# Asthma prevalence (2–14 years)

## HIGHLIGHTS:

- **In 2015/16, about 132,000 children aged 2–14 years (16.6%) took medication for asthma. This was a significant increase in the prevalence since 2011/12 (14.0%).**
- **By ethnic group, Māori children (24.0%) had the highest rate of medicated asthma.**
- **Rates of medicated asthma were highest for children living in the most deprived areas (NZDep2013 quintile 5) (21.6%).**
- **Children living in Whanganui (23.1%), Tairawhiti (21.8%) and Northland (19.3%) DHBs had the highest rates of medicated asthma in 2011–14.**

## Relevance of asthma to environmental health

Asthma affects a person's airways, and makes it difficult to breathe. Second-hand smoke exposure can increase the risk of having asthma and wheeze in children (US Department of Health and Human Services 2007). Indoor dampness/mould is also associated with asthma onset and exacerbation in children (Jaakkola et al., 2011; Prezant & Douwes, 2011). Additionally, several studies have found an increase in asthma prevalence or incidence associated with exposure to nitrogen dioxide (Guarnieri & Balmes, 2014). Evidence also suggests that transport-related air pollution may increase the incidence of asthma (Orellano et al., 2017). New Zealand has high asthma rates for children compared with other countries (Lai et al., 2009; OECD, 2015). Each year, a small number of children die from asthma; in 2014, four children died from asthma in New Zealand.

## Data for this indicator

The data for this indicator come from the New Zealand Health Survey. This indicator focuses on medicated asthma, that is, children aged 2–14 years who had been told by a doctor that they have asthma and are currently taking medication (inhalers, aerosols or tablets) for it.

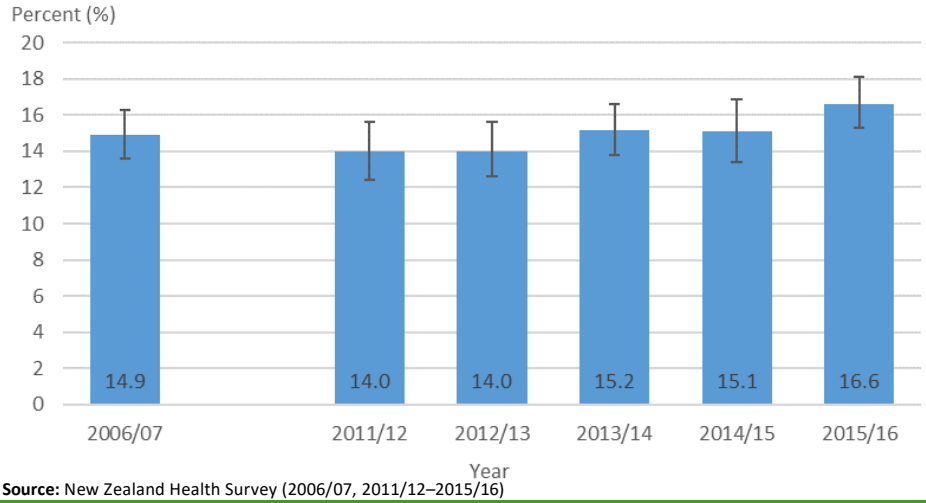
## About 132,000 children had medicated asthma in 2015/16

In 2015/16, 16.6% of children aged 2–14 years had medicated asthma (95% confidence interval 15.3–18.1). This is about 132,000 children.

Overall, 18.5% of boys and 14.7% of girls took medication for asthma. Boys were significantly more likely than girls to have medicated asthma, after adjusting for age differences (adjusted rate ratio 1.26, 1.07–1.48).

There has been a significant increase in the prevalence of medicated asthma from 2011/12 (14.0%) to 2015/16 (16.6%) (Figure 1) (Ministry of Health 2016).

