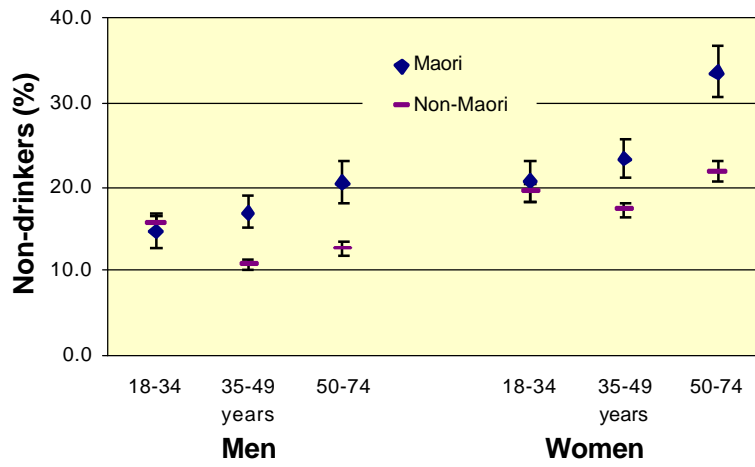
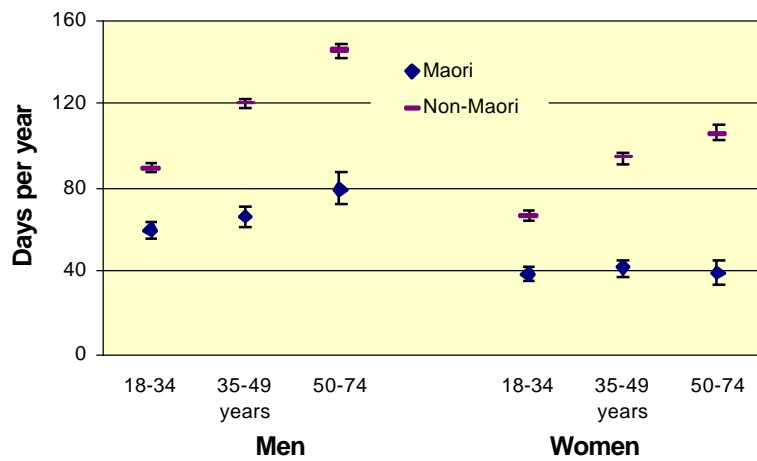


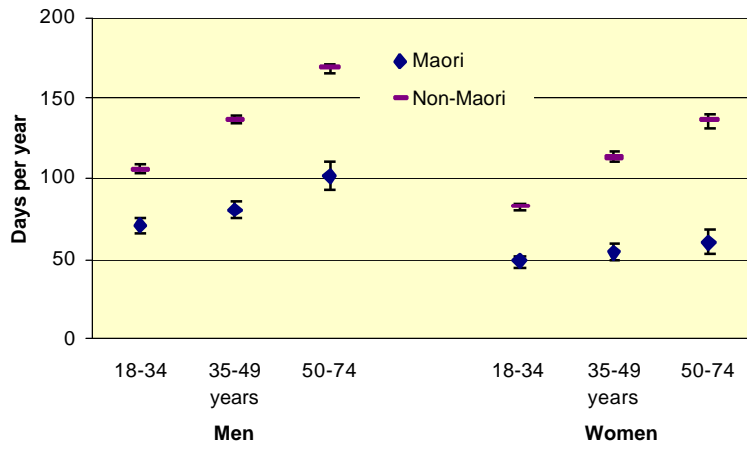
**Figure 1. Percentage of non-drinkers (with 95% error bars, crude (unadjusted) data)**



