

Sugar, dental caries and acute rheumatic fever: what is the link?

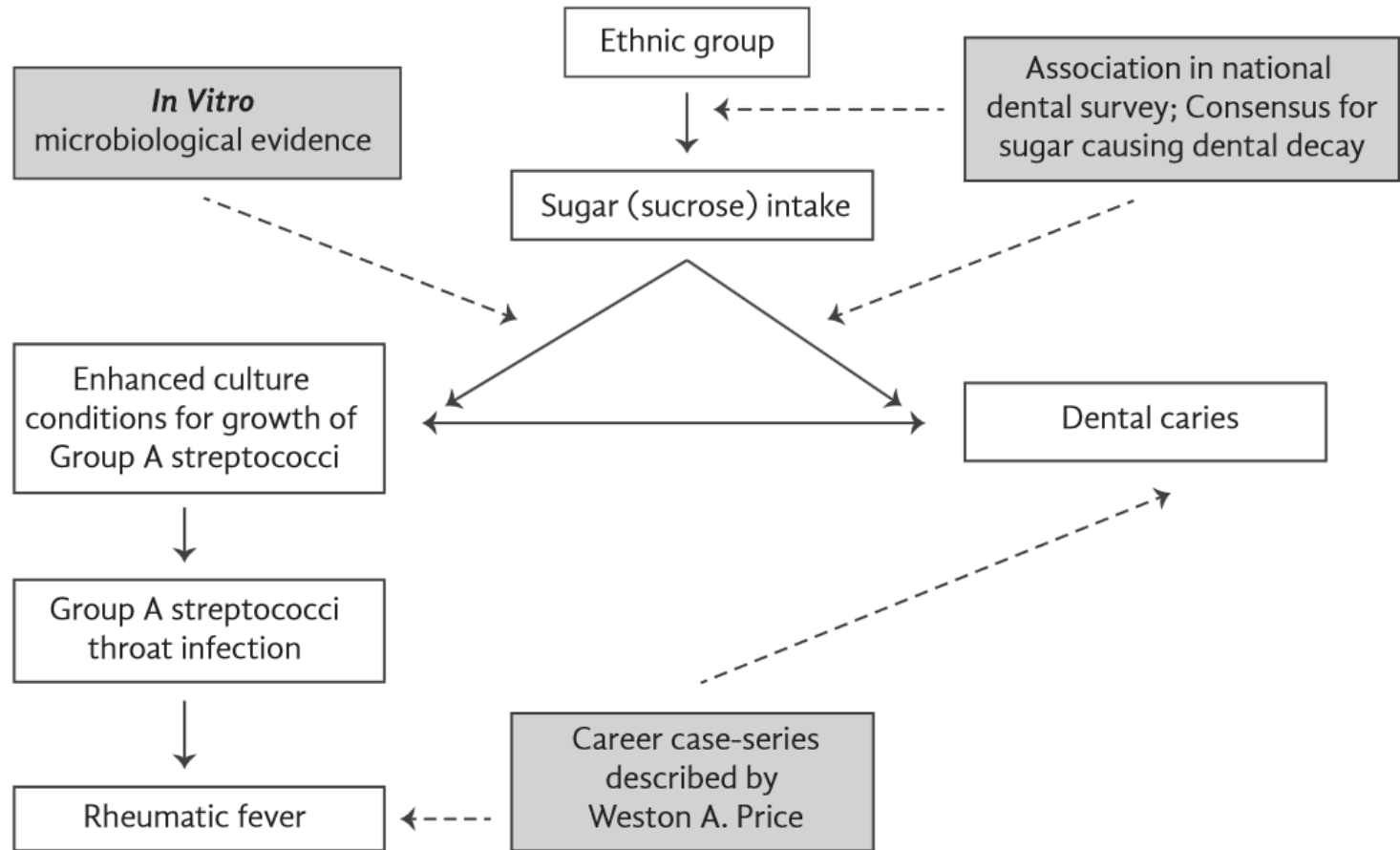
Dr Simon Thornley (Auckland Regional Public Health Service)





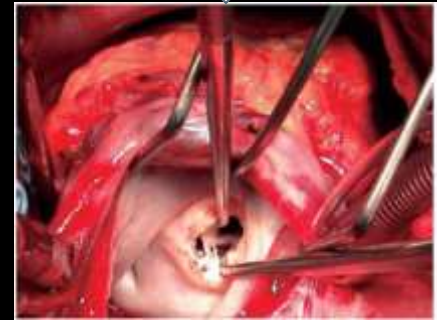
The hypothesis

How could sugar cause rheumatic fever?





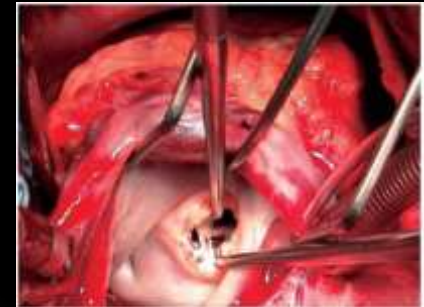
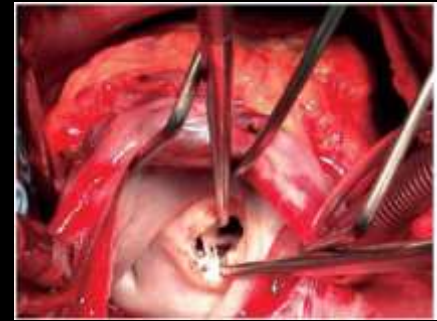
Statistical evidence
of association?



