Do 30km/h speed limit policies contribute to healthier cities?

A mixed-methods natural experiment in Amsterdam, The Netherlands

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20mph speed limits and zones for better public health: Meta-narrative evidence synthesis☆

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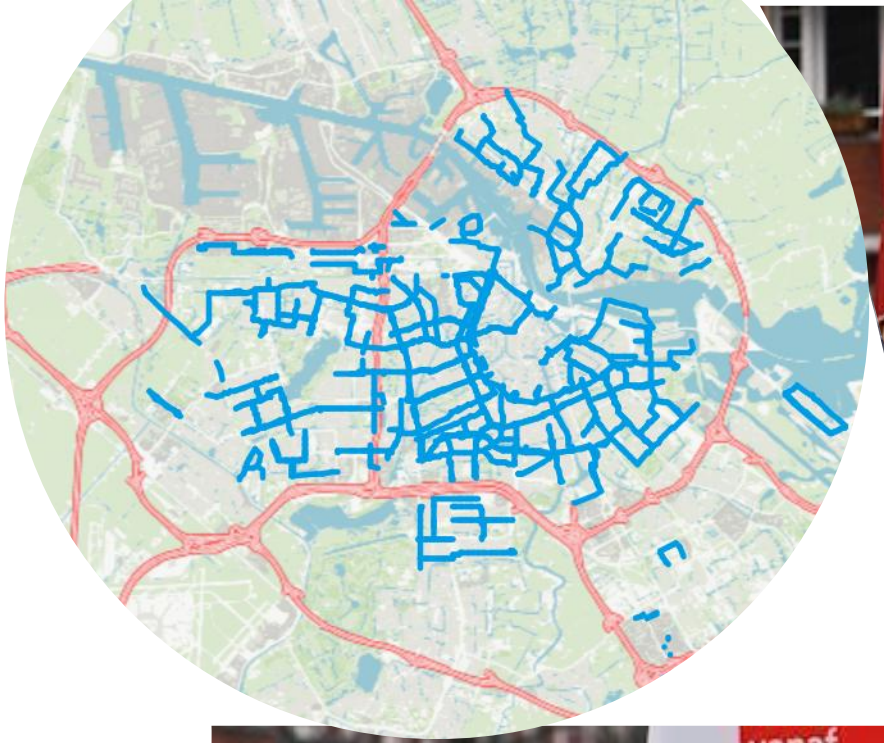
30 km/h policy in Amsterdam



- Dec 8th 2023
- Sign-based

nrc

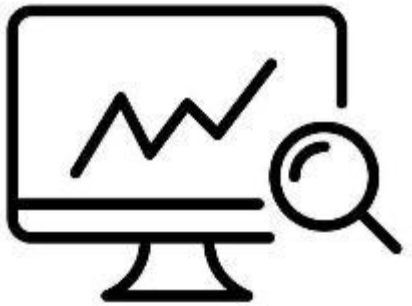
Mijn nieuws Podcasts Digitale krant

ACHTERGROND

Amsterdam maakt zich op voor de *big bang* : 30 kilometer per uur

Survey

Street observations



Secondary data

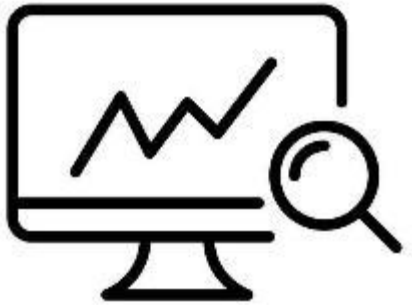
Survey

- ✓ Validated
- ✓ Easy for research team

- ✓ Selective population (participant burden)

Street observations

- ✓ Unobtrusive – no participant burden
- ✓ Can observe anyone and (almost) anywhere
- ✓ Easy to conduct

