



**58<sup>th</sup> CIECA  
CONGRESS**  
DRESDEN 2026

# Hazard Perception Testing: does deployment policy affect safety outcomes?

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	Test 1	Test 2
Video type	CGI videos	real world videos



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Video type	CGI videos	real world videos
Interaction method	Computer-based test (tap or click)	Touch screen-based test (touch response only)



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Testing mode	Online	In-person, at a testing centre



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Practice clips before test	No	Yes



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Time to re-take test	None	None	Subject to availability	Subject to availability





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Time to re-take test	None	None	Subject to availability	Subject to availability
Passed test after attempt number				
Passed on their 1st attempt	61.1%	68.5%	96.9%	96.7%
Passed on their 2nd attempt	22.4%	18.7%	2.7%	2.7%
Passed on their 3rd attempt	7.6%	5.9%	0.3%	0.5%
Passed after 4 or more attempts	8.9%	6.9%	0.0%	0.1%





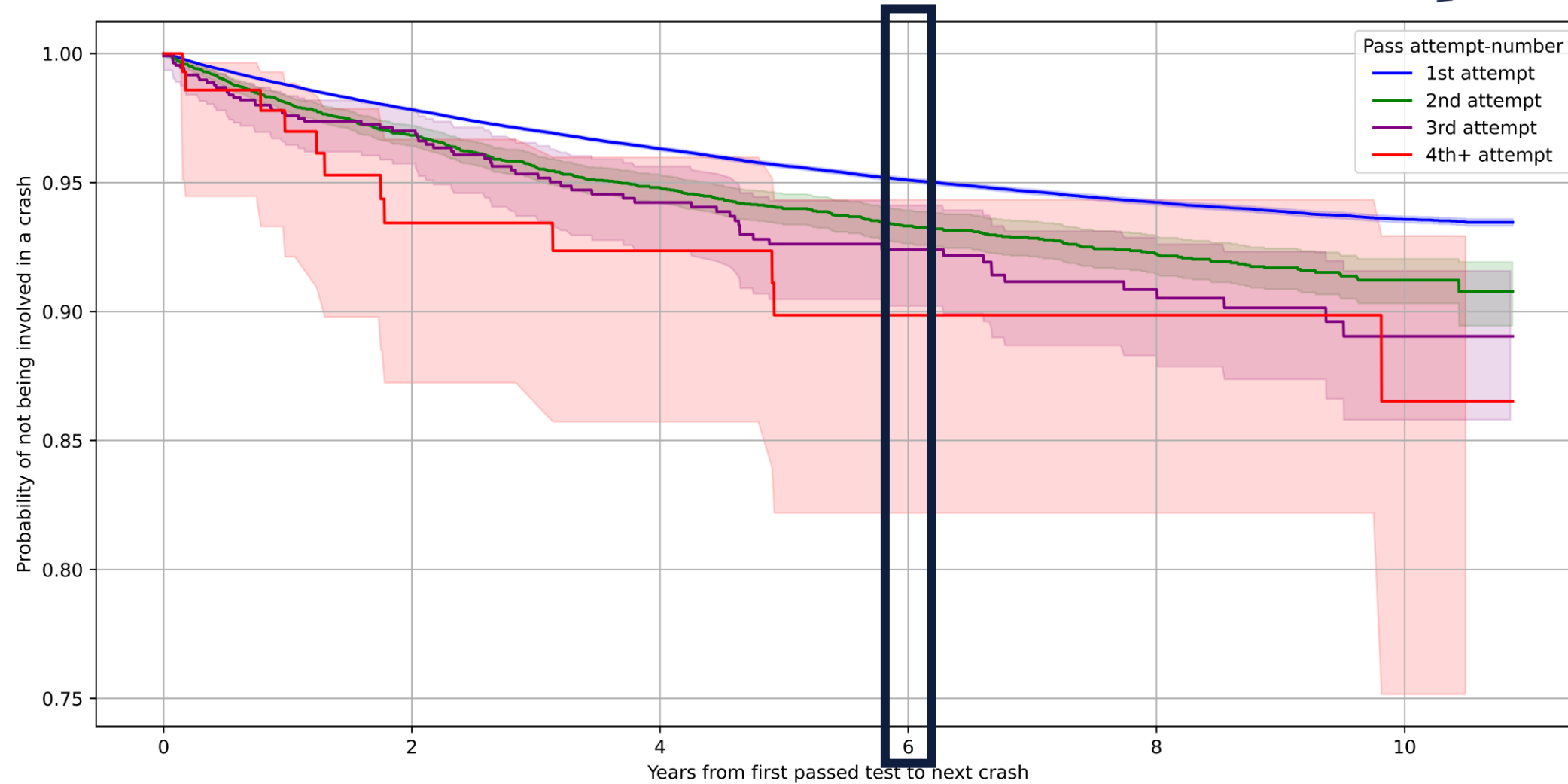
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Time to re-take test	None	None	Subject to availability	Subject to availability
Pass attempt-number association with <u>crash</u> involvement				
Kaplan-Meier survival analysis	Unclear	<b>Positive</b> ( $p < .01$ )	<b>Positive</b> ( $p < .01$ )	<b>Positive</b> ( $p < .01$ )