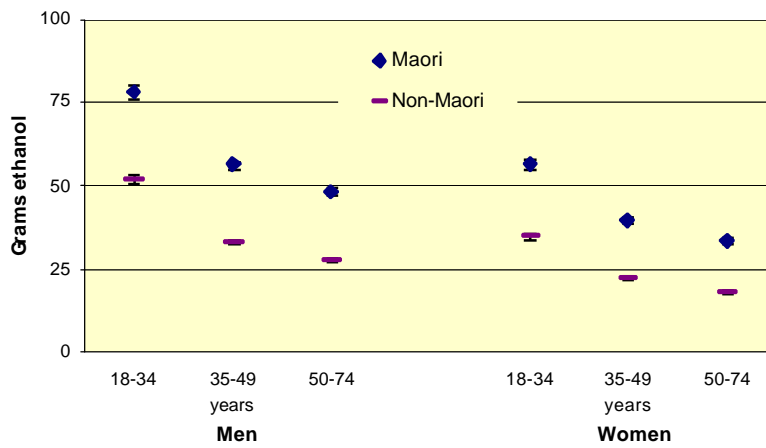
**Figure 2. Frequency of drinking including non-drinkers and drinkers (with 95% error bars, crude (unadjusted) data)**



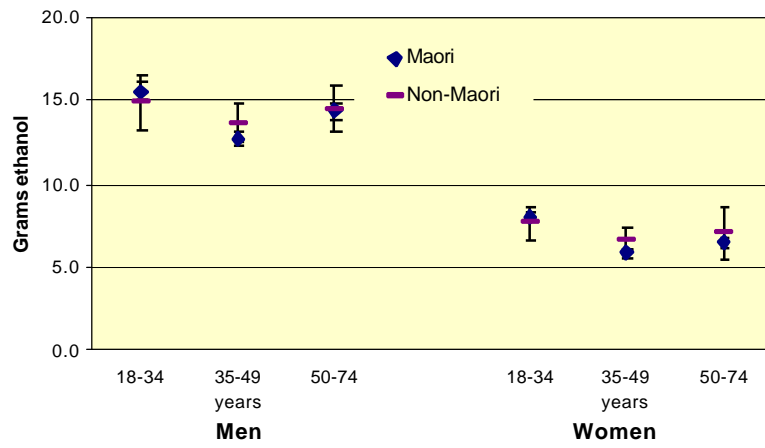
**Figure 3. Frequency of drinking among drinkers (with 95% error bars, crude (unadjusted) data)**



**Figure 4. Alcohol drunk on typical occasion (with 95% error bars, crude (unadjusted) data)**



**Figure 5. Average volume alcohol drunk per day (with 95% error bars, crude (unadjusted) data)**



**Table 1. Studies used in analyses of alcohol consumption**

	Year of fieldwork (approx)	Ref	Total	Maori*				All Non-Maori†			
				18–34	35–49	50–74	Total	18–34	35–49	50–74	Total
<b>Men</b>											
<i>Population-based studies</i>											
NZ Health Survey & National Nutrition Survey‡	1997	4,23	<b>2881</b>	188	143	131	462	724	811	884	2419
Sleep Survey§	1999	5	<b>3177</b>	193	741	529	1463	221	867	626	1714
<i>Studies in selected populations</i>											
Fletcher Challenge/Univ. of Auckland Survey‡	1992	7	<b>6282</b>	411	354	107	872	1956	2357	1097	5410
NZ Blood Donors Health Study¶	1997	8	<b>8072</b>	218	153	60	431	2493	2820	2328	7641
Workforce Diabetes Survey**	1989	6	<b>4072</b>	-	182	125	307	-	2037	1728	3765
<b>All men</b>			<b>24 484</b>	<b>1010</b>	<b>1573</b>	<b>952</b>	<b>3535</b>	<b>5394</b>	<b>8892</b>	<b>6663</b>	<b>20 949</b>
<b>Women</b>											
<i>Population-based studies</i>											
NZ Health Survey & National Nutrition Survey‡	1997	4,23	<b>4028</b>	383	225	146	754	1095	993	1186	3274
Sleep Survey§	1996	5	<b>3751</b>	266	853	612	1731	297	1043	680	2020
<i>Studies in selected populations</i>											
Fletcher Challenge/Univ. of Auckland Survey‡	1992	7	<b>1654</b>	91	54	13	158	729	572	195	1496
NZ Blood Donors Health Study¶	1997	8	<b>9365</b>	382	198	46	626	3527	3079	2133	8739
Workforce Diabetes Survey**	1989	6	<b>1548</b>	-	77	45	122	-	919	507	1426
<b>All women</b>			<b>20 346</b>	<b>1122</b>	<b>1,407</b>	<b>862</b>	<b>3391</b>	<b>5648</b>	<b>6606</b>	<b>4701</b>	<b>16 955</b>
<b>Total</b>			<b>44 830</b>	<b>2132</b>	<b>2980</b>	<b>1814</b>	<b>6926</b>	<b>11 042</b>	<b>15 498</b>	<b>11 364</b>	<b>37 904</b>

