

# Regional survey supports national initiative for 'water-only' schools in New Zealand

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Childhood obesity, increasing globally since the 1980s, has been described as a normal response to an abnormal environment.<sup>1</sup> Increased availability and marketing of highly processed foods, including sugar, has been a key environmental change during this time. Systematic reviews suggest that sugar,<sup>2</sup> and sugary drinks,<sup>3</sup> contribute to obesity. (Sugar also contributes to other health conditions such as dental caries, a leading cause of preventable hospitalisations in young children.)

Industry-funded researchers create doubt about sugar's contribution to obesity.<sup>4</sup> A review of reviews on sugary drinks and obesity found that "reviews with conflicts of interest were five times more likely to present a conclusion of no positive association than those without them."<sup>5</sup> While it remains true that there are many information gaps,<sup>6</sup> there is enough evidence to act on sugary drinks.<sup>7</sup> A counter-argument is that while the evidence of association is strong, evidence is more limited on the impact of reducing sugary drinks consumption on obesity.<sup>8</sup>

A review of intervention studies to reduce sugary drink consumption in children that also reported changes in body fatness found limited evidence, but concluded that moderate intensity educational interventions could be effective, especially when supported by environmental changes.<sup>9</sup> School nurses can also play a role in addressing child obesity by providing education and support.<sup>10</sup>

## School environment and health

A systematic review of school environment changes found a limited evidence base

## Abstract

**Objective:** To support a national initiative to remove sugary drinks from schools and limit drinks to water or unflavoured milk ('water-only').

**Methods:** We emailed all 201 schools with primary school aged children in the Greater Wellington region with a survey on (1) current status of, (2) support needs for, and (3) barriers to or lessons learned from, a 'water-only' school policy.

**Results:** Only 78 (39%) of schools responded. Most supported 'water-only': 22 (28%) had implemented a policy; 10 (13%) in process of doing so; 22 (28%) were considering it; and 12 (15%) were 'water-only', but did not have a policy. Only 12 (15%) were not considering a 'water-only' policy. The main barrier reported was lack of community and/or family support. Many schools did not see any barriers beyond the time needed for consultation. Monitoring and communication were identified as key to success. A quarter of schools requested public health nurse support for a 'water-only' policy.

**Conclusions:** The survey elicited a range of views on 'water-only' policies for schools, but suggests that 'water-only' may be an emerging norm for schools.

**Implications for public health:** Our survey shows how local assessment can support a national initiative by providing a baseline, identifying schools that want support, and sharing lessons. Making schools 'water-only' could be a first step in changing our children's environment to prevent obesity.

**Key words:** Obesity prevention, School health, sugary drinks

(only UK and US studies), but these showed potential to improve health.<sup>11</sup> Another review found that there was a lack of evidence to show that the school environment determined obesity, but there was also a lack of validated tools to assess the school environment.<sup>12</sup> A review of school policies that limit access to sugary drinks and energy dense foods found mixed, but generally supportive, evidence for these policies in preventing obesity.<sup>13</sup> For example, sales restriction at school had only limited effect on high school students' overall consumption of sugary drinks in Maine,<sup>14</sup> but was effective in Boston.<sup>15</sup> A review of the impact of school-based adolescent health

interventions provides two relevant insights for reducing sugary drink consumption: (1) the need for multi-component interventions (e.g. including policy, parent involvement and community engagement); and (2) the interventions were effective at addressing some, but not all, health issues.<sup>16</sup>

## Global and national context

From these reviews, it is clear that there is both potential and challenge to use schools to improve community health. The 2015 World Health Organization (WHO) guidelines advise reducing sugar intake, particularly sugary drinks.<sup>17</sup> The WHO Commission on Ending Childhood Obesity (ECHO) started in

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2014 and issued its final report in 2016.<sup>18</sup> The Commission highlighted the need for political commitment and a 'whole of government' approach to implement a "comprehensive, integrated package of recommendations to address childhood obesity", including:

- "Eliminate the provision or sale of unhealthy foods, such as sugar-sweetened beverages and energy-dense, nutrient-poor foods, in the school environment.
- Ensure access to potable water in schools and sports facilities."

