

### 3. Risk factors

This section presents results obtained from the 2002/03 New Zealand Health Survey<sup>4</sup> (NZHS) on physiological and lifestyle risk factors for diseases such as obesity, Type 2 diabetes, and vascular disease, for New Zealanders aged 15 years and over. Results for the following physiological risk factors are presented: hypertension, hypercholesterolaemia, overweight and obesity. Lifestyle risk factors are also presented: smoking, marijuana use, hazardous drinking, physical activity, and fruit and vegetable intake. More detail on Maori lifestyle factors including maps of risk distribution is given in *Te Hau o te Whenua, Te Hau o te Tangata*, ARPHS 2005 ([www.arphs.govt.nz](http://www.arphs.govt.nz)).

#### 3.1. Physiological risk factors

##### Hypertension

Individuals with high blood pressure were identified from the 2002/03 NZHS questionnaire as those for whom a doctor had diagnosed high blood pressure at any time except during pregnancy. Table 3.1.1 shows the age-standardised prevalence of high blood pressure by gender, ethnic group and DHB. Of particular note, Pacific in CM had a lower prevalence of hypertension (9.3%) than nationally (17.3%) which was not explained by their prevalence of overweight or obesity as Pacific in CM had similar or higher prevalence of these conditions than nationally. However, this finding may be due in part to the lower prevalence of hypercholesterolaemia in Pacific in CM. Alternatively, given that obesity or overweight prevalence can not explain the relatively low prevalence of hypertension and hypercholesterolaemia in Pacific in CM, such low prevalence may reflect service access issues or under-reporting by Pacific due to, for example, communication or comprehension issues.

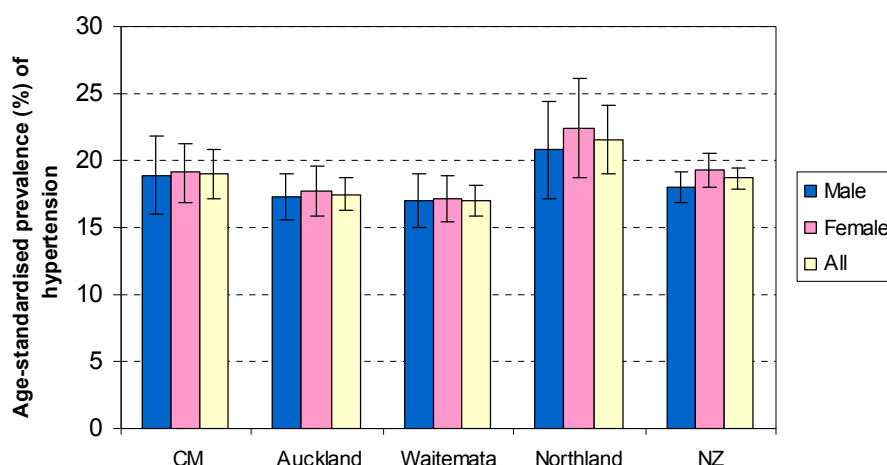
**Table 3.1.1: Prevalence of high blood pressure by gender, ethnic group, and DHB (NZHS 2002/03)**

DHB	Hypertension: age-standardised prevalence (% of adult population)														
	Males					Females					Males & females				
	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All
CM	27.4	7.2	23.2	19.5	18.9	26.9	11.2	6.2	22.1	19.1	27.1	9.3	14.2	20.8	19.0
Auckland	19.8	14.1	7.8	19.9	17.3	21.2	13.8	8.0	20.5	17.7	20.6	13.9	7.9	20.2	17.5
Waitemata	15.6	17.5	6.3	18.3	17.0	17.2	11.7	7.6	18.7	17.1	16.4	14.3	7.0	18.5	17.0
Northland	27.5	6.4	30.4	19.1	20.8	26.7	21.2	3.8	21.4	22.4	27.1	12.0	14.3	20.3	21.6
NZ	23.7	16.2	14.4	17.6	18.0	23.9	18.2	13.1	19.2	19.3	23.8	17.3	13.7	18.4	18.7

Figure 3.1.1 shows that the prevalence of hypertension for males and females combined was significantly higher in Northland (21.6%) than in Waitemata (17.0%). The prevalence of hypertension between the Auckland regional DHBs and nationally was not significantly different although there was a trend towards higher prevalence in women (19.3%) than men (18.0%), and in CM (19.0%) than Auckland (17.5%) or Waitemata (17.0%).

<sup>4</sup> Ministry of Health. *A portrait of health: key results of the 2002/03 New Zealand Health Survey*. Wellington: Ministry of Health; 2004.

**Figure 3.1.1: Prevalence of hypertension by sex and DHB (NZHS 2002/03)**



**Figure 3.1.2: Prevalence of hypertension in CMDHB by sex and ethnicity (NZHS 2002/03)**

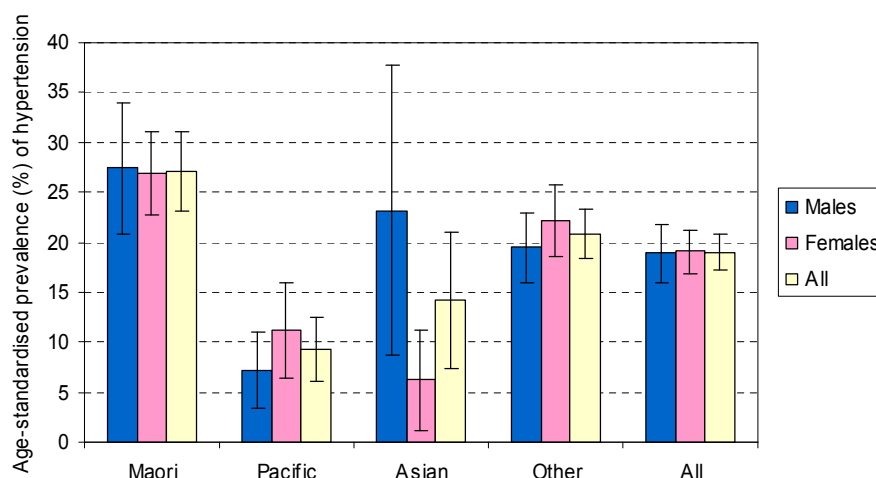


Figure 3.1.2 shows that the prevalence of hypertension was significantly higher in Maori (27.1%) in CM than in Pacific (9.3%), Asian (14.2%) or Other (20.8%) groups. In Pacific people the prevalence of hypertension was also significantly lower than in Others. Asian men (23.2%) and Pacific women (11.2%) had a higher prevalence of hypertension than Asian women (6.2%) and Pacific men (7.2%), respectively. Confidence intervals for Asian were wide due to relatively small sample sizes.

