

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

Dr Simon Thornley (Auckland Regional Public Health Service)

Auckland Regional Public Health Service

Rātonga Hauora ā Iwi o Tamaki Makaurau



Waitemata
District Health Board
Best Care for Everyone



Working with the people of Auckland, Waitemata and Counties Manukau

Overview

- How could sugar be related to dental caries?
 - A cohort study
 - Results
 - Conclusion
 - What next?
 - A new strategy for preventing rheumatic fever?
-

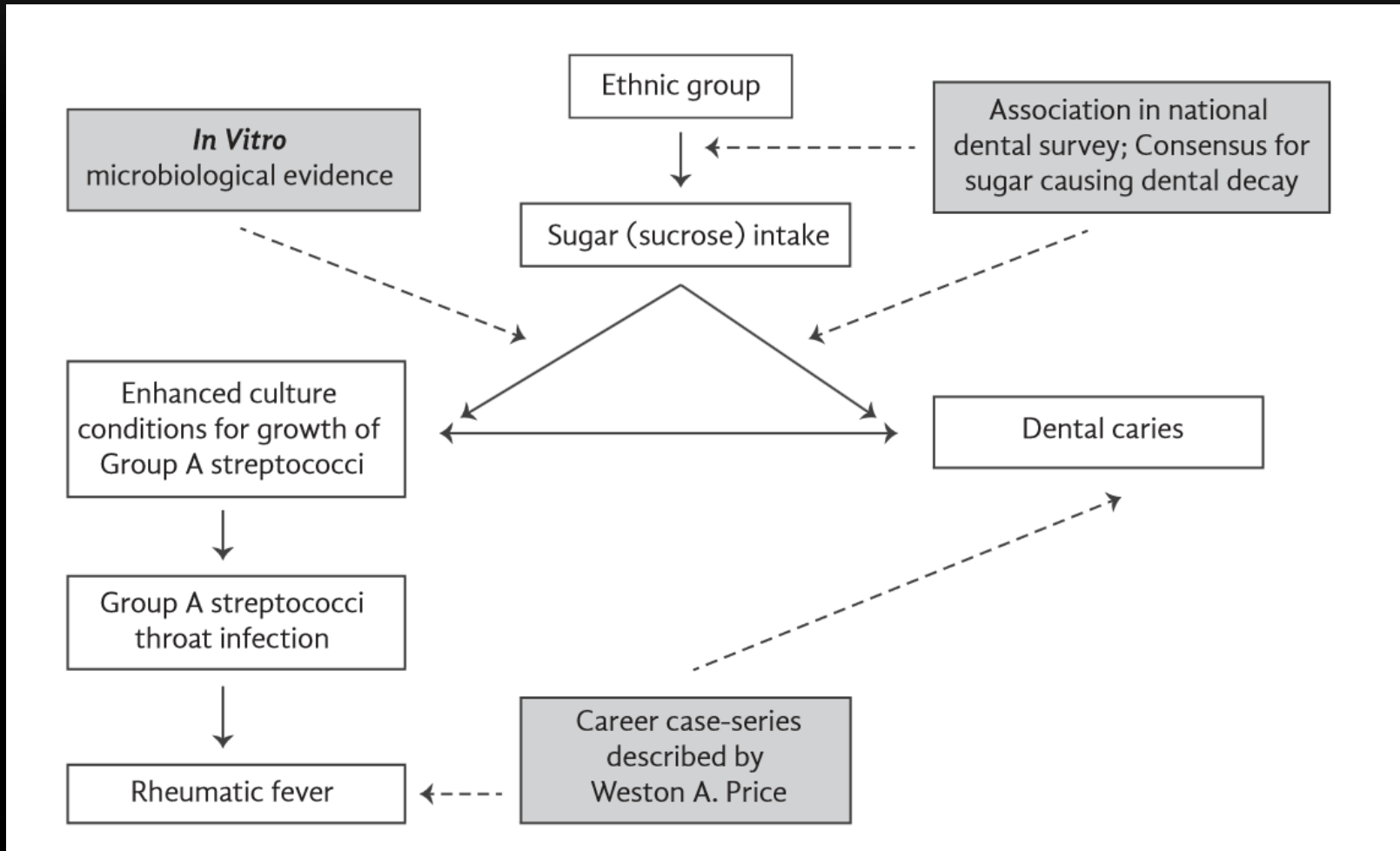


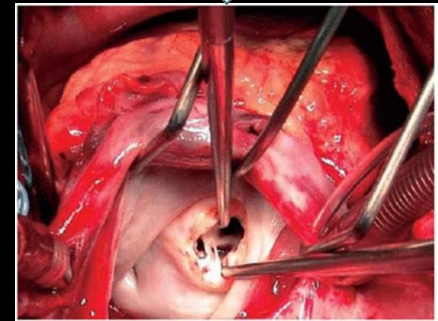
© Price-Pottenger Nutrition Foundation, www.ppnf.org



The hypothesis

How could sugar cause rheumatic fever?



