

# Nutrition Guidelines for Older People

**Good practice guidelines for carers  
of older people in Tayside**



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Specialist Health Promotion Service

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# Contents

Foreword	1
1. Introduction	2
<b>Part 1: General Advice for Older People.....</b>	<b>4</b>
2. The Five Food Groups	4
3. The Value of Foods, and Methods of Preparation and Cooking	8
4. Food Handling and Hygiene	12
5. Alternative Diets	13
6. Therapeutic Diets	14
<b>Part 2: Further Advice for Older People who ..... may be Nutritionally at Risk</b>	<b>17</b>
7. Common Health & Nutritional Problems	17
8. Nutritional Assessment	22
9. Settings	23
10. References and Further Reading	26
11. Nutritional Assessment Tools	28
<b>Appendix 1</b>	
Reference Nutrient Intakes/Estimated Average Requirement	29
<b>Appendix 2</b>	
Summary of Dietary Requirements due to Religion or Culture	30
<b>Appendix 3</b>	
Vitamins, Minerals and Trace Elements	31
Contact Addresses and Telephone Numbers	34
Membership of the Working Group: 2000 to 2002	35



## Foreword

I am very happy to give my full support to the introduction of these nutrition guidelines for older people. They replace guidelines published as long ago as 1992, which were in need of updating.

As we all know, food is one of life's pleasures, whatever our age. In addition to the enjoyment which we get from it, good food is also essential to keep us healthy and fit and to keep us full of energy.

An important part of a good diet is the provision of variety and choice. This can be difficult at any age, but can be a particular challenge in older people. Thankfully, many of our older people are healthy and are well able to eat a healthy diet. However, the health of some older people is, of course, not so good and there can be particular difficulties for them in achieving a healthy diet and in achieving variety and choice. When we think about nutritional problems in this country, we usually think of over-nutrition, but we are becoming increasingly aware, in older people in particular, of the problem of under-nutrition.

These guidelines are an excellent source of advice, based on the best evidence, for those in Tayside who care for older people. The guidelines are very clear, very practical, and very easy to use. They have been put together by a group of professionals who are highly experienced in the field of nutrition in older people and I am confident that they will answer most of the questions you are likely to have. The guidelines have also been endorsed by all the local organisations which have an interest in nutrition in older people.

We intend to publish updated versions at some time in the future, and to help with this, we would be most grateful to receive from you any comments you have on their content or style of presentation.

Dr Drew Walker  
Director of Public Health  
NHS Tayside  
December 2001



# 1. Introduction

Increasing awareness of nutritional needs has led to the publication of reports which give recommendations for dietary change (Scottish Diet Report 1993, Scottish Diet Action Plan 1996). Although such reports make recommendations for the general population, the Nursing Homes Core Standards (1999) and the Caroline Walker Trust Report (1995) also give some specific guidelines for older people. We have used these reports to inform our guidelines.

Diet plays a vital role in maintaining health for everyone but is especially important for older people. Older people require the same nutrients as all other adults. For various reasons some older people may take a poor diet, which as the body reserves of nutrients are used up may result in malnutrition and the development of dietary deficiencies. This process is speeded up by illness when the body may have a greater demand for nutrients.

- ◆ Understanding the dietary needs of the older person is essential for anyone involved in caring or catering for older people. The provision of nutrition to older people warrants this special attention since they have many problems in obtaining an adequate balanced diet. (*See section 7*)

Other factors can affect the appetite and food intake of older people, which can lead to poor nutrition. The impact of these factors may vary according to whether the older person is at home or in care.

- ◆ **Loneliness** – eating is a social occasion and often loses its value when an older person is left alone, especially to anyone who has cooked for or been part of a family for many years.
- ◆ **Mental disturbances** – dementia can occur and the person can easily forget eating times, or indeed whether they have eaten or not.
- ◆ **Physical disability** may prevent shopping, food preparation or even eating.
- ◆ Some **drugs** may affect appetite, cause nausea or loss of body mineral stores.
- ◆ **Ignorance about food preparation** especially for some men who have never shopped or cooked.
- ◆ **Changing nutritional requirements** e.g. dietary vitamin D requirement will increase in the housebound.
- ◆ **Economic position** – food may not be the first priority.
- ◆ **Access to/availability of food** – shops, shelves in shops, etc.
- ◆ For **individuals in care**, who are dependent on others in meeting their nutritional needs, specific attention to influencing factors such as meal service and the dining environment, food provision and personal choice is important.

These guidelines will address some of these difficulties, and provide the necessary information to enable the older people of Tayside to receive appropriate nutrition. In addition to information on achieving the dietary recommendations for an adequate diet, included are sections on common health and nutritional problems, alternative and therapeutic diets, food safety and the preparation and service of food to older people.

# Part 1: General Advice for Older People

Some individuals may be following a low fat, low sugar diet in line with the general recommendations for the general adult population. If the individual’s weight is stable and their appetite is good it is not necessary to change their eating habits. These recommendations are however, inappropriate for those with a reduced appetite where nutritional status may be compromised.

## 2. The Five Food Groups

### Introduction

Foods can be categorised into five different groups. In order to meet nutritional requirements, a minimum intake from each group is suggested.



### i) Fruit and vegetables

Foods in group	Recommended servings per day	Serving sizes	Other information
<b>Vegetables e.g. fresh or frozen, salad</b> <b>Fruit e.g. fresh, stewed, dried or tinned</b> <b>Fruit juice</b> <b>Vegetable juice</b>	Aim for a minimum of five portions per day which should include a mixture of fruit and vegetables.	2tbsp cooked vegetables (50-75g; 2-3oz) 2tbsp raw vegetables (50-75g; 2-3oz) 1 side portion of salad 1 apple, orange, banana 1 small bowl of stewed or tinned (50-75g; 2-3oz) 1tbsp dried fruit (25g; 1 oz) 100 mls fresh fruit juice or fortified fruit juice	These add non starch polysaccharide (NSP also known as fibre), vitamins and some minerals to the diet.  Include green leafy vegetables or salad at least three times per week.



## ii) Bread, other cereals and potatoes

Food Group	Recommended servings per day	Serving sizes	Other information
<b>Bread</b> <b>Breakfast cereal</b> <b>Pasta</b> <b>Rice</b> <b>Potatoes</b> <b>Chappati</b> <b>Yam</b> <b>Sweet Potato</b>	Minimum of 1 or more portions from this group at each main meal, minimum 5 portions per day.	½ roll (25g; 1oz) 1 slice bread (25g; 1oz) 1 bowl breakfast cereal (3 tbsp) 2 tbsp cooked rice, pasta, noodles (75g-100g; 3-4oz) 2 egg sized potatoes (75-100g; 3-4oz) 1 (50g, 2oz) scone, slice tea bread	Try and encourage higher NSP varieties e.g. wholemeal bread, whole-wheat flakes, branflakes, porridge and weatabix.



