



Risk of fatality and causes of death of Thoroughbreds in racing in Victoria between 1989 and 2004

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Objectives

- To measure the risk of fatality of Thoroughbred racehorses in racing in Victoria over a 15 year period
- To determine the proportional mortality rates for specific causes of death

Materials and Methods

- City racecourses (4)
 - Flemington, Sandown, Caulfield, Moonee Valley
- Country racecourses (53)
- Racing year begins 1st August and ends 31st July
- All racing on turf tracks

Racing Fatality

- A horse that died suddenly or immediately after a race
- A horse that was euthanised within 24 hours of a race due to injury sustained during that race
- Fatalities identified from industry database (Racing Victoria Limited)

Starts

A start occurred whenever a horse started in a race.

- Starts obtained from commercial database (AAP Limited)
- One horse could contribute more than one start.
- Starts included horses that were pulled up or lost riders.
- Barrier trials and 52 jumps starts with unidentified race location were excluded

Analysis

- Risk between 1989 and 2004
 - expressed as fatalities per 1000 starts
- Population attributable risk
- Population attributable fraction
- Poisson regression with robust standard error



Fatalities 1989-2004

All Race Types

514 fatalities, 743,552 starts

0.7 fatalities per 1000 starts

Flat Races

316 fatalities, 719,695 starts

0.44 fatalities per 1000 starts

Jumps Races

198 fatalities, 23,857 starts

8.3 fatalities per 1000 starts

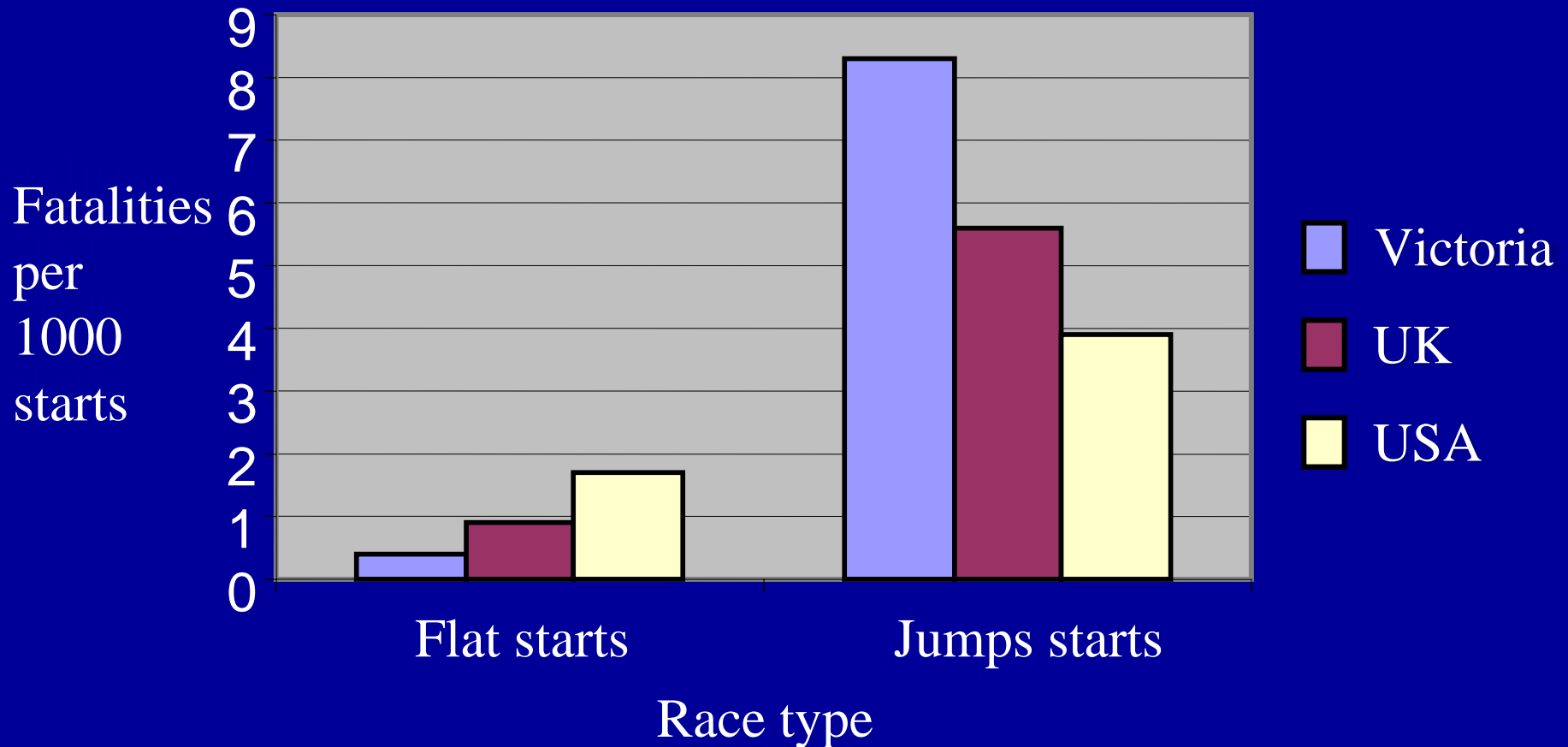


Race Type

- Risk of fatality in jumps starts was 19 times that in flat starts.



Risk of Fatality in Flat and Jumps Starts in Victoria, the UK and USA



Race Location

Flat Starts

City

0.6 per 1000 starts (92/154,420)

Country

0.4 per 1000 starts (224/565,275)



Fatalities in flat starts were 1.5 times more likely to occur on city tracks than on country tracks.

