

CHAPTER 7

FOOD HABITS AND BELIEFS

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CHAPTER 7

FOOD HABITS AND FOOD BELIEFS

7.0 INTRODUCTION

In this study, food habits and food beliefs were of interest for the following reasons:

- 1) To identify food habits and food beliefs that may influence food intake.
- 2) To identify changes to food habits and beliefs on migration.

Food habits include food shopping, eating problems (e.g chewing), eating environment (company at meal times), food patterns (cooked meals versus snacks, food distribution), religious practices, eating/cooking practices (adding salt) and food avoidance. Nutritional surveys have shown a low to moderate prevalence of frank nutrient deficiencies but an increased risk of deficiencies in both institutionalised and non-institutionalised elderly groups (Horwath, 1989a). Anorexia or low food intake is a problem in the elderly because it increases the risk of nutrition related illnesses. There are many possible causes of low food intake in the elderly (see Chapter 2, section 2.4.2). Factors, including lack of help with shopping, solitary meals, loss of appetite, sensory impairments (loss of taste and smell) and poor dentition have been reported to play a role (Rolls, 1992).

Factors affecting food choice are found in the '*food perception model of food selection*' (see figure 7.0). It is made up of three arms addressing the questions 'why?', 'who?' and 'where?' (Kronl and Lau, 1978; Kronl 1990). Cavalli-Sforza (1990) after reviewing the literature on cultural transmission and food preference concluded "*food preferences are largely determined by cultural transmission and individual experience*". Food habits are based in culture, and are more likely to be retained amongst the older members of the society. The extent to which grandchildren and great-grandchildren inherit the food beliefs and practices from their forebears will influence their ultimate nutritional status.

Culture is the pattern of knowledge, concepts, values, attitudes, beliefs and traditions that are learned and transmitted between individuals, often from generation to generation. Cultural information, beliefs and attitudes concerning food are communicated early in life and, because they relate to basic biological needs, can remain strong for those who fully participate in a particular culture. Such attitudes are known to persist throughout individual lifetimes and from one generation to the next (Johns and Kuhnelin, 1990).

Ethnicity in particular, can be a predictor of dietary behaviour. Particular cuisines are associated with particular ethnic groups, and group membership means a strong likelihood that certain types of food will be eaten. Religions often place constraints on diet and belonging to a particular religion is a likely predictor of some aspects of dietary habits. Detailed collection of data on the prevalence and context of a range of cultural variables such as beliefs, attitudes or knowledge may assist in the understanding of a particular behaviour (Johns and Kuhnelin, 1990).

Cultures that have a stable history of many generations have food habits and traditions compatible with survival of the group in a particular setting. Traditional food cultures have developed over thousands of years and have been tested, refined and distilled, producing a repertory of foods and processes for preparing them, capable of sustaining life in specific environments. Therefore, rather than trying to change traditional food habits, based upon current scientific evidence, invaluable lessons may be learnt by tapping into the wisdom of cultures by enquiring about their food beliefs and how they influence health decision making.

Figure 7.0

FOOD PERCEPTION MODEL OF FOOD SELECTION

FACTORS INFLUENCING FOOD CHOICE

WHO	WHY	WHERE
HEREDITY	BELIEFS	ECONOMY
SEX	CONVENIENCE	SOCIETY
AGE ACTIVITY	PRICE PRESTIGE FAMILIARITY	CULTURE
	TASTE TOLERANCE	

SATIETY

Source: Krondl and Lau, 1978

The objectives of this chapter include:

- 1) To report descriptive statistics by age group and gender for :
 - a. appetite
 - b. enjoyment of eating
 - c. dentition
 - d. eating problems
 - e. food avoidance
 - f. eating environment
 - g. food purchase and preparation
 - h. food and religion
 - i. food pattern
 - j. food beliefs
- 2) To identify potential food habits and beliefs affecting the health and food intake of elderly Greeks
- 3) To identify changes to food habits and beliefs on migration.

Data on Spata Greeks was compared to:

- a) Euronut-Seneca study (de Groot et al., 1991) - rural Greeks aged 75 from Markopoulo, near Spata, (M 33, F 27) and Anogia/Archanes, Crete (M 31, F 45).

Data on elderly Greek Australians was not available for comparison.

Data was therefore compared to:

- a) Wahlqvist et al (IUNS, in press) - Anglo-Celtic elderly Australians aged 70-79 in Melbourne (M 50, F 49).

7.1 FOOD HABITS

7.1.1 APPETITE

Whether a true 'anorexia of ageing' exists, independently of disease, medications, poverty, and psychosocial conditions that tend to suppress appetite, is not clear. However, the most common causes of anorexia found in elderly individuals (mostly

institutionalized) are induced by disease states or they are psychosocial or poverty related. Disease states associated with reduced food intake include cancer, chronic obstructive pulmonary disease, abdominal angina, swallowing difficulties, chronic constipation, impaired mobility, dementia, depression and medications (digoxin, psychotropic and analgesic/antiinflammatory drugs) (Glick, 1992).

Results: A greater proportion of men aged 70-79 (60%) reported very good appetite compared with the women (30%). Appetite appeared to decrease with age in Spata men -only 20% of the 80+ men reported good appetite. Melbourne elderly aged 80+ (especially the women) appeared to have a better appetite (42%) than Spata elderly (20%) (table 7.1.1).

Table 7.1.1

Question APP54
How would you describe your appetite?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	22
Poor to fair	18.8	15.8	10.6	10.7
Good	18.7	63.2	30.3	46.4
Very good	62.5	21.0	59.1	42.9
WOMEN				
N	31	22	59	36
Poor to fair	25.8	31.8	27.1	30.6
Good	41.9	54.6	40.7	25.0
Very good	32.3	13.6	32.2	44.4

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata 70-79; Melbourne 70-79.

Age group differences: Spata men; Melbourne nil.

Centre differences: women 80+.

Comparisons with reported data: In the Anglo-Celtic Australian study in Melbourne, a significantly smaller proportion of men (23%) and women (24%) aged 70-79 reported very good appetite compared with Melbourne Greeks (M 59%, F 32%).

7.1.2 EATING ENJOYMENT

The most commonly reported reason by elderly people for reduced eating enjoyment is 'food does not taste and smell as good as it used to' (Rolls, 1992). The extent of sensual pleasure that is derived from food influences food intake (Schiffman and Covey, 1984). It

has been suggested that diminished taste acuity and other sensory changes are not the results of ageing itself, but instead reflect disease, the use of medications, poor nutrition or lack of preventive dental care, and that poor health is also an important factor in determining olfactory sensitivity (Horwarth, 1989a; Schiffman and Covey, 1984).

Elderly subjects appear to have decreased acuity of taste, especially for salty and bitter tastes, but not for sweet or sour. In association with a significant atrophy of the taste buds, is a reduction in the ability to detect odors and to identify the foods eaten (Schiffman and Covey, 1984). The reductions in taste sensitivity with ageing, however, appear to be small - the sense of smell appears to decline more with ageing than the sense of taste. Elderly have lessened ability to differentiate between food odours (Glick, 1990; Murphy, 1992).

Results: In Spata and Melbourne, 72% of the elderly aged 70-79 reported enjoying their food as much as they used to. In contrast a greater proportion of Melbourne elderly aged 80+ (64%) reported enjoying food compared to Spata (46%). Gender differences were not seen within centres. Age group differences were significant only in Spata men - a smaller proportion of men aged 80+ enjoyed their food as much as they used to. Centre differences were not significant. The main reasons given for not enjoying food as much, included the following: a smaller appetite (30%), loss of interest in food (5%), loss of taste (5%) and loss of smell (2%). In Melbourne, other reasons given included lack of company at mealtimes (3%), problems with digestion (9%) (table 7.1.2a,b).

Table 7.1.2a

Question APP53
Do you enjoy your food as much as you used to?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Yes	78.1	47.4	78.8	71.4
No	21.9	52.6	21.2	28.6
WOMEN				
N	31	22	59	36
Yes	64.5	45.5	64.4	55.6
No	35.5	54.5	35.6	44.4

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil; Age group differences: Spata men; Melbourne nil. Centre differences: nil.

Comparisons with reported data: In elderly Australians in Adelaide, the overall frequency of reporting that food no longer tasted or smelt as good was considerably lower than that in other studies (but similar to the Greek study): 5% and 2%, respectively (Horwath, 1987). Nevertheless, both perceived loss of taste and smell appeared to be important reasons for diminished enjoyment in eating, particularly for men. In the Anglo-Celtic study in Melbourne (Wahlqvist et al., 1993) only 2% of men and 5% of women reported having diminished enjoyment in eating due to taste changes. None of the subjects reported olfactory changes.

Table 7.1.2b

Question APP53NO
If you no longer enjoy your food, why is this?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	22
Food does not interest me	6.2	0.0	1.5	7.1
No company at mealtimes	0.0	0.0	1.5	3.5
Lost interest in cooking	0.0	0.0	1.5	0.0
Appetite is smaller	21.8	42.1	15.1	21.4
Food doesn't taste as good	3.1	10.5	4.5	3.5
Food doesn't smell as good	3.1	0.0	1.5	0.0
Problems with digestion	3.1	5.2	3.0	7.1
WOMEN				
N	31	22	59	36
Food does not interest me	9.6	0.0	3.3	11.1
No company at mealtimes	0.0	0.0	3.3	2.7
Lost interest in cooking	0.0	0.0	5.0	2.7
Appetite is smaller	29.0	45.4	27.1	41.6
Food doesn't taste as good	3.2	4.5	5.0	8.3
Food doesn't smell as good	3.2	0.0	3.3	2.7
Problems with digestion	0.0	0.0	13.5	13.8

7.1.3 DENTITION

The loss of teeth and their replacement with marginally functional dentures and subsequent loss of mechanical chewing efficiency has been associated with a preference for a softer-consistency diet, high in sugar, low in fibre and nutrients. For example, dislodgement of a denture or pain in the mucosa beneath the dentures can develop during mastication when complete dentures do not fit properly. Wearers of such dentures often eat only soft foods with limited or decreased food variety. However, food selection is not necessarily altered in those wearing dentures that fit properly, so the influence on

dietary intake is unclear (Horwath, 1989a). One would expect that wearing dentures, as opposed to chewing with only gums or a few teeth, would improve food intake.

Results: In both centres, 60% of the men and women aged 70-79 reported wearing dentures (40% still had their own teeth) (see Table 7.1.3). In the 80+ group, about 50% of the Spata elderly wore dentures compared with 80% of the Melbourne elderly. Less than 10% of this group chewed with their gums (except Spata women 27%) and about 20% still had most of their teeth. Gender differences were significant in Spata elderly aged 80+ - a greater proportion of men reported to wear dentures (63%) compared with the women (36%). Age group differences were not seen within centres. Centre differences were significant in the women only aged 80+ - a greater proportion of Melbourne women reported wearing dentures (80%) compared with Spata women (36%). The greater use of false teeth by Melbourne elderly is not necessarily a reflection of dental status i.e that dental status in Melbourne elderly is worse than Spata elderly. Spata women may chose not to wear dentures and chew with their gums (27%). Additionally, the provision of dental care in Melbourne may be better than Spata.

Comparisons with reported data: In the Euronut study, similar proportions of Greek subjects aged 75 reported wearing dentures (M 66%, F 68%) compared to Spata elderly aged 70-79 (M 53%, F 52%). However, significantly more Spata elderly reported having most of their teeth (M 44%, F 36%) compared to Euronut Greeks (M 16%, F 10%), but a similar proportion reported chewing with gums (4%). In the Anglo-Celtic study, similar proportions of elderly aged 70-79 reported wearing dentures (63%) compared to Melbourne Greeks (65%).

Table 7.1.3

Question APPTth Dental status

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
False teeth	53.1	63.2	69.8	85.7
Own teeth	43.8	31.5	28.7	14.3
Few teeth	0.0	0.0	0.0	0.0
Gums	3.1	5.3	1.5	0.0
WOMEN				
N	31	22	59	36
False teeth	52.5	36.4	61.2	81.1
Own teeth	36.3	18.2	28.8	8.1
Few teeth	6.2	18.1	5.0	2.6
Gums	5.0	27.3	5.0	8.2

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata 80+; Melbourne nil. Age group differences: nil.

Centre differences: women 80+.

7.1.4 EATING PROBLEMS

a) Chewing difficulty

Some results suggest that self-perceived chewing problems may be a more reliable indicator of altered intake than a dental specialist's assessment of dental status (Gordon et al., 1985). Many elderly persons wear partial or complete dentures. However, their masticatory efficiency is much less than that of complete natural dentition but probably better than chewing with gums or a few teeth.

Results: Poorly fitting dentures were reported by only 12% of men in both Spata and Melbourne. In contrast, <3% of Spata women and 15% of Melbourne women reported poorly fitting dentures. Gender, age group and centre differences were not significant. Chewing difficulties were reported by about 30% of the men in both age groups, probably accounted for by poorly fitting dentures. A significantly greater proportion of women aged 80+ (45%) reported difficulty chewing than the younger women (20%) (see table 7.1.4).

Gender differences were significant for the Melbourne subjects aged 80+ - a greater proportion of women had difficulty chewing than the men. Centre differences were seen in women only aged 80+ - Melbourne women had more difficulty chewing than Spata women. However, since Spata women in this age group did not report having poorly fitting dentures, we may assume that their chewing problems may have been due to lack of teeth.

Comparisons with reported data: In the Euronut study, similar proportions of Greek men aged 75 reported having chewing difficulties (M 36%) compared with Spata men aged 70-79 (28%). In contrast a greater percentage of women reported difficulty (44%) compared with Spata women (19%). In the Anglo-Celtic study in Melbourne, a significantly smaller proportion of subjects aged 70-79 reported chewing difficulties (M 7%, F 5%) compared with Melbourne Greeks (M 21%, F 20%). However, similar proportions to Melbourne Greeks (M 19%, F 12%) reported poorly fitting dentures (M 17%, F 10%).

b) Swallowing difficulty

Dysphagia, or difficulty swallowing is common in nursing homes (30-40% of residents reported dysphagia in the US); its prevalence in non-institutionalised elderly is unknown (Dwyer et al., 1991).

Results: Difficulty swallowing was reported by less than 5% of the elderly, mainly in the 80+ age group. Gender, age group and centre differences were not significant. Sore and dry mouth were rarely reported as problems (<5%). In contrast, heart burn was reported by 10% of the men and 13% of the women (see table 7.1.4).