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Cochran-Armitage test summary	<b>Negative</b> ( $Z = -2.5, p = .01$ )	<b>Positive</b> ( $Z = +3.0, p < .01$ )	<b>Positive</b> ( $Z = +7.3, p < .01$ )	Unclear



Category	Passed HPT on 1 <sup>st</sup> attempt	Passed HPT on 2 <sup>nd</sup> attempt	Passed HPT on 3 <sup>rd</sup> attempt	Passed HPT on 4 <sup>th</sup> or later attempt	Cochran- Armitage test for trend	
					Z-value	p-value
Crash(es) after	↑ 4%	↑ 6%	↑ 6%	↑ 8%	<b><u>7.3</u></b>	<b><u>&lt; .01</u></b>



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Pass attempt-number association with <u>offence</u> involvement				



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Cochran-Armitage test summary	Unclear	<b>Positive</b> ( $Z = +16.3, p < .01$ )	<b>Positive</b> ( $Z = +14.4, p < .01$ )	<b>Positive</b> ( $Z = +2.7, p < .01$ )



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					Z-value	p-value
Offence(s) after	↑ 41%	↑ 48%	↑ 49%	↑ 57%	<b><u>14.4</u></b>	<b><u>&lt; .01</u></b>



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# Hazard Perception Testing: does deployment policy affect safety outcomes?

Yes.



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	Proxy for poor hazard perception	Proxy for hazard perception ability	Statistical test (ordered by inferential strength)	Statistical test result	Conclusions
Predictive validity	Crash involvement (where test-taker was driver/rider) after passed HPT	Attempt-number	Kaplan-Meier survival analysis	No significant differences between groups	Poor predictive validity of crash involvement based on attempt-number
			Cochran-Armitage test for trend	Crash likelihood higher for test-takers with fewer attempts	
		First attempt score	Logistic regression	No significant result, however, trend suggested crash likelihood increased for test-takers who achieved higher scores	Poor predictive validity of crash involvement based on first attempt score
			Kaplan-Meier survival analysis	No significant differences between groups	
			Cochran-Armitage test for trend	Crash likelihood higher for test-takers who achieved higher scores	
		Passed attempt score	Logistic regression	No significant result	Neither positive nor negative predictive validity
			Kaplan-Meier survival analysis	No significant differences between groups	
			Cochran-Armitage test for trend	No significant result	
		Offence involvement after passed HPT	Attempt-number	Kaplan-Meier survival analysis	Offence likelihood lower for test-takers with fewer test attempts
	Cochran-Armitage test for trend			No significant result	
	First attempt score		Logistic regression	Offence likelihood lower for test-takers who achieved higher scores	Good predictive validity of offence involvement based on first attempt score
			Kaplan-Meier survival analysis	No significant differences between groups	
			Cochran-Armitage test for trend	Offence likelihood lower for test-takers who achieved higher scores	
	Passed attempt score		Logistic regression	Offence likelihood lower for test-takers who achieved higher scores	Good predictive validity of offence involvement based on passed attempt score
			Kaplan-Meier survival analysis	No significant differences between groups	
Cochran-Armitage test for trend			Offence likelihood lower for test-takers who achieved higher scores		