Effectiveness of Community Water Fluoridation

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Community Dentistry, University of Toronto

York Review, 2000

- Commissioned by Chief Medical Officer, UK

  Objective #1:

  What are the effects of fluoridation of drinking water supplies on the incidence of caries?
- Best available evidence
- Water fluoridation ↓ cavities
- Withdrawal of water fluoridation ↑ cavities
- Because of fluoridation ≈ 14 additional children in every 100 will be cavity-free

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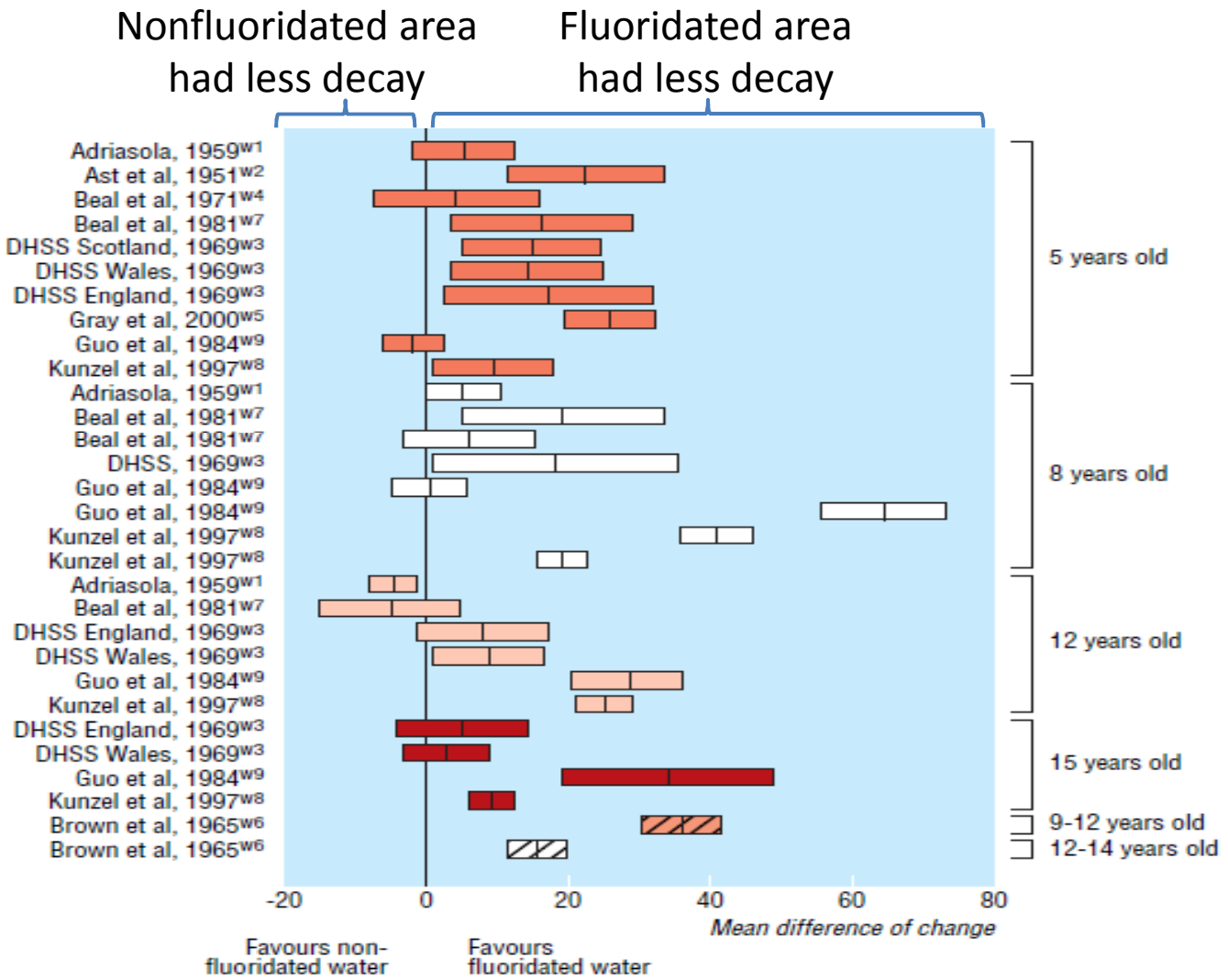
Change in proportion of children without cavities in fluoridated versus nonfluoridated areas



McDonagh MS et al. (2000).British Medical Journal; October 2000;321:855-85

Discontinue fluoridation and decay rates rise

Dorval, Quebec

- % of kindergarten children at high risk of developing dental cavities doubled in the two-year period after water fluoridation was halted in 2003
- Rising from 8 % to 17 %
- Methodological limitations but they were corroborated in independent modelling studies conducted by the INSPQ (25).

