

# LABĀKA REDZE = DROŠĀKA BRAUKŠANA: RISINĀJUMI AUTOVADĪTĀJIEM

Gatis Ikaunieks

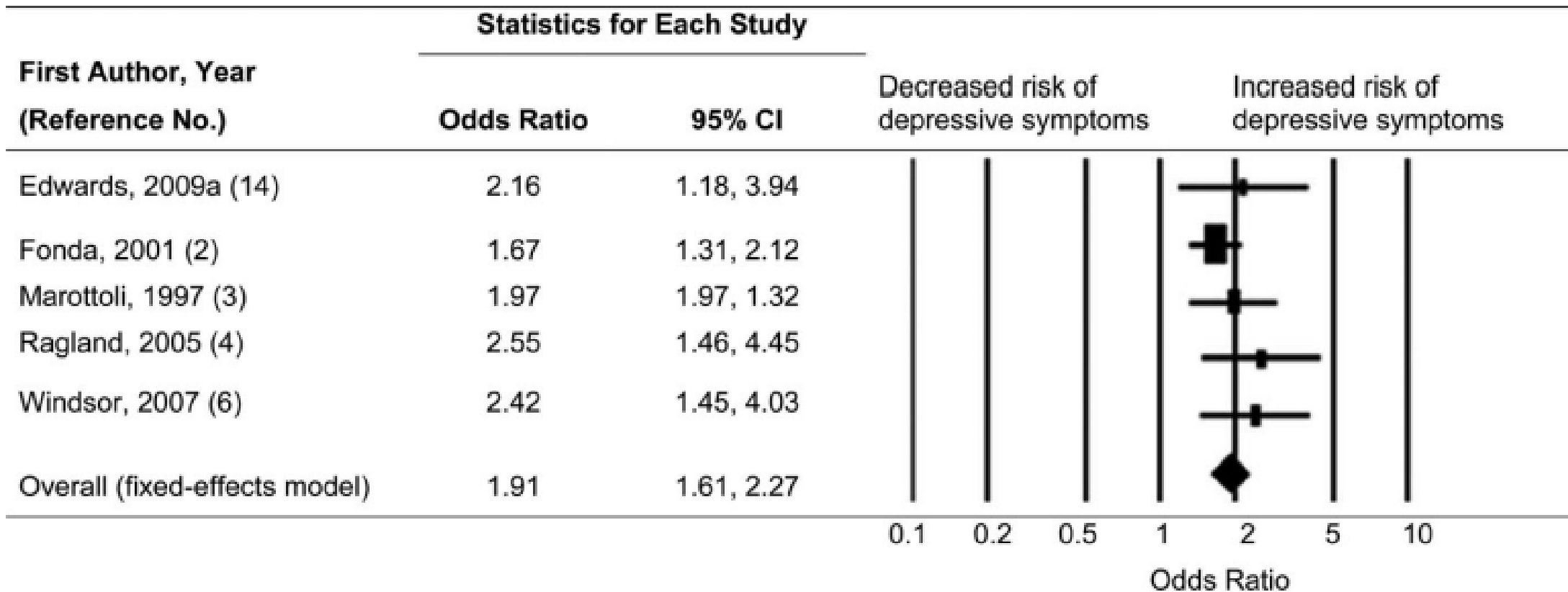


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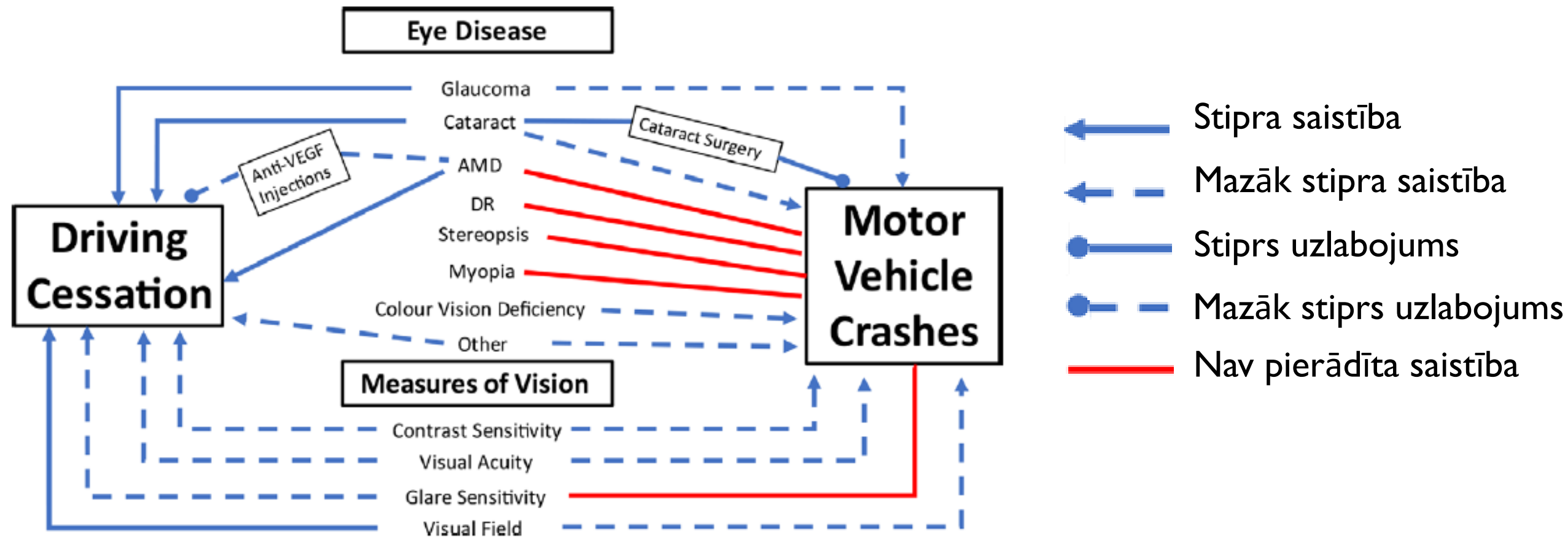


LOOA vasaras seminārs  
"Acis pie stūres"  
24.08.2025.