## iii) Milk and dairy foods

Food Group	Recommended servings per day	Serving sizes	Other information
<b>Milk and dairy products, e.g. Cheese, yoghurt, fromage frais, custard, milk puddings, hot milky drinks</b>	3 portions per day. Individual could have ½ pint milk a day in drinks, plus two food servings from this group.	Large glass of whole milk (300 ml; ½ pint) 2 slices cheese (25 – 50g, 1-2 oz) 1 bowl milk pudding (100-150g, 4-6 oz) 1 carton yoghurt (100-150g, 4-6 oz)	Whole milk should be used (not low fat milks) and the milk should not be watered down. Milk can also be used with cereals and in drinks.



#### iv) Meat, fish and alternatives

Food Group	Recommended servings per day	Serving sizes	Other information
<b>Meat</b> <b>Fish</b> <b>Eggs</b> <b>Nuts</b> <b>Pulse vegetables</b> e.g. beans, peas and lentils <b>Quorn, tofu</b>	2 portions from this group per day.	2 slices meat (50-75g; 2-3oz) 1 large fish fillet (75g-125g; 3-5oz) 1 chicken breast (50-75g; 2-3oz) 2 eggs 3 tbsp baked beans or other tinned or soaked pulse vegetables (100-125g; 4-5 oz) 2tbsp peanut butter (50g; 2oz)	Red meats and offal are good sources of iron. Oily fish (e.g. mackerel, sardines) are good sources of vitamin D Pulses are a good alternative to meat and can be used in soups and casseroles.



#### v) Fatty and sugary foods

Food Group	Recommended servings per day	Serving sizes	Other information
<b>Fatty Foods</b>	Use in moderation	1tsp butter or margarine (15g; ½oz)	Only decrease fatty foods if weight reducing diet required.
<b>Sugary Foods</b>	Use in moderation	1tsp preserve (10g; 1/3oz)	Only decrease sugary food if weight reducing or diabetic diet required.



## vi) Drinks

At least 1500mls daily	8 x 200ml cups of water, tea, coffee, milk, fruit juice, squashes, fizzy drinks	Use full fat milk and drinks high in vitamin C. Only use low fat milk and low calorie drinks if person on weight reduction diet. Sugar-free drinks may also be provided for diabetics.
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To achieve appropriate intakes, some individuals (for example those with poor appetites) may require additional quantities of the above. When individuals are found to be having difficulties through regular nutrition screening, initial steps should involve appropriate dietary modification/food fortification. This will require appropriate provision from catering services and staff training on this area of care. Catering services should also be able to provide some nourishing drinks such as Complan or Build-Up for individuals with short term or intermittent problems with poor appetites/intakes.

### 3. The Value of Foods, and Methods of Preparation and Cooking

It is important to remember that the older people may be more vulnerable than members of the general population, and therefore some foods may carry health risks.

Food safety guidelines are issued by government departments from time to time. These will supercede the following comments relating to specific foods.

#### Pulse Vegetables

Pulse vegetables (peas, beans, lentils) should be encouraged since they are a good source of NSP (non starch polysaccharides; fibre). They can be introduced into the diet to extend some meat dishes or used in soup. Their use is essential

for vegetarians as a meat alternative. Dried pulses must be soaked, and then cooked thoroughly to make them digestible. Red kidney beans need ten minutes on a rolling boil to destroy toxins.



#### Other Vegetables

Vegetables are a good source of the anti-oxidant vitamins A and C, minerals and NSP (fibre). They should preferably be fresh or frozen rather than canned although canned tomatoes can be very useful for savoury dishes. Canned vegetables are also a useful standby for older people at home. Vegetables should be provided at every meal and a wide variety offered throughout the week. Some vegetables can be a good source of vitamin C. Unfortunately vitamin C is lost by prolonged soaking of vegetables in water and easily destroyed by prolonged boiling. Steaming is a better method of cooking as it destroys less of the vitamin C. Care must be taken to minimise preparation and cooking time, and the minimum amount of water should be used for cooking. Fresh vegetables should be prepared just before they are required for cooking or serving as far as possible. The peeling of edible skins should be avoided provided the vegetables are of good quality, as this will increase the vitamin and NSP (fibre) content of the diet.

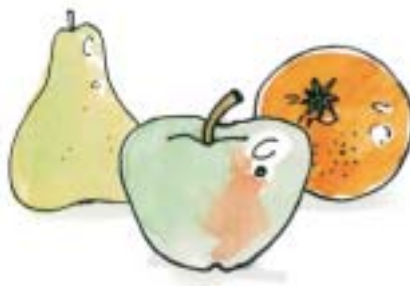
#### Nuts

Nuts are a good source of protein, but they may not be suitable for consumption by some older people e.g some people may have an allergy to peanuts. They may become lodged in dentures and may cause problems for those with swallowing difficulties. Their use should be encouraged in the vegetarian with ground nuts, peanut butter and other nut pastes being suitable alternatives to meat and fish.

## Fruit

Fruit is a good source of the anti-oxidant vitamins A and C, minerals and NSP (fibre). Fresh fruit should be incorporated into the diet regularly using a wide variety of seasonally available fruit.

Fruit can also be used as an alternative to cakes and biscuits, and stewed fruit can be used as a pudding. If whole fruits are difficult to manage, fresh fruit salad is usually very acceptable.



Canned fruit is a useful alternative. Dried fruits can also be used in baking, or added to cereals and puddings, to add sweetness. Pure fruit juice (100 mls) can be used as a fruit portion substitute on a daily basis to boost vitamin C. Excessive use may cause abdominal pain or diarrhoea.

## Bread or other Cereal Products



Bread and flours are a good source of vitamins and NSP (fibre) and provide energy. Wholemeal bread should be encouraged but white bread should also be available. A mixture of white and wholemeal flours should be used in baking. Unprocessed bran should not be used as it can cause stomach pain and constipation if fluid intake is not adequate and reduce the body's ability to absorb some important nutrients if given in excessive quantities.

A variety of pastas may be used: white, wholemeal, verdi and tomato since these will add variety to the diet. Breakfast cereals are mostly fortified and are a good source of vitamins and minerals. Porridge, oats and muesli and fortified breakfast cereals are also good sources of NSP (fibre) and should be encouraged. Offer the whole grain varieties in preference to those which are sugar-coated.

## Rice

Rice is a good source of energy, B vitamins and NSP (fibre). It is best to use a variety of rice, both white and brown, for savoury dishes. Rice pudding can be made with sugar or sweetened with dried fruit such as sultanas, which will also increase the NSP (fibre) content of the dish.

## Milk and Milk Products

Milk and milk products are excellent sources of calcium and protein. Whole milk should be used. Semi-skimmed milk and low fat cheese will help to reduce fat intake for those who are overweight or on a specific therapeutic diet. For the vegan, calcium-enriched soya milk should be used. All milk products must be pasteurised.



