

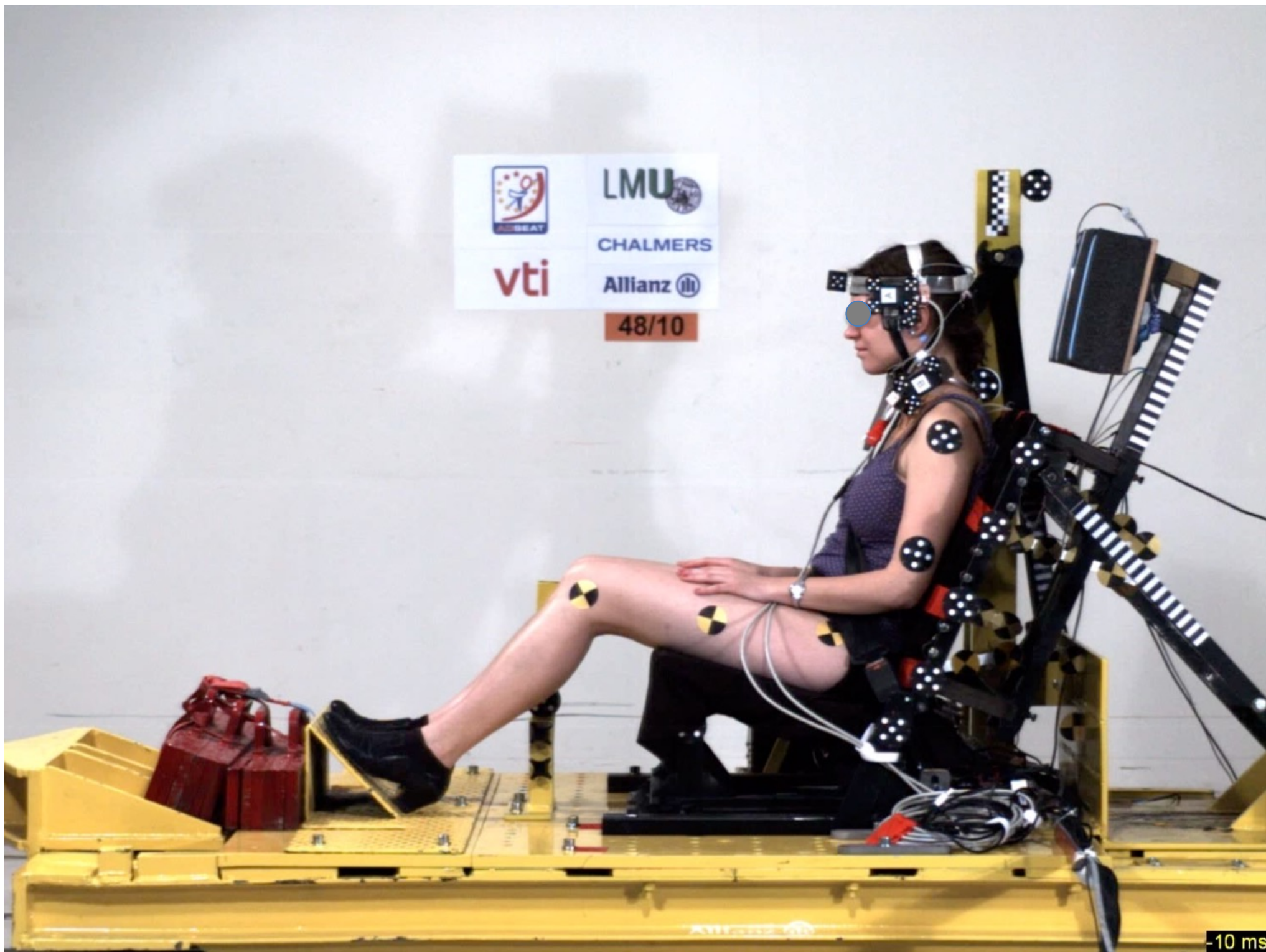
Can a male size dummy represent the female population?

