

Does a school nutrition policy effect the oral health of students?

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Summary

- Schools as a political battleground for healthy food policy in NZ
- One school in the poorest part of South Auckland makes a change
 - Anecdotal benefits reported
 - Is there objective evidence of benefit?
- What effect does the policy have on the oral health of students?

School policies & nutrition

- 2008 National Administration Guidelines
- *“... where food and beverages are sold on schools’ premises, ... only healthy options [are to be made] ... available.”*



Change in Govt. policy

- 2009 NAG changed.
- Selling healthy options removed, but...

“... promote healthy food and nutrition for all students.”

Yendarra primary school





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What did Yendarra school do?

- In 2006



Promoting healthy foods

- <https://www.youtube.com/watch?v=83glvF5v3ak>
- Community engagement
- New water fountains
- Fruit/milk in schools; healthy canteen
- Photos of students with healthy lunches promoted
- Giving away drink bottles

Inspiring results

- Fewer behavioural issues
- Less dental caries
- Large sizes of uniform stopped selling
- New water fountains
- Weight loss
- Improved learning and classroom behaviour

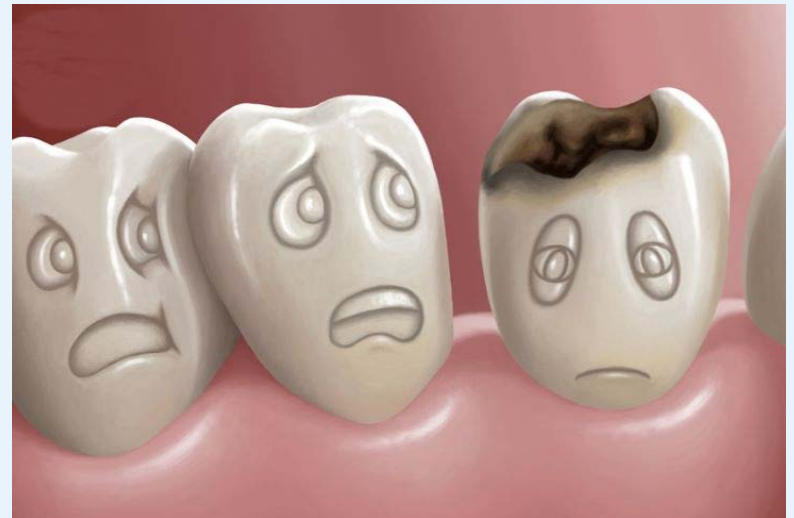


Does a school nutrition policy influence the incidence of dental caries?

THE STUDY

Community oral health service

- Publicly funded dental service
- All children invited to participate
- Ideally seen yearly for review