# Depresijas biežums pēc auto vadīšanas pārtraukšanas



Chihuri, S., Mielenz, T. J., DiMaggio, C. J., Betz, M. E., DiGuseppi, C., Jones, V. C., & Li, G. (2016). Driving Cessation and Health Outcomes in Older Adults. *Journal of the American Geriatrics Society*, 64(2), 332–341



Mean±SD, floor-ceiling

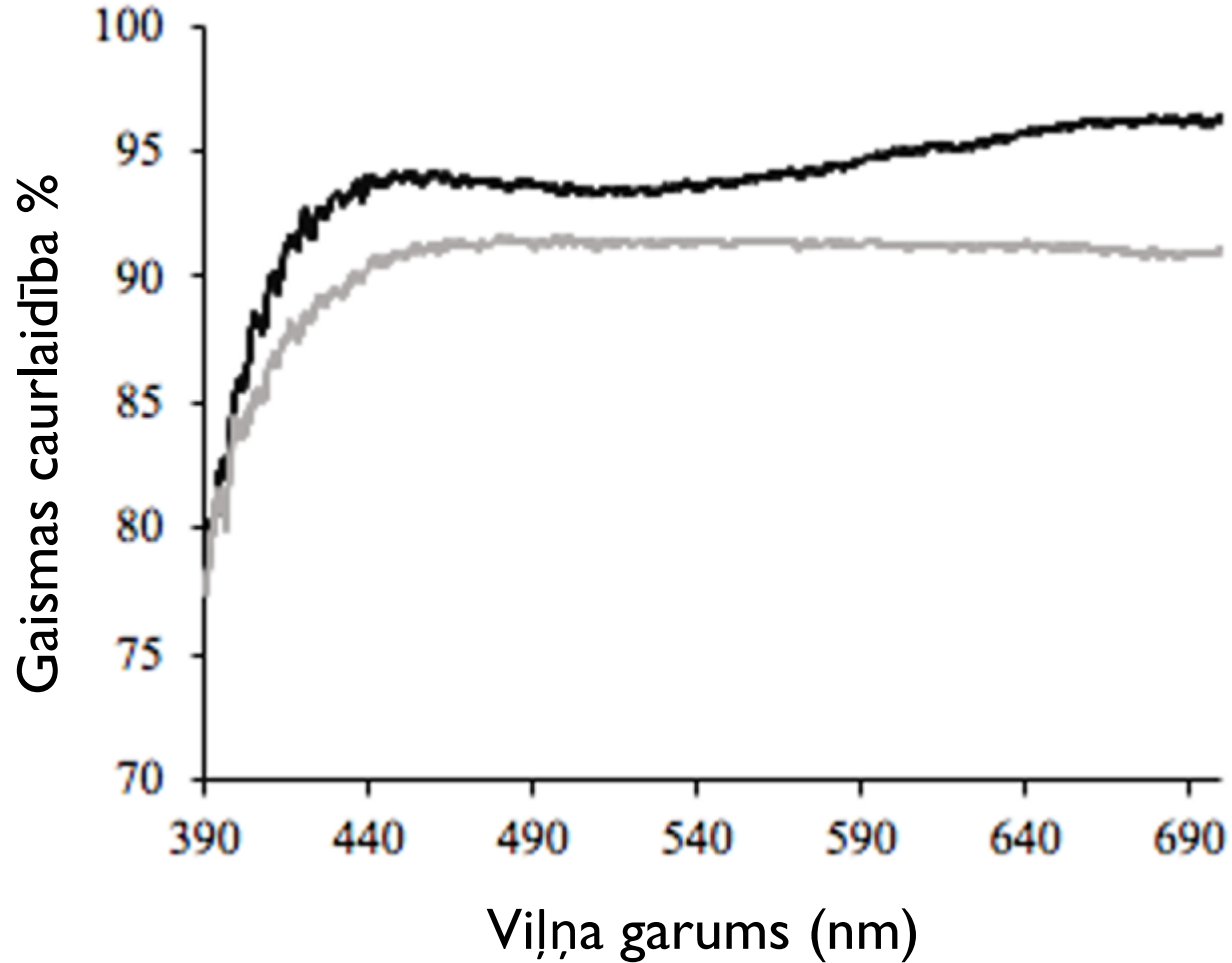
|                                 | LASIK<br>(1) | Spectacles<br>(2) | Contact<br>lenses (8) | Orthoke-<br>(4) | Emmetropes<br>(5) |
|---------------------------------|--------------|-------------------|-----------------------|-----------------|-------------------|
| Clarity of vision               | 74.1±28.7;   | 85.1±19.0;        | 79.1±19.2;            | 75.3±24.7;      | 88.0±21.0.        |
| Expectations                    | 67.1±40.9;   | 44.4±36.1;        | 38.1±32.1;            | 42.6±34.5;      | 94.1±20.5.        |
| Glare                           | 68.9±25.9;   | 78.1±21.0;        | 77.3±18.1;            | 57.4±26.5;      | 84.6±21.8.        |
| Satisfaction with<br>correction | 81.0±19.5;   | 75.6±19.0;        | 77.3±18.1;            | 83.0±19.0.      | 82.4±27.7.        |
| Global                          | 80.6±14.8;   | 71.9±11.7;        | 70.4±10.6.            | 74.7±14.6.      | 87.7±9.3.         |

Queirós, A. Et al. (2012).  
Quality of life of myopic  
subjects with different  
methods of visual correction  
using the NEI RQL-42  
questionnaire. *Eye & contact  
lens*, 38(2), 116–121.

|                              | LASIK     | Si-H CL  | CRT *     | Emmetropes |
|------------------------------|-----------|----------|-----------|------------|
| Clarity of vision            | 81.6±22.7 | 93.9±8.0 | 85.8±16.4 | 95.8±7.5   |
| Glare                        | 69.8±25.2 | 86.4±3.6 | 85.4±3.6  | 93.7±8.4   |
| Satisfaction with correction | 83.3±28.1 | 93.3±9.8 | 85.0±17.3 | 60.0±40.0  |
| Overall                      | 80.0±10.2 | 87.1±6.4 | 83.5±6.4  | 85.5±12.8  |

González-Pérez et  
al.(2019). Vision-Specific  
Quality of Life: Laser-  
Assisted in situ  
Keratomileusis Versus  
Overnight Contact Lens  
Wear. *Eye & contact  
lens*, 45(1), 34–39.