Levy, M. 2007. Update on Water Fluoridation in Quebec (French) from *INSPQ Water Fluoridation: An analysis of the health benefits and risk.* 9e Quebec Public Health Meeting.

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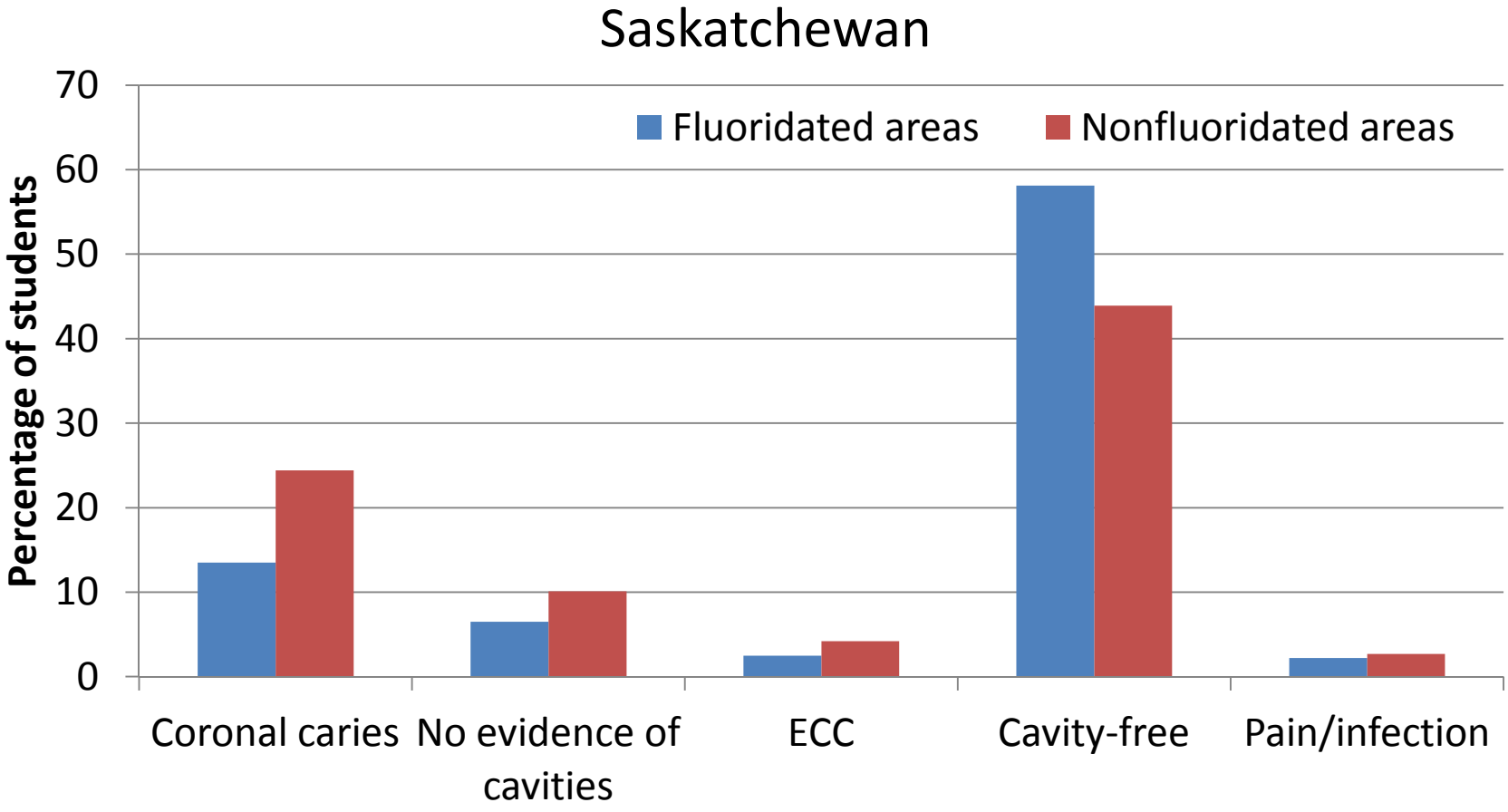
Improved dental health of students with exposure to water fluoridation



