

Change in the **food environment** and measured **adiposity** in **adulthood** in the Christchurch Health and Development birth cohort, Aotearoa: A cohort study



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## 1. Food environment?

# What is food environment?

The term "food environment" refers to the collective surroundings, conditions, and factors that influence an individual's access to, choices about, and consumption of food.



Note: The pictures were generated by AI

1. Food environment?

2. Why?

# Why is this important?

- **Obesity** is an issue:
  - Around 35% of adults overweight and 11% obese worldwide
  - Around 1 in 3 adults lives with obesity in NZ.
- The causes of obesity are diverse :
  - Genetics + culture + lifestyle + **environment**
  - **Increased accessibility** to cheap, palatable, energy-dense foods
- Changes in the **food environment** particularly around unhealthy foods do not support healthy behaviours and outcomes.

1. Food environment?

2. Why?

# Why is this important?

- Little evidence on **change in** food environments.
- Little **longitudinal evidence** which can control for historical confounding.
- Few studies have **considered** both change in exposure and outcome (and movement of individuals over time).



1. Food environment?

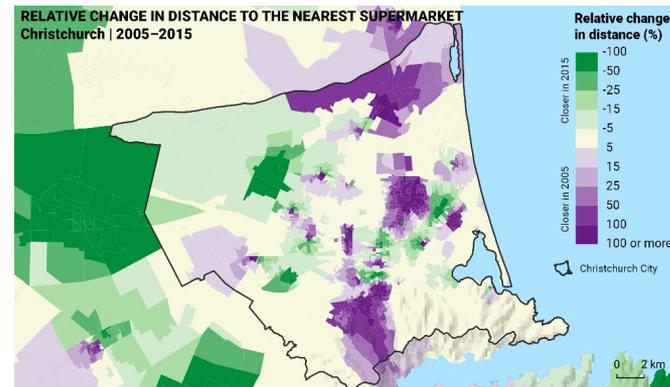
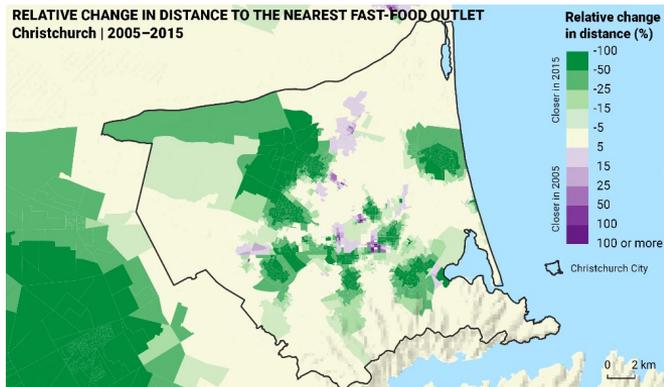
2. Why?

3. How?

# How did we do it?

## Nationwide change in the food environment from 2005 to 2015

- Major chain fast-food outlets (e.g. McDonalds)
- Large supermarkets (e.g. New World, Countdown).

