

Special Report

Irish Heart Foundation Nutrition Policy

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Introduction

Ireland has one of the world's highest death rates from coronary heart disease (heart attack and angina). It is our major cause of death. A vast amount of scientific evidence links dietary fat intake with blood cholesterol level which in turn relates strongly to coronary deaths.

The Irish Heart Foundation believes that a national policy is an essential component of any strategy aimed at reducing coronary heart disease. Progressive changes in patterns of food consumption, production and marketing will be required to achieve such a policy. A nutrition policy is of little value unless translated into everyday foodstuffs and an attempt is made to achieve this.

While it is believed that a nutrition policy is the fundamental requirement for the prevention of coronary disease, urgent attention to other risk factors is also required. As a nation we have a high prevalence of raised blood pressure, continue to smoke heavily, and have done little to promote leisure activity. These issues are addressed briefly in the present document.

1. SUMMARY

1.1 NUTRITIONAL RECOMMENDATIONS FOR THE GENERAL POPULATION

1.1.1 Irish people should be advised to adopt a diet which reduces total fat intake from the current level of 35 to 40% of food energy to less than 35% of food energy. As a longer term objective, a fat intake of less than 30% of food energy is recommended.

These recommendations do not apply to children less than five years of age.

1.1.2 Not more than one third of dietary fat should come from saturated fat.

1.1.3 Saturated fat should be partially replaced by polyunsaturated and monounsaturated fats. Fats from polyunsaturated sources should not comprise more than 10% of total food energy.

1.1.4 Changes in specific foodstuffs to reduce saturated fat intake include the use of low fat dairy products, lean meat, poultry, fish and vegetable proteins, and reducing consumption of biscuits, cakes and processed meats. Fish consumption should be increased. Low fat and unsaturated spreads are recommended.

1.1.5 Intake of food energy should be reduced, if necessary, to correct overweight and adjusted to maintain ideal body weight.

1.1.6 Increased consumption of fruits, vegetables and

cereals is recommended. Such foodstuffs provide fibre and help reduce fat intake.

1.1.7 Salt intake should be reduced by avoiding table salt, minimising salt in cooking and by reducing consumption of high salt processed foods.

1.1.8 Alcohol consumption should not exceed 21 units per week for men and 14 units per week for women. One unit of alcohol means half a pint of beer, one glass of wine or one small measure of spirits.

1.2 NUTRITIONAL RECOMMENDATIONS FOR HIGH RISK INDIVIDUALS.

1.2.1 A high risk individual is defined as a person with a blood cholesterol of six mmol/l (230 mg/dl) or more with one or more of the following

- male sex

- cigarette smoking

- raised blood pressure

- a family history of coronary heart disease (heart attack, angina or coronary artery surgery).

- known coronary heart or blood vessel disease already present.

1.2.2 In addition to the recommendations for the general population, high risk individuals should adopt a diet in which fat constitutes less than 30% of total food energy. Saturated fat should not exceed 10% of food energy. Wherever possible such individuals should receive personal nutritional advice from a physician or dietitian.

1.2.3 High risk individuals should be aware that smoking and raised blood pressure put them at particular risk and should be offered special help with regard to these risk factors.

1.3 GENERAL RECOMMENDATIONS

1.3.1 Regular, frequent and appropriate physical activity should be promoted. Those who take regular leisure activity have been shown to have lower levels of other risks factors.

1.3.2 Appropriate educational strategies should be developed to increase public awareness that cigarette smoking and raised blood pressure greatly increase the risk of a high fat diet.

