

Too many antibiotics for New Zealand children

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Dr Mark Hobbs. Credit: University of Auckland

Almost all New Zealand children have taken antibiotic medications by the time they are five years of age, according to new research from the University of Auckland's Centre for Longitudinal Research – He Ara Ki Mua.

The study authors were concerned that prescribing such a lot of antibiotics for young [children](#) unnecessarily could have serious long term consequences, most importantly encouraging the spread of [antibiotic resistant bacteria](#).

The research, published today in the *Journal of Antimicrobial Chemotherapy*, describes community antibiotic dispensing for more than 5,000 children in the contemporary longitudinal study of child development Growing Up in New Zealand, during their first five years.

Dispensing data was obtained, with parental consent, through linkage with national pharmaceutical dispensing records.

By five years of age almost all children (97 percent) had received one or more antibiotic courses with a median of eight courses per child and an average rate of almost two courses per child per year.

Study author and infectious disease specialist Dr Mark Hobbs, says that overall levels of antibiotic dispensing in New Zealand are higher than in the United States and many European countries with the highest levels being for young children and the elderly.

"In this study, we found that Māori and Pacific children received more antibiotic courses than New Zealand European children, as did children living in areas of high socioeconomic deprivation compared with those in the least deprived areas.

"More than one third of the courses were dispensed during the three winter months and the majority of antibiotic courses were for one [antibiotic drug](#), amoxicillin," says Dr Hobbs.

"This suggests to us that many of these courses are likely to have been for seasonal respiratory tract infections which are mostly caused by viruses.

"Antibiotic treatment is not effective in these circumstances and is not supported by New Zealand general practice guidelines," he says.

Antibiotic prescribing decisions for children in general practice often relate to doctors' perceptions of parents' expectations when seeking healthcare, as well as parents' beliefs about antibiotics.

A recent international survey by the World Health Organization revealed a poor level of public understanding about the situations where it is appropriate to use antibiotics.

Recent research has also shown that the first three years of life is a critical period for establishing a healthy microbiome – the healthy communities of bacteria that live in our gut, on our skin and elsewhere. It has been suggested that consumption of antibiotics at a young age may interfere with the developing microbiome and lead to permanent changes in immunity or metabolism.

"There is increasing evidence linking antibiotic use in [young children](#) to later weight gain and the development of chronic diseases, with asthma being one example," says Dr Hobbs.

"Our finding that more than nine out of ten children had been exposed to [antibiotics](#) by three years of age is concerning for this reason. The large, ethnically and socioeconomically diverse Growing Up in New Zealand

cohort gives us an ideal opportunity to investigate this possibility as the children develop.

"We also intend to review [general practice](#) medical records to get a better understanding of the reasons for antibiotic prescribing," he says.

"Together, we expect these investigations will provide evidence to help manage the challenges of antibiotic use in primary care including addressing parents' beliefs and expectations and supporting practitioners in balancing benefits versus harms in [antibiotic prescribing](#)."

More information: Mark R. Hobbs et al. Antibiotic consumption by New Zealand children: exposure is near universal by the age of 5 years, *Journal of Antimicrobial Chemotherapy* (2017). [DOI: 10.1093/jac/dkx060](#)

Provided by University of Auckland

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