

## Community Water Fluoridation

### “Why fluoridate community drinking water?”

Community Water fluoridation (CWF) is the inclusion of regulated fluoride to a communities' water supply with the purpose of improving oral health. While researching CWF, the following topics commonly arose. These are; the benefits of water fluoridation, and concerns regarding the use of fluoride in public water supply.

#### Clinical issue

- Fluoridating community water is an important and constructive health measure that ensures to reduce gaps in social inequities.
- Oral disease is the fourth most expensive disease category. Reducing the amount of oral disease in all populations across New Zealand is a top health priority.
- There are claims that ingesting fluoride with every drink of water can interfere with neurological development. Despite a lack of evidence, it has been enough to sway some local NZ government's decisions to take a fluoride free approach to tap water (Ministry of Health, 2017 & Broadbent, Thomson, Ramrakha, Moffitt, Zeng, Foster-Page & Poulton, 2015).

#### Findings

- Fluoride exposure prior to the eruption of teeth alters the structure of enamel, making permanent teeth more resistant to dental caries. Additionally, continued exposure to Community Water Fluoridation could improve oral health by providing further protection of tooth enamel (Neidell et al, 2010).
- CWF is equitable due to its wide population coverage. For minorities who lack the means to practice oral health care or lack the opportunity to visit a dentist, water fluoridation is extremely important. Primarily due to its pre-eruptive systemic effects and post-eruptive topical effects in preventing tooth decay (McLaren & Emery, 2012).
- Anti-fluoridation campaigners claim that CWF leads to IQ deficits. This has been investigated and factually discredited. The only well-founded evidence of the negative effect of CWF is fluorosis, a discolouration or mottling of tooth enamel. This is usually very mild and occurs in very small percentage of people (Friedman, 2016).

#### Recommendations

- In addition to brushing teeth twice a day, healthy eating and regular appointments with a dentist, water fluoridation is a public health measure proven to reduce tooth decay. For the best protection against caries, both systemic and topical fluoride sources are needed. While systemic fluoride is acquired by drinking fluoridated water, topical fluoride can be used on surfaces of teeth via toothpastes, mouth rinses, and gels. (Friedman, 2016, Messina, 2016 & MoH, 2017).
- Regarding social health equity, it is recommended that in communities where there are poor oral health outcomes and non-fluoridated water, fluoridating community water would increase the likelihood of better oral health outcomes.
- When considering populations that are against CWF, appropriate evidence based information is key. Fluoride has been proven to be safe as it is in such low doses in the water that it will not have any negative physiological effects.

#### Conclusion

CWF is a beneficial and justifiable social health measure. It is required when ensuring the prevention of oral health decay and in closing gaps between social health inequities. Claims made by anti-fluoride campaigners suggesting CWF cause pathophysiological illnesses or defects, lack any scientific evidence. The quantity of fluoride in public water supply is monitored regularly to make sure that the levels stay within the appropriate parameters (MoH, 2017). Additionally, if systemically and topically used, fluoride will protect teeth from decay and subsequent tooth eradication by: strengthening tooth enamel; repairing early stages of tooth decay; and prevent bacteria growth which lead to cavities (MoH, 2017).



| PECOT category          | Information relating to question  | Explanation   |
|-------------------------|---|---|
| Population              | All demographics.   | All demographics are relevant because all ages and ethnicities are affected by oral hygiene.  |
| Exposure (intervention) | Community water Fluoridation.   | The population exposed to fluoridated water are done so through the community water supply. This decision is generally in the hands of local governments.   |
| comparison / Control    | Benefits of community water fluoridation and negative effects.                    | The point of this literature review is to compare the benefits of water fluoridation verses the potential negative effects in-order to see if the benefits outweigh the negatives.                                |
| Outcome                 | Benefits of community water fluoridation on oral health and social health equity. | It is important to see if the benefits of water fluoridation have flow-on benefits for the oral health of those communities involved and to see if this in turn increases the health status of those communities. |
| Time                    | Research gathered for this essay spans from 2010 to 2018.                         | This time-period is the most relevant as it is the most recent. Water fluoridation is an on-going issue so we need to look at the most recent research.   |

#### Rational for choosing a poster

Community water fluoridation (CWF) was introduced into New Zealand's water supply in 1954. Since its introduction, it is now estimated that 2.1 million New Zealanders are supplied with fluoridated water. Cities such as Auckland, Wellington and Dunedin hold the greatest population of fluoridated water supply. Fluoride is a naturally occurring compound found in the environment (Moore & Poynton, 2016). In New Zealand the natural level of fluoride found in untreated water supplies, is not sufficient to be of benefit. Therefore, by adjusting the natural level within the safe parameters significantly helps in the prevention of tooth decay for all New Zealanders (MoH, 2017).

I am aware that CWF has come under some scrutiny in recent years from anti-fluoride campaigners, making it a controversial topic. I choose to present the research and findings for this topic in poster form because I felt the information would be easily absorbed by those interested in learning more about this issue. I also want to respect whatever view a person may take regarding CWF and felt that a poster would allow people the autonomy to make an informed decision.

#### References

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