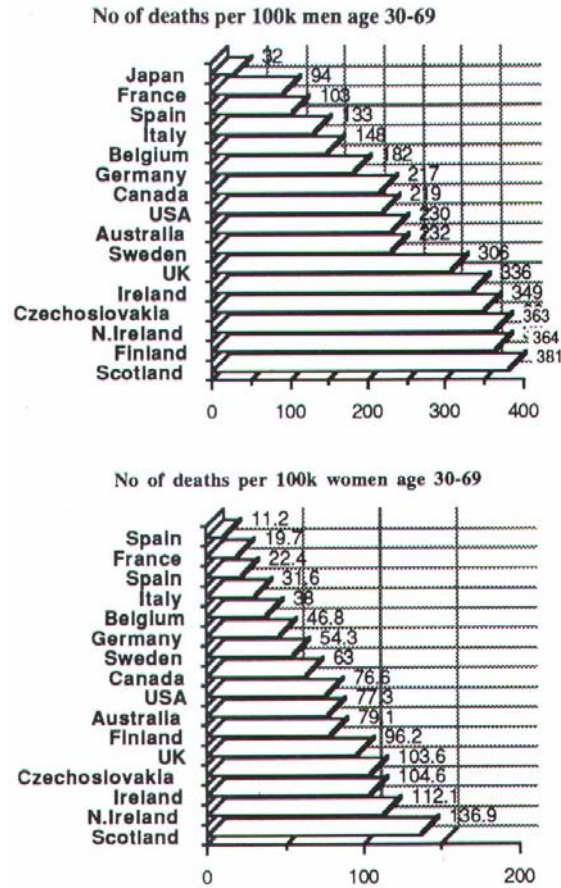
1.4 IMPLEMENTATION

Implementation of these recommendations should be promoted by government, professional, educational and lay agencies and by the food industry and communications media.

2 SCIENTIFIC BACKGROUND

2.1 THE PROBLEM

Diseases of the heart and circulation account for half of all deaths in Ireland, equalling all other causes put together.’ Ireland and the United Kingdom share the world’s highest death rate from coronary heart disease (heart attacks and angina) (2,fig. 1)



2.2 CAUSES

Certain factors are strongly related to coronary heart disease and show a dose-response effect. These are blood cholesterol level, cigarette smoking and high blood pressure.

Fat intake, particularly saturated fat, relates to both blood cholesterol level and to coronary heart disease deaths. Again, a dose-response effect is evident - the higher the saturated fat intake the greater the risk of coronary heart disease. Coronary disease is very rare in communities with a very low fat intake and it is likely that a certain level of fat consumption is a prerequisite for the development of widespread coronary disease in the community.

2.2.1 Fat intake and cholesterol levels in Ireland Irish adults presently obtain 35-40% of dietary

energy from fat. Data from the Irish National Nutrition Survey published in 1990³ recorded mean fat intake for males and females aged 18-60 years as 35% of energy intake. In the survey, the highest fat intake was 36% for both males aged 25-40 and females aged 18-25. Distribution of intakes shows that on average more females (71%) than males (60%) had intakes above the recommended 35% of energy from fat. The main sources of dietary fat for the whole sample were fresh meat (18%), meat products (7%), milk (22%), butter (12%), biscuits, cakes and pastries (11%) and potatoes, mostly as chips (8%).

The Kilkenny Health Project baseline nutrition survey of 60 adults⁴ reported that fat intake was 36% for men and 39% for women. Major sources of dietary fat were spreadable fats (28%), meat (23%), milk (12%) and cakes and biscuits (11%). Data from the Nutrition Surveillance Report (1985),⁵ suggest that total fat intake in the Irish diet contributes about 40% of food intake. This figure was estimated from food balance sheets and household budget survey figures and does not take wastage into consideration. Irish cholesterol levels reflect our higher than recommended fat consumption. Cholesterol levels from the Kilkenny Health Project baseline survey of 770 adults⁶ and the Irish Heart Foundation Mediscan results on 22,425 adults are shown in Table 1 (combined).

Table 1 - Serum Cholesterol Levels (mmol/L) in Irish adults

Age	Male	Female
35-44	5.9	5.4
45-54	6.1	6.7
55-64	6.1	6.1

The average cholesterol level for Irish adults at 6.0 mmol/L substantially exceeds the World Health Organisation’s optimum maximum figure for cholesterol levels of 5.2 mmol/L (200mg%) . One third of Kilkenny adults had blood cholesterol levels about 6.5 mmol/L and were judged to be at sufficiently high risk to require direct referral to their family doctor.