## Meat, Poultry and Meat Products



Meat is an excellent source of protein and iron. A wide range of meats should be used to encourage a variety of tastes. Cultural and religious objections to certain meats should be acknowledged (*see Appendix 2*).

Meat products such as sausages and burgers should be cooked without the addition of fat. Meat pies and pastries may cause problems for those with ill-fitting dentures or dry mouths, they also have a high fat content and should be offered only occasionally.

Frozen poultry must be defrosted thoroughly in the fridge and well-cooked to avoid the risk of food poisoning.

## Fish

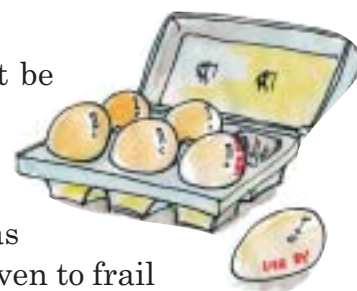
Oily fish such as kippers, herring, sardines, pilchards and mackerel are rich sources of vitamin D and omega-3 fatty acids. The use of all fish should be encouraged and a variety of cooking methods can be used.

## Eggs

In hospital and residential settings pasteurised eggs must be used for such dishes as scrambled eggs.

Eggs should be purchased from a reputable dealer who has a quick stock turnover. Shell eggs must never be washed as this will raise the risk of salmonella infection. Shell eggs given to frail elderly should be hard-boiled or thoroughly cooked. (Forbes, 1988).

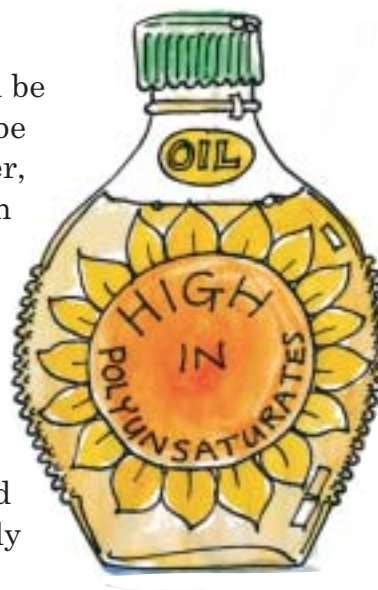
Individual clients wishing to have a soft-boiled egg might be allowed to sign a disclaimer in care home facilities.



Eggs should not be available as the vegetarian choice every day.

## Fats and Oils

Although frying foods adds variety to the diet it should be kept to a minimum. Where possible, foods should be grilled, poached, steamed, boiled or baked. However, when frying, the oil used should be labelled “High in Polyunsaturates”, for example, sunflower oil, soya oil, rapeseed oil, etc. Vegetable oil of unknown origin should be avoided since it may not be as rich in polyunsaturates. Both spreads labelled “high in polyunsaturates” and butter should be available. The use of spreads rather than butter should be encouraged since the Vitamin D content is higher. Polyunsaturated fats can also be used in baking. Low fat spreads are only necessary in the case of therapeutic diets.



## Drinks

Water should be available at all times. A variety of other drinks should be available as well. The amount of sugar and sugar-containing drinks may need to be restricted in the case of therapeutic diets. Any alcohol consumed should not be counted as part of total fluid intake. Alcohol, tea and coffee all have diuretic properties. Further information about safe alcohol limits is available from the Specialist Health Promotion Service (*see page 34*).

## 4. Food Handling and Hygiene

General leaflets for home use are available from your GP surgery or the local Environmental Health Department.

Frail older people are particularly vulnerable to the effects of food poisoning. It is essential that policies and procedures to minimise this danger are written down. Policies must meet with the requirements laid down in the Food Safety Act (1990) and the relevant provisions of the Health and Safety at Work Act 1974 and any Regulations made thereunder. All establishments should have agreed procedures to implement and monitor their policies.

The Social Work Departments advise all establishments to have in place a Hazard Analysis of Critical Control Points (HACCP) system which details personal hygiene, food handling and kitchen cleaning to be followed by all staff.

The contractors for NHS Tayside catering provision are bound to comply with the specification for the services required and should also have HACCP systems in place.

Nursing Homes in Scotland are required to implement Nursing Homes Core Standard No 7 Food Hygiene Standards, Scottish Executive NHS MEL(1999)54, and to have HACCP systems in place.

All establishments are required to implement any subsequent food safety and hygiene laws.



## 5. Alternative Diets

### Vegetarian and Vegan

Increasingly, many people are becoming vegetarian and vegan because they do not believe in the slaughter of animals for food whilst some are vegetarian due to their religion or cultural beliefs.



### Types of Vegetarianism

It is important to establish what people mean when they say they are vegetarian as there are many variations with different nutritional implications. Main types:-

<b>Demi-vegetarian</b>	Don't eat red meat, but still eat fish, eggs and dairy products
<b>Lacto ovo vegetarian</b>	Don't eat meat, fish, or poultry but do eat eggs and dairy products.
<b>Lacto vegetarian</b>	Exclude all meat, fish, poultry, eggs but still take milk and milk products
<b>Vegan</b>	Consume no foods of animal origin.

In general, both vegetarian and vegan diets may be rather bulky and lower in energy than a mixed diet due to the high water content of vegetables. This in itself may cause problems for older people especially those with loss of appetite. However, in general, the nutritional value of a well-planned vegetarian diet is similar to that of a mixed diet. Problems may arise with a vegan diet which can be much more bulky and therefore more energy deficient.

A wide variety of plant protein from cereals, pulses and nuts will provide sufficient protein of good quality. Attention must be paid to ensure adequacy of energy, calcium, iron, riboflavin (B2), B12 and vitamin D.

### A Source of B12

As this is only present in animal foods, vegetarians must take it in fortified foods such as breakfast cereals, textured vegetable protein (TVP) or soya drinks. Yeast extracts such as Marmite are a good source.



### Cultural and Religious Norms

Every attempt should be made to cater for differing dietary requirements due to cultural or religious beliefs. Appendix 2 gives a summary of these dietary requirements.

## 6. Therapeutic Diets

A therapeutic diet is part of the treatment for a specific medical condition, e.g. obesity, diabetes mellitus, coeliac disease. This may involve changes in food consistency (*see Section 7*). The diet is prescribed by a doctor, i.e. hospital or GP, as part of a treatment regime and the individual dietary advice should be given by a State Registered Dietitian. A copy of the diet sheet provided by the Dietitian should be retained for reference.

### Gluten Free for Coeliac Disease

Coeliac disease is a condition where the bowel reacts to gluten, a protein found in wheat, rye, barley and oats. When a person with coeliac disease eats foods which contain gluten, the bowel lining becomes damaged and prevents food being properly absorbed. This can lead to nutrient deficiency.

Symptoms of coeliac disease vary but may include weight loss, diarrhoea, vomiting, abdominal swelling and anaemia. (These symptoms can also represent other medical conditions so if the client experiences any of the above it is important to contact their GP so that an appropriate diagnosis can be made).

