

Access to fluoridated drinking water

This report presents information about the population with access to fluoridated drinking water in Aotearoa New Zealand.

Key facts

- Of the New Zealanders on registered drinking water supplies, 57.5% (about 2.5 million people) reportedly had access to fluoridated water as of July 2024.
- The proportion of the population with access to fluoridated water has remained largely unchanged since 2014/15.
- Only 15.7% of the South Island population on registered supplies have access to fluoridated drinking water, compared with 72.3% of the North Island population.

Background information

Tooth decay (dental caries) is a major chronic disease among New Zealanders of all ages. It is often accompanied by pain, infection, and tooth loss, and can lead to absence from work or school while the condition is treated (Royal Society of New Zealand 2014). Dental caries (cavities) are caused by acids secreted by bacteria in the mouth. The acids dissolve the hard enamel of the tooth surface and trigger dental decay. A high-sugar diet can raise the number of bacteria, which in turn increases the production of decay-causing acids (Ministry of Health 2010, Royal Society of New Zealand 2014).

Fluoride is known to protect teeth against dental caries, so adding fluoride to drinking water supplies can help limit tooth decay. Fluoride works to protect teeth in three ways (Royal Society of New Zealand 2014):

- strengthening of tooth enamel, making teeth more resistant to decay
- interference with the growth of bacteria that cause cavities
- repair of the early stages of tooth decay.

Less than 60% of New Zealanders on registered supplies have access to fluoridated drinking water

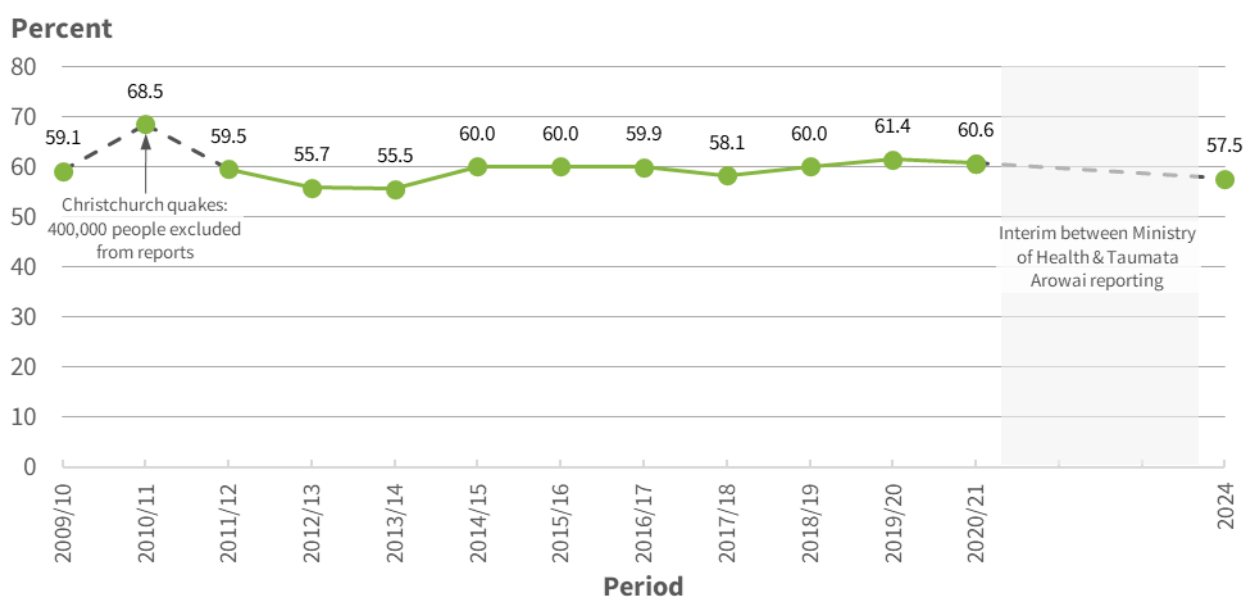
As of July 2024, around 4.3 million New Zealanders (81% of the population) were recorded as being served water from supplies that were registered with and verified by Taumata Arowai. The remainder were served water from unregistered supplies, which typically serve less than 100 people, or sourced their own water from 'self-supplies' (eg, rainwater tanks). Of the population on registered supplies, 57.5% (2.5 million) had access to fluoridated drinking water. From 2014/15 onwards, this percentage of people with access to fluoridated water has remained largely unchanged, never going above 62% (Figure 1).

The peak in the proportion of the population receiving fluoridated water in 2010/11 was due to a large drop in

the recorded population on registered water supplies rather than an increase in access to fluoridated drinking water. In 2010/11, 10 supplies serving 400,000 people in Christchurch were excluded from the Annual Drinking-water Quality Report (Ministry of Health, 2012) following the Canterbury earthquakes.