– Experience from rear impact tests, including a female size prototype dummy

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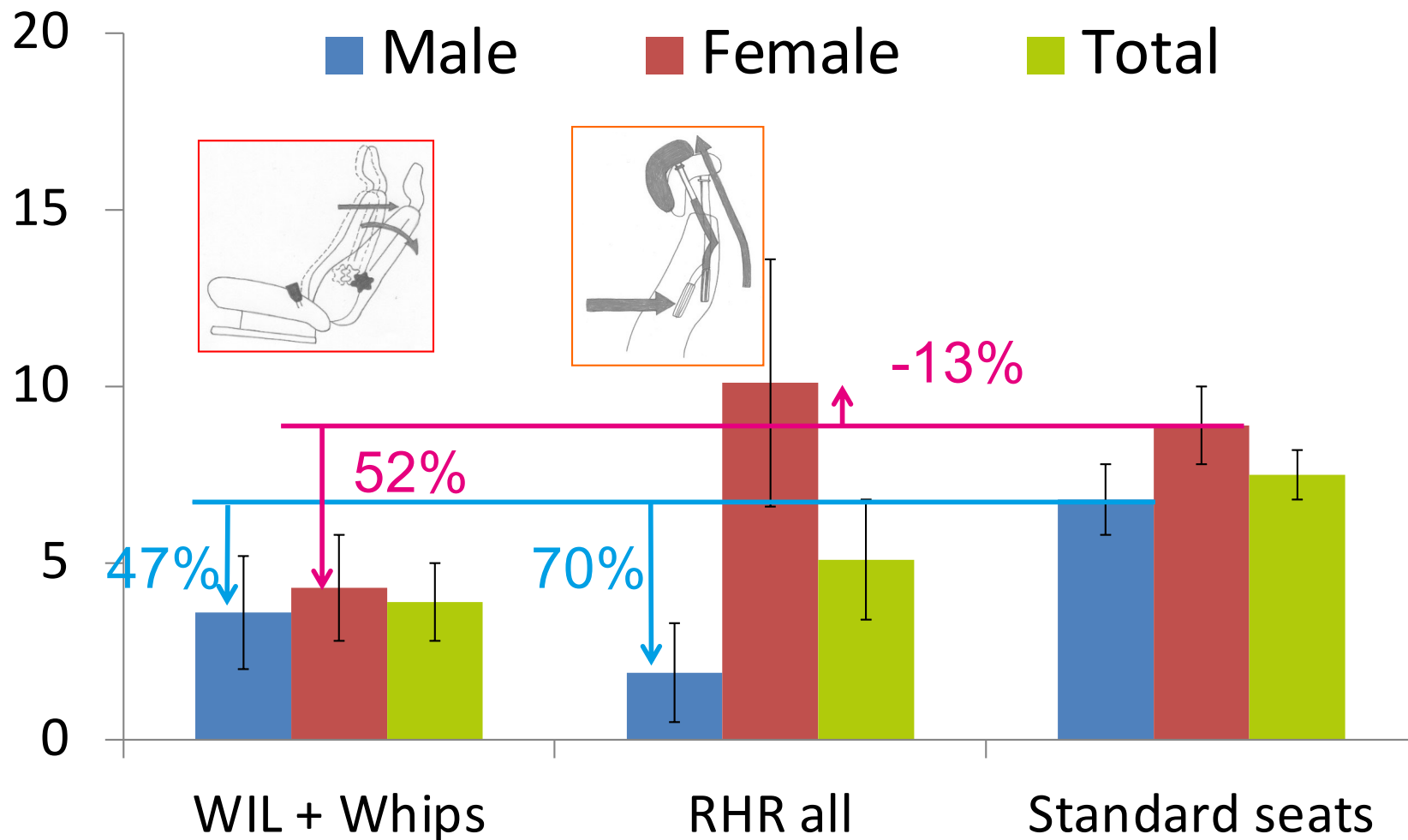
Allianz

48/10

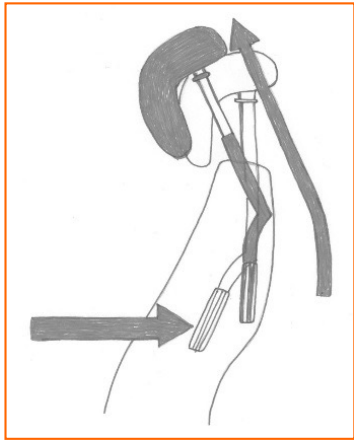
vti

-10 ms

Whiplash concepts, risk for pmi



Kullgren et al. (2013) Development of Whiplash Associated Disorders for Male and Female Car Occupants in Cars Launched Since the 80s in Different Impact Directions, IRCOBI Conference



RHR in Saab



Saab 9-3

Saab 9-5



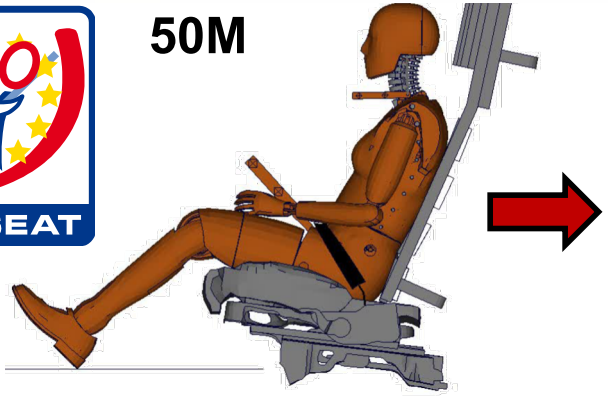
Tabell 2a. Provade säten med tillhörande whiplash-skadedata för kvinnor och män
(statistik från Folksam vid inledandet av projektet).

Säte (bilmärke/årsmodell/whiplashsystem)	Folksamdata – Kvinnor				Folksamdata – Män				Risk kvinnor / Risk män		
	n	n pmi	Risk pmi	95% CI	n	n pmi	Risk pmi	95% CI			
Volvo V70	00-06	WhiPS	37	0,9	2,4%	5,0%	56	1,4	2,4%	4,0%	1,0
Toyota Yaris	99-05	WIL1	145	4,5	3,1%	2,8%	44	0,8	1,9%	4,0%	1,6
Toyota Avensis	03-08	WIL1	57	1,3	2,2%	3,8%	73	1,5	2,0%	3,2%	1,1
Toyota Corolla	02-07	WIL1	141	4,1	2,9%	2,8%	91	3,9	4,3%	4,2%	0,7
VW Golf	04-10	RHR	32	2,3	7,2%	8,9%	24	0,0	0,0%	0,0%	∞
Saab 9-3	98-02	SAHR1	26	4	15,2%	13,8%	42	0,0	0,0%	0,0%	∞
Saab 9-5	98-09	SAHR1	64	2,1	3,2%	4,3%	99	0,8	0,8%	1,8%	4
Audi A4	95-00	-	77	0,4	0,5%	1,5%	132	6,5	4,9%	3,7%	0,1
VW Passat	97-05	-	95	3,5	3,7%	3,8%	155	2,2	1,4%	1,8%	2,6



