Equine Injury Database – Can we explain the significant drop in risk in 2015?

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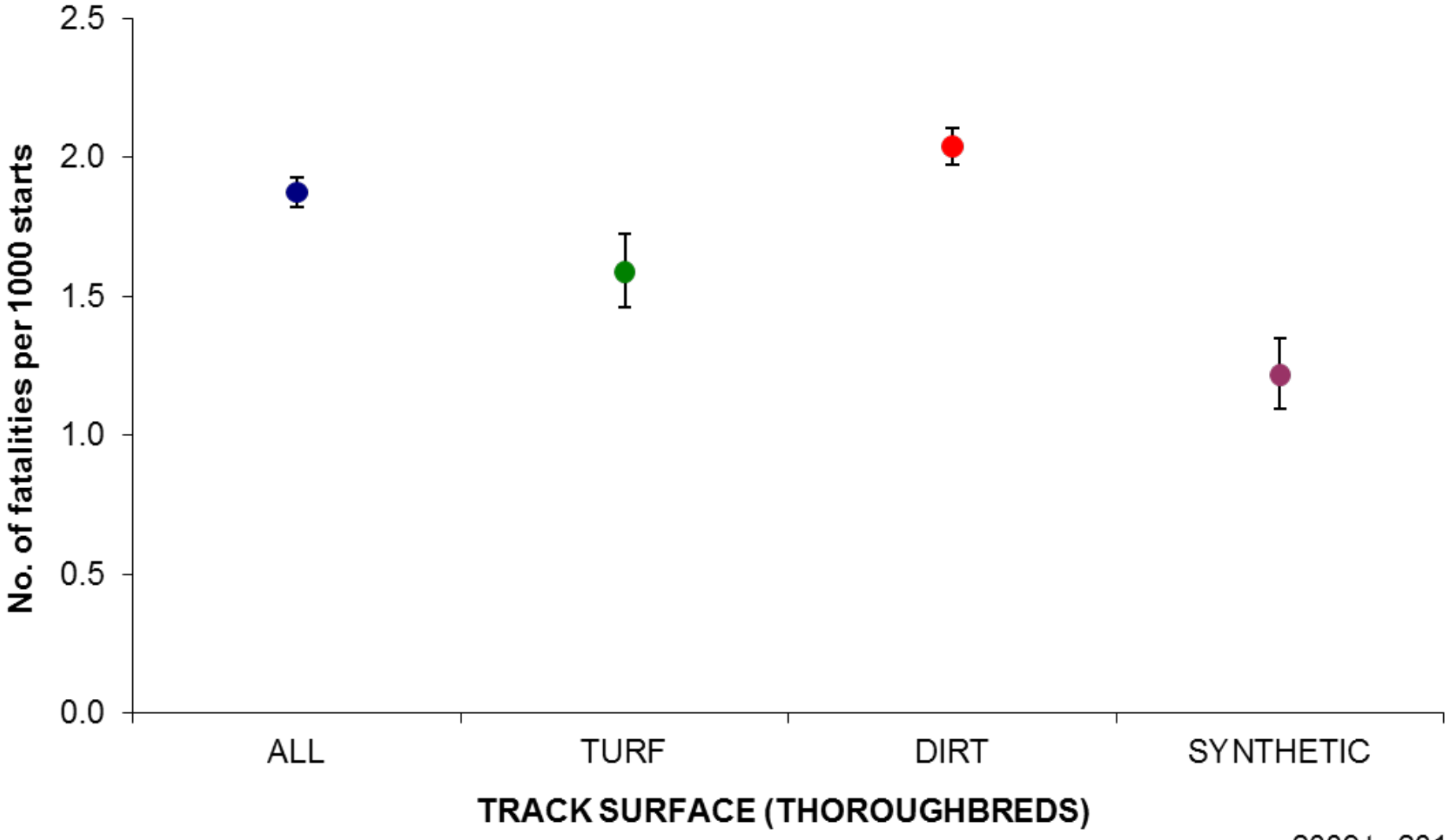
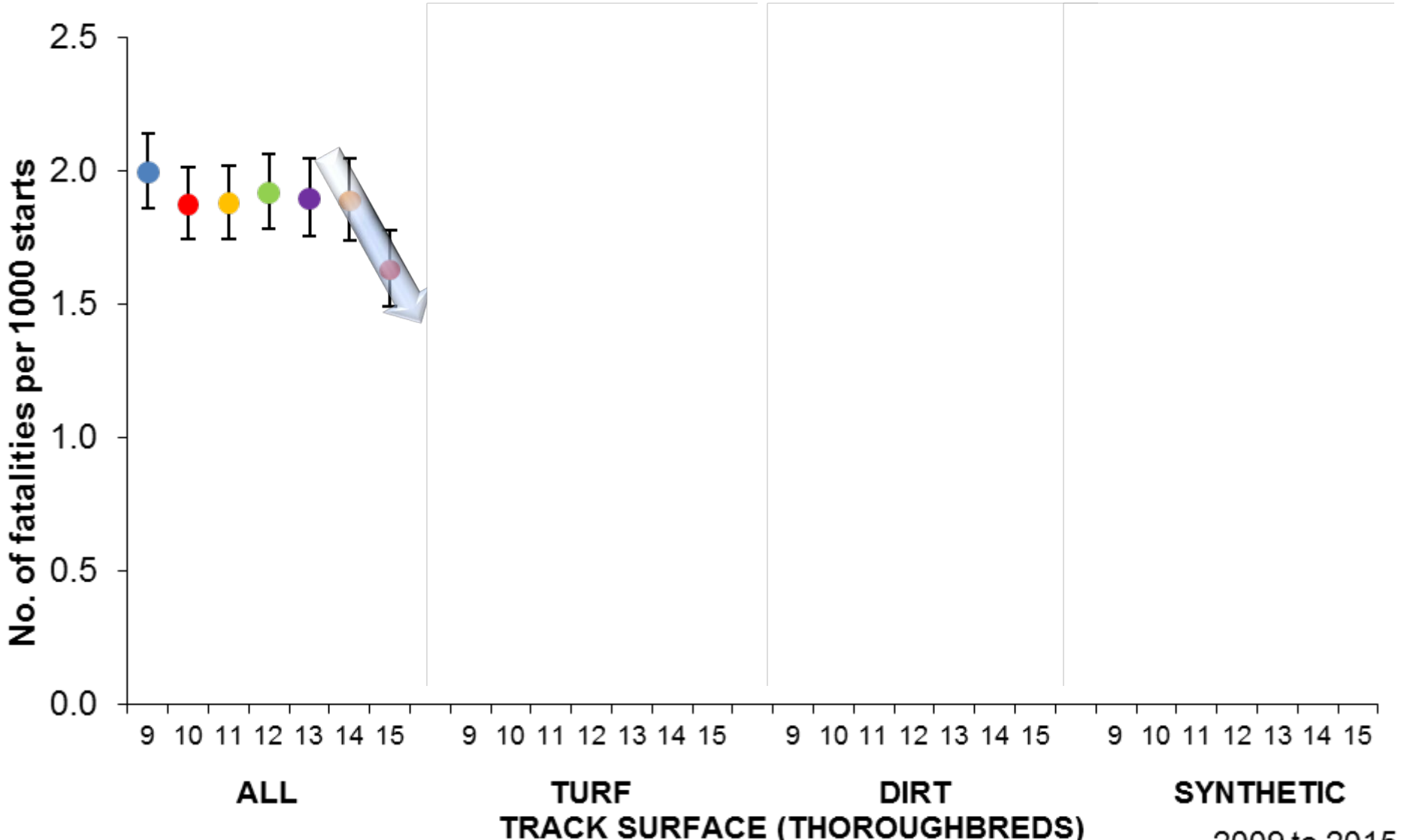
Summary

- What do the figures tell us now?
- Year on year changes in risk of fatal injury
- What might be responsible for the improvement?
- Change in prevalence of known risk factors
- Approximate contribution of each risk factor
- Conclusions