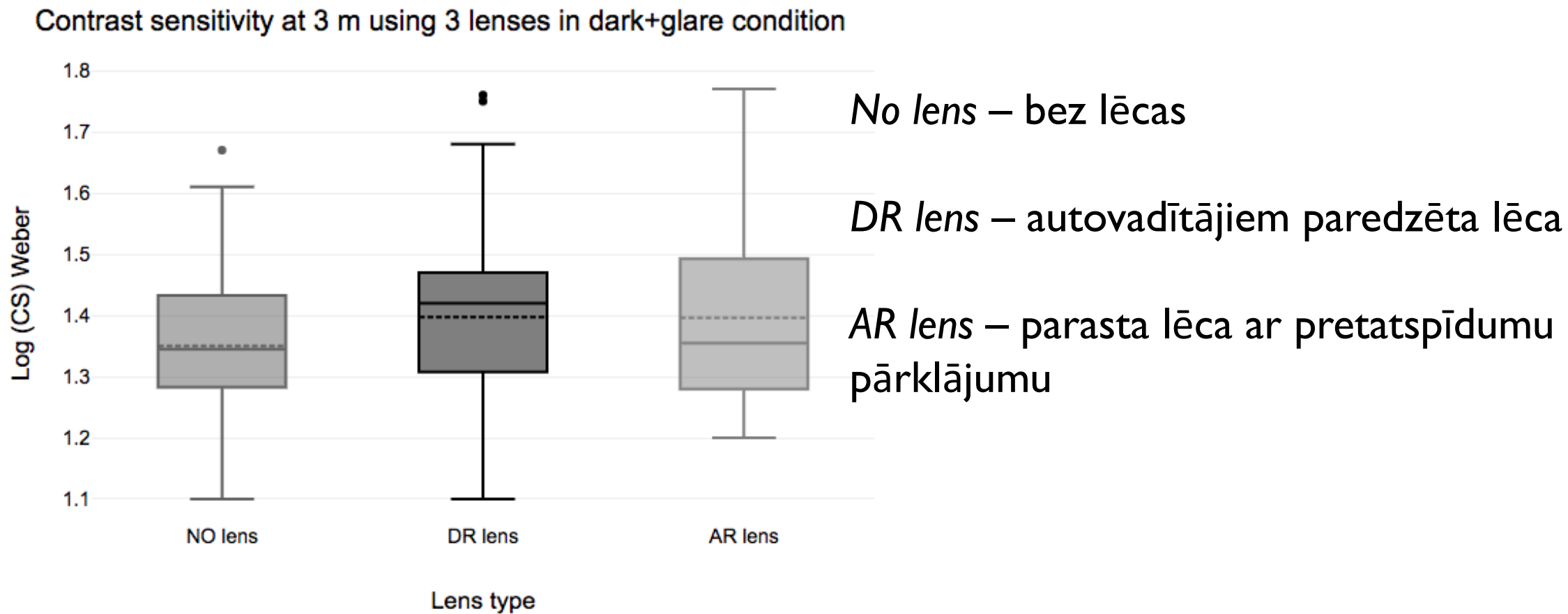
\* CRT - Corneal refractive therapy



Parasta lēca ar pretatspīdumu (AR) klājumu

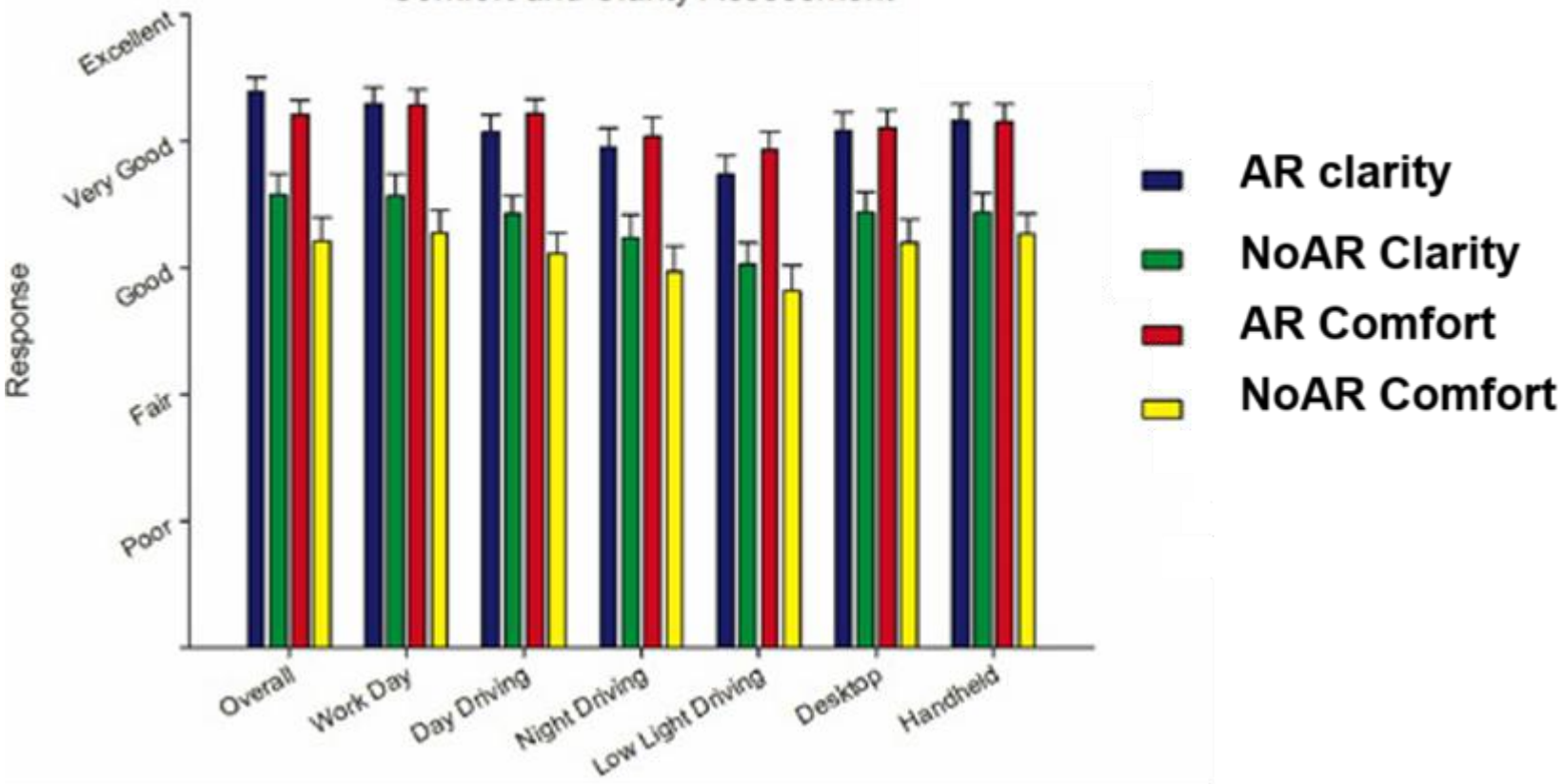
Lēca autovadītājiem

Michelle Hammar (2023). The Impact of Driving Spectacle Lenses on Visual Acuity and Contrast Sensitivity (Master thesis, University of Latvia)