**BioRID II
50M**

**Down-
scaling** 



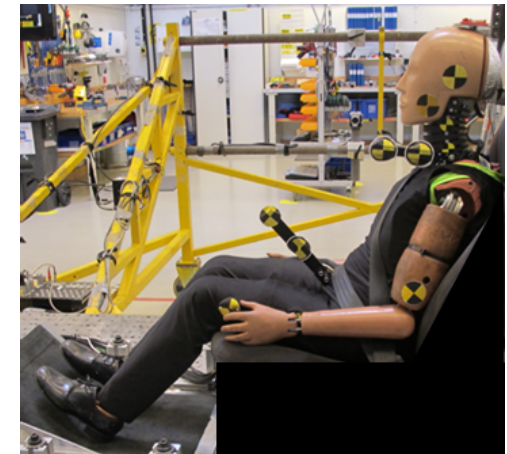
**EvaRID
V1.0**

Carlsson et al.
(2014)



**BioRID
P50F V1**

Carlsson et al.
(2022)



**BioRID
P50F V2**

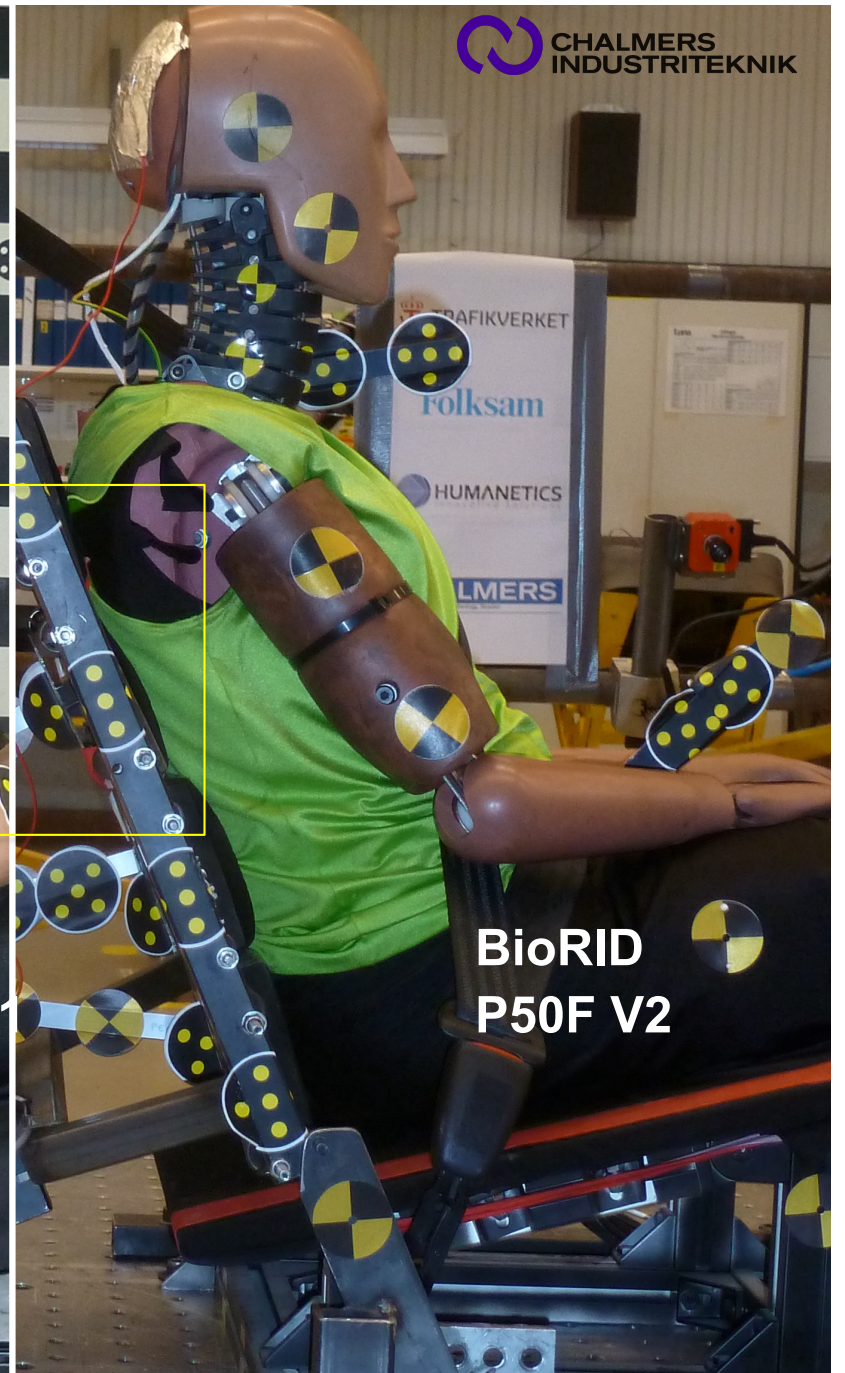


TU
Graz



BioRID
P50F V1