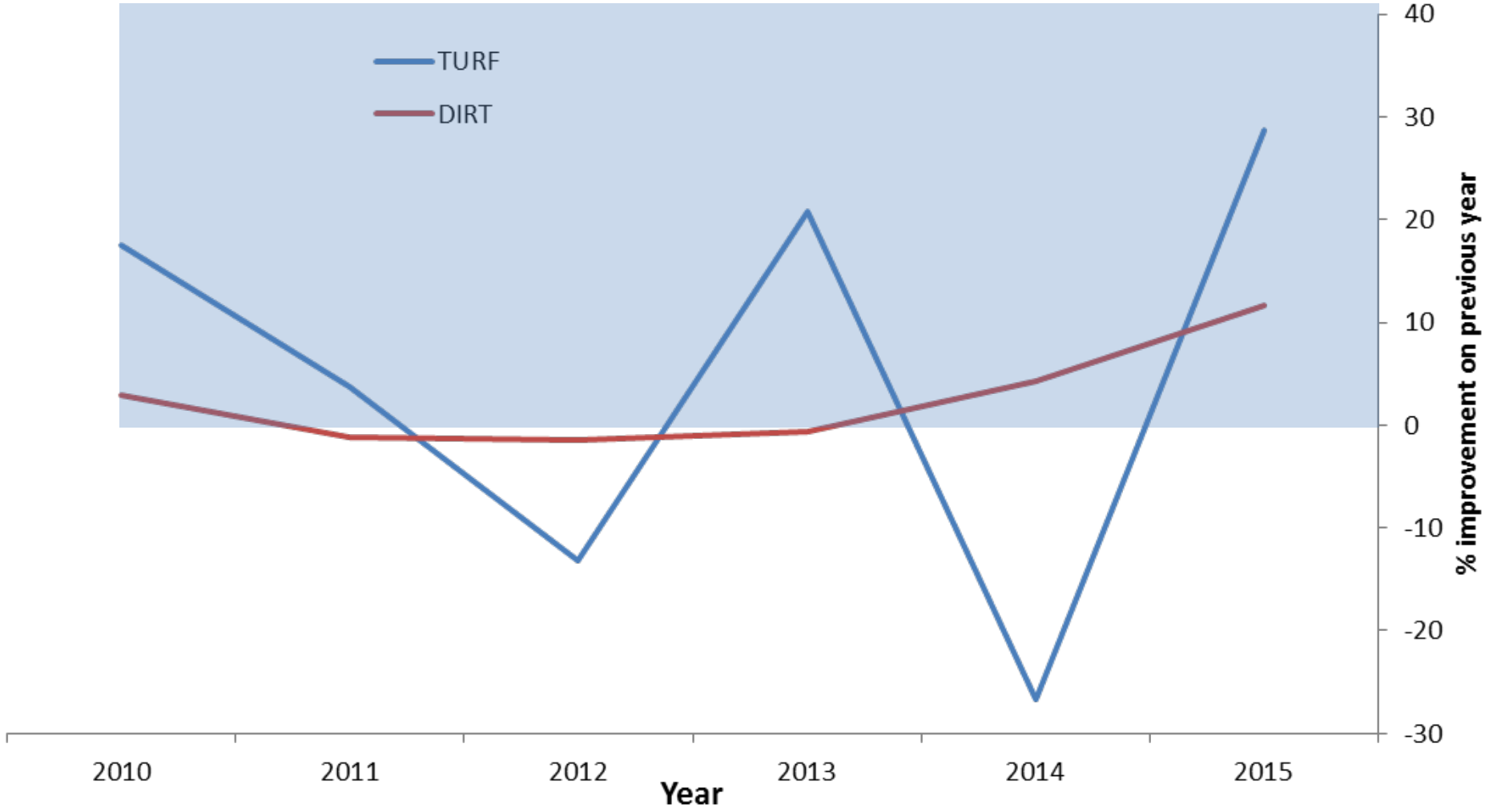
2009-2015


2.5
2.0
1.5
1.0
0.5
0.0
No. of fatalities per 1000 starts
ALL
TURF
DIRT
SYNTHETIC
TRACK SURFACE (THOROUGHBREDS)
2009 to 2015

7-years of the EID



% improvement in risk of fatal injury on previous year



So what is responsible for the improvement?

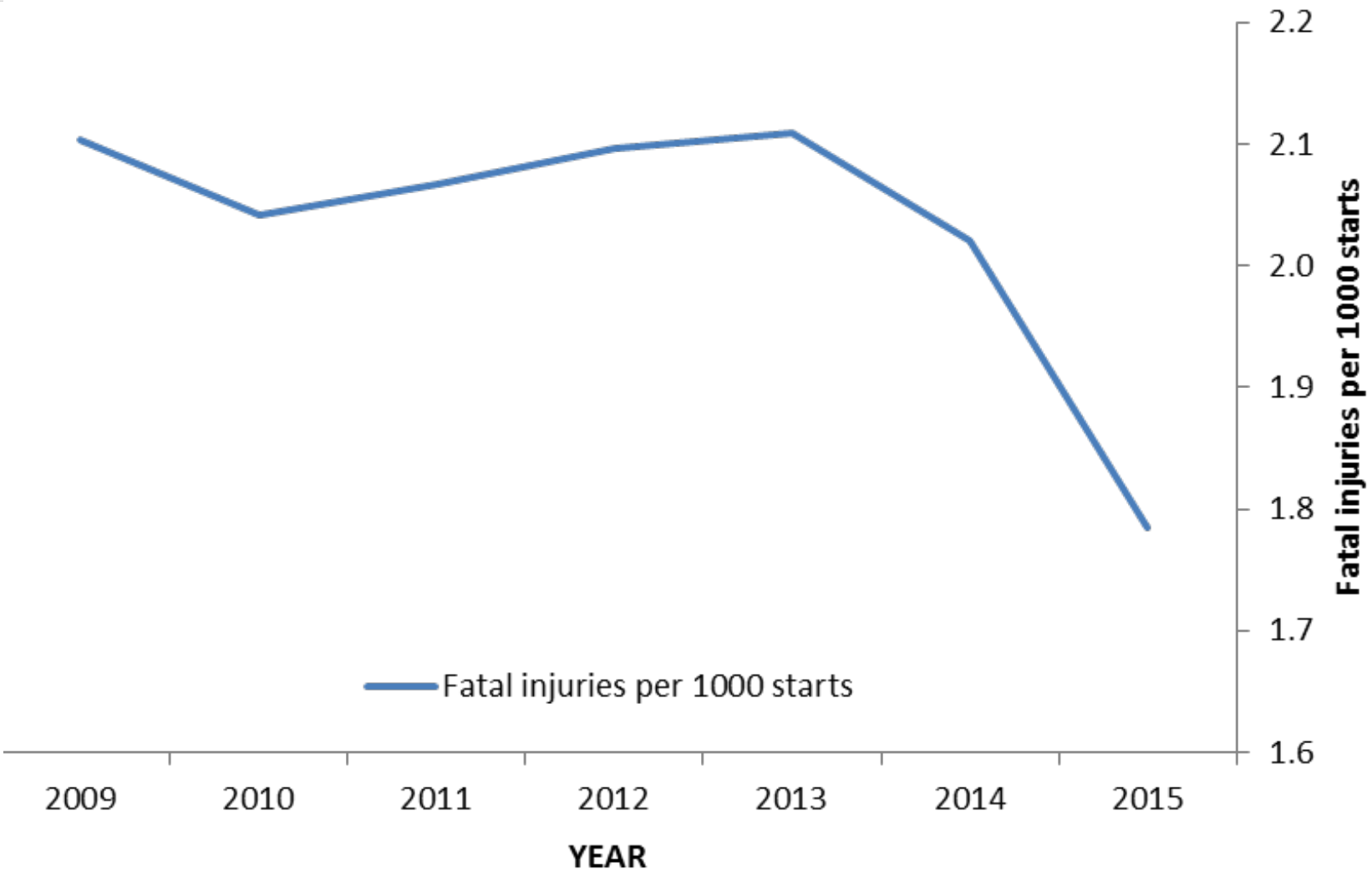
- Known risk factors
- Unknown risk factors
- Natural variation

Known risk factors

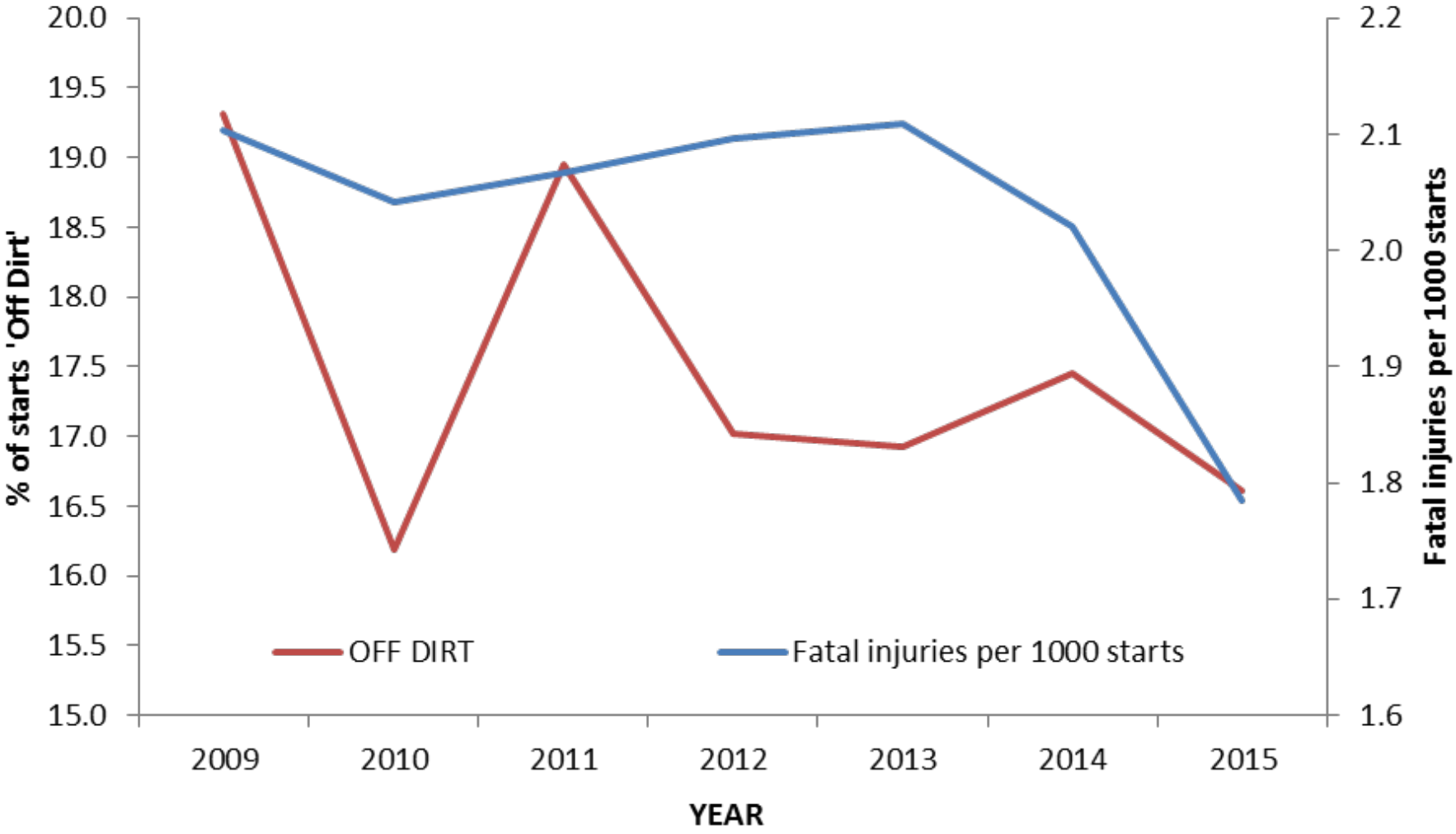
Prevalence of known risk factors

- We have identified close to 20 different factors associated with the risk of fatal injury or fracture
- How has the prevalence of these changed over the duration of the EID?
- Plot against risk of fatal injury on DIRT over the same time period