Pilly VK. (2010). Saskatchewan Dental Health Screening Program 2008-2009 Report, 46. Retrieved from http://oralhealth.circumpolarhealth.org/item/saskatchewan-dental-health-screening-program-2008-2009-report/

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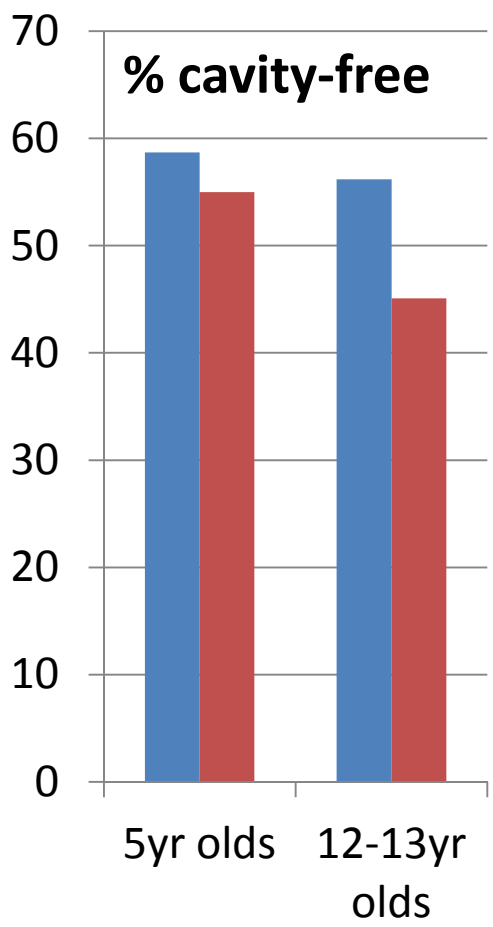
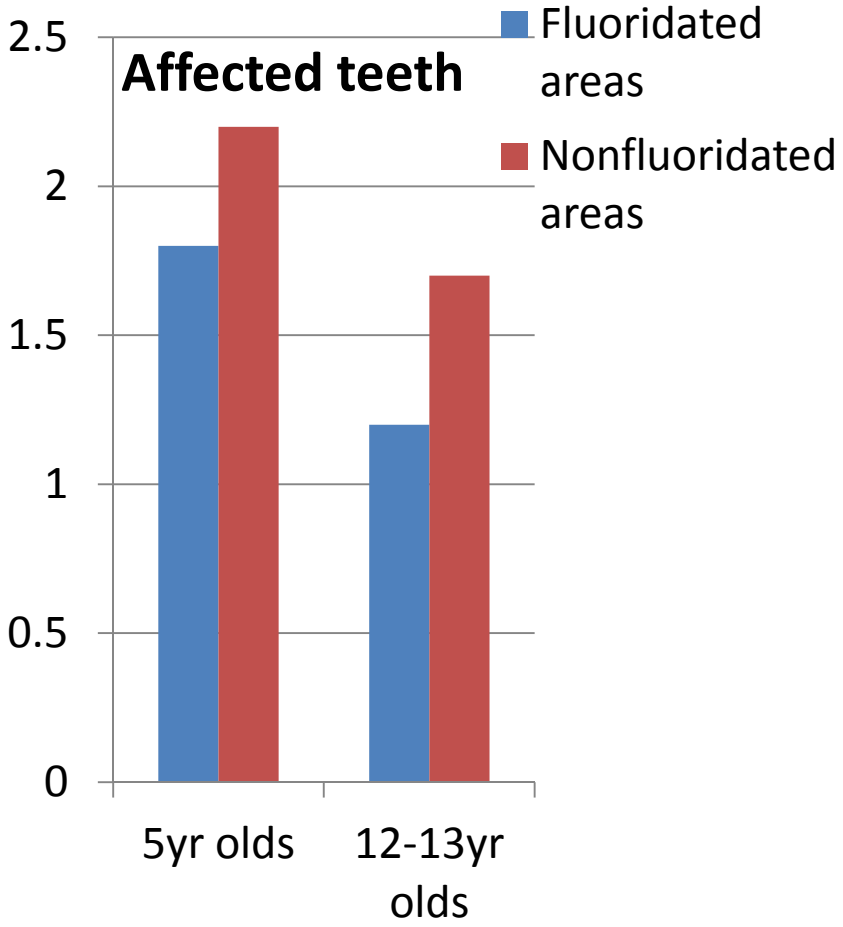
Improved dental health of schoolchildren in fluoridated areas