#### Hypercholesterolaemia

Individuals with high blood cholesterol were identified from the 2002/03 NZHS questionnaire as those for whom a doctor had diagnosed high blood cholesterol. Table 3.1.2 shows the age-standardised prevalence of high blood cholesterol by gender, ethnic group and DHB. As noted previously for hypertension, the prevalence of hypercholesterolaemia in Pacific in CM (6.1%) was somewhat less than national prevalence (10.3%) but is not explained by overweight/obesity. As discussed under hypertension above this finding may be due to difficulty accessing primary health care and/or being tested for hypercholesterolaemia, or difficulty with answering the survey itself.

**Table 3.1.2: Prevalence of high blood cholesterol by gender, ethnic group, and DHB (NZHS 2002/03)**

DHB	Hypercholesterolaemia: age-standardised prevalence (% of adult population)														
	Males					Females					Males & females				
	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All
CM	16.4	6.0	21.7	17.0	15.7	11.2	6.2	0.0	15.5	11.9	13.6	6.1	11.9	16.2	13.7
Auckland	13.0	8.4	9.2	16.3	14.2	14.9	9.9	9.0	15.0	13.4	14.0	9.2	9.1	15.6	13.8
Waitemata	14.3	8.3	7.0	15.4	14.2	13.6	8.4	8.5	13.8	13.0	13.9	8.3	7.8	14.6	13.5
Northland	17.3	3.6	21.7	14.6	15.1	11.5	11.6	0.0	13.5	12.8	14.1	6.6	12.0	14.0	13.9
NZ	15.9	9.5	13.4	14.6	14.5	12.0	11.1	12.3	13.2	12.9	13.8	10.3	12.8	13.9	13.7

**Figure 3.1.3: Prevalence of hypercholesterolaemia by sex and DHB (NZHS 2002/03)**

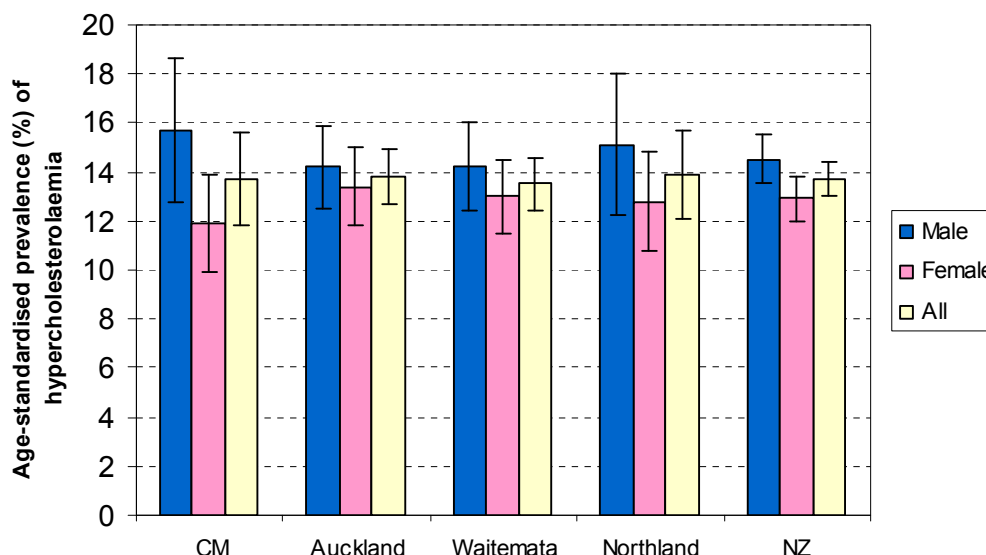


Figure 3.1.3 shows that the prevalence of high cholesterol (approximately 14%) was not significantly different between the three Auckland DHBs, or between males and females. However, males tended to have a greater prevalence of hypercholesterolaemia (14.5%) than females (13%), and the difference between males and females was greatest in CM, where males had the highest (15.7%), and females the lowest (11.9%), prevalence of the regions presented.

**Figure 3.1.4: Prevalence of hypercholesterolaemia in CMDHB by sex and ethnicity (NZHS 2002/03)**

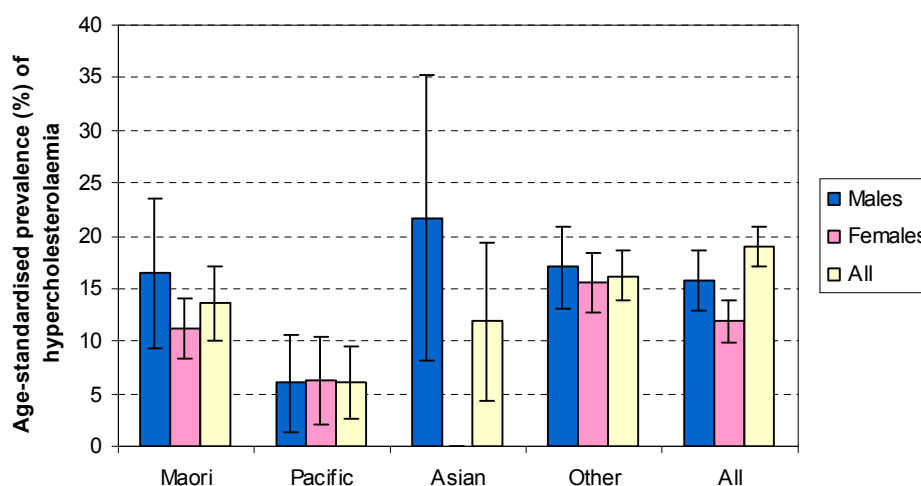


Figure 3.1.4 shows that the prevalence of hypercholesterolaemia was significantly lower in Pacific people (6.1%) than Maori (13.6%), Other (16.2%), or all combined (13.7%). There was a greater prevalence in men than women for Maori, Asian, Others, and all combined, while the Pacific prevalence for men and women was similar.

### Overweight

Overweight individuals were identified from the 2002/03 NZHS questionnaire as those with a BMI (Body Mass Index)  $\geq 26.0$  for Maori and Pacific, or a BMI  $\geq 25.0$  for Europeans, Others and Asians. Table 3.1.3 shows the age-standardised prevalence of overweight by gender, ethnic group and DHB.