Race Location

Jumps Starts

City

11.1 per 1000 starts (92/8295)

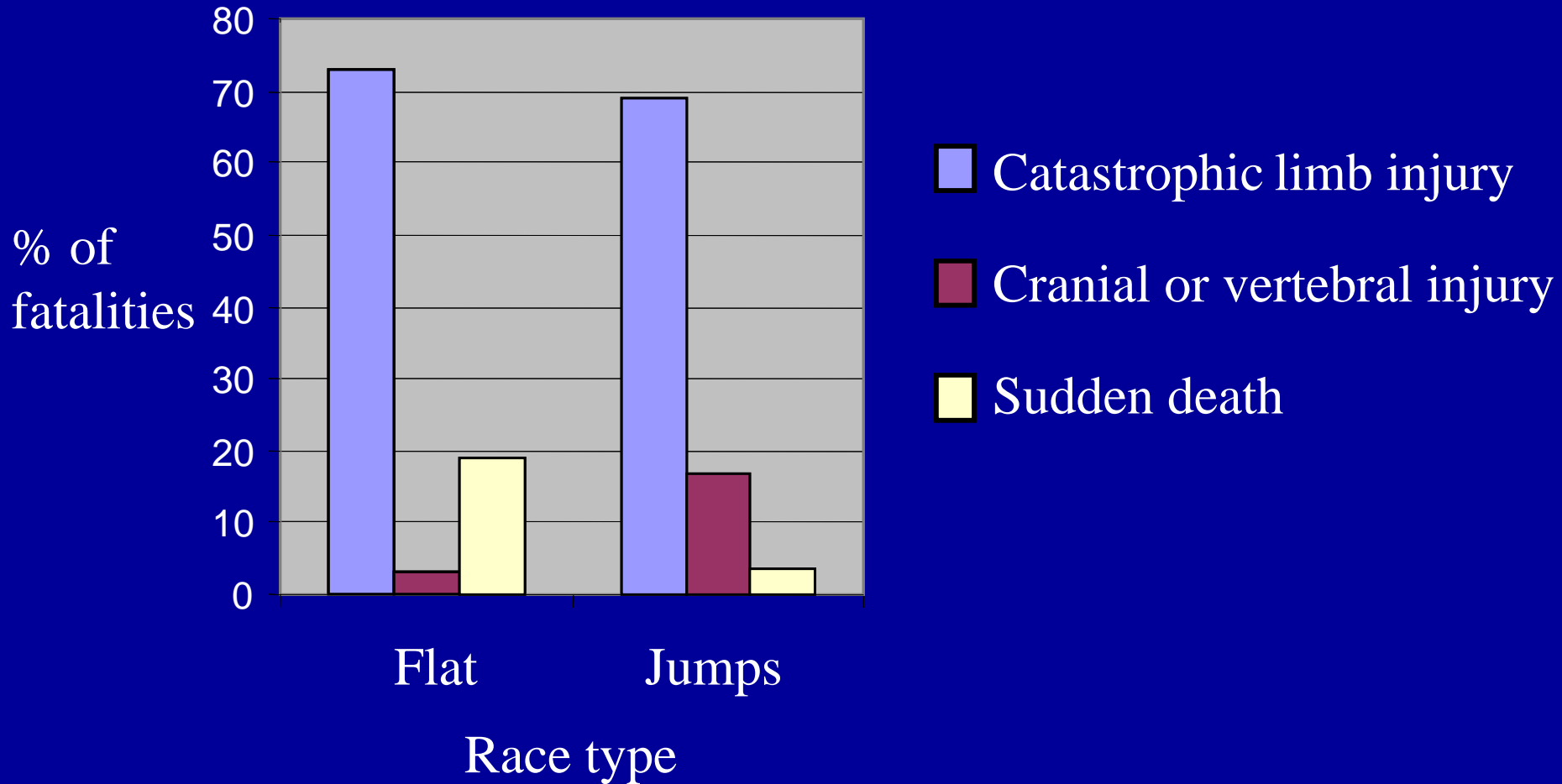
Country

6.8 per 1000 starts (106/15,562)



Fatalities in jumps starts were 1.6 times more likely to occur on city tracks than on country tracks.

Proportional Mortality Rates



Catastrophic Limb Injury

18 times more likely in jumps races than in flat races

Flat

1.5 times more likely on city tracks than country tracks

Jumps

1.6 times more likely on city tracks than country tracks



Cranial or Vertebral Injury

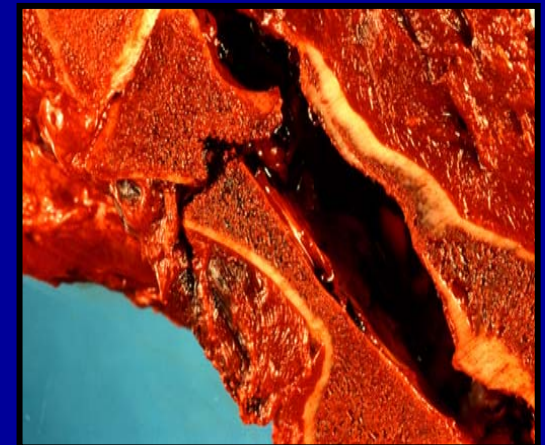
121 times more likely in jumps races than in flat races