New Zealand





Ministry of Health. (2010). Our oral health. *Key findings of the 2009 New Zealand Oral Health Survey.*

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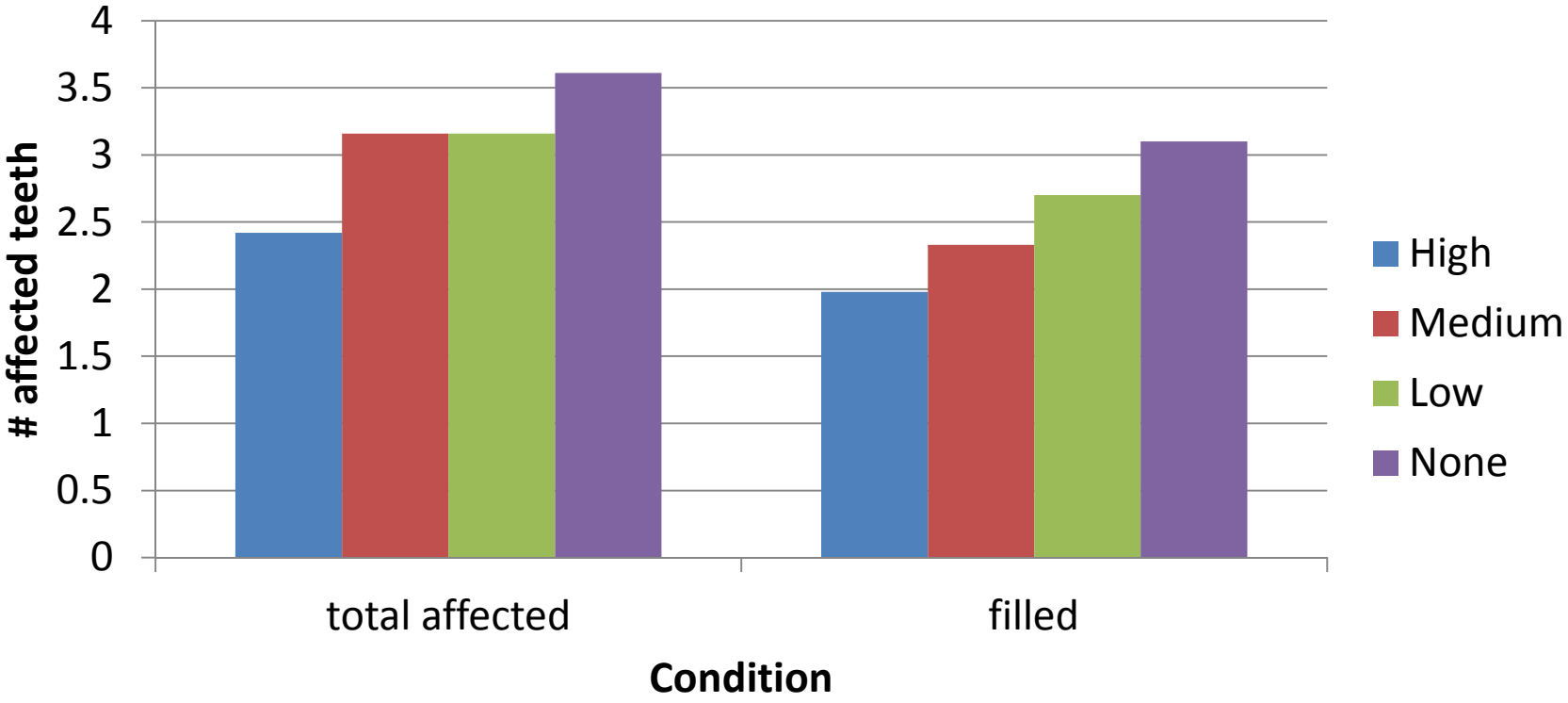
Improved dental health with life-time exposure to water fluoridation