**Table 3.1.3: Prevalence of overweight by gender, ethnic group, and DHB (NZHS 2002/03)**

DHB	Overweight: age-standardised prevalence (% of adult population)														
	Males					Females					Males & females				
	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All
CM	41.1	47.9	26.7	45.4	43.0	30.2	33.6	8.8	29.7	27.8	35.3	40.4	17.3	37.5	35.2
Auckland	43.6	39.0	23.0	42.7	39.2	38.7	39.2	18.3	26.2	26.8	41.1	39.1	20.5	34.5	32.9
Waitemata	38.2	43.2	23.6	42.8	40.7	41.4	35.9	15.3	25.6	26.1	39.8	39.4	19.2	34.2	33.4
Northland	40.5	47.7	30.9	41.0	40.9	30.4	28.5	11.2	29.1	29.0	35.1	40.5	19.2	35.1	34.9
NZ	38.0	43.9	23.2	41.9	40.5	33.7	34.8	19.5	26.9	27.5	35.8	39.2	21.2	34.4	34.0

Figure 3.1.5 shows the prevalence of overweight by DHB and gender. All DHBs showed a significantly greater prevalence of overweight in males (approximately 41%) than females (approximately 28%), with an overall prevalence of 34% nationally. The prevalence of overweight was not significantly different between the DHBs presented, and was similar to the national figure. Of the three Auckland regional DHBs, there was a trend towards CM having the highest prevalence of overweight for both males (43%) and females (27.8%).

**Figure 3.1.5: Age-standardised prevalence of overweight by sex and DHB (NZHS 2002/03).**

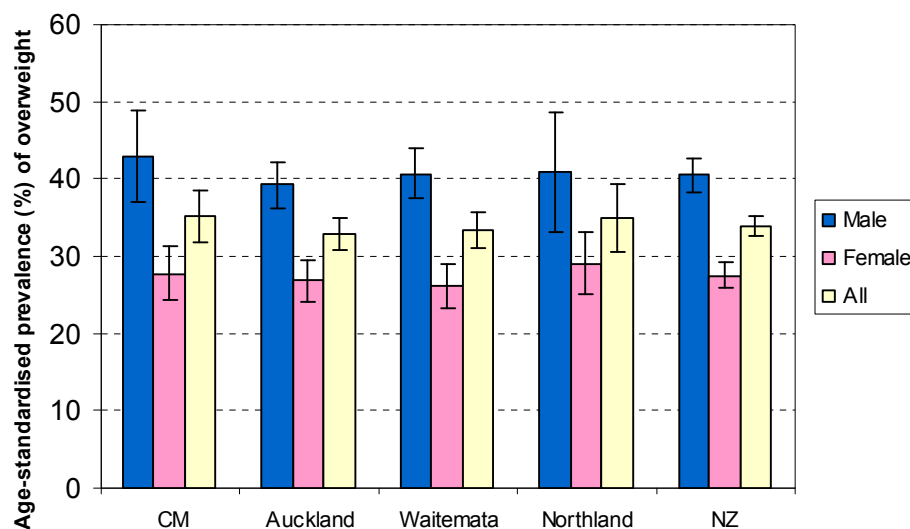
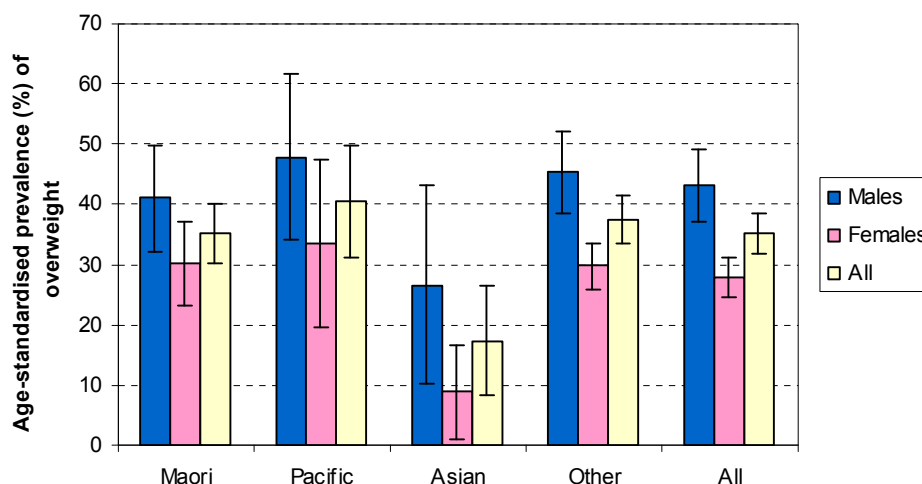


Figure 3.1.6 shows a greater prevalence of overweight in Pacific (40.4%) followed by Others (37.5%), Maori (35.3%), and Asian (17.3%). For all ethnic groups there was a trend towards greater prevalence in males than females, and this was statistically significant for Others.

**Figure 3.1.6:** Age-standardised prevalence of overweight in CMDHB by sex and ethnicity (NZHS 2002/03).



Obesity

Obese individuals were identified from the 2002/03 NZHS questionnaire as those with a BMI (Body Mass Index)  $\geq 32.0$  for Maori and Pacific, or a BMI  $\geq 30.0$  for Europeans, Others and Asians. Table 3.1.4 shows the age-standardised prevalence of obesity by gender, ethnic group and DHB.

**Table 3.1.4:** Age-standardised prevalence of obesity according to gender, ethnic group, and DHB (NZHS 2002/03).

DHB	Obesity: age-standardised prevalence (% of adult population)														
	Males					Females					Males & females				
	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All
CM	28.7	30.9	No data	21.4	22.1	31.0	46.8	No data	21.3	24.7	29.9	39.2	5.8	21.4	23.4
Auckland	25.9	44.2	4.1	15.2	16.7	20.7	48.6	5.6	18.7	19.3	23.2	46.5	4.9	16.9	18.0
Waitemata	27.2	41.9	4.0	14.6	15.9	17.9	51.2	4.8	18.8	18.9	22.7	46.6	4.5	16.7	17.4
Northland	29.4	31.4	No data	24.0	25.1	32.4	55.3	No data	24.0	25.9	31.0	40.4	6.5	24.0	25.5
NZ	29.0	38.0	4.3	18.0	19.2	27.5	47.8	6.9	19.8	21.0	28.3	43.0	5.7	18.9	20.1

Figure 3.1.7 shows that nationally there was a higher prevalence of obesity in females (21%) than males (19.2%), with an overall prevalence of 19.2%. The prevalence of obesity in females was highest in Northland (25.9%) and CM (24.7%), and these figures were significantly greater than for Auckland (19.3%) and Waitemata (18.9%). Similarly, the prevalence of obesity in males was highest in Northland (25.1%) followed by CM (22.1%), Auckland (16.7%), and Waitemata (15.9%). The prevalence of obesity in Waitemata was significantly less than in Northland or CM.