Comparisons with reported data: In the Anglo-Celtic study in Melbourne, only 5% of the women aged 70-79 reported to have difficulty swallowing (not the men). Sore/dry mouth were reported by 20% of the women compared with 5% of the men. A significantly greater proportion reported heartburn (M 43%, F 37%) compared with Melbourne Greeks (M 8%, F 22%).

Table 7.1.4

Question APP55
Do you have problems with any of the following?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
Poorly fit dentures	9.4	10.5	19.1	10.7
Foods too acid	0.0	0.0	0.0	3.6
Difficulty in chewing	28.1	36.8	21.2	28.6 ^d
Difficulty in swallowing	6.2	0.0	0.0	3.6
Heartburn	6.2	10.5	7.6	17.9
Sore mouth	0.0	0.0	0.0	3.6
Dry mouth	0.0	0.0	0.0	0.0
WOMEN				
Poorly fit dentures	3.2	0.0	11.9	16.7
Foods too acid	0.0	0.0	8.5	11.1
Difficulty in chewing	19.3	36.3 ^l	20.3	52.8 ^{dl}
Difficulty in swallowing	0.0	4.5	0.0	2.8
Heartburn	12.9	0.0	22.0	16.7
Sore mouth	0.0	0.0	3.4	8.3
Dry mouth	0.0	0.0	0.0	2.8

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Same pair of letters show significant differences, Chi-Square $p < 0.05$:

a,b,c or d within centres - between gender for a given age group

e,f,g or h within centres - between age groups for a given gender

i,j,k or l between centres - for a given age group and gender

7.1.5 FOOD AVOIDANCE

Certain foods may be avoided by individuals for a number of reasons:

- 1) advice from health professionals in relation to a health condition or public health recommendations via advertising (television, magazines)
- 2) food beliefs based upon tradition or religion of the culture or modern day food fads.
- 3) dislike
- 4) inability to chew

Whatever the reasons, food avoidance can have a profound effect on food intake and consequently nutritional status.

Results: A greater proportion of women in both centres reported avoiding foods (80%; except Spata women 80+) compared with the men (55%). A greater proportion of Spata women aged 70-79 reported avoiding foods than the older women. Centre differences were seen in women only aged 80+ - a greater proportion of Melbourne women (86%) reported avoiding certain foods compared with Spata women (45%) (see tables 7.1.5a,b).

The most common food reported to be avoided was *meat* in both Spata (25%) and Melbourne (45%) (see Table 7.1.5a). Gender and age group differences were not seen within centres. Centre differences were significant for women 80+ and men 70-79 - a greater proportion of Melbourne elderly reported avoiding meat compared with Spata elderly. Other foods reported to be avoided by the men included the following (see Table 7.1.5b): fruit 10%, egg 9% and bread 4%. Melbourne men also reported avoiding uncooked vegetables (8%) and cheese (10%). Other foods reported to be avoided by the women included the following: fruit 20%, egg 20%, cheese 15% and bread 8%. Melbourne women also reported avoiding uncooked vegetables (26%).

Comparisons with reported data: In the Euronut study, a similar proportion of Greek subjects in Markopoulo aged 75 reported avoiding meat (20%) and dairy products (8%) compared with Spata elderly (25% and 8% respectively).

Table 7.1.5a

Question APP56
Are there any foods that you try to avoid or
that you can't eat?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Yes	53.1	42.1	66.7	60.7
No	46.9	57.9	33.3	39.3
WOMEN				
N	31	22	59	36
Yes	80.6	45.5	74.6	86.2
No	19.4	54.5	25.4	13.8

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata 70-79; Melbourne 80+.

Age group differences: Spata women; Melbourne nil.

Centre differences: women 80+.

Table 7.1.5b

Question APP56
Which foods do you avoid?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Meat	21.8	21.0	40.9	39.3
Fruit	9.4	5.3	13.6	10.7
Uncooked vegetables	0.0	0.0	9.1	7.2
Egg	3.1	10.5	19.7	3.6
Bread	3.1	5.3	6.0	0.0
Cheese	0.0	0.0	15.2	3.6
WOMEN				
N	31	22	59	36
Meat	32.2	26.3	44.07	50.0
Fruit	6.4	27.3	23.7	27.7
Uncooked vegetables	0.0	0.0	11.9	38.8
Egg	29.0	4.5	18.6	22.2
Bread	6.4	4.5	11.9	11.1
Cheese	16.2	9.1	16.9	19.4

7.1.6 EATING ENVIRONMENT

To quote Barer-Stein (1979) *'The Greek doesn't like being alone and doesn't think that anyone or even anything should ever be alone. A drink must always be accompanied with food and food must always be enjoyed with friends'*. It is considered an honour to have guests - even strangers - to share their home and food. Greek women seriously value their reputation as hostesses and the very finest will be provided for the guest even if it may sometimes mean that the family must do without.

7.1.6.1 Eating alone

Companionship at meal times has been reported to influence the quantity and variety of foods eaten by elderly people (McIntosh et al., 1989).

Results: About 80-90% of the elderly in both Spata and Melbourne reported having company at mealtimes on a daily basis. A large proportion of women aged 80+ reported eating alone in Spata (41%) and Melbourne (25%) compared to the men (10%). This gender difference is most likely to reflect the preponderant survival of widows (see table 7.1.6.1a).

Gender differences were not seen within centres. Age group differences were seen in the women and men - a greater proportion of elderly aged 80+ reported eating alone than the younger elderly. Centre differences were not seen. Of those elderly aged 80+ reporting eating alone, two thirds had been doing so for 5 years or more (see Table 7.1.6.1b).

Comparisons with reported data: In the Anglo-Celtic study in Melbourne, a smaller proportion of subjects aged 70-79 reported eating with others every day (M 70%, F 62%) compared to Melbourne Greeks (M 88%, F 83%).

7.1.6.1a

Question DH58
How often do you eat with others?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Eat alone	9.4	15.8	3.0	14.3
2 - 3 week	0.0	5.2	9.1	0.0
Daily	90.6	79.0	87.9	85.7
WOMEN				
N	32	22	59	36
Eat alone	12.9	40.9	10.2	25.0
2 - 3 week	0.0	0.0	6.8	11.1
Daily	87.1	59.1	83.0	63.9

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil;

Age group differences: Spata men and women;

Melbourne men and women. Centre differences: nil.

Table 7.1.6.1b

Question DH58ALON
If you eat alone, how many years have you been eating alone?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
I do not eat alone	90.6	79.0	87.9	85.7
1-5 years	3.2	5.2	6.0	3.6
5-10 years	6.2	10.5	6.1	0.0
>10 years	0.0	5.3	0.0	10.7
WOMEN				
N	32	22	59	36
I do not eat alone	87.1	59.0	83.0	63.9
1-5 years	0.0	13.8	7.5	12.6
5-10 years	3.3	18.2	2.7	18.7
>10 years	9.6	9.0	5.8	4.8

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil.

Age group differences: Spata women; Melbourne women.

Centre differences: nil.

7.1.6.2 Eating away from home

The change in environment when eating away from home may provide stimulation to eat more or to consume a greater variety of foods.

Results: Spata elderly rarely (<10%) ate away from home (except men aged 70-79 22%), and if they did, they would go to a tavern or restaurant. Significantly more men aged 70-79 ate out compared with the men 80+ and the women 70-79. None of the subjects reported eating at other homes (see Tables 7.1.6.2a, b, c). In contrast, 70% of Melbourne elderly reported eating away from home once a month or more, of which one third would eat out on a weekly basis. The most common place for eating out was at a relative's home (60%). The type of meals eaten were mainly full course cooked meals. The elderly in Spata and Melbourne never consumed 'fast/convenience food' such as hamburgers, chips, hot dogs or frozen dinners. In Melbourne, pizzas were cooked at home.

Table 7.1.6.2a

Question DH60
How often do you eat away from home?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
>3 times/week	0.0	0.0	3.0	3.6
1 - 2 times/week	9.4	5.3	27.3	10.7
1-2 times/month	0.0	0.0	31.8	32.1
< 1 time/month	12.5	0.0	15.2	17.9
Never	78.1	94.7	22.7	35.7
WOMEN				
N	31	22	59	36
> 3 times/week	0.0	0.0	1.7	0.0
1 - 2 times/week	0.0	0.0	20.3	27.8
1 - 2 times/month	0.0	0.0	35.6	22.2
< 1 time/month	3.2	0.0	17.0	16.7
Never	96.8	100.0	25.4	33.3

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata 70-79; Melbourne nil.

Age group differences: Spata men; Melbourne nil.

Centre differences: men 70-79 and 80+; women 70-79 and 80+.

Comparisons with reported data: In the Euronut study, a similar proportion of Greek elderly aged 75 (80%) reported eating all meals at home compared to Spata elderly aged 70-79 (87%). In contrast to Spata elderly, 25% of the Greek subjects in the Euronut study reported eating at the homes of their children, but convenience foods were never consumed. In the Anglo-Celtic study in Melbourne, a similar proportion of subjects aged 70-79 reported eating away from home (87%) compared to Melbourne Greeks aged 70-79 (76%). However, a greater proportion ate at restaurants (50%) compared with Greeks (5%); similar proportions of Anglo-Celtics ate at relative's homes (M 70%, F 62%) compared to Melbourne Greeks (M 62%, F 75%).

Table 7.1.6.2b

Question DH60Place
In what type of place do you mostly eat?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
I do not eat out	78.1	94.7	22.7	35.7
Restaurant	21.9	5.3	7.7	7.2
Friend's/relative's home	0.0	0.0	61.8	46.4
Pub/other	0.0	0.0	7.8	10.7
WOMEN				
N	31	22	59	36
I do not eat out	96.8	100.0	25.4	33.3
Restaurant	3.2	0.0	0.0	2.8
Friends's/relative's home	0.0	0.0	74.6	60.3
Pub/others	0.0	0.0	1.7	3.6

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata 70-79; Melbourne nil.

Age group differences: Spata men; Melbourne men.

Centre differences: men 70-79 & 80+; women 70-79 and 80+.

Table 7.1.6.2c

Question DH60PFood
When you go out, what kind of food do you usually eat?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
I do not eat out	78.1	94.7	22.7	35.7
Snack	16.7	0.0	2.7	3.4
Cooked meal	0.0	5.3	74.6	57.3
Tripe/others	5.2	0.0	0.0	3.6
WOMEN				
N	31	22	59	36
I do not eat out	96.8	100.0	25.4	33.3
Snack	3.2	0.0	3.4	2.8
Cooked meal	0.0	0.0	69.5	58.3
Tripe/others	0.0	0.0	1.7	2.8

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil

Age group differences: nil

Centre differences: men 70-79 and 80+; women 70-79 and 80+.

7.1.7 FOOD PURCHASE AND PREPARATION

7.1.7.1 Home grown vegetables

Results: Even though Spata is a rural town, a significantly greater proportion of Spata elderly reported obtaining most of their vegetables from a supermarket (M 85%, F 65%) compared with Melbourne elderly (M 50%, F 55%). This is possibly related to the fact that in Spata, mainly grapes and olives are grown on farm land; in Melbourne a large variety of vegetables are grown in back yards (see table 7.1.7.1a,b).

The majority of elderly in both Spata (M 85%, F 67%) and Melbourne (M 75%, F 75%) reported having access to home grown produce. In Spata this was mainly olives, grapes, figs, almonds and olive oil. In contrast, 75% of Melbourne elderly grew a wide variety of vegetables in their back yards, mainly tomatoes, silverbeet, endives/chicory, lettuce, zucchini, cucumber, parsley, chilly peppers/capsicum, broad beans and less commonly grapes and fruit trees (olives were not grown).

Table 7.1.7.1a

Question DH61d
What proportion of the vegetables/fruit you eat comes from a shop e.g supermarket?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
All/most	9.3	10.5	18.2	28.6
Some	84.4	84.2	51.5	50.0
None	6.3	5.3	30.3	21.4
WOMEN				
N	31	22	59	36
All/most	38.7	31.8	22.0	25.0
Some	58.1	68.2	50.9	61.1
None	3.2	0.0	27.1	13.9

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata 70-79 and 80+; Melbourne nil.

Age group differences: Nil.

Centre differences: men 70-79 and 80+; women 70-79.

For example, almost 40% of Melbourne elderly reported relying solely on their backyard for most of their vegetable intake compared with only 4% of Spata elderly. Gender and age group differences were not significant in Melbourne with respect to home grown vegetables. In Spata, a greater proportion of men aged 70-79 reported relying on their farm land for vegetables or other produce compared with the women. This could be related to the observation that a greater proportion of men aged 70-79 were still working on their farm lands which would facilitate access to such produce.

Comparisons with reported data: In the Euronut study, about 80% of the Greek subjects aged 75 reported eating home-grown produce, of which 50% were vegetables and 50% fruits. Similarly in Spata, 75% of the elderly consumed home grown products, mainly fruit and olives. In the study of Anglo-Celtic Australians in Melbourne aged 70-79, the majority of the subjects (M 72%, F 62%) reported growing vegetables in their back yards. However, information on the variety of vegetables grown and the extent to which they relied on their vegetable gardens for their intake was not available.

Table 7.1.7.1b

Question DH61a
What proportion of the vegetables/fruit you eat
comes from your garden or land?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
All/most	6.3	0.0	54.5	32.1
Some	84.4	78.9	27.3	35.7
None	9.3	21.1	18.2	32.2
WOMEN				
N	31	22	59	36
All/most	3.2	4.6	39.0	33.4
Some	61.3	63.6	37.3	38.8
None	35.5	31.8	23.7	27.8

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata 70-79; Melbourne nil.

Age group differences: nil.

Centre differences: Spata 70-79 and 80+; Melbourne 70-79 and 80+.

