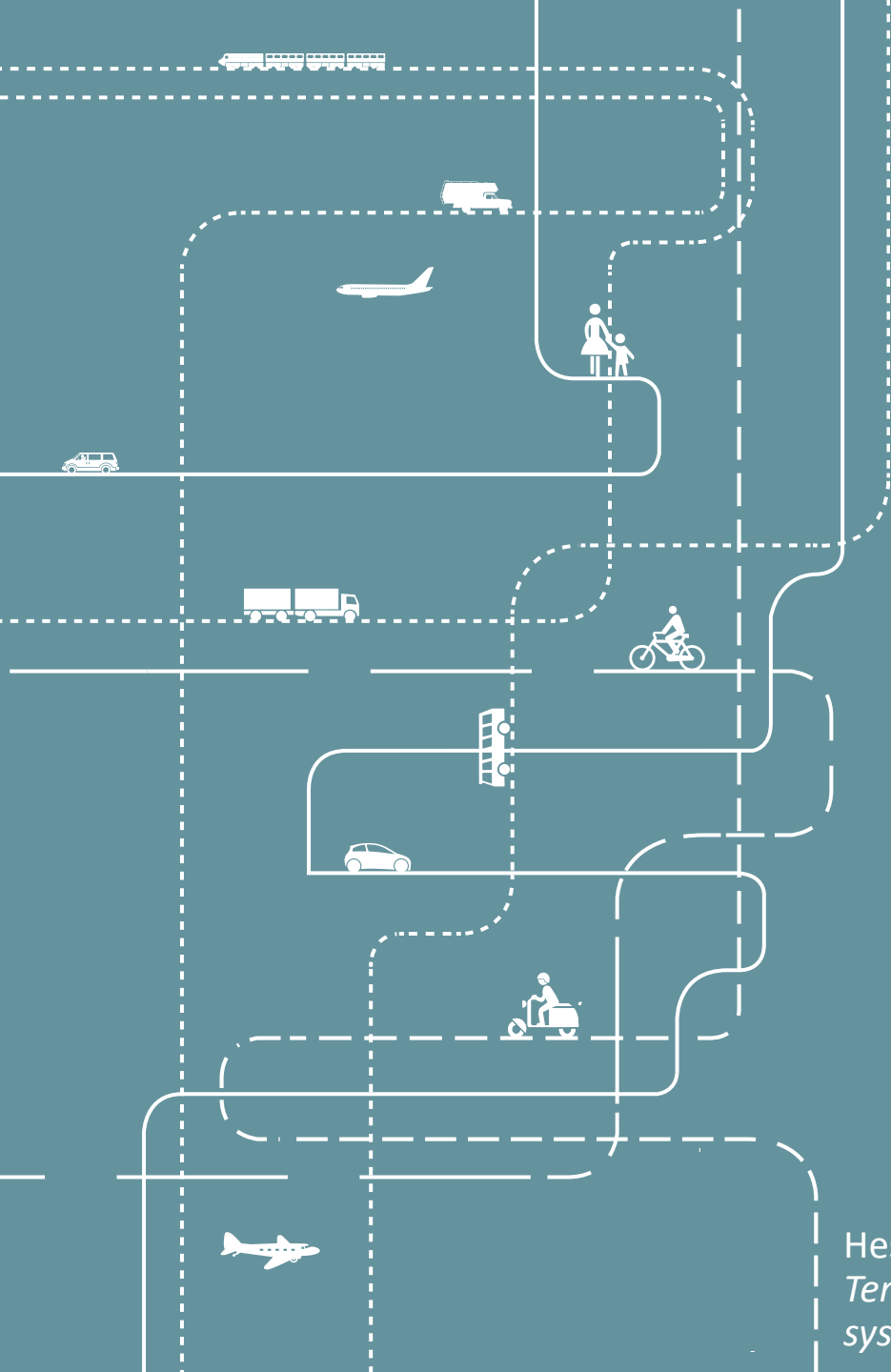




Cycling and pedestrian accidents in infrastructure transitions and roadworks

NVF, 17.09.2026

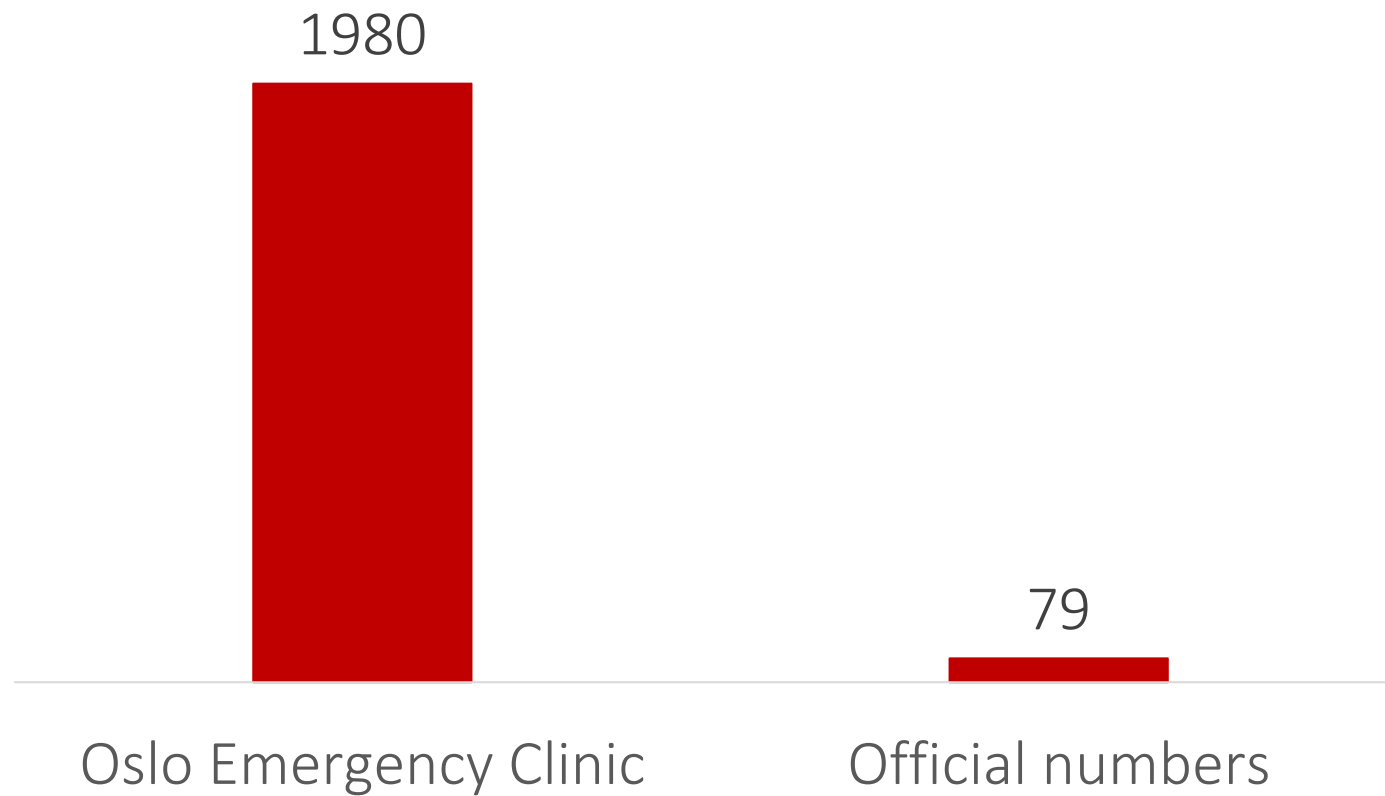
Ingeborg S. Hesjevoll

Researcher, Institute of Transport Economics

Hesjevoll, I. S., Ingebrigtsen, R., Bjørnskau, T., & Karlsen, K. (2026).
Temaanalyse av sykkel- og fotgjengerulykker: Ulykker i forbindelse med systemskifter og arbeid på og ved vei (TØI-report 2142/2026).

tøi

Bicyclists injured in the Oslo traffic 2023



Extensive and systematic underreporting

- Accidents with bicycles, e-scooters and on foot – a bigger problem than we think
- Single accidents are not registered
- Where do the accidents occur?
- Why do the accidents happen?
- What countermeasures are needed and where?