Northern Ireland & Republic of Ireland



CAWT. (2010). Epidemiological study of oral health. Retrieved from: http://www.cawt.com/Site/11/Documents/Publications/PCCC/CrossBorderFluorideStudy.pdf

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VERY GOOD RECENT STUDY

Fluoride in drinking water goes up – Cavities go down

- Denmark - naturally fluoridated, concentrations in drinking water known, widespread use of fluoride toothpaste
- Public dental care for children, n=178,147
- Linked dental health register with other government registers
  - To account for income, gender

Kirkeskov *et al.* (2010). The association between fluoride in drinking water and dental caries in Danish children. Linking data from health registers, environmental registers and administrative registers. *Community Dent Oral Epidemiol, 38*, 206–212.

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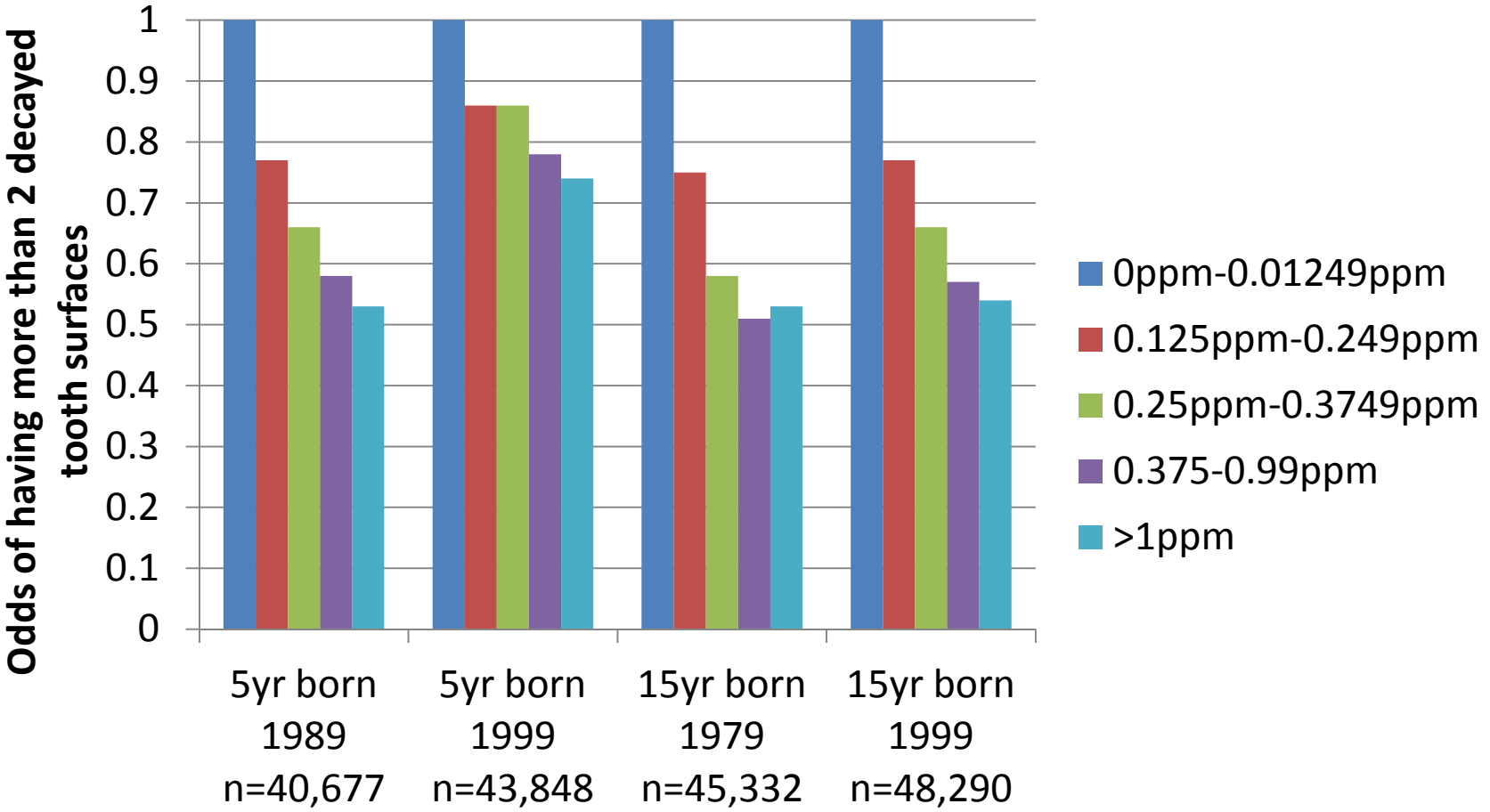
Fluoride goes up - Cavities go down