Flat

1.9 times more likely on country tracks than on city tracks

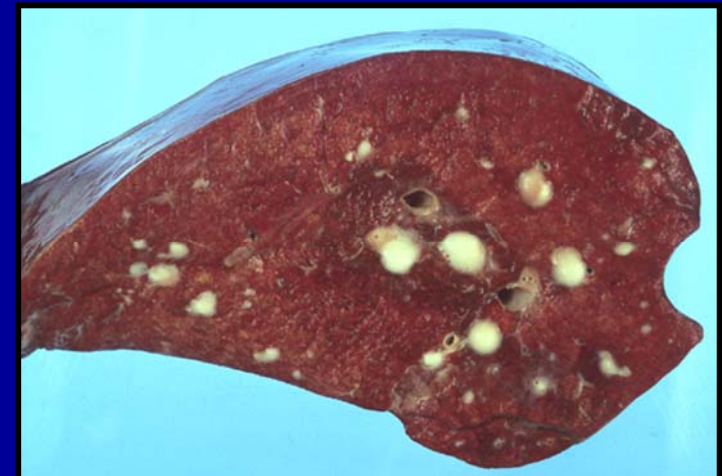
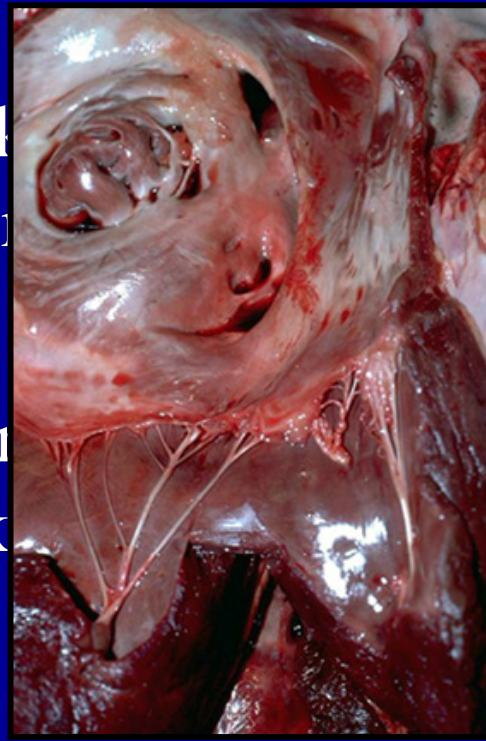
Jumps

3.1 times more likely on city tracks than on country tracks



Sudden Death

Most sudden deaths attributed to cardiovascular or respiratory failure



3.5 times more likely in
athletes than in flatlanders

No difference in risk between
and country track athletes

Race Location

City racecourses

- increased risk of catastrophic limb injury in flat and jumps races
- increased risk of cranial or vertebral injury in jumps races

Possible factors

- calibre of horse – faster pace, differences in career lengths and training regimens

Race Location

Country racecourses

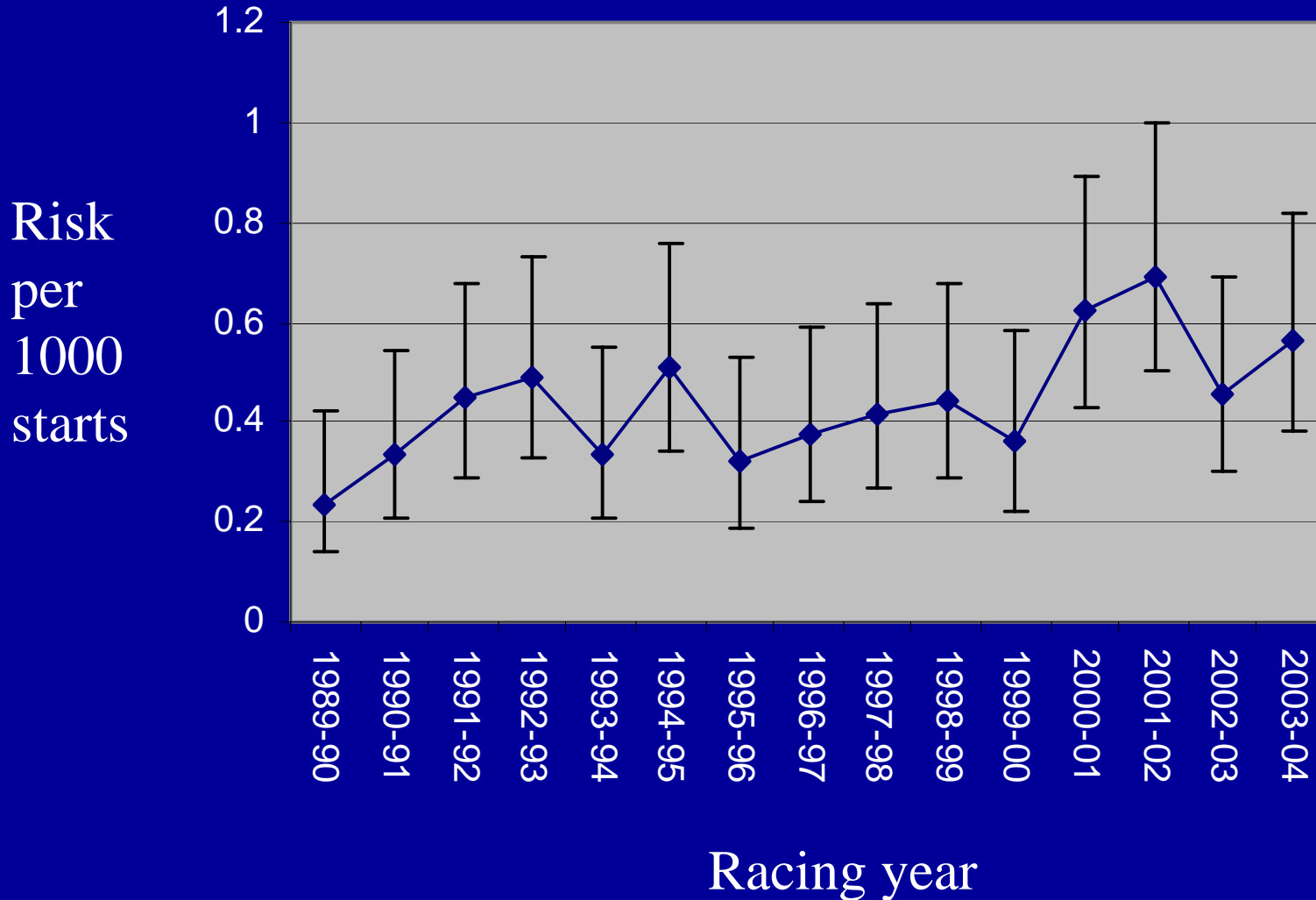
- increased risk of cranial or vertebral injury in flat races