The only treatment for coeliac disease is a lifelong gluten free diet. This must only be commenced after a doctor has diagnosed coeliac disease, and must be followed under the supervision of a State Registered Dietitian.

### Cholesterol Lowering for Hyperlipidaemia

Cholesterol is a natural fatty substance found in our blood. At normal levels, it is harmless but some people have too much of it. A raised cholesterol level is one of several risk factors associated with coronary heart disease. Other lifestyle risk factors include smoking, obesity, lack of exercise.

In older people, the link between risk factors and coronary heart disease is unclear. Any intervention with regard to lifestyle factors must be considered on an individual basis. Dietary and lifestyle interventions are applicable to fit, older people and not to more frail individuals with limited food intake.

Once hypercholesterolaemia is diagnosed, treatment involves intervention to address other risk factors as well as dietary measures. The objectives of dietary intervention aim to achieve weight control, reduce total fat intake, particularly saturated fat and increase intake of fruit and vegetables.

The main dietary points are:

- ◆ Include more fruit and vegetables (at least five portions daily)

- ◆ Reduce intake of fatty foods such as cakes, biscuits, pastries, fried foods and high fat meat products
- ◆ Use polyunsaturated or low fat spreads sparingly, olive or sunflower oil rather than butter or lard
- ◆ Use semi-skimmed milk, modify intake of other full fat dairy products/ use lower fat alternatives
- ◆ Include more oily fish eg sardines, mackerel, salmon.

Some people may be prescribed medication to help lower their cholesterol. However, it is still important to maintain a healthy diet.

### Low Sugar for Diabetes

Diabetes is a condition in which the body is unable to control the amount of sugar in the blood. The blood sugar level increases and, if not treated, can be harmful.

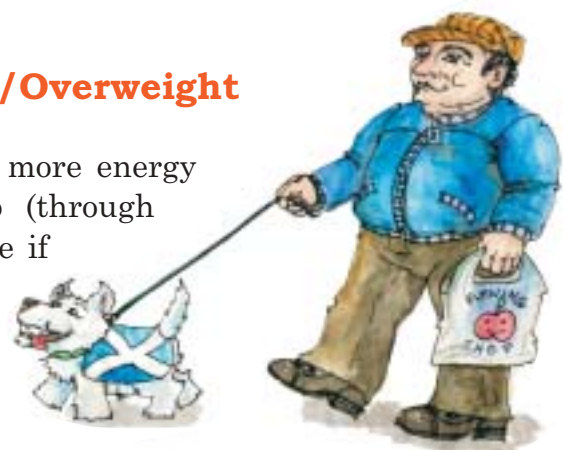
Symptoms of diabetes may include excessive thirst, passing large amounts of urine and tiredness. Some people may also lose weight. A doctor can diagnose diabetes from a blood test which measures sugar level. A large proportion of people with diabetes are diagnosed over the age of 60.

Eating a healthy diet will help to control blood glucose levels. The diet for people with diabetes is not a special diet, it is simply a healthy way of eating. The main points to remember are:

- ◆ Foods with a high sugar content (e.g. cakes, chocolate) should be restricted and the amount of sugar added to food and drinks should be reduced. Use an artificial sweetener and reduced sugar or sugar free products.
- ◆ Encourage regular eating - provide three meals a day, plus appropriate snacks if necessary.
- ◆ At every meal, include some starchy food e.g. bread, potatoes, cereal, rice, pasta.
- ◆ Try to ensure at least 5 portions of fruit and vegetables each day.
- ◆ Cut down on fatty foods.

### Reduced Energy (calorie) for Obesity/Overweight

People will become overweight if they take in more energy (through food and drink) than they use up (through activity). This can be a problem in older people if they become less active, e.g. through illness, but maintain their normal eating habits.



The best way to avoid excess weight gain is to eat a healthy varied diet:

- ◆ Include more fruit and vegetables (at least 5 portions a day).
- ◆ Use skimmed or semi-skimmed milk.
- ◆ Use lean meat and trim off all fat before cooking.
- ◆ Avoid fatty meat products such as pies, luncheon meat.
- ◆ Reduce the intake of cakes, chocolate, biscuits.
- ◆ Try boiling, steaming, grilling or microwaving food instead of frying.



## **Part 2: Further Advice for Older People who may be Nutritionally at Risk**

### **7. Common Health & Nutritional Problems**

As people get older, physiological changes, which affect the body, can affect intake, digestion, absorption and utilisation of nutrients. Socio-economic factors, acute and chronic illness and drug-nutrient interactions can also affect nutritional intake and nutritional status. It is important to be aware of possible problems in order to take prompt, appropriate action as necessary.

#### **Mouth Problems**

Changes to the mouth and teeth can occur, which may cause difficulties with chewing, mouth dryness, diminished sense of taste and ill-fitting dentures. Older people should continue to have check-ups annually to identify potential problems, whether or not they have natural teeth.

#### **Dental and Oral Health**

As we age there are several changes in the mouth and teeth:

- ◆ Taste buds are lost leading to diminished taste perception;
- ◆ Salivary glands become more fibrous, this leads to dry mouth and increased potential for decay;
- ◆ The tongue enlarges which may affect mastication (chewing);
- ◆ Tooth pulp deteriorates;
- ◆ Gum disease is common leading to inflammation and exposed roots, also there is poor bone support;
- ◆ Dentures may be ill fitting.



We would recommend screening for oral cancer on an annual basis regardless of whether the individual has teeth or not.

An Oral Health – Training for Carers pack will shortly be available from the Community Dental Service (NHS Tayside 2002, in press).

## Swallowing Difficulties

Swallowing difficulties or “dysphagia” can sometimes be a problem for older people. This can occur for a variety of reasons but often happens following a stroke. If there is any concern regarding swallowing ability, a referral should be made for a Speech and Language Therapy assessment to determine the severity of dysphagia and recommend the most appropriate texture of food to offer. Referral to a State Registered Dietitian should also be made with regard to advice to optimizing nutritional intake.

People who have dysphagia can range from those who have no swallow reflex at all, to those who can manage modified textures of food. It is often easier to control the swallowing action with foods that are of a smooth, thick consistency rather than liquids e.g. mashed potatoes with gravy and thick custards.

In some instances a liquidised diet may be required. However it is important to ensure that this consistency is actually needed and that other possible options have been explored. Regular review of the requirement for a liquidised diet is required.

Foods should be prepared and cooked as usual before liquidising. Meal components should be liquidised separately. Nourishing fluids such as stock, gravy, sauces or milk can be added to make foods easier to liquidise. Care should be taken not to over-dilute with the addition of liquid.



The aim is to use normal foods of the correct consistency. It is not appropriate to use jars of baby foods. A Speech and Language therapist can also advise on whether the person can manage fluids and whether these require to be thickened. There are various products available which have been manufactured for this purpose.