In 2013, overweight and obesity were predicted to replace tobacco as the leading risk to the health of New Zealanders by 2016.<sup>19</sup> In fact, a 2016 review of health loss, found that by 2013 diet was already the leading modifiable risk factor, followed by overweight and obesity, and with tobacco third.<sup>20</sup> To address the risk, the refreshed health strategy includes the plan to: "Implement and monitor a package of initiatives to prevent and manage obesity in children... Action will be taken across a range of settings where children learn, live and play, such as schools."<sup>21</sup>

### Reason for the survey

On 21 March 2016, the Ministry of Education issued a guideline encouraging schools to consider a 'water-only' policy,<sup>22</sup> and provided supporting resources.<sup>23</sup> A 'water-only' policy does **not** exclude milk, but is intended to remove sugary drinks, including fruit juices. The Ministry of Health media release stated that: "The World Health Organization recommends schools create healthy food environments so introducing a water-only policy is a great first step for schools."<sup>24</sup>

Regional Public Health employs school based Public Health Nurses (PHNs) to deliver personal and population health services to primary and intermediate schools in the in the Greater Wellington region. In addition to providing health services and referrals to individual children with health needs and delivering immunisation, PHNs provide health promotion and classroom health education. Therefore, RPH wished to support the joint Health-Education initiative for 'water-only' schools by surveying the schools in our region. The survey aimed to:

1. Assess the proportion of schools in the region with, or working towards, a 'water-only' policy;
2. Identify schools who want support to consider or implement a 'water-only'

policy; and

3. Learn lessons from schools that have already done so.

### Method

We developed a short survey and cover note (see Supplementary File 1). The survey had six questions, in addition to the ones to identify the school and respondent: four asked for free text responses on (1) acceptable drinks; (2) barriers to, or (3) lessons learnt in, and (4) type of support needed to implement a 'water-only' policy; two offered tick boxes: (1) 'water-only' policy status; and (2) PHN contact request.

The survey was emailed at the start of Term 2 (2 May 2016) to all 201 schools in the Greater Wellington region with primary school aged children (i.e. Year 1 to Year 8 when children are about 5 and 13 years old, respectively). We sent a reminder email two weeks later. We closed the survey three weeks after the initial email.

The question on the school's 'water-only' policy status offered 4 pre-defined choices (not considering; considering; in process; and implemented) or 'other'. Twelve of the 16 schools that responded 'other' described a practice or culture of 'water-only', and were placed in a new category ('In Practice'). In Practice included, for example:

*"Water is our promoted drink of choice, except for special events like Discos and School Fairs."*

*"Students are encouraged to drink water: we have water fountains and we provide bottled water for students to buy"; and*

*"We do not have a policy as such but our students only bring water to drink anyway. It is just part of our school culture."*

The remaining four schools that responded 'other' were reclassified:

- 'Not considering': "We do not have an issue with drinks other than water and school milk being consumed at school";
- 'Considering': "May consider – open to learn more", and "Will raise it with the BoT and Whānau."; and
- 'In Process': "Working toward, as part of a school plan."

Survey monkey was used for the e-survey, and data downloaded to Microsoft Excel for analysis. The analysis involved calculating proportions of response by various categories, such as the school's type, area, number of students, and deprivation decile

that are part of the RPH database on schools. The analyses found no associations with 'water-only' policy status and are not reported here. The comments were grouped into categories.

### Results

A total of 89 responses were completed from 78 schools (39%); there were two responses from nine schools, and three responses from one school. For these ten schools, a single record was created based on their combined responses.

The 201 schools in the original sample included a range of different school types, including eight Secondary schools that included Year 7 and 8 classes. None of these responded. Only 3 of 14 (21%) Intermediate schools (serving only Year 7 and 8); and 3 of 10 (30%) Composite schools (all ages) responded. Full Primary schools (Years 1-8) and Contributing Primary schools (Years 1-6) had higher responses at 43% (40 of 93) and 40% (30 of 75), respectively. Both 'special' schools responded.

The percentage of schools responding was similar across the six areas of the region, with the highest from schools in Lower Hutt (43%) and Wellington (41%), and the lowest from Porirua (34%) and Upper Hutt (31%). Of Wairarapa and Kapiti schools, 36% responded.