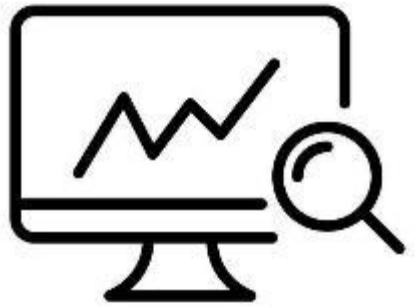


Secondary data

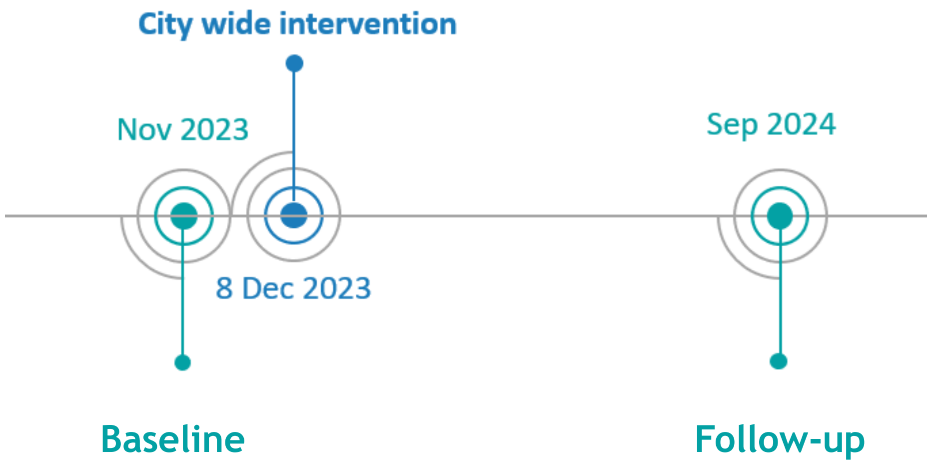
- ✓ Linkage of available data
- ✓ Representative

