

30 km/h speed limits

the effect on neighbourhood traffic safety perceptions

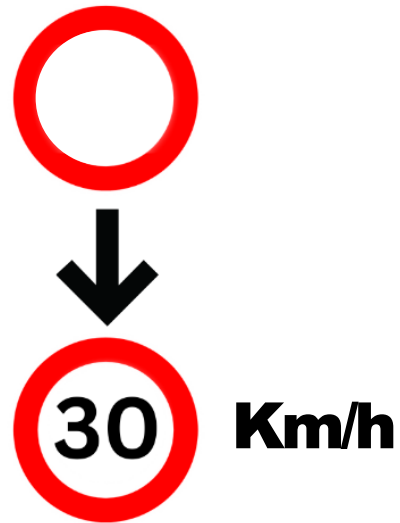


Dr. Famke Mölenberg

Erasmus Medical Center Rotterdam





REDUCING TRAFFIC SPEED IN NEIGHBOURHOODS



ITS NOT NEW!





Chapter Five - 20mph speed limits: A meta-narrative evidence synthesis of the public health evidence

Carel-Peter L. van Erpecum ^a  , Anna Bornioli ^{b c}, Claire Cleland ^d, Sarah Jones ^e, Adrian Davis ^{f g}, Nicolette R. den Braver ^h, Paul Pilkington ^e

“Clear impacts on reduced injuries, less evidence is available on wider health impacts such as changes in active travel, play, and air quality.”



How do decision-makers justify the implementation of 30km/h interventions in the Netherlands? An analysis of 47 traffic order documents

Carel-Peter L. van Erpecum ^a  , Nicolette R. den Braver ^b, Anna Bornioli ^c,
Rhoderick J. van Veldhuizen ^b, Pilar Garcia-Gomez ^a, Famke J.M. Mölenberg ^d

“Safety was the most common justification for 30 km/h. Few documents emphasized other public health benefits.”

AGGRESSIVE DRIVING

SPEEDING

COLLISIONS

PERCEIVED TRAFFIC SAFETY

BICYCLE PATH SAFETY

TRAFFIC ODOR / NOISE
ANNOYANCE

SIDEWALK SAFETY

RETROSPECTIVE STUDY: UNRAVEL WITH EXISTING DATA

What is the impact
changing speed limits from
50km/h to 30 km/h on
residents' perceptions of
traffic safety in Rotterdam,
The Netherlands?



Two administrative surveys
(N=4,968 and 5,146)



2017-2018

ROTTERDAM \neq UTRECHT

Exposure to changed speed limits

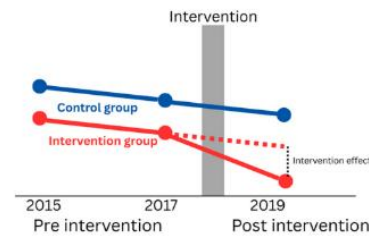
Street proximity in network distance



Street density in Euclidian buffer



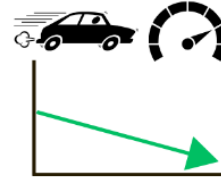
Difference-in-Differences analysis



Main findings after 30km/h implementation on 56 streets

Perceived speeding and aggressive driving

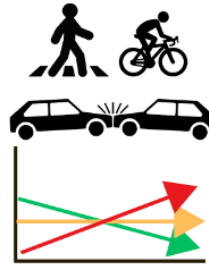
Reduced



2017-2018

Perceived sidewalk and bicycle path safety, perceived collisions

Inconclusive



Perceived traffic noise and odor annoyance

Little change



NATURAL EXPERIMENT: UNRAVEL WITH NEW DATA

Rotterdam and Amsterdam





Journal of Transport & Health

Volume 42, June 2025, 102042



Thirty km/h speed limits for better public health: Study protocol of a natural experiment in Rotterdam, the Netherlands

Carel-Peter L. van Erpecum^a  , Anna Bornioli^{b 1}, Pilar García-Gómez^a,
Famke J.M. Mölenberg^c, Nicolette R. den Braver^d

