Why did Folksam start conducting consumer tests?

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How can an insurer influence consumers?

- Folksam Insurance Group is a mutual company
  - One of the biggest insurance companies in Sweden
    - We insure 50% of family homes, 50% of all persons in Sweden and 20% of all cars in Sweden
  - Our vision is that our customers should feel secure in a sustainable world
- Own research department since the end of 1970s
  - Focused on road traffic safety and sport injuries
  - Aim to reduce injuries and fatalities
  - Influence consumers, industry and authorities

This is why Folksam test helmets

- Informing and guiding consumers
- Encourage helmet manufacturers
- Influence certification tests

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Consumer Testing of Helmets

- 2012 Bicycle helmets for adults
- 2013 Bicycle helmets for children
- 2014 Ski helmets
- 2014 Equestrian Helmets
- 2015 Bicycle helmets for adults
- 2017 Bicycle helmets for adults
- 2017 Bicycle helmets for children
- 2018 Equestrian Helmets
- 2019 Ski helmets
- 2019 Bicycle helmets for adults
- 2019 Bicycle helmets for children
- 2020 Bicycle helmets for adults

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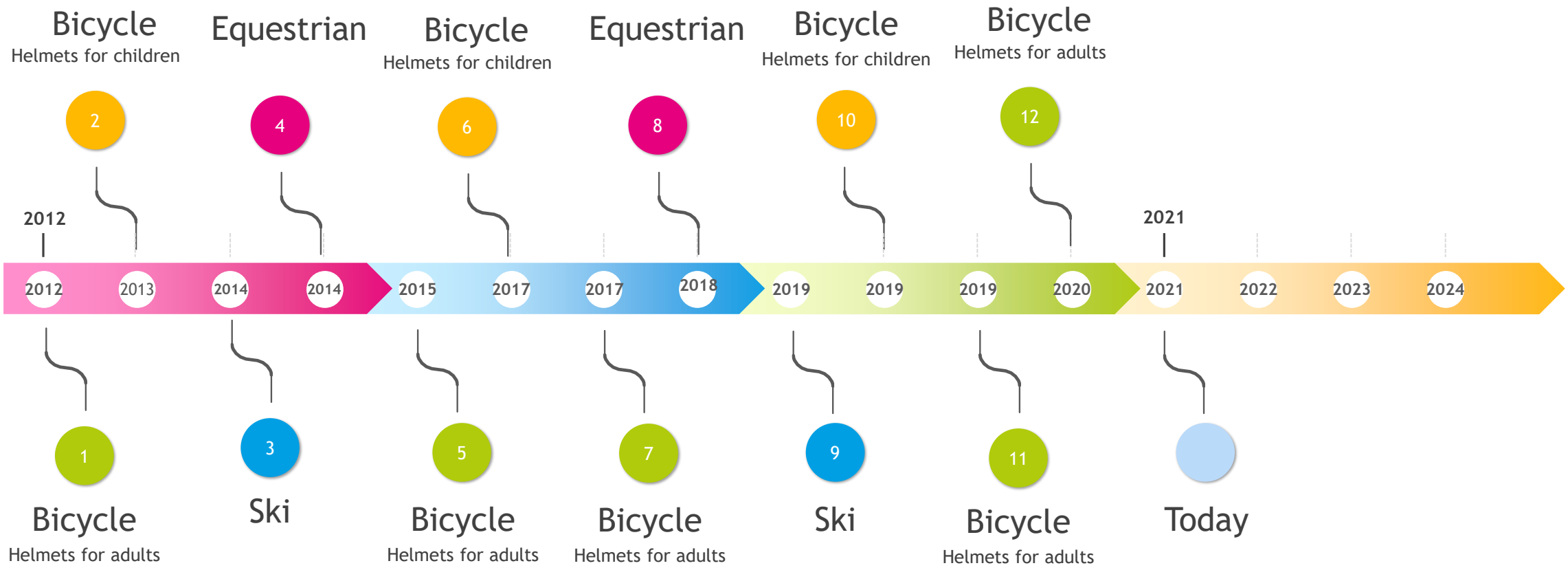
Ten years of testing



