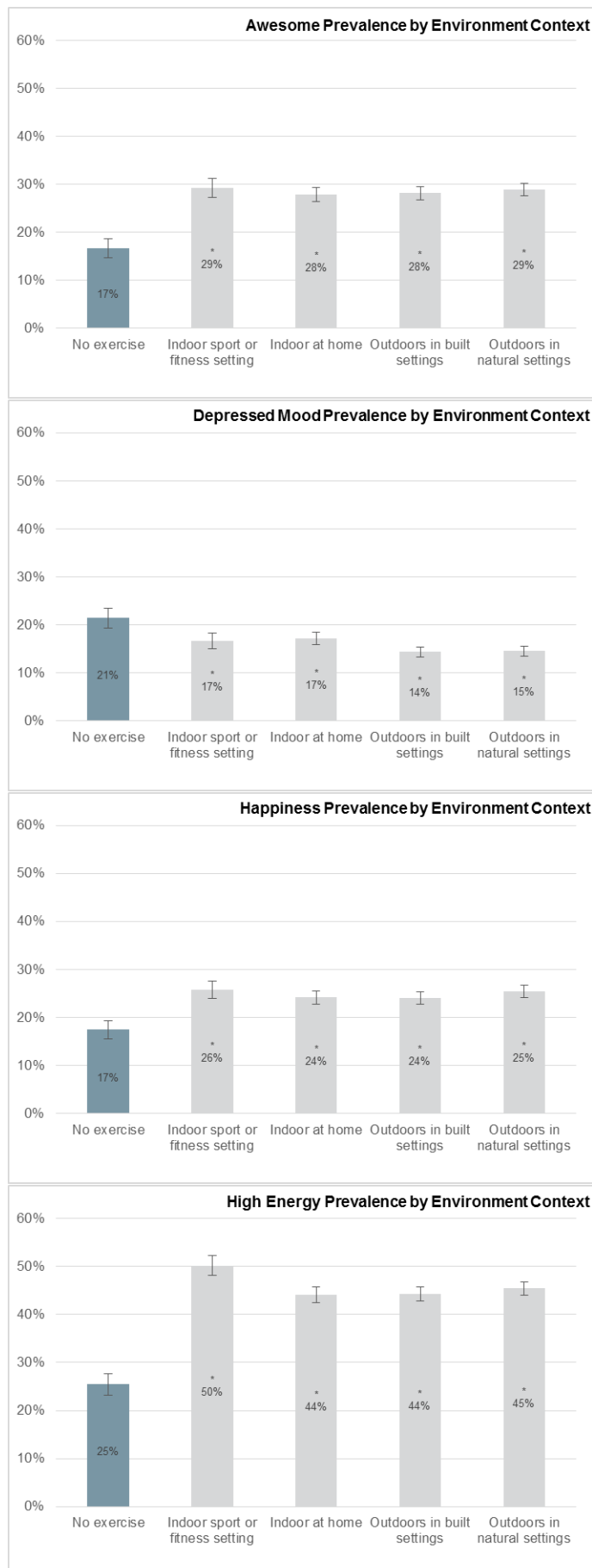
Key Finding: 14.4 percent of those exercising outdoors in built settings and 14.6 percent exercising outdoors in natural settings had *depressed mood*, compared with 21.4 percent of non-exercisers.

Prevalence of wellbeing outcomes were fairly consistent across the different environmental contexts for exercise. Outdoor settings were associated with a lower prevalence of *depressed mood* than indoor settings. The most significant difference was observed for exercising in indoor sport or fitness settings; this group had a higher prevalence of *high energy* (50.2%) than the other environmental contexts (44.1-45.4%).

Within each individual environmental context, there are some differences in the prevalence of wellbeing outcomes between those who exercise in that context and those that don't (but exercise in other contexts).

- Those who exercise outdoors in natural settings had a greater prevalence of being *awesome*, *happiness*, and *high energy*, than those who did not exercise outdoors in natural settings.
- Exercising indoors at home had higher rates of *depressed mood* compared with those who do not exercise at home (the lowest rate of *depressed mood* overall, 12.9%).
- Those who exercise indoors at sport or fitness settings had a greater prevalence of *high energy* than those who do not exercise in these sport or fitness settings (50.2% and 39.6% respectively).

There is only a small amount of research investigating how the environmental context in which we exercise influences our wellbeing. A few studies have compared exercise in indoor and outdoor environments. These studies suggest that exercise may feel easier in the natural environment (Gladwell, Brown, Wood, Sandercock, & Barton, 2013), and outdoor exercise may be associated with more energy, improved calmness, and greater revitalisation compared with exercise in indoor environments (Thompson Coon et al., 2011).



