

# Bicycle crashes and conspicuity:

early findings from the Taupo Bicycle Study

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# Cycling and Public Health

- Benefits

- Cardiovascular health
  - Antidote to sedentary behaviour

**Sedentary  
Behaviour =**



- Obesity (adults)
  - 35.2% overweight
  - 20.9% obese

- Risks



# Epidemiological study

*“Epidemiology is the simplest and most direct method of studying the causes of disease in humans, and many major contributions have been made by studies that demand nothing else than an ability to count, think logically and have a keen imagination”*

– Sir Richard Doll (1990)



# Cross-sectional study...



**Participants**

**Exposure**

**Outcomes**

Participants

Exposed

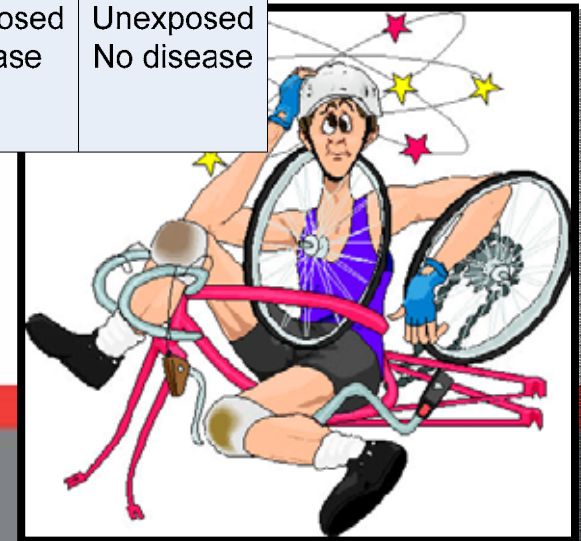
Unexposed

Exposed  
Disease

Exposed  
no disease

Unexposed  
Disease

Unexposed  
No disease



# Taupo Cycle Study - Aims

- To investigate the causes of cycle crashes resulting in injury
- To understand factors that promote cycling, both recreational and utility

# Setting

- New Zealand's largest cycle race around Lake Taupo (central North Island)
- 11,000 participants



# The Lake Taupo Cycle Challenge

- Competitive cyclists (160km)
- Social (40/80km)