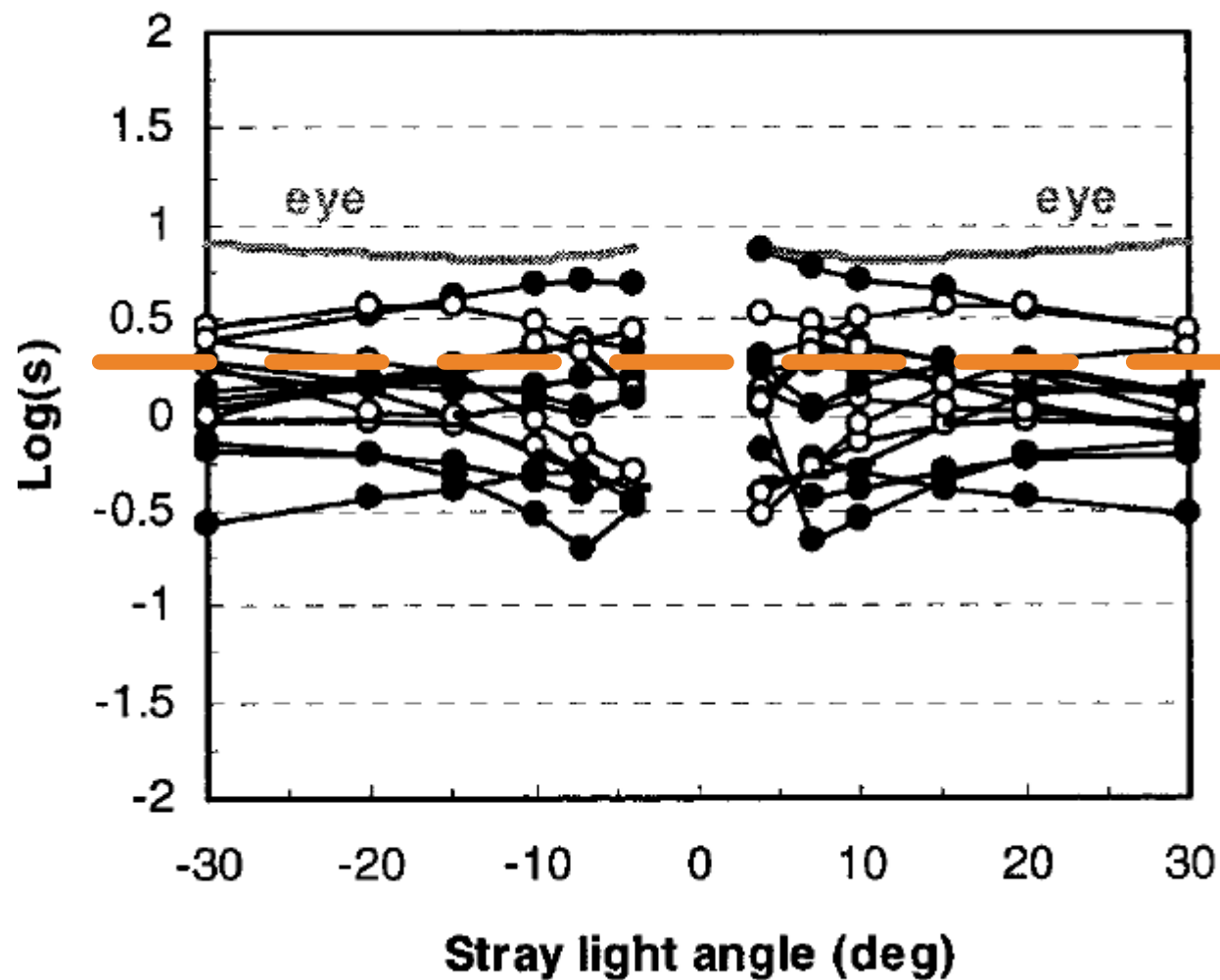
Michelle Hammar (2023). The Impact of Driving Spectacle Lenses on Visual Acuity and Contrast Sensitivity (Master thesis, University of Latvia)

AR vs No AR Coating  
Comfort and Clarity Assessment



Lēcas ar pretatspīdumu klājumu dod lielāku redzes komfortu un skaidrāku redzi

McMahon, J.M. AR and non-AR coated lens performance during contrast sensitivity testing and daily activities. Illinois College of Optometry & The Vision Council. 2014. <https://thevisioncouncil.org/sites/default/files/AR-and-non-AR-coated-lens-performance.pdf>