### Water-only status and PHN support

Table 1 shows the 'water-only' policy status of the 78 schools by request for a public health nurse (PHN) support for a 'water-only' policy. A quarter of schools (n=21) requested PHN support; mostly those that were either considering or in process of implementing a 'water-only' policy. Two of 12 schools that had responded that they were 'not considering' a policy requested PHN contact suggesting that they might consider it.

**Table 1: Distribution of schools by 'water-only' policy status and request for PHN support. Number in each category (% in two PHN groups; and % in each policy group)**

Water-only Policy	PHN contact requested		
	No	Yes	Total
1) Not Considering	10	2	12 (15%)
2) Considering	11	12	22 (28%)
3) In Process	4	7	10 (12%)
4) In Practice	10	2	12 (15%)
5) Implemented	22		22 (28%)
Total	57 (73%)	21 (27%)	78 (100%)

### Acceptable drinks allowed

Most schools (22 of 36) that replied to this question only allowed water and unflavoured milk. Six schools also allowed fruit juice, while for seven schools the focus was on excluding fizzy drinks. Three schools noted the use of sugary drinks as treats only for special occasions, and not for the regular school day. One school considered that allowing sugary drinks for treats helped to reinforce that 'water-only' was the norm.

### Barriers to water-only policy

Schools that had not implemented were asked to state the barriers to a 'water-only' policy. Two responses stated that continuing with the school milk would be a barrier. As noted in the introduction, the 'water-only' policy includes milk, so this is not a barrier. The other free text responses are listed in Supplementary File 2, Box 1. The other eight schools that were 'not considering' a policy, were mostly (n=5) because they did not see a need for a policy because of current practice, and in one case because they preferred to focus on education.

Of the 20 schools considering a policy that responded, eight did not see any barriers; it was just a matter of time and priority. The main barrier, expressed by eight schools, was family and community support for the policy and overcoming parental objections. Two schools mentioned fundraising as an obstacle and another two mentioned the need for water fountains. One school wanted more information on how to do it.

Four schools felt there was no need for a policy, mostly because the children were mostly already drinking water and they do not see the value of a policy. Half of the eight responses from schools 'in process' of establishing a policy identified parental buy-in as a barrier, while the others only described the process.

### Lessons learned in implementing a water-only policy

Those who had implemented a 'water-only' policy were asked to share any lessons learned. Four responded stated that it was easy to implement and was now part of the school culture, the other responses are listed in Supplementary File 2, Box 2. Nine responses emphasised communication (to explain the policy and its rationale) and monitoring (to ensure the policy was implemented). Consultation was highlighted

as a key lesson by three responses; and two noted the positive impact of going 'water-only' as the lesson learned. One noted the importance of having good options for providing water, and one on the value of limiting sugary drinks to special occasions to reinforce not having them on a daily basis.

### Support needed

The survey asked what kinds of support the schools would need to consider or implement a 'water-only' policy. Supplementary File 2, Box 3 shows the responses. Not included are responses that stated they did not need support, and one who stated "I don't agree with it, and feel that it's more work for overworked staff who are at school to educate not police lunch boxes and drink bottles." One school noted that they had spent "\$1,500 getting a water filter installed to lower the nitrate levels... and it would be great if there was funding available to help."

Schools asked for practical support around developing a policy including sharing experiences and model/template policies; information resources for parents, students and staff, including educational resources; and information around the whole process of implementation. Two schools noted the need for water fountains, and two the need for national programmes of support.

### Time to complete survey

The median time to complete the survey was 2.5 minutes, as calculated from the start and end time for survey completion. Three-quarters of responses (n=68) took less than five minutes. Ten respondents took more than ten minutes to complete the survey, which suggests they were engaged in other tasks during its completion.

### Discussion

Our survey met its aim of providing a picture of the variation across schools in the region; and found 28% of schools with a 'water-only' policy compared to the 10% of schools reported by the Ministry of Education.<sup>22</sup> The survey also identified schools that wanted support, and lessons were shared that may be useful to schools implementing, planning or considering a 'water-only' policy.