**Figure 3.1.7:** Age-standardised prevalence of obesity by sex and DHB (NZHS 2002/03).

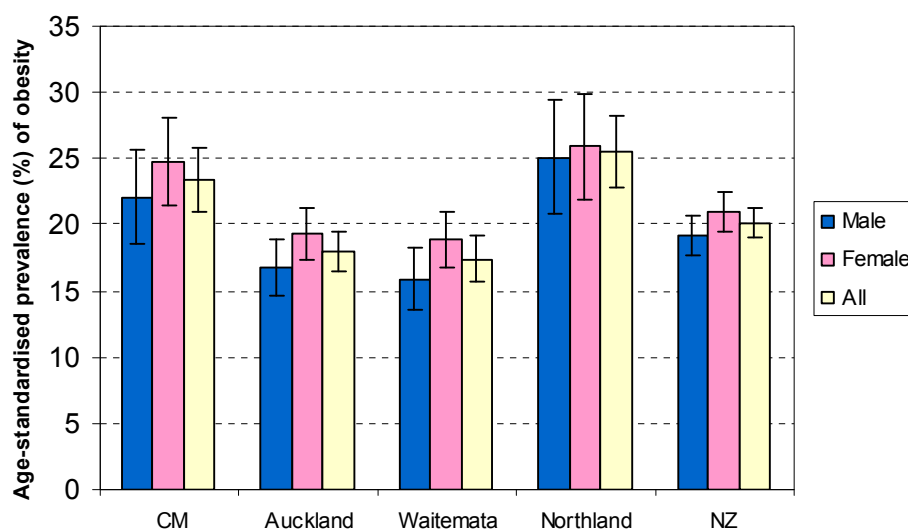
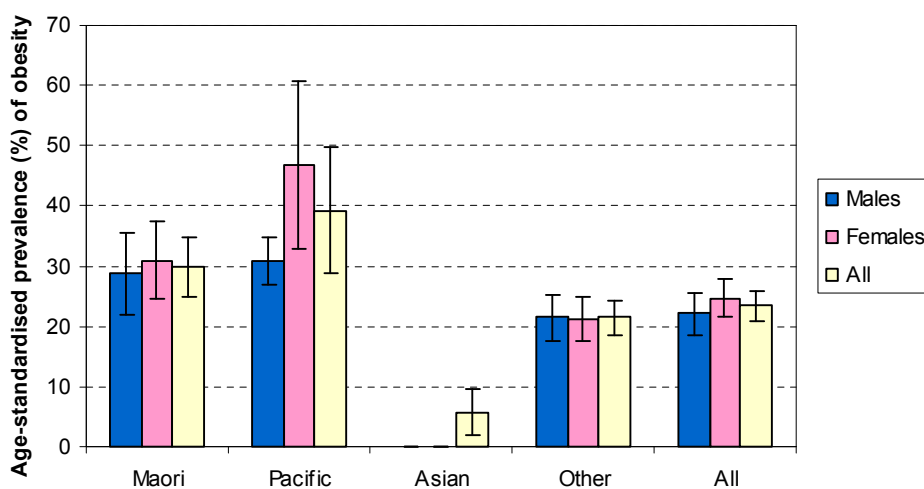


Figure 3.1.8 shows a greater prevalence of obesity in Pacific people (39.2%), followed by Maori (29.9%), Other (21.4%), and Asian (5.8%), with the prevalence in Pacific and Maori being significantly greater than in Other or all ethnic groups combined (18%). Females had the highest prevalence of obesity in Pacific (46.8%) followed by Maori (31%), Other (21.3%), and Asian (very low – figures too small to estimate accurately), with the prevalence being significantly less in Other than Maori or Pacific. Similarly, males had the highest prevalence of obesity in Pacific (30.9%) closely followed by Maori (28.7%), Other (21.4%), and Asian (low, no data), with the prevalence being significantly less in Other than Pacific. Obesity is rare in people of Asian ethnicity.

**Figure 3.1.8:** Prevalence of obesity in CMDHB by sex and ethnicity (NZHS 2002/03)



## 3.2. Lifestyle risk factors

### Smoking

Individuals who were current smokers were identified in the 2002/03 NZHS questionnaire as those who smoked one or more tobacco cigarettes per day (cigars were excluded). Table 3.2.1 shows the age-standardised prevalence of smoking by gender, ethnic group and DHB.

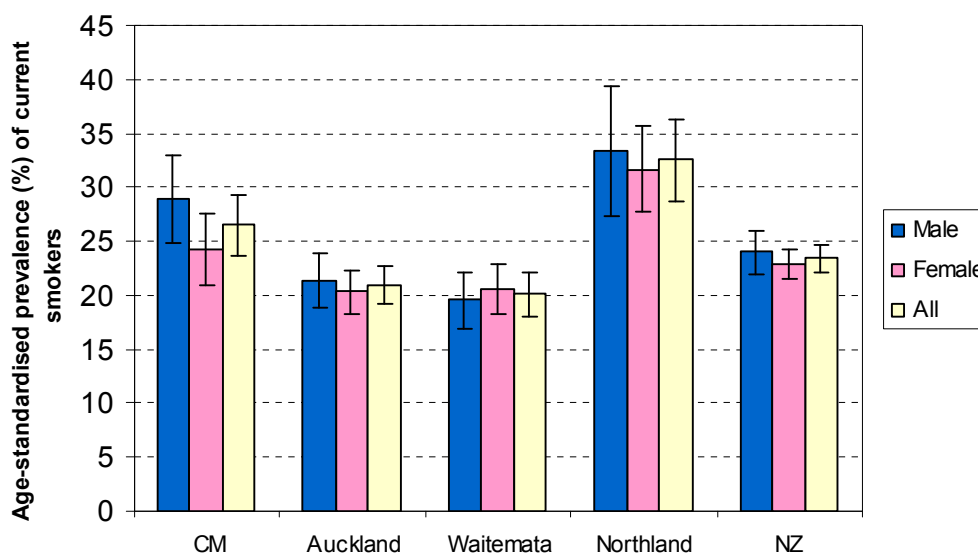
Table 3.2.1: Prevalence of smoking by gender, ethnic group, and DHB (NZHS 2002/03)