7.1.7.2 Shopping

Traditionally in the Greek culture, the men would go to the local market to purchase the fresh produce such as fish, vegetables and meat and the women were responsible for the groceries and non-perishable foods (anecdotal evidence from elderly subjects). This behaviour was still evident amongst the Melbourne Greeks but not amongst the Spata Greeks.

a) Shopping by elderly

Results: Overall, about 50% of the elderly reported doing their own shopping for food, except Melbourne men aged 70-79 (90%). In Spata, 47% of the elderly reported doing shopping for food. Gender and age group differences were not significant. In Melbourne, gender differences were significant for both age groups - a greater proportion of men (75%) went shopping than the women (50%). Age group differences were also seen - a greater proportion of men and women aged 80+ (55%) did not go shopping for food compared with the younger subjects (22%) (see Tables 7.1.7.2a, b). Centre differences were significant for the men aged 70-79 - a greater proportion of Melbourne men (90%) went shopping for food than Spata men (62%). Of those subjects that did not go shopping, the main reasons given included: I am too weak to go 57% (especially the 80+ women) or someone else goes for me 43%.

Table 7.1.7.2a

Question DH62
Do you do any shopping for food?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Yes	62.5	47.4	89.4	57.1
No	37.5	52.6	10.6	42.9
WOMEN				
N	31	22	59	36
Yes	48.4	31.8	66.1	33.3
No	51.6	68.2	33.9	66.7

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata nil; Melbourne 70-79 and 80+.

Age group differences: Spata nil; Melbourne men and women.

Centre differences: men 70-79.

b) Shopping by others

Results: The living arrangements of the elderly appeared to determine the food shopping behaviour. For example, elderly who lived with their children (mainly women) were less likely to report shopping for food, and for couples, the husband was more likely to be reported as doing the shopping (especially in Melbourne). Furthermore, the 80+ elderly (M 17%, F 54%) tended to report their children doing the shopping regardless of living arrangements. Only 15% of the study subjects lived alone. The majority of the men (85%) were still living with their spouse compared to only 60% of the women aged 70-79 and 20% aged 80+. Furthermore, 85% of the Spata elderly also lived with their children compared to only 40% of Melbourne men and 60% of the women (see also Chapter 6).

In Spata, about 45% of the men never went shopping - they reported their spouse (75%) or their child (25%) going for them. A greater proportion of the 80+ men (30%) reported their children shopping for them compared with the younger men (16%). About 60% of the Spata women never went shopping, however the majority of the 80+ women (80%) reported their children going for them compared to the younger women (60%) who relied more on their spouses (30%). In Melbourne, only 11% of the 70-79 men never went shopping. In contrast, 43% of the 80+ men never went shopping - they reported their spouse (33%), child (42%) or paid help (26%) going for them. A greater proportion of Melbourne women aged 80+ did not go shopping (67%) compared with the 70-79 women (34%). Similarly to the Spata women, the majority of the 80+ women (80%) reported their

children going shopping for them compared to the younger women (44%) who relied more on their spouses (42%) (see table 7.1.7.2b).

Table 7.1.7.2b

**Question DH62Who
If you do not go shopping, who goes for you?**

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Myself	62.5	47.4	89.4	57.1
Spouse	31.3	36.8	8.7	14.3
Children	6.2	15.8	0.0	17.9
Grandchildren/friends	0.0	0.0	0.0	0.0
Paid help	0.0	0.0	1.5	10.7
WOMEN				
N	31	22	59	36
Myself	48.4	31.8	66.1	33.3
Spouse	16.2	4.5	14.3	4.6
Children	32.2	54.6	15.2	53.7
Grandchildren/friends	3.2	4.5	2.7	2.8
Paid help	0.0	4.6	1.7	5.6

Comparisons with reported data: In the Euronut study, similar proportions of elderly Greeks aged 75 in Crete reported going shopping (M 69%, F 59%) compared with Spata elderly aged 70-79 (M 62%, F 48%). However, a greater proportion of elderly Greeks studied in Markopoulo (M 79%, F 74%) reported going shopping. In the Anglo-Celtic Australian study in Melbourne a significantly greater proportion of women aged 70-79 reported doing their own shopping (97%) compared with Greek women in Melbourne (66%). This could be related to the fact that a greater proportion of Anglo-Celtic women reported living alone (36%) compared with Melbourne women (12%). A similar proportion of men (81%) reported going shopping compared with Melbourne Greek men (90%).

7.1.7.3 Cooking

Results: Traditionally in the Greek culture, women do the cooking. However, the elderly Greek men in the study were far from ignorant when it came to cooking. They appeared to have a good appreciation of the important ingredients that should be included in dishes to improve their flavour. Furthermore, they appeared quite confident that they could cook if the need arose (85% of the Melbourne men, 60% Spata men).

In Spata, gender differences reached significance - a greater proportion of women prepared the meals compared with the men in both age groups. The majority of the Spata men reported that their wife cooked for them (75%) or their child/relative (20%) - only 5% did the cooking themselves. In contrast to the men, a greater proportion of the Spata women (50%) reported that their children prepared the meals and 50% prepared their own meals. Age group differences were seen in the women only - significantly more women aged 80+ relied on their children to do the cooking (65%) compared to the younger women (35%) (see table 7.1.7.3).

Table 7.1.7.3

Question DH57
Who usually prepares most of your meals?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Myself	6.2	5.3	13.7	17.8
Spouse	81.3	68.4	81.8	57.1
Relative/friend/neighbour	12.5	26.3	3.0	17.9
Welfare or voluntary help	0.0	0.0	0.0	3.6
Privately employed help	0.0	0.0	0.0	0.0
I receive meals on wheels	0.0	0.0	1.5	3.6
WOMEN				
N	31	22	59	36
Myself	64.5	36.4	81.3	38.9
Spouse	0.0	0.0	5.1	2.8
Relative/friend/neighbour	35.5	63.6	13.6	58.3
Welfare or voluntary help	0.0	0.0	0.0	0.0
Privately employed help	0.0	0.0	0.0	0.0
I receive meals on wheels	0.0	0.0	0.0	0.0

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata 70-79 and 80+; Melbourne 70-79 and 80+.

Age group differences: Spata women; Melbourne men and women.

Centre differences: women 70-79.

In Melbourne, gender differences also reached significance - a greater proportion of women prepared the meals compared to the men in both age groups. About 70% of the men reported their spouses preparing the meals, 16% did the cooking themselves, 10% relied on their children, and 4% on welfare or meals on wheels. A significantly greater proportion of men aged 80+ relied on their children for meals (18%) compared to the men 70-79 (3%). The majority of the 70-79 women still prepared the meals (80%). In contrast, a significantly greater proportion of women aged 80+ relied on their children to cook for them (58%).

Centre differences were significant for the women only aged 70-79 - a greater proportion of Melbourne women (81%) were still preparing meals compared with the Spata women (64%). This was probably related to the fact that 87% of the Spata women lived with their children compared with only 46% of Melbourne women.

Comparisons with reported data: In the Anglo-Celtic study in Melbourne, similar proportions of men (26%) and women (95%) aged 70-79 reported preparing their own meals compared with Melbourne Greeks (M 14%, F 81%) aged 70-79.

7.1.7.4 Household appliances

Results: All the study subjects reported having access to a stove, oven, fridge, TV, radio, phone, toilet and hot water in the home they were living in. In Melbourne, 12% of study subjects also reported to have a microwave and 53% a deep freeze.

Comparisons with reported data: In the Euronut study, 100% of the Greek elderly aged 75 reported having a kitchen, fridge and cold water and 85% reported having hot water.

7.1.7.5 Food practices

a) Animal fats

Results: The majority of the men in both Spata and Melbourne (78%) reported avoiding the fat on the meat or the skin on the chicken; only 10% usually consumed it. Similarly for the women, 88% never consumed the fat on the meat or chicken; only 6% reported eating the fat/skin on most occasions. Gender, age group and centre differences were not significant (see table 7.1.7.5a).

Comparisons with reported data: In the Euronut study, a similar proportion of Greek elderly in Markopoulo reported avoiding fatty meat (78%) compared to Spata elderly (80%). In the study of Anglo-Celtic Australians in Melbourne, about 75% of the elderly (M 77%, F 71%) reported eating lean cuts of meat. A greater proportion of women (29%) reported eating the skin on chicken compared with Melbourne Greek women (12%). Similar proportions of men (33%) reported eating the skin compared to Greek men (27%).

Table 7.1.7.5a

Question DH68
Do you eat the fat on meat?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Usually	12.5	5.2	15.1	10.7
Occasionally	18.7	15.8	4.6	10.7
Rarely	68.8	79.0	80.3	78.6
WOMEN				
N	31	22	59	36
Usually	3.2	9.1	3.4	5.6
Occasionally	6.5	9.1	3.4	8.3
Rarely	90.3	81.8	93.2	86.1

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil. Age group differences: nil. Centre differences: nil.

Table 7.1.7.5b

Question DH69
Do you eat the skin on chicken?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Usually	12.5	5.3	21.2	17.9
Occasionally	15.6	5.3	6.1	7.1
Rarely	71.9	89.4	72.7	75.0
WOMEN				
N	31	22	59	36
Usually	3.2	9.1	5.1	19.4
Occasionally	6.5	4.5	6.8	5.6
Rarely	90.3	86.4	88.1	75.0

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil. Age group differences: nil. Centre differences: nil.

b) Salt in cooking

Results: About 55% of the elderly in Spata reported adding salt to food whilst cooking compared with 73% of the Melbourne elderly. Gender and age group differences were not seen within centres. Centre differences reached significance for the men and women aged 70-79 - a greater proportion of Melbourne elderly reported adding salt to food whilst cooking (see table 7.1.7.5c).

Comparisons with reported data: In the study of Anglo-Celtic Australians in Melbourne, similar proportions of subjects aged 70-79 reported adding salt to cooking (M 77%, F 67%) compared to Melbourne Greeks (M 77%, F 73%).

c) Salt at the table

Results: Overall, there was a tendency for Melbourne elderly to avoid adding salt at the table (M 43%, F 54%) since salt was usually added to cooking. In contrast, a smaller proportion of Spata elderly avoided salt at the table (M 27%, F 40%) since salt was not normally added to cooking (see also Chapter 10) (see table 7.1.7.5d). Centre differences were significant for the men only aged 70-79 - a greater proportion of Melbourne men reported avoiding salt at the table (44%) compared with Spata men (22%).

Table 7.1.7.5c

Question DH70
Do you add salt or stock cubes to food whilst cooking?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
No	9.4	5.3	3.0	0.0
Sometimes	50.0	26.3	19.7	32.1
Most of times	40.6	68.4	77.3	67.9
WOMEN				
N	31	22	59	36
No	3.2	13.6	6.8	8.3
Sometimes	48.4	22.7	20.4	19.4
Most of times	48.4	63.7	72.8	72.3

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil.

Age group differences: nil.

Centre differences: men 70-79; women 70-79.

Table 7.1.7.5d

Question DH71
Do you add salt to your food at the table?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
No	21.9	31.6	43.9	42.9
Sometimes	50.0	21.0	18.2	21.4
Most of times	28.1	47.4	37.9	35.7
WOMEN				
N	31	22	59	36
No	45.2	36.4	52.5	55.6
Sometimes	35.5	31.8	22.1	22.2
Most of times	19.3	31.8	25.4	22.2

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil. Age group differences: nil. Centre differences: men 70-79.

Comparisons with reported data: In the study of Anglo-Celtic Australians in Melbourne, similar proportions of subjects aged 70-79 reported adding salt to food at the table (M 67%, F 45%) compared to Melbourne Greeks (M 56%, F 48%) aged 70-79. In the Euronut study, subjects were generally asked if they avoided salt. About 55% of the Greek subjects reported avoiding salt. However, the distinction between salt added to cooking and/or to food was not reported.

7.1.7.6 Cooking methods

Results: The preferred cooking methods for vegetables in both Spata and Melbourne included the following: boiled (100%), salad (96%, especially by younger elderly), roasted/baked (95%), casseroled (90%, especially by 80+) and fried (55%, especially in Spata). In Melbourne, steamed vegetables were also eaten by 20% of the elderly and microwaved by only 2%. The preferred cooking methods for meat/chicken/fish in both Spata and Melbourne included the following: boiled (98%), baked (94%), casseroled (93%, especially by 80+), grilled (72%, not popular with 80+) and fried (60%, not popular with 80+). However, in Melbourne, meat tended to be either barbecued (36%) or grilled whereas in Spata, casseroles were more popular. Steamed and microwaved meat was rarely consumed (4%).

Comparisons with reported data: In the Levkadian Migrant Health Study (Powles et al., 1988b), siblings (and their families) who had migrated from the Greek island of Levkada

to Melbourne reported a marked preference for grilling as a cooking method for meat compared to their counterparts who stayed on the island. In the Anglo-Celtic Australian study in Melbourne, the most frequently reported cooking methods for meat included roasting (70%), grilling (62%), casseroles (56%), barbecuing (25%), frying (10%), boiling (10%). Cooking methods for vegetables included steaming (60%), boiling (70%), microwaving (30%), roasting (50%) and casseroles (20%).

7.1.8 FOOD AND RELIGION

Adherence to religious customs can have a profound effect on food and nutrient intake. To the casual observer, it seems that Greeks are either enjoying a feast day due to a special occasion, or submitting to yet another religious fast day. The Greek calendar is studded with both. Foods for fast days coincide with the foods that are staples for most rural Greeks: bread, olives and olive oil, fruit, nuts, vegetables and legumes. Food for feast days includes roasted meats such as lamb or chicken, varieties of fruits and vegetables, cheeses and yoghurt and specialties of delicate pastries and cookies (Barer-Stein, 1979).

Feasting preceded by fasting actually only occurs during five important holidays of the year: Christmas, Easter, Lent, Assumption (Virgin Mary) and Saint George's Day. Other festive days (e.g. name days, Saint days, weddings, baptisms) are usually marked with special foods, most significantly with the inclusion of lamb or goat. The vast majority of Greeks are, traditionally, members of the Greek Orthodox Church. The teachings of their religion require certain periods of fasting to be observed on certain religious occasions during the year. Fasting during these periods is not the total abstinence from food but rather the avoidance of certain types of food, namely animal flesh and products, which is characteristic of vegan vegetarian diets.

