

## Protecting or harming oneself: Options of older cyclists to cycle safely

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### ABSTRACT

We identified personal conditions and behaviour which are associated with a higher probability that an older cyclist is involved in a bicycle crash. 317 cyclists from medium sized cities in Saxony and Saxony-Anhalt participated in the study, they were 60 to 88 years old, and most of them used their bike regularly. The reported number of bicycle crashes, collisions and single bike crashes, after the 59<sup>th</sup> birthday – absolute and per year – was used as a measure of crash involvement. Contrary to our expectation, performance in a cycle course showed no consistent correlation with crashes. Crashes were unrelated to assessed physical fitness and to reported physical difficulties. Higher correlations with crashes were found with non-compliance with traffic rules (no stop at stop signs ( $r = .18$  with number of crashes per year), running red lights, cycling on the footpath), with exposure to potentially harmful conditions (ice and snow, bad surfaces) and lack of compensation in these conditions (switch on light in fog, disregard surface quality in the dark) and dual tasks (carrying things).

Furthermore, we were able to identify two small groups of cyclists with a very high probability of a bike crash: One group are cyclists who have a hearing aid and switch it aid off when they go outside ( $r = .48$  with number of crashes per year in the subgroup of 17 persons with a hearing aid) or when cycling. This replicates the results of a former study [1] and shows that it is necessary to investigate the role of hearing for safe cycling more closely. The second group with a high accident probability are cyclists who stopped driving a car because a doctor advised them to do so ( $r = .49$  with number of crashes per year in the subgroup of 47 persons who stopped driving).

**Keywords:** cyclists, accidents, traffic rules, physical problems, compensation.

### REFERENCES

- [1] C. Hagemeister and A. Tegen-Klebingat, *Fahrgewohnheiten älterer Radfahrerinnen und Radfahrer [Cycling habits of older cyclists]*, TÜV Media, Köln, 2011.