- Registration period: May 2024 – ongoing
- Bicyclists + e-scooter riders + pedestrians
- Many cities/counties/municipalities
- Geolocation of accidents – map, street view and detailed descriptions of mechanisms
- Aim: find hot spots and implement safety measures



Have you been injured on foot, on a bicycle, on an e-scooter, etc.?

Skadelegevakten

Participate here:
Scan the QR code or
go to this link:
www.toi.no/cywalk/oslo



Many accidents among pedestrians
and cyclists are never registered.

By telling about how your accident
happened, you can contribute to a
research project to prevent injuries.

Thank you for contributing!

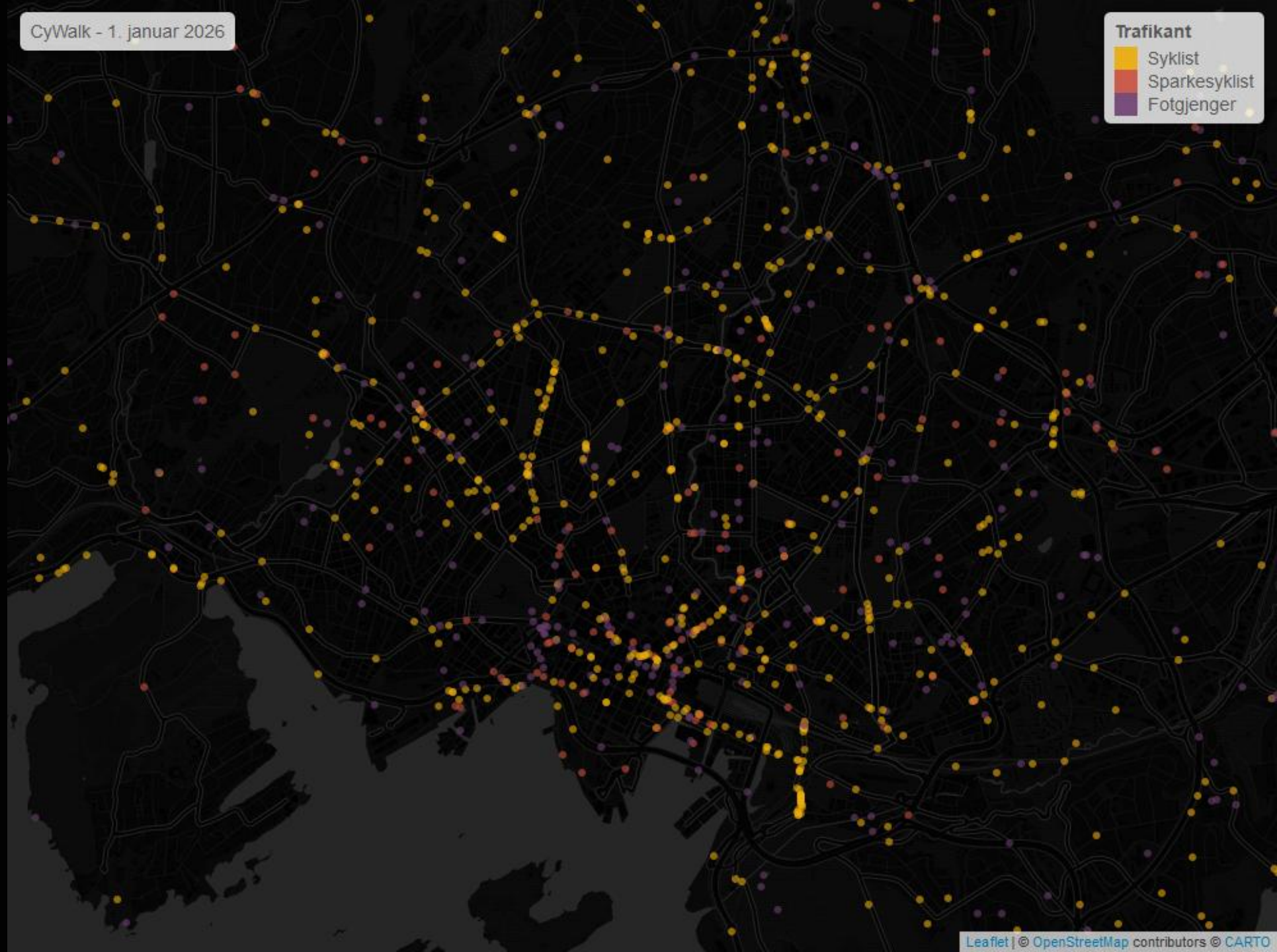


Funding:
Norwegian research council,
municipalities and counties, NPRA

CyWalk - 1. januar 2026

Trafikant

- Syklist
- Sparkesyklist
- Fotgjenger



Thematic analysis: What did we look for?