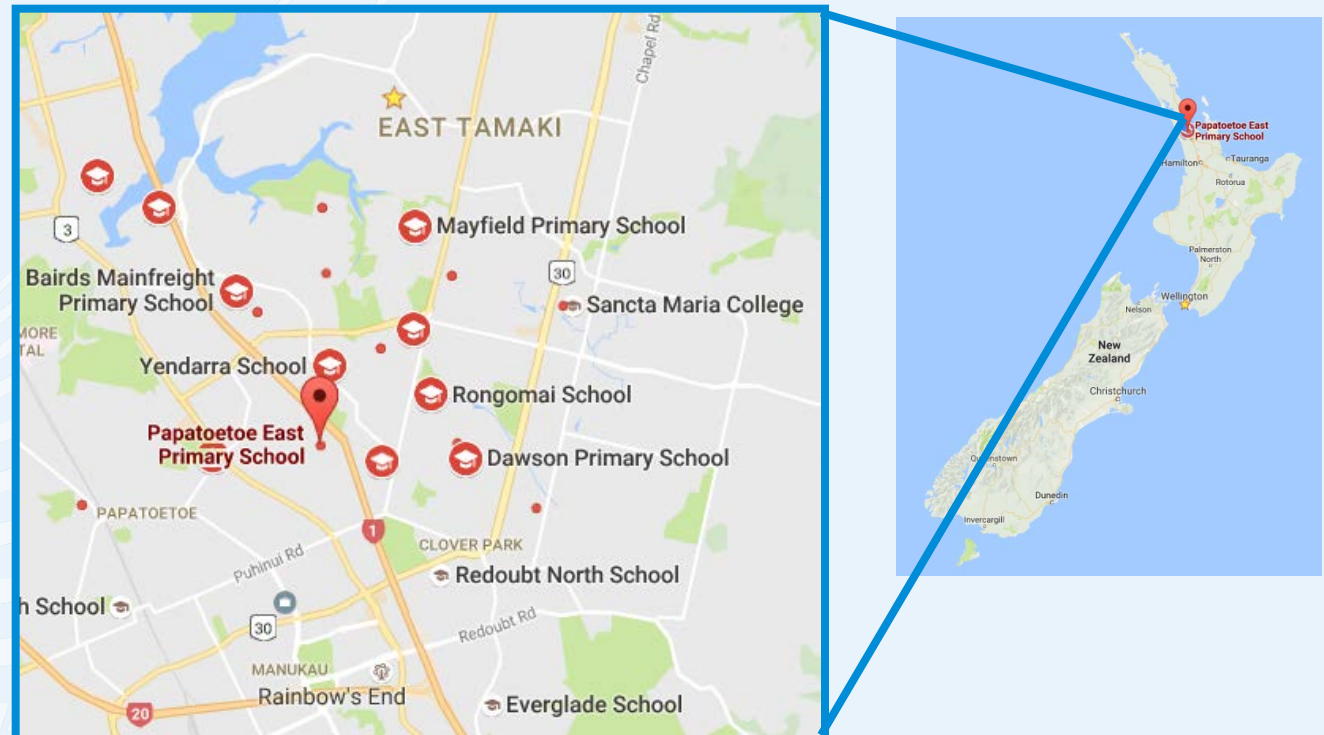


Community dental data

- Cross sectional study (2007 to 2014)
- Age 8 to 11 years
- Yendarra vs 8 other surrounding schools
 - (state funded and decile 1)
- Outcome
 - First visit dmft + DMFT (total caries)
- Exposure
 - Age (at visit), sex, ethnicity