Kirkeskov *et al.* (2010). The association between fluoride in drinking water and dental caries in Danish children. Linking data from health registers, environmental registers and administrative registers. *Community Dent Oral Epidemiol, 38*, 206–212.

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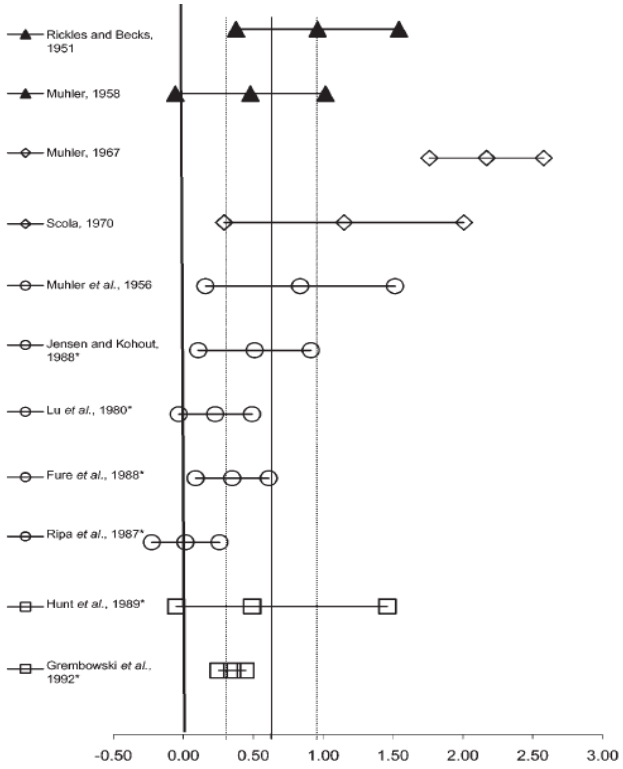
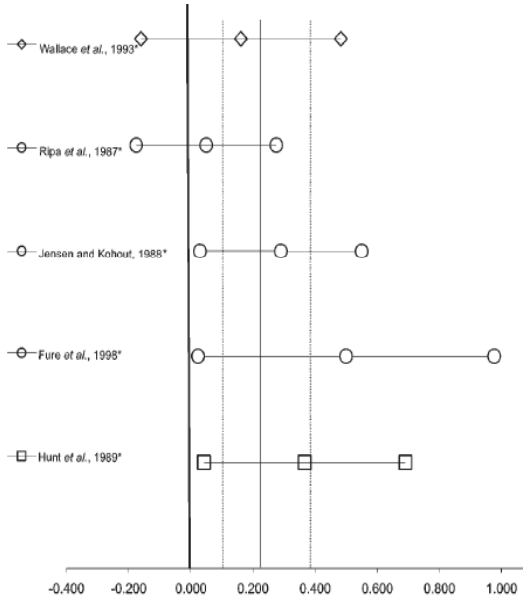
Fluoridated water reduces cavities in adults and seniors

Absolute reduction in crown caries



Absolute reduction in root caries



Griffin *et al.* (2007). Fluoride affects teeth. *J Dent Res, 86*, 410-415.