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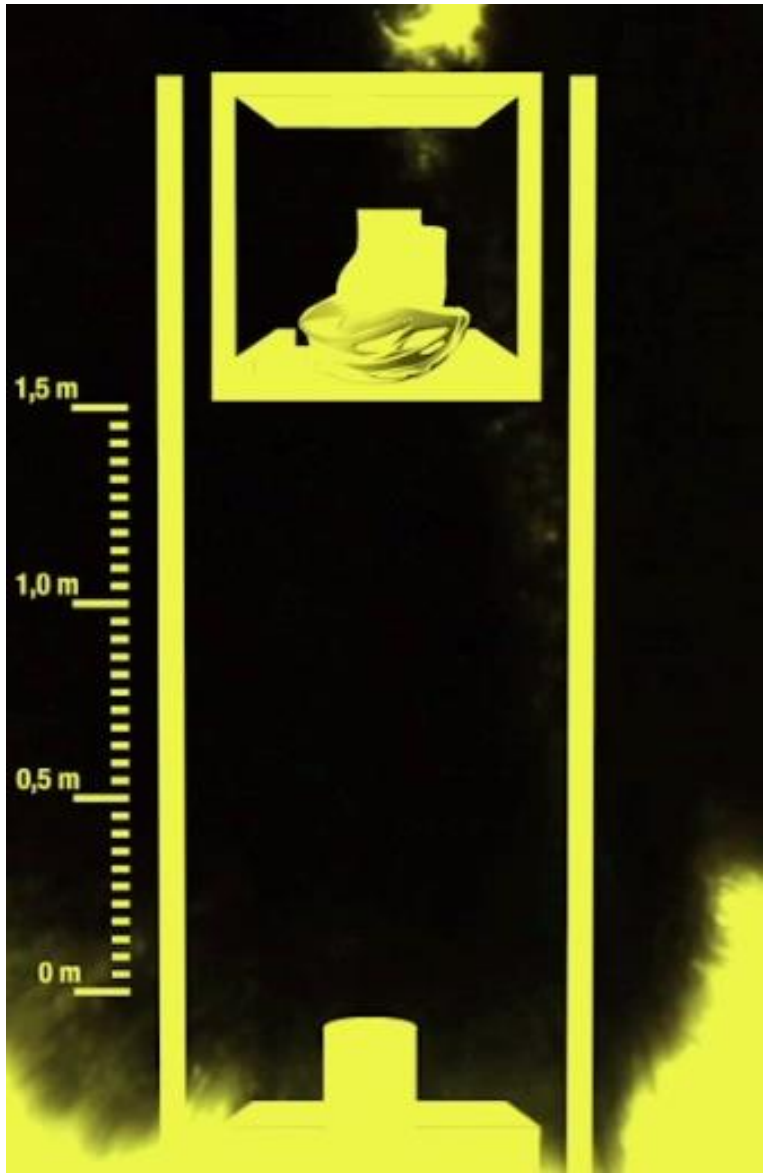
Current Helmet Standard – Focus on Skull Fracture

- Evaluating energy absorption in perpendicular impact
  - 250g limit
- Angular acceleration not included
  - brain more sensitive
  - more common impact type



