



Understanding Prenatal Alcohol Exposure

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How children develop is influenced by their genes, their environment, and their experiences. What happens even before they are born can affect their development and health into adulthood.¹ The tremendous growth and development happening before birth makes this a time of potential susceptibility, when alcohol causes considerable and lifelong harm.²

This article explores prenatal alcohol exposure (PAE). Its purpose is to inform professionals and decision makers about the many factors which influence prenatal alcohol exposure, the lasting and inequitable harms arising from it, and the need for support for those affected—so collectively we can better support all children to have a healthy start.

Impacts of prenatal alcohol exposure

“Alcohol is a known teratogen that passes freely through the placenta and can have adverse effects on fetal development.”³ This means that an unborn baby has alcohol levels like their mother’s but with only limited ability to metabolise the alcohol.⁴

Prenatal alcohol exposure (PAE) can have wide ranging effects—with the brain and central nervous

system particularly sensitive leading to neurological challenges, which may be widespread or limited to specific areas, and can contribute to difficulties with learning and behaviour.⁵

The impacts of PAE can vary depending on factors such as the amount, frequency and timing of exposure. More frequent exposure to greater amounts of alcohol is associated with the greatest harm. However, there is no level of alcohol exposure that we know to be safe.⁶ Because of this many countries, including Aotearoa/New Zealand, recommend avoiding alcohol when planning a pregnancy.⁷ NZ’s Ministry of Health “advises that there is no known safe level of alcohol use at any stage of pregnancy.”⁸

Fetal Alcohol Spectrum Disorder / Te Iho Tātai-ā-Rongo.

Infants exposed to alcohol prenatally are at risk of Fetal Alcohol Spectrum Disorder (FASD).⁹ Not all those exposed will be diagnosed with FASD; however, they may still be adversely affected by their prenatal alcohol exposure.

“Fetal Alcohol Spectrum Disorder (FASD) is a diagnostic term used to describe impacts on the brain and body of individuals prenatally exposed to alcohol. FASD is a lifelong disability. Individuals with FASD will experience some degree of challenges in their daily living, and need support with motor skills, physical health, learning, memory, attention, communication, emotional regulation, and social skills to reach their full potential.”¹⁰ Everyone with FASD is unique, with their own strengths and challenges.¹¹

FASD has many impacts both for the person with FASD and their whānau¹² and alcohol “is the leading cause of non-genetic developmental disability in many countries.”¹³

In response to inequities faced by Māori, some whānau and Māori health leaders have sought to reclaim naming practices and embed mātauranga Māori into the way FASD is understood. One outcome of this is the name Te Iho Tātai-ā-Rongo, gifted and confirmed at wānanga in 2023 under the leadership of Kaumātua Manu Kawana (Rangitāne, Raukawa, Te Arawa).¹⁴

How prevalent is FASD?

Aotearoa/NZ lacks clear prevalence data and currently relies on estimates.¹⁵ Many people living with the effects of PAE may not have had a formal diagnosis

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as access to skilled diagnosis in New Zealand is both limited and expensive.¹⁶ It's important to note that those who do not reach the threshold for a diagnosis of FASD may still experience significant challenges as a consequence of their PAE.

Estimates of prevalence vary depending on the method used. One conservative estimate, based on overseas rates, is 1% prevalence of FASD in Aotearoa. However, given New Zealand has higher rates of binge and hazardous drinking than many other countries, our actual prevalence of FASD is likely to be higher.¹⁷ Other estimates suggest population rates of 3-5%, equating to between 1800-3000 children born with FASD annually.¹⁸

“Prevalence rates vary and are higher in special populations (including children in care, international adoptees, special education, and correctional populations), however, FASD is found across socioeconomic groups, ethnicities and education levels.”¹⁹

Drinking in Aotearoa

To understand the context of prenatal alcohol exposure, we must look at alcohol use across the wider population. Drinking alcohol is common in Aotearoa. The New Zealand Health Survey found 76% of those

aged 15 years or older had consumed alcohol in the previous twelve months.²⁰ Rates of hazardous drinking—i.e. drinking in a way that could harm the drinker and/or others—are high, at 26% of adult drinkers.²¹

Societal norms and expectations around alcohol influence the drinking of expectant parents. Among women of child-bearing age high levels of drinking are common—this influences drinking patterns during pregnancy.²²

Drinking patterns in pregnancy

Many women in Aotearoa drink alcohol before becoming pregnant—and for some, that drinking continues into pregnancy. The Growing Up in New Zealand (GUINZ) study found that 71% of women drank alcohol before pregnancy or before they were aware they were pregnant. Of those who drank, one third continued to drink in their first trimester, and almost one-fifth (19%) continued throughout their pregnancy.²³ A smaller group continued drinking at high levels.²⁴

Unplanned pregnancies are common in Aotearoa. Estimates vary, but around half of pregnancies are thought to be unplanned,²⁵ resulting in roughly one in four births.²⁶ This can mean alcohol is consumed



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Those who are pregnant are more likely to reduce alcohol use if partners are supportive and actively involved in the pregnancy.



before the pregnancy is recognised—often during the early stages when development is particularly sensitive.