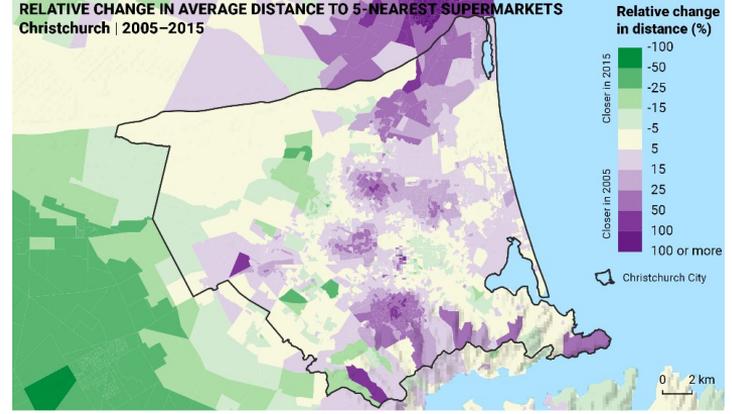
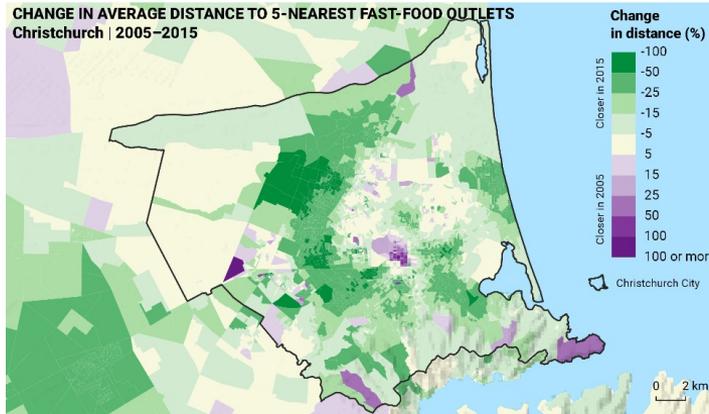
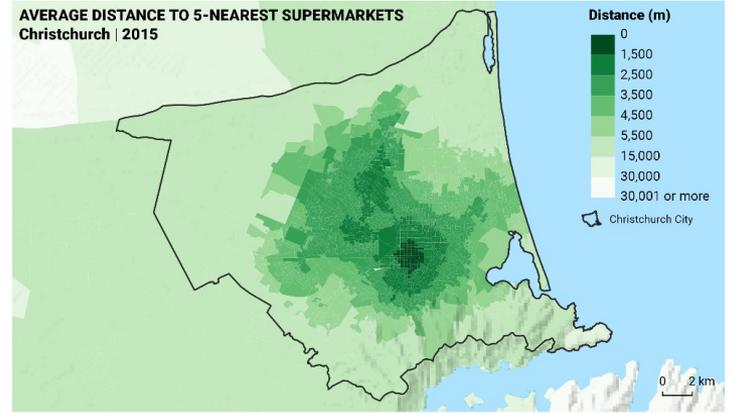
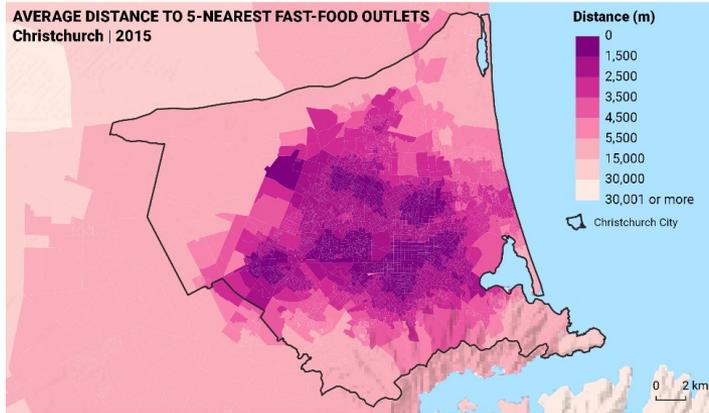