Typically vegetables, legumes, nuts, fruits, grains (bread, rice, pasta), invertebrate seafood (squid, prawns), halva (tahini, honey), olives, vegetable/olive oil are included in the diet, but meat, eggs, dairy products, fish, butter and wine are avoided. Fasting is required for the followers of the Greek Orthodox religion during the religious periods of Easter (40 days), Christmas (40-60 days), The Dominion of the Virgin (15 days) and Saint Apostollos (15 days). For every Wednesday and Friday which falls within the limits of these religious periods of fasting, a further restriction, abstaining from the use of oil, is also required. Apart from religious occasions, for every Wednesday and Friday of the year, it is required by tradition that fasting takes place, with the avoidance of meat, fish

and eggs (except milk products). Fasting on Wednesdays commemorates the capture and imprisonment of Christ, and Fridays commemorate the crucifixion. For an individual who adheres strictly to the practice stipulated by the Greek Orthodox Church, a total of 175 days of the year would involve avoidance of meat, milk products, fish and eggs (i.e 3 days a week meat should be avoided). The impact that such fasting practices has on health needs further enquiry.

The adherence to religious fasting practices appears to vary in Greece between the rural and urban populations. An observation by Vouyoucalos (1975) is that fasting in Athens appears to be a diminishing practice, but that in the village environment adherence to religious fasting for the required periods are 'more carefully' observed and that 'fully westernised' immigrants give such practices 'token consideration'.

Results: Melbourne Greeks did not fast the total number of days as recommended by the church compared with Spata elderly. The practice of fasting every Wednesday and Friday was more common in Spata (57%) than in Melbourne (30%). Gender and age group differences were not seen in Spata. In Melbourne, gender differences reached significance for the 80+ group only - a greater proportion of women 80+ (42%) reported fasting every week on these days compared with the men (14%). A reater proportion of Spata elderly reported fasting practices than Melbourne elderly (tables 7.1.8a,b).

Table 7.1.8a

Question DH66WF
Do you fast every Wednesday and/or Friday?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
Yes	68.7	47.4	28.8	14.3
No	31.3	52.6	71.2	85.7
WOMEN				
N	31	22	59	36
Yes	61.3	50.0	30.5	41.7
No	38.7	50.0	69.5	58.3

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata nil; Melbourne 80+.

Age group differences: nil.

Centre differences: men 70-79 and 80+; women 70-79.

Table 7.1.8b

Question DH66
How many days of the year do you fast for EASTER and CHRISTMAS?

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
EASTER				
MEN				
N	32	19	66	28
0 days	25.0	21.1	62.1	71.4
7 days	18.8	21.1	16.7	14.4
14 days	28.1	36.7	9.1	7.1
40 days	3.1	0.0	10.6	7.1
60 days	25.0	21.1	1.5	0.0
WOMEN				
N	31	22	59	36
EASTER				
0 days	22.4	36.4	50.8	38.9
7 days	22.6	4.5	22.0	16.5
14 days	29.1	31.9	13.6	8.4
40 days	9.8	9.0	11.9	30.6
60 days	16.1	18.2	1.7	5.6
CHRISTMAS				
MEN				
0 days	31.3	21.1	71.2	71.4
7 days	15.6	31.5	9.1	14.3
14 days	25.0	26.3	7.6	10.7
40 days	28.1	21.1	12.1	3.6
60 days	0.0	0.0	0.0	0.0
WOMEN				
0 days	22.6	36.4	61.1	52.8
7 days	22.6	18.2	15.3	8.3
14 days	25.8	31.8	10.2	8.3
40 days	29.0	13.6	13.6	30.6
60 days	0.0	0.0	0.0	0.0

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: Spata nil; Melbourne 80+.

Age group differences: nil.

Centre differences: men 70-79 and 80+; women 70-79.

In Spata, 27% of the elderly did not fast for Easter or Christmas, 48% fasted 7-14 days and 25% for 40 days or more. Gender and age group differences were not significant. In Melbourne, 60% did not fast for Easter or Christmas, 25% fasted 7-14 days and 15% 40 days or more. Gender differences were significant in the 80+ group - a greater proportion of women fasted for 40 days or more (34%) compared with the men (4%). Age group

differences were not seen. Centre differences were significant for women aged 70-79 and men 70-79 and 80+ - fasting for Easter and Christmas was more prevalent in Spata than in Melbourne.

Comparisons with reported data: The situation appears to be that Greek immigrants in Australia as a group do not fast on as many days as do individuals in Greece. For example, during the Easter period a small number of individuals would fast the whole 40 days, the majority fasting only during the last week of Lent, or during Good Friday (Girkinezis et al., 1977). Furthermore, a greater proportion of migrants aged over 50 have been reported adhering to the fasting custom (Kosmidis et al., 1980).

In the study of 472 Greek migrants in Melbourne aged 30 and over (Kosmidis et al., 1980; Rutishauser & Wahlqvist., 1983) the proportion of the sample who adhered to the traditional custom of omitting meat, fish and eggs from their diets on Wednesdays and Fridays was small (12%). A much larger proportion of the sample omitted meat, fish and eggs from their diet on one or more days during the Easter (76%) and Christmas (51%) periods of religious festivals. Length of stay did not appear to influence practice of fasting. However, older individuals were more likely to follow religious customs than younger or second generation individuals.

7.1.9 FOOD PATTERN

The type of foods eaten through out the day, their distribution, as well as the size of meals (e.g main meal in the middle of the day as opposed to the evening) may influence biochemical indices such as cholesterol, blood sugar levels as well as weight control (Fabry and Tepperman, 1970). Therefore, it is important to firstly describe food intake patterns in epidemiological studies in order to identify patterns conducive to health and nutritional status. In this section, analysis was restricted to description of food patterns of elderly Greeks to examine changes to food patterns on migration. Future analyses will examine relationships between food patterns and health variables.

In Greece, early morning breakfast is usually scanty, consisting of little more than milk or coffee (brewed Greek coffee) accompanied by crispbread or rusk. This may be followed by another similar snack later in the morning. The main meal is eaten late in the afternoon. Another main meal may or may not be eaten late in the evening (Kosmidis, 1979). The main meal does not necessarily include meat, and frequently includes such dishes as vegetable casserole, stuffed tomatoes or peppers (gemista), legume soups and dishes made with pasta or rice and vegetables. The main meal is accompanied by bread and fresh or boiled salads (Kosmidis, 1979). Cheese, usually feta or kasseri and olives may also be served with the main meal. Bread along with oil, usually olive oil, is considered to be the most constant item in the village and urban diet. Thickenings or gravies as they are known to Australians are not used. The meal is served unthickened, with whatever juices are provided during cooking (Vouyoucalos 1975).

Fruit is usually consumed after a main meal rather than a sweet dessert, and Greek coffee, which is made by boiling coffee, water and sugar together, is also commonly served after meals (Girkinezis et al., 1977). Dishes which are sometimes considered to be 'typically Greek', such as dolmades (minced meat and rice rolled into vine leaves), moussaka (mixed dish containing eggplant, potato and minced meat dish) are in fact exceptional because of the time involved in their preparation, and are considered special dishes, appropriate for serving to guests or for special occasions, rather than everyday dishes (Kosmidis, 1979).

The pattern of the day's meals varies from rural to urban dwellers. The Greek farmer rises early, with little more than coffee and bread to start his day. The noon meal is often eaten in the fields and may include a hot bean soup, bread and cheese, perhaps olives and raw onions, tomatoes and cucumbers, and grapes. The farmer's evening meal will be soon after sundown when the chores are completed. The meal itself will be similar to the noon one except that a meat dish may be added if available. The urban dwellers will also start their day with Greek coffee and bread or more commonly crisp bread. Lunch is the main meal of the day followed by an afternoon siesta. Dinner is normally very light comprising yoghurt or soup or bread, cheese and olives. Sometimes dinner can be eaten as late as 10-11pm.

7.1.9.1 Breakfast time

Results: In Spata, 80% of the elderly had breakfast between 7.00 and 8.00am; all subjects consumed breakfast. In contrast, 80% of Melbourne elderly had breakfast between 8.00 and 10.00am; 3% did not eat breakfast. Gender and age group differences

were not significant within centres. Centre differences were seen - Melbourne elderly consumed breakfast later in the morning than Spata elderly.

Comparisons with reported data: In the Euronut study, the majority of elderly Greek subjects consumed breakfast around 8.0 am, which is similar to Spata elderly. In the Anglo-Celtic Australian study in Melbourne, the majority of the elderly had breakfast between 7-9am compared with 8-10am for Melbourne Greeks.

Table 7.1.9.1

Time Breakfast is eaten

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
No breakfast	0.0	0.0	3.0	3.6
6.00am	31.3	10.5	4.5	3.6
7.00am	28.1	42.1	13.6	14.2
8.00am	37.5	47.4	43.9	35.7
9.00am	3.1	0.0	22.8	28.6
10.00am	0.0	0.0	10.7	14.3
11.00am	0.0	0.0	1.5	0.0
WOMEN				
N	31	22	59	36
No breakfast	0.0	0.0	3.4	0.0
6.00am	16.1	0.0	1.6	0.0
7.00am	35.5	45.5	10.2	8.3
8.00am	38.7	50.0	33.9	36.1
9.00am	9.7	4.5	40.7	36.1
10.00am	0.0	0.0	8.5	13.9
11.00am	0.0	0.0	1.7	5.6

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil;

Age group differences: nil

Centre differences: men 70-79; women 70-79 and 80+.

7.1.9.2 Breakfast foods

Results: In Spata, the most common foods reported to be consumed for breakfast included the following: milk 65%, coffee 52%, crisp bread 45%, bread 42% and tea 15%. In contrast, the most common foods reported to be consumed by Melbourne elderly included: milk 52%, bread 55%, cheese 30%, coffee 45%, tea 32%, packet cereal 28%, crispbread 16%, porridge 10%, olives 10%, egg 10%, sweet biscuits 8% and fresh fruit 7% (see table 7.1.9.2). In Spata, only Greek coffee was consumed and mainly herb tea.

Table 7.1.9.2

Foods eaten at Breakfast

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
milk	53.1	73.7	54.5	50.0
yoghurt only	0.0	0.0	1.5	0.0
milo drink	0.0	0.0	1.5	0.0
breakfast cereal	0.0	0.0	24.2	28.6
unprocessed bran	0.0	0.0	3.0	0.0
corn meal only	0.0	0.0	0.0	3.6
porridge only	0.0	0.0	3.0	17.9
rice pudding only	0.0	0.0	0.0	3.6
pasta/noodles only	0.0	0.0	1.5	0.0
sweet biscuits	0.0	0.0	6.1	3.6
crisp bread	37.5	52.6	7.6	17.9
bread	40.6	47.4	48.5	57.1
cheese	0.0	0.0	34.8	21.4
olives	0.0	0.0	7.6	10.7
egg only	0.0	0.0	13.6	7.1
bacon only	0.0	0.0	6.1	0.0
juice	0.0	0.0	4.5	3.6
fruit	0.0	0.0	6.1	7.1
dried fruits	0.0	0.0	1.5	3.6
coffee	56.2	31.6	47.0	50.0
tea	25.0	15.8	31.8	28.6
alcohol	0.0	0.0	1.5	0.0
WOMEN				
N	31	22	59	32
milk	61.3	72.7	40.7	61.1
breakfast cereal	0.0	0.0	28.8	27.8
unprocessed bran	0.0	0.0	1.7	0.0
porridge only	0.0	0.0	5.1	11.1
rice pudding only	0.0	0.0	0.0	2.8
crumpet only	0.0	0.0	1.7	0.0
pasta/noodles only	0.0	0.0	0.0	2.8
sweet biscuits	0.0	0.0	10.2	11.1
crisp bread	58.1	36.4	13.6	25.0
bread	32.3	50.0	59.3	58.3
cheese	0.0	0.0	33.9	27.8
olives	0.0	0.0	11.9	13.9
egg only	0.0	0.0	10.2	13.9
bacon only	0.0	0.0	1.7	0.0
juice	0.0	0.0	1.7	2.8
fruit	0.0	0.0	5.1	11.1
dried fruits	0.0	0.0	3.4	0.0
coffee	61.3	59.1	37.3	50.0
tea	16.1	4.5	40.7	27.8
alcohol	0.0	0.0	0.0	2.8

In Melbourne, mainly instant coffee was consumed and European tea. It is interesting to note that fruit juices were rarely consumed at breakfast by the elderly. Gender and age group differences within centres were not significant for any of these foods. Significant differences between centres included the greater consumption of cheese, breakfast cereal, olives and tea by Melbourne elderly compared with the greater consumption of crisp bread and milk by Spata elderly.

Comparisons with reported data: In the Euronut study the majority of elderly Greek subjects consumed coffee and bread/crispbread for breakfast, which is similar to Spata elderly. Furthermore, fruit juices and breakfast cereals were rarely consumed for breakfast. In the Anglo-Celtic Australian study in Melbourne all the subjects had breakfast, but the type of foods eaten were remarkably different to Melbourne Greeks: eggs (27%), fruit (25%), breakfast cereals (80%), bread (66%), milk (75%), fruit juices (28%), coffee/tea (80%) and margarine (60%). However, a significant proportion of Melbourne Greeks have introduced eggs and packet cereal into their breakfast meal.

7.1.9.3 Morning tea time

Results: In Spata, 65% never had morning tea, 30% had it at 10.00am and 5% at 11.00am. In Melbourne, 55% never had morning tea, 25% had it at 10.00am and 20% at 11.00am. Gender and age group differences were not significant within centres. Centre differences were seen in the men and women aged 80+ - Melbourne elderly took morning tea later in the morning than Spata elderly.

Comparisons with reported data: In the Anglo-Celtic Australian study in Melbourne, a similar proportion of elderly did not have morning tea (50%) compared to Melbourne Greeks (55%). About 20% had morning tea at 10.00am and 15% at 11.00am.

7.1.9.4 Morning tea foods

Results: In Spata, the most common foods reported to be consumed for morning tea included the following: cheese, bread & tomato 20%, coffee 15%, fruit 10% and crisp bread 3%. In contrast, the most common foods reported to be consumed by Melbourne elderly included: coffee 30%, fruit 10%, sweet biscuits 3%, bread 2% and crisp bread 2% (see table 7.1.9.4). Gender and age group differences within centres were not significant for any of these foods. Significant differences between centres included the greater consumption of coffee by Melbourne Greeks compared with the greater consumption of cheese/tomato/bread by Spata elderly.

Comparisons with reported data: In the Anglo-Celtic Australian study in Melbourne, the foods reported to be consumed for morning tea included cakes/biscuits (33%), coffee/tea (47%) and fruit (10%).