CHALMERS
INDUSTRIOTEKNIK



BioRID
P50F V2

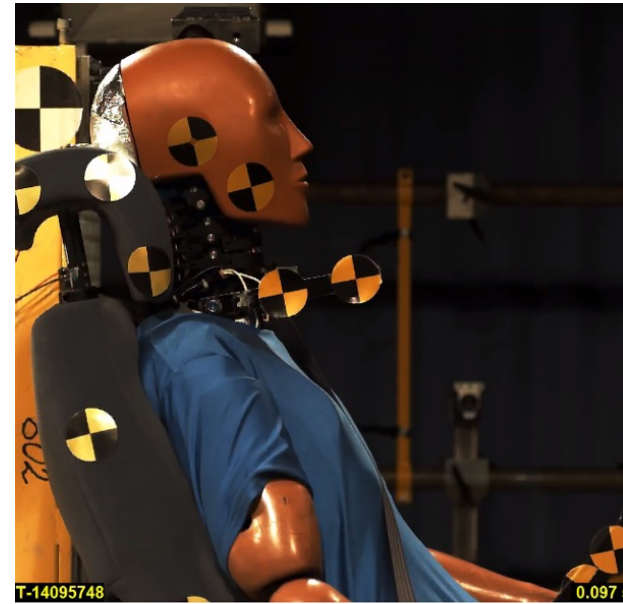
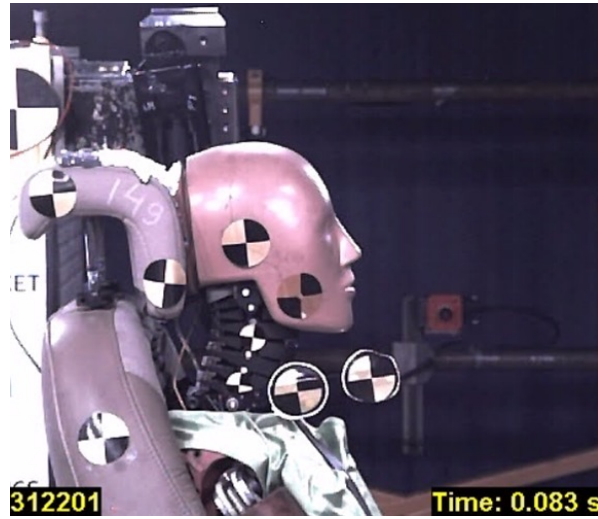
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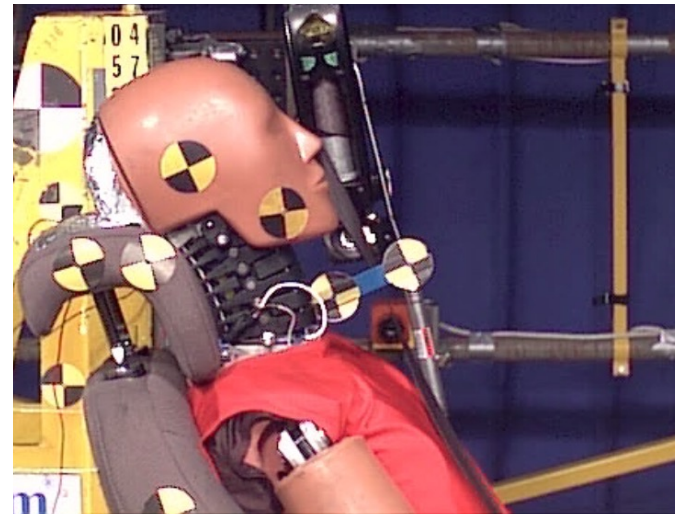
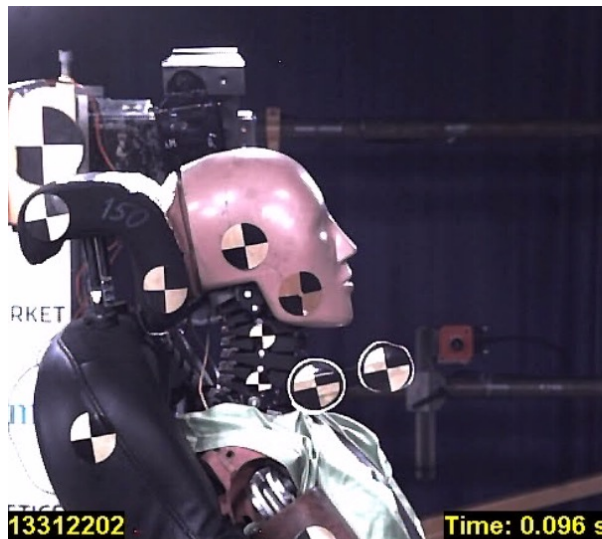
Female