\*includes all those with any self-reported Maori ethnicity

†includes all those in survey with no mention of Maori ethnicity

‡nationally representative random sample of those aged 15+ years, selected using an area-based sampling frame, face-to-face interviews; linked to data from sub-sample surveyed in nutrition survey, plus additional Maori sample; self-administered food-frequency questions

§National random sample of people aged 30–59 years selected from electoral rolls, postal survey

‡ Fletcher Challenge employees aged 35+ years, interviewed at work sites in Auckland and Tokoroa

¶blood donors throughout NZ, self-administered questionnaire completed during voluntary blood donation visits

\*\*employees aged 40–64 years from work sites in Auckland region, interviewer-administered questionnaire

**Table 2. Non-drinkers (%) and the odds ratios (OR) of being a drinker, non-Maori relative to Maori, by gender and age group**

	Non-drinkers						Non-Maori drinkers relative to Maori <sup>†</sup>					
	Maori*			All Non-Maori <sup>†</sup>			18–34		35–49		50–74	
	18–34	35–49	50–74	18–34	35–49	50–74	OR <sup>‡</sup>	95% CI <sup>§</sup>	OR <sup>‡</sup>	95% CI <sup>§</sup>	OR <sup>‡</sup>	95% CI <sup>§</sup>
	%	%	%	%	%	%						
<b>Men</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	11.7	16.8	34.4	12.6	12.2	14.3	0.93	0.57–1.54	1.45	0.89–2.37	3.18	2.11–4.79
Sleep Survey	16.1	17.9	20.4	8.6	9.1	10.5	2.00	1.09–3.68	2.18	1.62–2.94	2.09	1.49–2.91
<i>Studies in selected populations</i>												
Fletcher Challenge/Univ. of Auckland Survey	10.9	14.1	15.0	9.3	10.0	13.7	1.22	0.87–1.73	1.47	1.06–2.04	1.14	0.65–1.99
NZ Blood Donors Health Study	23.4	22.2	18.3	22.2	13.2	13.6	1.03	0.74–1.44	1.88	1.26–2.79	1.45	0.75–2.82
Workforce Diabetes Survey	-	14.3	12.0	-	8.4	10.4	-	-	1.81	1.16–2.82	1.19	0.68–2.08
<b>All men</b>	<b>14.8</b>	<b>17.0</b>	<b>20.5</b>	<b>15.6</b>	<b>10.8</b>	<b>12.6</b>	<b>1.13</b>	<b>0.93–1.39</b>	<b>1.79</b>	<b>1.52–2.10</b>	<b>1.89</b>	<b>1.55–2.31</b>
<b>Women</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	17.8	24.9	46.6	21.1	19.4	26.1	0.82	0.61–1.11	1.37	0.98–1.93	2.63	1.85–3.75
Sleep Survey	13.5	20.8	31.7	13.1	14.9	17.5	1.02	0.62–1.66	1.50	1.18–1.90	2.22	1.71–2.89
<i>Studies in selected populations</i>												0.99–13.01
Fletcher Challenge/Univ. of Auckland Survey	15.4	29.6	30.8	9.9	9.3	12.8	1.70	0.91–3.16	4.13	2.15–7.93	3.58	
NZ Blood Donors Health Study	30.1	33.3	32.6	21.4	17.9	21.9	1.58	1.24–2.00	2.28	1.67–3.11	1.79	0.96–3.36
Workforce Diabetes Survey	-	16.9	20.0	-	20.1	21.3	-	-	0.80	0.43–1.49	0.95	0.44–2.03
<b>All women</b>	<b>20.8</b>	<b>23.3</b>	<b>33.6</b>	<b>19.4</b>	<b>17.2</b>	<b>21.9</b>	<b>1.20</b>	<b>1.01–1.42</b>	<b>1.63</b>	<b>1.40–1.91</b>	<b>2.17</b>	<b>1.79–2.62</b>