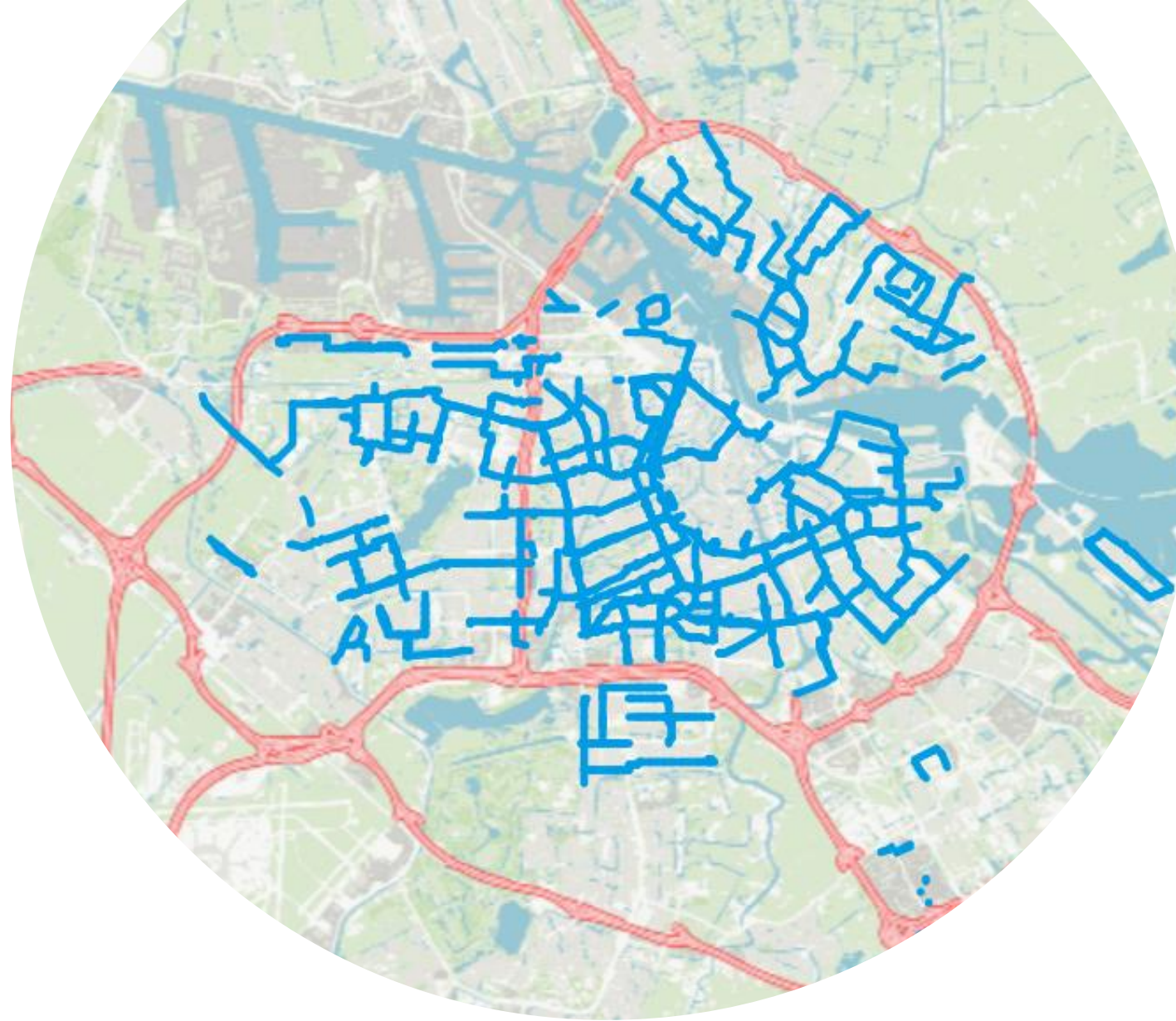
Rotterdam

- Sept 2023 - May 2024
- Size: 7 streets
- Where: Central areas
- With physical calming measures to improve adherence