Male

9-3

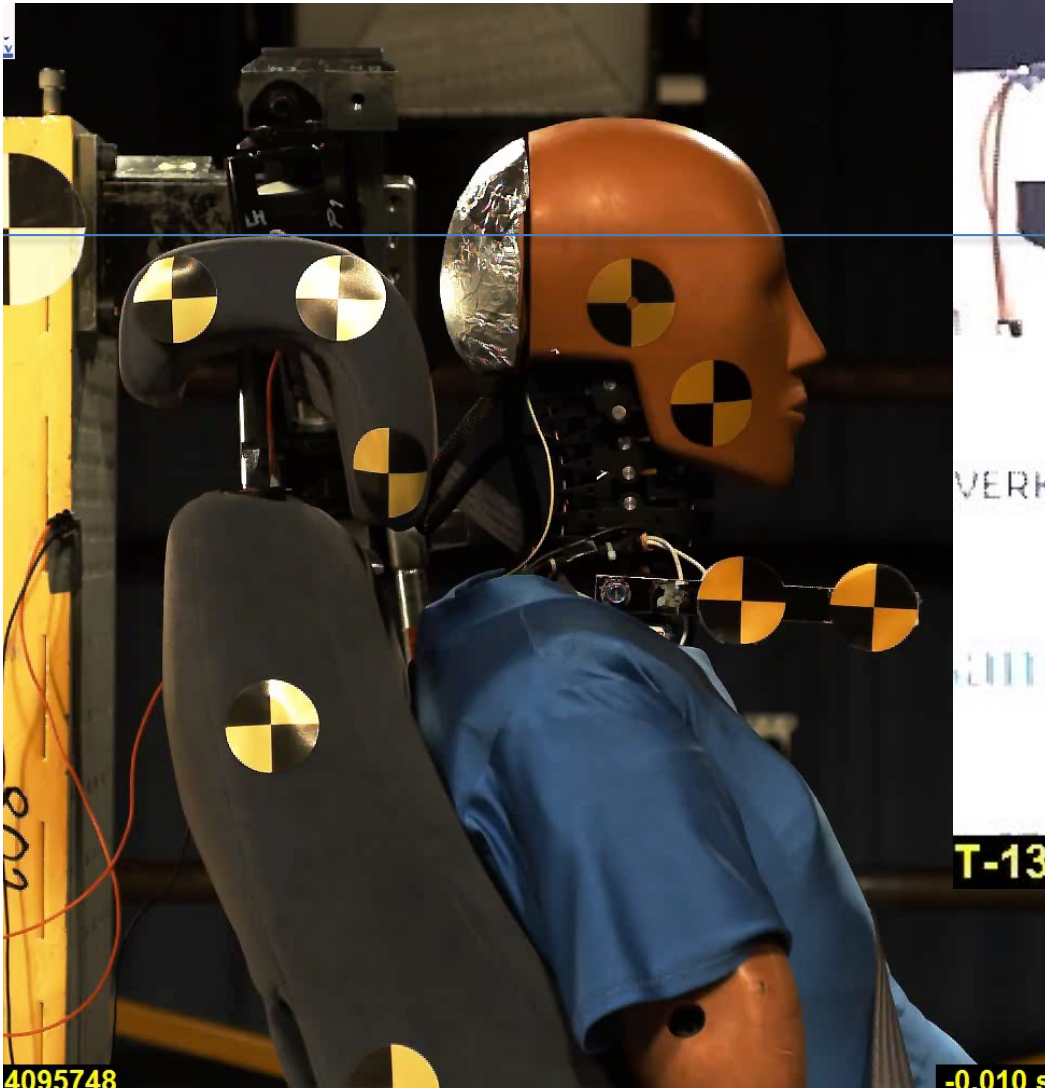


9-5



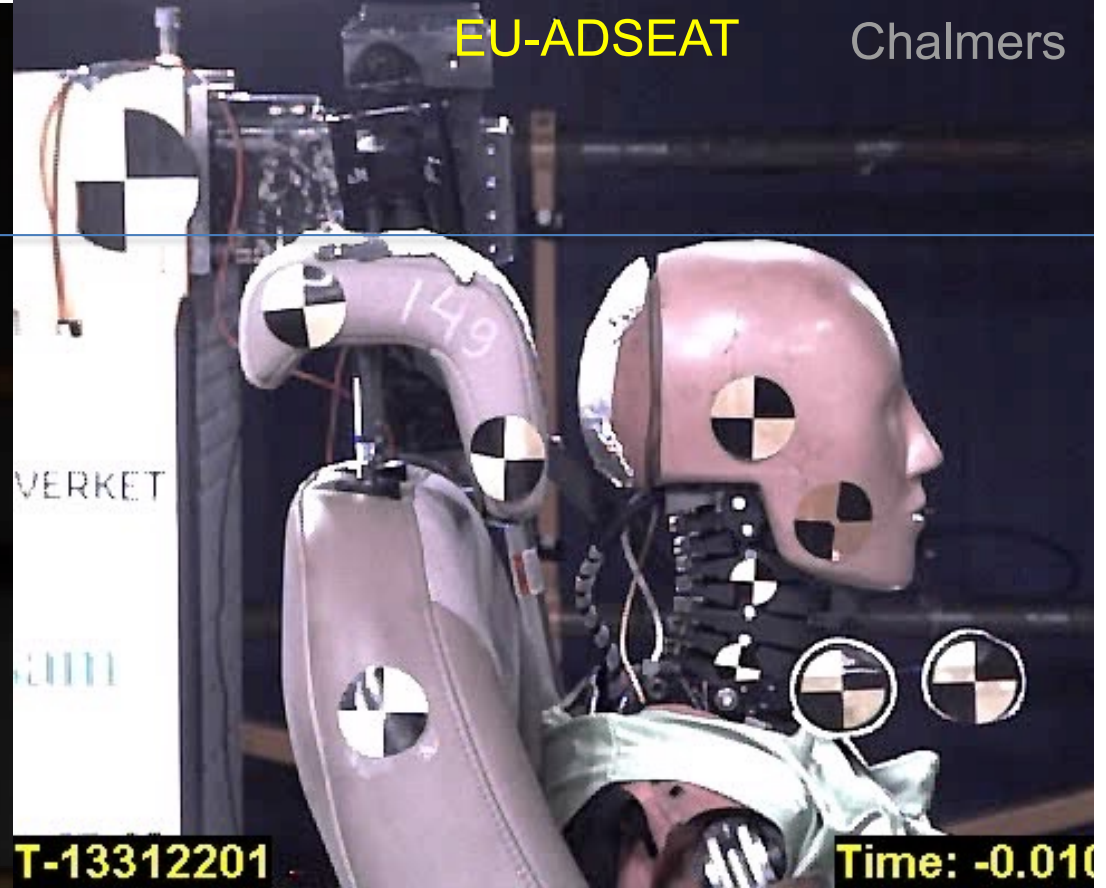
Saab 9-3

Male Size
BioRID II



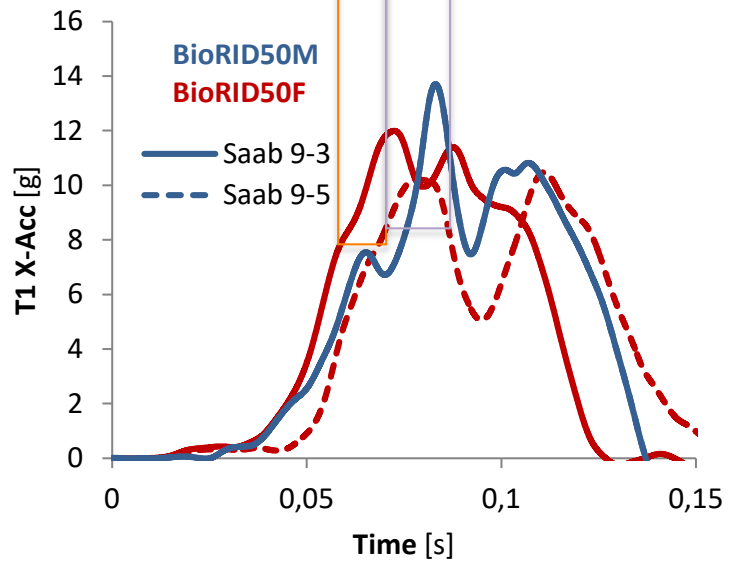
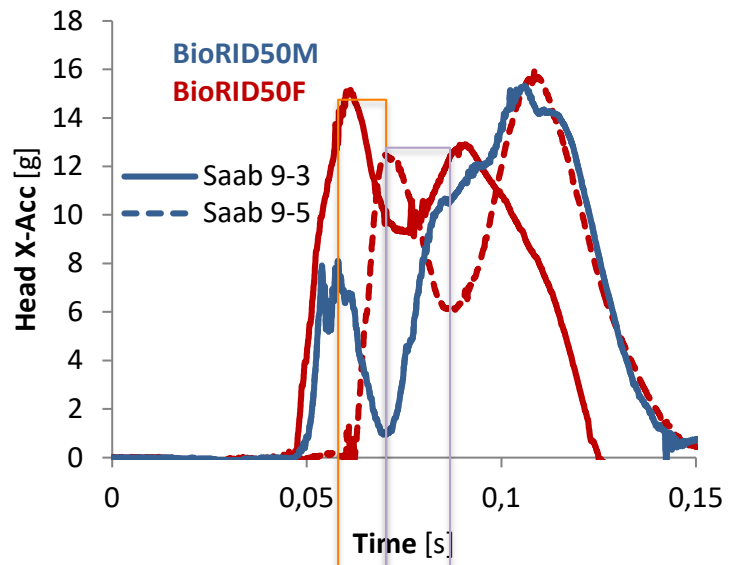