DHB	Smoking: age-standardised prevalence (% of adult population)														
	Males					Females					Males & females				
	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All
CM	44.1	42.3	18.3	24.3	28.9	55.3	26.3	No data	20.3	24.2	50.3	33.9	11.4	22.3	26.5
Auckland	44.6	35.2	22.0	17.3	21.4	41.9	39.6	4.0	19.4	20.3	43.1	37.6	12.4	18.4	20.9
Waitemata	41.8	31.3	20.5	16.6	19.5	41.6	41.9	5.4	19.0	20.6	41.7	37.2	12.3	17.9	20.1
Northland	44.7	48.7	26.7	29.9	33.3	56.1	28.3	No data	24.5	31.7	50.9	41.0	12.3	27.2	32.5
NZ	42.9	34.8	18.9	21.3	24.0	51.1	31.6	3.6	19.9	22.9	47.2	33.1	10.6	20.6	23.4

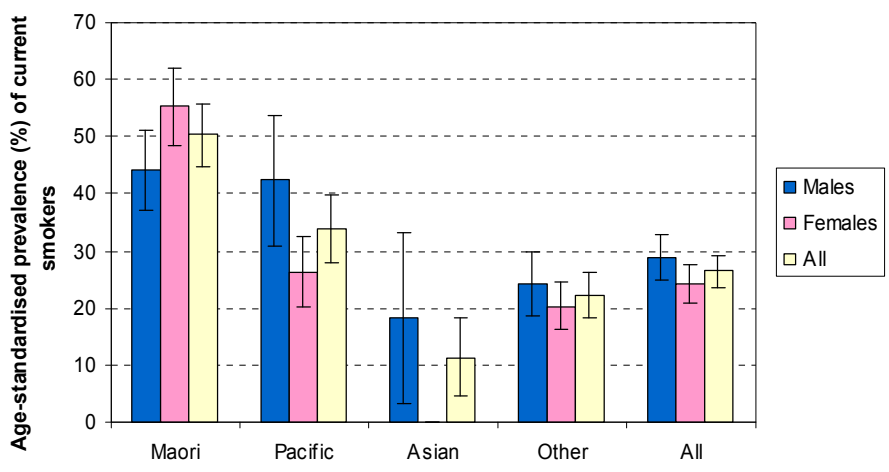
The prevalence of smoking in CM (26.5%) was greater than nationally (23.4%), and significantly greater than in Auckland (20.9%) or Waitemata (20.1%) (Figure 3.2.1). Smoking prevalence was greatest in Northland (32.5%) for males and females, and significantly greater than in the Auckland region except for males in CM. There was a greater prevalence of male (24%) than female (22.9%) smokers nationally, and in CM there was a significantly greater prevalence of male (28.9%) smokers than in Auckland (21.4%) or Waitemata (19.5%).

In CM, Maori had a significantly higher prevalence of smoking (50.3%) than any of the ethnic groups shown, followed by Pacific (33.9%), Other (22.3%), and then Asian (11.4%) (Figure 3.2.2). Women had a lower prevalence of smoking than men in all ethnic groups, except for Maori women who had a higher prevalence (55.3%) than Maori men (44.1%). Figures were very low for Asian women - no estimate was able to be made.

Figure 3.2.1: Prevalence of current smokers by sex and DHB (NZHS 2002/03)



**Figure 3.2.2: Prevalence of current smokers in CMDHB by sex and ethnicity (NZHS 2002/03)**



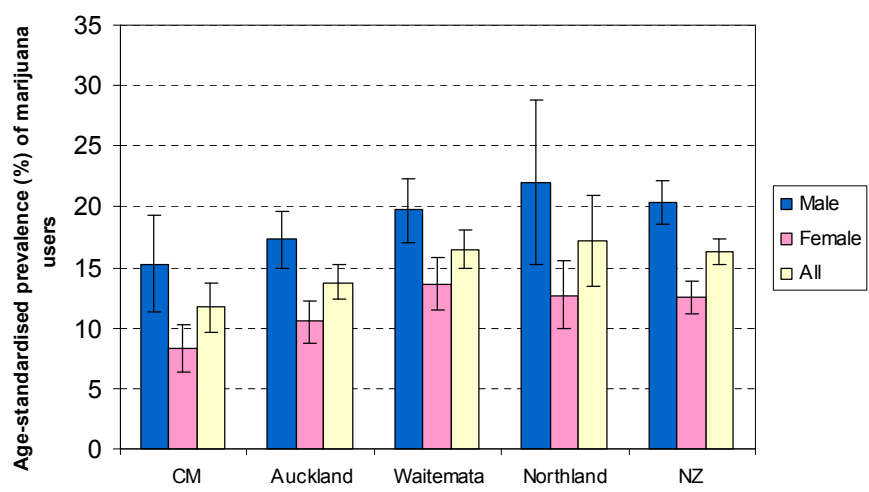
Marijuana use

Marijuana users were identified in the 2002/03 NZHS questionnaire as any person who had used marijuana in the last 12 months. Table 3.2.2 shows the age-standardised prevalence of marijuana use by gender, ethnic group, and DHB.

**Table 3.2.2: Prevalence of marijuana use according to gender, ethnic group, and DHB (NZHS 2002/03)**

DHB	Marijuana use: age-standardised prevalence (% of adult population)														
	Males					Females					Males & females				
	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All
CM	34.3	8.6	No data	15.5	15.3	21.4	6.4	No data	7.5	8.3	27.2	7.4	No data	11.4	11.7
Auckland	34.7	18.4	No data	18.6	17.3	19.4	7.2	No data	12.5	10.5	26.3	12.2	3.2	15.4	13.8
Waitemata	38.3	17.6	No data	19.7	19.7	24.7	10.9	No data	14.4	13.6	31.2	13.9	3.2	17.0	16.5
Northland	33.9	6.4	No data	19.4	22.0	22.0	4.9	No data	10.1	12.7	27.3	5.8	No data	14.6	17.2
NZ	32.9	13.4	4.3	20.2	20.4	22.5	5.3	No data	12.4	12.5	27.3	9.2	2.4	16.2	16.3

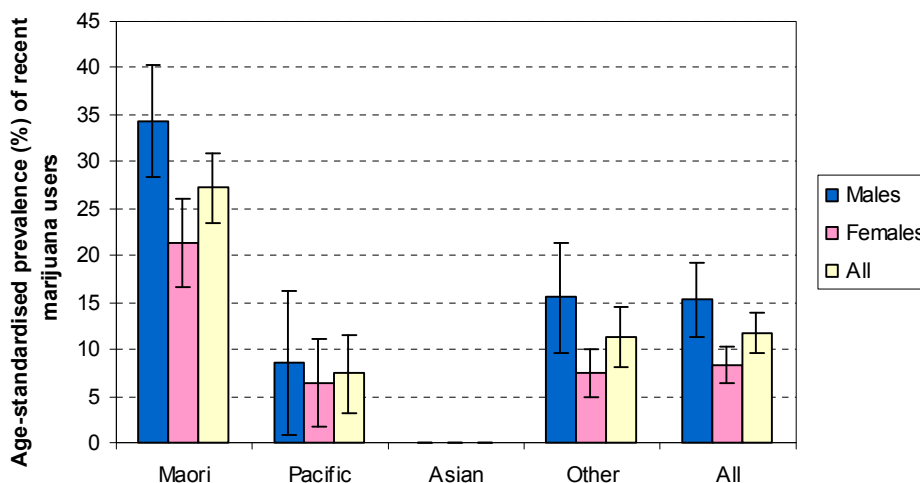
**Figure 3.2.3: Prevalence of marijuana use by sex and DHB (NZHS 2002/03)**