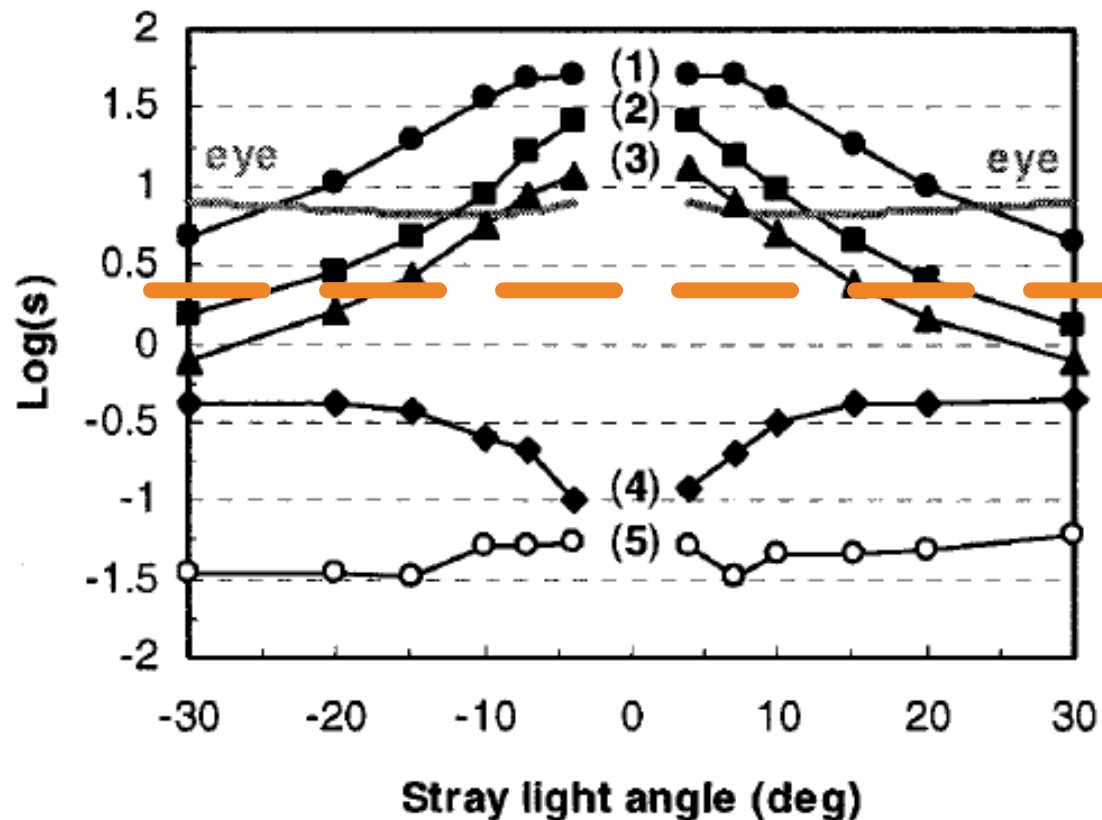
○ Plastikāta brillu lēcas

● Stikla brillu lēcas

Robeža, pie kuras lēcu radītā izkliede var būt traucējoša redzei

Gaismas izkliede brillēs, kuras tiek nēsātas ikdienā

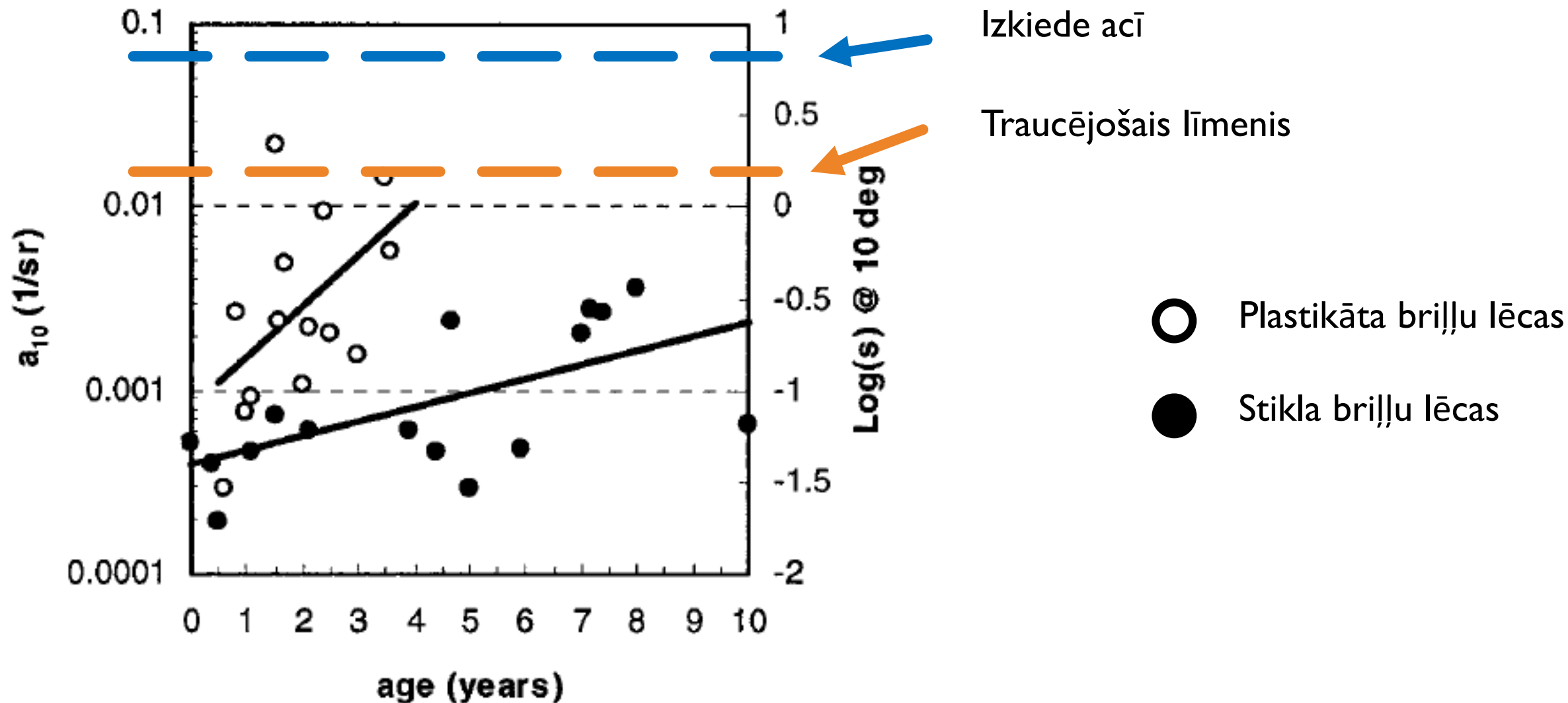
De Wit, G. C., & Coppens, J. E. (2003). Stray light of spectacle lenses compared with stray light in the eye. *Optometry and vision*, 80(5), 395–400.



- (1) – 3 pirkstu nospiedumi
- (2) – 2 pirkstu nospiedumi
- (3) – 1 pirkstu nospiedums
- (4) – lēcas notīrītas ar lupatiņu, vispirms  
uzpūšot uz tām elpu
- (5) – brilles nomazgātas ar ziepēm un  
notīrītas ar lupatiņu

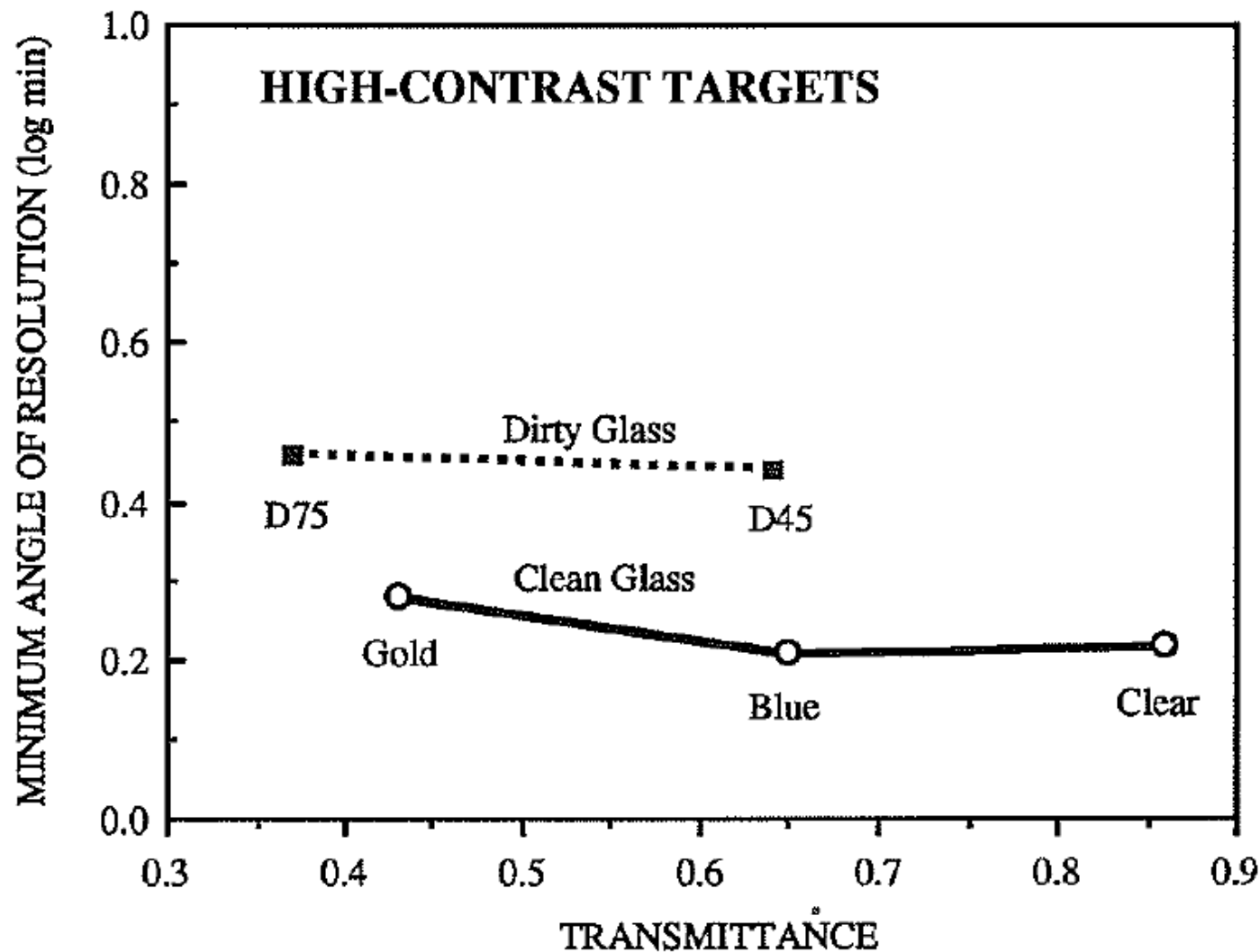
Gaismas izkliede netīrās un tīrās brillēs