\*includes those with self-reported Maori ethnicity, the referent group in OR calculations

<sup>†</sup>includes all those in survey with no mention of Maori ethnicity

<sup>‡</sup>OR = odds ratio of being a drinker for this age–sex group, vs Maori, calculated by logistic regression with adjustment for age as a continuous variable

<sup>§</sup>95% CI = 95% confidence intervals about the estimate

**Table 3. Frequency of alcohol consumption (days a year) and ratio of frequency of drinking among all respondents, non-Maori relative to Maori, by gender and age group**

	Mean days a year alcohol consumed*						Relative frequency of drinking by non-Maori vs Maori <sup>‡</sup>					
	Maori <sup>†</sup>			All Non-Maori <sup>‡</sup>			18–34		35–49		50–74	
	18–34	35–49	50–74	18–34	35–49	50–74	Ratio <sup>§</sup>	95% CI <sup>  </sup>	Ratio <sup>§</sup>	95% CI <sup>  </sup>	Ratio <sup>§</sup>	95% CI <sup>  </sup>
	%	%	%	%	%	%						
<b>Men</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	51.7	66.0	49.0	87.5	100.3	126.2	1.67	1.63–1.70	1.49	1.45–1.52	2.56	2.49–2.62
Sleep Survey	48.1	58.3	76.4	78.7	108.0	128.1	1.62	1.58–1.66	1.86	1.83–1.88	1.68	1.66–1.70
<i>Studies in selected populations</i>												
Fletcher Challenge/Univ. of Auckland Survey	62.1	76.8	103.4	101.4	122.1	138.6	1.63	1.61–1.66	1.56	1.54–1.58	1.34	1.31–1.36
NZ Blood Donors Health Study	71.5	77.0	125.5	80.6	128.5	160.1	1.10	1.09–1.12	1.65	1.62–1.68	1.27	1.24–1.30
Workforce Diabetes Survey	-	-	-	-	-	-	-	-	-	-	-	-
<b>All men</b>	<b>59.5</b>	<b>65.8</b>	<b>79.2</b>	<b>89.0</b>	<b>120.4</b>	<b>145.2</b>	<b>1.47</b>	<b>1.46–1.49</b>	<b>1.69</b>	<b>1.67–1.70</b>	<b>1.65</b>	<b>1.64–1.67</b>
<b>Women</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	27.7	33.0	31.0	47.0	69.4	75.2	1.70	1.67–1.74	2.09	2.04–2.14	2.45	2.37–2.53
Sleep Survey	35.2	38.5	37.5	47.1	72.9	88.2	1.34	1.30–1.37	1.90	1.87–1.92	2.35	2.32–2.39
<i>Studies in selected populations</i>												
Fletcher Challenge/Univ. of Auckland Survey	44.4	53.4	50.5	79.4	109.2	118.7	1.78	1.73–1.84	2.04	1.97–2.12	2.36	2.19–2.56
NZ Blood Donors Health Study	48.7	57.4	76.6	70.5	105.8	126.9	1.44	1.41–1.46	1.80	1.77–1.84	1.66	1.60–1.71
Workforce Diabetes Survey	-	-	-	-	-	-	-	-	-	-	-	-
<b>All women</b>	<b>38.0</b>	<b>41.0</b>	<b>38.8</b>	<b>65.9</b>	<b>93.8</b>	<b>105.7</b>	<b>1.51</b>	<b>1.50–1.53</b>	<b>1.91</b>	<b>1.89–1.93</b>	<b>2.27</b>	<b>2.24–2.30</b>