2.3 SOLUTIONS

The major causes of coronary heart disease outlined in 2.2 are modifiable. There is now compelling evidence from many sources that smoking cessation, effective blood pressure control and reduction of blood cholesterol reduces the risk of developing cardiovascular disease. It has been established beyond reasonable doubt that cholesterol lowering reduces heart attack risk. The reduction observed in clinical trials is the same as that predicted from population experience and is proportional to the degree of cholesterol lowering achieved.⁷

The World Health Organisation has summarized these issues.⁸ “The relationship between habitual diet, blood cholesterol lipoprotein levels and coronary heart disease are well established and judged to be causal. In high-incidence countries a lowering of the population distribution of blood

cholesterol levels is recommended through progressive changes in eating patterns. As a guideline, a population average (cholesterol) value of under 5.17 mmol/L (200mg/dl) is likely to be associated with no more than a moderate frequency of coronary heart disease".

There has been controversy in the past as to whether a nutrition policy should be aimed at the whole population (population based approach) or only at those known to have markedly raised cholesterol levels (targeted or high risk approach). Most coronary deaths occur in those with only slightly raised cholesterol levels because such people are much more numerous than those with markedly raised levels. Detailed examination of this issue confirms that a targeted approach alone would be inadequate⁹ and the Irish Heart Foundation, like others, recommends complementary and simultaneous population and high risk approaches.

These considerations have led over 30 national and international bodies to make nutritional recommendations particularly with regard to fat intake. It is notable that, in most of the countries which have implemented detailed strategies for coronary disease prevention, death rates have fallen substantially in recent years. This is not yet the situation in Ireland.

2.4 IRISH AND INTERNATIONAL NUTRITIONAL RECOMMENDATIONS FOR THE PREVENTION OF CORONARY HEART DISEASE.

The scientific evidence underlying diet and coronary heart disease prevention has been addressed by a number of international expert panels. In particular, this policy details the findings of

- The World Health Organisation Coronary Heart Disease Reports (1982, 1985, 1986).^{10,11,12}
- The U.S. Consensus Conference Panel on Lowering Blood Cholesterol to prevent Coronary heart disease (1985).¹³
- The European Atherosclerosis Society, representing 19 countries including Ireland (1987).¹⁴
- The British Cardiac Society working group on Coronary Heart Disease Prevention (1987).¹⁵

On reviewing the proposals made by over 30 international and U.S. organisations and groups of experts, Truswell found that most of the recommendations were dietary; some targeted high risk groups, others addressed the general population. Commonly recurring features included advice to reduce total and saturated fat and often cholesterol intake.¹⁶

Since 1982 the WORLD HEALTH ORGANISATION has published several report on coronary heart disease prevention and has considered the major risk factors in depth.^{10,11,12} The dietary recommendations of the expert committee of the World Health Organisation (1982) recommend that energy from total fat should be limited to 30% of food energy and energy from saturated fat to 10% of food energy.

Dietary recommendations from the U.S. CONSENSUS CONFERENCE PANEL

ON LOWERING BLOOD CHOLESTEROL (USCC, 1985) were similar.¹³ In addition it recommended that polyunsaturated fats be increased to no more than 10% of total energy and that cholesterol be reduced to 250-300 mg or less per day.

While an increase in polyunsaturated fats is encouraged, no specific figure is mentioned. Both the USCC and the EUROPEAN ATHEROSCLEROSIS SOCIETY (EAS)¹⁴ unequivocally state that blood cholesterol levels play a causal role in coronary heart disease.

The concordant evidence advanced by many genetic, experimental, epidemiological and clinical trial research endeavours over the years is cited by these panels. The question of whether a reduction of cholesterol levels helps prevent coronary heart disease is answered affirmatively by the USCC and the EAS, a view supported by the findings of the LRC - CPPT, Oslo and other trials.^{17,25} Also cholesterol lowering has now been shown to produce decreased progression and in some cases, regression of coronary atherosclerosis as assessed by coronary angiography.^{21,23}

The BRITISH CARDIAC SOCIETY WORKING GROUP (BCS) while discussing a number of difficulties in interpreting clinical trial results, concludes nevertheless that there is very strong circumstantial evidence from the many experimental, biochemical and epidemiological studies that CHD should be preventable.²⁴

The Working Group endorses the most recent UK dietary guidelines from the Committee on Medical Aspects of food policy panel on diet in relation to cardio-vascular disease (COMA), 1984²⁵ recommending that the consumption of fat in the U.K. be reduced so that no more than 35% of food energy comes from total fat and 15% of food energy from saturated fat. The ratio of polyunsaturated fat to saturated fat (P:S ratio) is recommended to be increased to 0.45.