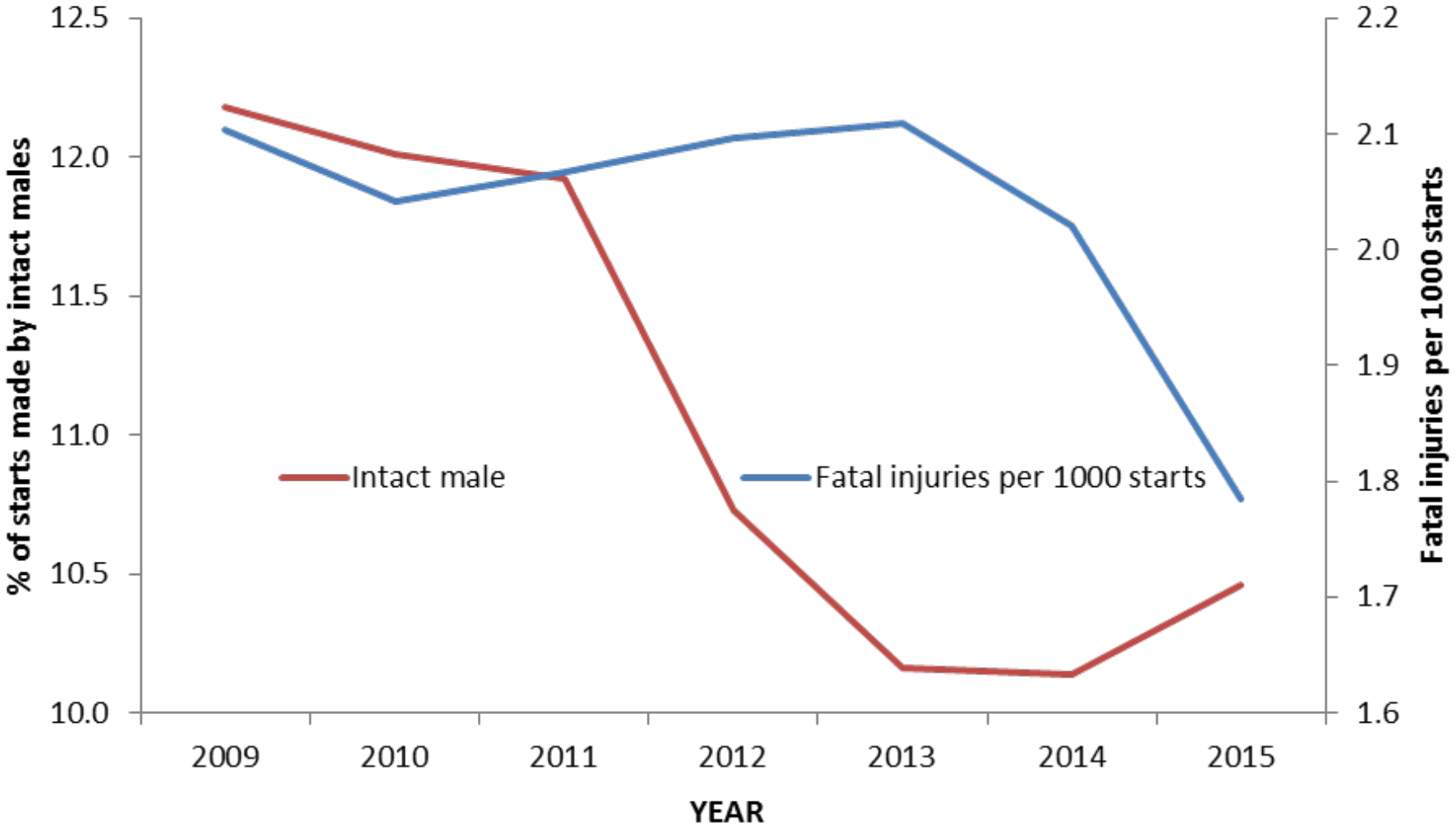
Risk of fatal injury on DIRT



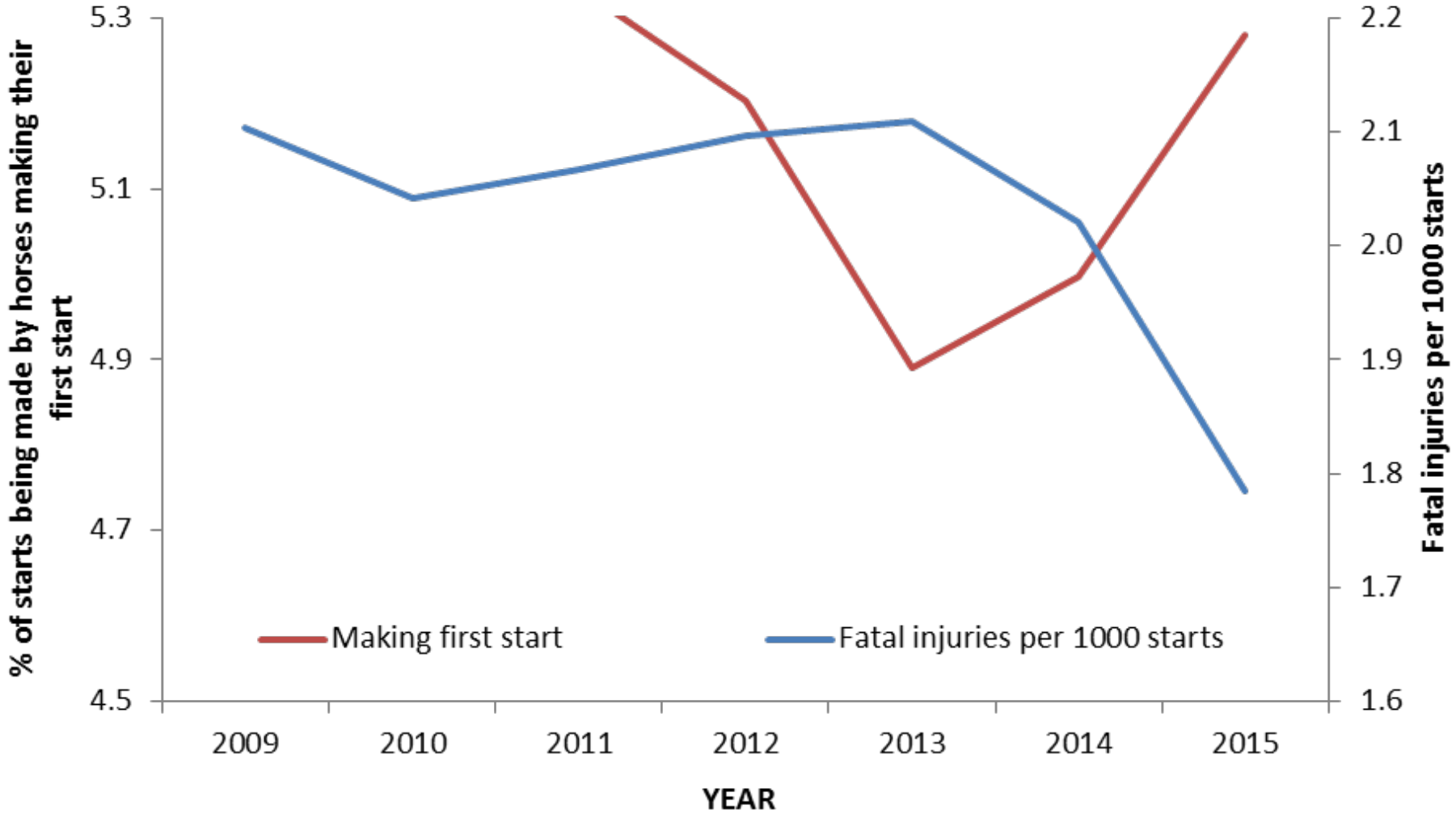
‘Off Dirt’ – increased risk



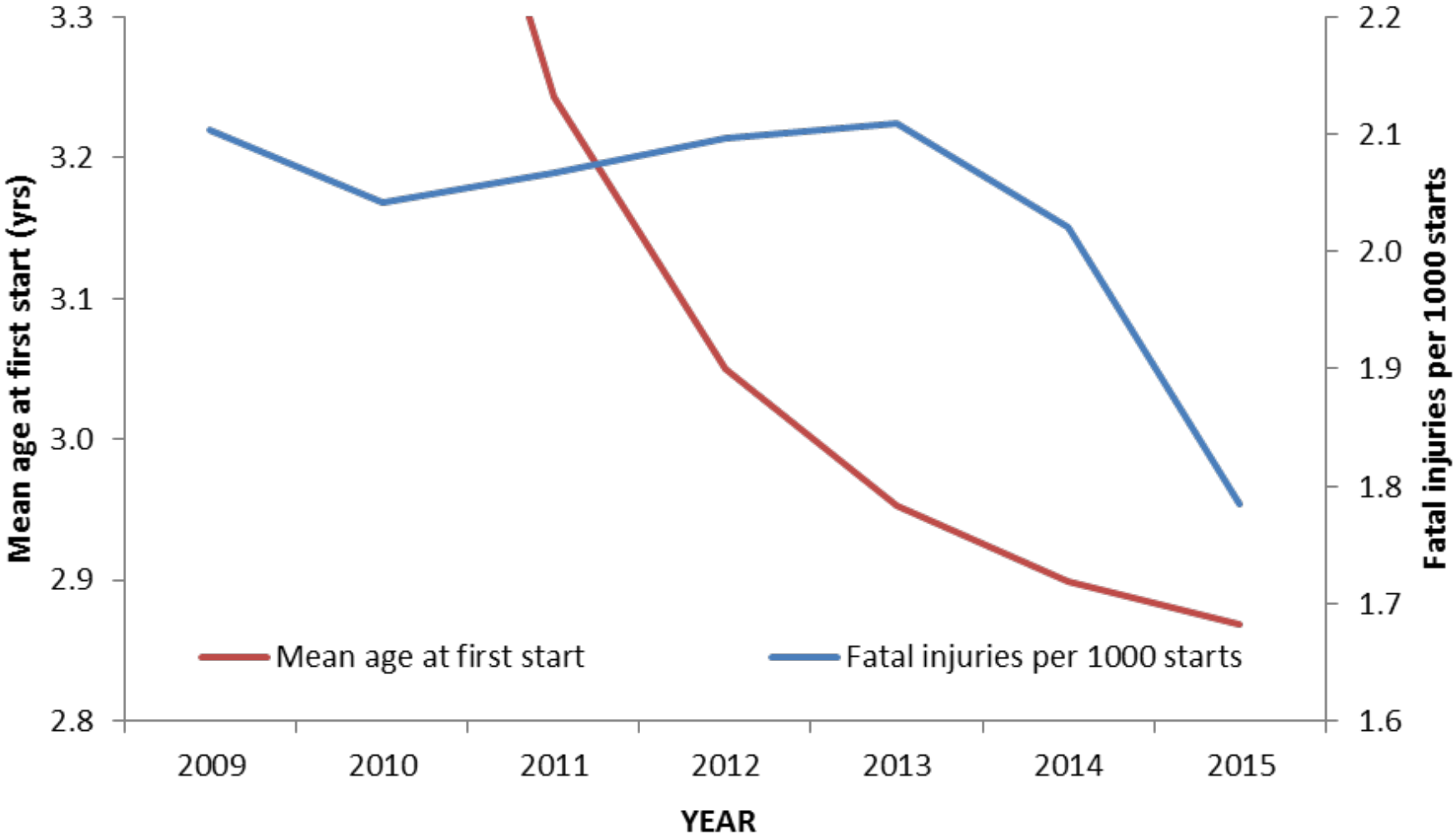