On occasions when the swallow reflex is completely lost or if someone is unable to manage sufficient nutrition, they can be fed using a special tube down their nose into their stomach (nasogastric) or directly into their stomach (gastrostomy). A specially formulated liquid feed can then be given to ensure adequate nourishment. A State Registered Dietitian will decide on an appropriate feeding regimen.

## Weight Loss

Poor appetite, swallowing difficulties and certain illnesses can all lead to weight loss. Regular weighing is recommended as any significant or continued steady weight change (loss or gain) can be an indication of a health problem and should be referred to the medical practitioner.

If a person has a poor appetite and/or is experiencing weight loss, the following suggestions may help:

### Small appetites

- ◆ Offer small amounts of food often, every 2-3 hours.
- ◆ Give a small main course with pudding offered a little later
- ◆ Make use of snacks between meals e.g. cakes, cheese and crackers, biscuits, scones, pancakes, milky drinks.
- ◆ Offer drinks after food rather than along with it.
- ◆ Try to make all food offered look attractive.

### Use high calorie foods where possible

- ◆ Full cream dairy products e.g. full cream milk, thick creamy yoghurts.
- ◆ Add margarine or butter to potatoes and vegetables.
- ◆ Include fried foods



- ◆ Add cream to porridge, soups, milk puddings, tinned fruits.
- ◆ Use full cream milk instead of water to make up soups, porridge, jelly.
- ◆ Add sugar to tea and coffee
- ◆ As an alternative to tea and coffee try a glass of full cream milk, milk shake, hot chocolate or milky coffee.
- ◆ Use salad cream or mayonnaise.
- ◆ Sauces and gravies can help moisten foods and add flavour.
- ◆ Low calorie/low sugar/low fat products should not be used for anyone with weight loss or poor appetite.



## Constipation

Constipation can be due to reduced mobility, low intake of fluid, a poor diet, inadequate NSP (fibre) and also by some medication.

Constipation may be relieved by increasing NSP (fibre) and ensuring adequate fluid intake. A gradual increase in fibre-containing foods is advisable to prevent bowel discomfort and distension. Unprocessed bran should not be used, as absorption of minerals can be compromised. Older people should be encouraged to be as mobile as possible, appropriate to their capabilities.

## Irritable Bowel Syndrome

This condition is characterised by a change of bowel habit, which may be either diarrhoea, constipation or an alternation of both. Abdominal pain or distension may be present. Any change in bowel habit must be referred to a medical practitioner for investigation.

A regular, well-balanced dietary intake with adequate fluid intake can help alleviate symptoms. Alterations to either increase or decrease fibre intake, depending on individual symptoms, can also be of benefit, but referral to a State Registered Dietitian for further advice is recommended.

## Diverticulitis

This is a condition where pockets develop in the bowel which can become infected, causing pain and changes in bowel movements. A diet with adequate fibre and fluid can help prevent the symptoms.

## Nutritional Deficiencies

Older people are at particular risk from certain nutrient deficiencies. These are vitamin C, folic acid and iron, and vitamin D.



Deficiency of vitamin C generally relates to a low intake of fruit and vegetables. This may be caused by ill-fitting dentures, or difficulties with manual dexterity may cause problems in preparation for those living at home. Overcooking vegetables also increases vitamin C loss.

Inadequate intakes of dietary iron and/or folic acid can cause anaemia. However, certain diseases can lead to anaemia and must be excluded before a dietary cause is diagnosed. Drug therapy can also affect absorption of these nutrients.

To help prevent anaemia, iron-rich foods should be encouraged such as red meat, oil-rich fish, eggs, fortified breakfast cereals, green leafy vegetables and pulses. A food or drink rich in vitamin C taken with a meal can enhance iron absorption.

Folic acid can also be found in liver, pulses, fortified breakfast cereals and bread, green leafy vegetables and citrus fruits.

Osteomalacia is caused by vitamin D deficiency, resulting in painful, soft bones that are prone to fracture. Vitamin D is formed mainly in the skin by the action of sunlight. Older people should be encouraged to sit outside during summer months and include the few dietary sources of vitamin D. These are margarine (fortified with vitamins A and D) oil-rich fish, eggs and liver. Vitamin D supplements should be considered for those who are housebound, and in long-term care.

### **Muscle and Bone Disorders**

Mobility and manual dexterity can be affected by disorders such as osteoarthritis, osteoporosis and osteomalacia.

Physical activity should be encouraged according to each individual's ability, as this can improve bone muscle strength and increases calorie intake which can help increase appetite.

With regard to osteoporosis, there is uncertainty whether additional calcium intake is preventative. However an adequate calcium intake is important. Foods high in calcium include milk and milk products.

### **Dementia**

The effects of dementia can have a serious impact on eating habits. Feeding problems can occur due to neurological, behavioural change and cognitive deficits.

Nutritional intake and weight should be monitored closely and any concerns referred to a medical practitioner.

### **Parkinson's Disease**

Involuntary movements can lead to difficulties with food preparation, feeding and increased energy requirements, all of which can have a detrimental effect on nutritional intake and body weight. Swallowing difficulties can also cause problems.

### **Effect of Medication**

Older people often can take more than one prescribed drug. Many drugs can affect appetite, absorption and metabolism of nutrients (White and Ashworth, 2000). Any concerns should be discussed with the pharmacist or medical practitioner.

## 8. Nutritional Assessment

In order to identify older people who may be at risk of becoming malnourished within care settings, it is important to have policies on assessment of nutritional status and assessment of dietary intake.

Simple measures such as monitoring weight are vital to aid early identification of potential problems and allow appropriate action to be taken. Chair scales with a footrest should be available. Weight and Body Mass Index should be checked and recorded monthly.

Body Mass Index (BMI) Ready Reckoners consider weight in relation to height and provide a guide to categorising an individual's weight from under weight to normal weight, over weight and obesity.

BMI can be calculated using the following formula:

$$BMI = \frac{Weight(kg)}{Height(m)^2}$$

Significant or continued weight change should be referred to a Medical Practitioner in order to eliminate any health problem.

The use of a validated nutrition screening tool appropriate to the elderly which is approved by a State Registered Dietitian is recommended, for example MAG, MNA, NuRAS, or NRI. Sources for these tools can be found in the Reference section on page 28.

An example of a simple screening tool is the "4 question approach" (Lennard Jones et al 1995) using the following: (*information could be obtained from a relative or carer if necessary*)

- ◆ Have you unintentionally lost weight recently?
- ◆ Have you been eating less than usual?
- ◆ What is your normal weight?
- ◆ How tall are you?

On identification of nutritional risk, factors which can influence nutritional status and appetite should be considered (*see Section 7*) along with factors relating to the eating environment and meal service (*see Section 9*).

Simple dietary measures which can be implemented with regard to management of weight loss can be found in Section 6.

Should there be no improvement in nutritional intake and nutritional status, referral to a State Registered Dietitian should be considered in consultation with the Medical Practitioner.