Table 7.1.9.4**Foods eaten at morning tea**

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
coffee	15.6	15.8	33.3	39.3
tea	0.0	0.0	1.5	17.9
milk	0.0	0.0	1.5	3.6
bread	18.8	15.8	6.1	0.0
crisp bread	3.1	0.0	3.0	3.6
sweet biscuits	0.0	0.0	3.0	3.6
nuts	0.0	0.0	3.0	0.0
fruit	6.2	0.0	13.6	3.6
cheese/tomato/bread/olives	28.1	26.3	7.6	
WOMEN				
N	31	22	59	36
coffee	3.2	22.7	30.5	19.4
tea	0.0	0.0	3.4	13.9
milk	3.2	9.1	0.0	0.0
bread	19.4	13.6	0.0	2.8
crisp bread	3.2	4.5	0.0	0.0
sweet biscuits	0.0	0.0	3.4	2.8
nuts	0.0	0.0	0.0	0.0
fruit	16.1	13.6	6.8	11.1
cheese/tomato/bread/olives	12.9	13.6	0.0	2.8

7.1.9.5 Lunch time

Results: The majority of the elderly in both Spata and Melbourne had lunch at 12 noon (50%), 33% at 1.00pm and 12% at 2.00pm. Gender and age group differences were not significant within centres. Centre differences were seen only in the women aged 80+ - a significantly smaller proportion of Melbourne women had lunch at 12 noon (33%) compared with Spata women (60%) (see table 7.1.9.5).

Comparisons with reported data: In the Euronut study the majority of elderly Greek subjects consumed lunch between 12-1.00pm, which is similar to Spata elderly. In the Anglo-Celtic Australian study in Melbourne, about 90% of the elderly had lunch between 12noon-1.00pm.

Table 7.1.9.5

Time lunch is eaten

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
no lunch	0.0	0.0	4.6	0.0
11.00am	3.2	5.3	4.5	0.0
12.00noon	43.7	63.1	45.5	50.0
1.00pm	40.6	10.5	30.3	35.7
2.00pm	9.4	21.1	9.1	10.7
3.00pm	0.0	0.0	3.0	0.0
4.00pm	3.1	0.0	3.0	3.6
WOMEN				
N	31	22	59	36
no lunch	0.0	0.0	1.6	2.8
11.00am	0.0	0.0	3.4	0.0
12.00noon	38.7	59.2	37.3	33.4
1.00pm	54.8	22.7	32.2	33.3
2.00pm	6.5	13.6	15.3	19.4
3.00pm	0.0	4.5	8.5	11.1
4.00pm	0.0	0.0	1.7	0.0

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil

Age group differences: nil

Centre differences: women 80+.

7.1.9.6 Lunch foods

Results: In Spata, all the subjects had a cooked meal for lunch, which was accompanied by bread (92%), fruit (60%) and alcohol (M 52%, F 13%). In contrast, 75% of Melbourne elderly had a cooked meal which was also accompanied by bread (80%), alcohol (men 30%, women 15%) and fruit (15%). Other foods consumed for lunch included sandwiches (13%), cheese and bread (26%), olives and bread (17%), fruit 17% and soup (5%). A significantly greater proportion of Melbourne men aged 70-79 (80%) consumed a cooked meal for lunch compared to the women (58%). Age group differences were also seen - a greater proportion of women aged 80+ (80%) consumed a cooked meal compared to the younger women.

Centre differences were significant for men and women in both age groups - a greater proportion of Spata elderly had a cooked meal for lunch compared with Melbourne elderly. A greater proportion of Melbourne subjects aged 70-79 consumed sandwiches or cheese and olives for lunch. However, a greater proportion of Spata elderly also reported eating fruit after lunch. In both Spata and Melbourne, alcohol was consumed more

frequently with lunch by men than by the women. A greater proportion of Spata men consumed alcohol with lunch compared with Melbourne men.

Table 7.1.9.6**Foods eaten for lunch**

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
cooked meal	96.9	100.0	80.3	78.6
sandwich only	0.0	0.0	12.1	10.7
soup only	0.0	0.0	1.5	10.7
cheese	0.0	0.0	27.3	28.6
milk	0.0	0.0	1.5	0.0
cheese/tomato/bread/olives	3.1	0.0	1.5	0
olives	0.0	0.0	19.7	10.7
dip	0.0	0.0	0	3.6
fruit	50.0	63.2	24.2	39.3
bread	87.5	94.7	87.9	75.0
crisp bread	6.2	5.3	3.0	10.7
alcohol	55.0	50.0	28.7	32.5
coffee	3.1	0.0	10.6	10.7
tea	0.0	0.0	6.1	10.7
WOMEN				
N	31	22	59	36
cooked meal	100.0	100.0	57.6	80.6
sandwich only	0.0	0.0	22.0	8.3
soup only	0.0	0.0	3.4	5.6
cheese	0.0	0.0	33.9	16.7
milk	0.0	0.0	0.0	2.8
salad/vegetable only	0.0	0.0	3.4	2.8
cheese/tomato/bread/olives	0.0	0.0	1.7	0.0
olives	0.0	0.0	18.6	16.7
dip	0.0	0.0	0.0	2.8
fruit	71.0	50.0	27.1	38.9
bread	93.5	90.9	74.6	80.6
crisp bread	3.2	0.0	5.1	2.8
sweet biscuit	0.0	0.0	1.7	0.0
alcohol	9.0	17.2	15.4	14.6
coffee	3.2	4.5	5.1	5.6
tea	0.0	0.0	0.0	11.1

Comparisons with reported data: In the Euronut study the majority of elderly Greeks consumed a cooked meal for lunch, which is similar to Spata elderly. In the Anglo-Celtic Australian study in Melbourne, all the study subjects consumed lunch, however, only 25% had a cooked meal; the majority consumed a light snack e.g sandwiches.

7.1.9.7 Afternoon tea time

Results: About 82% of the men and 72% of the women in the sample had afternoon tea. Significantly more Melbourne elderly reported having their afternoon tea between 3.00-4.00pm (M 68%, F 56%) compared with Spata elderly. In Spata, afternoon tea was taken at about 5.00pm (M 73%, F 56%). Gender and age group differences were not significant within centres. Centre differences were seen by gender and age group.

Comparisons with reported data: In the Anglo-Celtic study in Melbourne, a similar proportion of elderly reported having afternoon tea (M 55%, F 60%) compared to Melbourne Greeks.

7.1.9.8 Afternoon tea foods

Results: The beverages and foods reported to be consumed for afternoon tea by the men included: coffee (64%), tea (Melbourne men only aged 80+ 22%), fruit (28%) and bread (Spata only 12%) The women reported the following foods and drinks: coffee (60%, except Melbourne women 70-79), tea (Melbourne only 11%), fruit (26%) and crispbread (7%) (see table 7.1.9.8).

Table 7.1.9.8

Foods eaten for afternoon tea

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
coffee	62.5	73.7	57.6	60.7
tea	0.0	5.3	4.5	21.4
fruit	31.3	15.8	31.8	32.1
crisp bread	6.2	15.8	1.5	10.7
sweet biscuit	0.0	0.0	3.0	10.7
bread	12.5	10.5	1.5	3.6
nuts	0.0	0.0	4.5	0.0
alcohol	0.0	0.0	4.5	0.0
other	9.4	0.0	1.5	0.0
WOMEN				
N	31	22	59	36
coffee	67.7	54.5	8.5	58.3
tea	0.0	0.0	8.5	13.9
fruit	16.1	27.3	27.1	36.1
crisp bread	16.1	0.0	5.1	5.6
sweet biscuit	0.0	0.0	6.8	0.0
bread	3.2	4.5	1.7	2.8
nuts	0.0	0.0	1.7	2.8
other	3.2	0.0	1.7	2.8

Comparisons with reported data: In the Anglo-Celtic Australian study in Melbourne the foods consumed for afternoon tea included cakes/biscuits (45%), sweets (20%), fruit juices (13%), coffee & tea (61% women only), alcohol (M 20%, F 10%) and fruit (11%).

7.1.9.9 Dinner time

Results: Less than 3% of the men and women in the sample never had dinner. Significantly more Melbourne elderly reported having their dinner between 6.00-7.00pm (75%) compared with Spata elderly. In Spata, dinner was consumed between 8.00-9.00pm (80%). Gender and age group differences were not significant within centres. Centre differences were significant - a greater proportion of Melbourne elderly consumed their dinner earlier than Spata elderly (see table 7.1.9.9).

Table 7.1.9.9

Time dinner is eaten

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
no dinner	3.1	5.1	4.5	3.5
4.00pm	0.0	0.0	1.5	0.0
5.00pm	3.1	0.0	15.2	10.7
6.00pm	0.0	0.0	45.5	50.0
7.00pm	12.5	5.3	24.2	28.6
8.00pm	50.0	63.2	7.6	3.6
9.00pm	21.9	21.1	0.0	3.6
10.00pm	9.4	5.3	1.5	0.0
WOMEN				
N	31	22	59	36
no dinner	0.0	0.0	3.3	2.7
4.00pm	0.0	0.0	0.0	0.0
5.00pm	0.0	0.0	11.9	5.6
6.00pm	0.0	0.0	44.1	55.6
7.00pm	3.2	22.8	25.4	13.9
8.00pm	83.9	54.5	15.3	19.4
9.00pm	9.7	18.2	0.0	2.8
10.00pm	3.2	4.5	0.0	0.0

Chi-Square was used to test for differences in question responses (general associations) between gender, age group or centre, significance level at 5%.

Gender differences: nil

Age group differences: nil

Centre differences: men 70-79 and 80+; women 70-79 and 80+.

Comparisons with reported data: In the Euronut study the majority of elderly Greek subjects consumed dinner around 8.00 pm, which is similar to Spata elderly. In the Anglo-Celtic Australian study in Melbourne, all the subjects reported eating dinner. Similarly to Melbourne Greeks, the majority of subjects (75%) consumed dinner between 6.00pm and 6.30pm.

7.1.9.10 Dinner foods

Results: In Spata, about 50% of the elderly reported having a cooked meal for dinner, except for the men aged 70-79 (72% had cooked meal). In Melbourne, 75% of the men and 65% of the women had a cooked meal. A greater proportion of Melbourne men aged 80+ (79%) reported having a cooked meal compared with Spata men 80+ (47%). Significantly more Spata elderly reported having yoghurt only for dinner (35%) compared to Melbourne (10%). In contrast, significantly more Melbourne elderly reported having soup only for dinner (15%) compared to Spata (0%). The preference of soup over yoghurt in Melbourne is probably related to the longer periods of cold weather in Victoria.

About 20% of the subjects reported having bread/cheese/tomato and olives for dinner and 40% had fruit only. Significantly more Spata women (25%) consumed milk only for dinner compared with Melbourne women (5%). The majority of the elderly had bread with their dinner (80%). In Spata, alcohol was consumed with dinner by 13% of the men and 4% of the women. In Melbourne, 27% of the men and 16% of the women consumed alcohol with dinner. In Spata, coffee was more popular after dinner (12%) than tea (6%). In Melbourne, tea (12%) was more popular than coffee (6%) after dinner. The Spata men 80+ consumed more herb tea (16%) than other elderly in the sample.

Comparisons with reported data: In the Euronut study the majority of elderly Greek subjects consumed fruit and/or yoghurt or salad or cheese for dinner, which is similar to Spata elderly. In the Anglo-Celtic Australian study in Melbourne, about 80% of the elderly had a cooked meal for dinner, which is slightly greater than Melbourne Greeks. This is probably related to the fact that Anglo-Celtics prefer an uncooked meal for lunch.

Table 7.1.9.10

Foods eaten for dinner

	SPATA		MELBOURNE	
	70 - 79 (%)	80 + (%)	70 - 79 (%)	80 + (%)
MEN				
N	32	19	66	28
cooked meal	71.9	47.4	74.2	78.6
pasta/noodles only	0.0	0.0	3.0	0.0
egg only	0.0	0.0	3.0	0.0
soup only	0.0	0.0	7.6	17.9
yoghurt only	31.3	31.6	6.1	3.6
milk only	3.1	15.8	3.0	3.6
tomato/cheese/bread/olives	15.6	15.8	24.2	14.3
fruit	34.4	47.4	22.7	35.7
crisp bread	9.4	15.8	3.0	3.6
bread	81.2	73.7	87.9	85.7
coffee	9.4	10.5	10.6	3.6
tea	6.2	15.8	6.1	14.3
alcohol	13.7	13.0	28.7	24.5
WOMEN				
N	31	22	59	36
cooked meal	48.4	54.5	66.1	63.9
pasta/noodles only	0.0	0.0	1.7	2.8
breakfast cereal	0.0	0.0	1.7	0.0
egg only	0.0	0.0	3.4	0.0
soup only	0.0	0.0	13.6	19.4
yoghurt only	41.9	31.8	10.2	22.2
milk only	25.8	22.7	1.7	8.3
rice pudding only	0.0	0.0	0.0	2.8
tomato/cheese/bread/	22.6	13.6	22.0	22.2
fruit	35.5	40.9	20.3	36.1
crisp bread	16.1	9.1	3.4	2.8
bread	80.6	77.3	81.4	77.8
coffee	12.9	13.6	3.4	5.6
tea	6.5	0.0	10.2	16.7
alcohol	3.9	5.5	13.4	18.6

7.1.9.11 Supper time

Results: In Spata, supper was rarely consumed by the elderly, probably because dinner was taken after 8.00pm by most subjects. In Melbourne, a greater proportion of women (60%) than men (30%) in both age groups did not have supper. The remaining subjects normally took supper between 8.00 and 9.00pm (M 56%, F 38%).

Comparisons with reported data: In the Anglo-Celtic Australian study in Melbourne, about 60% of the elderly did not eat supper. The remaining subjects normally took supper between 8.00 and 10.00pm (M 56%, F 38%).

7.1.9.12 Supper foods

Results: About 30% of the Melbourne elderly had fruit for supper, 7% milk, 20% coffee and 20% tea.

Comparisons with reported data: In the Anglo-Celtic Australian study in Melbourne, the type of foods eaten for supper were remarkably different to Melbourne Greeks: cakes/biscuits (23%), chocolate (30%), confectionary (18%), coffee/tea (30%), nuts (8%). Overall, more than 90% of the elderly subjects in Spata and Melbourne reported consuming a cooked meal daily. In Spata, a greater proportion of elderly had two cooked meals a day compared with Melbourne elderly.