Male horses – increased risk



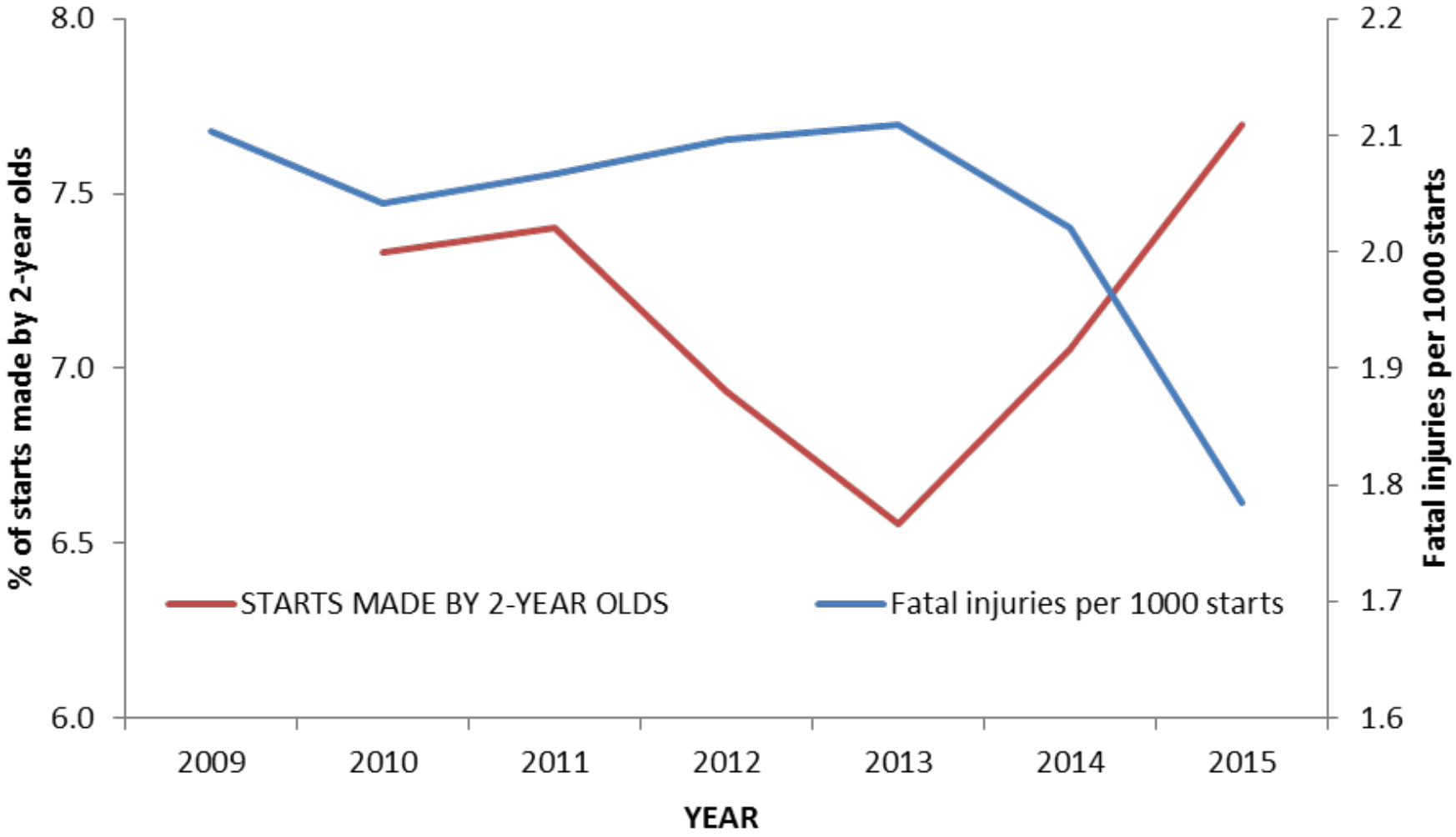
First start – reduced risk



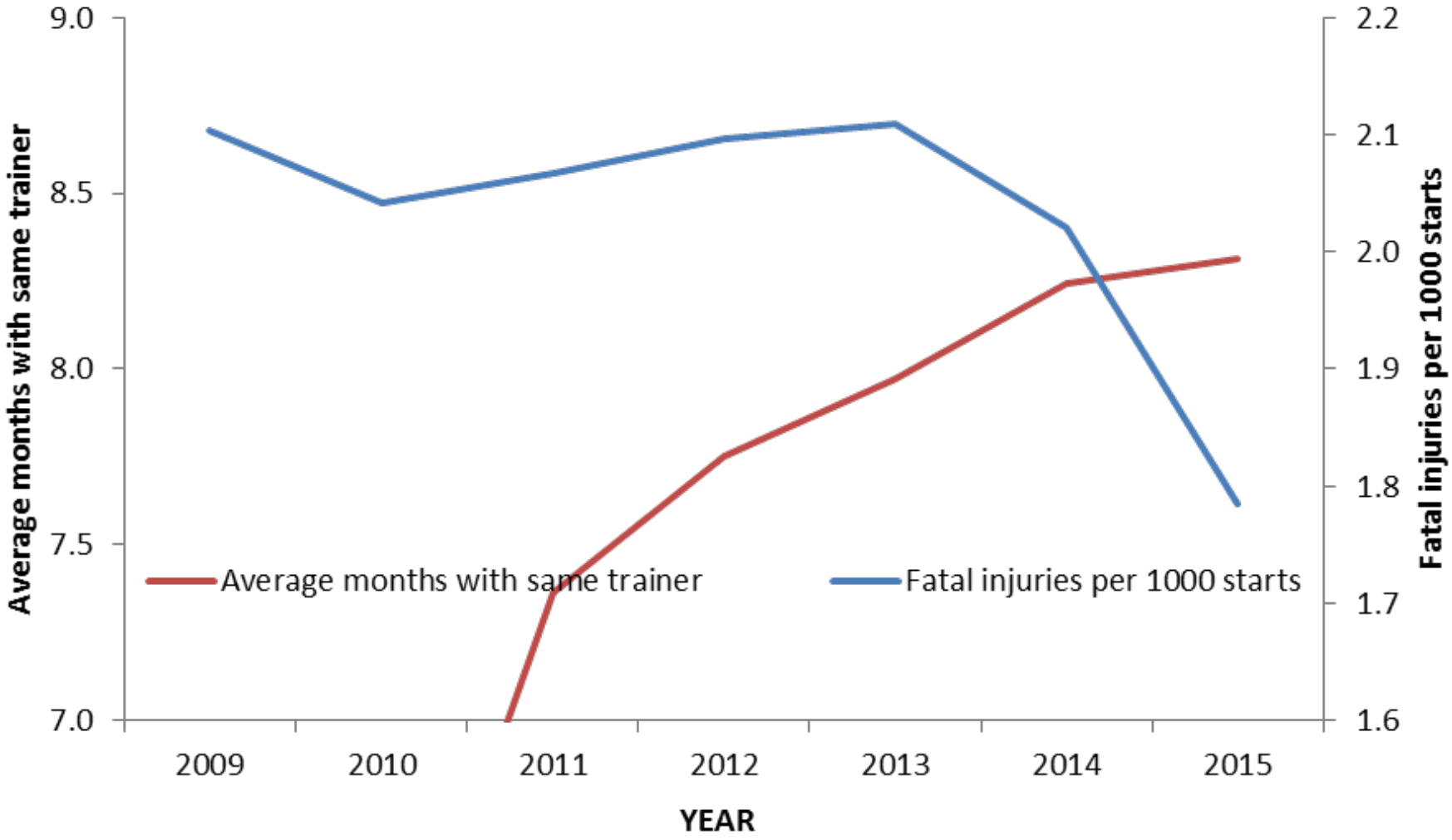
Age at first start – younger is better