Results

- 3,813 kids
- 428 Yendarra, 3385 surrounding schools



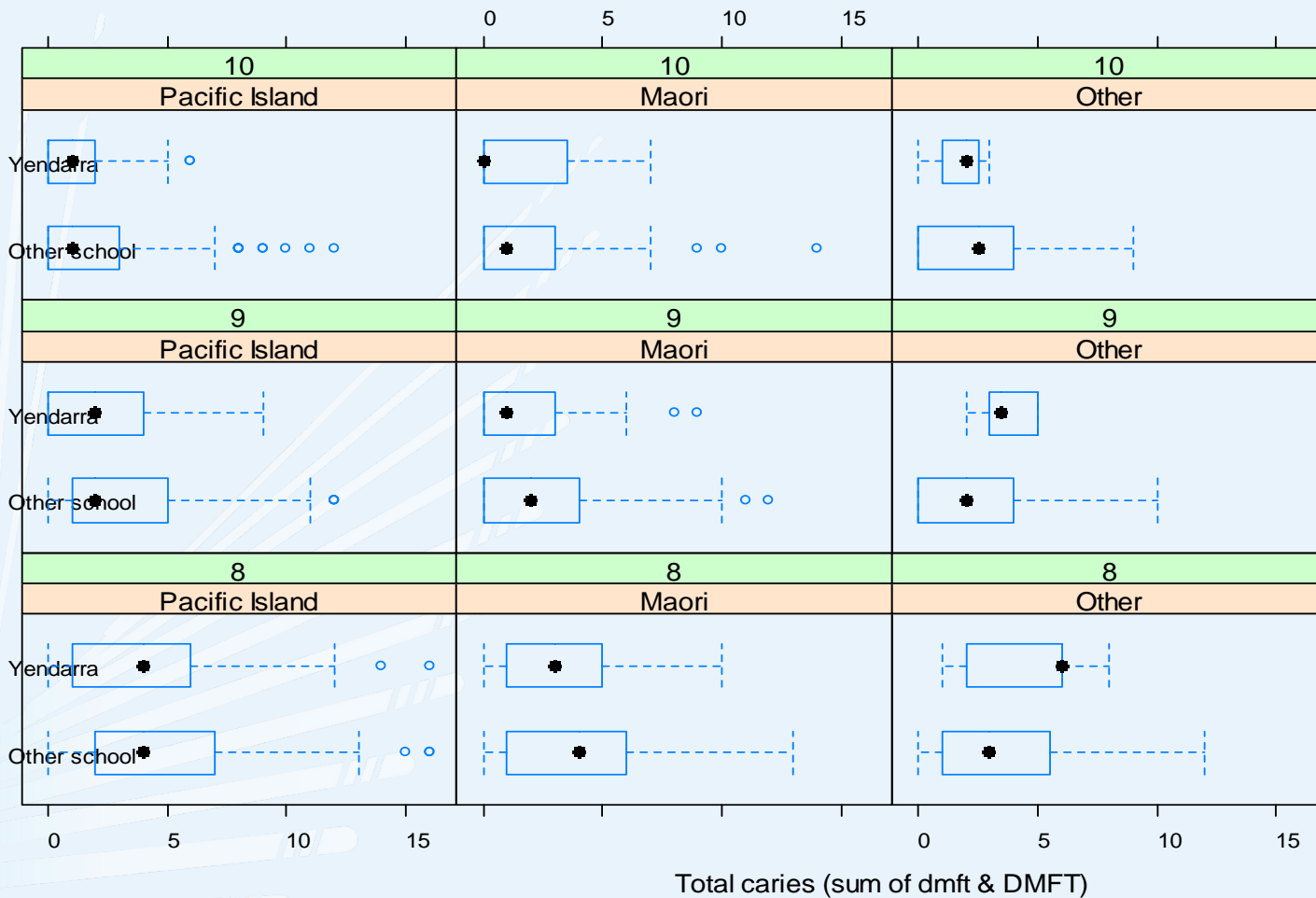
Kids by school...

	Other Primary Schools (col. % or sd)	Yendarra (col. % or sd)	Total (col. % or sd)	P-value*
Total	3,385	428	3,813	
Gender				0.812
Male	1,765 (52.1)	220 (51.4)	1,985 (52.1)	
Age (years)				0.255
Mean (sd)	9.10 (0.82)	9.14 (0.80)	9.10 (0.81)	
Ethnic Group				0.187
Pacific	2,528 (74.7)	337 (78.7)	2,865 (75.1)	
Māori	721 (21.3)	77 (18.0)	798 (20.9)	
Other	136 (4.0)	14 (3.3)	150 (3.9)	