The prevalence of marijuana use was greater in Northland (17.2%) than the Auckland region. Within the Auckland region, marijuana use was highest in Waitemata (16.5%) followed by Auckland (13.8%), and CM (11.7%) (Figure 3.2.3). Marijuana use was significantly less in

CM compared to Waitemata or all NZ. Within the Auckland region and nationally, marijuana use was significantly more prevalent amongst males than females.

**Figure 3.2.4: Prevalence of marijuana use in CMDHB by sex and ethnicity (NZHS 2002/03)**



Within CM, marijuana use was most prevalent amongst Maori (27.2%), followed by Other (11.4%) and Pacific (7.4%) (Figure 3.2.4). Asians had very low rates – estimates were not able to be supplied by the survey. Prevalence for Other was similar to overall prevalence (11.7%). Overall, significantly more males (15.3%) than females (8.3%) used marijuana, although Maori females (21.4%) had a higher prevalence than either Other males (15.5%) or Pacific males (8.6%).

Hazardous drinking

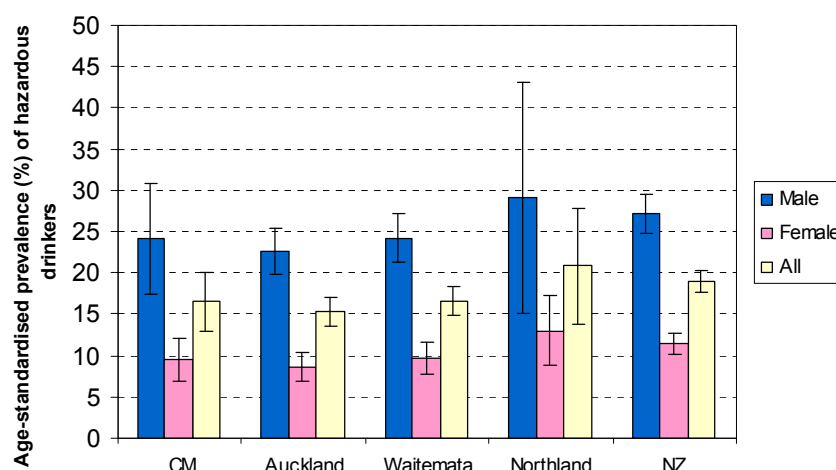
Hazardous drinkers were identified in the 2002/03 NZHS questionnaire as those with an established pattern of drinking that carries a high risk of future damage to physical or mental health. This was defined as an Alcohol Use Disorders Identification Test (AUDIT) score of eight or more. Table 3.2.3 shows the age-standardised prevalence of hazardous drinking by gender, ethnic group, and DHB.

**Table 3.2.3: Prevalence of hazardous drinking by gender, ethnic group, and DHB (NZHS 2002/03)**

DHB	Hazardous drinking: age-standardised prevalence (% of adult population)														
	Males					Females					Males & females				
	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All
CM	35.4	25.6	No data	22.8	24.1	19.3	7.3	No data	8.9	9.5	26.6	16.1	10.2	15.7	16.5
Auckland	29.4	34.7	5.6	24.6	22.7	13.1	10.3	No data	9.8	8.6	20.6	21.3	3.3	17.0	15.3
Waitemata	32.5	37.5	5.7	24.8	24.2	13.1	11.7	No data	10.4	9.7	22.4	23.3	3.1	17.3	16.6
Northland	36.1	30.1	No data	27.3	29.1	19.0	5.6	No data	11.1	13.0	26.8	20.9	12.7	19.1	20.8
NZ	34.5	30.8	6.8	27.3	27.1	18.4	7.6	No data	11.4	11.4	25.9	18.6	3.9	19.2	18.9

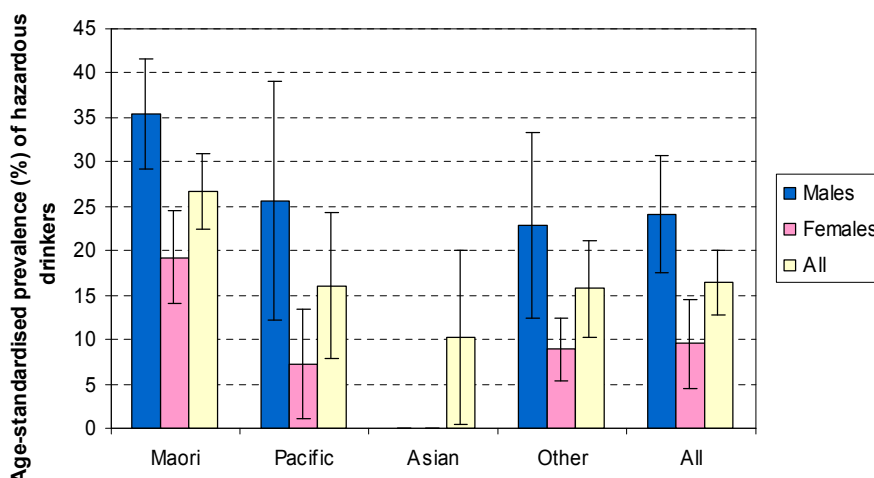
The prevalence of hazardous drinking was similar for CM (16.5%), Waitemata (16.6%), and Auckland (15.3%), while prevalence was greater in Northland (20.8%), similar to national prevalence (18.9%) (Figure 3.2.5). Nationally, and within each DHB in the Auckland region, prevalence was significantly higher in men (27.1%) than in women (11.4%).

**Figure 3.2.5: Prevalence of hazardous drinkers by sex and DHB (NZHS 2002/03)**



Within CM Maori had the highest prevalence of hazardous drinkers (26.6%), followed by Pacific (16.1%), Other (15.7%), and Asian (10.2%) (Figure 3.2.6). For each ethnic group, the prevalence for males was considerably higher than females; the prevalence in Maori women (19.3%) came closest to Maori men (35.4%), comprising more than half the male prevalence.

