



## ***In utero* brain damage from alcohol: a preventable tragedy**

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Alcohol (ethanol) has been New Zealand's favourite recreational substance since British colonisation gathered pace 170 years ago. Regular consumption of large quantities of this drug is a common occurrence involving 25% of New Zealand drinkers.<sup>1</sup> This amounts to about 700,000 people, the total population of Wellington and Christchurch combined. But how many of these heavy drinkers are aware that alcohol has toxic as well as intoxicating effects? Moreover, how can we best protect mothers-to-be from inadvertently putting their babies at risk?

Neurotoxic effects of alcoholism have been well-known medically for many years, the main syndromes being alcoholic cortical dementia, Wernicke-Korsakoff's syndrome, cerebellar degeneration, and peripheral neuropathy.<sup>2</sup> However, signs of brain damage and associated cognitive dysfunction have recently been identified in social drinkers,<sup>3</sup> although low social drinking (less than 12 standard drinks per week) has been demonstrated to not be associated with any loss of brain volume.<sup>4</sup>

Undoubtedly the most tragic neurotoxic scenario involving alcohol is fetal alcohol spectrum disorder (FASD) where babies are born burdened with a preventable form of brain damage. Ho and Jacquemard<sup>5</sup> provide chilling data reminding us all once again about the continuing high prevalence of consumption of this neurotoxic drug by many mothers-to-be in one of the best New Zealand studies of the area to date. Ninety-one percent of mothers-to-be reduced their alcohol use because of pregnancy. However, more than half did this *after* pregnancy had commenced and an astounding 28% continued drinking during their pregnancy. This tallies closely with 2007–2008 Ministry of Health data,<sup>6</sup> which found 29% of women who had been pregnant in the previous 3 years had consumed alcohol during the pregnancy. Of additional concern was the finding that only 68% of women in this report who had been pregnant in this period reported having received advice not to drink at all during pregnancy, despite this being the unequivocal recommendation from the Ministry of Health since 2006.

The incidence of FASD has previously been estimated to be at least 1% of all births in the US.<sup>7</sup> If this conservative estimate is applied to New Zealand, where there are about 60,000 births per annum, there would be at least 600 children borne with FASD each year. However, Ho and Jacquemard produce evidence that drinking during pregnancy in New Zealand is markedly higher than in the US. Further, an updated US estimate<sup>8</sup> has put the prevalence of FASD in populations of younger school children as high as 2–5%. The true rate of FASD in New Zealand therefore could be greater than 5%.

Why are so many New Zealand children being exposed to the risk of brain damage in utero?

One reason is that a large proportion of pregnancies, including wanted ones, are unplanned and fetuses are exposed to alcohol and its metabolites before the pregnancy

is recognised. This is a function of the prevalent drinking culture, and therefore must be addressed by population-based measures.

The per capita consumption of alcohol has increased 9% over the past 10 years<sup>9</sup> despite an aging population. Part of this increase is due to drinking starting at earlier ages,<sup>10</sup> part because of greater volumes being drunk on each occasion by young people,<sup>11</sup> but there has also been an increase in consumption by women across all ages that has been most marked in young women.<sup>11</sup>

This increase in women's drinking has not been an accident of history. It has been driven by a highly successful marketing campaign of the alcohol industry which spends in the region of \$200,000 a day<sup>12</sup> targeting sub-populations where there is potential for growth in consumption, including women. The industry's tactic of linking alcohol with the "good life" by associating drug use with having sex, being successful, being accepted by peers, and being grown-up and independent has been known for some time.<sup>13</sup> For women, there is also the added leverage of "keeping up with the boys" and emancipation through imitation of male behaviour.

How much of the industry's enormous marketing effort has been allocated to informing their women customers that there is a risk of producing a brain damaged baby if they become pregnant while drinking alcohol or if they continue to drink alcohol while being pregnant? The answer is zero.

In fact, the alcohol industry goes out of its way to resist such measures being undertaken. While the effectiveness of warning labels about FASD on alcoholic drinks has not been fully evaluated scientifically, it is surely the responsibility of the industry that produces and markets this potential neurotoxin to make sure drinkers know about the risk before they get pregnant for the first time.

As well as exposure to alcohol before a pregnancy is identified, more than one in four pregnant women in New Zealand continue to drink. This is a national tragedy. And whether the 68% quoted above is the proportion of pregnant women who are never offered advice, or the proportion that never hear it, the pregnancy abstinence message is not being received clearly. This needs urgent rectification.

The current Law Commission review gives New Zealand a once in a generation opportunity to reduce the levels of hazardous drinking in the population that contribute to the incidence of FASD. The relentless promotion of alcohol by the sophisticated marketing machine that the industry uses to keep its favourite customers drinking heavily needs to be dismantled, and health warnings applied to alcohol beverage containers. This will provide a new supportive environment for the dissemination of the Ministry of Health's pregnancy abstinence message by all health and maternity providers and by informed members of the community at large.

**Competing interests:** None known.

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