The decision of the BCS to advocate less stringent total saturated fat restrictions has been criticised by an editorial in the Lancet as reflecting some perceived need for pragmatism and consistency in relation to agricultural and food interest in the UK.²⁶ Brook and Rifkind in their appraisal of international reports suggest that this pragmatism also seems to reflect the fact that the British are somewhat further from the goal of reducing coronary heart disease than their U.S. counterparts.²⁷

The consumption of total fat in Britain has risen over the past three decades from 34 to 43% in 1983. The ingestion of saturated fat has fallen, with a corresponding modest increase in polyunsaturated fat intake. The P:S ratio, however, remains low at 0.27.²⁵ Fat intake has fallen in the United States over the same period²⁸ resulting in an intake of 36% in 1985 with a P:S ratio of 0.49. This has been paralleled by reduced consumption of milk, eggs, beef, pork, fats and oils.

Recommendations for dietary cholesterol intake are not consistent. Because dietary cholesterol, with the exception of the cholesterol in eggs, is so intimately related to dietary saturated fat, it has been difficult to determine the independent effect of cholesterol in the diet on serum cholesterol levels in free-living population groups. Any recommendations relating to saturated fat will influence the amount of cholesterol ingested.

The BCS makes no specific proposals about the cholesterol intake, while both the USCC and EAS advocate that cholesterol intake should not exceed 300 mg/day.

Table 2 - Dietary recommendations for fat intake

Expert panel		Population recommendations % energy as	
		Total fat (%)	Saturated fat (%)
World	Health	30	10
US Consensus Conference ¹³		30	10
European Society ¹⁴	Atherosclerosis	30	10
British Cardiac Society ¹⁵		35	15
Irish Heart Foundation		35	12
		30*	10*

* Long term

2.5 IRISH AND INTERNATIONAL NUTRITIONAL RECOMMENDATIONS FOR GENERAL HEALTH PROMOTION

In many countries expert panels have formulated dietary guidelines for the general population. These form the basis of a preventive public health policy, aimed at reducing the incidence of chronic disease, in particular coronary heart disease, but also diseases such as cancer, anaemias and dental decay. These guidelines include:-

- Guidelines for preparing information and advice to the general public on healthy eating (Ireland, 1987).²⁹
- Proposals for nutrition guidelines for health education in Britain (U.K. 1983).³⁰
- Dietary guidelines for Americans (U.S. 1986).³¹

More recently the Surgeon General's report on Nutrition and Health³² provides a comprehensive review of the most important scientific evidence in support of the current federal nutrition policy as stated in the Dietary Guidelines for Americans. These guidelines suggest that total fat be reduced to 30-35% and saturated fat reduced to 10-15% of food energy. The national expert panels' guidelines are summarised in Table 3.

Table 3 - Summary of national dietary guideline for fat intake for the general population

Expert Panel		% of Energy	
		Total fat(%)	Saturated fat
Food advisory committee ²⁹		35	10
NACNE – Short term		34	15
Long term ³⁰		30	10
Dietary Guidelines for Americans ³¹		30	10

It should be noted that the recommendations for

coronary prevention and those for general health promotion are almost identical. Any strategy aimed at coronary disease is likely to have additional benefits in terms of preventing other chronic diseases.

3 RECOMMENDATIONS

3.1 NUTRITIONAL RECOMMENDATIONS FOR THE GENERAL POPULATION

The Irish Heart Foundation recommends these dietary modifications for the population generally. They may not be suitable for certain people, such as those following special dietary restrictions, young children, pregnant and lactating women and some elderly people.

3.1.1 Fat consumption

Irish people should be advised to adopt a diet which reduces total dietary fat intake from the current level of about 35-40% of food energy to less than 35% of food energy. As a longer term objective, a fat intake of less than 30% of food energy is recommended.

3.1.2 Saturated fat

Not more than one third of dietary fat should come from saturated fat.

3.1.3 Poly and monounsaturated fat

Saturated fat should be partially replaced by polyunsaturated and monounsaturated fats. Polyunsaturated fats should not exceed 10% of food energy.

The practical implications of a diet lower in saturated fat and higher in polyunsaturated and monounsaturated fats (and including more wholegrain cereals) would result in a reduced intake of cholesterol. For this reason no specific recommendation is made with regard to cholesterol intake.