## 9. Settings

In all care settings, special attention must be given to meal service and there are many factors which should be considered:

- ◆ Is there enough time between meals during the day?
- ◆ Is the maximum time between the last meal at night and breakfast the following day no more than 14 hours?
- ◆ Are snacks and fluids available outwith normal meal times?
- ◆ Are individuals positioned where they can eat properly and be comfortable?
- ◆ Are the portion sizes appropriate?
- ◆ Is the food appetising and at the correct temperature?
- ◆ Is there help with feeding when necessary and is it provided in an appropriate way?
- ◆ Can the individual handle the crockery and cutlery?
- ◆ Is there enough variety for individuals in long-term care?
- ◆ Does the dining room area provide a pleasant eating environment?

It is important to address these points and make mealtimes as enjoyable and as nutritionally adequate as possible.

### In Hospital

For older people in hospital, problems tend to be related to lack of appetite and deficiency states rather than “excess” states.

It is important to be aware of the disease states which may be a limiting factor in nutritional intake e.g. stroke, Parkinson’s disease, arthritis, physical disabilities such as poor hearing, poor sight and poor dentition. There are also a variety of dietary therapies for specific conditions e.g. Diabetes mellitus, Coeliac disease, kidney and liver problems. Mental states should also be considered, as dementia can have a detrimental effect on nutritional intake, as can depression, confusion, recent bereavement or a loss of will to live.



All meals provided in hospital must be in accordance with the nutritional requirements of the patients. During their stay in hospital (short or long term) elderly patients should receive a well-balanced and nutritionally sound meal pattern. Portion control should be dictated by individual nutritional requirements. The Nutritional standards (RNIs) given by DoH 1991 should be followed (*see Appendix 1*) and NHSMEL(1999)54 on Core Standards.

### **In Day Hospital**

Patients who attend day hospital generally live in the community either alone, with carers, or in residential accommodation. The aim of the day hospital is to maintain patients in the community for as long as possible, to give back up to carers, to provide therapy as required by individuals, to increase mobility and to promote self care skills. Food provided in



day hospital should show by example the kind of foods which should be taken at home. Menus must provide a variety of texture, colour and flavour. Familiar foods tend to be more acceptable to older people, however some unfamiliar foods may be introduced. The food provided must also be nutritious and healthy and should provide at least one third of the RNI (*See Appendix 1*).

Special diets must also be catered for, e.g. Diabetic, Weight Reducing, High Protein etc, and suitable foods for those with poor dentition and poor mastication must be provided.

### **In Nursing Homes**

Nursing Homes are required to comply with National Core Standards and to provide good quality nutritional care. The majority of older people living in registered nursing homes are likely to be very frail and to have multiple disabilities and health problems, many are malnourished when first admitted to the home. Each person's nutritional status should be assessed on admission and a nutritional care plan drawn up and reviewed monthly. It is important that nursing homes create a pleasant environment for eating and provide attractive meals which are well-balanced, nourishing and reflect the residents' individual preferences and choice. The particular likes and dislikes of residents should be noted and respected, and those people who require therapeutic diets, adapted cutlery or assistance in eating and drinking should have this provided. The home should ensure that menus meet residents' nutritional needs, and menu cycles should not be less than 4 weekly and should be reviewed regularly.

## **In Residential Homes**

A residential home provides a four-week menu cycle with food of the residents' choosing. This is achieved through consultation with the cook and is a consumer-led process. Likes and dislikes are identified in a personal care plan to ensure that all nutritional needs are met. Differences of opinion on risk food i.e. soft boiled egg will require to be identified, agreed and signed by the consumer.

It is emphasised in a residential setting that dining is a social occasion, therefore innovative practice is encouraged e.g. the vision and choosing of a salad or sweet from the trolley, a process that the resident can assist in.

The ongoing charisma of feeling at home or perhaps dining out enhances the residents' independence, well-being and health.

From April 2002 all residential and nursing homes will be redesignated as care homes.

## **In Day Centres**

It is important that day centres provide good quality food which will meet daily nutritional requirements. The choosing of food and preparation of menus is consumer-led. This involves regular consultation with cooks and other day centre members. A full meal will contain one third of an adult's nutritional requirements (*see Appendix 1*). Innovative programmes within day centre aspires to the consumer rekindling, regaining and retaining skills in providing nourishment for themselves whilst living at home.



## **Meal Provision in the Community**

Lunch clubs and various dining out venues are popular. Local Social Work Departments (*see page 34*) will be able to advise where the nearest places are.

Older people living in the community have demonstrated a preference for living at home as opposed to residential or nursing care. It is therefore necessary for the service provider to ensure that the older person is presented with nourishing meals which meet cultural need, give choice and offer a varied diet. At present these are developing services managed by the Social Work Departments.

## 10. References and Further Reading

Allison S P (1999) **Hospital food as treatment. A report by a working party of the British Association of Enteral and Parenteral Nutrition.** BAPEN. London.

British Dietetic Association Nutritional Advisory Group for Elderly People (1996) **In the minority through the 90's: a handbook for those who provide meals for elderly people in a multicultural society.** NAGE, Rotherham.

Caroline Walker Trust (1995) **Eating well for older people: practical and nutritional guidelines for food in residential and nursing homes and for community meals. Report of an expert working group.** Caroline Walker Trust, London.

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Lennard-Jones J E, Arrowsmith H, Davidson C, Denham A F, Micklewright A (1995) **Screening by Nurses and Junior Doctors to detect malnutrition when patients are first assessed in the hospital.** *Clinical Nutrition*, 14:336-40.

MAFF (1995) **Manual of nutrition. Reference book 342.** HMSO, London.

Malone L (1996) **Mealtimes and dementia.** Dementia Services Development Centre, University of Stirling.

NHS Tayside Community Dental Service (2002) **Oral health – training for carers** (*in press.*)

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Scottish Executive Health Department NHS MEL (1999) **54. Nursing Homes Core Standards: Section 6 Nutritional Care.** Scottish Executive, Edinburgh.

Scottish Office (1993) **The Scottish Diet.** The Stationery Office, Edinburgh.

Scottish Office (1996) **Eating for health: a diet action plan for Scotland.** The Stationery Office, Edinburgh.

White R and Ashworth A (2000) **How drug therapy can affect, threaten and compromise nutritional status.** Journal of Human Nutrition and Dietetics, 13, 2, 119-129.

WHO (1995) **Physical status: the use and interpretation of anthropometry. Report of a WHO expert committee.** WHO, Geneva.