Error bars: 95% Confidence interval; * indicates estimate is significantly different from non-exercisers (95% confidence interval does not overlap).

Conclusion

Most people are doing some form of exercise, whether it be one day of moderate-intensity activity a week or a combination of different types of exercise on most days of the week. However, our data shows that 15.7 percent of respondents do not engage in any form of purposeful exercise on a weekly basis. Living an active lifestyle is essential for maintaining good physical health, reducing your risk of many chronic health conditions, and—as our results suggest—achieving optimal wellbeing.

Results from this report confirm that those who engage in some form of exercise have greater wellbeing outcomes than those who do not. In particular, the greatest benefits observed in this study were for *energy* levels and the overall wellbeing indicator – being *awesome*.

Among exercisers, rates of being *awesome*, *depressed mood*, and *happiness* were consistent across exercise types, social context, and environment context. However, there were some clear differences for *high energy*. In particular, greater rates of *high energy* were observed for:

- Organised sport, short duration vigorous intensity, and long duration vigorous intensity, compared with moderate intensity activity.
- Exercising with a team, group of people or personal trainer, compared with exercising independently, or with friends, family or colleagues.
- Exercising in indoor sport and fitness settings, compared with indoors at home or outdoors in built on natural settings.

Some wellbeing outcomes appeared to be polarising suggesting that further research is needed to understand this more fully. In particular, some exercise types or contexts were associated with higher rates of *high energy* while they were also associated with increased rates of *depressed mood* when compared with respondents who did not select the same exercise type or context. However, in general the rates of *depressed mood* among exercisers were still lower than that observed for non-exercisers.

- While participants of organised sport had a greater prevalence of *high energy* than exercisers not engaging in organised sport, they also had greater levels of *depressed mood*.
- Participants of short vigorous intensity exercise had a greater prevalence of *high energy* than exercisers not engaging in short vigorous exercise, but they had poorer wellbeing outcomes in terms of *depressed mood*.
- Exercisers who train with a personal trainer or instructor had higher rates of *high energy* but also higher rates of *depressed mood* compared with those who do not exercise with a personal trainer or instructor.

These results suggest that there may be two groups of exercisers: those who engage in active recreation for health, fitness, and enjoyment; and those who engage in structured exercise to achieve specific performance or health goals. It is possible that the pathways to wellbeing may differ for these groups depending on their approach to exercise.

Recommendations

In order to increase your vitality, be awesome, and reduce your risk of chronic diseases we recommend incorporating these “vitality boosters” into your daily life:

- *Move more and sit less.* Reduce your sedentary behaviour and break up long periods of sitting. Getting up from your chair and moving about is essential for optimal health and can even help with productivity and creativity! Even if you are already active, sitting too much can increase your risk of some chronic diseases. The more movement you incorporate into your day, the better.
- *Include moderate intensity physical activity every day.* Incorporate plenty of aerobic activities into your week such as walking, jogging, playing sport, or active leisure activities. Activities that raise your heart rate help to improve your fitness (which is important for heart health, insulin sensitivity, and blood pressure), are important for maintaining mobility and function, and are great for your wellbeing.

- *Do some higher intensity activity a couple of times a week.* Adding in some higher intensity exercise is great for increasing your fitness even further. What is high intensity for our top athletes may not be the same as it is for you – if you are finding the exercise quite difficult and you can no longer hold a conversation, then this is vigorous intensity. **If you are just starting out in exercise, have an existing health condition, or you have a low fitness level, start with moderate intensity activities and work your way up as your fitness improves.**
- *Include muscle-strengthening exercises a couple of times a week.* Lift some heavy things – these could be around the home or in a fitness gym setting. By doing load bearing exercises you are strengthening your bones (which is good for preventing osteoporosis and maintaining mobility) and increasing your muscle mass (which is good for your metabolism, energy production, and mobility).
- *Don't forget to Play!* Exercise shouldn't all be hard work. Have some fun, choose activities that you enjoy, and get together with your family and friends.

We also recommend that you mix up the social and environmental contexts.

- *Get active with a family member or friend.* Being active with others not only provides an opportunity to increase your physical activity, but also the chance to invest in social relationships through connections.
- *Take notice when exercising independently.* Take the opportunity to process your day or your week when exercising on your own. Practice mindfulness, meditation, and savouring, or simply take notice of your surroundings when exercising outdoors.
- *Exercise outdoors.* Exercising outdoors can provide a great opportunity to take notice of your surroundings, get fresh air, and increase your daily dose of sunlight (but watch you don't burn).
- *Get a sweat up in structured exercise.* Exercising in an indoor sport or fitness facility, a group class, or with your team is a great way to get into some higher intensity exercise. This is great for improving your energy levels.