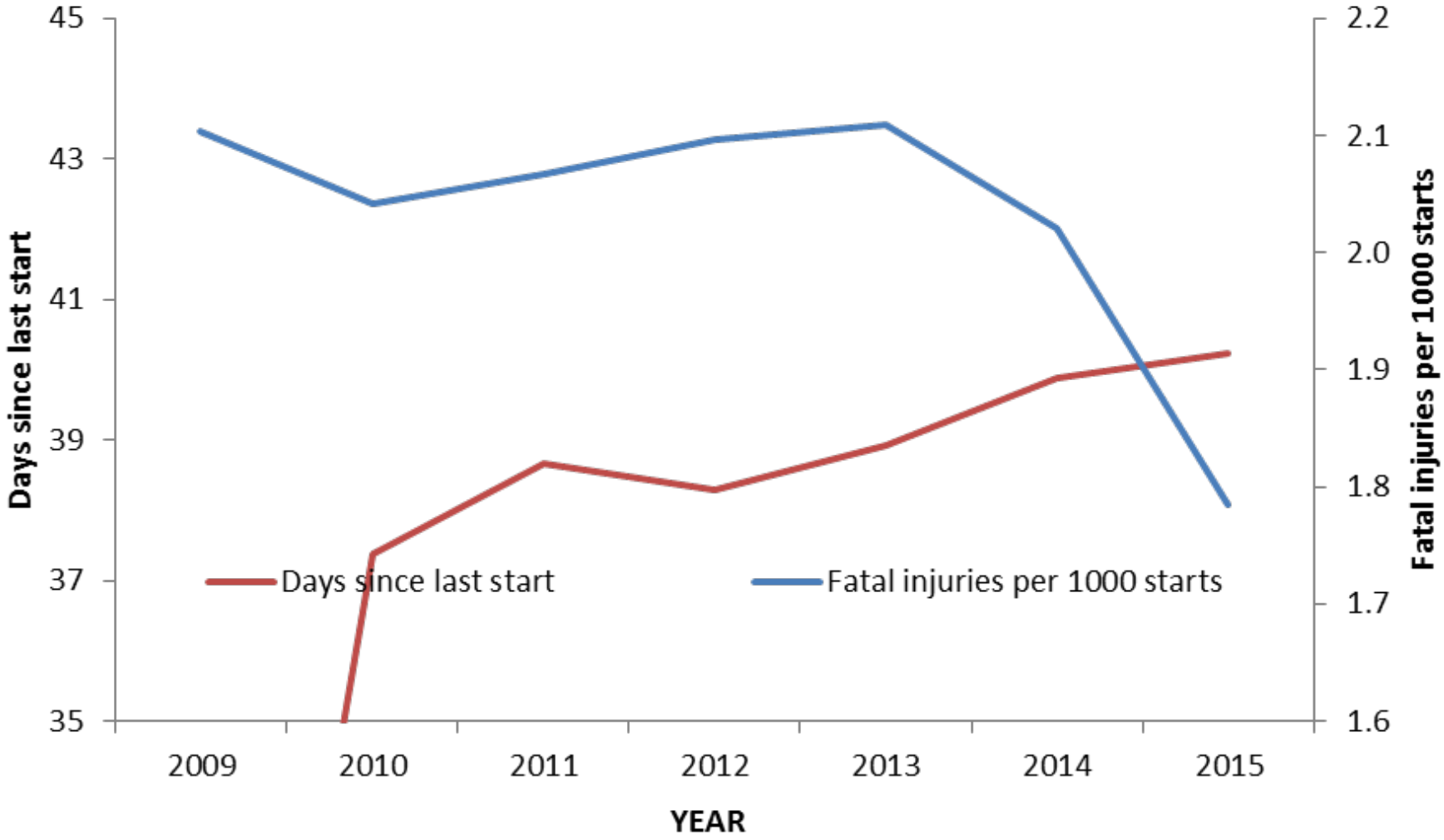
2-year old starts – reduced risk



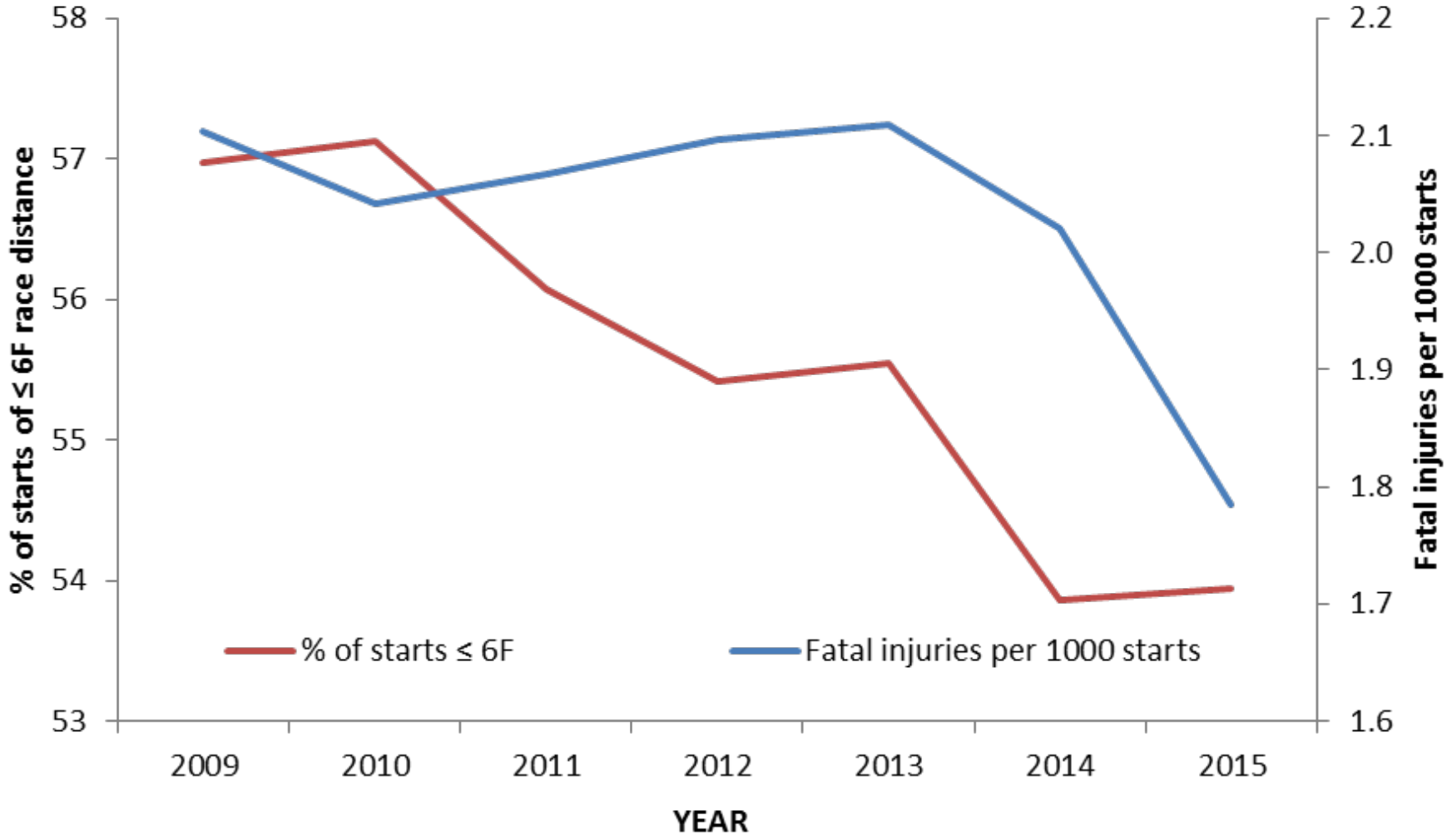
Time with same trainer – longer is better