**Figure 3.2.6: Hazardous drinkers in CMDHB by sex and ethnicity (NZHS 2002/03)**



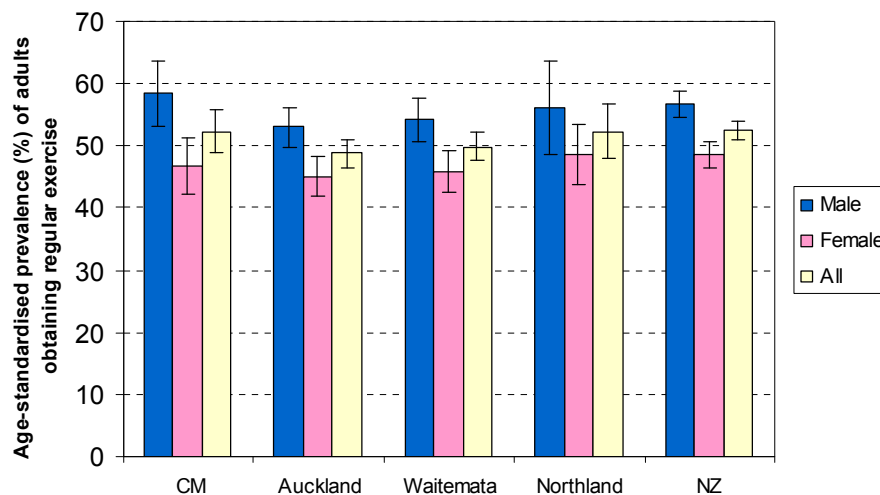
Regular physical activity

Individuals undertaking regular physical activity were identified in the 2002/03 NZHS questionnaire as those undertaking at least 150 minutes of physical activity per week, comprising at least 30 minutes on five or more days of the week. Table 3.2.4 shows the age-adjusted prevalence of individuals undertaking regular physical activity by gender, ethnic group, and DHB.

**Table 3.2.4: Prevalence of adults obtaining regular physical activity by gender, ethnic group, and DHB (NZHS 2002/03)**

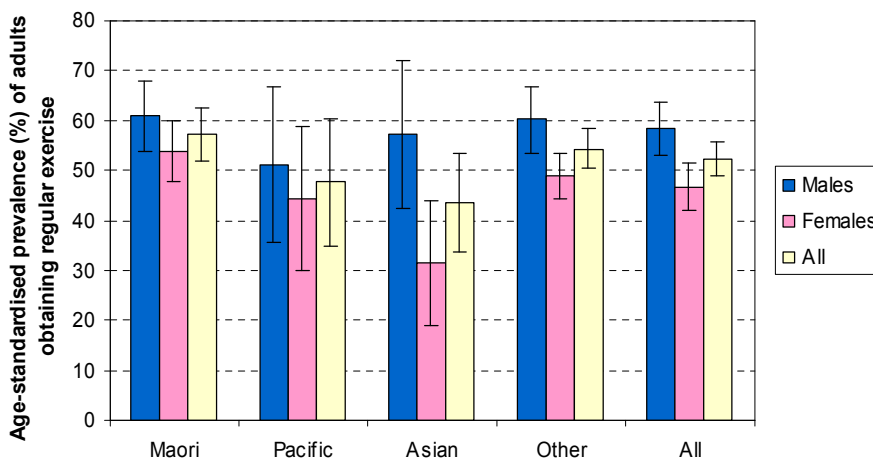
DHB	Regular physical activity: age-standardised prevalence (% of adult population)														
	Males					Females					Males & females				
	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All
CM	60.9	51.2	57.2	60.1	58.4	53.9	44.4	31.5	49.0	46.8	57.1	47.6	43.6	54.4	52.3
Auckland	51.3	48.8	40.1	56.9	53.0	53.0	50.1	33.3	46.4	45.0	52.3	49.6	36.5	51.5	48.8
Waitemata	49.5	43.5	39.3	57.1	54.2	49.4	49.7	31.3	47.2	45.9	49.4	46.9	35.0	52.0	49.9
Northland	58.9	42.3	54.3	55.6	56.1	53.0	42.5	25.7	47.9	48.7	55.7	42.4	37.0	51.7	52.3
NZ	59.7	51.7	44.3	57.5	56.7	51.2	44.0	33.6	49.6	48.6	55.2	47.7	38.5	53.4	52.5

Figure 3.2.7: Adults obtaining regular physical activity by DHB and sex (NZHS 2002/03)



The prevalence of regular physical activity was similar for CM (52.3%), Auckland (48.8%), Waitemata (49.9%), Northland (52.3%), and nationally (52.5%) (Figure 3.2.7). Nationally, and for each of the three Auckland DHBs, there was a significantly higher prevalence of males than females obtaining regular physical activity, with CM having the greatest difference between male (58.4%) and female (46.8%) prevalence.

Figure 3.2.8: Adults obtaining regular physical activity in CMDHB by sex and ethnicity (NZHS 2002/03)



Within CM, Maori had the highest prevalence of regular physical activity (57.1%) followed by Other (54.4%), Pacific (47.6%), and Asian (43.6%) (Figure 3.2.8). For all ethnic groups, there was a higher prevalence of males (58.4%) than females (46.8%) undertaking regular physical activity; this difference was smallest for Maori and greatest for Asian.

Fruit and vegetable intake

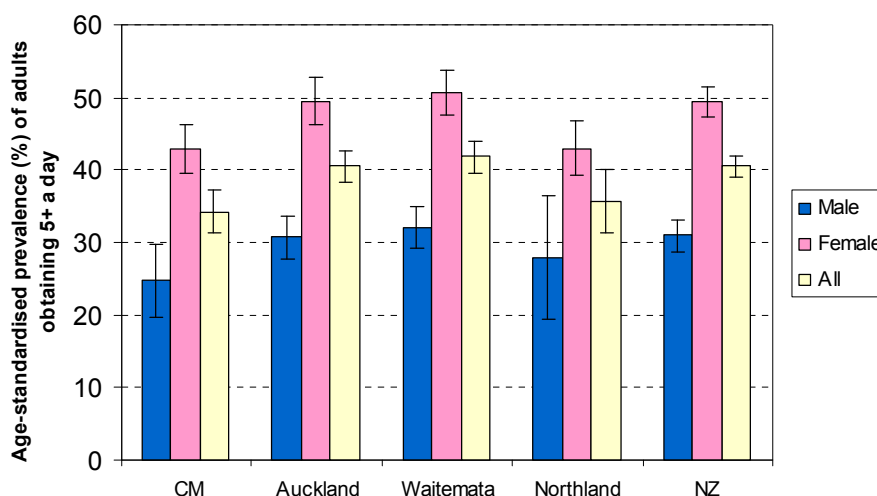
Fruit and vegetable intake adequate to protect health is generally accepted to consist of two or more servings of fruit and three or more servings of vegetables per day i.e. “5+ a day”. Individuals stating they had at least this intake were identified from the 2002/03 NZHS. Table 3.2.5 shows the age-adjusted prevalence of individuals consuming 5+ a day by gender, ethnic group, and DHB.

