

## Diploma in Nutrition and Health

2003

### 45 Guided Learning Hours

#### Description:

Publication of the 2004 Government White Papers “Choosing Health: Making Healthy Choices Easier” and “Choosing a Better Diet”, along with the WHO Global Strategy on Diet, Physical Activity and Health and other documents, have heightened public and professional awareness of the importance of nutrition and healthy eating.

Following increased interest in the subject of Nutrition and Health and requests from the RSPH certificate level students and registered centres, The RSPH developed the syllabus for the Diploma in Nutrition and Health qualification.

The aim of this qualification is to equip candidates with a Level 4 knowledge and understanding of the principles of good nutrition and healthy eating and to ensure they are able to apply these principles in a practical and responsible way in the course of their daily work and lives.

This examination is designed to provide an in depth knowledge for everyone (including the general public) interested in the practical application of the principles of nutrition and healthy eating.

The Diploma is a particularly useful qualification for those working in the following areas:

- Health care professions including nurses and those working in residential homes
- Hospitality, sport, leisure and health & beauty industry - for example, training coaches, sports-persons, teachers and those working in gymnasia and the leisure industry.
- Food industry - production, distribution & catering.

## **Content:**

### **Section 1: General Principles**

#### **A. Proteins**

*The candidate should be able to:*

- Describe the structure of proteins including peptide bonding.
- List indispensable (essential) and dispensable (non-essential) amino acids and explain the difference between them.
- Explain the use of dietary aids including the relationship with energy supply.
- List and explain protein requirements and mention needs of different groups (Link to N: DRV in Paper 2 - Nutrition and Health in the Community).
- Define "Biological Value" and give details of different sources of protein.
- Explain "Complementation" including its importance in vegetarian diets.
- Explain "Protein Turnover".
- Describe "Protein Energy Malnutrition", its causes and effects.
- Introduce Protein Sparing (Link to C: Carbohydrates).
- Identify novel sources of protein.

#### **B. Fats**

*The candidate should be able to:*

- Describe the general formula of fatty acids, both saturated and unsaturated.
- Describe the structure of triglycerides.
- Explain oxygenation and its prevention.
- List and describe the role of essential fatty acids. (Omega-3 fatty acids in relation to fish fats.)
- Explain the relationship between body fats and energy reserves.
- Explain the links between fat types and atherosclerosis and heart disease. (Link to I: Diet and Disease).
- Describe the different blood fats to include knowledge of high and low-density lipoproteins.

#### **C. Carbohydrates**

*The candidate should be able to:*

- Describe the different types of sugar - intrinsic and extrinsic - their sources.
- Describe the structure and explain, with examples of sources, mono-, di-saccharides and, poly-saccharides with special emphasis on starch.
- Explain the concept of empty calories.
- Describe protein sparing.

(Links to Diet and Disease - Dental caries and Diabetes mellitus)

## **D. Vitamins**

*The candidate should be able to:*

- Provide an in-depth study of the material with special emphasis on vulnerable groups. To include explaining loss of vitamins during cooking and its prevention.

## **E. Minerals**

*The candidate should be able to:*

- Provide a more in-depth study of the material with special emphasis on vulnerable groups. To include explaining the effects of enhancers and inhibitors.

## **F. Non-starch Polysaccharides (NSP) and Fibre**

*The candidate should be able to:*

- Explain the physiological functions of non-starch polysaccharides (NSP) with an emphasis on effect on gastro-intestinal tract.
- List, with sources, the chemical substances classed as NSP (dietary fibre).
- Describe soluble NSP (fibre), its sources and function.
- Describe the effect of NSP (fibre) on appetite and energy intake.
- Explain ways in which NSP (fibre) intake may be altered by food choice and recipe adjustment.
- Explain the historical perspective of NSP (dietary fibre).
- Describe the effects of over and under intake of NSP (fibre) (Link to I: Diet and Disease) especially Irritable Bowel Syndrome (IBS) and effect of phytic acid on nutrient absorption.