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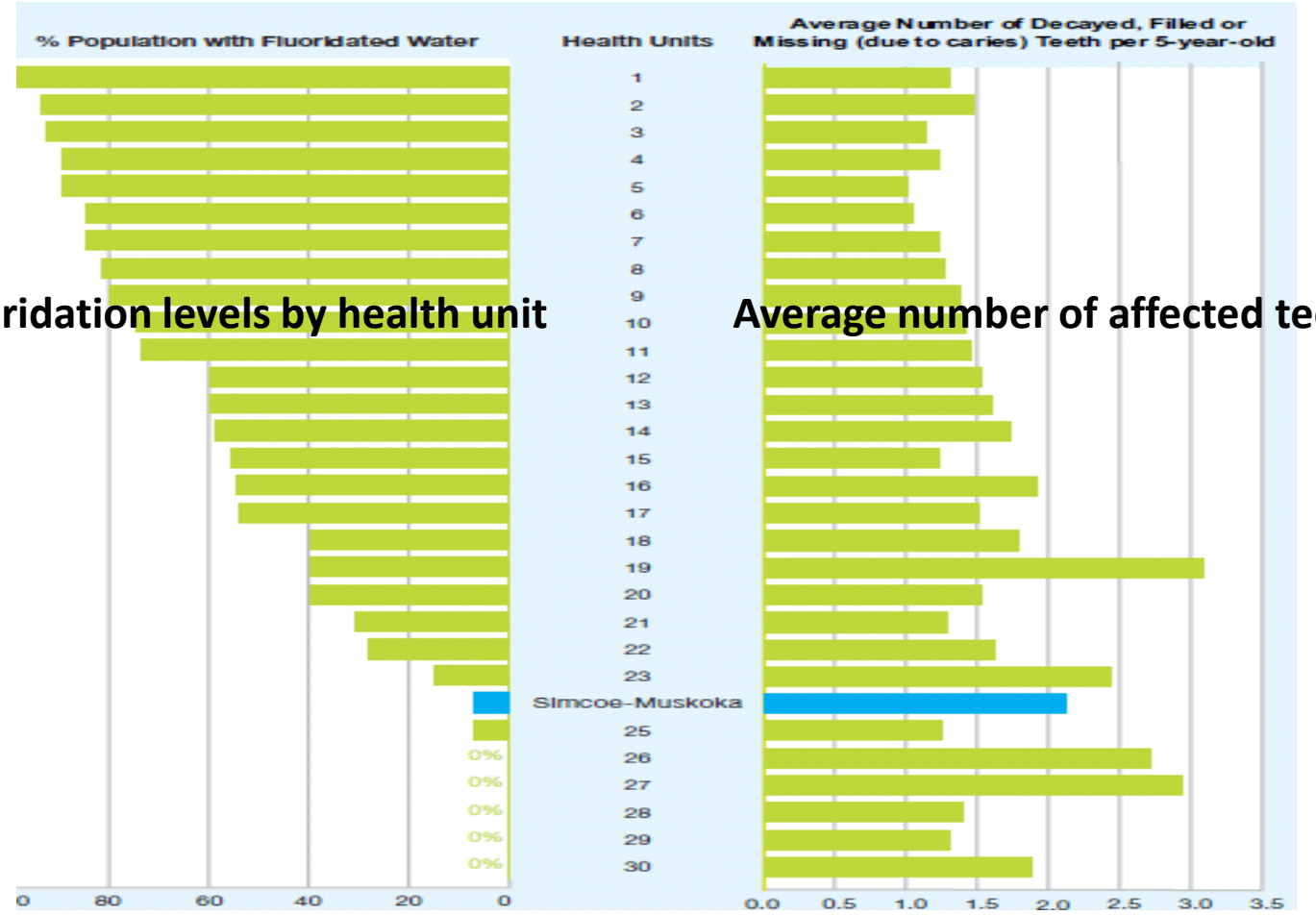
Oral health of Ontario
5 year old schoolchildren 2005-07



Fluoridation levels by health unit

Average number of affected teeth

Simcoe-Muskoka District Health Unit. (2009). Oral health in Simcoe-Muskoka, Focus on health stats. *Adapted from* Ontario Association of Public Health Dentistry. 2008. data available from 30/36 units.

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