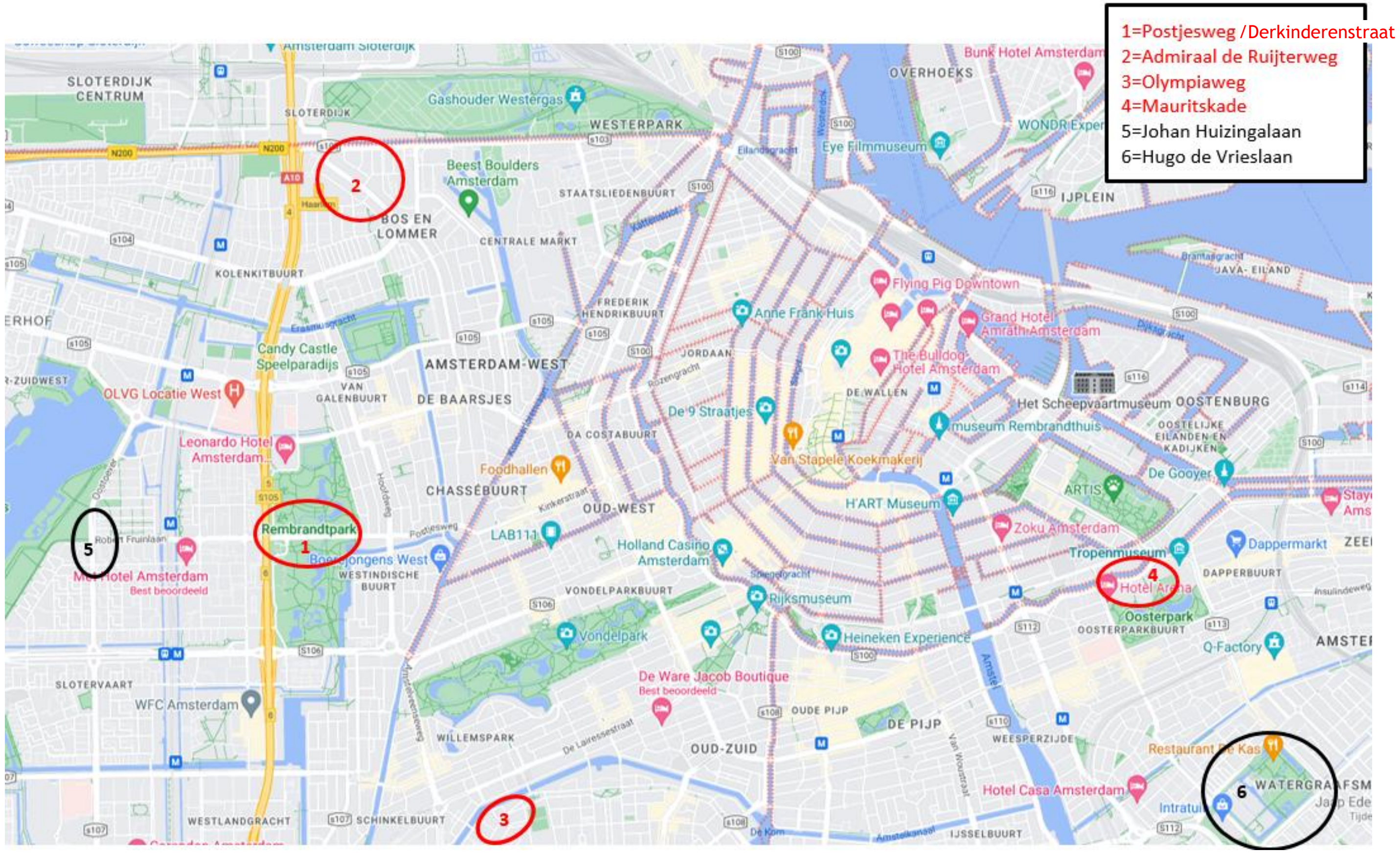
Survey

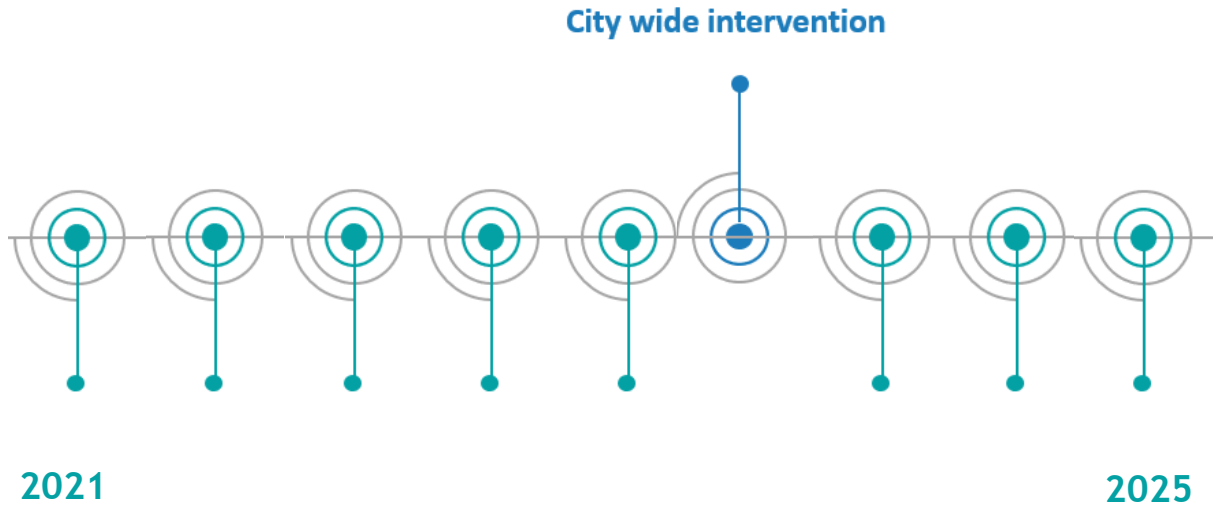
Street observations



Secondary data

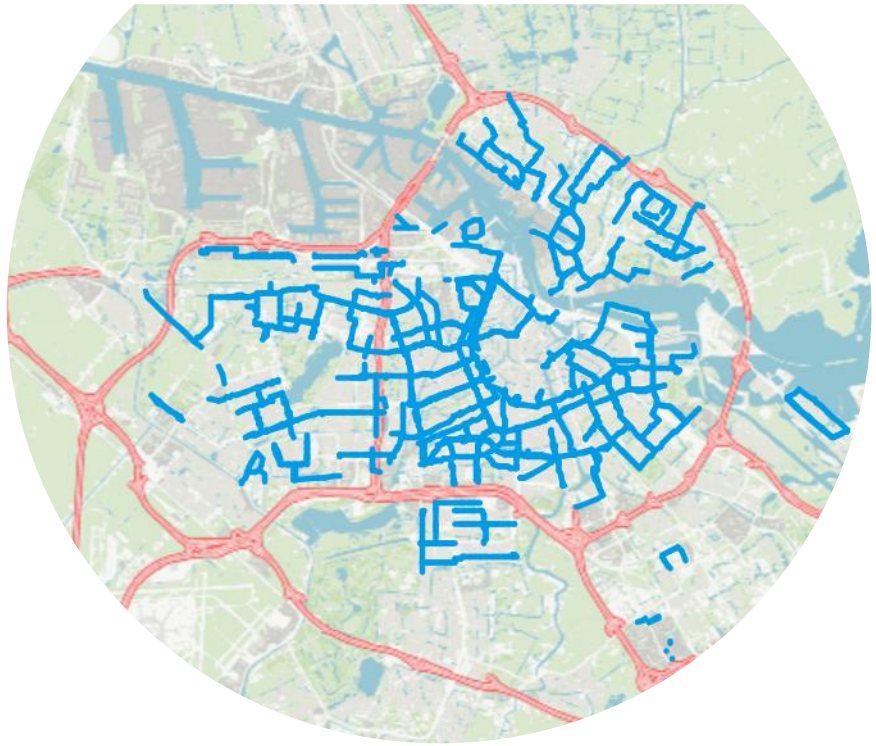

City wide intervention
Nov 2023
8 Dec 2023
Sep 2024
Baseline
Follow-up


1=Postjesweg /Derkinderenstraat
2=Admiraal de Ruijterweg
3=Olympiaweg
4=Mauritskade
5=Johan Huizingalaan
6=Hugo de Vrieslaan
1
2
3
4
5
6
SLOTERDIJK CENTRUM
WESTERPARK
OVERHOEKS
BOS EN LOMMER
KOLENKITBUURT
AMSTERDAM-WEST
DE BAARSJES
CHASSÉBUURT
OUD-WEST
OOSTENBURG
DAPPERBUURT
SLOTERVAART
OUD-ZUID
DE PIJP
WILLEMSPARK
WESTLANDGRACHT
SCHINKELBUURT
Rembrandtpark
Vondelpark
Oosterpark
Rijksmuseum
Tropenmuseum



Four-weekly measurements

40 measurement stations on intervention streets
19 measurement stations on control streets



Study population

	Baseline (n=382)		Follow-up (n = 480)	
	Control (n=100)	Intervention (n=282)	Control (n=101)	Intervention (n=379)
Male	48 (48%)	121 (43%)	47 (47%)	157 (41%)
Mean (±SD) age	54 (±16)	56 (±18)	57 (±16)	56 (±18)
Highly educated	82 (82%)	226 (80%)	76 (75%)	293 (77%)

