

# Do changes in neighbourhood & household smoking cause changes in individual smoking?

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# Aim

To investigate whether:

- *changes* to neighbourhoods and households with more smoking was associated with
- *changed* individual smoking



# Background



- Smoking is increasingly recognised as occurring within a social context
- Cross-sectional analyses have shown that neighbourhood deprivation is a risk factor for individual smoking *over and above individual-level deprivation*
- The normality of smoking appears to be a major risk factor for the uptake of smoking, and can affect quit attempts and quitting

# Methods



- Longitudinal study: NZ SoFIE-Health; 18,000 each in 2004-05, 2006-07 and 2008-09
- Regression analyses to remove confounding from:
  - neighbourhood smoking density or deprivation
  - number of adult smokers in household
  - labour force status, income, tenure and family type
  - Removes all time invariant confounding by design – a massive improvement compared to most studies to estimate causal effects

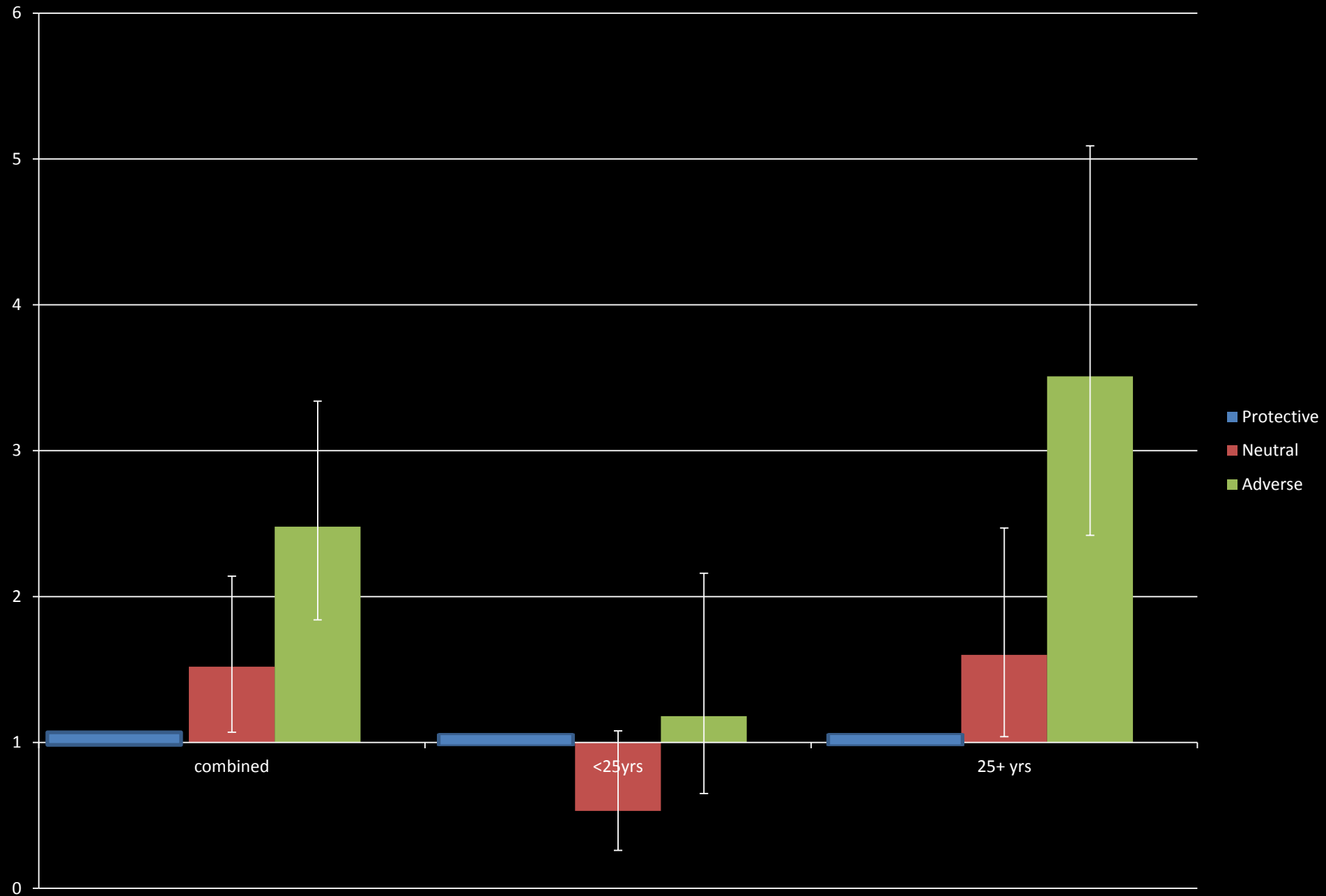
# Results: Household effects



Amongst those who have experienced a change in the household smoking:

- compared to living with no smokers, living in *a* household with *at least one smoker*:
  - more than doubled the odds of becoming a smoker *or relapsing* (OR: 2.5, 95% CI: 1.8 to 3.3)
  - For those over 25 yrs age, more than tripled the odds (OR 3.5)
- compared to living with smokers, living in *a* household *with no smokers* had a *protective* effect (*more than halved* odds of becoming a smoker)

# Odds of becoming a smoker in households with different smoking status



# Results: Neighbourhood effects

Amongst those who have experienced a change in the type of neighbourhood (smoking level):

- *A one decile increase in the neighbourhood **smoking prevalence** was associated with a **4% increased odds** of becoming a smoker (OR 1.04, 95% CI: 0.97 to 1.10)*



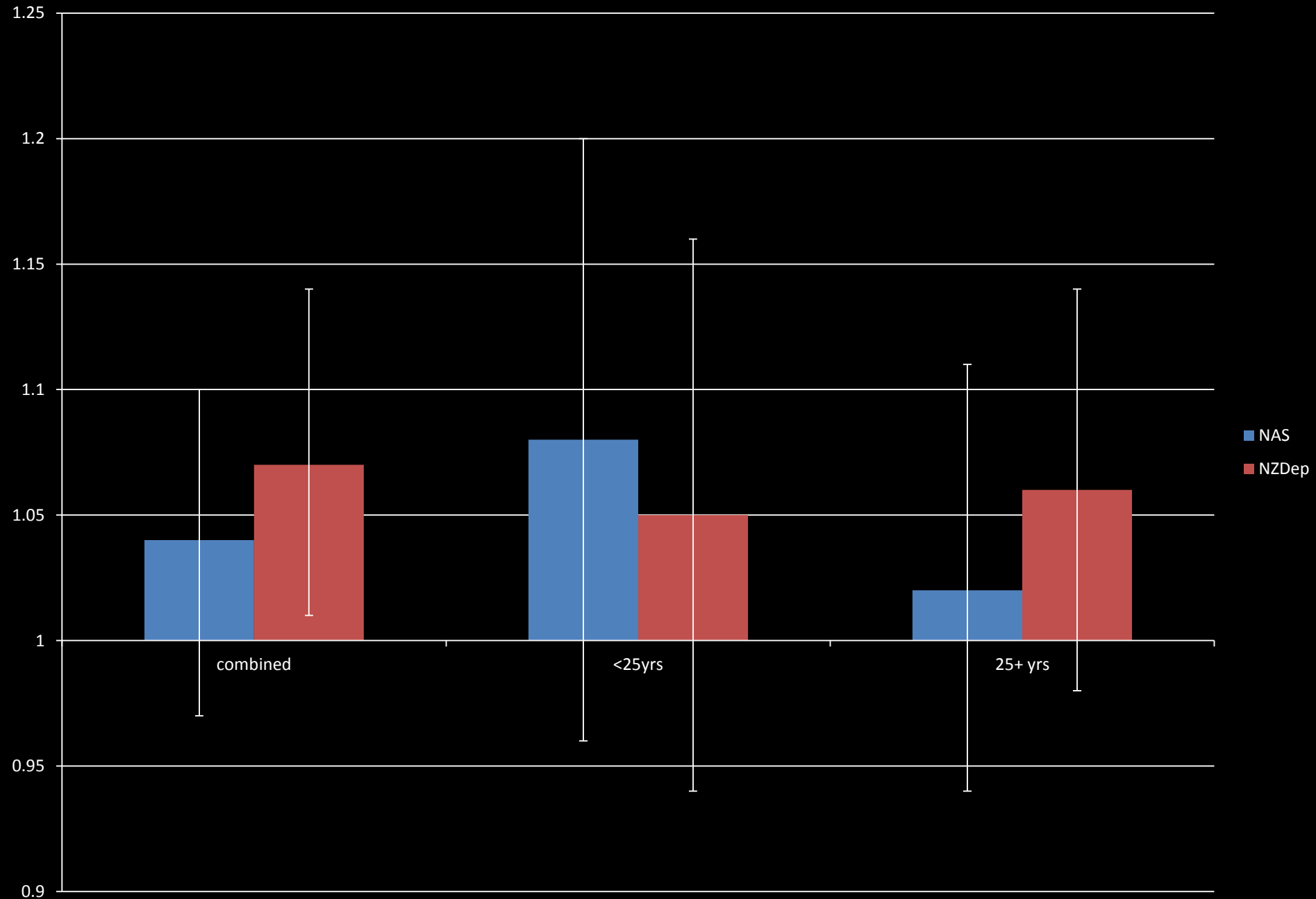
# Results: Neighbourhood effects

Amongst those who have experienced a change in the type of neighbourhood (deprivation level):

- A one decile increase in neighbourhood *deprivation* was associated with a 7% **increased odds** of becoming a smoker (OR 1.07, 95% CI: 1.01 to 1.14)
- Moving to a neighbourhood with *less smoking* or *less deprivation* had a *protective* effect