**Table 3.2.5: Prevalence of adults obtaining 5+ a day by gender, ethnic group, and DHB (NZHS 2002/03).**

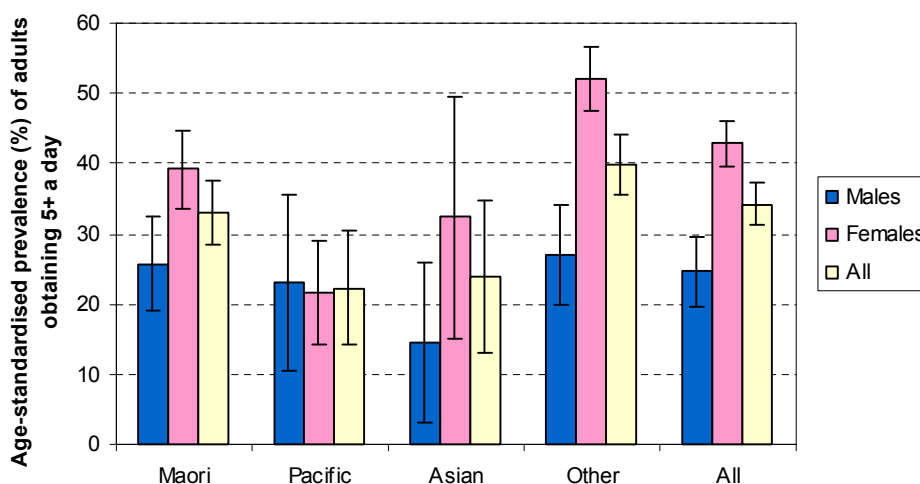
DHB	Adequate fruit & vegetable intake: age-standardised prevalence (% of adult population)														
	Males					Females					Males & females				
	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All	Maori	Pacific	Asian	Other	All
CM	25.7	23.0	14.5	27.0	24.7	39.1	21.6	32.3	52.0	42.9	33.0	22.2	23.9	39.8	34.2
Auckland	18.0	20.4	25.7	34.4	30.7	46.9	39.0	36.0	55.0	49.5	33.7	30.6	31.2	45.0	40.5
Waitemata	19.0	19.1	26.6	34.7	32.0	51.4	41.4	36.6	53.2	50.7	36.0	31.4	32.0	44.2	41.8
Northland	26.5	19.9	9.3	28.8	27.9	39.5	22.9	31.4	44.7	43.0	33.6	21.0	22.7	36.8	35.7
NZ	26.3	29.5	24.2	32.2	31.0	42.1	30.7	36.2	52.4	49.3	34.7	30.1	30.7	42.6	40.5

Adequate fruit and vegetable intake (i.e. 5+ a day) was significantly less prevalent in CM (34.2%) than in Waitemata (41.8%), Auckland (40.5%), or nationally (40.5%) (Figure 3.2.9). Adequate fruit and vegetable intake was also low in Northland (35.7%). A significantly greater proportion of females than males received 5+ a day in all Auckland DHBs, Northland, and nationally (49.3% females, 31.0% males).

**Figure 3.2.9: Adults obtaining 5+ a day, by sex and DHB (NZHS 2002/03).**



**Figure 3.2.10: Age-standardised prevalence of adults obtaining 5+ a day in CMDHB by sex and ethnicity (NZHS 2002/03).**



In CM adequate fruit and vegetable intake was most prevalent amongst the Other group (39.8%), followed by Maori (33%), Asian (23.9%) and Pacific (22.2%) (Figure 3.2.10). Amongst the women in CM Other women had the highest prevalence of 5+ a day (52%), followed by Maori (39.1%), Asian (32.2%), and Pacific women (21.6%). Amongst Pacific

people in CM, there was little difference in the prevalence of 5+ a day between men (23%) and women (21.6%), however, for all other ethnic groups women had a higher prevalence than men. There was no significant variation in prevalence of 5+ a day between men of different ethnic groups in CM, while women showed much greater variation between ethnic groups. The greatest difference in prevalence between men and women in CM occurred in the Other group (52% of women, 27% of men).

#### Summary – Section 3 risk factors

In CM the average adult is likely to be more overweight or obese than the national average and to eat less fruit and vegetables. They are also more likely to smoke tobacco but less likely to smoke marijuana. Despite the obesity and diet indicators, there was no evidence at a population level that CM residents were any more likely on average to have lower exercise levels or higher blood pressure, cholesterol, or hazardous drinking than other New Zealanders. Within the Auckland metropolitan area, CM residents have the poorest scores for every indicator except marijuana use (lower than ADHB and WDHB), hazardous drinking (lower than WDHB), and exercise (higher than both).

Males tended to have poorer health figures than females across most of the indicators examined. They smoked more (tobacco and marijuana), had higher cholesterol levels, were more likely to be overweight and to have a poor diet, and were much more likely to drink alcohol in a hazardous manner. Their only redeeming feature was the number of men getting regular exercise was higher than females – or at least that is what the respondents said!

Within CMDHB there were large differences across social groups in many of the indicators. Maori in CMDHB were far more likely to smoke, either tobacco or marijuana, to have higher blood pressure, to be obese, and to drink alcohol in a hazardous manner. Pacific people in CMDHB were far more likely to be obese, smoked more (tobacco), and had a relatively poor diet. And if one is male and Maori, or male and Pacific, the data combines to look even worse – this is the group needing clear assistance to change the social and environmental factors leading to what appears to be a very destructive lifestyle. At the other end of the health indicator spectrum Asian people living in CMDHB were clearly at lower risk in every indicator except regular exercise.

When examining lifestyle measures one is immediately drawn to individual-based interventions – “they should just pull up their socks, do more exercise and stop smoking”. But causes are multifactorial, and mainly lie “upstream” from those affected. As outlined in the New Zealand Health Strategy there is no such quick fix for the major social and ethnic health disparities that exist. A multi-faceted “whole of society” approach is needed, resting on education, employment and fair income distribution, environmental change, improved access to services and social support systems.