7.2 FOOD BELIEFS

In the past, elderly people were important and respected in society because they were credited with experience essential for the well-being and survival of the group. Their knowledge would be wide ranging, including food and health beliefs. The elderly of today still possess this knowledge but less importance is given to these beliefs by younger generations due to alternative sources of information (scientific and non-scientific based) in journals, magazines, books etc. Invaluable lessons may be learnt by tapping into the wisdom of 'time-tested' cultures by enquiring about their food beliefs and how they influence health decision making.

The elderly are not only custodians of tradition, but they are also wiser from a lifetime of experience, and thus form one of the best resources for food and health beliefs. An important incentive for collecting food beliefs was also based on the premise that such beliefs should be documented before they are lost, since younger generations appear to be distancing themselves from culture and tradition. The food and health beliefs of Greeks may shed some light on the reasons for their health advantages and disadvantages (Powles and Gifford, 1991).

In this section, food and health beliefs of Greeks living in Spata and Melbourne are reported with the purpose of identifying (see also Methods, Chapter 3):

- 1) Food and health beliefs related to longevity.
- 2) Beliefs on food and herbal remedies used to treat or prevent illness.
- 3) Beliefs regarding the effect of migration on health and food intake (Chapter 8).
- 4) Food and health beliefs which may be influencing food intake and subsequently nutritional status

7.2.1 BELIEFS ON LONGEVITY AND HEALTH

Food and health beliefs related to longevity are summarised in table 7.2.1 and prevalence indicated as a % of respondents having the same beliefs: >75% (very common=VC), 50-75% (common=C), 25-50% (less common = LC), 1-25% (uncommon=UC). The place where the beliefs are held are abbreviated as follows: S=Spata, M=Melbourne, SM=belief held in both places. If the belief originated from traditional sources e.g beliefs passed down through generations, it is classified as 'old', 'new' if originated from contemporary sources e.g magazines, doctor, 'mixed' if an 'old' belief has been modified to explain modern day diseases (Wahlqvist et al., 1991b).

Results: The majority of elderly Greek respondents (>75%) in Greece and Australia expressed grave concern about their children and grand children eating too much meat and 'convenience' foods and not enough traditional Greek food, especially legumes. Of all the foods, the high intake of meat and low intake of legumes have been singled out by the elderly as being the cause of most modern day diseases (e.g cancer, heart disease, diabetes). They point to the Greek Orthodox Religion which recommends abstaining from animal products for at least 170 days of the year (which actually works out to about 2-3 days a week where one can eat animal products) and in place of animal products one is supposed to eat legumes, seafood, olives and olive oil, rice, pasta and bread (legumes are supposed to be eaten every Wednesday and Friday) (see table 7.2.1). The great importance ascribed to legumes by elderly Greeks for longevity and health can also be found in history. Each of the four major legumes were given names from the prominent Roman family, eg Fabius from the faba bean, Lentulus from lentil, Piso from ea and Cicero, most distinguished of them all, from the chick pea. No other food group has been so honoured (McGee, 1986). The soluble fibres contained in legumes appear to assist in lowering serum cholesterol, post-prandial blood sugars and may be protective against bowel cancers (US National Research Council, 1989) (see section 7.2.2.1).

7.2.2 BELIEFS ON FOOD AND HERBAL REMEDIES

Results: The elderly Greeks in Greece and Australia reported a whole range of foods and herbs used to maintain good health or to cure certain illnesses, which appear to have been extended to include modern day diseases (e.g hypercholesterolaemia). The source of such beliefs appears to have originated in the majority of cases by 'word of mouth'. The remedies reported by the elderly in Greece and Australia were strikingly similar with minor changes occurring to the remedy on migration.

Table 7.2.1

**What advice would you give to your children and grandchildren
about how to stay healthy and live a long time?**

Beliefs of Greek Elderly aged 70+		Place Held	Prevalence ¹	Historical Basis
		S=Spata M=Melb	VC, C LC, UC	M=mixed O=old N=new
1.	Do not smoke	S,M	VC	M
2.	Do not have late nights	S,M	VC	O
3.	Wake up early in the morning	S,M	C	O
4.	Have a nap every day in afternoon	S	VC	O
5.	Get plenty of sleep every night	S,M	C	O
6.	Get plenty of fresh air	S,M	VC	M
7.	Live in a climate that is not humid, and where temperatures do not fluctuate (like Melbourne); the Mediterranean climate, is the best in the world	S,M	VC	O
8.	Do plenty of exercise , especially walking	S,M	VC	O
9.	Work hard for as many years of your life	S,M	VC	O
10	Avoid stress and worry, try always and be happy; laughter is very good for your health	S,M	VC	O
11	Remain as sexually active as possible with spouse	S	VC	O
12	Be as socially active as possible, especially in old age, and create good social support networks	S,M	VC	O
13	Believe in the Greek Orthodox religion and perform all fasts e.g fast animal foods for 40 days before Easter	S,M	VC	O
14	Drink 1-2 glasses alcohol daily, but never get drunk; wine (as opposed to other sources of alcohol) is the most beneficial to health, but always drink with food	S,M	VC	O
15	Try and remain slim	S	C	M
16	Do not eat alot of food even if active, eat small serves	S,M	VC	O
17	Have regular meals and have the largest meal for lunch	S,M	C	O
18	Eat a little of everything; variety is very important	S,M	VC	O
19	Avoid fried foods, prefer casseroles/stews i.e wet foods (as opposed to grills/roast) which are more nutritious	S,M	VC	O
20	Eat meat only once a week, prefer lamb, goat or rabbit to beef; eat poultry no more than once a week	S,M	VC	O
21	Eat fish 2-3 times a week, not daily	S,M	VC	O
22	Legumes are essential for health, eat 2-3 times/week	S,M	VC	O
23	Eat plenty of vegetables only in season, wild greens , should be eaten at least twice a week	S,M	VC	O
25	Eat fruit in moderation; fruit are not as healthy as vegetables; fruit are not essential to stay healthy as long as alot of vegetables are eaten; best fruit are seasonal fruit, especially grapes	S,M	C	O
26	Eat plenty of bread , does not have to be wholemeal	S	VC	O
27	Eat dairy products from sheep milk, especially yoghurt	S	C	O
28	Use lemon juice liberally on all dishes/foods	S,M	VC	O
29	Avoid eating sweets, sugar and soft drinks	S,M	VC	M
30	Limit coffee to 2-3 cups daily, prefer Greek coffee	S	VC	M
31	Drink plenty of herb teas e.g chamomile instead of tea	S	VC	O
32	Eat only olive oil , in liberal quantities (about 2 tablespoons daily), preferably added to food once cooked; avoid butter, margarine and other oils	S,M	VC	O

¹VC = very common, belief held by >75% of subjects

LC = less common 25-50% of subjects

C = common 50-75% of subjects

UC = uncommon 1-25% of subjects

The most popular remedies are summarised below with reference to current scientific evidence (Duke, 1989; Talalaj, 1989; James et al., 1989; US National Research Council, 1989; McGee, 1986; Wahlqvist and Kouris-Blazos, 1991):

7.2.2.1 Foods

a) Meat & other animal products

i. Animal products

Belief: Animal products should be eaten sparingly and avoided on at least two days of the week (also recommended by the Greek Orthodox Church).

Evidence: Animal products are an important source of many nutrients, particularly amino acid balanced proteins. Most animal studies show that dietary protein does not affect carcinogenesis when fed at amounts required for optimum growth. At intakes of 20-25% of total calories (Australian average about 18%) carcinogenesis increases and it occurs only when there is amino acid balance (such as proteins from animal sources), suggesting that the effect is not due to specific amino acids or to amino acid imbalance (US National Research Council, 1982). It has not been clearly demonstrated in epidemiological studies that protein per se (especially animal protein) is carcinogenic (Ireland and Giles, 1993). Nevertheless, because there are no known benefits and possibly some risks in consuming diets with a high animal protein content, it is probably not advisable to increase protein consumption to compensate for the caloric loss that would result from the recommended reduction in fat intake. Furthermore, it is advisable to increase the variety of sources of protein - namely from vegetables (Wahlqvist and Kouris-Blazos, 1991).

ii. Meat

Belief: Eat meat sparingly, no more than once a week because it is bad for your health. We were healthier in the past when we consumed meat only a couple of times a month.

Evidence: Lean meat has not been shown to increase the risk of heart disease by adversely affecting blood lipid profiles (Kestin et al., 1989). However, the recent interest in iron as a prooxidant and its potential for increased lipoprotein peroxidation needs reexamination in view of the enhanced experimental atherogenicity of oxidised LDL (Steinbrecher et al., 1984). Furthermore, serum ferritin levels have been associated with

heart disease (Salonen et al., 1992). Whether meat is a 'prooxidant' food due to its high content of iron, requires further investigation. The question also remains on the role of animal protein (as well as the source i.e dairy vs meat) and carcinogenesis (Ireland and Giles, 1993). In a case-control study by Kune et al (1987a, 1987b), beef intake was a risk factor for colonic cancer in men, but not women.

iii. Yoghurt

Belief: Yoghurt is very good for one's health and should be eaten daily. It is also good for 'digestion'.

Evidence: The health-giving properties ascribed to yoghurt by elderly Greeks have recently been under investigation. Specifically, the yoghurt culture *Lactobacillus acidophilus* has been associated with preventing diarrhoea during antibiotic therapy, improving digestion in those with lactose intolerance, treatment of gastrointestinal infections, colonic cancer prevention and in controlling serum cholesterol levels (Dubick 1983; Gilliland 1989; Lin et al., 1989; Gorbach, 1990). More studies are needed to confirm these findings. Furthermore, yoghurt is a good source of folate, a nutrient inadequately consumed by many elderly people.

iv. Fish

Belief: Fish is good for your health, but should not be eaten daily, ideally about 2-3 times per week.

Evidence: Epidemiological studies suggest that consumption of 1-2 servings of fish per week over a prolonged period of time (about 3 months) is associated with a lower heart disease risk and lower all cause mortality - seen with both fatty and lean fish (Kromhout et al., 1985; Shekelle et al., 1985). Fish has also been shown to be protective against colonic cancer (Kune et al., 1987a, 1987b). Greenland Eskimos who eat fish daily have been reported to be relatively immune from atherosclerosis, but not from haemorrhagic stroke (US National Research Council, 1989).

b) Plant food

i. Vegetables and Bread

Belief: Vegetables and bread should make up the bulk of the diet, accompanied by only small amounts of meat, if at all.

Evidence: Population subgroups (vegetarians, Seventh-Day Adventists) consuming diets rich in plant foods have lower heart disease, blood pressure and cancer than the general population. Although the mechanism underlying these effects is not fully understood, the health advantages of vegetarians cannot simply be explained by their lower intakes of animal fat, cholesterol and animal protein and higher intakes of fibre. But rather, there appear to be other factors (nutrient and non-nutrient) in plant foods conferring protection against disease (Ireland and Giles, 1993). The ideal proportion of plant foods to animal foods is yet to be established. Japan, which has very low rates of heart disease, the ratio of vegetable to animal products is 79:21 compared with 65:35 in Australia (US National Research Council, 1989).

ii. Potatoes (*Solanum tuberosum*)

Belief: Potatoes are very good for you. One cup of raw potato juice drunk every morning before breakfast for 4 days lowers cholesterol and is good for your heart.

Evidence: Potatoes contain pectins, choline, b-sitosterol, sigmasterol, caffeic acid and cholinergic acid, all of which are potentially hypocholesterolaemic (Duke, 1989). Controlled trials are required using raw or cooked potatoes to treat hyperlipidaemia.

iii. Wild greens or dandelion leaves (*Cichorium intybus*)

Belief: This is boiled and eaten with oil and lemon as a salad. The water in which they have boiled can also be drunk and is even healthier than eating the leaves, particularly for the kidneys. There is a large variety of wild greens. Wild chicory (or dandelion leaves) is the best of the lot; it is essential for good health, is good for the kidneys and blood, it removes kidney stones, lowers blood pressure, cholesterol and blood sugars.

Evidence: Leaves, especially the root are considered diuretic; contains inulin (hypoglycaemic); effects mainly seen when leaves and root are drunk as a tea; no toxic effects ever recorded; dose required not scientifically established to treat conditions.

iv. **Artichoke** (*Cynara scolymus*)

Belief: The leaves, stem, root and flower are good for lowering cholesterol and blood sugars. Can be eaten as a boiled salad with oil and lemon, but water in which it was boiled must also be drunk or leaves can be dried and drunk as tea. At least one cup of this tea should be drunk every morning on an empty stomach to lower cholesterol or blood sugars.

Evidence: Contains cynarin which is hypocholesterolaemic and inulin which is hypoglycaemic (found mainly in stem, leaves and root but not in flower top). More research required to establish dose (Duke, 1989).

v. **Garlic** (*Allium sativum*)

Belief: Garlic is an important ingredient in Greek dishes. If eaten daily, it keeps one in good health and promotes longevity. It lowers blood pressure and blood fats and so is good for the heart. Garlic is good for colds because it kills bacteria and it also kills worms in the gut. Garlic strengthens the body, especially the heart and nerves.

Evidence: Contains diallyldisulphide and allicin which are bactericidal, hypocholesterolaemic, hypoglycaemic, hypotensive and insecticidal. Garlic also contains apoene which affects platelet aggregation. The possible role of garlic in reducing atherogenesis, by an effect on lipids or on platelets, appears possible but is far from certain. Most studies demonstrating the lipid and blood pressure lowering of garlic have used large doses of garlic on animals (Nye, 1990). Epidemiological evidence is needed to confirm these findings.

vi. **Onions** (*Allium cepa*)

Belief: Traditionally, onions were eaten raw, along with bread and legume soups e.g (fasolada) or in salads. Onions were also a major ingredient in dishes. A whole onion sliced vertically (but still intact) can be placed in water overnight and water drunk before breakfast to lower cholesterol, blood pressure and treat heart disease. Onions should be eaten daily for good health, but preferably not fried. Onions also help get rid of colds and are useful to treat wounds.