Prototype
Female Size
BioRID 50F
EU-ADSEAT

Vägverket
Folksam
Humanetic
Chalmers

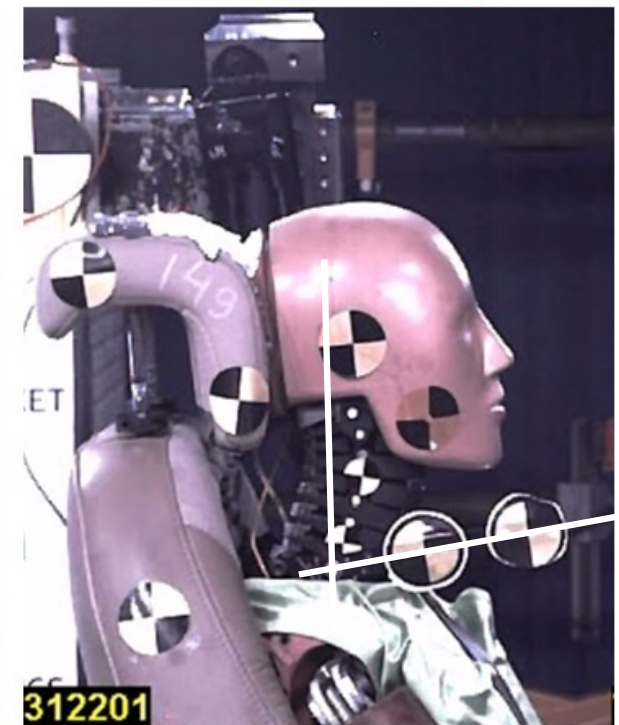
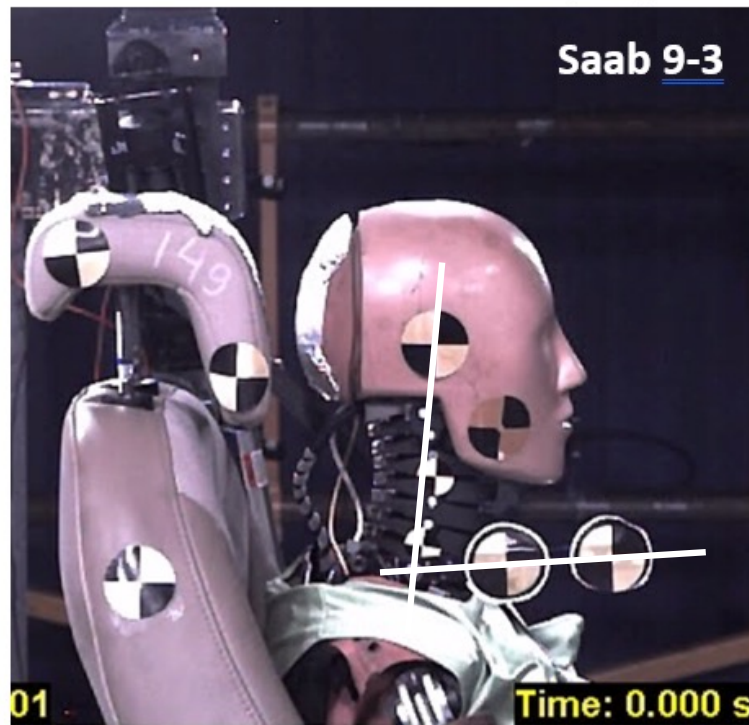


4095748

-0.010 s



Saab 9-3



(M/F = ∞)