Days since last race – longer is better



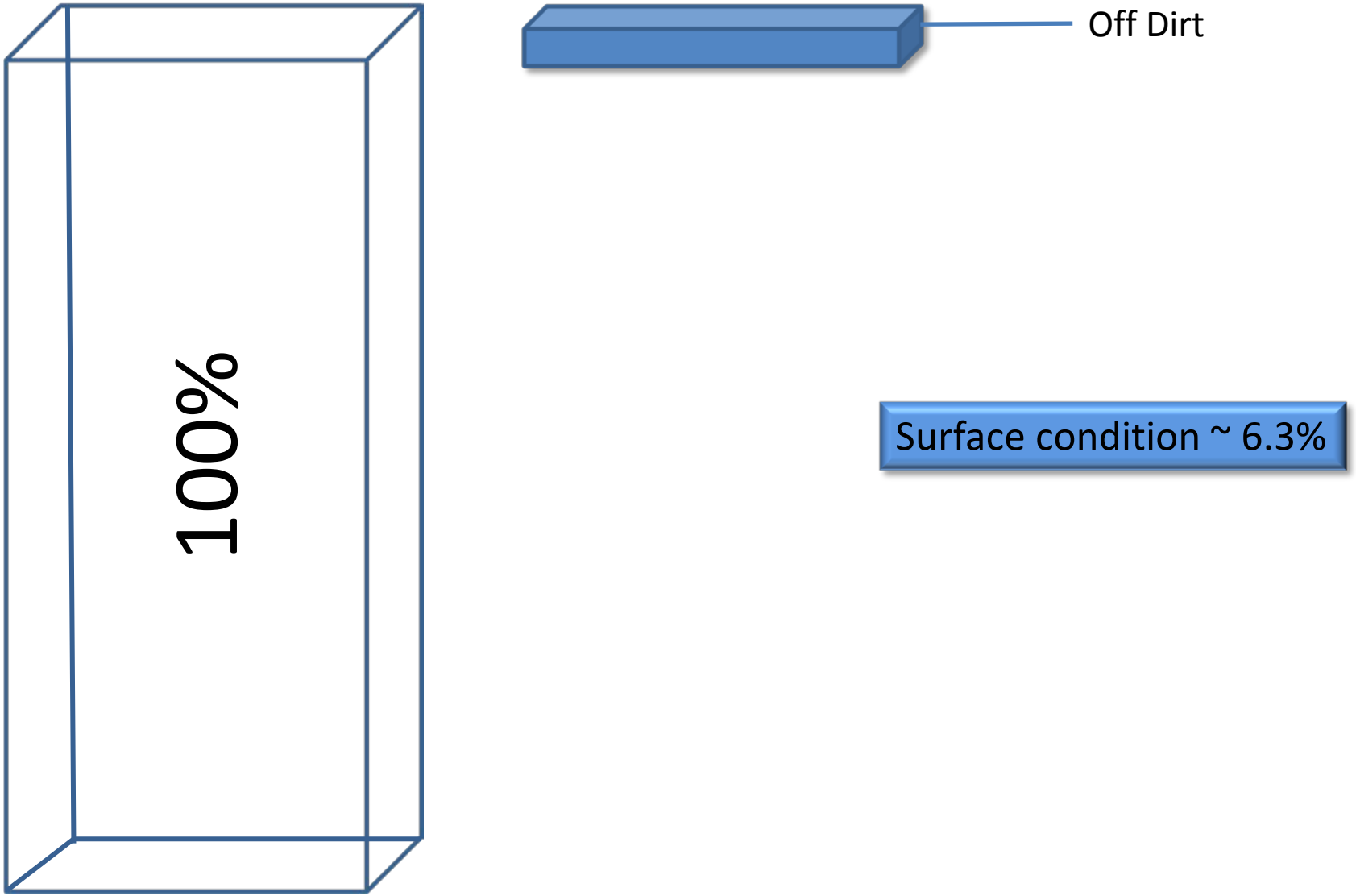
Race distance – ≤ 6F of particular risk



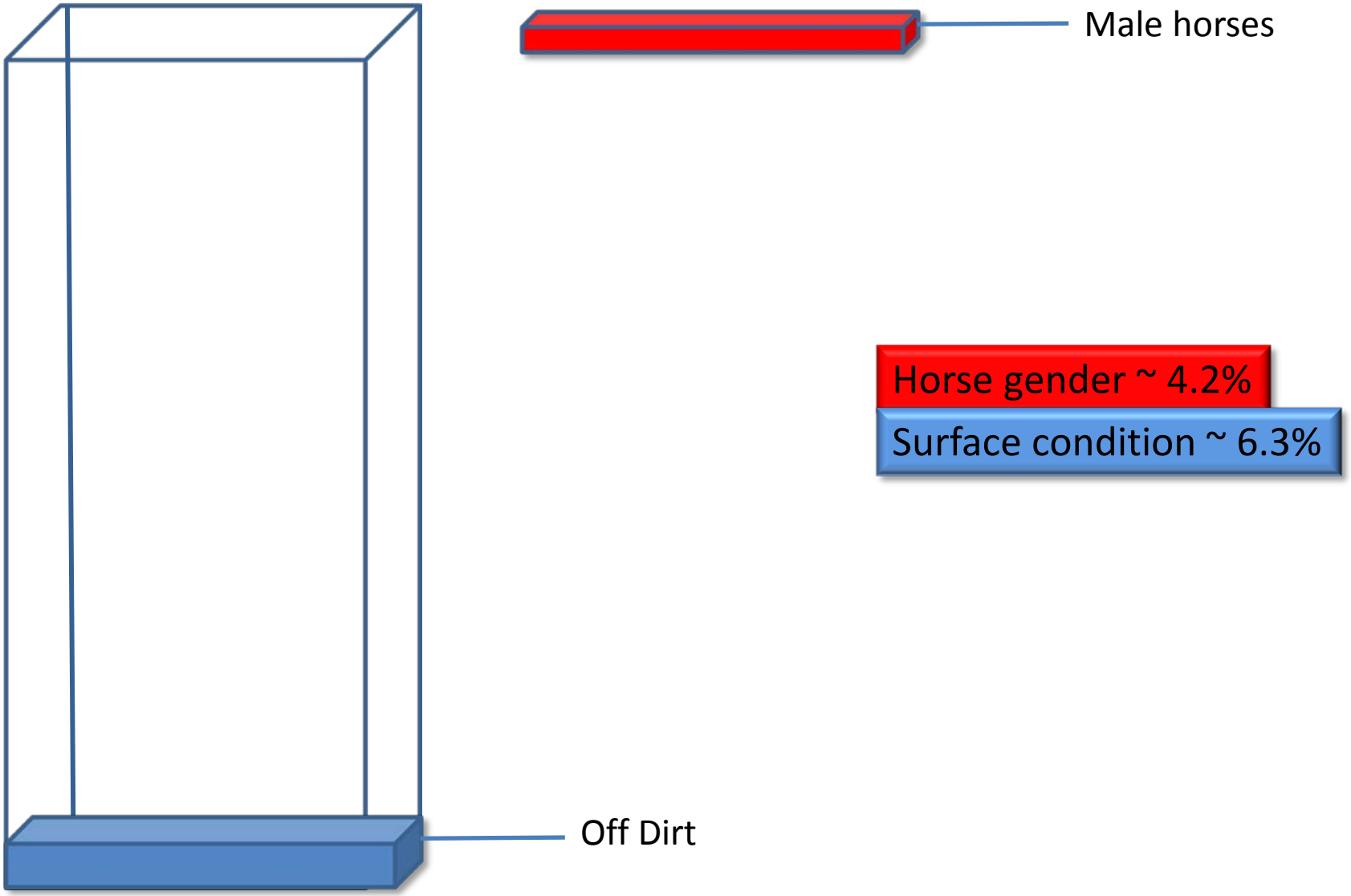
Some ‘interesting’ plots but…

- What do they actually mean
- How much of the change in risk can be attributed to some of those changes?
- ‘Simple’ calculations accounting for:
  - The change in prevalence of risk factors
  - Size of effect on risk attributed to the presence of the risk factor