Together, these patterns highlight the overlapping factors that contribute to prenatal alcohol exposure: how common alcohol use is among women prior to pregnancy, the frequency of unplanned pregnancies, and the social norms that shape drinking behaviours. Recognising these patterns help us better support whānau and reduce the likelihood of exposure for babies.

Factors influencing Prenatal Alcohol Exposure

Preventing babies from being exposed to alcohol in utero is very complex. It is a “social issue with systemic causes.”²⁷ Progress on this requires a sense of collective responsibility, culturally responsive initiatives, and community action to change current alcohol norms.²⁸ In other words, focusing on the pregnant parent’s behaviour is not enough to support an alcohol-free start for baby. Many factors can directly or indirectly influence alcohol use during pregnancy,

which often align with the social determinants of health.²⁹ Some of these factors are described below.

1. Social environment

There are multiple influences on alcohol consumption in pregnancy and one of these is a woman’s social environment including whether and how those around her are drinking.³⁰

If a woman has a partner, her abstinence or consumption will be influenced by her partner’s drinking—she is more likely to drink if her partner does, particularly if they drink heavily. On the other hand, those who are pregnant are more likely to “reduce alcohol use if partners are supportive and actively involved in the pregnancy.”³¹ Stopping drinking in pregnancy can be difficult without support from whānau and friends.³²

2. Health professional advice

Health professionals working with those who could be or are pregnant have an important role to provide clear, evidence-based, information about the risks of alcohol in pregnancy.³³ However, one study found

that only approximately half of the pregnant women report being told by their GP to avoid alcohol in pregnancy.³⁴ Conflicting information from health professionals, particularly about the risks of low alcohol use, is one of the factors making it less likely that women will avoid alcohol completely during pregnancy.³⁵

3. Trauma

“Women globally are disproportionately affected by intimate partner and domestic violence, fewer opportunities for employment with liveable wages, inequitable parenting and other caregiving responsibilities, and other forms of gender discrimination.”³⁶ Alcohol, as a legal and easily accessible drug, is often used in efforts to self-medicate, or make themselves feel better, even temporarily. It can be an attempt to cope with trauma, especially in the absence of

accessible supports.³⁷ However, drinking alcohol is likely to worsen mental health and psychosocial challenges, rather than improve them.³⁸

For Indigenous peoples, trauma also includes inter-generational and ongoing trauma linked to colonisation, racism, and systemic inequity.³⁹

Substance use, including alcohol in pregnancy, is connected to health and social inequities, racism, and trauma.⁴⁰ Therefore, reducing prenatal alcohol exposure requires both reducing sources of trauma in women’s lives, and ensuring access to effective support when it does occur.

4. Policy settings

Policy settings influence access to alcohol harms, including prenatal alcohol exposure. As Health Coalition Aotearoa have pointed out, “we can create a society where alcohol causes minimal harm to people’s physical health, mental health and general wellbeing.”⁴¹

Policy settings that could reduce alcohol harm, including harm to unborn children, include:

- Restricting alcohol marketing including print and digital media, and at sporting and cultural events⁴²
- Limiting opening hours and numbers of alcohol outlets⁴³
- Increased taxation and pricing policies⁴⁴
- Regulation of online alcohol purchasing and delivery⁴⁵
- Strengthening community input regarding local licensing⁴⁶
- Embedding Te Tiriti o Waitangi in alcohol legislation⁴⁷
- Improved access to equitable, culturally appropriate, effective contraception as well as sexual and reproductive health care.⁴⁸

New Zealand’s FASD Action Plan recommended “a major shift in societal attitudes to alcohol use overall, and specifically in pregnancy.”⁴⁹

Inequity

“Health inequities are systematic, unjust and potentially avoidable differences in health between sub-groups in the population with differing levels of social advantage or disadvantage.”⁵⁰ These inequities occur in many areas, including the rate at which children experience prenatal alcohol exposure.



Many policy settings influence access to alcohol harms, including prenatal alcohol exposure.