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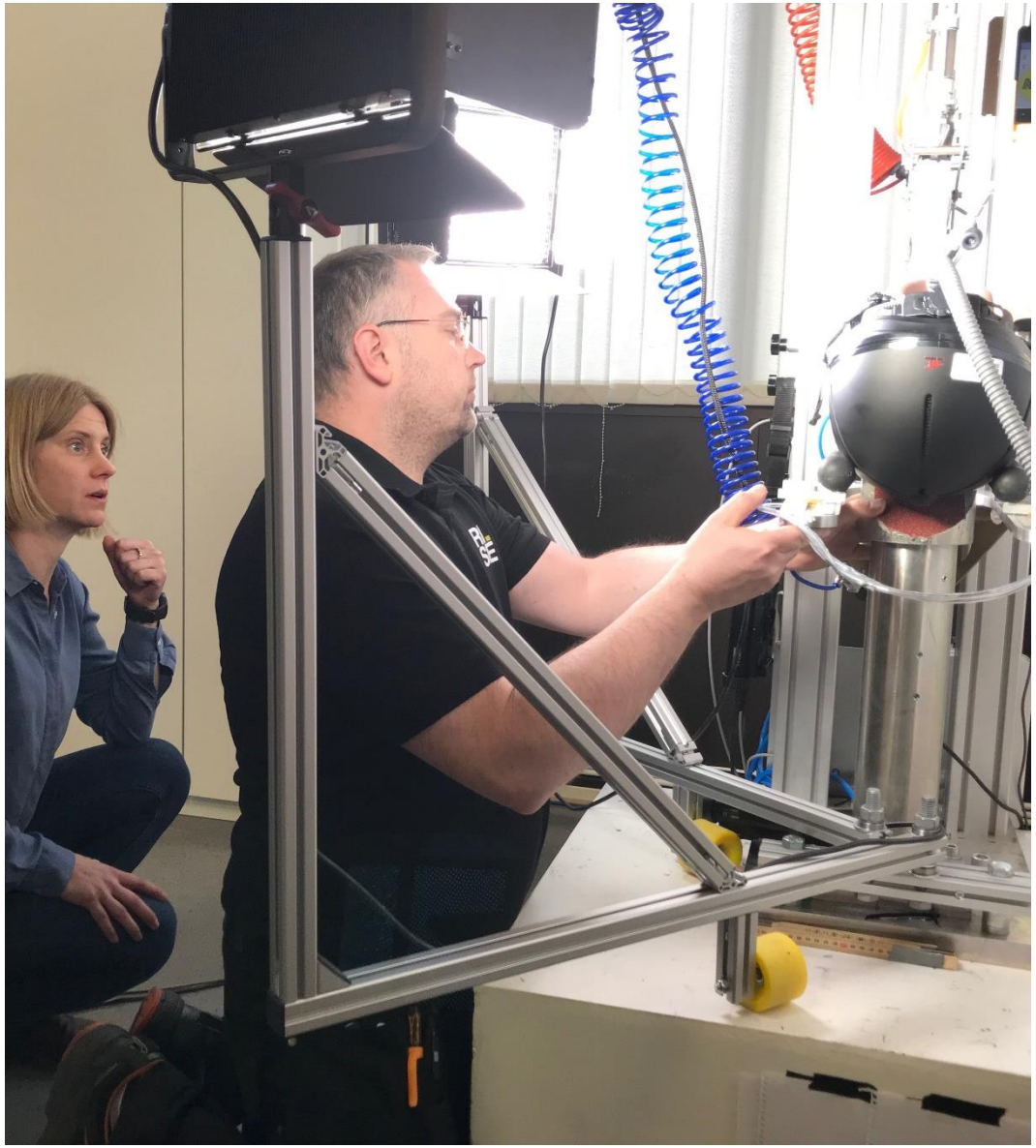
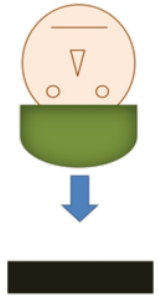
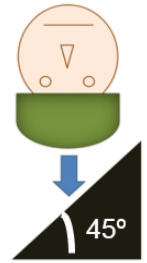


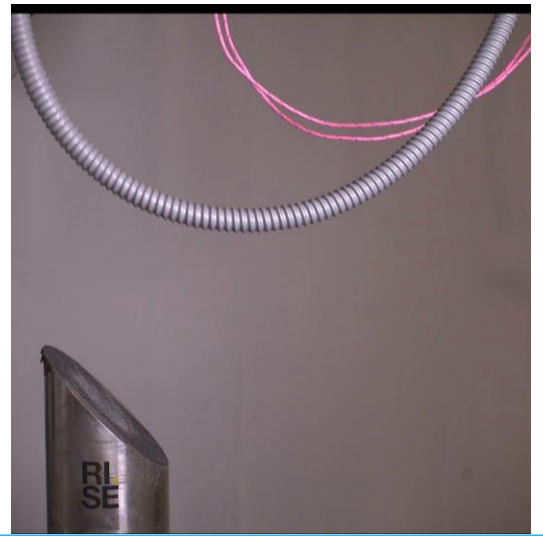
Our aim

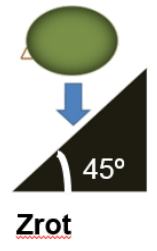
To develop an improved test method, including oblique impacts, to evaluate helmets sold on the European market

