Introduction

- What factors make people with low vision decide to cycle or not to cycle?
- How do cyclists with low vision compensate for loss of visual acuity or visual field?

Is it safe for people with low vision to ride a bicycle in regular traffic? At present, no evidence-based data are available to answer this question. The research project Safe Cycling aims to provide the first steps towards evidence-based guidelines for good training and advice of visually challenged cyclists.

Part 1: Delphi study (in progress)
Goal: to reach consensus on what functions and issues are highly relevant for safe cycling with low vision.

First round
Forty-six experts on cycling and vision answered several open-ended questions. For example:

- What are the most important visual impairments that cause a decrease in bicycle usage amongst people with low vision?
- What non-visual factors affect cycling behaviour of people with low vision?

Second round
Same expert group evaluates and ranks all given suggestions. → Consensus.

Part 2: Online survey (fall 2015)
Goal: to find out what problems cyclists with a visual impairment experience and why some visually challenged people give up cycling.

- Visually impaired cyclists versus people with low vision who ceased cycling.
- Also assesses the influence of cognitive, neurological, and motor impairment.

Part 3: Naturalistic Cycling (summer 2016)
Goal: to determine the effects of low visual acuity and visual field impairments on lane position and speed.

- GPS camera.
- Two weeks of regular cycling behaviour.
- Speed, lane position, critical situations, etc.

Part 4: E-bike Experiment (summer 2016)
Goal: to compare the cycling behaviour of people with low vision on a regular bicycle and a pedal supported bicycle (E-bike) in order to determine whether they ride with adapted speed and lane positioning.

- Twice a fixed route twice (E-bike versus regular bicycle).
- Data collection by GPS camera (see part 3).

Literature