There are two types of fat - saturated and unsaturated. Unsaturated fats include two groups: polyunsaturated and monounsaturated. Saturated fat raised blood cholesterol. Poly and monounsaturated tend to lower blood cholesterol. Saturated fats are found as animal fats in meat (beef, lamb, pork, suet, lard and dripping) and in dairy products like milk, cheese and butter. They are also found in some vegetable fats, such as coconut oil and palm oil and in cakes, biscuits, chocolates, cooking fats, hard margarines, sauces and puddings. Sometimes these fats are listed in ingredients as hydrogenated vegetable fat/oil. Polyunsaturated fats are found in some vegetable oils like sunflower, corn or soya oils, in some vegetable fat spreads, and in oily fish such as herring, mackerel, salmon and trout.

Monounsaturated fats are found in olive oil, avocado pear, some fat spreads and fat in poultry.

3.1.4 Changes in specific foodstuffs to reduce saturated fat intake.

Appendix 1 - Food choices to help lower blood cholesterol

	Advisable	In Moderation	Not Advised
Cereal Food	Wholemeal flour, Oatmeal Wholemeal bread, Wholegrain cereals, Porridge oats Crispbreads Wholegrain rice and pasta, Cereals.	White flour, White bread, Sugarcoated breakfast cereals, White rice, pasta.	Fancy breads eg croissants, savoury cheese biscuits, Cream crackers.
Fruit and Vegetables	All fresh and frozen vegetables - peas, broadbeans, sweetcom. Dried beans and lentils are very high in fibre. Baked potato - eat skins, fresh and dried fruit.	Avocado pears, Olives.	Potato crisps, Chips.
Nuts	Walnuts	Almonds, brazil nuts, chestnuts, hazelnuts, peanuts.	Coconut
Fish	All white fish, oily fish e.g. herrings, tuna.	Shellfish occasionally.	Fish roe.
Meat (Lean) goose,	Chicken, turkey, veal, rabbit, game.	Ham, beef, pork, lamb, bacon, lean mince, liver and kidney occasionally	Visible fat on meat (including Crackling), sausages, pate, duck, streaky bacon, meat pies, meat pastes.
Eggs and dairy foods	All fats should be limited	Margarine labelled "high in polyunsaturates", corn oil, sunflower oil, soya oil, safflower oil.	Butter, dripping, suet, lard, margarine not "high in polyunsaturates", cooking/ vegetable oil of unknown origin.
Made up dishes	Skimmed milk puddings, low fat puddings e.g. jelly, sorbet, skimmed milk sauces, cakes and biscuits made with suitable margarine or oil and wholemeal flour.	Pastry puddings, cakes and biscuits made with suitable margarine or oil and white flour, ice cream.	Tinned or whole milk puddings, dairy ice cream, pastry puddings, cakes, biscuits and sauces made with whole milk, eggs or unsuitable fat or oil. All proprietary puddings and Sauces. Mayonnaise.
Sweets, Preserves and Spreads	Bovril, oxo, mannite.	Meat and fishpastes, boiled sweets, fruit pastilles, peppermints, etc jam, marmalade, honey, sugar.	Peanut butter, chocolate, toffees, fudge, butterscotch, lemon curd, mincemeat.
Drinks	Tea, Coffee, Mineral water, unsweetened fruit juices, clear soups, homemade soups, e.g. vegetable, Lentil.	Packet soups, alcohol.	Cream soup.

Notes:

- 1 Foods **ADVISABLE** are generally low in fat or high in fibre. These should be used regularly as part of your diet.
- 2 Foods **IN MODERATION** contain polyunsaturated fats or smaller quantities of saturated fats. As your diet should be low in fat, these foods are allowed only in moderation. For example, a) read meat not more than three times a week; b) medium fat cheeses and meat and fish pastes once a week; and c) homemade cakes, biscuits and pastries made with suitable polyunsaturated margarine or oil, twice a week.
- 3 Food **NOT ADVISED** contain large proportions of saturated fats and therefore should be avoided wherever possible.
- 4 For overweight avoid foods high in sugar and limit use of suitable fats and oils.

In order to achieve a population reduction in blood cholesterol levels, by reducing saturated fat, the following recommendations are made with regard to these sources of fat.