However, because Christchurch’s water supply was not fluoridated, this did not change the number of people with access to fluoridated water and instead skewed the data for the overall population of New Zealand (Table 1). As the recorded ‘total population on registered supplies’ changed drastically for this reporting period only, the peak should be discounted as an outlier. The actual number of people who received fluoridated water in each period is presented in Table 1.

Figure 1: Percentage of the population on verified and fluoridated drinking water supplies, by year, 2009/10 to 2024



Note: The change in the regulatory body associated with collecting this data brought about a change in the period that the data points are associated with. Data reported by the Ministry of Health refers to a July-June annual reporting period. Data from Taumata Arowai (2024 onwards) is a snapshot of the registered water supplies at the time the data was received by EHINZ.

Source: Ministry of Health (2011-2022), Taumata Arowai (2024)

Table 1: Population on verified and fluoridated drinking water supplies, by year, 2009/10 to 2024

Period:	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2024
Registered supply population (millions)	4.0	3.4	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.1	4.1	4.2	4.3
Population served fluoridated water (millions)	2.4	2.3	2.3	2.1	2.1	2.3	2.3	2.3	2.2	2.4	2.5	2.5	2.5
Proportion served fluoridated water	59.1%	68.5%	59.5%	55.7%	55.6%	60.0%	60.0%	59.9%	58.1%	60.0%	61.4%	60.6%	57.5%

Note: The change in the regulatory body associated with collecting this data brought about a change in the period that the data points are associated with. Data reported by the Ministry of Health refers to a July-June annual reporting period. Data from Taumata Arowai (2024 onwards) is a snapshot of the registered water supplies at the time the data was received by EHINZ.

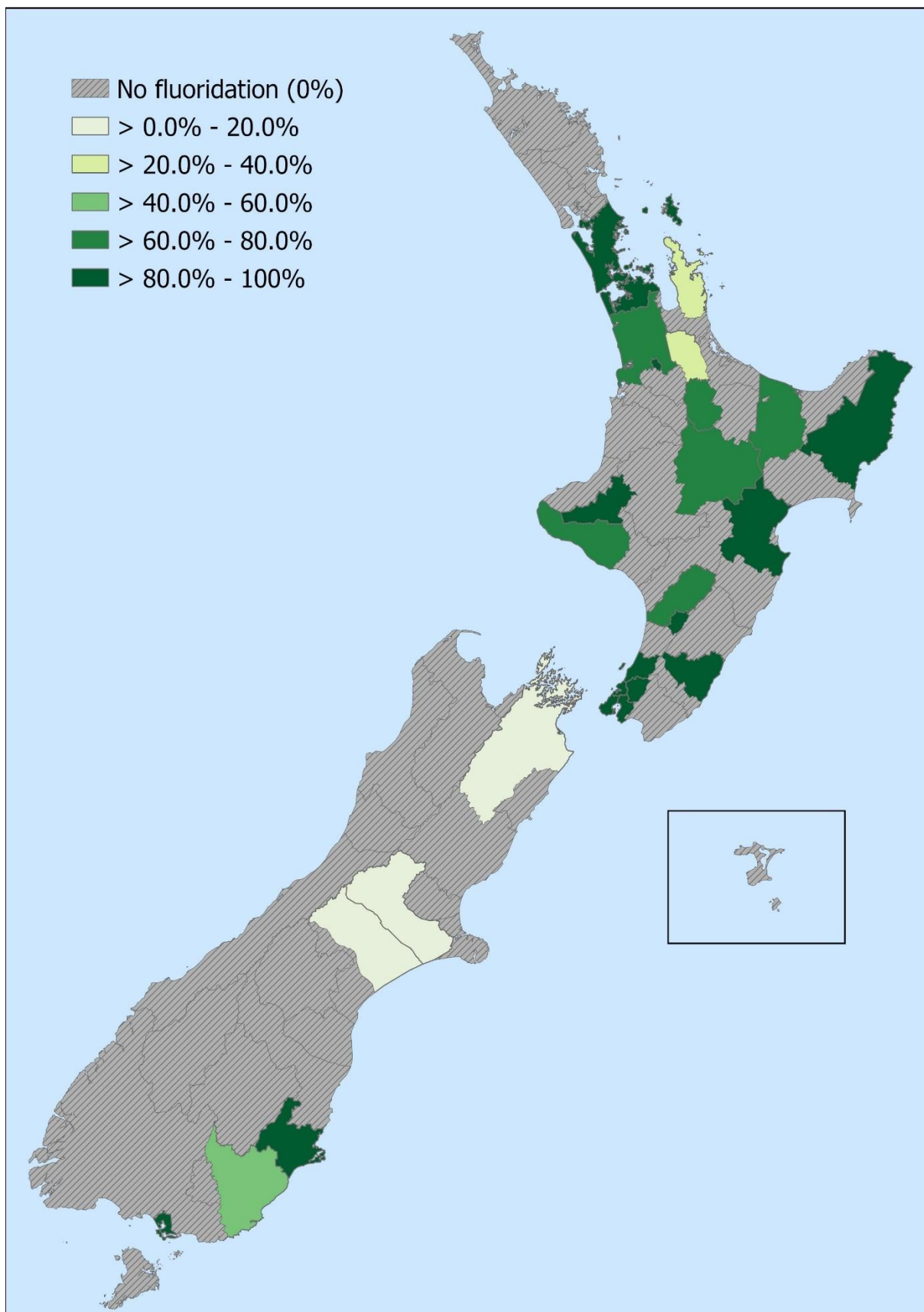
Source: Ministry of Health (2011-2022), Taumata Arowai (2024)