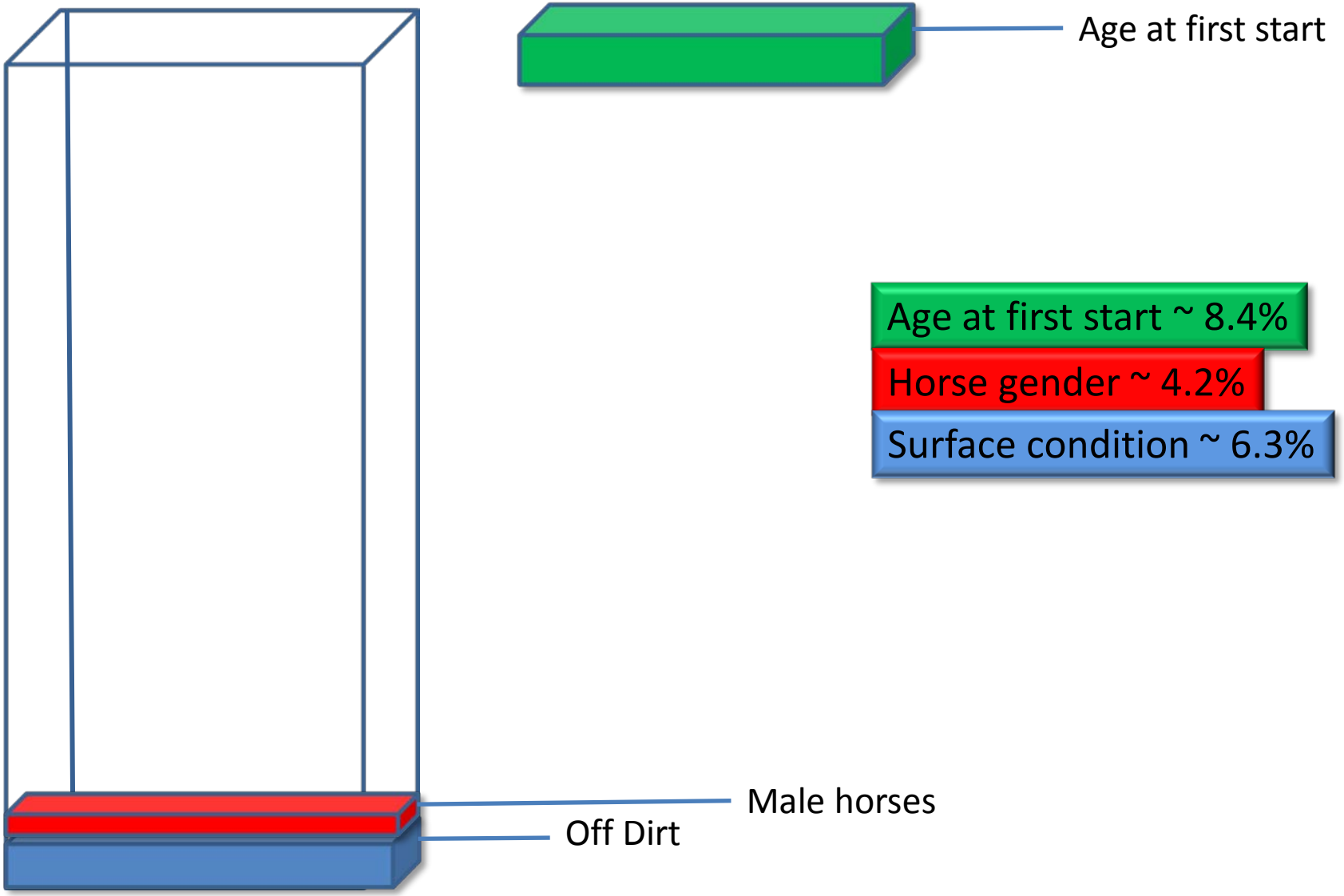
Contribution to drop in risk



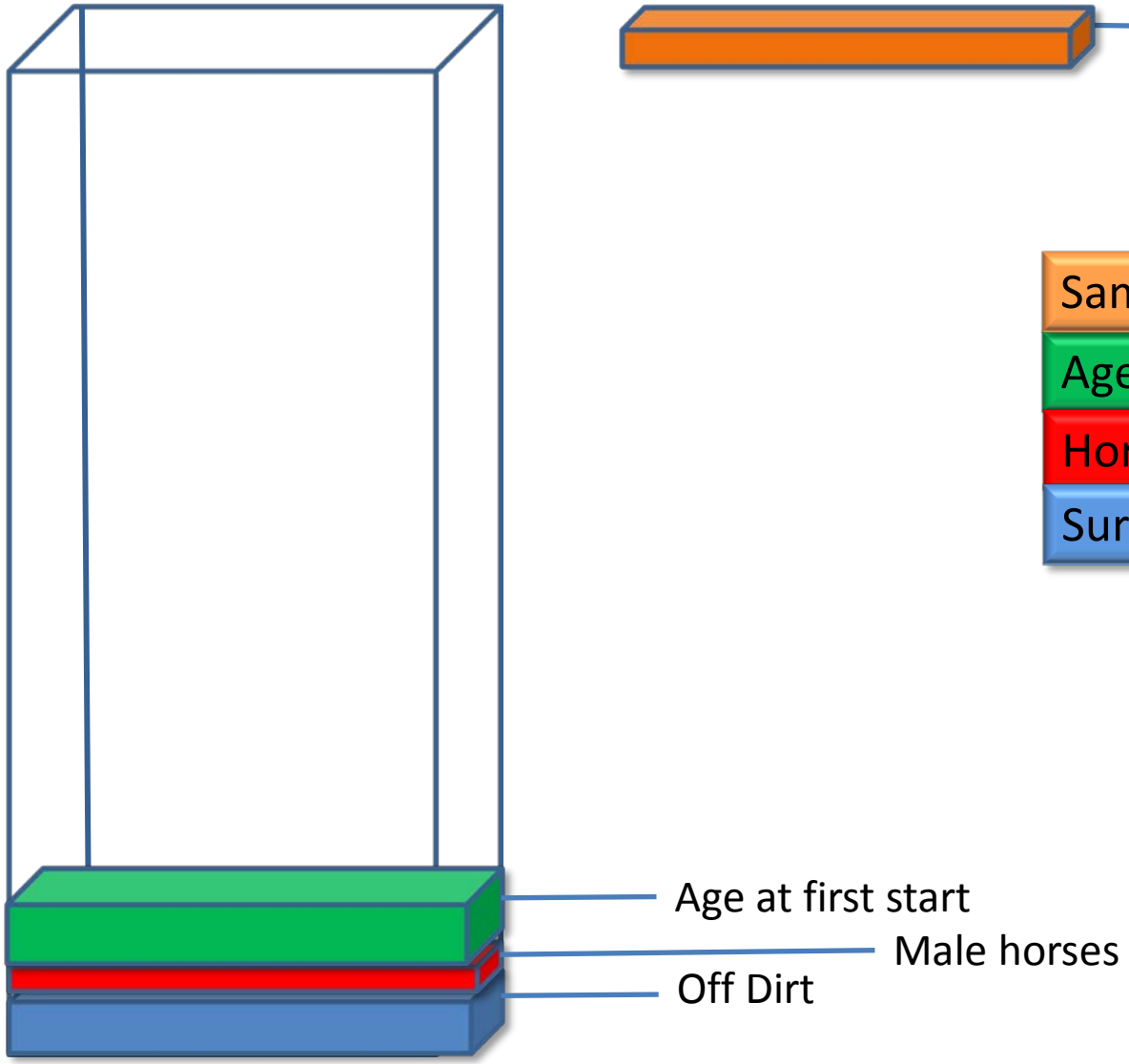
Contribution to drop in risk



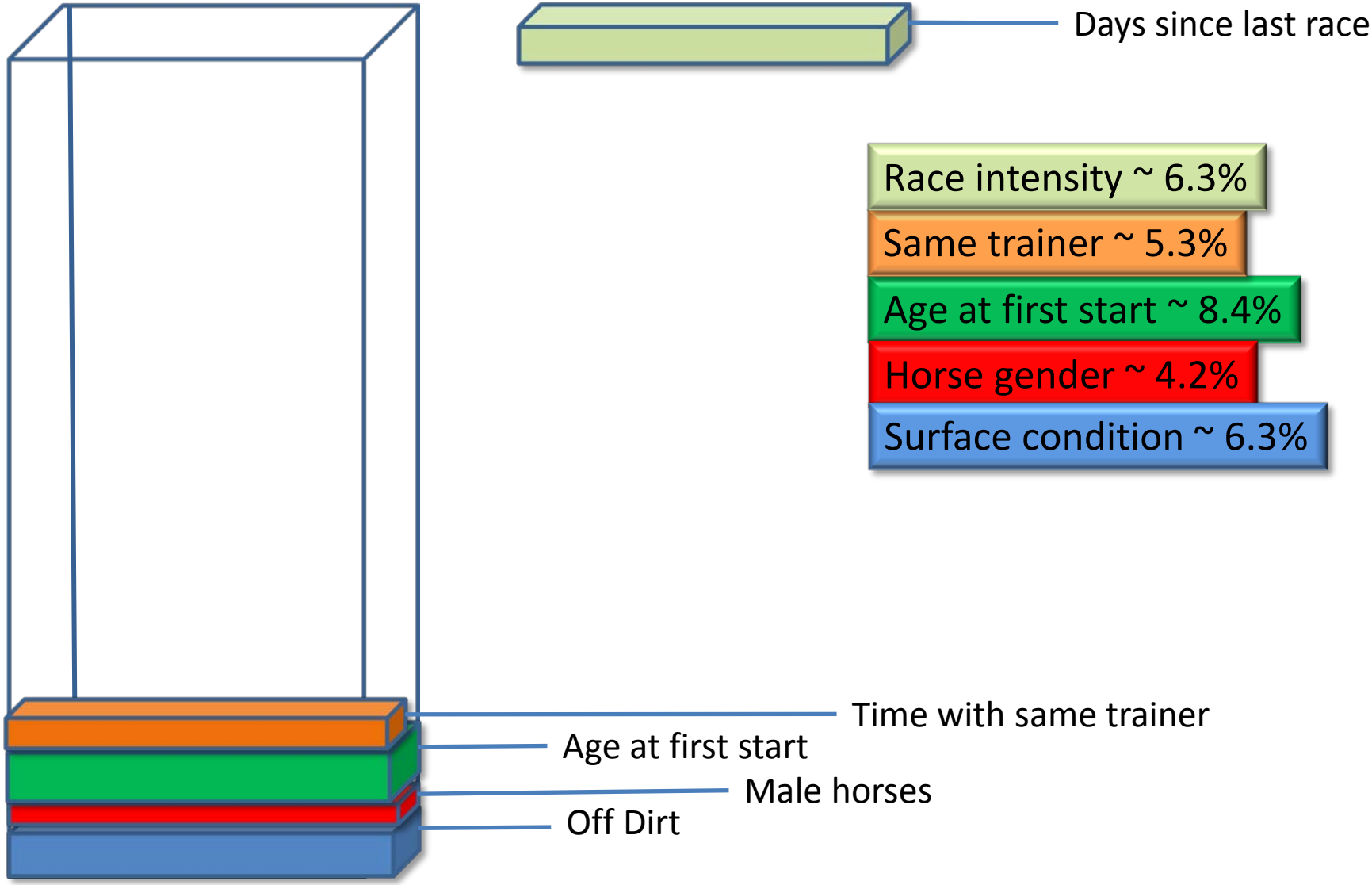
Contribution to drop in risk



Contribution to drop in risk



Contribution to drop in risk



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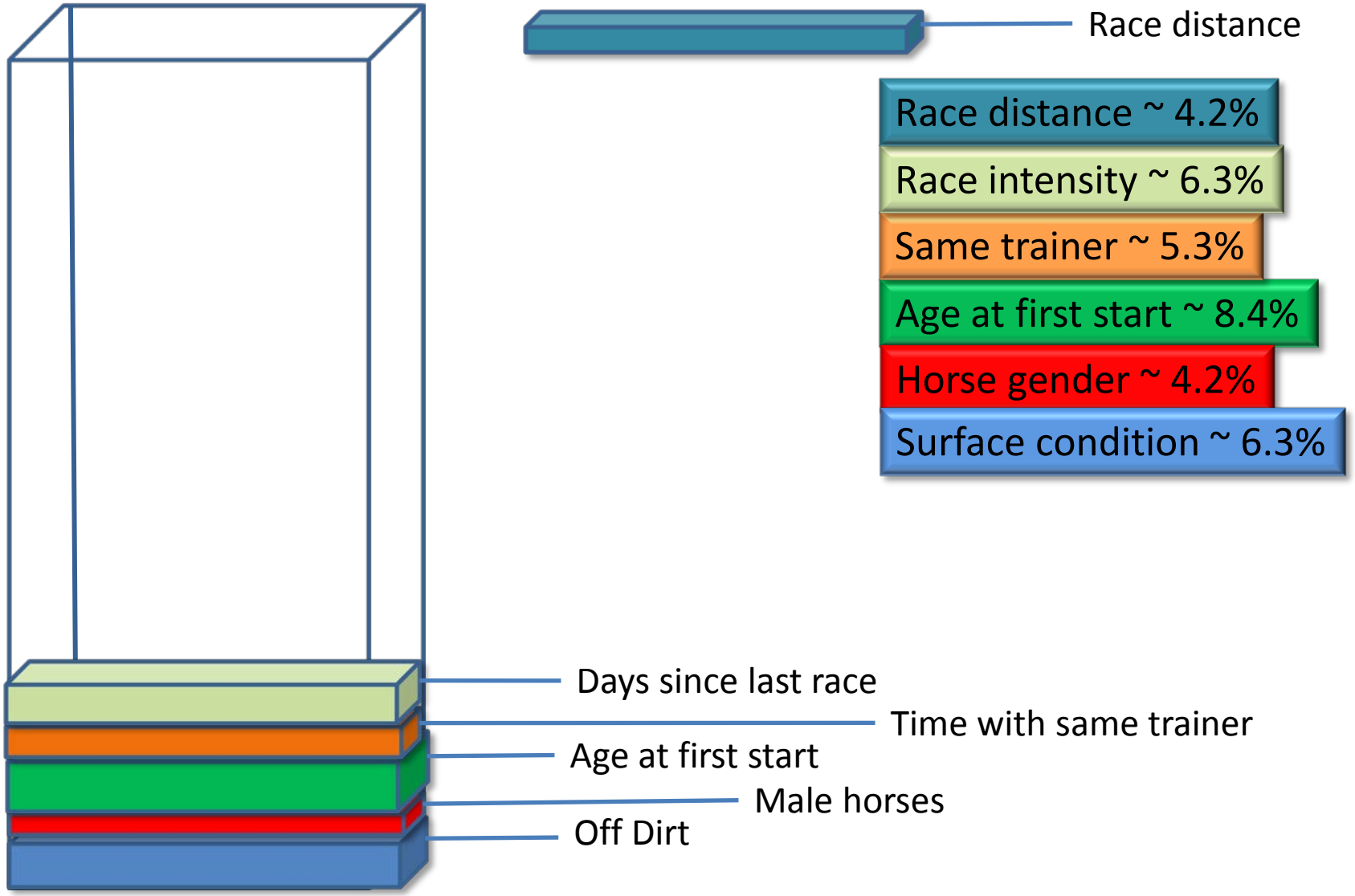