\*means and regressions models included all responders

<sup>†</sup>includes all those with any mention of self-reported Maori ethnicity – the reference group in modelling of frequencies

<sup>‡</sup>includes all those in survey with no mention of Maori ethnicity

<sup>§</sup>ratios were calculated using a Poisson regression model for each sex and age group, adjusting for age as a continuous variable within age group, and for survey in summary estimates

<sup>||</sup> 95% CI = 95% confidence intervals about the estimate

**Table 4. Frequency of alcohol consumption (days a year) and ratio of frequency of drinking among drinkers, non-Maori relative to Maori, by gender and age group**

	Mean days a year alcohol consumed*						Relative frequency of drinking by non-Maori vs Maori <sup>‡</sup>					
	Maori <sup>†</sup>			All Non-Maori <sup>‡</sup>			18–34		35–49		50–74	
	18–34	35–49	50–74	18–34	35–49	50–74	Ratio <sup>§</sup>	95% CI <sup>  </sup>	Ratio <sup>§</sup>	95% CI <sup>  </sup>	Ratio <sup>§</sup>	95% CI <sup>  </sup>
	%	%	%	%	%	%						
<b>Men</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	58.8	79.8	75.6	100.4	114.6	148.0	1.66	1.63–1.70	1.41	1.38–1.44	1.94	1.89–1.99
Sleep Survey	57.3	71.1	96.2	86.2	118.9	143.2	1.50	1.46–1.54	1.67	1.65–1.69	1.50	1.48–1.51
<i>Studies in selected populations</i>												
Fletcher Challenge/Univ. of Auckland Survey	69.9	89.7	121.6	111.9	135.8	160.8	1.60	1.58–1.62	1.48	1.46–1.50	1.31	1.29–1.34
NZ Blood Donors Health Study	93.6	99.2	154.9	104.0	148.3	185.6	1.08	1.06–1.10	1.48	1.45–1.51	1.20	1.17–1.23
Workforce Diabetes Survey	-	-	-	-	-	-	-	-	-	-	-	-
<b>All men</b>	<b>70.0</b>	<b>79.8</b>	<b>101.5</b>	<b>105.8</b>	<b>136.2</b>	<b>167.9</b>	<b>1.44</b>	<b>1.43–1.46</b>	<b>1.55</b>	<b>1.54–1.56</b>	<b>1.46</b>	<b>1.45–1.48</b>
<b>Women</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	33.8	44.3	62.0	59.8	86.5	103.1	1.77	1.73–1.81	1.93	1.89–1.98	1.67	1.62–1.73
Sleep Survey	40.8	48.7	55.2	54.2	85.7	106.9	1.34	1.30–1.37	1.76	1.74–1.79	1.93	1.90–1.96
<i>Studies in selected populations</i>												
Fletcher Challenge/Univ. of Auckland Survey	52.7	76.5	72.9	88.1	120.4	136.1	1.68	1.62–1.73	1.57	1.51–1.63	1.84	1.70–1.99
NZ Blood Donors Health Study	69.9	86.1	114.9	90.0	129.1	163.3	1.27	1.25–1.29	1.47	1.44–1.50	1.42	1.37–1.47
Workforce Diabetes Survey	-	-	-	-	-	-	-	-	-	-	-	-
<b>All women</b>	<b>48.1</b>	<b>53.9</b>	<b>59.9</b>	<b>81.9</b>	<b>112.8</b>	<b>136.2</b>	<b>1.44</b>	<b>1.42–1.46</b>	<b>1.70</b>	<b>1.68–1.71</b>	<b>1.81</b>	<b>1.79–1.83</b>

\*means and regressions models included drinkers only

<sup>†</sup>includes all those with any mention of self-reported Maori ethnicity – the reference group in modelling of frequencies