Ensuring a healthy start for our tamariki requires collective efforts to make it more likely their early development is not impacted by exposure to alcohol.



The impacts of prenatal alcohol exposure occur across all ethnic groups in Aotearoa but are not equally distributed.⁵¹ Both historical and contemporary factors contribute to disparities between the rate at which alcohol impacts different groups.

Colonisation and its legacies, including trauma, contribute to higher rates of alcohol use and abuse among colonised Indigenous peoples, including Māori in Aotearoa.⁵²

The impacts of colonisation—including inequality, alienation from culture, and racism—are key drivers of the differences in alcohol harm.⁵³ These contribute to higher rates of drinking during pregnancy among Māori than other groups, and consequently higher estimated rates of FASD among tamariki Māori.⁵⁴

Contemporary factors include differing exposures to alcohol outlets and to alcohol marketing. For example, there are “disproportionately more places that sell alcohol in low-income areas”⁵⁵ where higher

proportions of Māori live. A study of children wearing cameras found that tamariki Māori were exposed to five times the level of alcohol marketing than Pākehā children were.⁵⁶ Unequal exposure to these risk factors for alcohol use further contributes to inequities in alcohol harm.⁵⁷

Need for support

“With appropriate supports individuals with FASD can achieve positive healthy outcomes.”⁵⁸

“An FASD diagnosis provides families and professionals supporting families with a framework for understanding an individual’s strengths and challenges.”⁵⁹ Diagnosis and associated interventions are more effective the earlier they occur contributing to improved outcomes for the child with FASD and for their whānau.⁶⁰

Conversely, delays in recognising FASD and providing the necessary supports contribute to increased

challenges for the person with FASD and their whānau.⁶¹ Difficulties and delays in accessing a FASD diagnosis are more common among Indigenous peoples globally.⁶²

A diagnosis of FASD requires a multidisciplinary team of professionals who consider many aspects including the individual's strengths and challenges and developmental history.⁶³ In Aotearoa/NZ access to such a diagnosis is limited, expensive, and not available in all areas.⁶⁴

Despite the many challenges people with FASD may experience, as many as 80% of those affected do not meet the current criteria for health, education or disability support.⁶⁵ Only those who also have intellectual disability as well as FASD can access disability support.⁶⁶ To ensure equity, support should be based on need, and not purely on diagnosis.⁶⁷

Conclusions

Tamariki are influenced by their environment, before they are born. Exposure to teratogens such as alcohol, can have significant adverse and lifelong effects. As in all areas of development, PAE impacts individual children differently. However, research is

clear that there is no known safe time, amount, or type of alcohol for baby. Many guidelines, including New Zealand's Ministry of Health, reflect this.

Clear messaging reflecting the no safe time and no safe amount is important but insufficient to ensure all babies have an alcohol-free start to life. Many systemic factors influence whether and to what extent children experience PAE. These include:

- colonisation and its ongoing impacts
- Aotearoa's drinking culture
- policy settings which make alcohol readily accessible and in ways that worsen inequity, and
- experiences of trauma, especially when effective support is not accessible.

Aotearoa has many children affected by PAE. However, as many are not diagnosed, they and their whānau struggle to access the needed support.

Many of those exposed to alcohol prenatally have FASD, a lifelong condition with impacts on many areas of development. While those with FASD benefit from early diagnosis and appropriate support services to meet their needs, cost and availability mean many go without. People with FASD have individual



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strengths alongside their challenges, however the condition is life-long and “must be recognised and resourced as such.”⁶⁸

The early years of life are an important stage of development which influence future health and wellbeing.⁶⁹ Focusing investment on the early years can make the biggest difference in improving long term health and wellbeing.⁷⁰ Ensuring a healthy start for our children requires collective efforts to make it more likely their early development is not impacted by exposure to alcohol.

This article replaces “Drinking for Two: How alcohol in pregnancy affects the developing child,” written by Norma Hayward in 2016.