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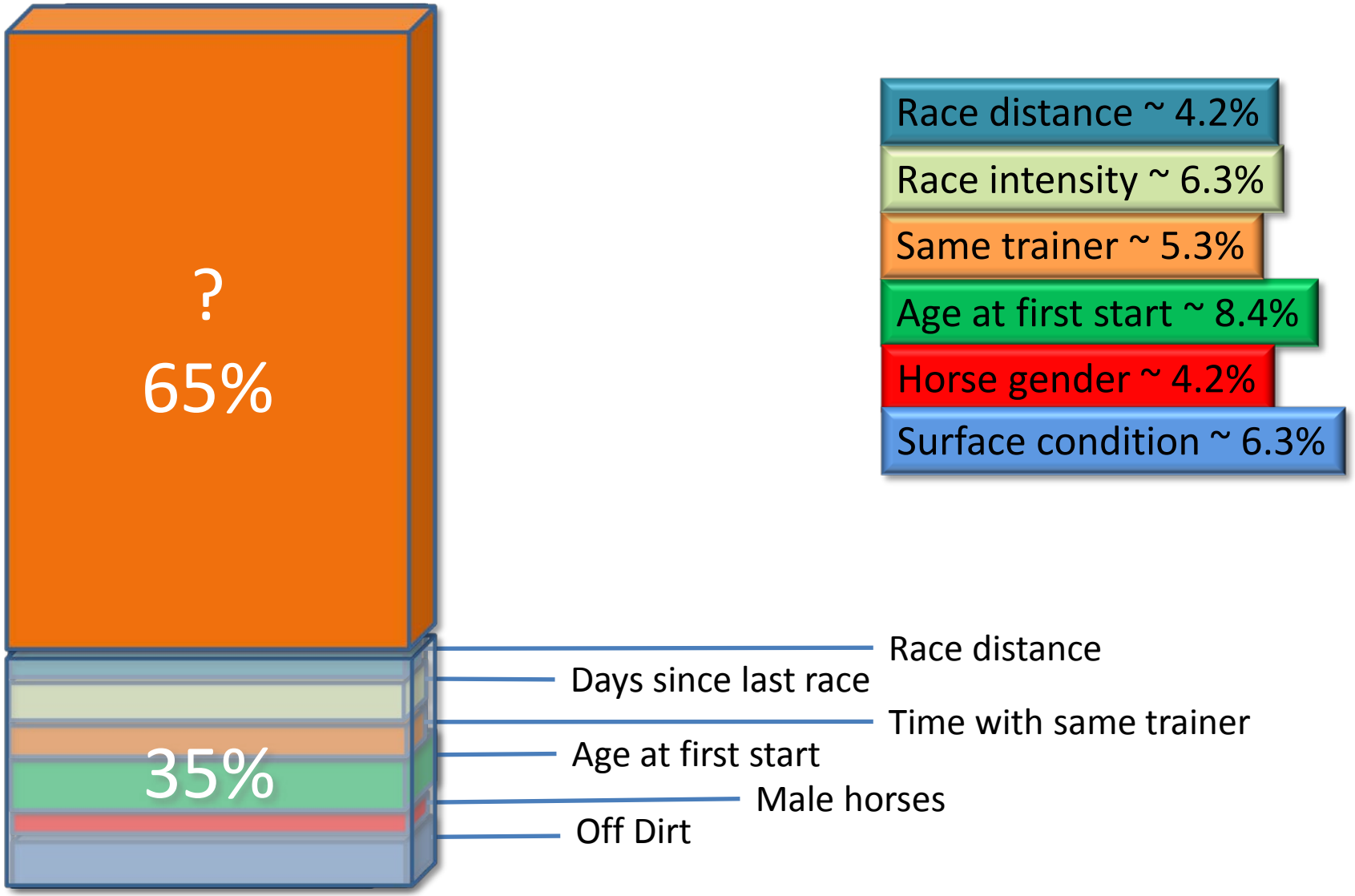

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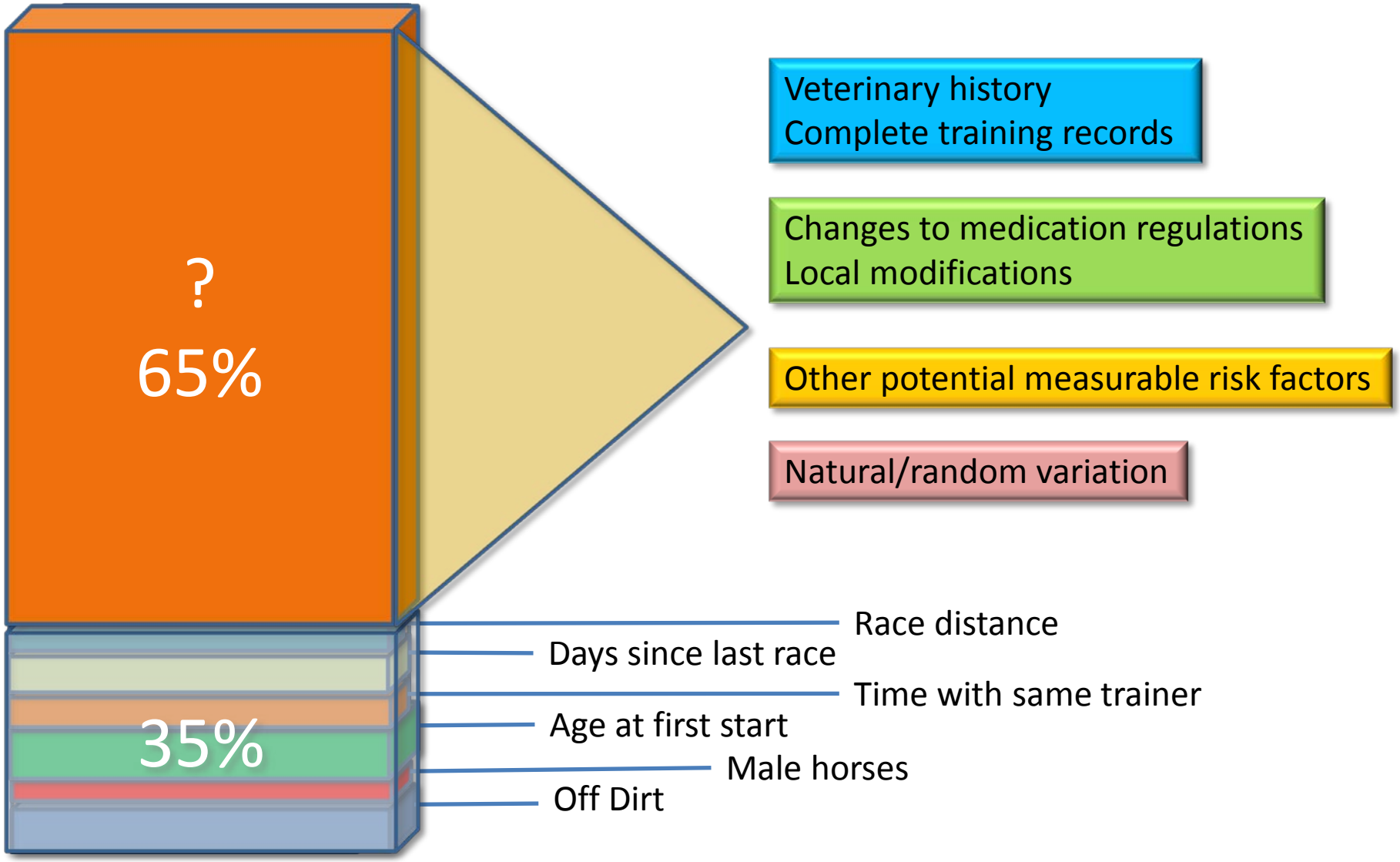

EID and Local changes

- Not simply due to change in tracks reporting to EID
- A few tracks had very significant reductions in risk between 2014 and 2015:
  - Between 5 and 13 fewer fatal injuries (‘14 to ‘15)
  - Between 13% and 53% change compared to 2009-2014 average
- What happened in 2015 compared with 2014 at these tracks?

Local changes

Most of the tracks with a significant drop in risk had:

- 2-9% reduction in starts on ‘off dirt’
  - National average 0.8% reduction from 2014 to 2015
- 2-10 fold greater increase in average months with same trainer (0.14 – 0.77 months)
  - National average 0.07 months difference from 2014 to 2015
- 3-5 fold greater increase in average days since last race (1.26 – 2.45 days)
  - National average 0.45 days difference from 2014 to 2015
- 2-4.5% reduction in the % of starts ≤ 6F
  - National average 0.08% increase from 2014 to 2015

Conclusions

- The collective efforts may be starting to bear fruit
  - Significant improvement with a lot of unknown variables
  - Continue to report complete data
  - Look at your own data
- A greater awareness of the importance of Thoroughbred welfare
  - Continual marginal gains are important
- Sharing of vet lists
- Harmonisation of
  - Medication regulations, veterinary list protocols, etc.
- Being able to include medical records in models of risk

Acknowledgements

- The Jockey Club
  - Matt Iuliano
  - Kristin Werner Leshney
  - Jamie Haydon
- University of Glasgow
  - Stamatis Georgopoulos