Possible factors

- quality of racecourse – track surface maintenance
- calibre of horse
- calibre of jockey

Risk of Fatality Over Time

Risk of Fatality in Flat Starts Between 1989 and 2004



Flat Races

Increasing risk of fatality in Victoria over time (RR 1.04, 95% CI 1.01-1.07)

- genuine increase
- increased stringency of reporting fatalities



Flat Races

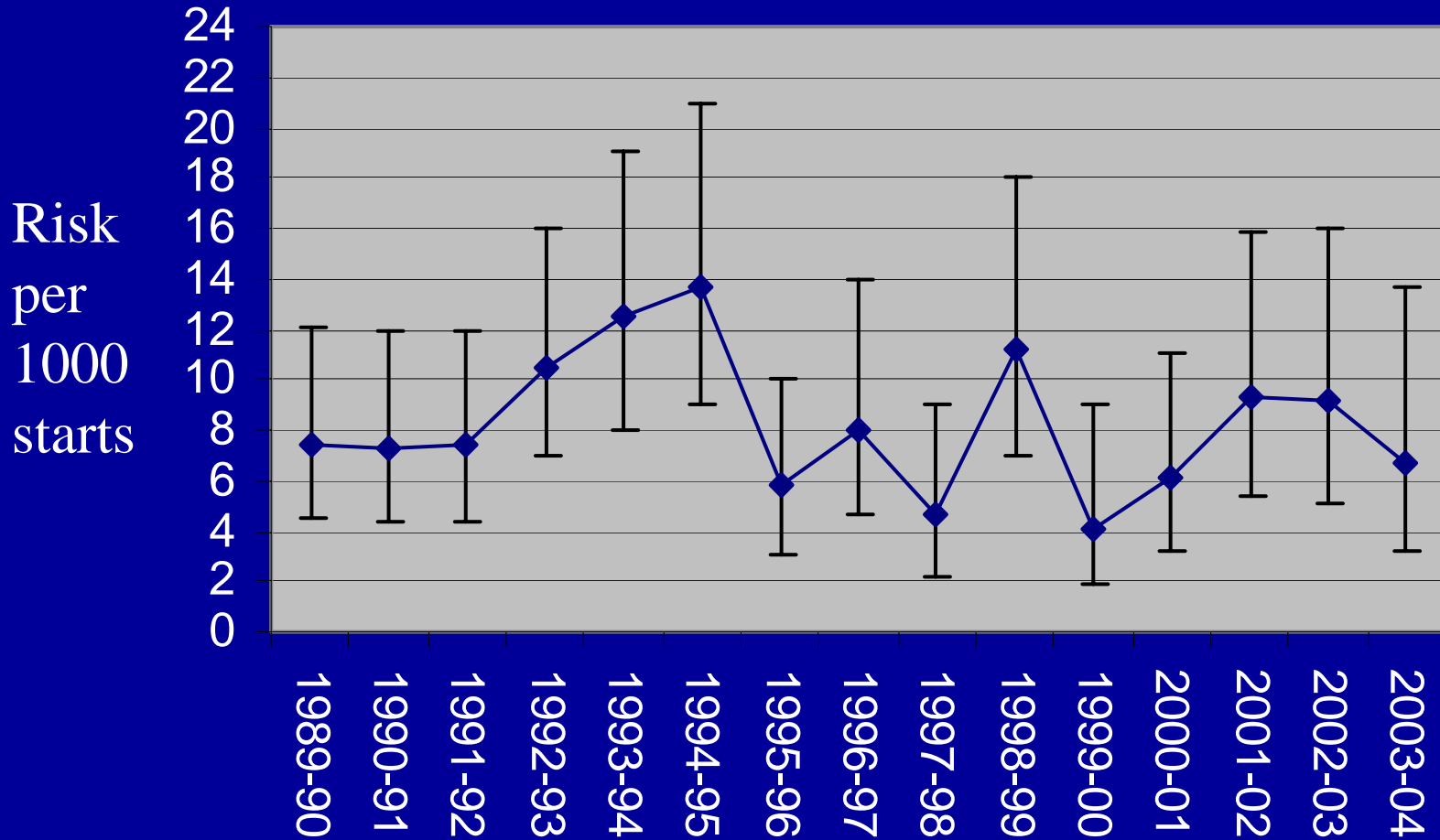
Lower risk in Victoria than in USA or UK

Possible factors

- calibre of horses
- track surfaces (turf versus dirt)
- going of track
- medications permitted overseas