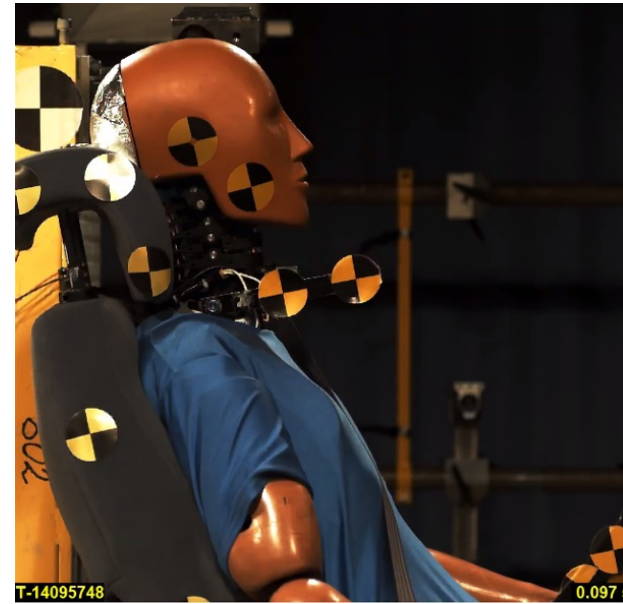
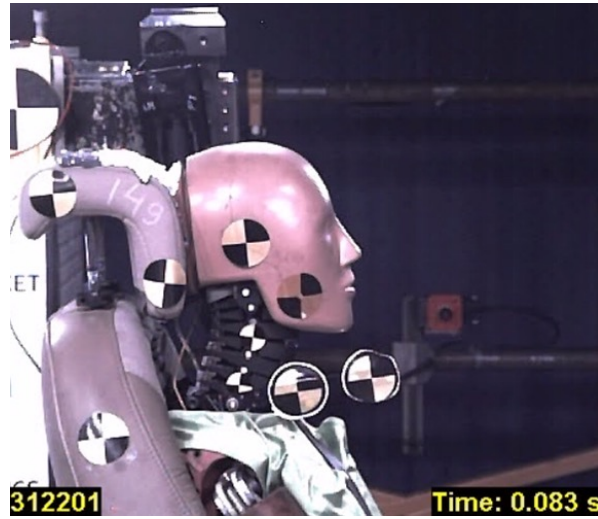
BioRID P50F V2:

- Upper body sinks into the seatback
- ~2 cm protraction

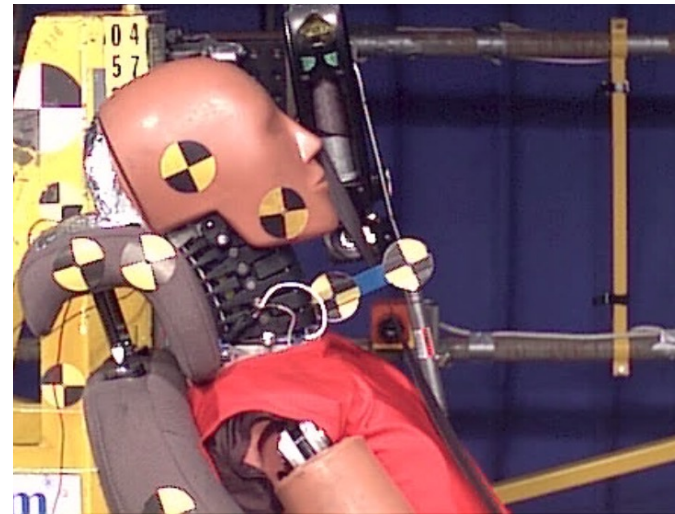
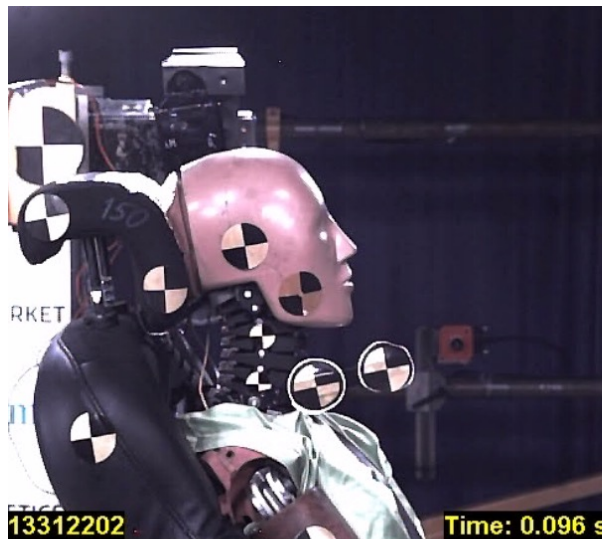
Female