**Figure 1 :** Medicated asthma in children aged 2–14 years, 2006/07–2015/16 (unadjusted prevalence)




**Source:** New Zealand Health Survey (2006/07, 2011/12–2015/16)

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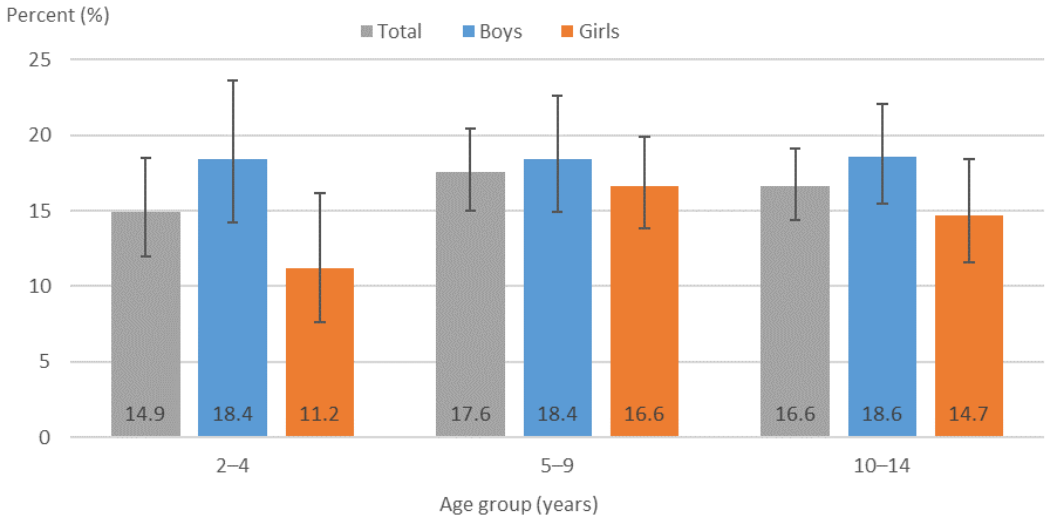
## Similar levels of medicated asthma across age groups

The percentage of children taking medication for asthma was similar for children aged 2–4 years (14.9%), 5–9 years (17.6%) and 10–14 years (16.6%) (Figure 2).

Boys generally had higher rates of asthma than girls. By age group, the biggest difference between boys and girls was in the 2–4 year age group, with 18.4% of boys and 11.2% of girls having medicated asthma (Figure 2).

**Figure 2:** Medicated asthma, children aged 2–14 years, by sex and age group, 2015/16 (unadjusted prevalence)



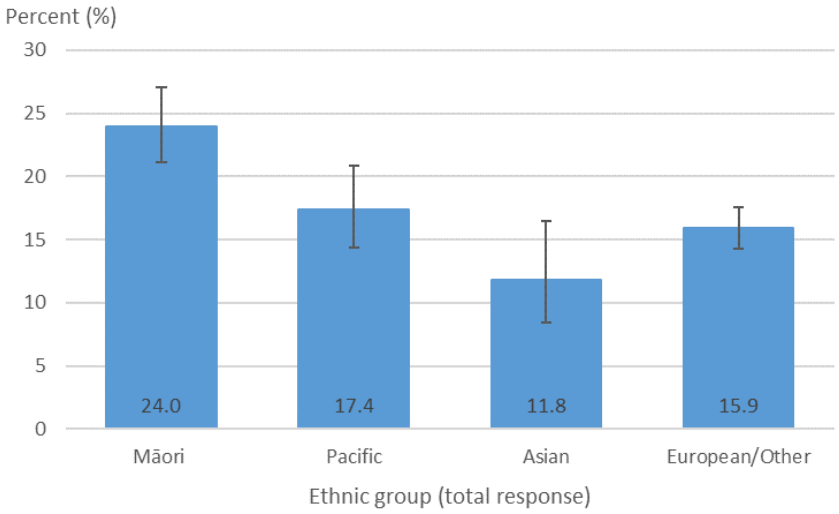

**Source:** New Zealand Health Survey (2015/16)

## One in four Māori children have medicated asthma

In 2015/16, the highest rate of medicated asthma was among Māori children (24.0%), with one in four affected (Figure 3).

Adjusting for age and sex differences, Māori children were 1.7 times as likely as non-Māori children to have medicated asthma (adjusted rate ratio 1.69, 1.39–2.05). Asian children were significantly less likely to have medicated asthma than other children (adjusted rate ratio 0.69, 0.48–0.99).