<sup>‡</sup>includes all those in survey with no mention of Maori ethnicity

<sup>§</sup>ratios were calculated using a Poisson regression model for each sex and age group, adjusting for age as a continuous variable within age group, and for survey in summary estimates

<sup>||</sup> 95% CI = 95% confidence intervals about the estimate

**Table 5. Volume of alcohol consumed on a typical occasion (mean, gm) among drinkers, and ratio of volume reportedly consumed on usual occasion, non-Maori relative to Maori, by gender and age group**

	Mean volume consumed on typical occasion*						Relative volume drunk by non-Maori vs Maori <sup>‡</sup>					
	Maori <sup>†</sup>			All Non-Maori <sup>‡</sup>			18–34		35–49		50–74	
	18–34	35–49	50–74	18–34	35–49	50–74	Ratio <sup>§</sup>	95% CI <sup>  </sup>	Ratio <sup>§</sup>	95% CI <sup>  </sup>	Ratio <sup>§</sup>	95% CI <sup>  </sup>
	%	%	%	%	%	%						
<b>Men</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	68.6	45.4	43.1	50.8	33.4	28.7	0.74	0.65–0.84	0.77	0.68–0.88	0.72	0.63–0.83
Sleep Survey	54.4	53.0	47.2	33.3	33.3	31.3	0.56	0.46–0.68	0.54	0.49–0.59	0.63	0.56–0.71
<i>Studies in selected populations</i>												
Fletcher Challenge/Univ. of Auckland Survey	89.8	69.2	59.4	52.9	37.6	30.7	0.61	0.56–0.67	0.58	0.53–0.63	0.58	0.50–0.66
NZ Blood Donors Health Study	87.2	54.2	47.2	53.8	29.0	25.2	0.69	0.61–0.78	0.63	0.56–0.71	0.65	0.55–0.78
Workforce Diabetes Survey	-	-	-	-	-	-	-	-	-	-	-	-
<b>All men</b>	<b>78.4</b>	<b>56.5</b>	<b>48.4</b>	<b>52.1</b>	<b>33.1</b>	<b>27.8</b>	<b>0.65</b>	<b>0.61–0.69</b>	<b>0.59</b>	<b>0.56–0.62</b>	<b>0.64</b>	<b>0.60–0.68</b>
<b>Women</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	61.0	40.7	33.6	34.1	23.6	18.4	0.58	0.53–0.63	0.65	0.59–0.72	0.66	0.60–0.72
Sleep Survey	46.9	39.4	35.7	24.7	21.8	19.5	0.47	0.40–0.55	0.52	0.47–0.58	0.55	0.48–0.62
<i>Studies in selected populations</i>												
Fletcher Challenge/Univ. of Auckland Survey	51.5	46.2	27.1	31.8	22.9	19.5	0.68	0.58–0.80	0.52	0.43–0.63	0.75	0.52–1.07
NZ Blood Donors Health Study	62.7	39.4	24.3	37.3	22.0	17.8	0.67	0.61–0.73	0.69	0.62–0.76	0.81	0.68–0.95
Workforce Diabetes Survey	-	-	-	-	-	-	-	-	-	-	-	-
<b>All women</b>	<b>57.0</b>	<b>39.9</b>	<b>34.7</b>	<b>35.1</b>	<b>22.4</b>	<b>18.4</b>	<b>0.59</b>	<b>0.56–0.63</b>	<b>0.58</b>	<b>0.55–0.61</b>	<b>0.59</b>	<b>0.55–0.63</b>

\*means and regression models included only those where recorded volume of alcohol drunk on usual occasion was >0

<sup>†</sup>includes all those with any mention of self-reported Maori ethnicity – the reference group in modelling of frequencies

<sup>‡</sup>includes all those in survey with no mention of Maori ethnicity

<sup>§</sup>regression coefficients were calculated using linear regression model with log link, for each sex and age group, adjusting for age as a continuous variable within age group, and for survey in summary estimates