De Wit, G. C. et al., 2003



Gaismas izkliede brillēs atkarībā no lēcu vecuma

De Wit, G. C. et al., 2003

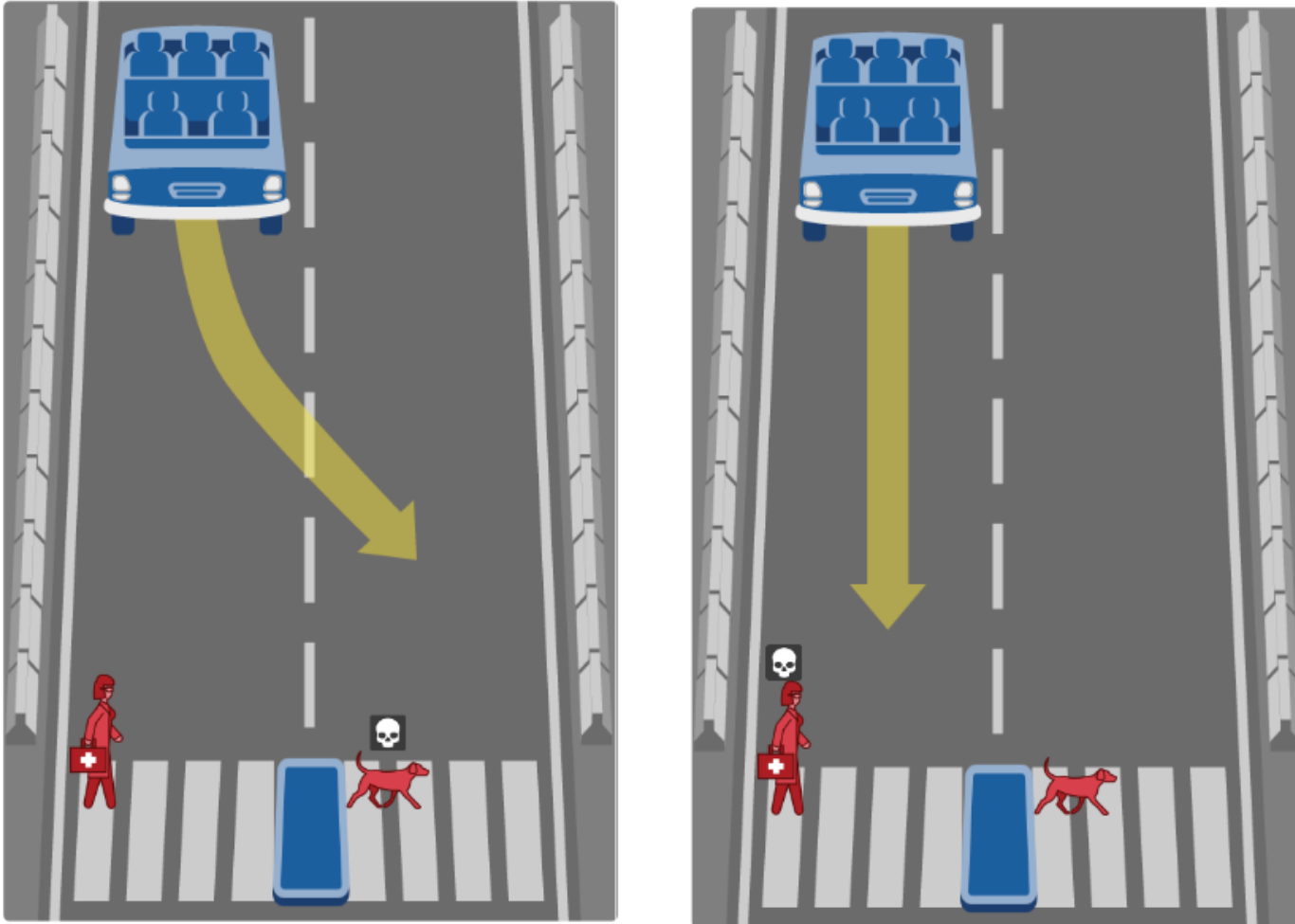


Redzes asums, mērīts caur tīru un netīru automašīnas stiklu

Owens, D.A. (1992). *Effects of light transmittance and scatter by windshields on nighttime visual performance* (Report No. UMTRI-92-37). Ann Arbor: University of Michigan Transportation Research Institute.

Awad, E. et al. (2018). The Moral Machine experiment. *Nature*, 563(7729), 59–64.  
<https://doi.org/10.1038/s41586-018-0637-6>