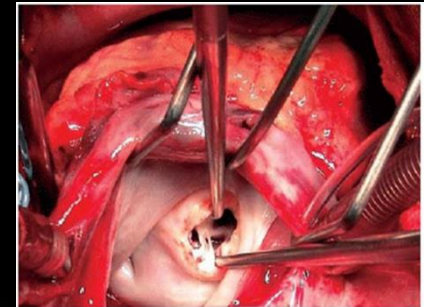
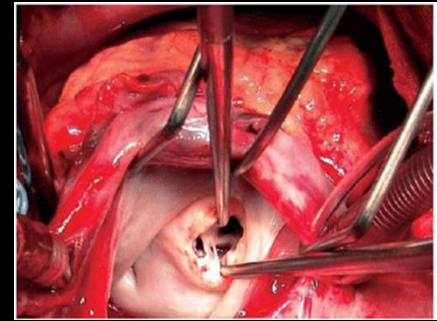


Statistical evidence
of association?

The study

Compare children, by caries

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

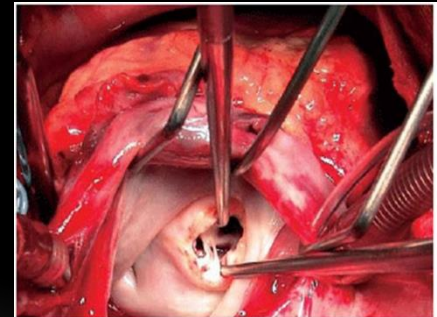


Other explanations...

Age
Gender
Ethnic group
Socioeconomic status



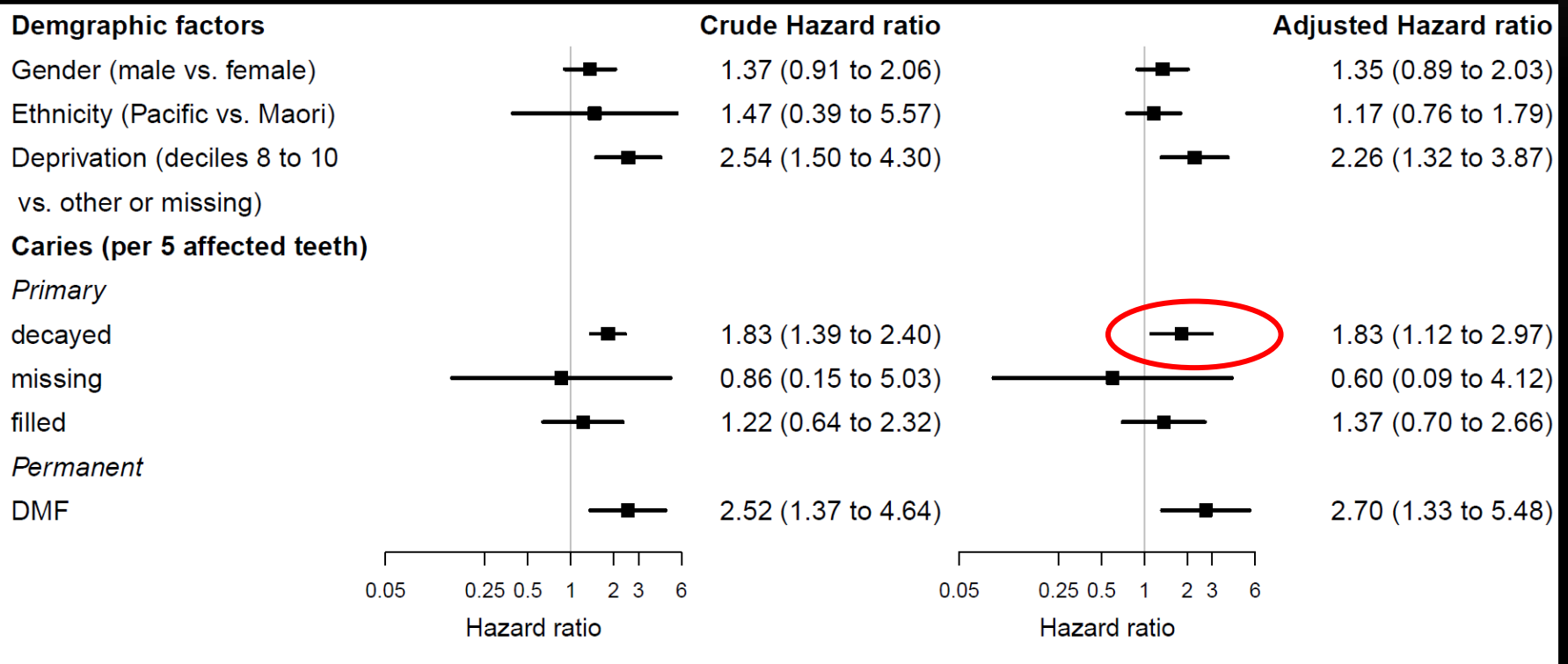
Spurious



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



Summary

- Teeth provide an indicator of cumulative exposure to sugar
 - Caries strongly linked to ARF incidence
 - Limiting sugar may reduce disease incidence
 - Intervention study would be next step
-

Acknowledgements

- Roger Marshall, University of Auckland
- Katie Bach, Paediatric Dentist, ADHB
- Pauline Koopu, Dentist, ADHB
- Gary Reynolds, Medical Officer, ARPMS
- Gerhard Sundborn, University of Auckland
- Dean Papa, CMDHB
- Julia Peters, ARPMS
- Satha Kanagaratnam, ARDS.