## **G. Water**

*The candidate should be able to:*

- Explain the functions of water in the body.
- Describe water-balance, explaining the control of water uptake and output.
- Describe the distribution of water in the body.
- Describe the relationship of water with sodium and potassium.
- List the most nutritious and healthy sources of food to be given priority in menu planning and retail promotion.

## **H. Energy / Metabolism / Weight Control / Exercise**

*The candidate should be able to:*

- List the sources of energy in the diet and amounts of energy each source provides. Explain energy density with relation to foods giving examples of both high and low energy dense foods. Explain the effect of these foods on the diet.
- Explain metabolism and the need for the regulation of energy intake.
- Describe the relationship between hunger and appetite.

- Explain the cause, effects and treatment of obesity and eating disorders such as anorexia and bulimia. (Link to Paper 2 - Nutrition and Health for Sport and Leisure and below.)

## I. Diet and Disease

*The candidate should be able to:*

- Describe relationship between diet and disease. The causes and treatment of the following diseases should be covered:
  - a) dental caries
  - b) constipation
  - c) heart disease
  - d) high blood pressure
  - e) diabetes
- Explain the possible relationship between diet and cancer and the use of nutrition in treating cancer.
- Describe the effects of alcohol and caffeine on the brain and other parts of the body.

## J. Commodities

*The candidate should be able to:*

- List the types, nutrient values, uses, and importance of the following food groups, particularly in relation to Diet and Disease (I) Vegetarians (Q) and Menu Planning (T):
  - a) Milk and milk products
  - b) Fish
  - c) Pulses, nuts, seeds
  - d) Roots, tubers, plantains
  - e) Fruit
  - f) Sugars
  - g) Meat
  - h) Eggs
  - i) Cereals
  - j) Vegetables
  - k) Fats
  - l) Preserves

## K. Trends

*The candidate should be able to:*

- Describe the changes in food patterns, patterns of consumption, and nutritional standards from the beginning of the 20th century within the United Kingdom.
- Explain the advantages and disadvantages of fast/convenience foods.
- Describe the factors affecting food choices including social, cultural, religious effects and psychological needs.

- Describe possible dietary problems for the principal ethnic minority groups - diets, restrictions, availability of normal foods.

## **L. Advertising / Marketing / Labelling / Law**

*The candidate should be able to:*

- Explain food labelling and laws relating to it.
- Describe the effects of advertising on food consumption etc.
- Briefly outline the methods of marketing foods.

## **M. Food Manufacture / Food Processing Changes**

*The candidate should be able to:*

- Explain how changes in composition will affect nutrition, for example, the hydrogenation of unsaturated fat, and addition of sugar/salt.
- Describe the loss of nutrients during processing.
- Explain food fortification, with examples.

## **N. Dietary Reference Values (DRV)**

*The candidate should be able to:*

- Understand and explain the concepts of DRV.
- Describe uses of DRV.
- Explain the importance of balanced diets.
- Explain the nutritional needs of different groups.
- Analyse the nutritional content of specific diets, preferably using a computer programme.
- Analyse menus for different groups. For example, the elderly, school children, pregnant women.

## **O. Additives / Food Labelling**

*The candidate should be able to:*

- Describe the different types of additives, with examples, and how they are represented on food labels.
- Explain that food additives can result in allergies - food sensitivity and their effects.
- List foods commonly responsible for food allergies.

## **P. Toxicants in Food**

*The candidate should be able to:*

- Explain the occurrence of natural toxicants, for example, favism, alkaloids in potatoes.
- Explain the effect of caffeine (Link to I: Diet and Disease).

- Describe the occurrence and effects of mycotoxins and aflatoxins.
- List and describe how other toxicants eg chemicals can contaminate foods.

## **Q. Vegetarians**

*The candidate should be able to:*

- Explain the classification of vegetarians.
- List and explain dietary deficiencies likely to be encountered in vegetarian groups.

## **R. Alcohol**

*The candidate should be able to:*

- Explain the absorption of alcohol and its immediate effects.
- Describe the metabolism of alcohol in the body.
- Explain effects of alcohol misuse. (Link to I: Diet and Disease).

