

Introduction to Food & Nutrition

SHORT COURSE



STUDY GUIDE

HOW TO WORK THROUGH THIS COURSE

Over the following pages, you will move through a logical, self-paced learning experience that can enlighten and educate you in Human Nutrition.

It is important from the outset to understand that learning about something is not the same as just reading about it. Learning implies a permanent change in what you know and can do.

Anyone can read a book and understand it; but for most people the detail of what you read is largely forgotten.

Reading something once only puts information into short-term memory. It is soon lost if you don't 'work' on it. Studying the same information takes longer, but by thinking about it and processing it you can transfer that information to long-term memory. This way, you will enhance your ability to recall and apply that information for years to come. If you take your time to work through the 5 lessons that follow, you will learn.

Read, Reflect, Research, Revise

Throughout the following pages, you will find not only things to read about, but also things to do:

1. Throughout each lesson, there are suggestions of things to do under the headings "Learn More". These are all sorts of ideas about things you can do in order to explore the subject further.
2. At the end of each lesson, there is an interactive selfassessment test (assignment), for you to undertake. When you click on this, your computer needs to be online. You will be taken to our cloud-based online school. The answers you choose will be evaluated immediately, and your results can be seen on completion of each test. You can return and repeat tests if you wish.

Undertaking these tasks will involve reflection, research and revision of the topics you read about. By repeatedly encountering each topic in different ways, your perspective on each subject will broaden, and the commitment of information to longer term memory will strengthen.

You don't need to undertake all of the suggested tasks if you don't want to; but we strongly recommend that you do some in each lesson, and that you take all of the self-assessment tests.

The more time you spend doing these things, the stronger your learning will be.

Completing the Course

After completing all 5 lessons you will be presented with a final assessment which can also be undertaken online.

Do not attempt to do this until you have worked through all 5 lessons, and feel like you have learnt the subject well.

Upon finishing this final assessment you will immediately see your final results, and you can save a pdf copy of those results as a "Certificate of Completion".

Welcome Audio

Click the button below to listen to the welcome audio for this course. This feature is supported by most computers and some mobile devices.



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LESSON 1 THE DIGESTIVE SYSTEM – EVERYONE IS DIFFERENT

NUTRITION & NUTRIENTS

Nutrition can be defined as the science of food and its relation to health. It involves processes where all people (all living organisms) receive and process the nutrients essential for life.

Nutrients themselves are defined as the chemical compounds from food that are found in a person's diet. Nutrients are essential to life; they play a variety of vital life roles such as in the provision of energy, the promotion of growth and development and in the regulation of bodily processes. There are six main classes of nutrients in food - proteins, lipids, carbohydrates, vitamins, minerals and water.

Foods have very different nutritional densities – this is the nutritional value of food relative to the number of kilojoules (energy) it supplies. In general terms, foods which have a high nutrient density are a good source of that nutrient relative to its contribution of energy. To explain, eggs or liver have high nutrient density as they contribute a great number of nutrients relevant to their kilojoule count, whereas fats and soft drinks provide energy, but have very low nutrient density as they contain few nutrients.

The most essential aspect of nutrition is the volume and variety of nutrients a person consumes in their diet. All people require the same nutrients during each stage in their life cycle although the volume of each nutrient necessary does vary. Here we will consider the differences of each life stage specifically and the major nutritional requirements during this time.

Please note the information herein is general and may not be directly applicable to every population/ community group, chronological information is not absolute, but is based generally accepted standards. Additionally, the numerical data is given as approximates only – based on mean averages from a number of sources.

FOOD PYRAMID AND RECOMMENDED DAILY INTAKE (RDI)

What is the recommended intake of nutrients?

There are many different authorities around the world that publish and promote recommendations.

These recommendations can vary from one authority to the next. As new information comes to light, and our understanding of the human body

Suggested Tasks: ▼

Throughout this course you will be provided with suggested tasks and reading to aid with your understanding. These will appear in the right hand column. Remember: these tasks are optional. The more you complete, the more you will learn, but in order to complete the course in 20 hours you will need to manage your time well. We suggest you spend about 10 minutes on each task you attempt, and no more than 20 minutes.