Analysis period: 1 May 2024–1 Nov 2025

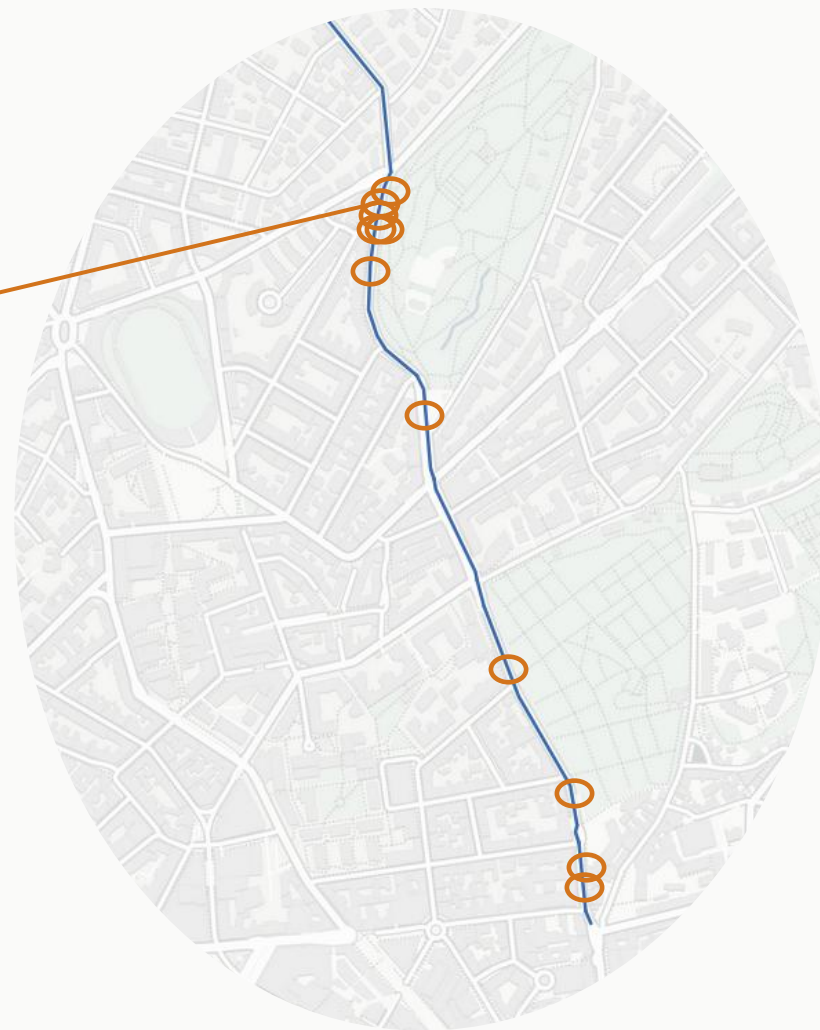
«System transitions»

- **Intersections and roundabouts:** 272 bicycle/e-scooter accidents; 45% single accidents.
- **Raised bicycle lanes** in Oslo: 22 accidents near raised lanes; 15 related single accidents.
- Also screened: Pedestrian crossings, endings of cycle lanes.