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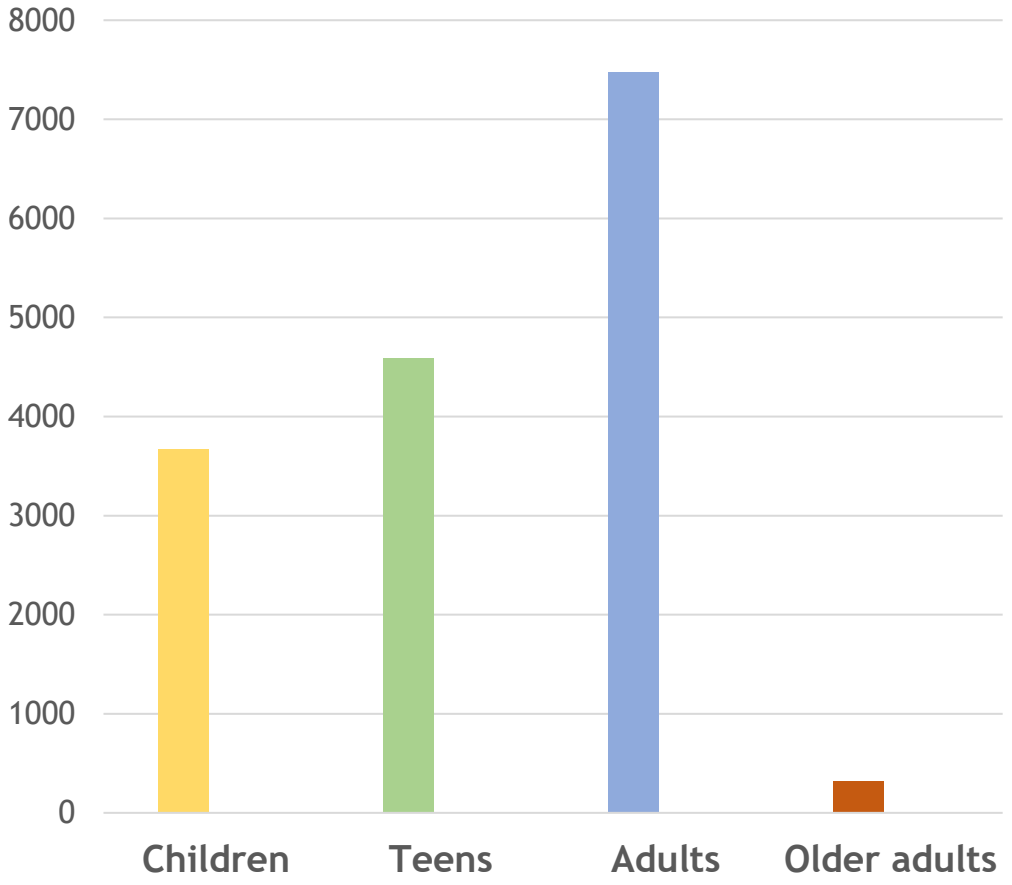