Method – Included Tests









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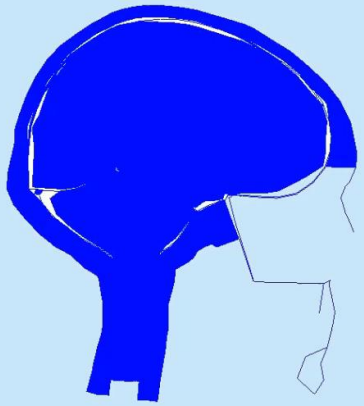
Finite Element Modelling Used to Evaluate Injury Risk

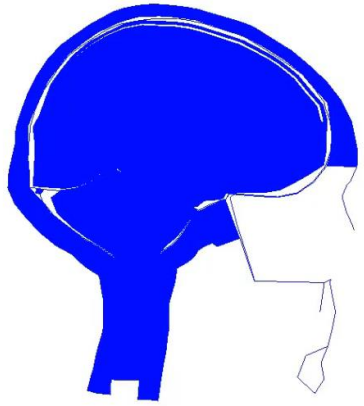
Only few helmets

below the threshold 50% risk of concussion

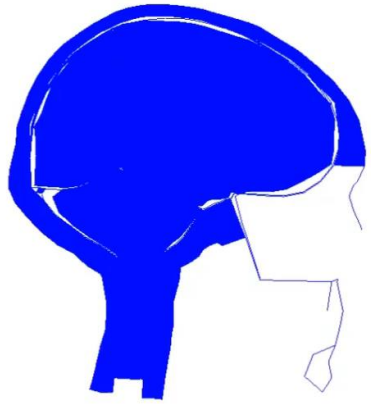
Head Protector - airbag
(Hövding)