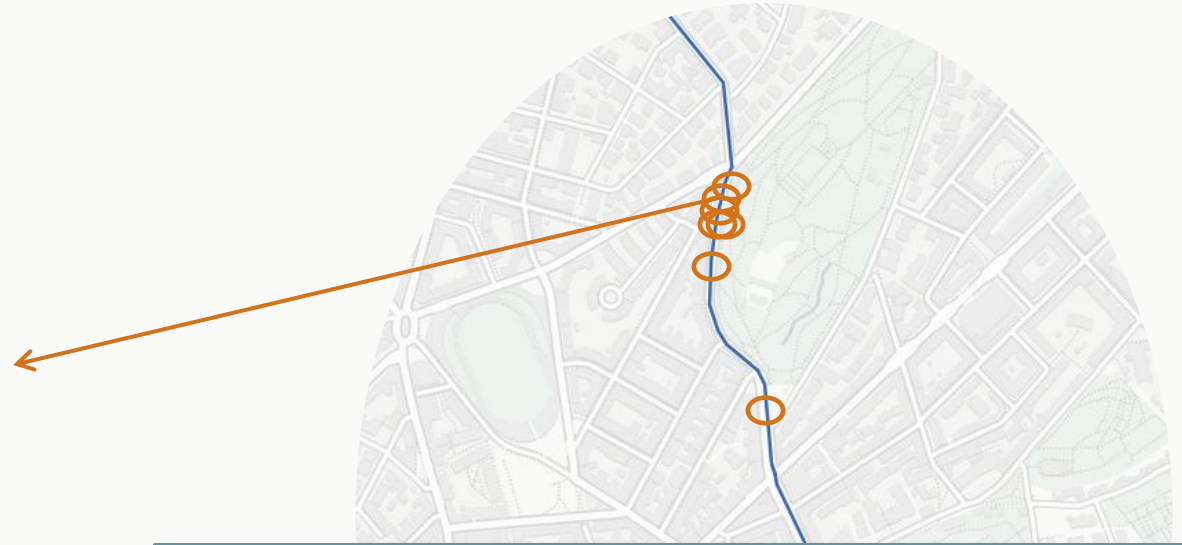
Accidents related to roadworks, construction

- 133 accidents identified.
- 108 were single accidents
- Typical factors: temporary edges, cables, metal plates, loose/uneven/slippery surfaces, obstacles, narrowed space and rerouting

Raised bicycle lanes, Ullevålsveien



Raised bicycle lanes, Ullevålsveien



When I was about to turn onto the newly built cycle path, my front wheel slipped on the freshly laid curb.

I came to as four guys were picking me up and calling 113 (emergency services).

The curb was the cause.

Raised bicycle lanes

“[...] had to move out into the carriageway because the cycle lane was blocked by a parked car, a crossing bus and a wheelchair user. [...] when I was moving back into the cycle lane I **did not see the kerb until it was too late**. I hit the kerb at too shallow an angle and fell [...].”

The bike lane went from being separated from driving lane by markings, to being raised with a very high kerb. **It was the change which came suddenly and without warning** and caused me to fall [...] What's causing accidents is the sudden change in «language» [...]

I was riding in the carriageway. I slowed down for a red light. I chose to turn up onto a newly built cycle lane. There was a kerb between the red cycle lane and the road. Two metres further ahead [...], the road and cycle lane merge without a kerb. I went over the handlebars and hit the ground.

“The cycle lane was raised, and it **was not clearly marked** that it was raised. I moved over to give someone else more space, and then [one wheel of] the e-scooter slipped off the cycle lane because of the edge.”

I passed another cyclist who was riding slowly and taking up the whole cycle lane. To pass, I moved out into the road, and when I tried to move back, the edge of the cycle lane was higher than the road. **I did not notice this in time**. I crashed into the edge when I tried to get back into the cycle lane [because there was a lot of traffic].

Road works I: «Small» physical hazards

- Unexpectedly high/poorly visible edges because asphalt is milled or missing;
- Cables, pipes and cable protectors across the route;
- Wet metal plates;
- Gravel, sand, mud, holes and uneven temporary surfaces.

«The street lights didn't work there. They are improving the sidewalk, it had no asphalt»

«I made a turn on some steel plate on the ground, I didn't know they get slippery when it rains.»

«A sign fell down in front of me, I got hit in the head by a road sign.»

«Usually there's no sand in the road at this location»

Road works II: Forced adaptation and reduced margins

The altered environment forces path changes and reduces available space and time to react.

Forced detours; Narrow space; Crossing kerbs

Traffic, route finding and surface conditions all require attention

«Stepped on drainage pipe in pedestrian crossing , as I was checking for cars, so I didn't see it»

«The sidewalk was closed by construction fences. I was run over a few seconds after entering the road».