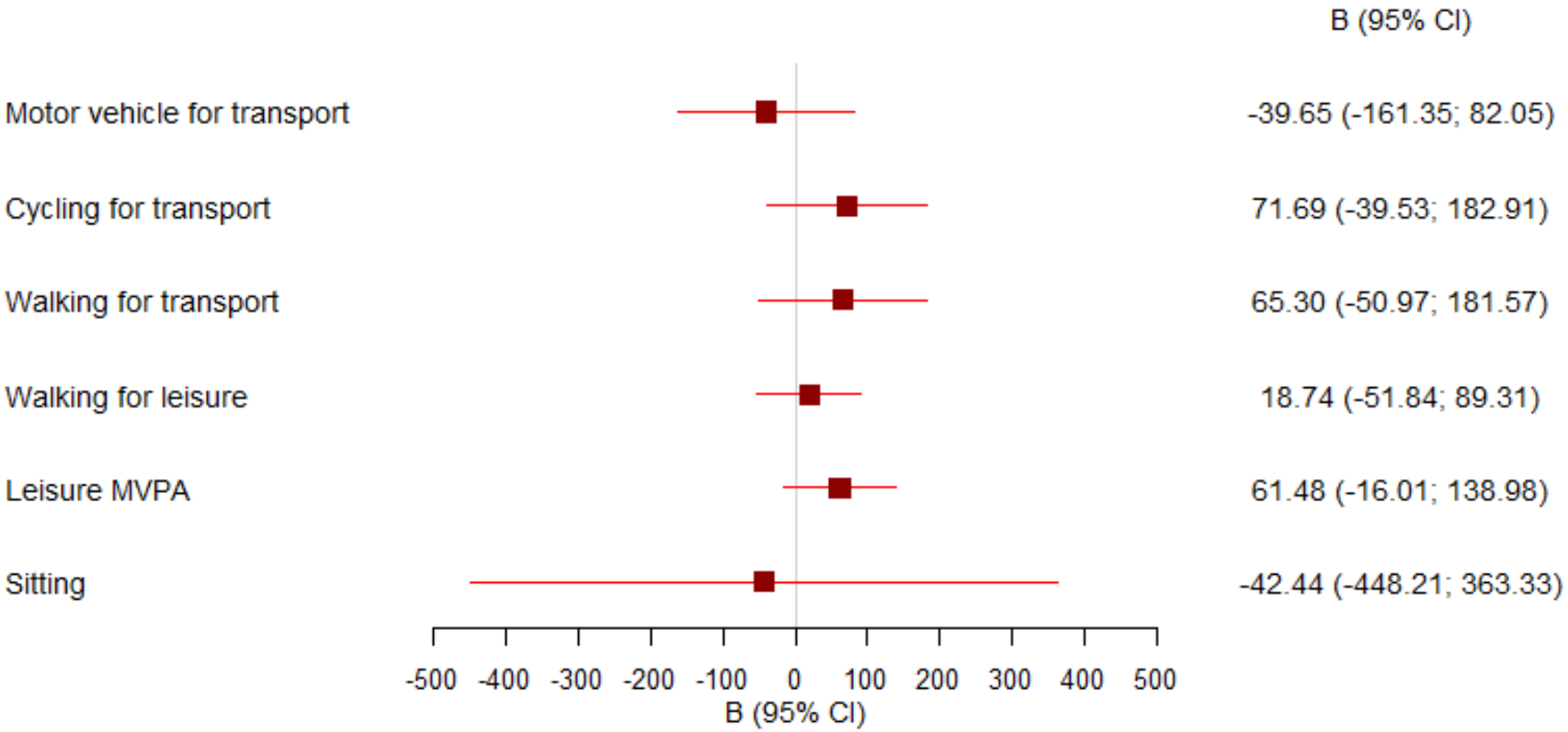
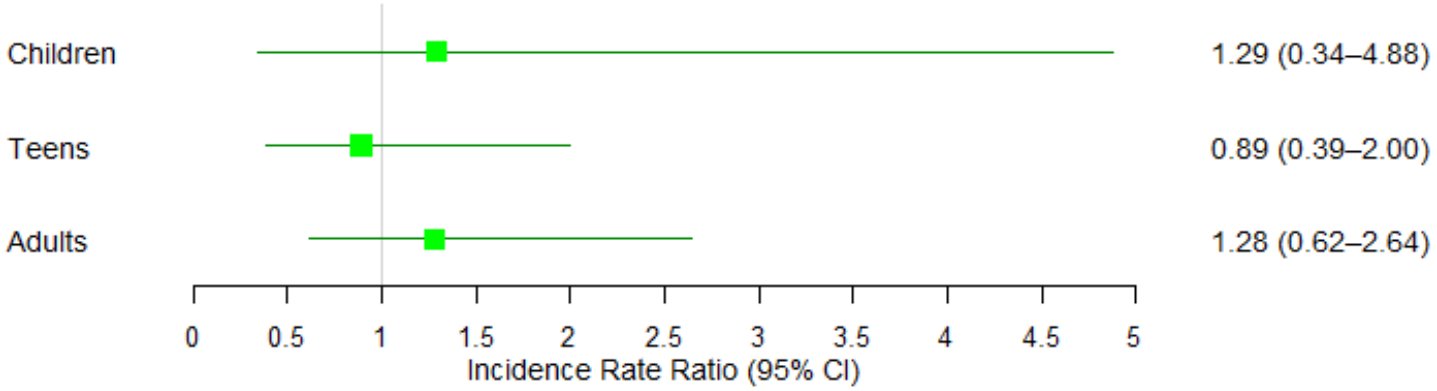
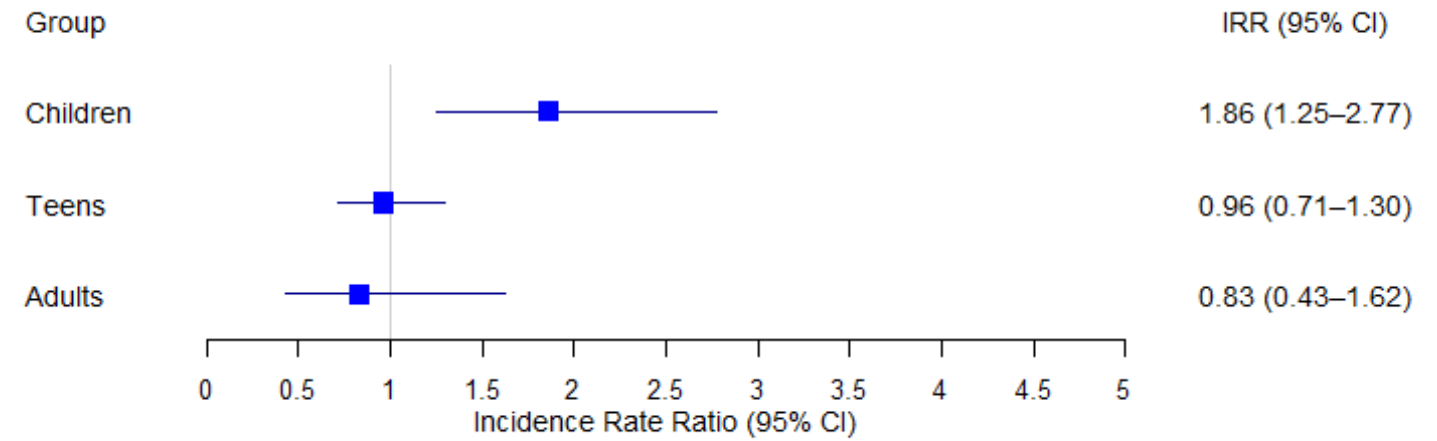