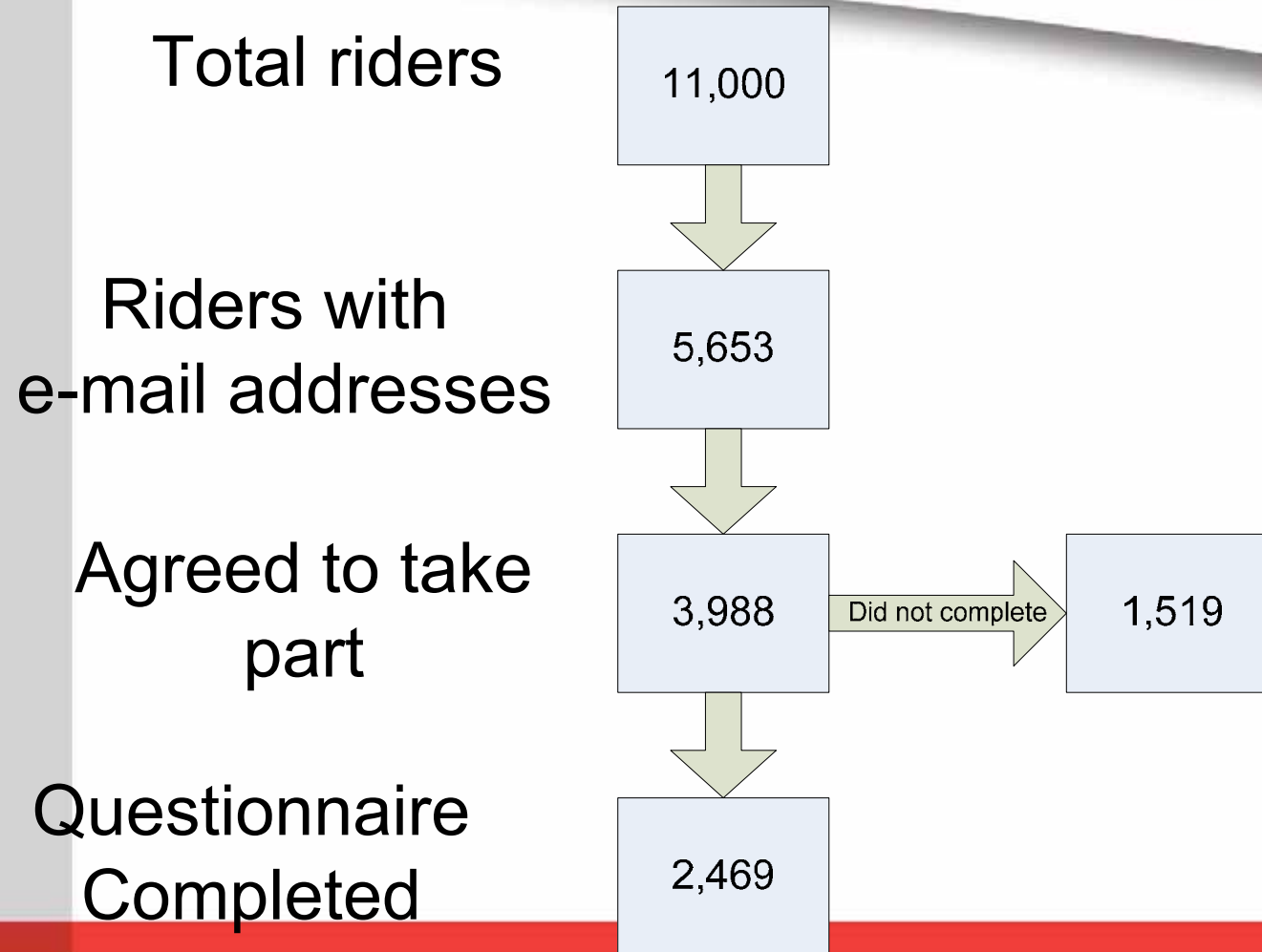
# Methods



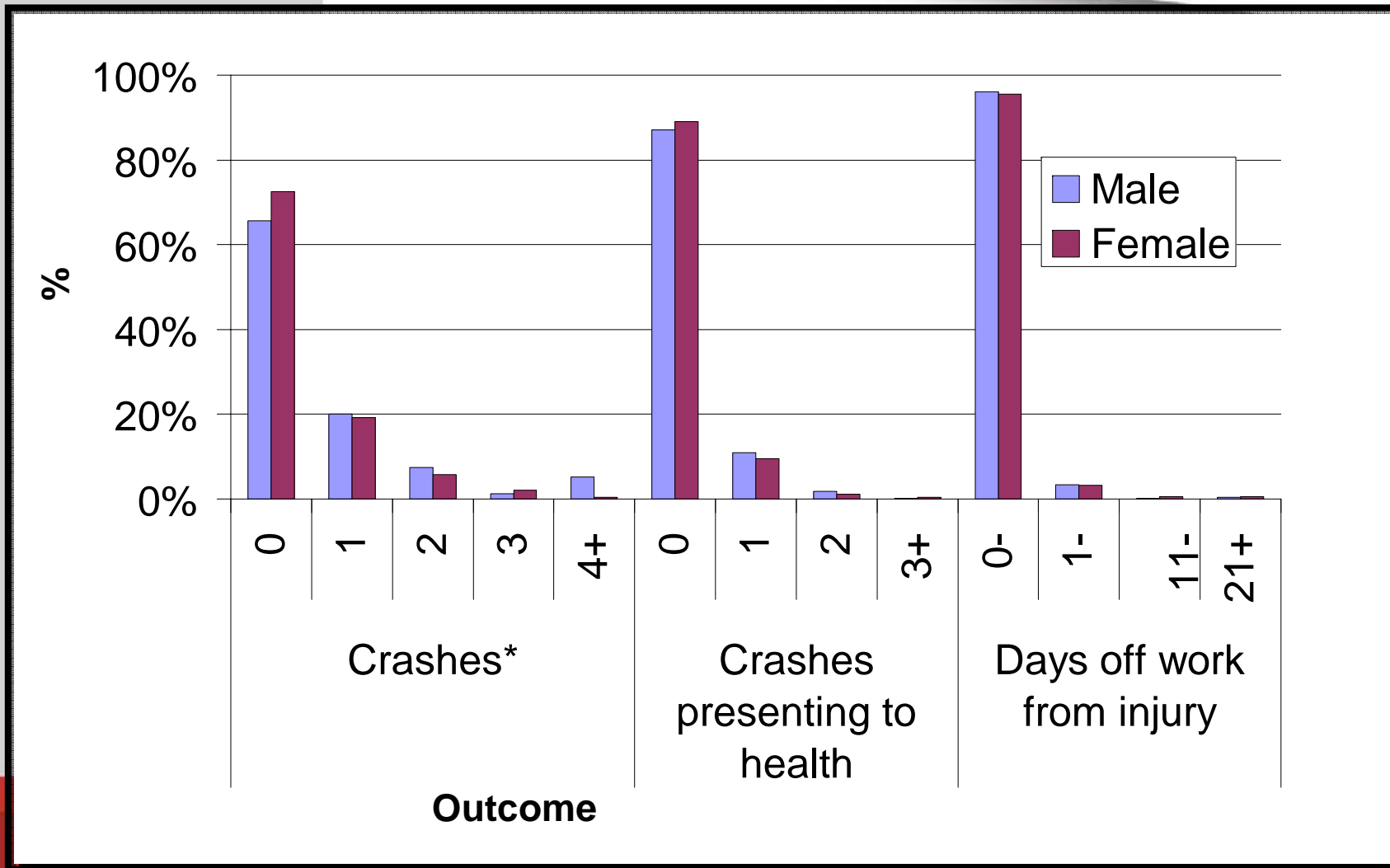
- Internet-based survey
- Online participants invited, solo and relay
- Risks and outcomes (crashes)
- Registration Survey
- Statistical analysis - negative binomial regression
- *Followup - record linkage (ACC, New Zealand Health Information Service)*