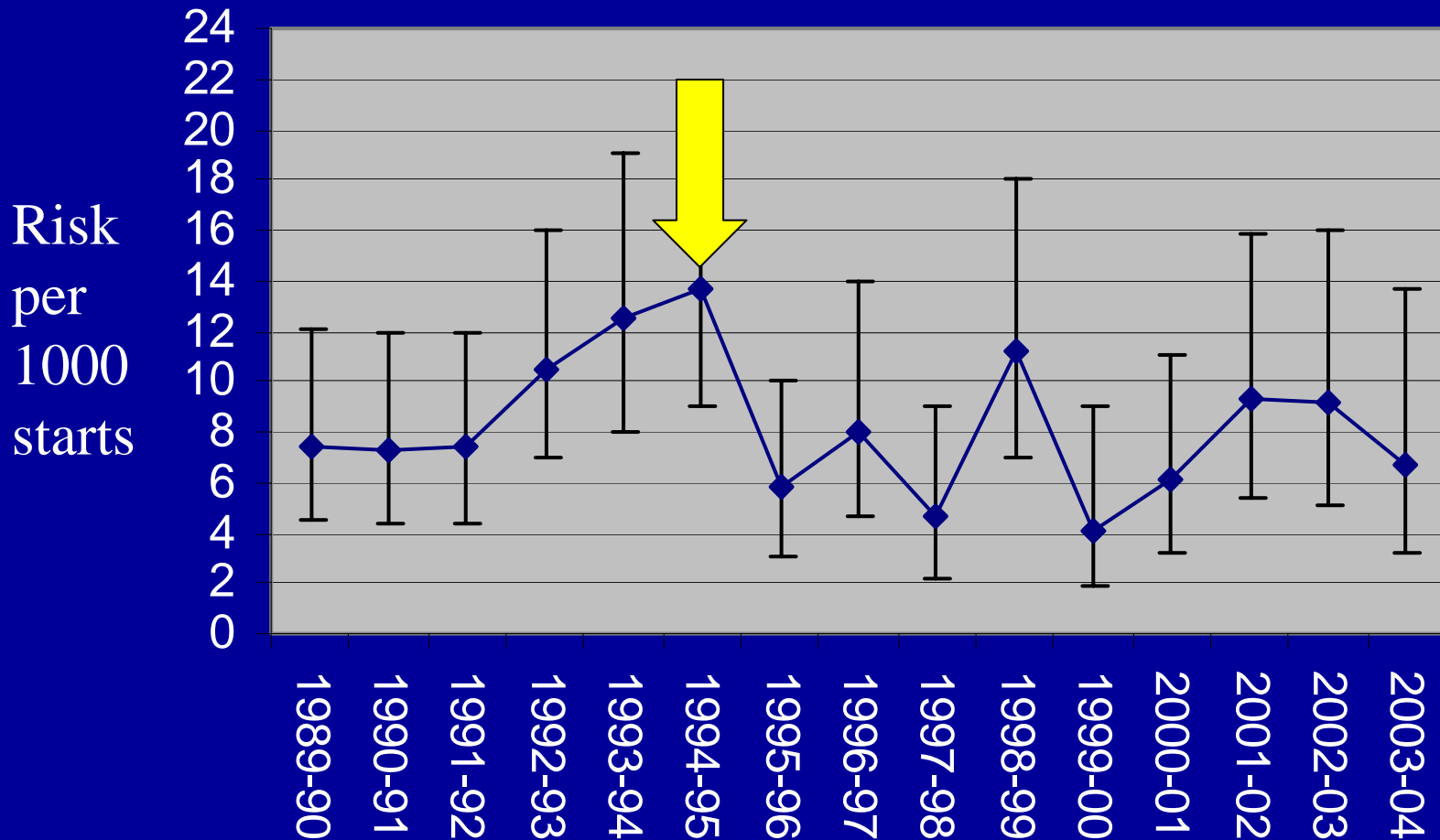
Risk of Fatality in Jumps Starts Between 1989 and 2004



RR 0.99, 95% CI 0.96-1.02

Racing year

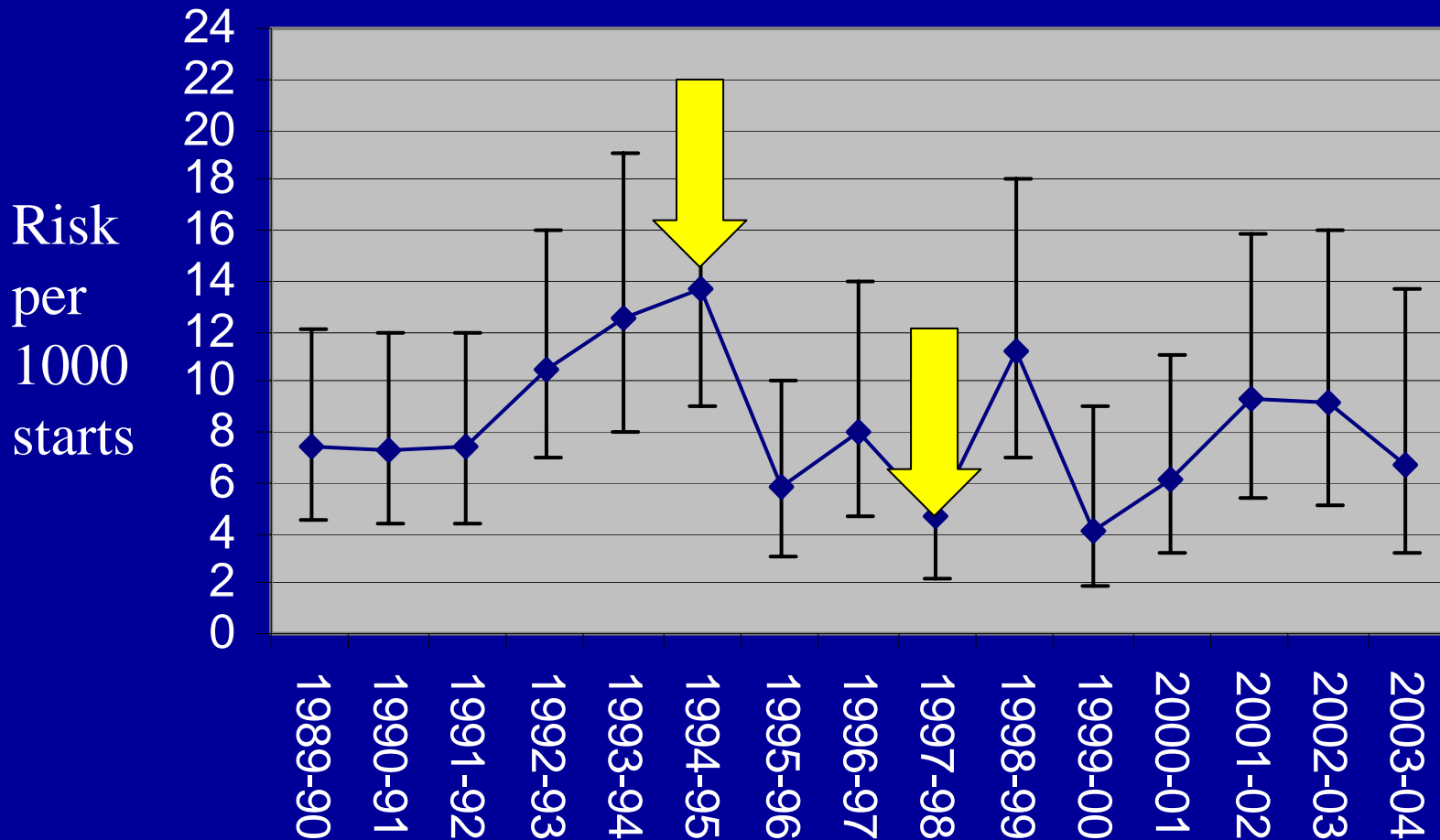
Risk of Fatality in Jumps Starts Between 1989 and 2004