<sup>||</sup> 95% CI = 95% confidence intervals about the estimate

**Table 6. Averaged daily volume of alcohol consumed (mean, gm) among drinkers, and ratio of averaged daily volume reportedly consumed, non-Maori relative to Maori, by gender and age group**

	Mean volume consumed on typical occasion*						Relative volume drunk by non-Maori vs Maori <sup>‡</sup>					
	Maori <sup>†</sup>			All Non-Maori <sup>‡</sup>			18–34		35–49		50–74	
	18–34	35–49	50–74	18–34	35–49	50–74	Ratio <sup>§</sup>	95% CI <sup>  </sup>	Ratio <sup>§</sup>	95% CI <sup>  </sup>	Ratio <sup>§</sup>	95% CI <sup>  </sup>
	%	%	%	%	%	%						
<b>Men</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	12.1	9.9	10.0	13.7	10.5	12.1	1.15	0.91–1.46	1.17	0.90–1.53	1.42	1.02–1.98
Sleep Survey	7.9	9.9	12.3	7.7	11.2	12.7	0.80	0.59–1.09	0.95	0.81–1.13	1.06	0.85–1.31
<i>Studies in selected populations</i>												
Fletcher Challenge/Univ. of Auckland Survey	18.6	16.3	18.6	15.7	13.6	13.7	1.33	1.10–1.60	1.29	1.07–1.56	0.90	0.64–1.27
NZ Blood Donors Health Study	20.0	14.0	15.2	15.3	11.7	12.9	0.78	0.64–0.94	1.01	0.82–1.26	0.79	0.57–1.11
Workforce Diabetes Survey	-	17.8	21.7	-	18.3	18.8	-	-	1.09	0.85–1.38	0.85	0.63–1.15
<b>All men</b>	<b>15.6</b>	<b>12.7</b>	<b>14.4</b>	<b>14.9</b>	<b>13.6</b>	<b>14.5</b>	<b>0.90</b>	<b>0.82–0.98</b>	<b>0.98</b>	<b>0.90–1.06</b>	<b>0.91</b>	<b>0.83–1.01</b>
<b>Women</b>												
<i>Population-based studies</i>												
NZ Health Survey & National Nutrition Survey	6.2	4.8	7.0	5.9	5.3	5.3	0.89	0.76–1.05	1.15	0.93–1.43	0.99	0.71–1.39
Sleep Survey	5.0	5.0	5.2	3.7	4.9	6.4	0.60	0.46–0.77	0.88	0.75–1.03	1.00	0.80–1.24
<i>Studies in selected populations</i>												
Fletcher Challenge/Univ. of Auckland Survey	8.6	9.5	6.7	7.6	7.6	7.2	1.34	0.90–1.99	1.04	0.58–1.86	1.13	0.29–4.30
NZ Blood Donors Health Study	12.7	9.2	6.9	8.7	7.5	8.2	0.83	0.72–0.96	0.96	0.78–1.18	1.34	0.88–2.05
Workforce Diabetes Survey	-	9.0	19.5	-	7.3	7.5	-	-	0.85	0.57–1.28	0.77	0.43–1.36
<b>All women</b>	<b>8.0</b>	<b>5.9</b>	<b>6.5</b>	<b>7.7</b>	<b>6.7</b>	<b>7.1</b>	<b>0.73</b>	<b>0.67–0.81</b>	<b>0.90</b>	<b>0.81–1.00</b>	<b>1.06</b>	<b>0.91–1.24</b>

\*means and regression models included only those where recorded volume of alcohol drunk on usual occasion was >0

<sup>†</sup>includes all those with any mention of self-reported Maori ethnicity – the reference group in ratio calculations

<sup>‡</sup>includes all those in survey with no mention of Maori ethnicity

<sup>§</sup>regression coefficients were calculated using linear regression model with log transformation, for each sex and age group, adjusting for age as a continuous variable within age group, and for survey in summary estimates

<sup>||</sup> 95% CI = 95% confidence intervals about the estimate