*This provides a measure of change in proximity to food outlets over time.*

# 1. Food environment?

# 2. Why?

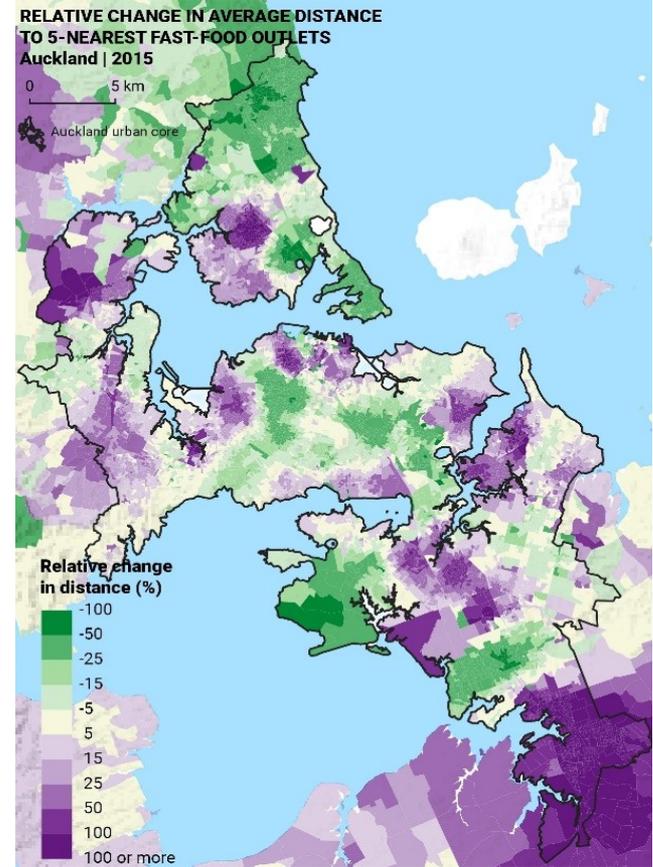
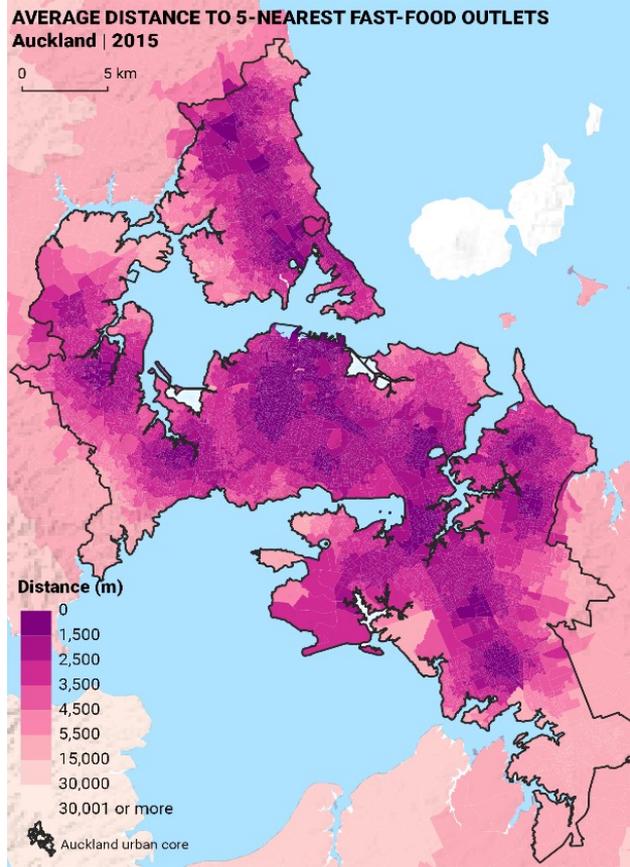
# 3. How?



1. Food environment?

2. Why?

3. How?



1. Food environment?

2. Why?

3. How?

# How did we do it?

## Christchurch Health and Development Study

- Birth cohort studied regularly from birth in 1977 to age 40 years in 2017.
- BMI and WC measured at age 30 (2007) and 40 (2017).
- Can track if individuals move house and what they are exposed to.

Change in proximity to food  
outlets from 2005 to 2015



Change in BMI  
and WC

Fully adjusted mixed effects models with random intercepts adjusting for family socioeconomic status at birth, gender, ethnicity, maternal BMI, paternal BMI and birth weight with individuals nested within current geographical areas (meshblock 2018).

1. Food environment?

2. Why?

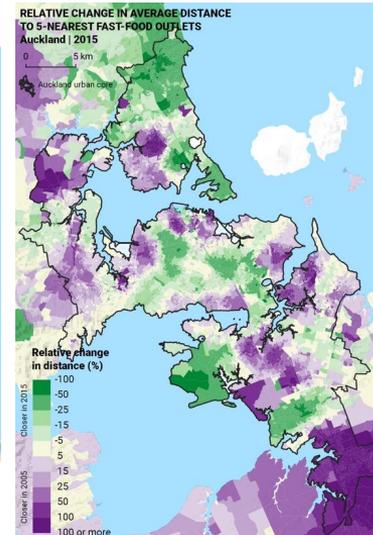
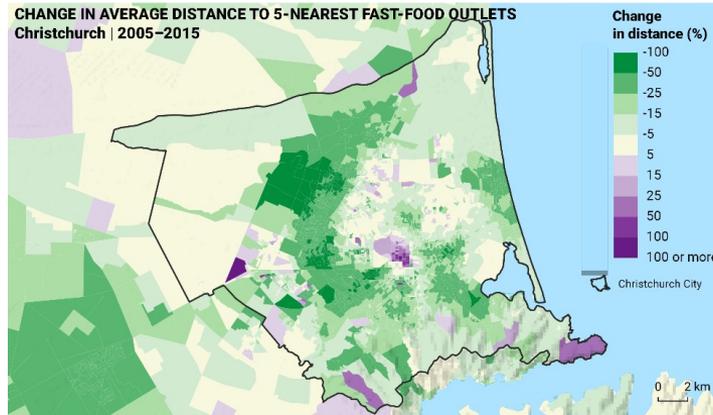
3. How?

4. What?

# What did we find?



**Generally:** cohort members who experienced change in distance (e.g., closer) to **fast-food** over time = the larger increases in BMI/WC.