Dairy products - low fat dairy products are recommended in preference to full-fat dairy products for regular use except in children under five years of age. A wide variety of high quality low-fat milks, cheeses, butters and dairy spreads are available. For most of the population this is a relatively simple change in eating habits. Low-fat milk and cheese contain similar amounts of calcium, protein and riboflavin as full-fat products. Low fat butters and dairy spreads provide half the fat of butter or margarine.

Meat should be eaten lean, well trimmed and with little or no fat added in cooking. Processed meats such as sausages should only be eaten occasionally and preferably lower fat varieties should be chosen. Poultry and fish should be chosen frequently as alternatives to red meat. Lean red meat is an important source of protein and iron, and a 3-4 oz serving is sufficient. Research in animal husbandry to breed leaner animals is recommended.

Food rich in vegetable protein such as peas, beans and lentils should be also be eaten more regularly as a supplement or substitute to meat protein.

Biscuits and Cakes are high in fat, especially saturated fat, and sugar and provide little additional nourishment. In achieving a reduction in fat intake these foods should be reduced first. Recipes which include wholemeal flour, polyunsaturated fat and reduced sugar are preferable. These foods may be eaten occasionally as part of a heart healthy diet. However for those who need to reduce weight and hence energy intake, these foods together with sugary foods and alcohol should be reduced first.

OTHER FAT SOURCES

Eggs - the main significance in egg consumption is the high cholesterol content of the egg yolk. Because dietary cholesterol is closely associated with dietary saturated fat, it has been difficult to determine the independent effect of this cholesterol on serum cholesterol. Eggs are an economical source of protein and iron and a consumption of four eggs per week is considered reasonable.

Fish is low in saturated fat and high in unsaturated marine oils. Fish consumption should be increased. Fish should form the main protein component of at least one meal per week and preferably more. Oily fish, particularly mackerel, herring, pilchards and sardines are the best sources of marine oils.

Yellow fats (Non Dairy) In order to lower the fat intake, low-fat margarines/spreads should be used more regularly in preference to full-fat varieties. Low-fat margarines/spreads and oils high in polyunsaturated and monounsaturated fat should be partially substituted for other margarines/spreads/butter/lard and other vegetable oils. Vegetable oils high in polyunsaturated fats include sunflower, soya and corn oil. Olive oil is high in monounsaturated fat. Oils are a very

concentrated source of fat and should be used sparingly.

3.1.5 **Energy intake and body weight**

Intake of food energy should be reduced, if necessary, to correct overweight and adjusted to maintain ideal body weight.

To reduce weight it is necessary to follow a lower energy, well-balanced diet and a programme of regular, moderate exercise. In reducing energy intake, fat, sugary foods and alcohol should be reduced first. Once ideal weight has been achieved, a higher energy diet may be followed. Regular exercise should be continued as part of a healthy lifestyle.

3.1.6 **Fibre**

Increased consumption of fruit, vegetables and cereals should be adopted, as recommended in national and international dietary guidelines. Such foodstuffs provide fibre and help reduce fat intake. The IHF endorses the Food Advisory Committee's recommendations for a fibre intake of approximately 30 g/day (i.e. within the range 25-35 g). A high fibre diet including a variety of cereals, and fibre from fruit and vegetables is recommended. Pulses such as peas, beans and lentils should be eaten regularly. Soluble fibre, which includes the pectins and gums found in oats, fruits, vegetables and pulses have recently been associated with a possible reduction in cholesterol level.³³

3.1.7 **Salt**

Salt intake should be reduced by avoiding table salt, minimizing salt in cooking and reducing consumption of high salt foods such as processed convenience foods. The average Irish salt intake, considered to be 12 g/day, may contribute to high blood pressure in 20% of the population. Although evidence for the effect of moderate restriction of dietary sodium on blood pressure has not been entirely consistent, it is likely that a significant reduction in blood pressure is more regularly achieved in persons with elevated pressure than in those with normal blood pressure. There is no evidence of adverse effects of moderate salt restriction. The role of other minerals in hypertension needs further investigation. The Food Advisory Committee's recommendation to reduce salt intake to 10g/day is endorsed.