Endnotes

- 1 Margolis & Gabard-Durnam, 2025
- 2 Gómez-Roig et al., 2021
- 3 Chu et al., 2022, p.10
- 4 Lo et al., 2022; Ministry of Health, 2010
- 5 Chu et al., 2022
- 6 Alcohol Healthwatch, 2021
- 7 Akison et al., 2024; Ministry of Health, 2010
- 8 Ministry of Health, 2010, p.1
- 9 Akison et al., 2024
- 10 CanFASD, 2024, p.3
- 11 CanFASD, 2024
- 12 Aotearoa (NZ) FASD Guidelines Development Project Team, 2024
- 13 Akison et al., 2024, p.2
- 14 “Te Iho Tātai-ā-Rongo,” 2024
- 15 NZIER, 2024
- 16 NZIER, 2024
- 17 NZIER, 2024; Romeo et al., 2023
- 18 Rossen et al., 2018, and, Romeo et al., 2023, cited by Aotearoa (NZ) FASD Guidelines Development Project Team, 2024
- 19 Aotearoa (NZ) FASD Guidelines Development Project Team, 2024, p.26
- 20 Ministry of Health, 2024
- 21 Ministry of Health, 2020, cited by Alcohol Healthwatch, 2021
- 22 Romeo et al., 2023
- 23 Rossen et al., 2018
- 24 SuPERU, 2015
- 25 Hohmann-Marriott, 2018; Ministry of Health, 2019
- 26 Hohmann-Marriott, 2018
- 27 Lemon et al., 2022, p.789

- 28 Lemon et al., 2022
- 29 Government of Canada, 2020, cited by Flannigan et al., 2022
- 30 Chikritzhs et al., 2021; Espiner et al., 2022
- 31 McBride et al., 2012, cited by Chikritzhs et al., 2021, p.1950
- 32 Gibson et al., 2020, cited by Chikritzhs et al., 2021
- 33 Rossen et al., 2018
- 34 Ministry of Health, 2015, cited by Rossen et al., 2018
- 35 Gibson et al., 2020, and, Hammer & Rapp, 2022, cited by Muggli et al., 2025
- 36 Morton Ninomiya et al., 2023, p.2
- 37 Morton Ninomiya et al., 2023
- 38 Ball et al., 2022
- 39 Espiner et al., 2022
- 40 Farahmand et al., 2020, Chung et al., 2016, and, Lund et al., 2018, cited by Morton Ninomiya et al., 2023
- 41 Health Coalition Aotearoa, 2023, p.5
- 42 Health Coalition Aotearoa, 2023; Romeo et al., 2023
- 43 Romeo et al., 2023
- 44 Health Coalition Aotearoa, 2023; Romeo et al., 2023; Rossen et al., 2018
- 45 Health Coalition Aotearoa, 2023
- 46 Health Coalition Aotearoa, 2023
- 47 Health Coalition Aotearoa, 2023
- 48 FASD Working Group, 2016, cited by Rossen et al., 2018
- 49 FASD Working Group, 2016, cited by Rossen et al., 2018, p. 31
- 50 Braveman & Gruskin, 2003, cited by Russell et al., 2023, p.588
- 51 Casswell et al., 2024
- 52 Alcohol Healthwatch, 2021; Espiner et al., 2022; Romeo et al., 2023
- 53 New Zealand Law Commission, 2020, and, Muriwai et al., 2018, cited by Alcohol Healthwatch, 2021
- 54 Espiner et al., 2022; Romeo et al., 2023
- 55 Ministry of Health, 2015, cited by Alcohol Healthwatch, 2021, p.2
- 56 Chambers et al., 2029, cited by Alcohol Healthwatch, 2021
- 57 Alcohol Healthwatch, 2021
- 58 Flannigan et al., 2021, and, Grubb et al., 2021, cited by Aotearoa (NZ) FASD Guidelines Development Project Team, 2024, p.18
- 59 Andrew, 2010, and, Loock et al., 2020, cited by Lau et al., p.13
- 60 Lau et al., 2023; Temple et al., 2021
- 61 Alcohol Healthwatch, 2021
- 62 Espiner et al., 2022
- 63 Aotearoa (NZ) FASD Guidelines Development Project Team, 2024
- 64 NZIER, 2024
- 65 Espiner et al., 2022; Romeo et al., 2023, cited by NZIER, 2024
- 66 NZIER, 2024
- 67 FASD Working Group, 2016
- 68 Ministry of Health, 2025
- 69 Haas, 2008, and, Hayward & Gorman, 2004, cited by Prickett et al., 2022
- 70 Heckman, 2006, and, Hertzman & Power, 2003, cited by Prickett et al., 2022

Glossary of Māori words:

Tamariki

children

If you found this article useful, here are other recommendations:

How Stress Affects Tamariki

<https://brainwave.org.nz/article/how-stress-affects-tamariki/>

A Squishy Wonder: Brain Structure & Function

<https://brainwave.org.nz/article/a-squishy-wonder-brain-structure-and-function/>

Adverse Childhood Experiences: Understanding Their Effects

<https://brainwave.org.nz/article/adverse-childhood-experiences-understanding-their-effects/>

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