Access to fluoridated drinking water is much lower in the South Island

In the South Island, just 15.7% of the population on registered supplies were served fluoridated drinking water in 2024. In comparison, 72.3% of the North Island population on registered supplies were served fluoridated drinking water. This translates to 157,410 people receiving fluoridated water in the South Island, while 2,302,689 people received it in the North Island.

Nine of the South Island's registered supplies were fluoridated, covering six territorial authorities (TAs). Of these, two are military bases, leaving just seven public supplies for the whole island. Meanwhile, twenty-two of the North Island's verified supplies (including one Defence encampment) were fluoridated, spread across 20 TAs (Figure 2 & Table 2 on the pages below).

Figure 2: Percentage of the population on verified and fluoridated drinking water supplies, by territorial authority, 2024



Source: Taumata Arowai 2024

Table 2: Population on verified and fluoridated drinking water supplies, by territorial authority, 2024

<i>Territorial Authority Name</i>	<i>People on registered supplies</i>	<i>People served fluoridated water</i>	<i>People served fluoridated water (%)</i>
<i>Far North District</i>	30,285	-	0.0%
<i>Whangārei District</i>	74,873	-	0.0%
<i>Kaipara District</i>	7,653	-	0.0%
<i>Auckland</i>	1,426,178	1,373,739	96.3%
<i>Thames-Coromandel District</i>	25,619	7,883	30.8%
<i>Hauraki District</i>	19,817	-	0.0%
<i>Waikato District</i>	29,435	21,500	73.0%
<i>Matamata-Piako District</i>	18,814	6,943	36.9%
<i>Hamilton City</i>	185,325	185,300	100.0%
<i>Waipa District</i>	44,237	-	0.0%
<i>Otorohanga District</i>	5,965	-	0.0%
<i>South Waikato District</i>	18,959	13,300	70.2%
<i>Waitomo District</i>	5,699	-	0.0%
<i>Taupo District</i>	46,172	35,051	75.9%
<i>Western Bay of Plenty District</i>	31,504	-	0.0%
<i>Tauranga City</i>	158,500	-	0.0%
<i>Rotorua District</i>	68,893	-	0.0%
<i>Whakatāne District</i>	31,418	21,020	66.9%
<i>Kawerau District</i>	7,721	-	0.0%
<i>Ōpōtiki District</i>	5,210	-	0.0%
<i>Gisborne District</i>	42,252	39,000	92.3%
<i>Wairoa District</i>	5,464	-	0.0%
<i>Hastings District</i>	70,491	64,764	91.9%
<i>Napier City</i>	64,035	-	0.0%
<i>Central Hawke's Bay District</i>	8,344	-	0.0%
<i>New Plymouth District</i>	74,496	-	0.0%
<i>Stratford District</i>	7,202	6,773	94.0%
<i>South Taranaki District</i>	18,671	12,639	67.7%
<i>Ruapehu District</i>	10,860	-	0.0%
<i>Whanganui District</i>	46,769	-	0.0%
<i>Rangitikei District</i>	9,045	-	0.0%
<i>Manawatu District</i>	23,845	17,350	72.8%
<i>Palmerston North City</i>	80,293	79,427	98.9%
<i>Tararua District</i>	11,829	-	0.0%
<i>Horowhenua District</i>	26,351	-	0.0%
<i>Kapiti Coast District</i>	58,560	48,000	82.0%
<i>Porirua City*</i>			
<i>Upper Hutt City*</i>			
<i>Hutt City*</i>	350,420	350,000	100.0%
<i>Wellington City*</i>			
<i>Masterton District</i>	20,589	20,000	97.1%
<i>Carterton District</i>	6,056	-	0.0%
<i>South Wairarapa District</i>	7,260	-	0.0%
<i>Tasman District</i>	37,955	-	0.0%
<i>Nelson City</i>	52,520	-	0.0%
<i>Marlborough District</i>	41,247	1,500	3.6%
<i>Kaikoura District</i>	3,680	-	0.0%
<i>Buller District</i>	6,876	-	0.0%
<i>Grey District</i>	10,178	-	0.0%
<i>Westland District</i>	8,094	-	0.0%
<i>Hurunui District</i>	15,194	-	0.0%
<i>Waimakariri District</i>	52,425	-	0.0%
<i>Christchurch City</i>	394,279	-	0.0%
<i>Selwyn District</i>	73,523	1,700	2.3%
<i>Ashburton District</i>	23,982	1,878	7.8%
<i>Timaru District</i>	43,721	-	0.0%