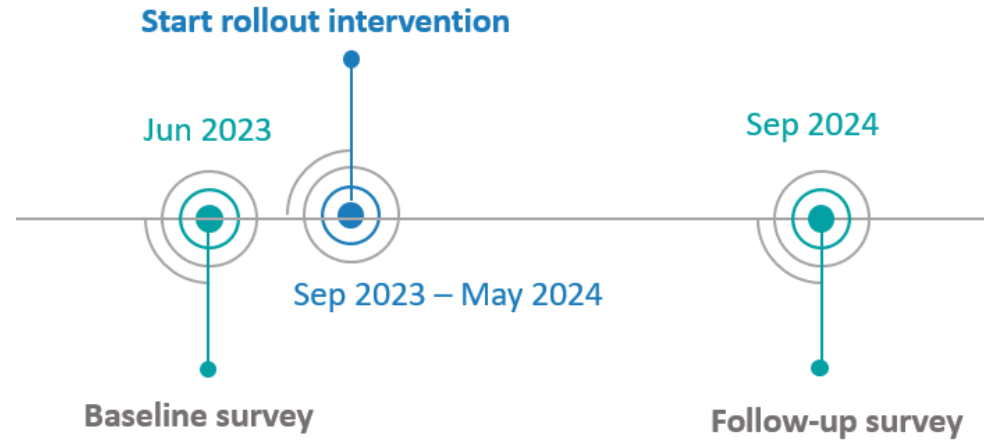


Amsterdam

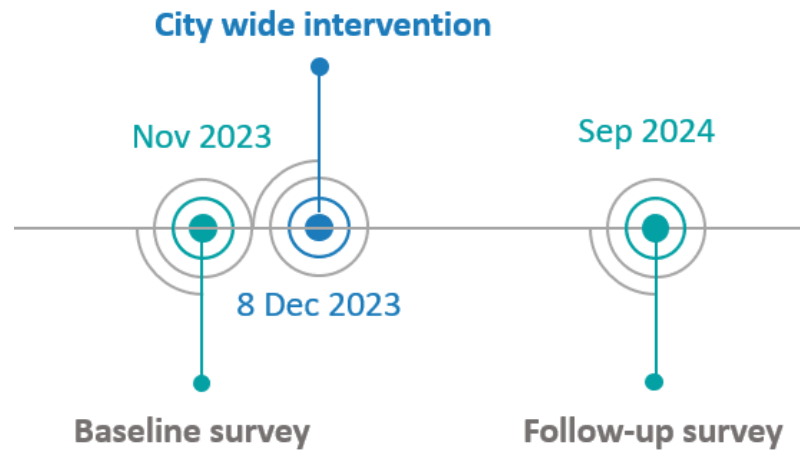
- **One night! Dec 8th 2023**
- 270 km road surface
- 80% of all 50km/h streets
- Sign-based
- Enforcement after 6 months
- Large campaign