## **S. Digestion and Assimilation**

*The candidate should be able to:*

- Explain in detail the digestive system and how the breakdown of nutrients occurs.
- Describe absorption and assimilation.

## **T. Menu Planning**

*The candidate should be able to:*

- Suggest how to promote healthy eating:
- Advise offering the choice of healthier foods eg
  - a) organically grown foods
  - b) low fat options
  - c) low sugar options
  - d) wider range of high fibre foods etc
- Evaluate the effect of different cooking methods on nutrient content then indicate the adoption of those which are most conservative.
- Explain how to adapt menus and recipes to conform with healthy eating guidelines.
- State the importance of providing nutrition education for all consumers, especially children and young people and give ideas of how this can be achieved.

## Section 2a: Nutrition and Health in the Community

### i. Elderly

*The candidate should be able to:*

- Describe the effects of ageing. Explain its implications on nutrient requirements.
- Explain the nutritional problems of ageing and reasons why diet may not be good.  
eg
  - a) psychological causes
  - b) medication
  - c) environmental causes
- Explain how these may be prevented and healthy eating encouraged.

### ii. Infants

*The candidate should be able to:*

- Explain the growth/energy needs relationship.
- Describe the requirements relating to water, vitamins, minerals.
- Explain the benefits and disadvantages of breast/bottle feeding and the cause and consequence of lactose intolerance.
- List the first foods given at weaning and explain why they are introduced first.
- Explain the importance of nutrition education in nursery schools.

### iii. Children

*The candidate should be able to:*

- Explain the importance of nutrition education in schools and guidance to parents and school teachers.
- Explain why special provision is needed in infant vegetarian diets and those for pregnant and lactating women.
- Explain the history of the provision of school meals, types provided and the need for healthy choices.
- List the contents of healthy packed lunches with an explanation for choices and how nutritional balance may be achieved.

### iv. Adolescents

*The candidate should be able to:*

- Explain the growth spurt and its nutritional implications.
- Explain the importance for adolescents of nutrition education, how this may be achieved and how healthy eating may be encouraged.
- Explain the importance of meal patterns.

- Explain the nutritional aspects of teenage pregnancy and possible health consequences for the mother.

## **v. Pregnancy**

*The candidate should be able to:*

- Describe the changes in maternal metabolism.
- Describe the growth of the foetus.
- Explain the changes in energy and nutrient needs during the different stages of pregnancy.
- Explain nutritional risks in pregnancy and their implications to both mother and foetus, in the long and short term.
- Describe lactation and energy and nutrient needs and the importance of diet during lactation.
- Describe briefly the nutritional problems that may occur within the principle ethnic groups in the UK.

## Section 2b: Nutrition for Sport and Leisure

### i. Body Weight / Consumption

*The candidate should be able to:*

Identify factors which affect body weight composition as follows:

- Assess nutritional factors affecting gain of body muscle.
- Discuss desirable body fat percentage for different types of sport.
- Describe how body fat is measured.
- Assess factors affecting body fat loss.
- Outline the symptoms of Anorexia Nervosa.
- Outline the symptoms of Bulimia Nervosa.
- Examine the nutritional problems facing the underweight sportspersons eg ballet dancers, gymnasts.
- Evaluate different food menus for suitability for loss of body fat.

### ii. Fluid Intake

*The candidate should be able to:*

Explain the importance of fluid intake with particular reference to sport as follows:

- Discuss the advantages/disadvantages of commercial sports drinks.
- Discuss in broad terms the effects of alcohol on the body and its effects on health and sports performance.

### iii. Effect of Diet on Sports Performance

*The candidate should be able to:*

Examine the effect of diet on sports performance as follows:

- Explain the importance of carbohydrate and performance in different types of sport -duration of sport.
- Discuss the onset and prevention of early onset of fatigue during sport in relation to diet.
- Examine the role of protein in the sportsman/woman's diet.
- Examine the role of fat in the diet of the sportsman/woman.
- Discuss timing of meals and effect on performance.
- Examine the balance of nutrients in relation to particular sports.