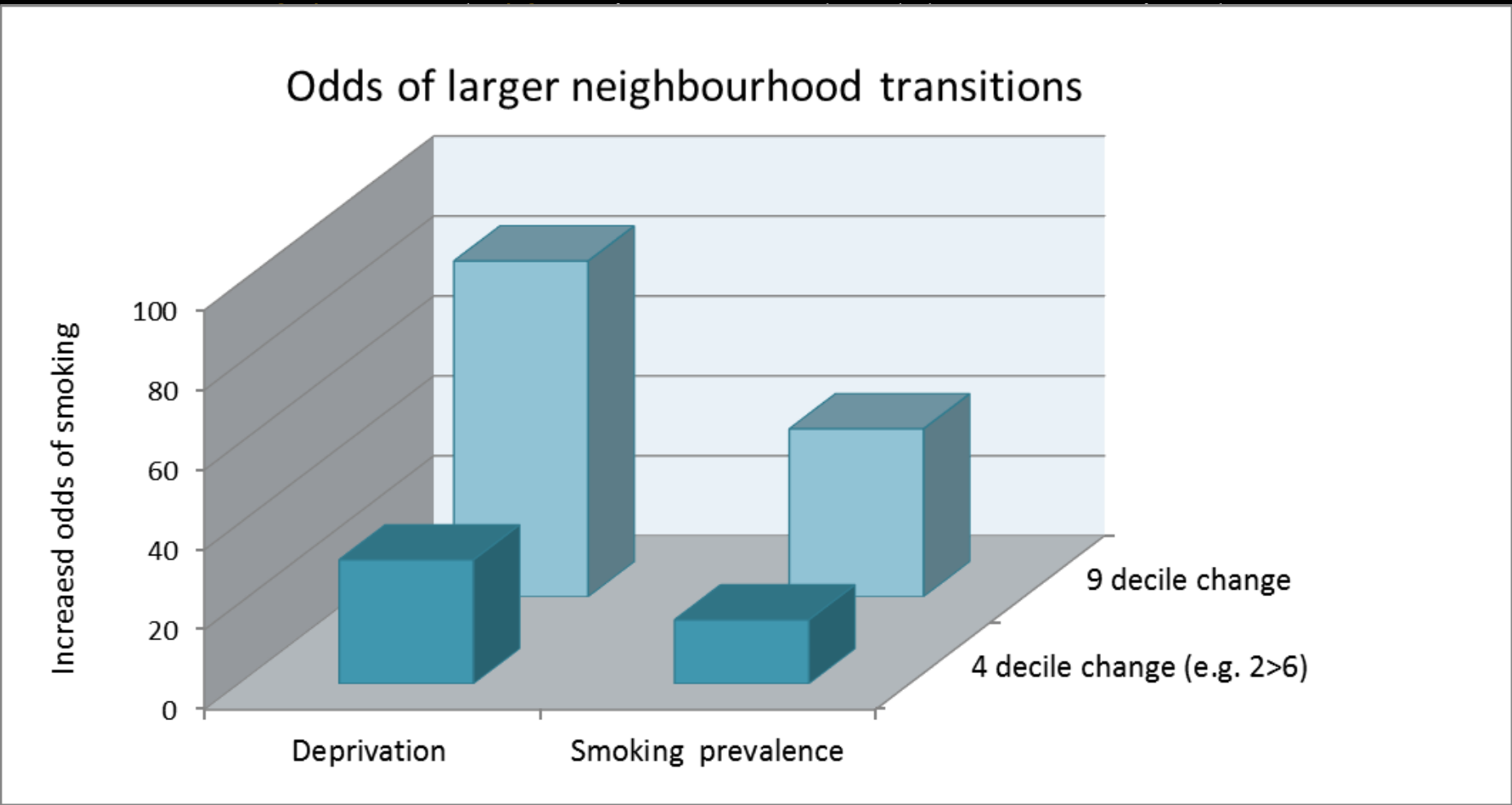


# Moving one decile to more-smoking and more-deprivation neighbourhoods



# SoFIE neighbourhood effects: best to worst

Odds of smoking from shifting to neighbourhoods with *larger deprivation and smoking prevalence increases*



# Discussion

- The evidence indicates a normalising effect from increased or decreased neighbourhood and household smoking



# Reasons for the results found

- Older people may relapse to smoking more than young people, or be more influenced by their household?



# Study strengths



- This longitudinal data captures changes in the exposure (neighbourhood or household) and the outcome (smoking)
- It provides stronger information for causal inference than:
  - cross-sectional studies
  - cohort studies where individuals do not change their exposure to smoking contexts

# Policy options to denormalise smoking

Include:

- Smokefree outdoor public areas
- Smokefree vehicles
- Smokefree broadcast visual media (TV, film)
  - ◆ Adult rating
  - ◆ Parallel smokefree ads
  - ◆ No brand images
- Reducing the number and location of tobacco retail outlets

# Conclusion

- The first longitudinal study with changes in neighbourhood smoking, controlled for socioeconomic measures?
- Indicates normalising from local smoking