The study

Compare children, by caries

$$P(\text{ARF} \mid \text{Decayed teeth}) = P(\text{ARF} \mid \text{Good teeth})$$

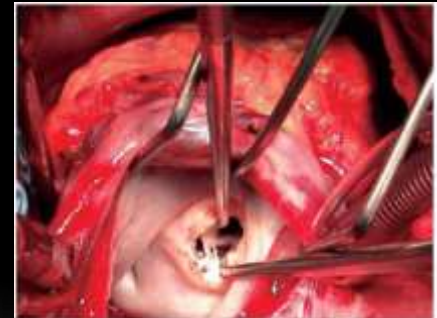


Other explanations...

**Age
Gender
Ethnic group
Socioeconomic status**



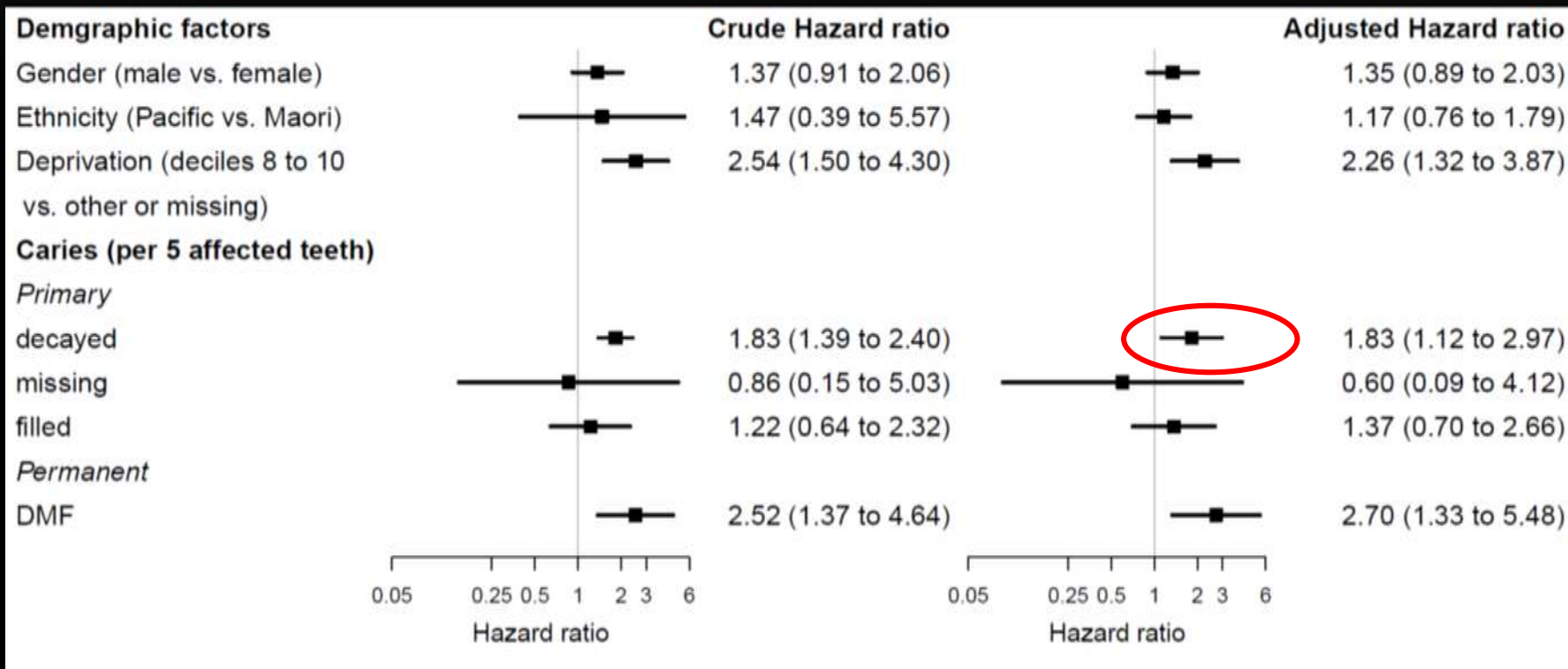
Spurious



Cohort study

- 20,033 Māori and Pacific children (ARDS)
- Aged 5 to 6 years
- Free of chronic disease at baseline
- Exposure: dental caries
- Outcome: rheumatic fever ($n = 96$)

Results



Conclusion

- Teeth provide an indicator of cumulative exposure to sugar
- Caries strongly linked to ARF incidence
- Limiting sugar likely to reduce disease incidence
- Sugar intake
 - likely responsible for more poor health than we are currently aware of

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