



# Sport Cycling Crashes on Public Roads, the Influence of Bunch Riding and Experience

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# What is the issue?

- About 600.000 Dutch sport cyclists (18 years and older)
- Mainly men (83%)
- Mean age is 42 years
- Mean annual cycling distance: 3000 km on public roads
- Injuries (ER) increased from about 2000 (average 2007-2010) to 4200 in 2012.
- Lack of scientific research related to sport cycling safety on public roads

# Aim of the study

- Identifying risk factors for sport cycling crashes on public roads.
- Question
  - What is the influence of:
    - Bunch riding,
    - Experience,
    - Competitivenesson crash involvement among male sport cyclists?

# Methods

- Sample of 2625 Dutch sports cyclists
  - Members of the Dutch Tour Cycling Union
  - 63% filed an indemnity insurance claim related to their bike in 2013
- Email invitation: a hyperlink to a questionnaire
  - Self reported: frequent bunch riding, experience (years), competitive attitude, age, sex, distance, crash involvement/attributes.

# Results

- Response 28% (N=744) male sport cyclists
- Mean age is: 52.7
- Bunch riders: 72.6%
- Experience:
  - < 3 years 5.2%
  - 3-10 years 34.7%
  - >10 years 60.1%
- Mean distance: 5500 km
- Competitive: 32.7%

# Types of sport cycling crashes by (non-)bunch riders

		Bunch rider:	
		Yes	No
		N (%)	N (%)
<b>Crash type:</b>			
	Bunch riding crash	<b>188 (76.4)</b>	25 (37.3)
	Non-bunch riding crash	58 (23.6)	<b>42 (62.5)</b>
Total	(N= 313; 100%)	246(78.6%)	67 (21.4%)

# Types of sport cycling crashes by (non-)bunch riders

		Bunch rider:	
		Yes N (%)	No N (%)
<b>Collision with:</b>			
	Sport cyclist	<b>47 (21.1)</b>	8 (12.5)
	Car	21 (9.4)	6 (9.4)
	Regular cyclist	8 (3.6)	6 (9.4)
	Other	8 (3.6)	7 (10.9)
<b>Single sided crash:</b>			
	Hit object	34 (15.2)	8 (12.5)
	Lost balance	83 (37.2)	21 (32.8)
	Poor road quality	14 (6.3)	2 (3.1)
	Other	8 (3.6)	6 (9.4)
<b>Total</b>	<b>(N=287)</b>	<b>223 (100.0)</b>	<b>64 (100.0)</b>
<i>Missing</i>	<i>(N= 26)</i>	<i>23</i>	<i>3</i>

# Distribution of cases on variables and crash involvement

		Respondents N, (%)	Crash (%)	Non- Crash (%)
Bunch riding	Yes	540 (72.6)	(45.6)	(54.4)
	No	204 (27.4)	(32.8)	(67.2)
Experience	<3 year	39 (5.2)	(61.5)	(38.5)
	3-10 year	258 (34.7)	(49.6)	(50.4)
	>10 year	447 (60.1)	(36.0)	(64.0)
Cycling motivation	Competitive	243 (32.7)	(46.9)	(53.1)
	Non competitive	501 (67.3)	(39.7)	(60.3)

# Uni- and multivariate effects of variables on crash involvement

		Univariate		Multivariate Incl. age, distance	
		OR, (95% CI)	Sig.	OR, (95% CI)	Sig.
<b>Bunch riding</b>	Yes	1.71 (1.22, 2.40)*	<0.01	1.79 (1.26, 2.54)*	<0.01
	No	.	.	.	.
<b>Experience</b>	<3 year	2.84 (1.45, 5.57)*	<0.01	2.93 (1.42, 6.06)*	0.01
	3-10 year	1.75 (1.28, 2.39)*	<0.01	1.58 (1.11, 2.24)*	0.02
	>10 year	.	.	.	.
<b>Cycling motivation</b>	Competitive	1.34 (0.99, 1.83)	0.06	1.19 (0.85, 1.66)	0.31
	Non competitive	.	.	.	.

# Conclusions

- Sport cyclist crash involvement on public roads is increased by:
  - Bunch riding;
  - Fewer years of sport cycling experience;
  - Competitiveness (ns)

# Recommendations

- Evaluate the effectiveness of training for safe bunch riding (<http://www.youtube.com/watch?v=j0HtuuKTmsQ>)
- Study the actual behavior to clarify the safety impact of competitiveness

# Thank you for your attention