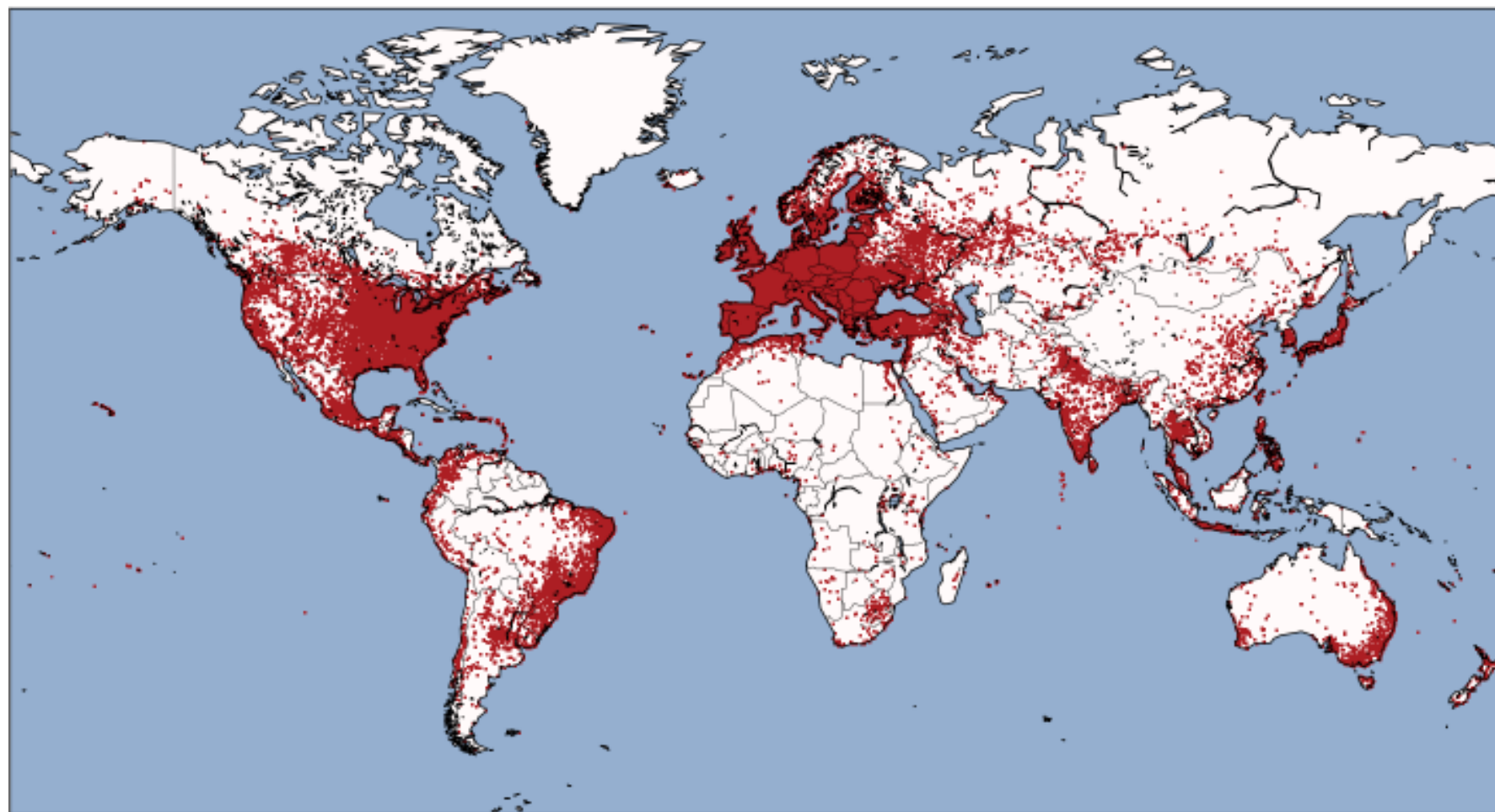
What should the self-driving car do?

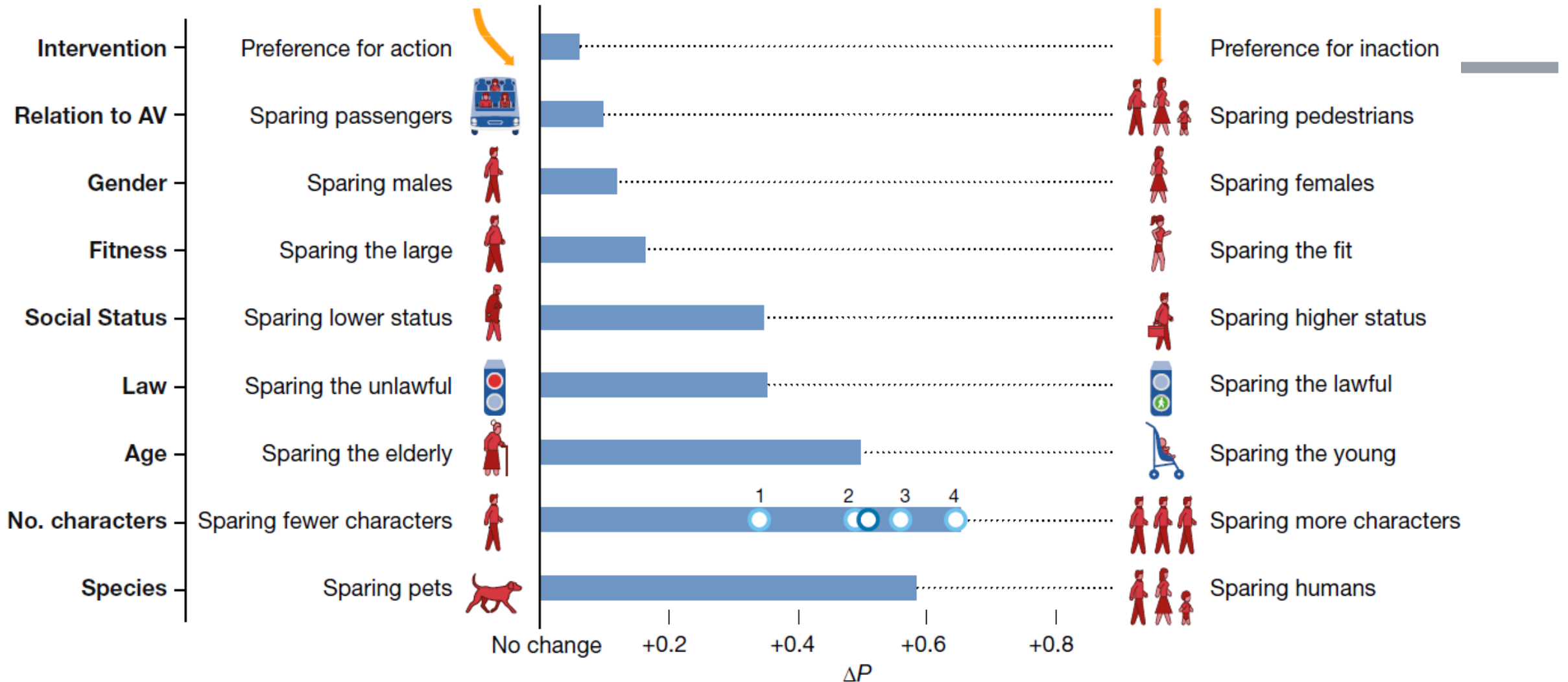


Starptautisks pētījums interneta vidē, kurā piedalījās vairāki miljoni dalībnieku no dažādām valstīm.