Helmet with low risk



Helmet with high risk



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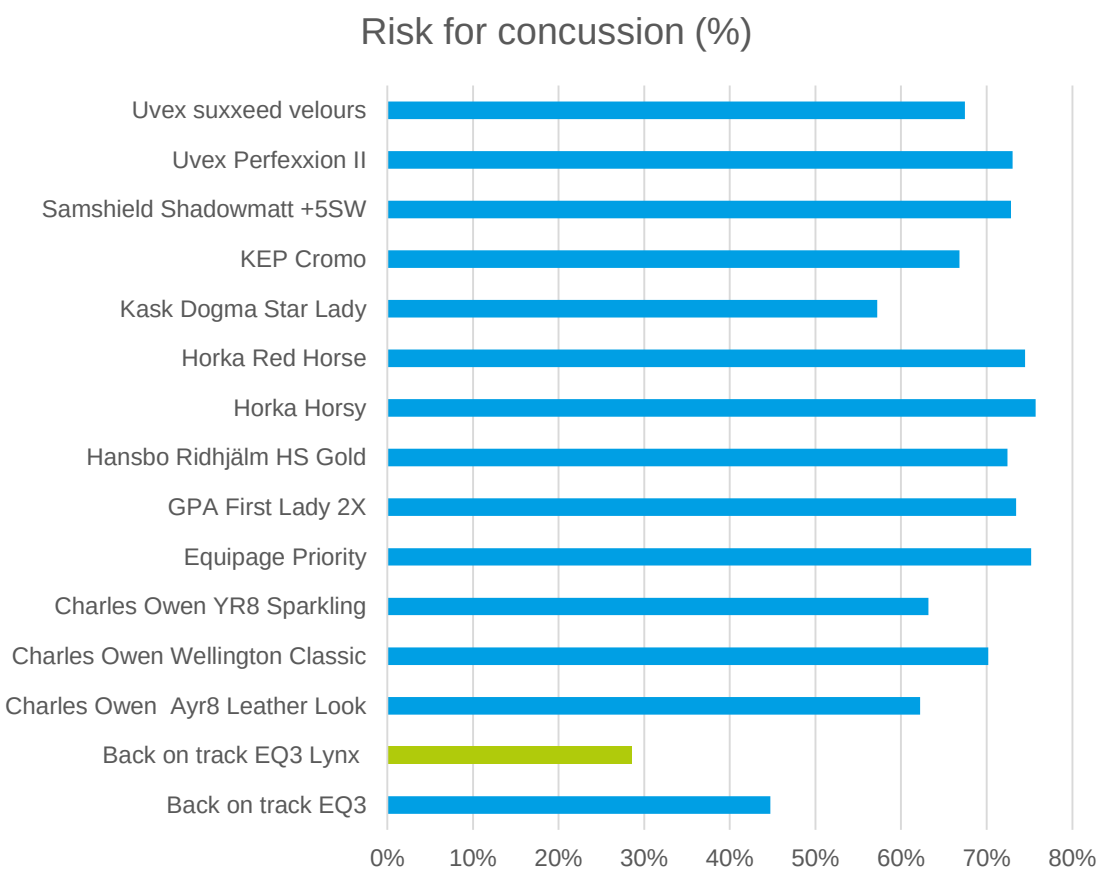
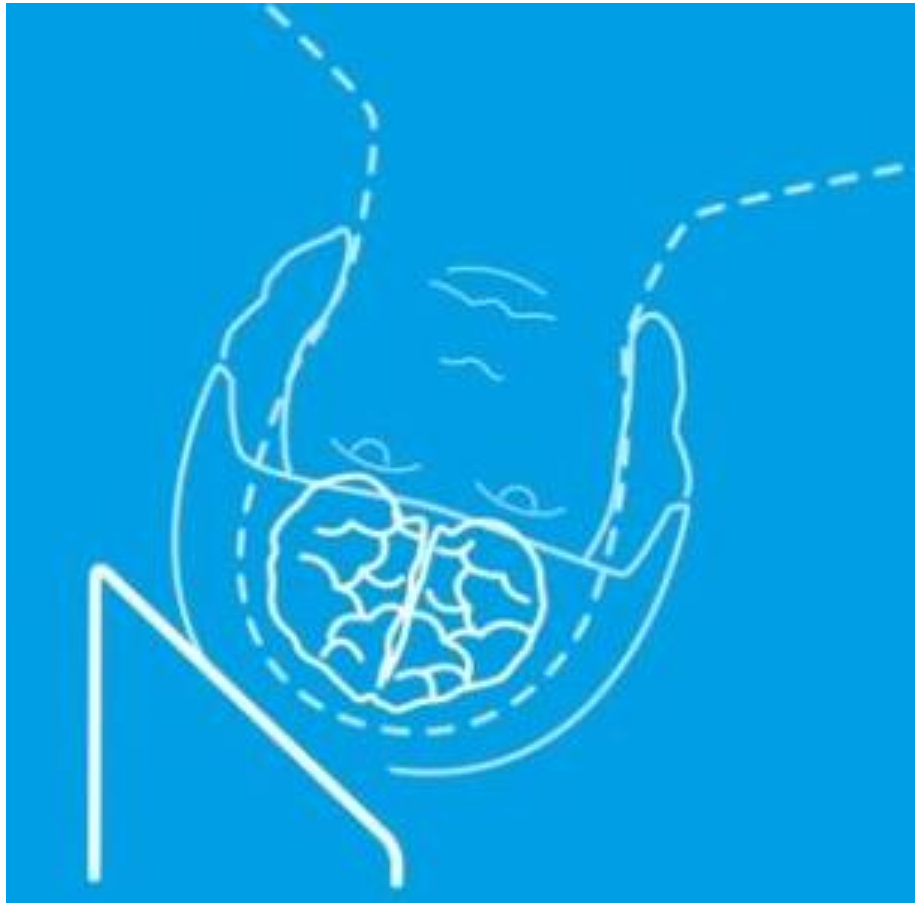
Reflecting helmet’s protective performance in oblique impact – risk for concussion





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Shock absorption according to European standard (Angle 0° 5.6 m/s) – Folksam test of Equestrian helmets 2018

