GAODENG ZHIYE JIAOYU SHIPINLEI ZHUANYE XILIE JIAOCAI

• 高等职业教育食品类专业系列教材 •

食品专业英语

SHIPIN ZHUANYE YINGYU

汪洪涛　陈宝宏　编

中国轻工业出版社

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前　言

本书为高职高专食品、农产品、水产品、畜牧产品加工类专业及分析专业学生的教材，亦可供食品行业工程技术人员参考。

全书共有36课，取材范围广，内容分为5个单元，涉及营养素与健康、食品原料、食品保藏、食品加工工艺和食品安全与控制。每课除了正文以外，还设有词汇、相关阅读材料，以扩大学生的专业词汇和专业知识面。在内容编排上力求结合实际，注重实际应用。每课后面均设有一定量的练习题，与课文内容同步，以提高学生的专业文献翻译能力。在本书的最后面整理归纳了食品专业术语和专业词汇，以供学生学习和查阅。

本书由江苏经贸职业技术学院汪洪涛和陈宝宏共同编写。汪洪涛负责第一单元、第二单元、第五单元和附录相关内容的编写，陈宝宏负责第三单元和第四单元相关内容的编写。全书由汪洪涛统稿。

由于我们的编写水平有限，编写时间仓促，书中难免存在缺点和不足之处，敬请专家和读者提出宝贵意见。

编　者

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Unit Ⅰ Nutrition and Health
营养与健康

Lesson 1 Nutrition
营养

What we eat as well as how much we eat determine our nutrition status to an important extent, and influenced by a diversity of external and internal factors. The person who wants to find the answer to the question "what should I eat for good nutrition?" might easily become lost in the maze of informational corridors, confused by the wealth of technical information provided by scientists or misled by simplistic answers provided by those with products to sell. Somewhere in between is some reasonable, commonsense information that we can use to guide us our quest for sound nutrition knowledge.

To begin, we need to learn some definitions of commonly used nutrition terms and find out what sorts of guidelines are available to help us measure the quality of our diets and to develop healthful eating patterns.

The word nutrition is often paired with the word food because the two go together. They are interdependent, but not interchangeable. Food might be defined as any edible substance that provides nourishment when consumed. It is made up of many natural ingredients—all chemicals—that have different functions such as providing odor, flavor, color, and nourishment. The ingredients that give us nourishment are called nutrients.

These nutrients are categorized as fats, proteins, carbohydrates (sugars and starches), minerals, vitamins, and water. They are called essential nutrients because we cannot get along without them. We need them for energy, for building and maintaining body tissue; and for regulating body processes the three essential functions of foods in the body. Nutrition might be defined as the process whereby we obtain the essential

nutrients and use them to make many other substances our bodies need, this process would include eating and digesting food and absorbing and using, or metabolizing, the nutrients it contains. We can obtain all of the essential nutrients from food. However, it is possible to obtain nourishment without eating and digesting food—if, for example, the nutrients are injected directly to our veins as in intravenous feeding.

Thus, it is the nutrients that are essential and the food that normally provides them. Since food is vital, we need to know the nutritive content of foods, which ones are the best sources of the various nutrients and how to combine them into a healthful diet.

The term good nutrition implies that we are obtaining from our food all of the essential nutrients in the amounts needed to keep our bodies functioning and to maintain optimum health. A very simplified definition of good nutrition might be "eating the right foods in the right amounts."

The work of nutrition scientists involves finding in the body, the amount of each that we need, what happenings when we receive too much or too little and about food and died—what foods we should eat and in what amount. Yet nutrition science in its broadest sense has many more faces: the influence of sensory factors of flavor, color, and texture of food on eating behavior; the psychological, cultural, emotional, and social aspects of food intake; and even the economics of food availability and consumer behavior in the purchase of food.