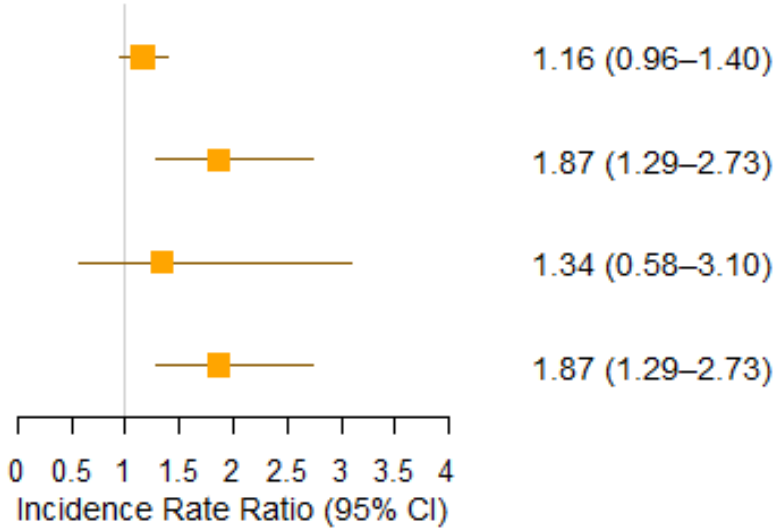
- Multiple imputation
- Multilevel difference-in-differences linear regression
  - Partially clustered data
- Adjusted for:
  - Individual level: ethnicity, work situation, education, gender, age, household size
  - Neighbourhood level: percentage property owner, average private cars per household, address density