Evidence: Onions contain allicin which is hypoglycaemic, hypocholesterolaemic and bactericidal. Onions also contain flavenoids, which have antioxidant properties and the

potential to protect LDL cholesterol from oxidation. Experimental and epidemiological studies are required. There is no evidence that drinking the soaking water is more beneficial than eating the actual onion. The amount of onion required to treat conditions needs to be scientifically established.

vii. Parsley (*Petroselinum crispum*)

Belief: Should eat as much parsley in diet as possible, and use in cooking in large quantities for good health. If boiled (leaves and roots) and drunk as tea, it lowers blood pressure, increases urination, removes kidney stones, lowers cholesterol and blood sugars. If boiled with nettle, mint and couchgrass, and drunk as tea, it removes kidney stones.

Evidence: Parsley contains apiole and myristicine (especially in root) which have diuretic properties. Parsley also contains bergapten, which has antiinflammatory and antihistamine properties. Scientific evidence is lacking on the use of parsley to treat conditions mentioned.

viii. Chilly (*Capsicum frutescens*)

Belief: Chillies promote longevity if eaten daily. They keep you strong and give you energy; they clean your blood of toxins, but they can increase blood pressure and cause stomach ulcer.

Evidence: Chillies contain capsaicin, which can raise blood pressure and metabolic rate, increase satiety and give relief to neuralgia. There is no evidence that it affects longevity or causes stomach ulcers. Dose required to have effect on metabolic rate, obesity, blood pressure and neuralgia needs to be established (National Research Council, 1989).

ix. Legumes

Belief: Legumes, especially haricot beans, are essential for health and must be eaten at least 2-3 times per week (also recommended by Greek Orthodox Church). Chick peas are also particularly good for you. Legumes protect you from all diseases.

Evidence: Leguminous seeds, either canned or home cooked (but not extracts), have been shown to lower serum cholesterol, when consumed on a habitual basis. The mechanism is unknown and it is not solely attributed to its soluble fibre content, but rather

to a number of nutrients (e.g plant protein, arginine, zinc, copper, calcium) and non-nutrients (e.g saponins, plant sterols, isoflavones) working together (Shutler et al., 1987). Unprocessed beans (i.e not canned, but home cooked) achieved an even greater lowering of blood lipids (up to 24%) (Anderson et al., 1984). In another study, 30g dried beans eaten daily reduced serum cholesterol levels of Chinese hyperlipidaemic subjects by 16% and of healthy subjects by 9% (Bingwen et al., 1981). Whole haricot beans and chick peas have shown a remarkable capacity for maintaining low levels of plasma cholesterol in the rabbit, despite continued cholesterol feeding (Shutler et al., 1987).

Although soy beans are not customarily consumed by Greeks, soy protein is rich in arginine which has been shown to increase the release of glucagon into the blood, known to interfere with hepatic cholesterol synthesis (Shutler et al., 1987). The non-nutrients found in legumes are anticarcinogenic and thus are potentially protective against cancer (Ireland and Giles, 1993). An optimal selection of carbohydrates with a low glycaemic index have been associated with better glycaemic control, in normal and diabetic subjects (Wolever, 1991). In this respect legumes can also play an important role since they have one of the lowest glycaemic indices (Wahlqvist and Kouris-Blazos, 1991).

x. Lupin (*Lupinus albus*)

Belief: Lupins are a member of the broad bean family. They are much smaller than broad beans. They are very bitter and only found in Cyprus and in a state of Greece called Mani. In the past, they were put in large sacks and left in the sea for a few days in order to remove bitter taste. They were then boiled or roasted and eaten like a nut. They are very good for you, they give you strength. They can also be used to lower cholesterol, blood pressure, and lose weight by swallowing 2 uncooked skinned and crushed lupins every morning before breakfast for a few months.

Evidence: There is no evidence that lupins lower cholesterol, blood pressure or weight. More research required. However, there is evidence that most other members of the legume family (haricot beans, chick peas etc) are both hypocholesterolaemic as well as hypoglycaemic (Shutler et al., 1988).

xi. Fruit

Belief: Fruit is good for you, but it is not essential for good health, as long as vegetables are eaten.

Evidence: Epidemiological studies have shown that diets rich in vegetables and fruit are protective against heart disease and cancer. Fruit in particular is protective against cancer of the oesophagus, oral cavity and larynx (US National Research Council, 1989). Fruit is an important source of nutrients and non-nutrients. However, compared with vegetables, fruits are not as nutrient dense due to their sugar content and lower concentrations of selected nutrients (e.g folate and carotene). Nevertheless, we eat food and not nutrients and there are probably non-nutrients in fruits not found in vegetables which are protective against disease. For example, flavonoids (e.g quercetin, kaempferol, myricetin, chrysin, tangeretin, rutin) are abundant in fruit and have the potential to protect against carcinogenic heterocyclic amines produced in cooked meats and to prevent the oxidation of low density lipoprotein cholesterol (Ireland and Giles, 1993).

xii. Oranges (*Citrus aurantium*) and Lemons (*Citrus limon*)

Belief: Oranges, although good for health and for treating colds, should be avoided by those with high blood pressure. Lemon should be used as liberally as possible on food for general good health. If the juice of one lemon is consumed in a glass of luke warm water every morning 30 min before breakfast this lowers blood pressure, treats constipation and aids weight loss. Lemon is also good for arthritis and kidneys, especially for removing kidney stones.

Evidence: Oranges and lemons contain hesperidin and quercitrin which are vasopressors and also antiinflammatory. Lemons also contain myristicin which is a diuretic, as well as noradrenaline (which may affect metabolic rate?). There is no evidence that they affect blood pressure, weight or kidneys. More research required.

xiii Grapes (*Vitis vinifera*)

Belief: When grapes are eaten exclusively (up to 5kg/day) for no more than 40 days (known as grape therapy and recommended by Hippocrates), they can cure the body of all illnesses e.g diabetes, atherosclerosis, hypertension, cancer. Grape therapy is still practiced by some elderly Greeks living in rural areas and priests living in monasteries. Should be done annually to keep body in good health and to cleanse body of all toxins.

Evidence: Grapes have a high glycaemic index and if eaten in large quantities may raise blood sugar levels in the diabetic. Although grapes are not particularly nutrient dense, they contain many non-nutrients which potentially can be of benefit to health, such as quercitin (a vasopressor), inositol choline (hypocholesterolaemic), coumarin

(hypoglycaemic and antitumour), saponins (hypocholesterolaemic, antitumour) and flavonoids (antioxidant) (Duke, 1989). Epidemiological data is lacking and grape therapy has not been proven scientifically to cure any illnesses - research needed.

xiv. Olive oil

Belief: Eat only olive oil, in liberal quantities (about 2 tablespoons daily), preferably added to food once cooked; avoid butter, margarine and other oils. Olive oil is very good for your health and is not 'fattening'.

Evidence: Recently there has been some concern that a high intake of polyunsaturates, namely linoleic acid, may not be as healthy as was originally thought. This century there has been a huge human experiment, unprecedented in the history of man, with regard to the high intakes of linoleic acid in vegetable oils. They may have helped to lower heart disease rates but there has also been a rise in cancer death rates. Animal studies and other studies by various groups that followed, raised the suspicion that polyunsaturates may favour tumour development in the presence of chemical carcinogens and that they may lead to immune suppression (Spiller, 1991; Wahlqvist and Kouris-Blazos, 1993).

In the absence of adequate amounts of antioxidants, large amounts of polyunsaturates in the diet may produce lipid peroxidation and free radicals. Free radicals are now considered to be involved in carcinogenesis and to be the key to the process of atherosclerosis (James et al., 1989; Yamamoto et al., 1988). It now seems that monounsaturates are just about as effective as polyunsaturates in reducing the level of LDL cholesterol in the blood, without lowering HDL (Grundy et al., 1988). In support of the claims for monounsaturates, it has been observed that blood cholesterol levels and the incidence of heart disease are lower in some mediterranean countries which consume olive oil almost exclusively, than in other European countries where the total amount of fat in the diet is similar but not obtained from olive oil (Keys 1980).

In contrast to polyunsaturates, monounsaturates are more stable and do not oxidise as easily. The antioxidants found in olive oil are therefore not only available for protecting the monounsaturates from oxidation but also for protecting blood cholesterol from oxidation and damage. Some olive oils contain 30 to 40 different antioxidants. The common practice of pouring olive oil over food just before it is eaten means the antioxidants are well preserved (Spiller et al., 1991). A high background diet of olive oil allows the omega 3 fatty acids (DHA, EPA) to be metabolised into their by products which have antiinflammatory/antithrombotic properties, whereas linoleic acid blocks the

pathway. Additionally, if very little linoleic acid is consumed, there will be an increase in eicosatetraenoic acid (a breakdown product of oleic acid) which is now known to have potent antiinflammatory action (US Surgeon General's Report 1988; Wahlqvist and Kouris-Blazos, 1991). Two recent case control studies in Europe suggest that monounsaturates may actually have a protective effect against colo-rectal cancer, but this finding needs confirmation (Tuyns et al., 1987). Olive oil is energy dense and therefore conducive to weight gain.

xv. **Beer and Wine**

Belief: Beer is not as good for your health and should be avoided. Wine is good for your health, especially for the heart. Drink one to glasses of wine daily with food, but never get drunk.

Evidence: In a study by Kune et al (1987a, 1987b) in Melbourne, beer was found to be a risk factor for rectal cancer, which was more marked in males than in females. This association was independent of other sources of alcohol and major dietary variables. In a study by Potter and McMichael (1986) in Adelaide, total alcohol intake (but not specifically beer) was associated with increased risk of both colon and rectal cancer in women.

Moderate alcohol intake of 1-2 glasses per day has been associated with reduced risk from heart disease. However a causal protective role for alcohol has not been established and whether there are differences between sources of alcohol i.e beer vs wine vs spirits. Countries with moderate per capita intake i.e 3-5% of calories from alcohol, have low rates of heart disease. For example, Greece and France that consume mainly wine, and Japan that consumes spirits made from rice, have low rates of heart disease. Whereas Finland, Netherlands, North America and Australia which have a high per-capita intake, mainly from beer, have higher rates of heart disease.

There is emerging evidence from France, that the source of the alcohol may also be important. Red wine in particular has been associated with reduced coronary heart disease mortality. Apart from alcohol, red wine also contains many non-nutrients such as antioxidants, which may also be contributing to the beneficial effects of this beverage (Ireland and Giles, 1993).

7.2.2.2 HERBS

i. **Rosemary** (*Rosmarinus officianalis*)

Belief: The leaves can be drunk as a tea. One cup daily keeps one in good health. It is particularly good for lowering blood sugars, for calming nerves and for treating colds.

Evidence: Contains volatile oils, borneol and camphor (antiseptic) and cineole (treats rhinitis, pharyngitis). Insufficient evidence for its use in diabetes.

ii. **Peppermint** (*Mentha piperata*)

Belief: Drunk as a tea, used to lower blood pressure by thinning blood, lowers cholesterol and blood sugars, cleans out the kidneys, and good for colds. Good to drink one cup daily for good health.

Evidence: Contains valeric acid and phellandrene (hypotensive), salicylates (antipyretic, analgesic). Evidence lacking for its use to treat conditions mentioned.

iii. **Olive tree leaves** (*Olea Europea*)

Belief: Drunk as a tea every morning before breakfast to lower blood pressure.

Evidence: Contains oleuropein (hypotensive). No evidence that it treats hypertension.

iv. **Mountain tea** (*Sideritis sp*) **and Sage** (*Salvia officinalis*)

Belief: When these herbs are drunk as teas they help lower blood pressure, blood sugars and cholesterol. They are good for the blood, kidneys, pain, colds and general good health.

Evidence: Sage contains phytoestrogens, ursolic acid (diuretic), thujone and cineole (antiseptic), saponins and borneol. Mountain tea contains tritopenic acids (diuretic). Insufficient evidence for their use in conditions mentioned.

v. **Chamomile** (*Matricaria chamomilla*)

Belief: Cures over 100 illnesses. Drunk as a tea to treat stomach upsets, colds, dysmenorrhoea, hypertension, constipation and colic in babies (only 1-2 teaspoons before bedtime). Should drink 1 cup daily to keep body in good health. Chamomile is also good for the skin and joints e.g chamomile is boiled in olive oil or kept in sun in oil for 1 month and then applied to the skin to prevent wrinkles or rubbed into the joints of a baby to strengthen limbs.

Evidence: Chamomile contains many non-nutrients which could potentially be good for health, such as matricine (antitumour), bisabolols (antiinflammatory, antiulcer), rutin (hypocholesterolaemic, diuretic, antithrombogenic) and coumarins (hypoglycaemic). However, epidemiological data is lacking and dose required to treat conditions not scientifically established.

vi. **Aniseed** (*Pimpinella anisum*)

Belief: The seeds are drunk as a tea. Used to treat colds, insomnia, and colic in babies (1-2 teaspoons before bedtime).

Evidence: Contains phytoestrogens, coumarins (hypoglycaemic, antiinflammatory), creosol (antiseptic), antihistamine, anethole (carminative). Scientific evidence lacking on the dose required to treat conditions.

vii. **Cornmeal** (*Zea mays*)

Belief: Corn silk is good for removing kidney stones. Cornmeal lowers cholesterol if 1 tablespoon is left overnight in water and drunk in the morning before breakfast for one month.

Evidence: Cornsilk contains diuretic compounds (wax, quercitrin) but has not been proven to remove kidney stones. There is some evidence in animals that cornmeal lowers cholesterol but more evidence is required. The reason for drinking the water rather than the cornmeal is unclear.

7.3 DISCUSSION

Appetite was reported to be good by more than 70% of the Greek elderly, decreasing slightly in the 80+ age group. Since the men in both Spata and Melbourne reported better appetites than the women, one would expect that food and nutrient intake would be greater in the men. Interestingly, the women (especially aged 80+) also tended to avoid more foods than the men. Melbourne Greeks, especially in the age groups 80+, reported better appetites than Spata elderly, suggesting better nutritional status in the migrant elderly (see chapters 9,10).

It is interesting to note that 80% of the Melbourne women aged 80+ wore dentures compared with 36% of the Spata women. The ability to chew with good fitting dentures may be positively influencing appetite and food intake in this age group. Chewing difficulties may influence nutritional status due to the selection of soft foods and avoidance of meat and hard fruits or certain vegetables. The most common food reported to be avoided was meat in both Spata (25%) and Melbourne (45%), followed by fruit, uncooked vegetables, egg, bread and cheese (especially in the 80+ women). The avoidance of such foods could be influencing the nutritional status of these subjects (see chapter 10). Examination of food beliefs may help provide some answers as to the reasons for such food avoidance (see below).