### **Useful Leaflets**

- ◆ HEBS Eat well, stay active: healthy eating for over 60's
- ◆ HEBS Oral Health in later life
- ◆ Help the Aged Healthy eating
- ◆ NAGE Staying healthy: a guide for the over 50's.
- ◆ NAGE Have you got a small appetite?
- ◆ NAGE Eating well and keeping well with diabetes
- ◆ NHS Tayside Keep smiling through retirement

# 11. Nutritional Assessment Tools

## 1. Mini Nutritional Assessment (MNA)

Guigoz Y, Vellas B, Garry PJ. **Mini Nutritional Assessment: a practical assessment tool for grading the nutritional state of elderly patients.** Facts and Research in Gerontology 1994;4: suppl 2, 15-59.

Guigoz Y, Vellas B, Garry PJ. **Assessing the nutritional status of the elderly: The Mini Nutritional Assessment as part of the geriatric evaluation.** Nutrition Review 1996; 54(1): 559-565.

## 2. Nutrition Risk Assessment Scale (NuRAS)

Nikolaus T, Bac M, Siezen S, Volkert D, Oster P, Schlierf G. **Assessment of nutritional risk in the elderly.** Annuals of Nutrition and Metabolism 1995; 39: 340-345.

## 3. Nutritional Risk Index (NRI)

Wolinsky FD, Coe RM, Chavex MN, Prendergast JM, Miller DK. **Further assessment of the reliability and validity of a Nutritional risk index.** Journal of Community Health 1989; 14(3): 125-135.

Wolinsky FD, Coe RM, McIntosh WA, Kubena KS, Prendergast JM, Chavez MN, Miller DJ, Roeis JC, Landmann WA. **Progress in the development of a nutrition risk index.** Journal of Nutrition 1990; 120: Supply 11 1549-1553.

## 4. MAG Screening Tool for Adults at Risk of Malnutrition

Further information available from:

MAG (Malnutrition Advisory Group)  
10th floor,  
10 Cabot Square  
Canary Wharf  
LONDON  
Website: *www.bapen.org.uk*

# Appendix 1

## Reference Nutrient Intakes/Estimated Average Requirement

(Extract from Dietary Reference Values for Food Energy and Nutrients for the United Kingdom)

	EAR Energy Mj (kcal)	RNI Protein g/d*	RNI Calcium mg/d	RNI Iron mg/d	RNI Thiamin mg/d	RNI Riboflavin mg/d	RNI Niacin mg/d	RNI Folate	RNI Vitamin C mg/d	RNI Vitamin A Retinol ug/d	RNI Vitamin D Cholec- alciferol ug/d
<b>Female</b>	7.99+ (1,900)	46.5	700	8.7	0.8	1.1	12	200	40	600	**
	7.61* (1,810)										
<b>Male</b>	9.71+ (2,330)	53.3	700	8.7	0.9	1.3	16	200	40	700	**
	8.77* (2,100)										

+ - 65-74 years

\* - 75+ years

\*\* - After age 65 the RNI is 10 ug/d for men and women

### Estimated Average Requirement (EAR)

The average requirement or need for food energy or a nutrient. Clearly, many people will need more than the average and many will need less.

### Reference Nutrient Intake (RNI)

An amount of a nutrient that is enough for almost every individual, even some who have high needs for the nutrient. This level of intake is, therefore, considerably higher than most people's need. If individuals are consuming the RNI of a nutrient, they are most unlikely to be deficient in that nutrient.

## Appendix 2

### Summary of Dietary Requirements due to Religion or Culture

RELIGION	DIETARY REQUIREMENTS
<b>Bahai's</b>	<p>None. Some choose to be vegetarian.</p> <p><b>Fasting:</b> 2-21 March - no food or drink to be consumed between sunrise and sunset (not obligatory in under 15s)</p> <p><b>Always ask.</b></p>
<b>Buddhists</b>	<p>None. Some choose to be vegetarian.</p> <p><b>Fasting:</b> New moon and full moon days, festivals eg Buddha's birthday and death day. All food to be consumed before 12 noon, nothing after.</p> <p><b>Always ask.</b></p>
<b>Chinese</b>	<p>Definite customs regarding preparation, service and manner in which food is eaten.</p> <p><b>Always ask.</b></p>
<b>Hindus</b>	<ul style="list-style-type: none"> <li>• Most will eat no beef</li> <li>• Some will eat no eggs</li> <li>• Some are strict vegetarian and will not eat vegetarian food items cooked and served in dishes previously used for non-vegetarian foods.</li> </ul> <p><b>Fasting:</b> Some periods of fasting in year.</p> <p><b>Always ask.</b></p>
<b>Jews</b>	<ul style="list-style-type: none"> <li>• Meat must be killed by religious trained personnel in a humanitarian way - <b>Kosher.</b></li> <li>• The <b>pig</b> is totally forbidden.</li> <li>• Observant Jews will not take milk and meat at the same meal. Milk and meat utensils, cutlery and crockery will be kept rigidly separate.</li> <li>• Some will not eat cheese made with animal rennet from a non-kosher animal, same applies to jellies and other foods containing gelatine.</li> </ul> <p><b>Fasting:</b> Several minor fasts in the religious calendar. Most prominent is <b>Yom Kippur</b>, the Day of Atonement, this falls in September/October and is a 25 hour fast.</p> <p><b>Always ask.</b></p>
<b>Muslims</b>	<ul style="list-style-type: none"> <li>• Pork meat and all pork, carrion and blood are forbidden.</li> <li>• All other meats must be killed by a muslim with a religious prayer - <b>Halal.</b></li> <li>• In general all shop bought products containing animal fat are avoided fearing it may be pork fat or fat from non-halal animals.</li> </ul> <p><b>Fasting:</b> During months of <b>Ramadan</b>. A muslim may only eat during the 1½ hours before sunrise. There are some exemptions for women or the sick.</p> <p><b>Always ask.</b></p>
<b>Sikh</b>	<ul style="list-style-type: none"> <li>• Do not eat beef.</li> <li>• Most will accept other meats although some women will not eat meat of any kind.</li> </ul> <p><b>Fasting:</b> Some will fast when there is a full moon.</p> <p><b>Always ask.</b></p>
<b>Vietnamese</b>	<p>None.</p> <p>Some are suspicious of lamb and do not use much milk and other dairy products.</p> <p><b>Always ask.</b></p>

## Appendix 3

### Vitamins, Minerals and Trace Elements

The fit and well elderly eating a well-balanced diet should not be at risk of vitamin, mineral and trace element deficiency. If older people are eating an inadequate diet, this table highlights those foods which are good dietary sources of vitamins, minerals and trace elements.