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Racing year

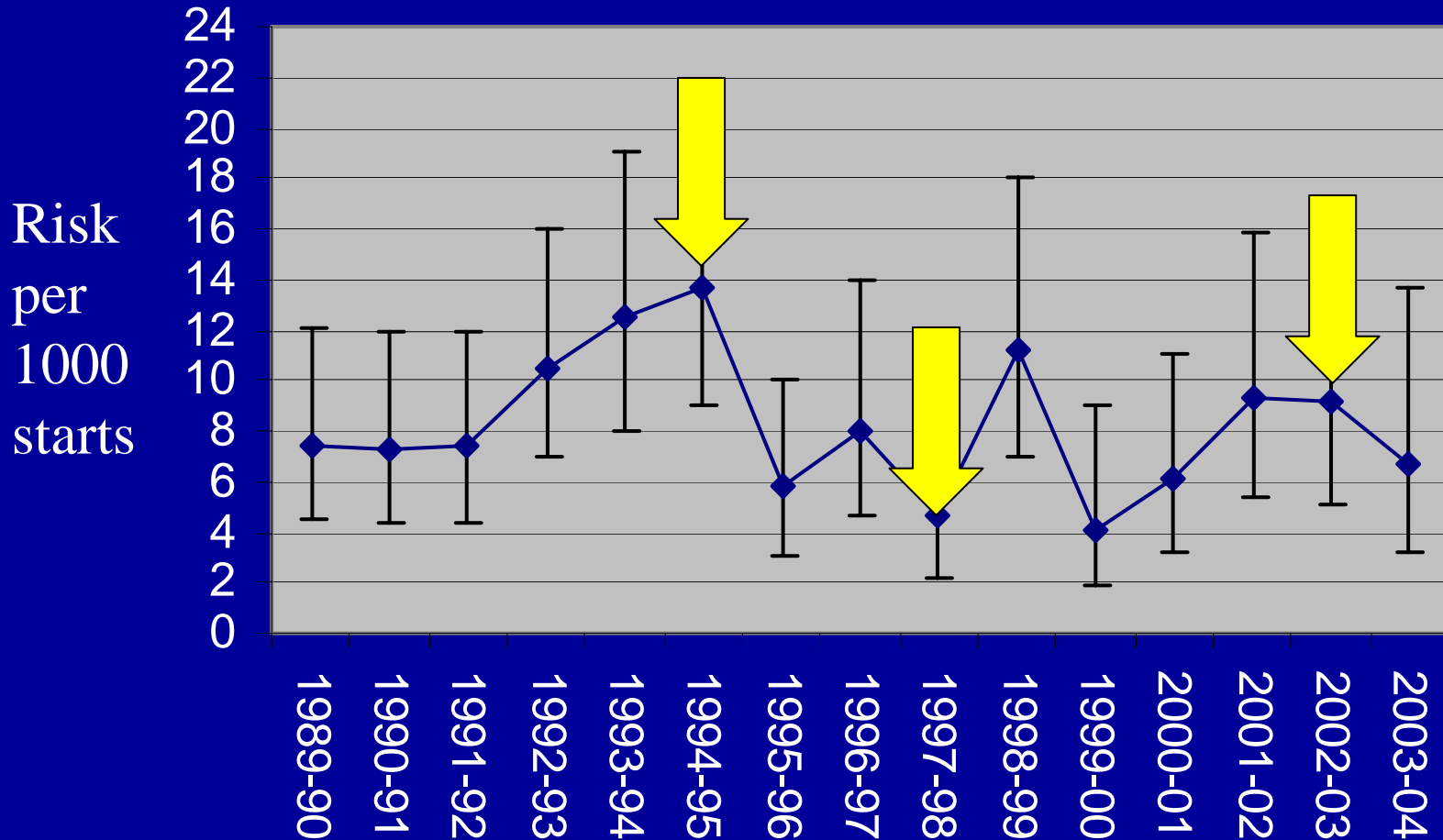
Risk of Fatality in Jumps Starts Between 1989 and 2004



RR 0.99, 95% CI 0.96-1.02

Racing year

Risk of Fatality in Jumps Starts Between 1989 and 2004



RR 0.99, 95% CI 0.96-1.02

Racing year

Risk of Fatality in the Population Due to Jumps Racing

Population attributable risk

0.25 per 1000 starts

Population attributable fraction

Overall risk of fatality in Victoria
36% lower if risk of fatality due
to jumps racing eliminated



Jumps Races

Higher risk in Victoria than in USA or UK

Possible factors

Differences in horse populations and racing culture

- breeding
- prize money
- fence structure
- track design



Significance of Study

Accurate measure of risk of fatality

Improved understanding of specific causes of fatality

Benchmark for future monitoring of racetrack fatalities and assessment of effects of strategies to minimise fatalities