Rotterdam



Amsterdam



Rotterdam

scale 1-5

Traffic safety while walking

Traffic safety while cycling

Perception of safe child play

Children can cross street safely

Children can cycle safely

scale 1-3

Frequency of aggressive driving behaviour

Frequency of speeding

Frequency of collisions

NA

NA- NA

0.08

-0.18-0.34

-0.05

-0.32-0.21

-0.15

-0.50-0.20

-0.15

-0.47-0.16

-0.19

-0.49-0.12

NA

NA- NA

0.00

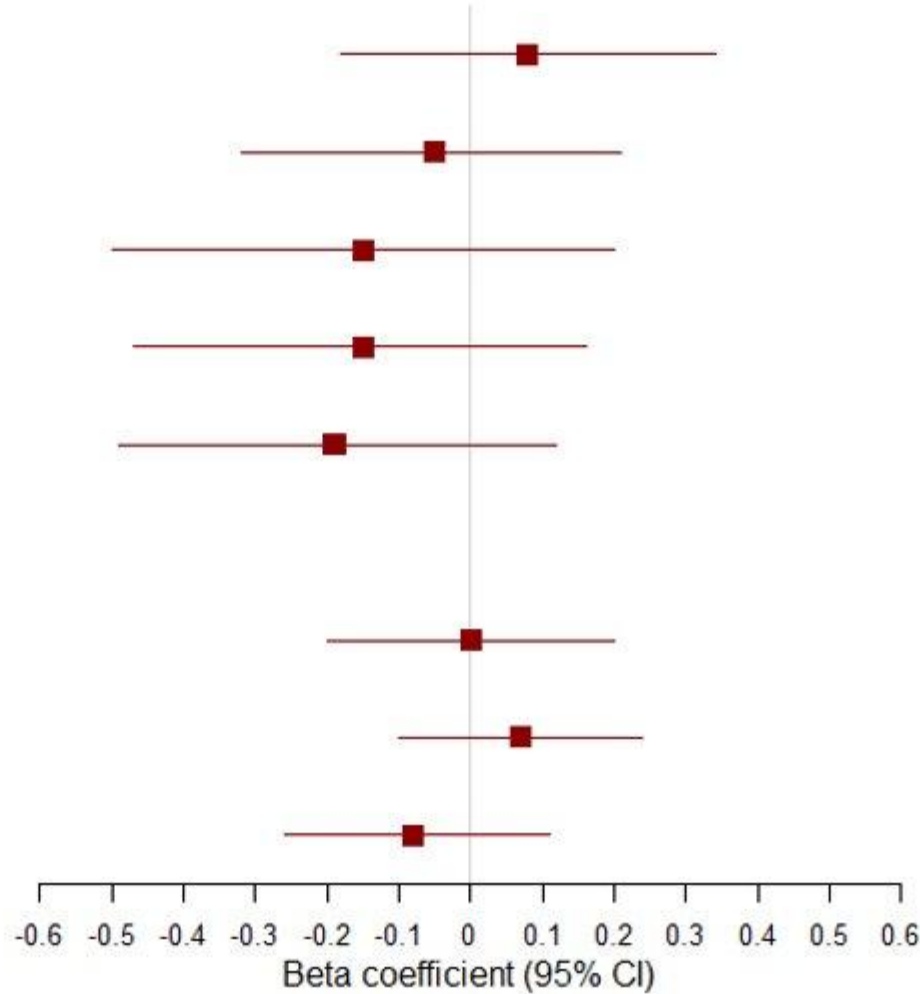
-0.20-0.20

0.07

-0.10-0.24

-0.08

-0.26-0.11



Amsterdam

Scale 1-5

Traffic safety while walking

Traffic safety while cycling

Perception of safe child play

Children can cross street safely

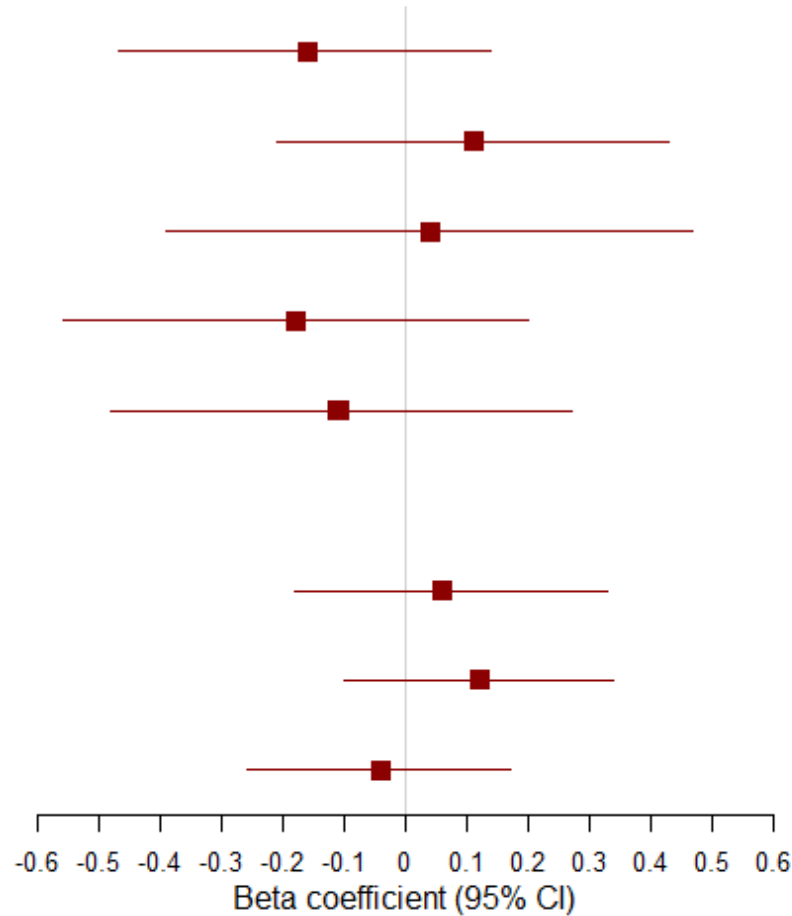
Children can cycle safely

Scale 1-3

Frequency of aggressive driving behaviour

Frequency of speeding

Frequency of collisions



NA

NA- NA

-0.16

-0.47-0.14

0.11

-0.21-0.43

0.04

-0.39-0.47

-0.18

-0.56-0.20

-0.11

-0.48-0.27

NA

NA- NA

0.06

-0.18-0.33

0.12

-0.10-0.34

-0.04

-0.26-0.17

Beta coefficient (95% CI)

NO CONSISTENT PATTERNS

One year follow-up

Highly educated sample

City-wide vs selected streets

STAY CONNECTED



Dr. Famke Mölenberg

f.molenberg@erasmusmc.nl

With a special thanks to:

Nicole den Braver

Anna Bornioli

Carel-Peter van Erpecum

Fleur Heuvelman

Jack Benton

Emma Twait

Joline Beulens

Pilar Garcia Gomez

And all participants of the studies!

STAY TUNED for the next presentation of dr. Nicole den Braver