Activity Statements for New Zealand Adults

(Ministry of Health, 2015)

1. Sit less, move more! Break up long periods of sitting.
2. Do at least 2 ½ hours of moderate or 1 ¼ hours of vigorous physical activity spread throughout the week.
3. For extra health benefits, aim for 5 hours of moderate or 2 ½ hours of vigorous physical activity spread throughout the week.
4. Do muscle strengthening activities on at least 2 days each week.
5. Doing some physical activity is better than doing none.

About the authors

The Human Potential Centre (HPC) is a multi-disciplinary health research group of AUT University. Led by Professor Grant Schofield, HPC comprises a group of multi-talented researchers specialising in positive psychology, nutrition, wellbeing, public health, physical activity, and the built environment. The Sovereign Wellbeing Index brings together HPC's diverse expertise across these areas to understand more about New Zealanders' wellbeing.

Visit: humanpotentialcentre.aut.ac.nz

About Sovereign

As New Zealand's largest life insurer, Sovereign believes it has an important role to play in helping Kiwis improve their health and wellbeing, which is why they partnered with AUT Human Potential Centre to develop the Sovereign Wellbeing Index and related reports.

"Through this research we're not only identifying problems, we're seeking productive change for the challenges identified in our society. It gives us an action plan as individuals, communities, leaders and as a nation as a whole that can help to make New Zealand an even better and happier place to live." – Sovereign CEO, Symon Brewis-Weston.

Visit: sovereign.co.nz

The executive report, *Sovereign Wellbeing Index: 2015*, and related reports are available at mywellbeing.co.nz

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Endnotes

¹ Wellbeing outcomes

Wellbeing outcome	Survey item	Threshold
Awesome	Derived from 10-item Flourishing Scale (Huppert & So, 2013)	
Depressed mood	8-item CESD depression inventory (Bracke, Levecque & Van de Velde, 2008)	Derived scale score ≥ 12
Happiness	"Please indicate how much of the time during the past week...you were happy?" [range: 1 none or almost none of the time – 4 all or almost all of the time]	4-all or almost all of the time
High energy	"Please indicate how much of the time during the past week...you had a lot of energy?" [range: 1 none or almost none of the time – 4 all or almost all of the time]	≥ 3 -most of the time

² 'Exerciser' – respondents who indicated that in the last four weeks they engaged in at least 1 session per week of any of the following exercise activities:

- short duration vigorous exercise (e.g., high intensity intervals, sprint training, cross fit);
- long duration vigorous exercise (e.g., running, cycling, swimming);
- moderate activities (e.g., walking, hiking, cycling);
- strength, weight or resistance training;
- stretching or flexibility; or,
- organised sport

³ Exercise questions – respondents were able to select multiple options within each exercise question.

In the last 4 weeks, have you undertaken any of the following physical activities?	Response options
Short duration vigorous exercise (e.g., high intensity intervals, sprint training, cross fit).	<ul style="list-style-type: none"> • I don't do this • 1-2 days per week • 3-4 days per week • 5 or more days per week
Long duration vigorous exercise (e.g., running, cycling, swimming).	
Moderate activities (e.g., walking, hiking, cycling).	
Strength, weight or resistance training.	
Stretching or flexibility.	
Organised sport.	
How often did you do these activities...	
With family, friends or colleagues	
With my team	
On my own	
With a group of people (e.g., a group class)	
With a personal trainer or instructor	
How often did these activities take in the following settings?	
Indoor sport or fitness settings	
Indoors at home	
Outdoors in built settings (e.g., streets, cycle lanes, or sports fields)	
Outdoors in natural settings (e.g., beach, bush, park)	

⁴ Exercise intensity combinations were –

Moderate only	Vigorous only	Moderate and vigorous
Moderate activities (e.g., walking, hiking, cycling).	Short duration vigorous exercise (e.g., high intensity intervals, sprint training, cross fit). OR- Long duration vigorous exercise (e.g., running, cycling, swimming). OR- Organised sport.	Moderate activities (e.g., walking, hiking, cycling).
		AND-
		Short duration vigorous exercise (e.g., high intensity intervals, sprint training, cross fit). OR- Long duration vigorous exercise (e.g., running, cycling, swimming). OR- Organised sport.
OPTIONAL-		OPTIONAL-
Stretching or flexibility. AND/OR Strength, weight or resistance training		Stretching or flexibility. AND/OR Strength, weight or resistance training