Acknowledgements

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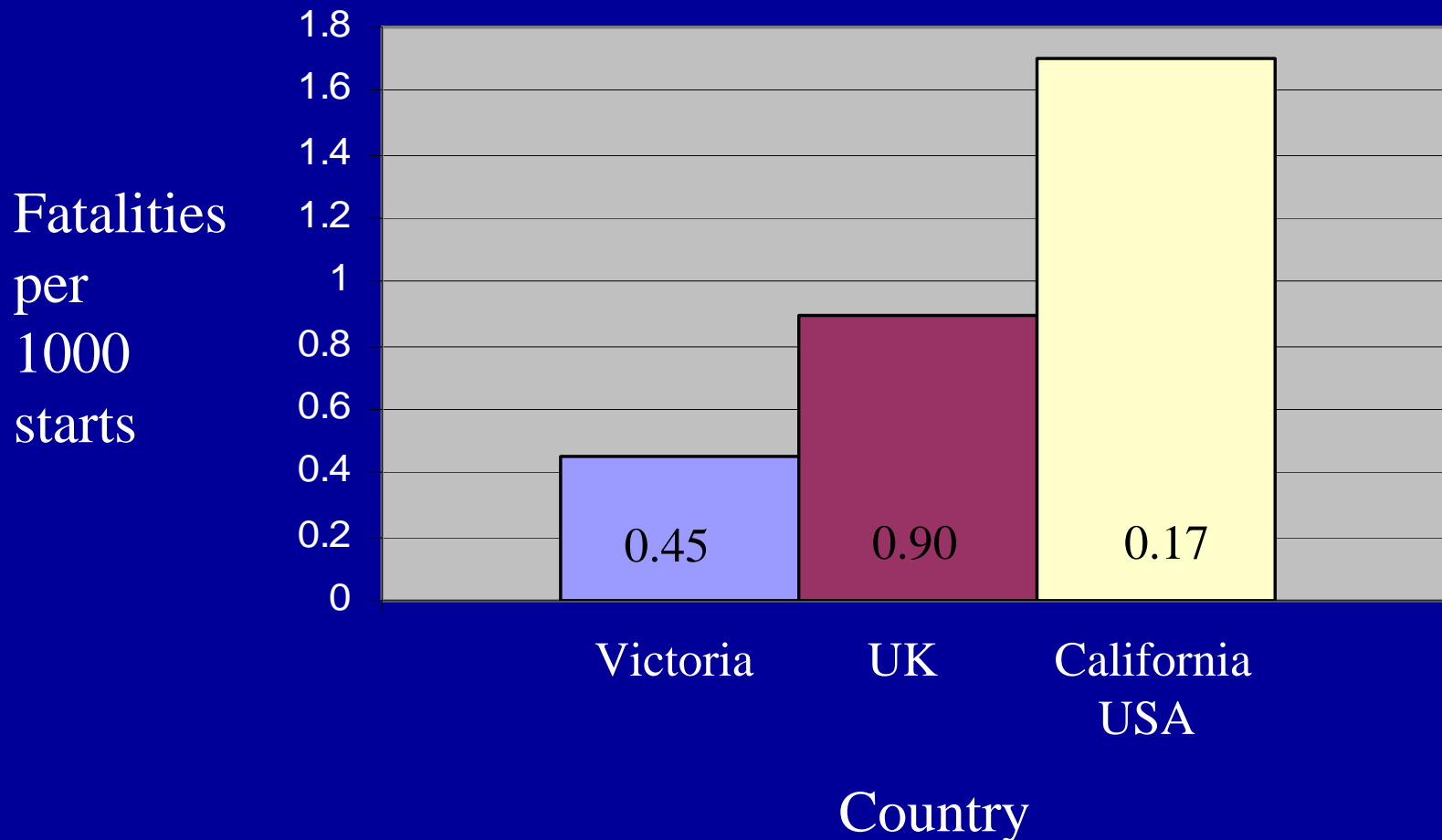


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Risk of Fatality in Flat Starts in Victoria, Australia, the UK, and California, USA