3.1.8 **Alcohol**

Alcohol intake correlates with raised blood pressure and with stroke mortality. It also contributes energy (7 calories/gram) with little or no nutritional value and may contribute to overweight. The Health Promotion Unit recommend that men consume no more than 21 units of alcohol per week and women no more than 14 units, preferably beer or wine taken in conjunction with food.

1 unit (8g) = 1/2 pt. beer or
of alcohol 1 glass wine or
1 small measure spirits

3.2 DIETARY RECOMMENDATIONS FOR HIGH RISK INDIVIDUALS

3.2.1 A high risk individual is defined as a person with a blood cholesterol of 6 mmol/L (230 mg/dl) or more with one or more of the following:

- Male sex
- Cigarette smoking
- Raised blood pressure.
- A family history of coronary heart disease (heart attack, angina or coronary artery surgery)
- Known coronary heart or blood vessel disease already present

3.2.2 In addition to the recommendations for the general population, high risk individuals should adopt a diet in which fat constitutes less than 30% of total food energy. Saturated fat should not exceed 10% of food energy. Wherever possible such individuals should receive personal nutritional advice from a physician or dietitian.

A dietitian can adapt advice to the individual's energy needs and food preferences. This fat reduction is endorsed by the Irish Hyperlipidaemia Association²⁴ which recommends a reduction in the proportion of calories in the diet derived from fat to less than 30% in those with raised blood cholesterol levels. Appendix one outlines this dietary advice, translated into foods, which can be used as a basis for a cholesterol-lowering diet.

3.2.3 High risk individuals should be aware that smoking and raised blood pressure put them at particular risk and should be offered special help with regard to these risk factors.

3.3 GENERAL RECOMMENDATIONS

3.3.1 Physical activity

A programme of regular, frequent and appropriate physical activity should be included as part of a healthy lifestyle.

Physical activity should be encouraged as a normal part of daily living. Irish research has indicated that subjects active in their leisure time have lower levels of other risk factors than those who are sedentary. Most epidemiological studies, though not all, have shown an inverse relation between sedentary. Most epidemiological studies, though not all, have shown an inverse relation between habitual aerobic exercise and coronary heart disease mortality. In addition to probable protection against coronary heart disease, regular exercise may have other health advantages including reduction of overweight, lessened risk of osteoporosis with advancing age, and enhanced cardiorespiratory and musculoskeletal fitness.

Improved well being and lessening of tension is commonly reported by physically active persons.

3.3.2 PUBLIC AWARENESS OF OTHER RISK FACTORS

Public awareness that cigarette smoking and raised blood pressure greatly increase the risk of a high fat diet should be increased through appropriate educational strategies.

4

IMPLEMENTATION

In order to implement these recommendations constructive interactions between professional and lay societies, government agencies, food industry representatives and the media are called for.

The Irish Heart Foundation recommends, therefore, that:-

- Educational programmes that enable children and adults to make information food choices should be readily available.
- Specific food items consistent with the recommended diet should be available, accessible and affordable.
- The food industry should accelerate its current efforts to develop, produce and market leaner meats and other foods, including dairy products with reduced total fat, saturated fat and cholesterol content.
- Restaurants and fast food outlets should make foods satisfying these dietary recommendations available to the customers.
- Government and Health Board facilities should serve meals consistent with these recommendations.
- Food labelling should include total calories, total fat, saturated fat, polyunsaturated fat, monounsaturated fat, and cholesterol content as well as other essential nutritional information.
- The media should be informed more purposefully.
- All health professionals should make a more co-ordinated and sustained effort to guide the media with accuracy, judgement and responsibility towards effective prevention of coronary heart disease.
- General practitioners should be more active in prevention of coronary heart disease. There are many opportunities for health promotion and disease prevention in daily practice and for seeking out those with a high risk of coronary heart disease.
- Cardiologists should give the lead in establishing effective policies to prevent and reduce coronary heart disease. The practice of clinical cardiology should include the promotion of these guidelines as well as preventive measures for individuals at special risk.
- Health authorities should recognise their potential in the prevention of coronary heart disease and incorporate prevention into the planning and delivery of health services.
- Finally, the need for more research is stressed. We do not yet have all the answers to the

prevention of coronary heart disease and more basic clinical and epidemiological studies are essential. Government should recognise the deficiencies in knowledge and provide funds to support more investigations as part of its overall programme for the prevention of coronary heart disease.

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