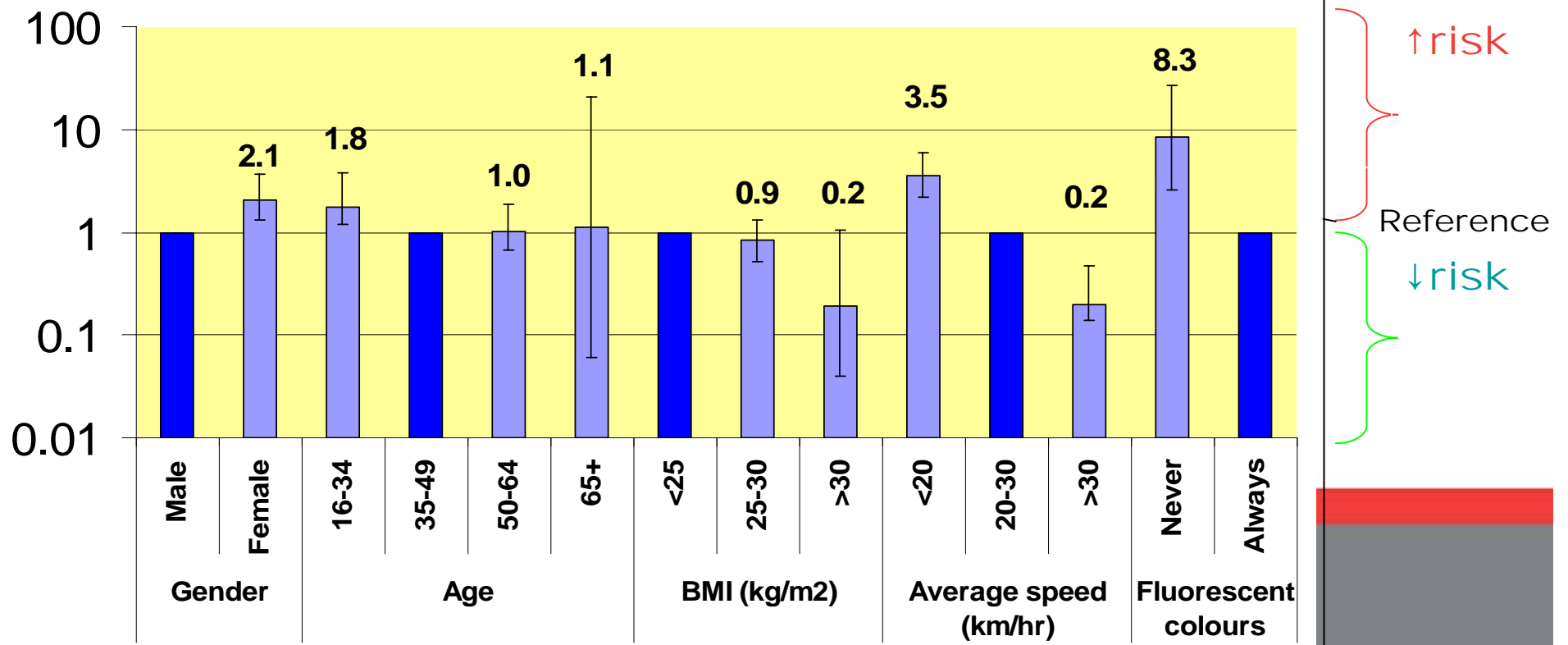
# Recruitment



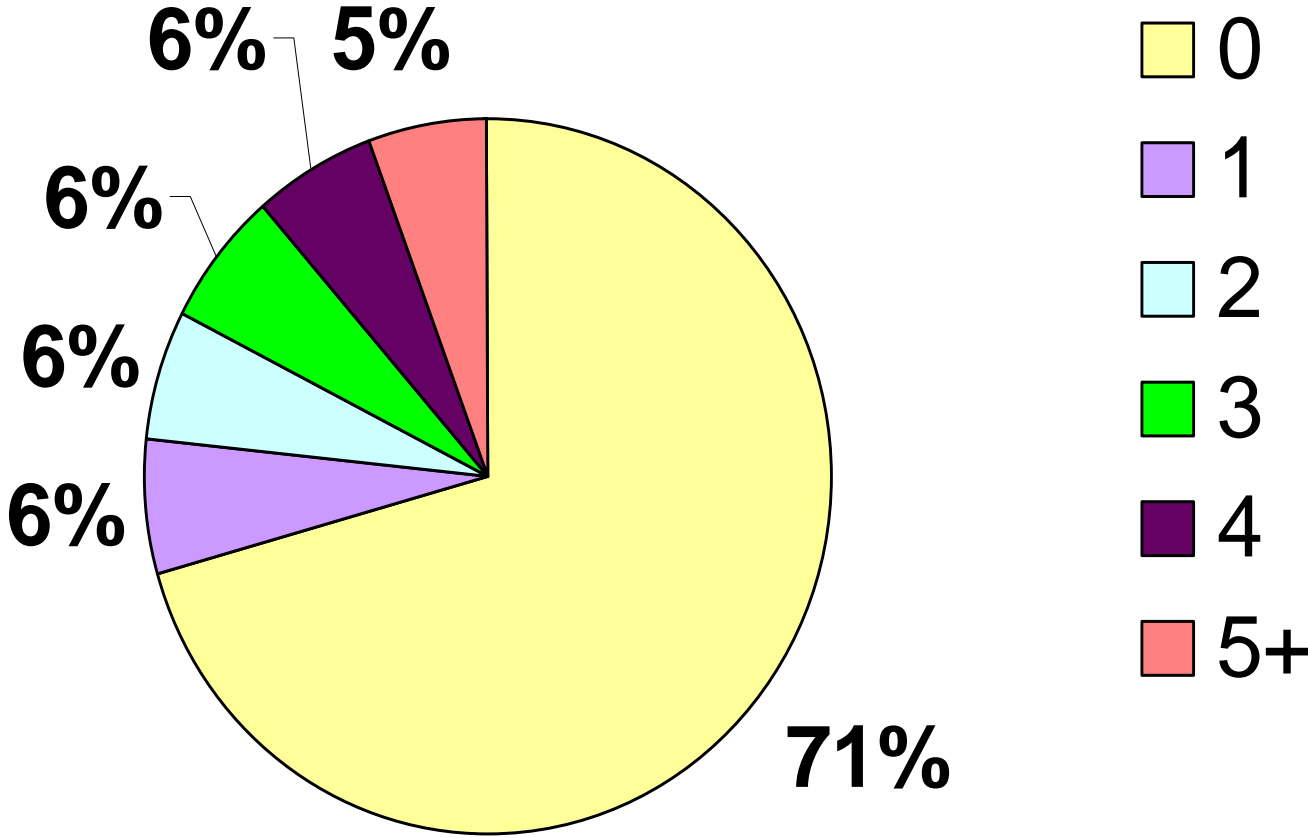
# % Crash Outcomes, by Gender



## Days off work due to cycle crash & risk ratios



# Commuting to work



# Where to from here?

- 8 fold reduction in risk from wearing fluorescent colours.
- Population attributable risk ~72%
- Future analyses
- In the mean time – safe, easy, cheap, acceptable intervention for safer cycling
- Findings to be published (inter)nationally

# Conclusions

- Changing pattern of cycling
  - utility vs. recreational
- High frequency of minor crashes, but small % involving health system
- Fluorescent colours protective
- Possible explanations
  - visibility, perceptions of motorists
- More to come

# Acknowledgements



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  - University of Auckland
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  - Co-investigators
  - Collaborators from Watty Lake Taupo Cycle Challenge (Keith Crate, Dave Anderson).
- Participating cyclists