Uzdevums bija pieņemt lēmumu, kam nebraukt virsū ar automašīnu, kurai saplīsušas bremzes, bet priekšā kāds atrodas uz ceļa (jāizvēlas mazākais ļaunums)

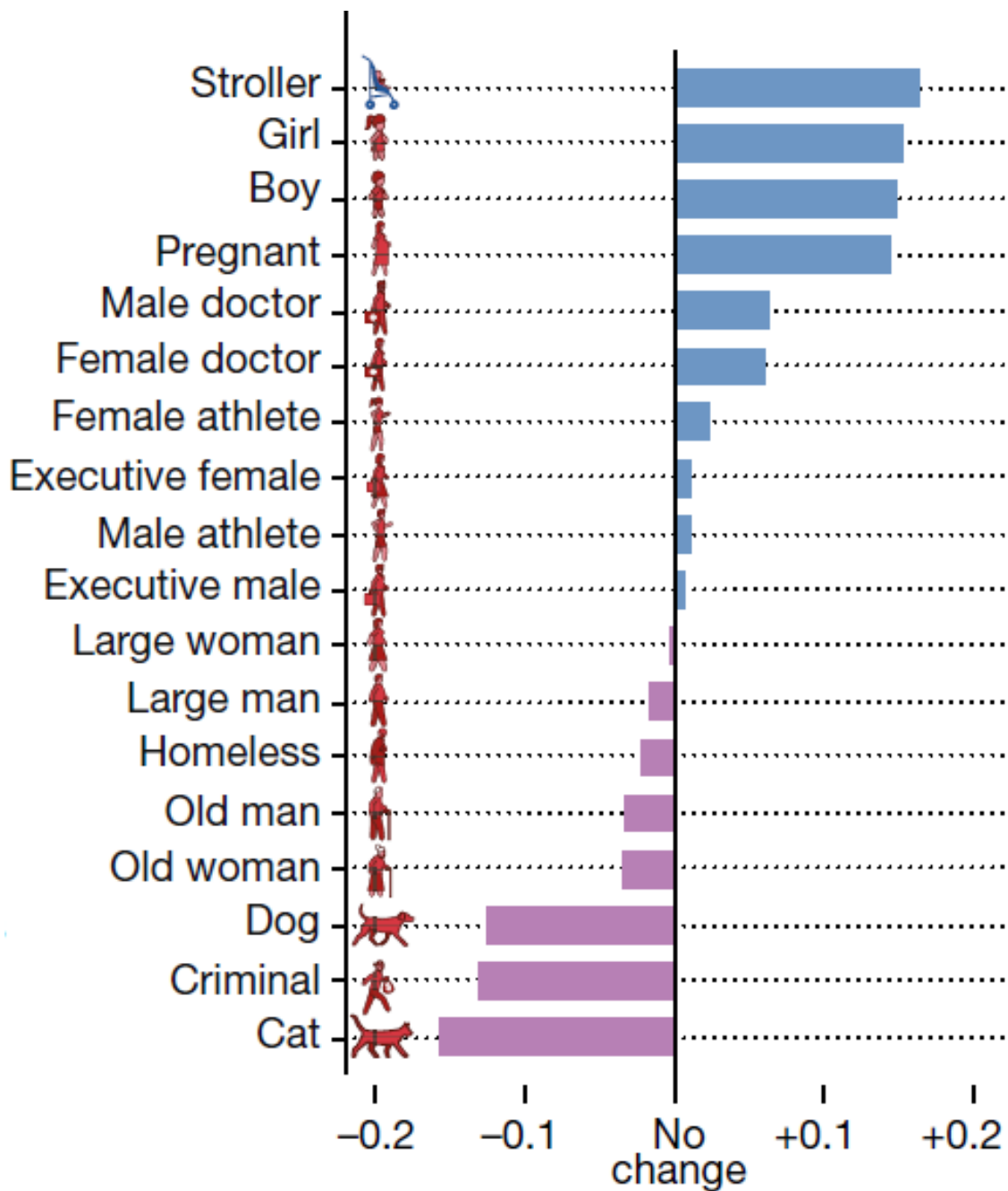
<https://www.moralmachine.net/>





$\Delta P$  –atšķirība varbūtībā, ka dalībnieks izvēlēsies glābt to, kas attēlots labajā pusē nekā to, kas attēlots kreisajā pusē. Piemēram, varbūtība, ka tiks pasaudzēts jauns, ir par 0.49 vienībām lielāka, salīdzinot ar vecāku cilvēku.

Awad, E. et al. (2018). The Moral Machine experiment. *Nature*, 563(7729), 59–64.

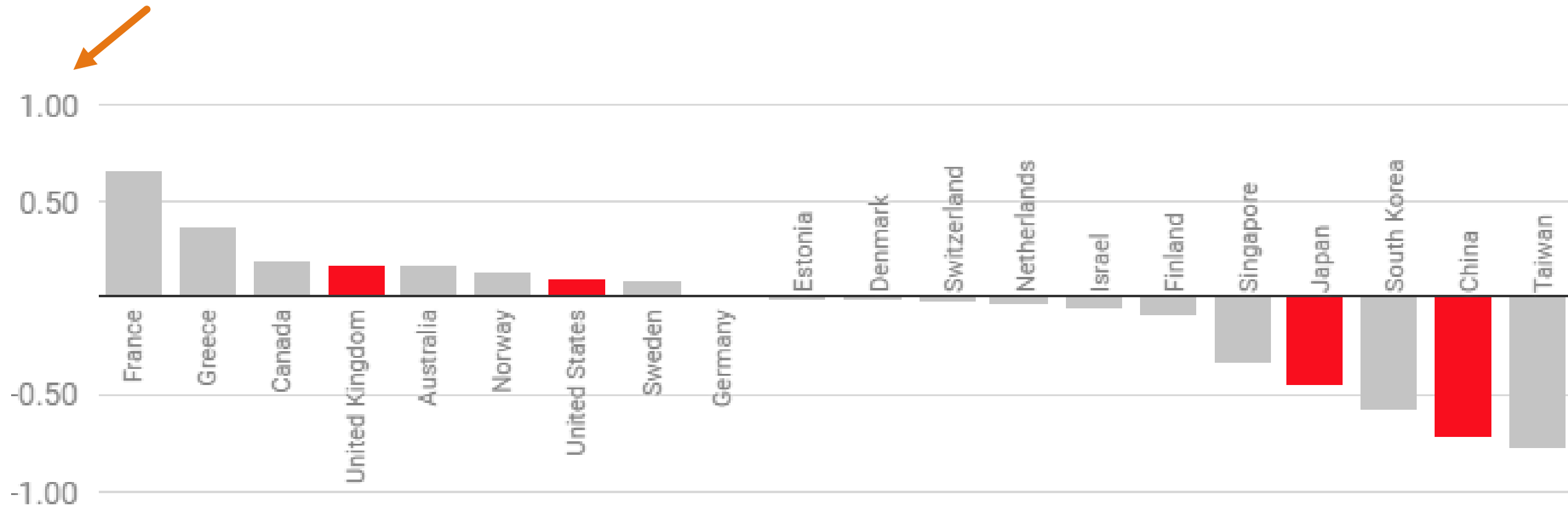


Varbūtība, ka tiks glābts tas, kas norādīts kolonnā attiecībā pret parastu vīrieti vai sievieti.

Pozitīvas vērtības nozīmē, ka norādītā būtne tiks izglābta ar lielāku varbūtību nekā parasts vīrietis vai sieviete.

Awad, E. et al., 2018.

Glābs gados jaunāku cilvēku



Glābs gados vecāku cilvēku

Karen Hao. Should a self-driving car kill the baby or the grandma? Depends on where you're from.

<https://www.technologyreview.com/2018/10/24/139313/a-global-ethics-study-aims-to-help-ai-solve-the-self-driving-trolley-problem/>

Paldies!