1. Food environment?

2. Why?

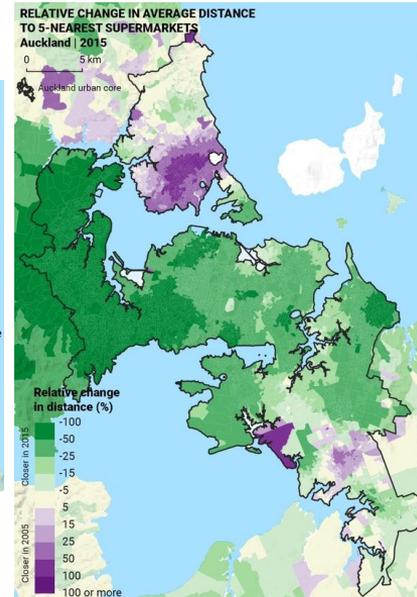
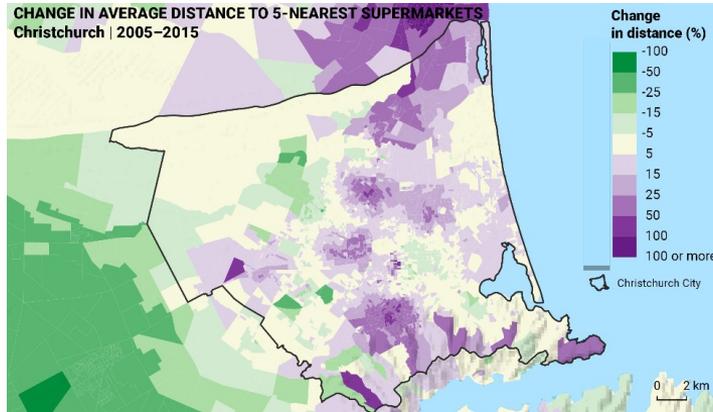
3. How?

4. What?

# What did we find?



**Generally:** cohort members who experienced change in distance (e.g., closer) to **supermarkets** over time = the smaller increases in BMI and WC.



# What did we find?

1. Food environment?

2. Why?

3. How?

4. What?

Relative percentage change in:	Fast-food			Supermarket		
	Nearest one	Nearest five	E2SFCA	Nearest one	Nearest five	ES2FCA
BMI						
WC						

Fully adjusted mixed effects models with random intercepts adjusting for family socioeconomic status at birth, ethnicity, maternal BMI, paternal BMI and birth weight with individuals nested within current geographical areas (meshblock 2018).  
E2SFCA: enhanced two-step floating catchment area.

# What did we find?

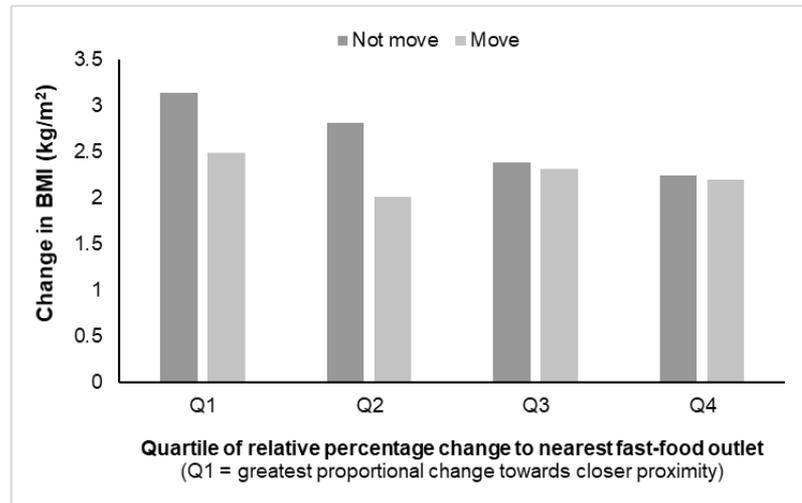
1. Food environment?

2. Why?

3. How?

4. What?

## Movement or not?



# What does this mean?

1. Food environment?

2. Why?

3. How?

4. What?

5. So what?

## Ranked importance of factors for childhood obesity

*Māori/Pacific groups identified the card “takeaways are easy to access” to be the second most important influence on child weight (Glover et al. 2019)*

### McDonald's to open four more restaurants in greater Christchurch, sparking fast food intensification concerns

Tina Law · 07:38, Feb 12 2018



STUFF

1. Food environment?

2. Why?

3. How?

4. What?

5. So what?

# Thank you Q & A

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