### iv. The Need for Vitamins and Minerals in the Diet of the Sportsman /woman

*The candidate should be able to:*

- Explain in basic terms the need for vitamins and minerals in the diet of the sportsman/woman.

## **v. Nutritional Requirements for Children**

*The candidate should be able to:*

- Examine the nutritional requirements for children undertaking intensive training.
- State suitable menus. State suitable snacks and drinks.

## **vi. Lifestyle Interview**

*The candidate should be able to:*

Identify the requirements for taking a lifestyle interview as follows:

- Define and examine the problems of taking a diet history.
- Briefly describe the environmental conditions suitable for taking a diet history
- Discuss interview techniques needed for a successful lifestyle interview.
- Outline how to keep a diet diary.

## **vii. Vegetarian Sportsman/ woman**

*The candidate should be able to:*

- Briefly examine the diet of the vegetarian sportsperson.

## **viii. Diabetics**

*The candidate should be able to:*

- Briefly examine the diet of the diabetic.
- Explain in broad terms the connection between exercise and symptoms of hypoglycaemia and action to be taken.

## **ix. Ergogenic Aids**

*The candidate should be able to:*

- Briefly examine the Role of Ergogenic Aids (Powders/Liquids) in the diet of the Sportsman/Woman.
- Examine and discuss the use of powders and drinks that are sold as aids to sports performance.

## Registration of centres

Potential centres wishing to offer courses leading to this qualification should first apply to the RSPH for registration. Registration requires:

- Approval of the course materials, training and examination facilities and resources offered by the centre.
- Approval of the teaching staff - trainers must hold a subject specialist qualification at a higher level than the level they wish to teach, hold a group training or teaching qualification and use approved training materials.

Details of local centres & registration procedures may be obtained from the Qualifications Department at the RSPH.

## Entry Requirements

All candidates for examination must hold the Certificate in Nutrition and Health or be educated to a similar level in the subject.

## Preparation for the examination

- Examinations for this qualification can be held on demand and exam bookings can be made online via the RSPH website ([www.rsph.org.uk](http://www.rsph.org.uk)) or directly with the Qualifications Department.
- All candidates must either have attended a full or part-time course of instruction, approved by the RSPH and covering the syllabus detailed above, or have undertaken study of a recognised distance learning package.
- Approved courses are usually of at least 45 hours duration. Where the course is delivered as an intensive programme, there must be a minimum of four weeks between the end of the course and the examination, to allow for completion of the course work assignments.
- Application for entry to the examination must be made through a RSPH registered examination centre to the Qualifications Department, to arrive at least two weeks before the date of the examination.

The Qualifications Department,  
Royal Society for Public Health  
3<sup>rd</sup> Floor  
Market Towers  
1 Nine Elms Lane  
SW8 5NQ

## Assessment

The assessment for the award of the Diploma is as follows:

**Paper 1** - General written examination paper (3 hours)      **100 marks**

**Paper 2** - Specialist paper (2 hours)      **50 marks**

Candidates may choose either of the following specialist papers:

- Nutrition & Health in the Community
- Nutrition & Health for Sports and Leisure

**Assignments** - x2 assignments based on course work  
(one from Section 1 - General Principles and one option from section 2) - **50 marks**

## Examination results and diplomas

Each examination centre will receive a Results List, giving the grade of each candidate. Grades will be awarded as follows:

<b>Honours</b>	160 to 200 marks
<b>Credit</b>	140 to 159 marks
<b>Pass</b>	120 to 139 marks
<b>Fail</b>	- 0 to 119 marks

Each successful candidate will receive a certificate upon which the option examined and the grade awarded will be shown. Diplomas are normally sent to centres for distribution to candidates. Those who have obtained a Diploma in Nutrition & Health (Nutrition & Health in the Community) may take the Diploma in Nutrition & Health (Sport & Leisure) by taking the specialist paper 2 only - and vice versa – providing the second option is taken within 12 months of having attained the first.