### Limitations

The main limitation of our survey findings was the low response rate, with less than half the schools in our region completing the

survey. Schools not supporting a 'water-only' policy may be less likely to respond leading to a biased picture. The contradictory responses from some schools where there was more than one response also suggest potential respondent biases. It is not straightforward to monitor policies and practices in schools.<sup>25</sup> Email surveys generally get lower surveys than postal ones; some schools may not have been able to access Survey Monkey, others may have chosen not to as a health survey is of low priority to schools.

The lower response for schools serving older children (intermediate and secondary schools) was also reported for a New Zealand-wide postal survey of schools' obesogenic environments: only 32% response for secondary schools compared to 61% for primary schools.<sup>26</sup>

### Lessons shared

The schools' experience of barriers and lessons highlight the need to engage the entire school community to understand and support the policy. A common challenge is finding the time and resources to do this in the face of many competing priorities. For some schools, there is a reluctance to embark on the process. Either because they feel that current practice is effectively 'water-only', or because they do not feel it is the role of schools to control what students eat and drink. The latter point was only made by a few, and hopefully represents a marginal view, with most accepting a more holistic view of children's needs.

The importance of good policy was suggested by a US review that found an association between school wellness policies and student health, especially when the policies were strong and comprehensive.<sup>27</sup> But a policy by itself does not lead to change. The importance of monitoring the policy and continuing to communicate it was the most common lesson learned reported by schools that had implemented a 'water-only' policy.

Some respondents were sceptical of the value of a 'water-only' policy and wanted more evidence. Yet, evidence was provided in the survey cover note referring to (1) joint Health-Education position, (2) WHO recommendation of 'water-only' as a good first step in addressing obesity and (3) a presentation describing Yendarra School's 10-year experience of positive results from going sugar free, starting with the introduction of a 'water-only' policy. We obtained some more

anecdotal support for the value of going 'water-only' reported by two schools.

One small school noted the cost needed to make their water potable, and the need for funding support. Access to potable water through fountains and easy-access sources at schools, and through the community, is a pre-requisite to making the policy a reality. Infrastructure costs need to be addressed when changing the environment. The Ministry of Education states that: "Clean, safe water must be provided at schools, especially for drinking."<sup>28</sup>

## Implications for public health

Removing sugary drinks from our children's environments is only one aspect of making it less obesogenic. The experience of Yendarra School showed that removing sugary drinks was the first step of a change that addressed all foods and that extended beyond school to the children's homes.

The initial focus of the Ministry of Health for policy change in school is perhaps because it is easier to change the school environment than the economic forces that lead to obesity. A 2013 US review of obesity prevention policies found that nearly all published studies in the previous decade were focused on school-based policies.<sup>29</sup> Changing the school environment will not by itself address obesity, just as removing sugary drinks will not. Our small survey suggests that most schools are keen to create healthy environments; and that there may be new emerging norm of 'water-only' schools that will reduce sugary drink consumption. If successful, 'water-only' schools could provide the foundation for other school health and obesity interventions. But it will only be a first step that will require many others to successfully address obesity.

The survey met our aims to provide a picture of the 'water-only' status of schools, to identify schools that needed support, and to share barriers and lessons to help schools move to 'water-only'. The results of the survey were disseminated to the schools to support and encourage schools to implement a 'water-only' policy. It also provides a baseline to assess progress towards all schools becoming 'water-only'. The survey also illustrates how local action can support a national initiative.

## Next steps

The RPH survey led to establishing a Working Group (WG) to help schools move to 'water-

only', since RPH did not have the resources to meet the level of demand expressed by the schools. The WG includes representatives from Ministry of Education, Healthy Families Lower Hutt, Healthy Futures Wellington, Regional Dental, the Heart Foundation, Kaupapa Māori Health services and RPH. The WG has developed a series of resources with common messages to be used with schools. A link to the resources will also be available on the RPH website. All members of the WG have contributed to a project plan to reach schools that requested PHN support, as well as to help others become 'water-only'. The WG will implement actions from the project plan for the 2017 school year.

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## Supporting Information

Additional supporting information may be found in the online version of this article:

**Supplementary File 1:** Cover note and survey questions.

**Supplementary File 2:** Individual responses.