

INTRODUCTION

Oral Health Care is one of New Zealand's health priorities as 4% of New Zealand children have had their teeth removed due to either decay, abscess or infection (Ministry of Health, 2012).

Fluoride in New Zealand's naturally occurring water is below optimal levels and therefore fluoride is recommended to be added to our drinking water to aid in the prevention of dental decay. However, does regular exposure to fluoridated water lead to less dental caries?

FINDINGS

- Dental caries is a chronic disease that is common in children, it causes discomfort and pain and can affect children's development, school performance and behaviour (Ministry of Health, 2012)
- Approximately half the total population of New Zealanders are living in communities with fluoridated water (Stodart, 2013)
- Children between the ages of 5 and 6 would need to drink, on average, 440 glasses of water a day to reach a toxic dose of fluoride (National Fluoridation Information Service, 2013)

IN SCHOOL-AGED CHILDREN, DOES REGULAR EXPOSURE TO FLUORIDATED WATER LEAD TO LESS DENTAL CARIES THAN IN CHILDREN NOT REGULARLY EXPOSED TO FLUORIDATED WATER?

FINDINGS

- Children living in fluoridated areas had on average 40% less dental caries (Ministry of Health, 2013)
- The risk of dental caries associated with sugar drink consumption decreases a considerable amount in children who have life time exposure to fluoridated water. (Armfield, Spencer, Roberts-Thomson and Plastow, 2013)

RECOMMENDATIONS

- The New Zealand Ministry of Health (2010) recommends fluoride concentration of drinking water is 0.7 to 1 part per million for drinking water to be safe from fluorosis and beneficial in reducing tooth caries
 - To decrease the inequalities in good oral health care, all children should receive the benefit of fluoride in drinking water

CONCLUSION

Community water fluoridation helps to achieve a New Zealand health priority of improving dental health.

Fluoride in drinking water can decrease dental caries in New Zealand children.

The levels of fluoridated water in New Zealand shows no substantial health risks to children. It is important to raise awareness among both policy makers and the general public of the role of water fluoridation in reducing dental caries, and how this is crucial to the general health and well-being of New Zealand children.

REFERENCES:

- Armfield, J., Spencer, J., Roberts-Thomson, K., & Plastow, K. (2013). Water fluoridation and the association of sugar-sweetened beverage consumption and dental caries in Australia children. *American Journal of Public Health*, 103(3), 494-499.
- Gleam. (2011). Lower wisdom tooth. Retrieved from commons.wikimedia.org/wiki/File:Lower_wisdom_tooth.png
- Ministry of Health (2010). *Fluoride Flipbook*. Retrieved from the Ministry of Health website: http://www.health.govt.nz/system/files/documents/pages/water-fluoridation-flipbook_0.pdf
- Ministry of Health. (2012). *The health of New Zealand children: key findings of the New Zealand health survey 2011/12*. Wellington: Ministry of Health.
- Ministry of Health. (2013). *Community water fluoridation*. Retrieved from the Ministry of Health website: <http://www.health.govt.nz/publication/community-water-fluoridation>.
- National Fluoridation Information Service, (2013, December). How many glasses of fluoridated water can I drink? *On Tap Newsletter*. Retrieved from <http://www.rph.org.nz>
- Stodark, K. (2013). There's something in the water. *Kai Tiaki Nursing New Zealand*, 19(6), 19.

PECOT Model

After forming a topic, 'is fluoride beneficial in preventing tooth decay', I used Schneider, Whitehead, LoBiondo-Wood & Haber (2013) PECOT model to refine my search question.

PECOT category	Information relating to question	Explanation
Population	School aged children	During this stage children lose their baby teeth and are replaced by permanent teeth.
Exposure	Children that are exposed to fluoridated water	I will be looking for articles that use an experimental design on whether children living in areas with fluoridated water show a decline in tooth decay.
Comparison/Control	Compared to children that are not exposed to fluoridated water	I will be interested in articles on whether children living in areas without fluoridated water have the same levels of tooth decay.
Outcome	Reduced tooth decay	I want to know if fluoride in our drinking water actually reduces tooth decay.
Time	Not applicable	Not applicable

Reference

Schneider, Z., Whitehead, D. (2013). Identifying research ideas, questions, statement & hypotheses. In Z. Schneider, D. Whitehead, G. LoBiondo-Wood, J. Haber. (4th ed.). *Nursing and midwifery research methods and appraisal for evidence – based practice* (pp. 57-76). Sydney, Australia: Mosby.