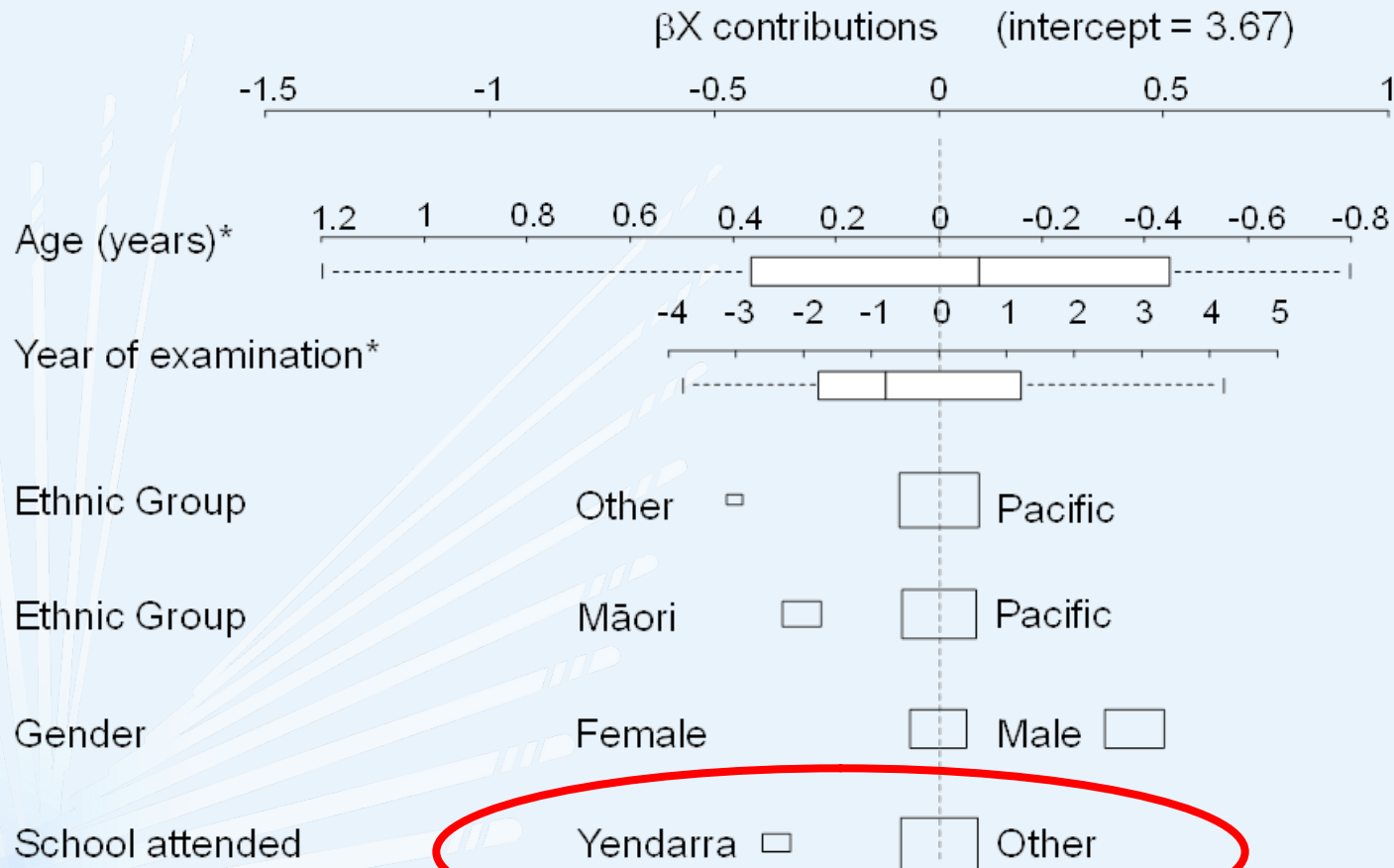
Comparing oral health

Oral Health Status	Other Primary Schools (col. % or sd)	Yendarra (col. % or sd)	Total (col. % or sd)	P-value*
Primary teeth				
decay				0.093
Mean (sd)	1.03 (1.57)	0.91 (1.48)	1.02 (1.56)	
missing				0.003
Mean (sd)	0.27 (0.76)	0.14 (0.50)	0.25 (0.74)	
filled				0.172
Mean (sd)	1.61 (1.97)	1.44 (1.91)	1.59 (1.97)	
dmf				0.018
Mean (sd)	2.91 (2.76)	2.50 (2.61)	2.87 (2.75)	
Permanent teeth				
DMF				0.320
Mean (sd)	0.55 (1.10)	0.50 (1.15)	0.55 (1.10)	
Total caries				0.002
Mean (sd)	3.47 (2.99)	3.00 (2.84)	3.41 (2.98)	

Distribution of total caries



Regression model (regplot)



* Centred at mean value (age = 9.1 years; Year = 2010.5)

Sensitivity analysis

- Include younger children:
 - much the same results.

Limitations

- Cross-sectional: cause and effect impossible to distinguish
 - Perhaps health conscious parents select Yendarra vs other schools??
- Selection bias: ~20% non-participation
- Measurement error possible
 - Likely to reduce size of benefit.

Conclusion

- Policy reduces dental decay on average 1 tooth per 2 students.
- 16 carious teeth / year prevented.

Conclusions

- If carried out in other schools
 - 48 carious teeth / year prevented.
 - Extend to other schools
- Nutrition policies are important!
 - Particularly sugar
 - ↓ dental caries
 - ↓ obesity
 - ↓ health inequality





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THANK YOU