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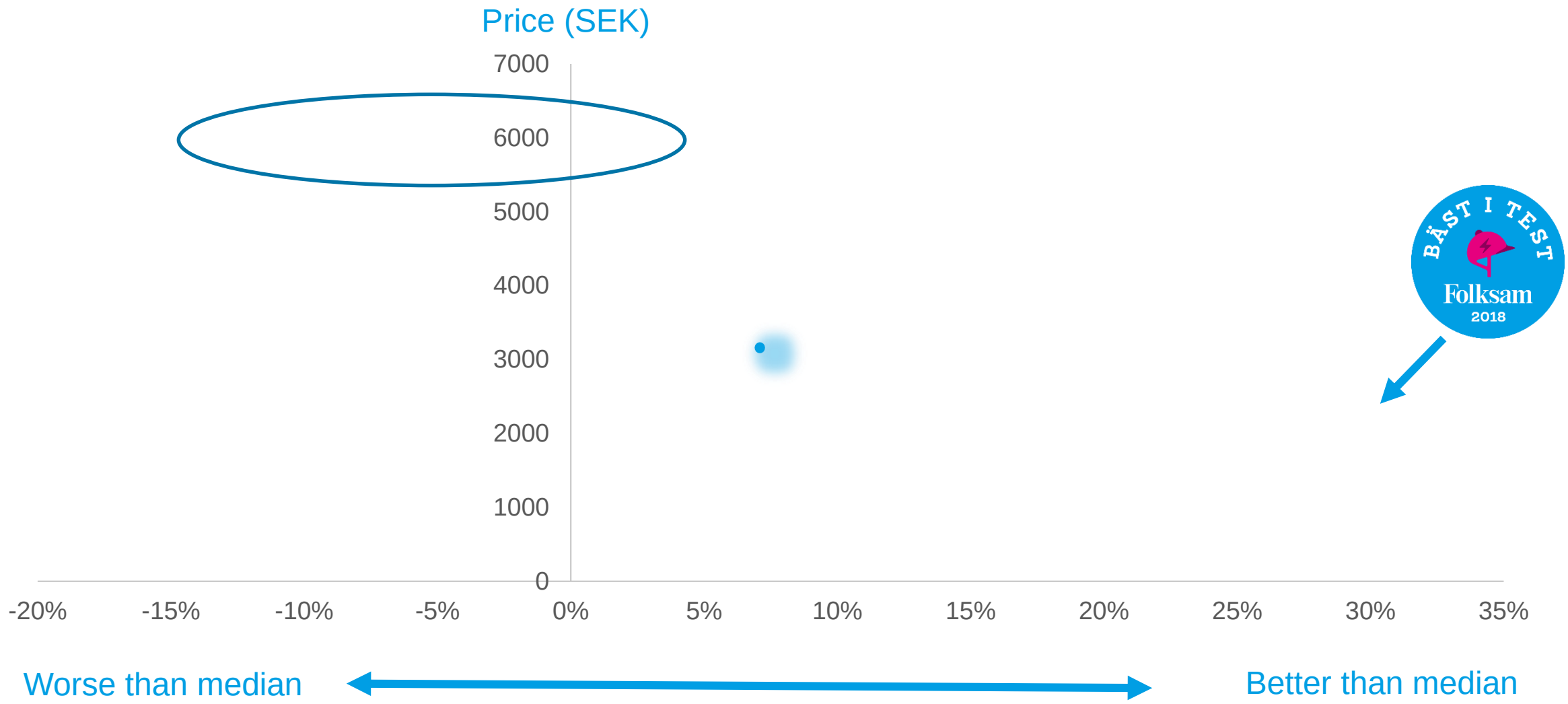
Back on Track
EQ3 Lynx

Back on Track
EQ3

Charles Owen
Ayr8 Leather Look

Price vs result



Conclusions

- A helmet that meets the current standards does not necessarily prevent a cyclist/skier/rider from getting a concussion
- Helmets equipped with systems aiming to reduce rotational loadings performed better than the others
  - but no guarantee that it is a safe helmet
- Helmets should be designed to reduce linear acceleration as well as rotational
- Consumer tests play an important role:
  - informing and guiding consumers in their choosing process
  - encourage helmet manufacturers to raise their game and bring to market new helmet models that perform at least as well as the best existing models

Thank you for your attention

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