**Figure 3:** Medicated asthma, children aged 2–14 years, by ethnic group, 2015/16 (unadjusted prevalence)




**Notes:** Total response ethnicity has been used, so children may appear in multiple ethnic groups.
**Source:** New Zealand Health Survey (2015/16)

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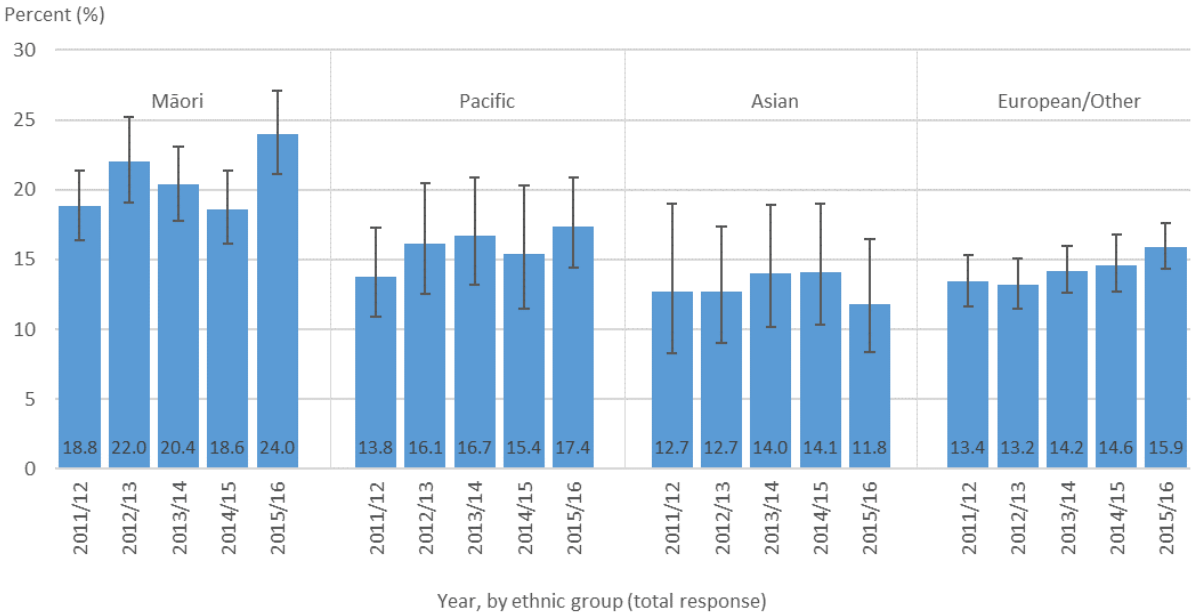
## Increase in medicated asthma rates for Māori children since 2011/12

The rate of medicated asthma significantly increased for Māori children between 2011/12 and 2015/16, and also between 2014/15 and 2015/16 (Figure 4). For European/Other children, there has been a significant increase between 2011/12 and 2015/16. There were no other significant changes in rates of medicated asthma between 2011/12 and 2015/16, or between 2014/15 and 2015/16, by ethnic group.

**Figure 4:** Medicated asthma, children aged 2–14 years, by ethnic group (total response), 2011/12–2015/16 (unadjusted prevalence)



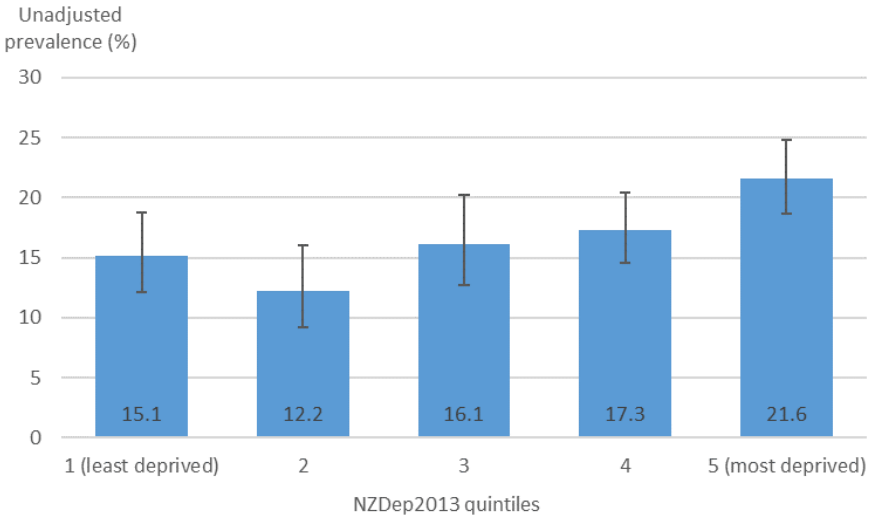

**Source:** New Zealand Health Survey (2011/12, 2012/13, 2013/14, 2014/15, 2015/16)

## Highest rates of medicated asthma in high deprivation areas

In 2015/16, children living in the most deprived areas (NZDep2013 quintile 5) had the highest rates of medicated asthma (21.6%) compared with children in the least deprived areas (quintile 1) (15.1%) (Figure 5).