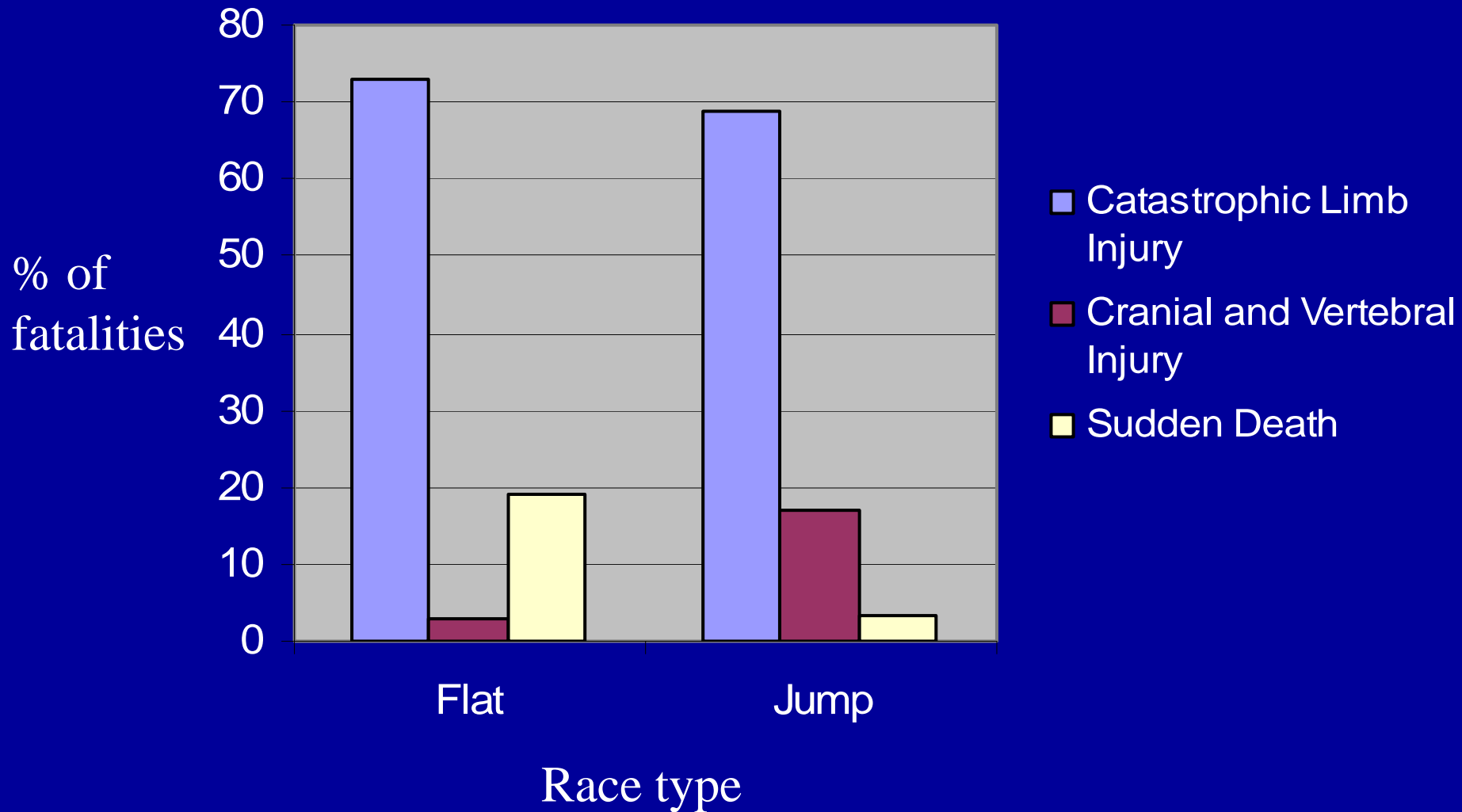
Risk of Fatality in Jumps Starts between 1989 and 2005

No difference in risk of fatality in jumps starts
before or after the jumps reviews

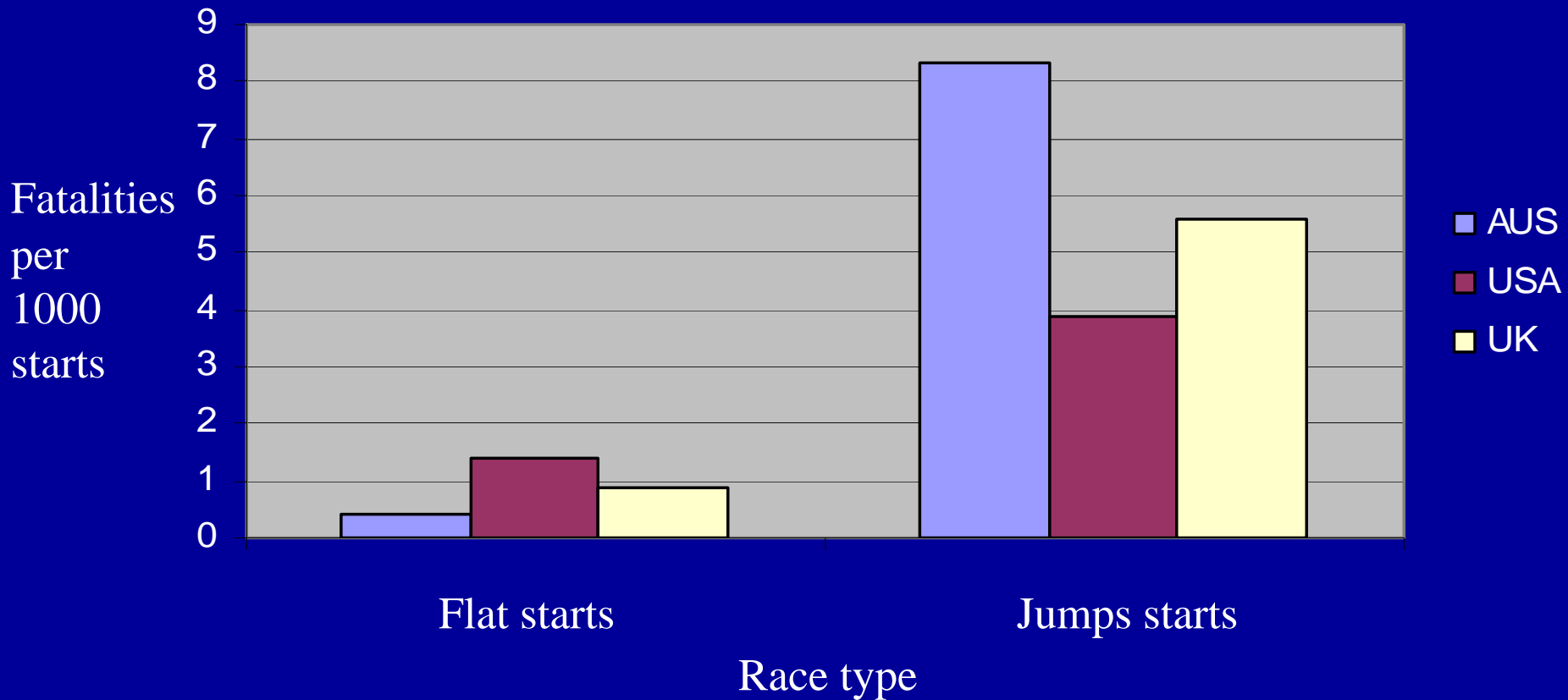
Academic Collaborative Links



Proportional Mortality Rates



Risk of Fatality in Flat and Jumps Starts in Victoria, the UK and USA



Jumps Races

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Possible factors

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