LEARN MORE >>>

Suggested Tasks

Choose a life stage that is of interest to you (for example infancy, childhood, adulthood or elderly).

Conduct an internet search on your chosen age group and research in more detail:

- nutritional requirements
- common nutritional deficiencies
- suitable foods that are good sources of the nutrients that are commonly deficient.

POPULATION BASED NUTRIENT REQUIREMENTS

Another method of calculating daily energy requirement is to use average energy requirements for the general population. For example, the UK Department of Health has published estimated average requirements (EARs) of 1940 calories a day for women and 2550 for men. Average energy requirements can also be given by age range, gender and daily activity level. For example, in Australia the estimated energy requirement (EER) for an 18 year old boy is 4000KJ per day.

In addition to providing a daily energy prescription, population based nutrient recommendations are also useful in dietary planning by helping to show the amount of different nutrients required for good health.

There are limitations of recommended daily intake population based nutrient recommendations, however, and some of these are outlined below.

It is wise to become familiar with these to demonstrate your understanding that every individual is different and have specific needs which can't always be addressed by following population based dietary recommendations.

- Individuals have widely varying nutrient requirements - both from person-to-person and from day-to-day general dietary recommendations must, therefore, be used with caution in assessing an individual's diet.

grows, we find recommendations are continuously modified.

In the light of these considerations, you cannot be excessively strict in your adoption of recommendations; but you should always give serious consideration to recommendations made by enlightened and educated experts.

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- Individuals have widely varying nutrient requirements - both from person-to-person and from day-to-day general dietary recommendations must, therefore, be used with caution in assessing an individual's diet.
- General dietary recommendations do not allow for illness, medications or the effects of major life stresses, smoking, and alcohol abuse.
- They do not allow for adaptation to high or low intakes of some nutrients (e.g. iron, calcium, energy) for the individual.
- They do not address the minor vitamins and trace elements (it is assumed that if the intake of the main nutrients is adequate, then the requirements for the others will automatically be covered).

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To help us achieve the recommended intake of nutrients pictorial guides have been developed to show the type and proportions of food the average person should eat on an average day to achieve good nutritional intake, this includes the food pyramid, originally developed in the US and the UK Eatwell plate.

The Eatwell plate divides a plate like a pie, showing the size of each 'slice' of different kinds of food. Cereals and fruits and vegetables have the largest slices while two other categories: dairy foods, and meat, fish, eggs and beans are considerably smaller and foods high in sugars and fats have a very narrow purple-edged slice. The slices have a coloured rim to make the proportions of each food on the plate easy to see.

The US food pyramid follows the same principles as the Eatwell plate.

In this instance different food groups are represented by different levels of the pyramid. The food group with the highest number of recommended daily servings (bread, cereal, and pasta group)

form the base of the pyramid; the group with the lowest recommended number of servings (fats, oils, and sweets) form the apex of the pyramid. The food pyramid is used in a number of countries including Australia and New Zealand.

The United States Department of Agriculture (USDA) has recently turned their food pyramid on its side. It now shows a child walking up the stairs of the pyramid as a way to incorporate exercise into the nutritional eating habits of children. The pyramid also incorporates a new colour scheme.

Released in April 2005, the new Dietary Guidelines from the USDA continues to reflect the tense interplay of science and the powerful food industry.

Several of the new recommendations represent important steps in the right direction:

- The new guidelines emphasize the importance of controlling weight, which was not adequately addressed in previous versions. And they continue to stress the importance of physical activity.
- The recommendation on dietary fats makes a clear break from the past, when all fats were considered bad. The guidelines now emphasize that intake of trans-fats should be as low as possible and that saturated fat should be limited. There is no longer an artificially low cap on fat intake. The latest advice recommends getting between 20% and 35% of daily calories from fats and recognises the potential health benefits of monounsaturated and polyunsaturated fats.