VITAMIN	USES	DIETARY SOURCES
Vitamin A or Retinol	Essential for vision in dim light. Maintenance of healthy skin and surface tissues.	Retinol itself is found only in animal foods but milk and some vegetable foods contain the deep yellow or orange carotenes that the body then converts to retinol. Liver, carrots, dark green vegetables, tomatoes, apricots, oily fish and fish liver oils, eggs, margarine (most are fortified with Vitamin A) and milk.
Vitamin B1 or Thiamin	Necessary for the steady and continuous release of energy from carbohydrate.	Widely distributed in both animal and vegetable foods. Milk, offal, pork, eggs vegetables, fruit, wholegrain cereals (including wholemeal bread) and fortified breakfast cereals.
Vitamin B2 or Riboflavin	Essential for the utilisation of energy from food.	Widely distributed, especially in animal foods. Largest intake in Britain generally derived from milk, cheese, yoghurt, eggs, liver, kidney, fortified breakfast cereals, yeast extracts.
Nicotinic Acid or Niacin	Involved in the utilisation of food energy	Some dietary nicotinic acid is unavailable to the body eg that found in maize. However an amino acid, tryptophan, can be converted to nicotinic acid in the body. Liver, kidney, meat, fish, yeast and yeast extracts, peanuts, bran, pulses, wholemeal wheat, coffee, fortified breakfast cereals and vegetables.
Vitamin B6 or Pyridoxine	Involved in the metabolism of amino acids including the conversion of tryptophan to nicotinic acid. Necessary for the formation of haemoglobin.	Occurs widely in food, liver, kidney, sardines, oysters, heart, rabbit, other meats, eggs, cheese, milk, wholegrain cereals and some vegetables.

Vitamin B12	A mixture of several related compounds, all of which contain the trace element cobalt. Needed by rapidly dividing cells such as those in the bone marrow which form blood cells.	Only occurs in animal products. Liver, kidney, sardines, heart, rabbit, other meats, eggs, cheese, milk. Small quantities found in yeast extracts which are therefore essential in the diet of a vegan as the sole source of B12.
Folic Acid	Needed along with B12 by rapidly dividing cells.	Occurs in many foods but mostly offal, raw green vegetables, pulses, bread, oranges and bananas. Other fruits, meat and dairy products contain little.
Vitamin C	Necessary for the maintenance of healthy connective tissue. Absorption of some types of iron. Man is one of the few animals that cannot form its own Vitamin C and therefore must obtain it from food.	It is not widely distributed in foods. Small amounts found in milk and liver. Virtually all Vitamin C in most diets derived from fruit and vegetables especially citrus fruits, green vegetables and potatoes.
Vitamin D or Cholecalciferol	Necessary for maintaining the level of calcium and phosphorus in the blood.	Obtained from the action of sunlight on a substance in the skin (this pathway appears hindered in children of Asian origin) and from the diet (most important in children from Asian origin). Few foods contain Vitamin D: margarine, oily fish, fish liver oils and eggs.
Vitamin E or Tocopherols	The requirement of Vitamin E is roughly proportional to the intake of polyunsaturated fat.	Vegetable oils, wholegrain cereal products, eggs. Animal fats, meat, fruit and vegetables contain comparatively little.
Vitamin K	Necessary for normal blood clotting.	Synthesised by bacteria in the intestine. Dietary sources include spinach, cabbage, greens, liver, cereals.
Iron	Involved with the use of oxygen. Haemoglobin (formed from iron) transports oxygen from the lungs to the tissues.	Offal, red meat, cocoa powder, cereals (wholegrain), potatoes, vegetables and pulses. Non-animal sources of iron require Vitamin C for absorption from the digestive tract.
Calcium	Most abundant mineral in the body. Essential for the growth and maintenance of bones and teeth. Essential for the contraction of muscles, normal clotting of blood, nerve function and the activity of several enzymes.	Few foods except milk, yoghurt, cheese are good sources of calcium. Also found, in much smaller quantities, in flour (if fortified), green vegetables; bones in canned sardines and salmon can be important sources for some people. Also fortified soya milks (not "shop bought" soya milks).

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Other minerals include phosphorus, magnesium, sodium, chlorine and potassium.

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Zinc	Associated with the activity of a large number of enzymes. Found in the bones and brain tissue (greatest concentration in the body)	Less than half the zinc in the diet is absorbed. Low blood zinc concentrations are associated with a diet that is based on processed and snack foods. Found especially in protein containing foods.
Fluoride	Associated with the structure of bones and teeth. Increases resistance to tooth decay.	Drinking water is an important source, but natural concentrations vary. Tayside has virtually no fluoride in the drinking water. Other sources include most toothpastes and mouth washes, sea food and tea.

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Other trace elements include iodine, manganese, chromium, copper, cobalt, selenium and vanadium.

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NB - Diets rich in processed and snack foods can be deficient or low in several vitamins, minerals or trace elements except in the case of sodium (salt) which may be found in excessive quantities. Also, inappropriate cooking methods can reduce the quantity of the water soluble Vitamins C and the B group. To minimise losses food should be prepared and cooked very near to the time of serving, minimum quantities of water should be used for cooking. Milk should be kept away from the light. Fewer processed and snack foods should be used.

# Contact Addresses and Telephone Numbers

## Local

Tayside NHS Board  
Directorate of Public Health  
Specialist Health Promotion Services  
King's Cross  
Clepington Road  
DUNDEE DD3 8EA  
Tel: 01382 818479

Angus Council  
Social Work Department  
County Buildings  
Market Street  
FORFAR DD8 3WS  
Tel: 01307 461460

Dundee City Council  
Social Work Department  
Balmerino Road  
DUNDEE DD4 8RW  
Tel: 01382 438300

Perth & Kinross Council  
Social Work Department  
Pullar House  
35 Kinnoull Street  
PERTH PH1 5GD  
Tel: 01738 476700

Tayside NHS Board  
Nursing Homes Registration Unit  
7 Dudhope Terrace  
DUNDEE DD3 6HG

*(until April 2002 when it will transfer its  
responsibility to the Scottish Commission  
for the Regulation of Care.)*

## National

NAGE (The Nutrition Advisory group for Elderly People of the BDA)  
The British Dietetic Association  
Unit 21, Goldthorpe Industrial Estate  
Goldthorpe  
ROTHERHAM  
South Yorkshire S63 9BL

The Festival Shop Ltd (for multi-faith, multi-cultural and citizenship resources)  
56 Poplar Road  
King's Heath  
BIRMINGHAM B14 7AG  
Tel: 0121 444 0444  
Fax: 0121 441 5404

## **Membership of the Working Group: 2000 to 2002**

### **Chair:**

Jackie McPate, NHS Tayside Primary Care

### **Group members:**

Rod Crawford, Dundee City Council Social Work Department. (from 01.12.00)

Vivienne Davidson, Angus Council Social Work Department

Ann Fenner, Perth & Kinross Council Social Work Department

Dr John Harper, NHS Tayside Primary Care (until 30.11.00)

Steve Hart, Dundee City Council Social Work Department (until 30.11.00)

Fiona Henderson, NHS Tayside Primary Care

Carole Kennedy, NHS Tayside, Registration & Inspection Unit

Sue Kilby, NHS Tayside University Hospitals

Jane Main, NHS Tayside Primary Care

Marie McArthur, Dundee College

Gillian McFarlane, NHS Tayside Primary Care

Moira Robertson, NHS Tayside Specialist Health Promotion Services

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