<i>Mackenzie District</i>	5,840	-	0.0%
<i>Waimate District</i>	8,668	-	0.0%
<i>Chatham Islands</i>	321	-	0.0%
<i>Waitaki District</i>	20,232	-	0.0%
<i>Central Otago District</i>	23,635	-	0.0%
<i>Queenstown Lakes District</i>	97,616	-	0.0%
<i>Dunedin City</i>	115,522	112,515	97.4%
<i>Clutha District</i>	15,171	7,361	48.5%
<i>Southland District</i>	12,985	-	0.0%
<i>Gore District</i>	9,290	-	0.0%
<i>Invercargill City</i>	50,973	50,456	99.0%
<i>New Zealand</i>	4,309,036	2,478,099	57.5%

Note: * - The primary water supply for these TAs is 'Wellington Region Bulk Water', which serves residents across the four TAs. Because 'population served' is recorded per supply, it is not possible to provide numbers for each TA individually.

Source: Taumata Arowai 2024

Data for this indicator

This indicator analyses data provided to EHINZ by Taumata Arowai, derived from their list of verified drinking water supplies in June of 2024. Historical figures sourced from the Ministry of Health's now-disestablished Annual Reports on drinking water are also presented to provide context for trends over time.

Due to the delay between supplies becoming fluoridated and the updating of that supply's record within Taumata Arowai's register, some recently fluoridated supplies may be listed as 'non-fluoridated' in the source data. EHINZ has made no adjustments or corrections to the figures in this report to account for this, and all claims made in this report are based on the data exactly as supplied. For instance, New Plymouth commenced fluoridation in July 2023 but was still listed as 'non-fluoridated' in the dataset – and consequently, in this report, one year later. There is no mechanism within either the data provided to us or in Taumata Aromwai's online public registry to assess the currency of the record for any supply.

These figures also do not account for faults in the process of adding fluoride to water supplies that may cause fewer than the stated number of people to have access to fluoridated drinking water. Local agreements that exclude fluoridation from subsets of larger supplies, or private supplies that are fluoridated are also excluded.

For additional information, see the [Metadata](#) sheet.

References

Ministry of Health. 2010. *Our Oral Health: Key findings of the 2009 New Zealand Oral Health Survey*. Wellington: Ministry of Health.

Ministry of Health. 2011-2022. *Annual Reports on Drinking-water Quality*. Wellington: Ministry of Health.

Ministry of Health. 2022. *Director-General of Health's role in decision-making on the fluoridation of drinking-water supplies*. Wellington: Ministry of Health. URL: <https://www.health.govt.nz/our-work/preventative-health-wellness/oral-health/community-water-fluoridation-aotearoa-new-zealand> (accessed 5 August 2024)

Royal Society of New Zealand. 2014. *Health Effects of Water Fluoridation: A review of the scientific evidence*. Wellington: Office of the Prime Minister's Chief Science Advisor and Royal Society of New Zealand.

Taumata Arowai. 2024. *Extract from the public register of drinking water supplies*. Wellington: Taumata Arowai (Personal communication with Taumata Arowai analysts)

Explore geographic data on interactive dashboards:

[Water dashboard](#)

[EHINZ dashboard](#)

Previous surveillance reports:

[2023](#)

[2021](#)

[2018](#)

Other related topics include:

[Access to safe drinking water](#)

[Children's oral health](#)

[Waterborne diseases related to drinking water](#)

Disclaimer

Environmental Health Intelligence NZ – Rapu Mātauranga Hauora mo te Taiao - Aotearoa, makes no warranty, express or implied, nor assumes any legal liability or responsibility for the accuracy, correctness, completeness or use of any information that is available in this surveillance report.

Author

The author of this report is Patrick Hipgrave, ehinz@massey.ac.nz

Citation

Environmental Health Intelligence. 2024. *Access to fluoridated drinking water*. [Surveillance Report]. Wellington: Environmental Health Intelligence NZ, Massey University.

[Visit the EHINZ website](#)

[Subscribe to our newsletter](#)