Male

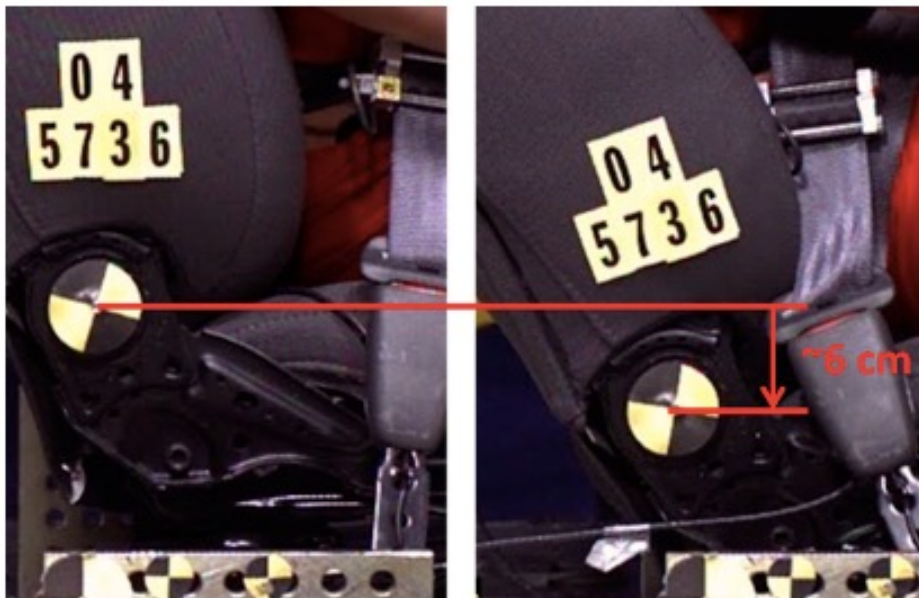
9-3



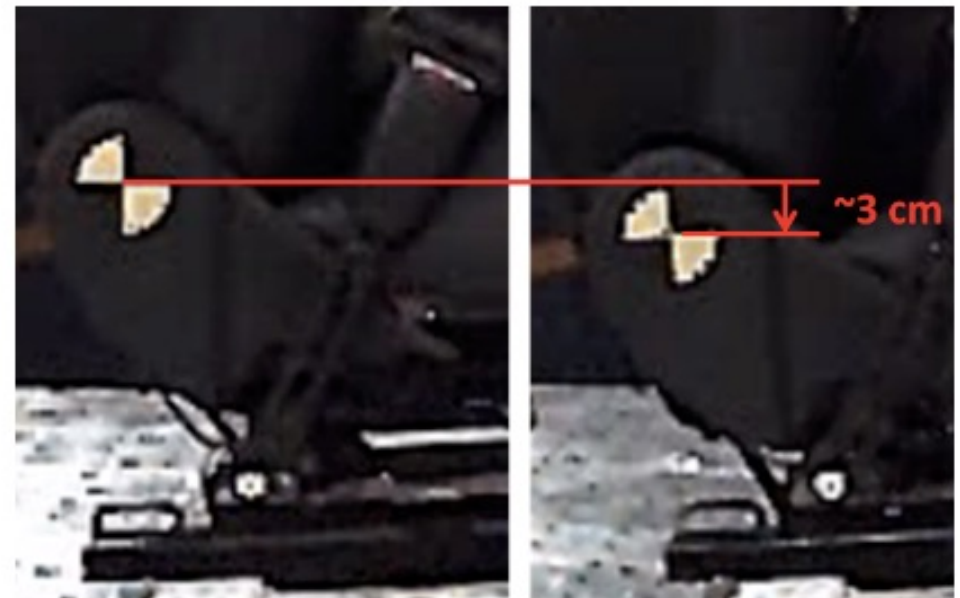
9-5



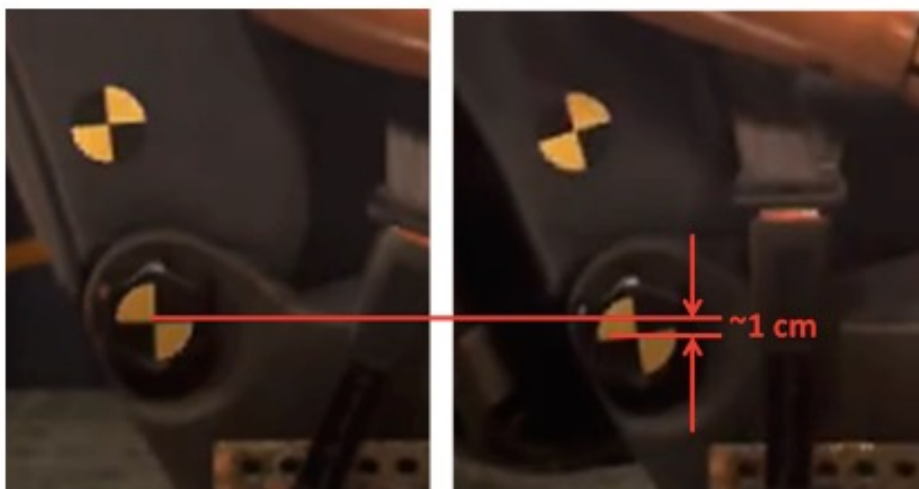
Saab 9-5 med BioRID50M:



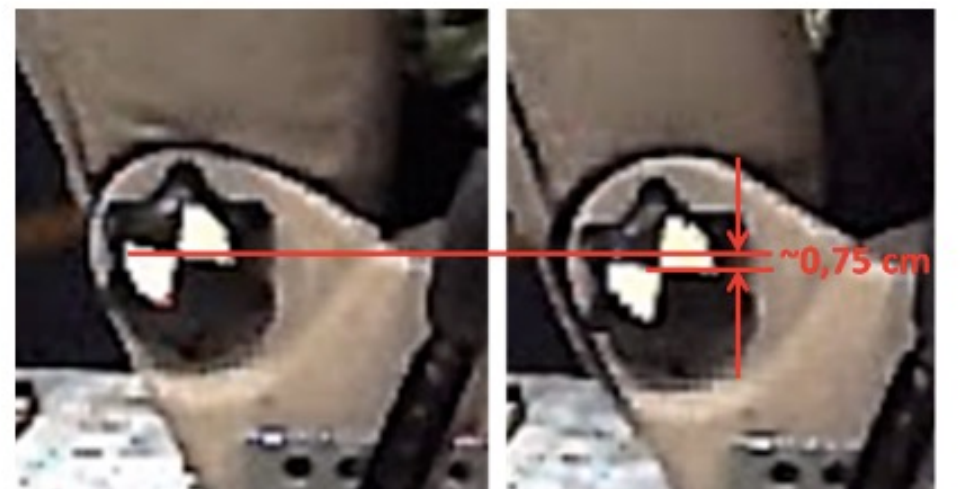
Saab 9-5 med BioRID50F:



Saab 9-3 med BioRID50M:



Saab 9-3 med BioRID50F:



Figur 8. Bakdelen av stolsitsen i Saab-9-5, där recliner-centrum indikeras av en film-markör.

Discussion