Companionship at meal times has been reported to influence the quantity and variety of foods eaten by elderly people (McIntosh et al., 1989). In this respect, the 80+ women are probably at greatest risk of inadequate food and nutrient intake since a large proportion reported eating alone in both Spata (41%) and Melbourne (25%) (see Chapter 11). Eating away from home may provide a stimulus to eat more or to eat a greater variety of foods. More than 70% of the Melbourne elderly reported eating away from home regularly compared with <10% of Spata elderly. Thus, one would expect that the nutritional status of Melbourne Greeks to be better than Spata Greeks (see chapter 10). This also reflects changes in living arrangements on migration; Spata elderly lived with their children, thus, visiting family and eating away from home was not as high as in Melbourne Greeks who tended to live only with their spouse.

Having access to home grown produce can markedly increase consumption of such foods, particularly in elderly people who have limited income. In this respect, Melbourne elderly appeared to be at a distinct advantage with more than 50% of the subjects relying on their back yards for most of their vegetables, compared with about 20% of the Spata elderly. One would therefore expect a significantly greater intake of vegetables by

Melbourne elderly (see chapter 9). The majority of the elderly (85%) had someone to shop and cook for them, thus food intake was probably minimally influenced by these factors. It appears the strong social support system in the Greek culture has not been lost on migration.

Cooking methods can have a significant effect on the retention of vitamins and minerals and subsequently nutrient intake. This can be particularly important in elderly people requiring a nutrient dense diet as a result of reduced energy needs. Greek elderly, especially the 80+ group, preferred cooking methods (e.g boiling) which were not conducive to vitamin retention. Nevertheless, casseroles were also very popular for both meats and vegetables which have better nutrient retention than boiling, but not as good as steaming. Cooking methods that keep food 'wet' such as casseroles are considered traditional in the Greek cuisine (Barer-Stein, 1979). This method of cooking was popular in both Spata and Melbourne, however it appears that drier methods of cooking (e.g grilling, roasting) were becoming increasingly more common on migration.

Adherence to religious customs can have a profound effect on food and nutrient intake, placing vulnerable elderly folk at increased risk of malnutrition. In this respect, Spata elderly and Melbourne women aged 80+ appeared to be at greater risk of malnutrition due to the higher prevalence of fasting practices (avoiding animal products for at least two days of the week, and for 40 days before Easter). Overall, religious fasting practices appeared to have decreased markedly on migration (see chapter 10, 11).

More than 90% of the subjects had a cooked meal daily suggesting that, overall, the nutritional status of the Greek elderly was probably quite good (see chapter 9). The common belief that the elderly live on 'tea and toast' was definitely not seen in elderly Greeks. The high prevalence of cooked meals amongst elderly people have also been found in large samples (>2000 subjects) of elderly Anglo-Celtic Australians (Horwath, 1987) and elderly Europeans (de Groot et al., 1991).

Food patterns, however, appear to have changed significantly on migration. Spata elderly were consuming the traditional rusk and milk beverage for breakfast compared with breakfast cereal, cheese, egg, sweet biscuits in Melbourne Greeks. Similarly, all of the Spata elderly had their main meal for lunch (i.e 100% had cooked meal) compared with less than 75% of the Melbourne Greeks. Fruit, bread and alcohol accompaniments to the lunch meal had also decreased in migrant Greeks. Furthermore, Melbourne Greeks tended to have their main meal for dinner (70% cooked meal) compared with <50% of the Spata elderly. This is also reflected in the alcohol consumption, with a greater

proportion of the Melbourne men drinking alcohol with dinner compared with Spata men. Spata elderly tended to have yoghurt for dinner. The significance of such changes to food patterns and meal frequencies in migrant Greeks requires further investigation. In a study by Fabry and Tenerman (1970) on 440 men aged 60-64, a greater meal frequency was associated with a lower prevalence of overweight, ischaemia heart disease, hypercholesterolaemia and hyperglycaemia .

Food beliefs can have a significant influence on the consumption of certain foods. An important approach is to distinguish between food intake, as quantitative data, and food beliefs, which help explain why the food choices were made and the constraints on their improvement (Kouris et al., 1991). The food beliefs of elderly Greeks can have an important impact on their nutritional status. Overall, their food beliefs appeared to be conducive to chronic disease prevention, but in vulnerable elderly, could lead to outright malnutrition. For example, the beliefs to avoid animal products or oranges for long periods of time could place such elderly (especially 80+ women) at risk of protein energy malnutrition, water soluble vitamin and mineral deficiency.

If the Greek community were to be targeted for health promotion and prevention, their beliefs would have to be taken into consideration in order to facilitate programme implementation. Moreover, further research is required to explore the scientific basis for many of these beliefs which appeared to be so deeply ingrained in the Greek culture.

7.4 SUMMARY

A greater proportion of men aged 70-79 (60%) reported very good appetite compared with the women (30%) in both Spata and Melbourne. Furthermore, Melbourne elderly aged 80+ (42%; mainly women) tended to report better appetite than Spata elderly (20%). Appetite appeared to decrease with age, especially in Spata men.

In Spata and Melbourne, the majority of elderly aged 70-79 (72%) reported enjoying their food as much as they used to. In contrast, a greater proportion of Melbourne elderly aged 80+ (64%) reported enjoying food compared with Spata (46%). The main reasons given in Spata and Melbourne for not enjoying food as much, included the following: a smaller appetite (30%), loss of interest in food (5%), loss of taste (5%) and loss of smell (2%).

In both Spata and Melbourne, 60% of the men and women aged 70-79 reported wearing dentures (40% still had their own teeth). In the 80+ group, about 50% of the Spata elderly

wore dentures compared with 80% of the Melbourne elderly. Less than 10% of this group chewed with their gums (except Spata women 27%) and about 20% still had most of their teeth. The greater use of false teeth by Melbourne elderly is not necessarily a reflection of dental status but possibly due to differences in the provision of dental care in Greece and Australia.

Poorly fitting dentures were reported by only 12% of men in both Spata and Melbourne. In contrast, <3% of Spata women and 15% of Melbourne women reported poorly fitting dentures. Gender, age group and centre differences were not significant. Chewing difficulties were reported by about 30% of the men in both age groups. A significantly greater proportion of women aged 80+ (45%) reported difficulty chewing than the younger women (20%). A greater proportion of Melbourne women aged 80+ (53%) had difficulty chewing compared with Spata women (36%). Difficulty swallowing was reported by less than 5% of the elderly, mainly in the 80+ age group. Sore and dry mouth were rarely reported as problems (<5%). In contrast, heart burn was reported by 10% of the men and 13% of the women.

A greater proportion of women (80%) in both Spata and Melbourne reported avoiding some foods compared to the men (55%). Furthermore a significantly greater proportion of Melbourne women aged 80+ (86%) avoided some foods compared to Spata women (45%). The most common food reported avoiding was *meat* in both Spata (25%) and Melbourne (45%). A significantly greater proportion of Melbourne elderly reported to avoid meat compared to Spata elderly. Fruit was the next most commonly reported food to be avoided by 10% of the men and 20% of the women, followed by egg (M 9%, F 20%) and bread (M 4%, F 8%). Avoidance of uncooked vegetables was only reported by Melbourne Greeks (M 8%, F 26%), mainly due to chewing difficulties with dentures.

About 80-90% of the elderly in both Spata and Melbourne reported having company at mealtimes on a daily basis. Significantly more elderly aged 80+ reported eating alone in Spata and Melbourne compared to the younger elderly, and the older women were more likely to eat alone (30%) compared to the men (10%). Spata elderly rarely (<10%) ate away from home (except men aged 70-79 22%). In contrast, 70% of Melbourne elderly reported eating away from home once a month or more, of which one third would eat out on a weekly basis. The most common place for eating out was at a relative's home (60%).

The majority of elderly in both Spata (M 85%, F 67%) and Melbourne (M 75%, F 75%) reported having access to home grown produce. In Spata this was mainly olives, grapes,

figs, almonds and olive oil. In contrast, 75% of Melbourne elderly grew a wide variety of vegetables in their back yards, mainly tomatoes, silverbeet, endives/chicory, lettuce, zucchini, cucumber, parsley, chilly peppers/capsicum, broad beans and less commonly grapes and fruit trees (olives were not grown). A significantly greater proportion of Melbourne elderly (40%) reported relying solely on their backyard for most of their vegetable intake compared with Spata elderly (4%).

Overall, about 50% of the elderly reported doing their own shopping for food, except for Melbourne men aged 70-79 (90%). Gender and age group differences were only seen in Melbourne - a greater proportion of men reported doing the shopping and the 80+ subjects did less shopping than their younger counterparts. Elderly who lived with their children (especially women) were less likely to report shopping for food, and for couples, the husband was more likely to be reported as doing the shopping (especially in Melbourne). Furthermore, the 80+ elderly (M 17%, F 54%) tended to report their children as doing the shopping regardless of living arrangements.

About 70% of the men reported to have their meals cooked by their spouse, however, a greater proportion of 80+ men reported their children providing meals (20%). Melbourne women aged 70-79 were more likely to cook their own meals (80%) compared to Spata women (60%), however, a greater proportion of 80+ women reported their children providing meals (60%). All the study subjects reported having access to a stove, oven, fridge, TV, radio, phone, toilet and hotwater in the home they were living in. In Melbourne, 12% of study subjects also reported having a microwave and 53% a deep freeze.

About 80% of the elderly in Spata and Melbourne reported avoiding eating the fat on meat or chicken skin. A significantly smaller proportion of Spata elderly (55%) reported adding salt to food whilst cooking compared with Melbourne elderly (73%). As a result, Spata elderly tended to add salt at the table (66%) compared to Melbourne elderly (50%). The preferred cooking methods for vegetables in both Spata and Melbourne included boiling (100%), salads (96%), baked (95%), casseroles (90%) and fried (55%). Steamed vegetables were eaten by only 20% of the subjects in Melbourne.

The preferred cooking methods for meat/chicken/fish in both Spata and Melbourne included the following: boiled (98%), baked (94%), casseroled (93%), and fried (60%). However, in Melbourne, meat tended to be either barbequed (36%) or grilled (72%) whereas in Spata, casseroles were more popular. Steamed and microwaved meat was rarely consumed (4%). The 80+ elderly preferred casseroles and avoided fried or dry

dishes. Religious fasts which involved the exclusion of meat, fish, eggs and milk products from the diet, were more commonly practiced by Spata elderly than Melbourne elderly. For example, the practice of fasting every Wednesday and Friday was more common in Spata (57%) than in Melbourne (30%). Similarly, fasting for Easter or Christmas was more prevalent in Spata (73%) than in Melbourne (40%). Spata elderly also reported to fast for a longer period of time during these religious events. However, Melbourne women aged 80+ were more likely to report such fasting practices compared with the men and younger women in Melbourne.

In Spata, 80% of the elderly had breakfast between 7.00 and 8.00am. In contrast, 80% of Melbourne elderly had breakfast between 8.00 and 10.00am. All subjects consumed breakfast. In Spata, the most common foods reported to be consumed for breakfast included the following: milk 65%, coffee 52%, crisp bread 45%, bread 42% and tea 15%. In contrast, the most common foods reported to be consumed by Melbourne elderly included: milk 52%, bread 55%, cheese 30%, coffee 45%, tea 32%, packet cereal 28%, crispbread 16%, porridge 10%, olives 10%, egg 10%, sweet biscuits 8% and fresh fruit 7%.

About 60% of the elderly never had morning tea. Melbourne elderly tended to have morning tea later in the morning (11am) than Spata elderly (10am). The most common foods consumed included: coffee, fruit, crisp bread, bread, cheese, tomato. The majority of the elderly in both Spata and Melbourne had lunch at 12 noon (50%), 33% at 1.00pm and 12% at 2.00pm. In Spata, all the subjects had a cooked meal for lunch, which was accompanied by bread (92%), fruit (60%) and alcohol (men 52%, women 13%). In contrast, 75% of Melbourne elderly had a cooked meal which was also accompanied by bread (80%), alcohol (men 30%, women 15%) and fruit (15%). Other foods consumed for lunch included sandwiches (13%), cheese and bread (26%), olives and bread (17%), fruit 17% and soup (5%).

About 22% of the elderly never had afternoon tea. Spata elderly tended to have afternoon tea later (5.00pm) than Melbourne elderly (3-4pm). The most common foods consumed included coffee (60%), tea (15%), fruit (27%) and crisp bread (7%). Less than 3% of the men and women in the sample never had dinner. Melbourne elderly tended to have their dinner earlier (6-7pm) than Spata elderly (8-9pm). Less than 50% of the Spata elderly had a cooked meal (except 70-79 men 72%) compared with about 77% of the Melbourne elderly. Spata elderly that did not have a cooked meal tended to have yoghurt (35%) or milk (25%) and Melbourne elderly tended to have soup (15%). About 20% of all the elderly reported to have bread/cheese/tomato and olives for dinner and 25%-35%

had fruit only. The majority of the elderly had bread with their dinner (80%). Alcohol was consumed with dinner by 13% of the Spata men and 4% of the women compared with 27% of the Melbourne men and 16% of the women. Coffee or tea were consumed after dinner by about 12% of the elderly. Supper was not common in Spata. In Melbourne, 40% of women and 70% of men had supper which normally consisted of fruit and or coffee/tea. Overall, more than 90% of the elderly subjects in Spata and Melbourne reported consuming a cooked meal daily. In Spata, a greater proportion of elderly had two cooked meals a day compared with Melbourne elderly.

The elderly Greeks in Greece and Australia reported a whole range of foods and herbs believed to be 'good' or 'bad' for health. The source of such beliefs appears to have originated in the majority of cases by 'word of mouth'. The remedies reported by the elderly in Greece and Australia were strikingly similar with minor changes to the remedy occurring on migration. The food and health beliefs reported most frequently included the following: 'good' for health: legumes, vegetables, yoghurt, religious fasts, moderate wine intake, small servings of food, food variety, wet/casseroled food, fish, bread, olive oil, herb teas, exercise, social activity, social support, laughter, sexual activity, napping, waking up early; 'bad' for health: meat, smoking, late nights, stress, obesity, sweets, coffee, margarine, butter.