«Suddenly the sidewalk was fenced off [...] so I had to cross the tram tracks again. This time it didn't go well»

Intersections: Permanent infrastructure shows similar patterns.

272 accidents, 45% single accidents

“... right where you are supposed to stop if the light is red, there are huge potholes. It was dark/dusk and there was no lighting, so I did not see the potholes. I was also looking towards the intersection to check that the drivers were obeying their red light. I hit the potholes and lost control of the bicycle.”

«Slowed down before the intersection, looked left and right, so I didn't see the tennis ball sized stone in the road.»

What links the accidents?

Unforgiving physical features

*kerbs · edges · cables · plates · holes · gravel ·
rails*

Limited margins for dealing with them

*traffic · manoeuvring · route choice · other road
users*

Less time, space and attention to detect, react
and recover



Temaanalyse av sykkel- og fotgjengerulykker

Ulykker i forbindelse med systemskifter og arbeid på og ved vei

Ingeborg Storesund Hesjevoll, Rikke Ingebrigtsen,
Torkel Bjørnskau, Katrine Karlsen

2142/2026



Ulykker blant fotgjengere, syklister og sparkesyklister

Resultater fra fylker og kommuner etter 24 måneder med ulykkesregistrering i CyWalk

Torkel Bjørnskau, Ingeborg Storesund Hesjevoll,
Rikke Ingebrigtsen, Katrine Karlsen, Hanne Beate Sundfør

2176/2026

Questions? ish@toi.no

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Further reading:

Registrering av ulykker med sykkel, elsparkesykkel og til fots: Dokumentasjonsrapport for prosjektene ReCyCLIST og CyWalk Hesjevoll, I. S., Ingebrigtsen, R., Bjørnskau, T., & Karlsen, K. (2025). (TØI-rapport 2105/2025).

Temaanalyse av sykkel- og fotgjengerulykker: Ulykker i forbindelse med systemskifter og arbeid på og ved vei Hesjevoll, I. S., Ingebrigtsen, R., Bjørnskau, T., & Karlsen, K. (2026). (TØI-rapport 2142/2026).

Ulykker blant fotgjengere, syklister og sparkesyklister: Resultater fra fylker og kommuner etter 24 måneder med ulykkesregistrering i CyWalk. Bjørnskau, T., Hesjevoll, I. S., Ingebrigtsen, R., Karlsen, K., & Sundfør, H. B. (2026). (TØI-rapport 2176/2026).

What characterizes bicycle and e-scooter accidents not included in official accident statistics? Lessons learned from the ReCyCLIST project in Agder, Norway Bjørnskau, T., Hesjevoll, I. S., Ingebrigtsen, R., Karlsen, K., Pokorný, P., Sundfør, H. B., Weyde, K. V., & Mjåland, O. (2025). *Traffic Safety Research*, 9, e000108. <https://doi.org/10.55329/prfq7240>

Bjørnskau, T., Hesjevoll, I. S., Ingebrigtsen, R., Karlsen, K., Weyde, K. V., & Sundfør, H. B. (2026, April 15–17). ***The missing crashes: How geolocated hospital data reveal hidden threats to cyclists and pedestrians*** [Conference paper]. 8th IRTAD International Conference: Better Road Safety Data for Better Safety Performance, Athens, Greece.

Selected other publications from related ReCyCLIST project:

Hesjevoll, I. S., Bjørnskau, T., & Røise, O. (2026, April 15–17). *When police and clinical severity diverge: Injury patterns and implications for Norway's transition to AIS-based serious-injury monitoring* [Conference paper]. 8th IRTAD International Conference: Better Road Safety Data for Better Safety Performance, Athens, Greece.

Mjåland, O., Hesjevoll, I. S., Bjørnskau, T., Røise, O., & Garratt, A. M. (2026). Clinical and patient-reported outcomes for bicycle and micro-mobility accidents: A prospective study with 12-month injury follow-up. *Injury*. Advance online publication. <https://doi.org/10.1016/j.injury.2026.113705>

Bere, E. T., Christiansen, S. T. G., Kamaleri, Y. B., Ohm, E., Hesjevoll, I. S., Bjørnskau, T., & Røise, O. (in press). Odds of sickness absence and disability pension after bicycle injuries: A Norwegian nationwide register study. *Journal of Safety Research*.