Children living in the most deprived areas were 1.5 times as likely to have medicated asthma as children in the least deprived areas, after adjusting for age, sex and ethnic differences (adjusted rate ratio 1.51, 1.06–2.15).

**Figure 5:** Medicated asthma, children aged 2–14 years, by NZDep2013 quintiles, 2015/16 (unadjusted prevalence)



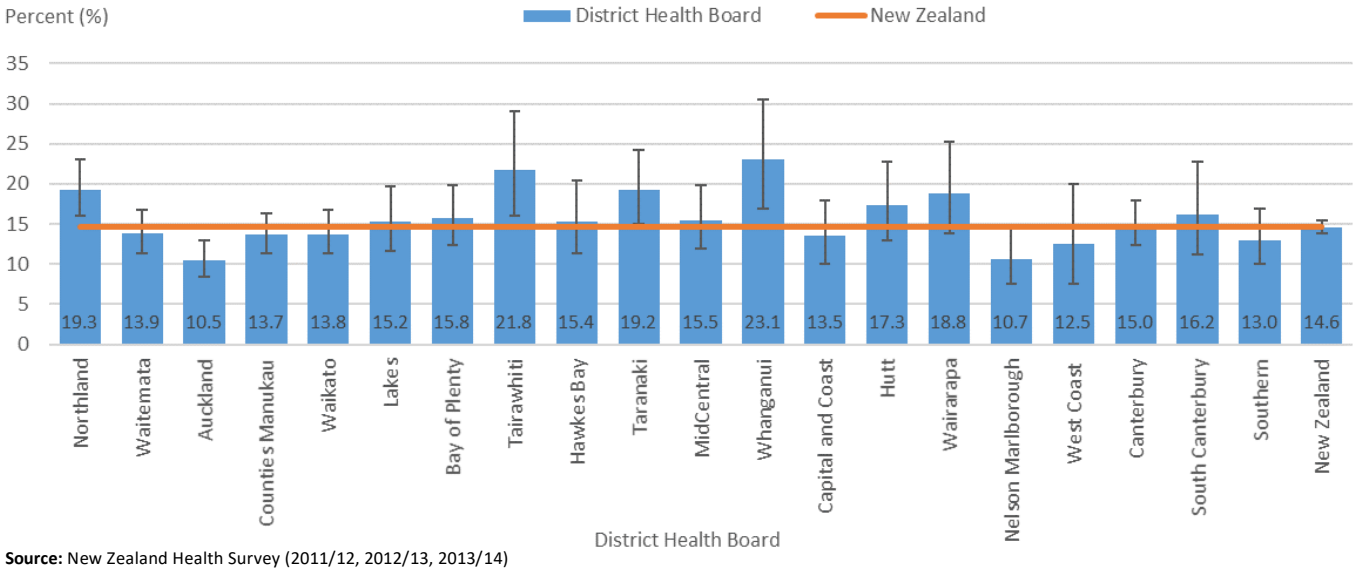

**Source:** New Zealand Health Survey (2015/16)

# Asthma prevalence (2–14 years)

## Highest rates of medicated asthma in Whanganui, Tairawhiti and Northland DHBs

In 2011–14, the following District Health Boards (DHBs) had significantly higher rates of medicated asthma than the New Zealand rate: Whanganui DHB (23.1%), Tairawhiti DHB (21.8%) and Northland DHB (19.3%) (Figure 6). Auckland DHB (10.5%) and Nelson Marlborough DHB (10.7%) had significantly lower rates.

**Figure 6:** Medicated asthma, children aged 2–14 years, by District Health Board, 2011–2014 (unadjusted prevalence)




**Source:** New Zealand Health Survey (2011/12, 2012/13, 2013/14)

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**DATA SOURCES**

Data come from the 2015/16 New Zealand Health Survey data tables (Ministry of Health, 2016), and regional results from the 2011–14 New Zealand Health Survey data tables (Ministry of Health, 2015). For more information about this indicator, see the metadata sheet.

**RELATED INDICATORS**

Related environmental health indicators for the indoor environment, available from the EHINZ website (www.ehinz.ac.nz), include:

- Asthma hospitalisations
- Second-hand smoke exposure (0–14 years)
- Lower respiratory tract infection hospitalisations
- Sudden unexpected death in infancy (SUDI)
- Meningococcal disease
- Maternal smoking at two weeks postnatal
- Household crowding.

See also the indicators in the Air Domain.

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