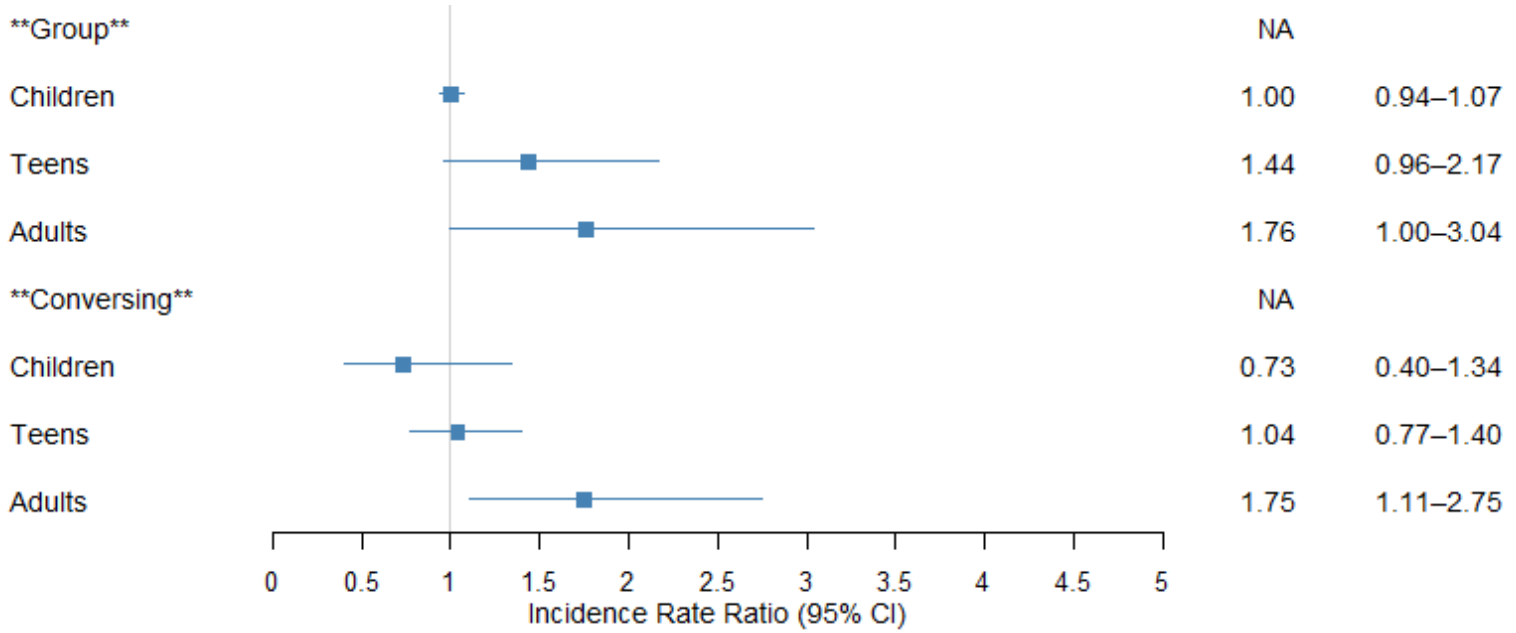




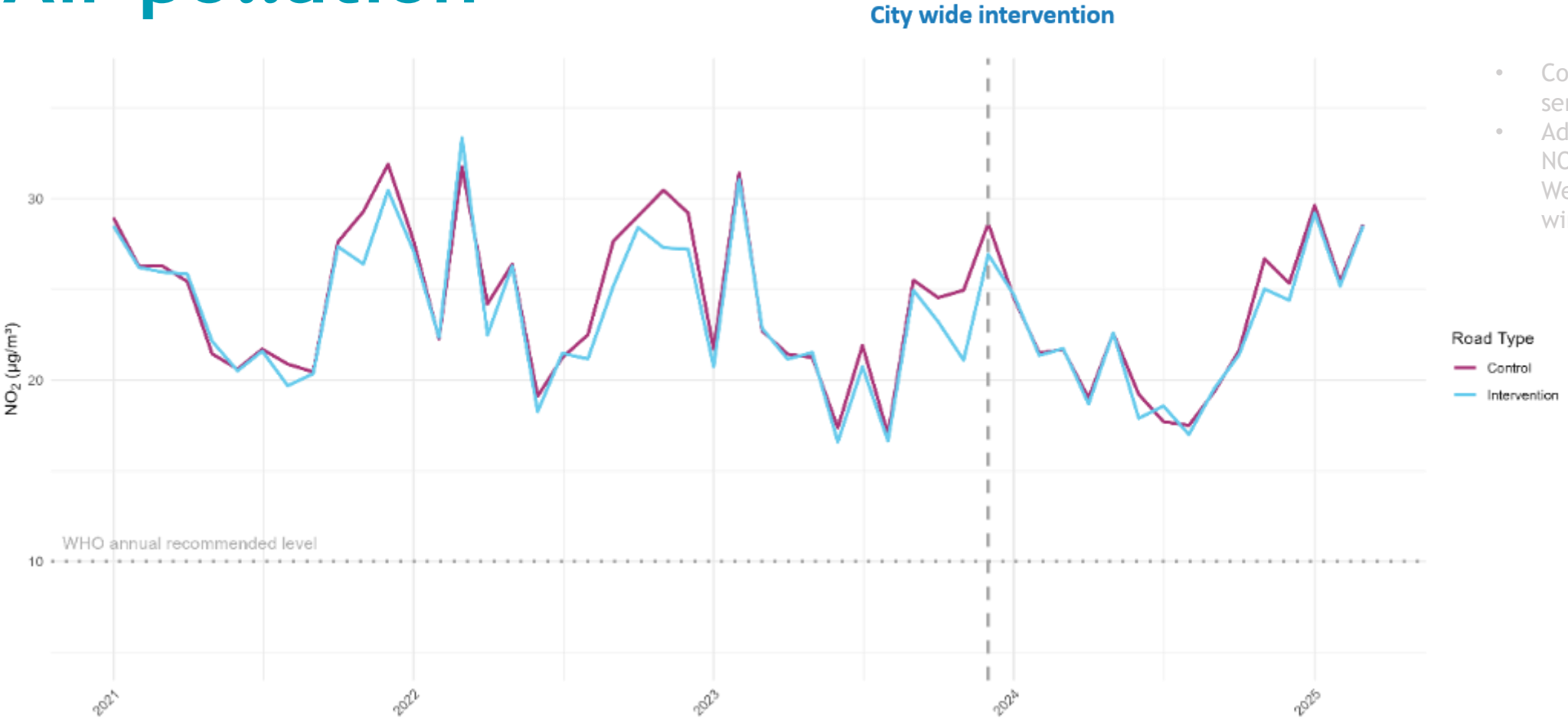


- Multilevel mixed-effects negative binomial regression models
- Difference-in-differences
- Adjusted for:
  - Day of the week, time of the day, precipitation


Group
IRR (95% CI)
Children in a cargo bike
1.16 (0.96–1.40)
Children in a child seat
1.87 (1.29–2.73)
Children wearing a helmet
1.34 (0.58–3.10)
Children walking or cycling under adult supervision
1.87 (1.29–2.73)
0 0.5 1 1.5 2 2.5 3 3.5 4
Incidence Rate Ratio (95% CI)


Group
Children
Teens
Adults
Conversing
Children
Teens
Adults
NA
1.00
0.94–1.07
1.44
0.96–2.17
1.76
1.00–3.04
NA
0.73
0.40–1.34
1.04
0.77–1.40
1.75
1.11–2.75
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
Incidence Rate Ratio (95% CI)

Air pollution



- Controlled interrupted time series
- Adjusted for: Background NO2 levels, Seasonality, Weather (temperature, windspeed, precipitation)

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Thank you for your attention!

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