To date, nutrition scientists have identified some 40 ~ 45 substances as essential nutrients. But the list is growing as new nutrients continue to be identified. Nutrients might be divided into two categories based on the amount that we need. These are the macronutrients (carbohydrates, fats, proteins, and water), which we need in relatively large amounts and the micronutrients (mineral elements and vitamins), which we need in relatively small amounts. All of the nutrients except for mineral elements and water are classified as organic chemicals because they contain the element carbon. Mineral elements and water are inorganic chemicals because they do not contain carbon. The vitamins are divided into two general categories based on their solubility in either water or fat. The fat-soluble vitamins are vitamins A, D, E, and K; the water-soluble vitamins include vitamins C (ascorbic acid), niacin, thiamin, riboflavin, flacon (also called folic acid), antithetic acid, pyridoxine, vitamin B_{12} and biotin. The mineral elements are divided into two categories based on the quantity of them that we need. Microelements are those needed in relatively large amounts, while microelements are those needed in very small amounts, some example of microelements are sodium, calcium, and phosphorus. Some example of microelements is iron, iodine, manganese,

zinc, and fluorine.

Once a nutrient is identified, one of the principal research efforts of nutrition scientist is to determine how much of it is needed by people at various ages and stages of life. Initial studies usually are conducted with laboratory animals, but the information developed in these studies cannot be applied directly to humans since people's needs often are quite different from animals' needs. Human nutrition studies on the other hand, are time-consuming, costly, and difficult to conduct, especially because of the problems of controlling variables and possibly causing harm to the individuals involved. Because of the obstacles to collecting, accurate data, our present knowledge of nutrient needs is incomplete, and the requirements of humans for many nutrients have not been established.

However, the data on human and animal needs currently available are used by nutrition scientists to establish estimates of the amounts of essential nutrients per day that will meet the needs of most health persons. In the United States, the most widely used nutrient guidelines are the recommended dietary allowance (RDA), which are issued by the national academy of sciences, national research council, and food and nutrition board.

The RDA serves as dietary of nutritional standards for a wide range of age-weight-sex groups such as infants, children, adolescents, pregnant and lactating women, and younger and older adults. They are recommendations, not average requirements, for satisfactory levels of intake of essential nutrients of population groups of average, healthy people. They do not take account of special needs certain individuals may have due to genetic make up, metabolic disorders, chronic infections, and other abnormalities, which may result in their needing different levels of nutrients.

To allow for individual difference, the usually are set with a generous margin of safety. Thus, they are thought to meet the needs of 95 ~ 97 percent of the people within each age-sex group. In other words, the RDA exceed the requirements of most individuals to ensure that the needs of nearly all are meet. For this reason, a person who consumes a diet that provides less than the RDA for one or more essential nutrients is not necessarily getting a diet that is nutritionally inadequate. What can be concluded, however, is that the farther the intake of an essential nutrient falls below the RDA, the greater the probability of nutritional inadequacy, on the other hand, if an individual is getting all the essential nutrients at or above the RDA level of his or her age, chances are good that diet is nationally adequate.

An exception is the RDA for energy or calories, which are not designed, as guides for individual caloric needs. Other variables not included in the RDA, such

as body size and physical activity, are involved in an individual's caloric requirements.

Another factor considered when the RDA are established is the availability of the nutrient and factors that affect how efficiently it is used in the body for some nutrients, such as iron, absorption or use in the body may be incomplete; so the RDA needs to be set high enough to allow for this. And because in the case of certain other nutrients, substance found in carrots and other vegetables and fruits, which our bodies convert to vitamin A.

On the other side of the coin, receiving too much of certain nutrients, amounts significantly above the RDA, can be just harmful as not obtaining enough certain vitamins (such as A and D) and minerals can be highly toxic if high for optimal nutrient intake from the standpoint of both maximum and minimum levels.

Vocabulary

nourishment 食物，滋养品；营养情况
nutrient 营养的，滋养的；营养素，营养物
nutrition 营养
nutritional 营养的
nutritive 营养的，滋养的，食品的，食物的
odor 气味
odorant 有香气的，有气味的；任何有气味的物体
flavor 味，香味，风味，滋味，食用香料，食用香精，调料
carbohydrate 碳水化合物，糖类
mineral 矿物质，食品中的痕量物质
vitamin 维生素，维他命
get along 过活，生存
metabolism 新陈代谢，代谢（作用）
intravenous feeding 静脉进食
vein 静脉，血管
vital 生命的，生机的，维持生命所必需的
intake 吸入，纳入，收纳，（水、气体流入沟、管的）入口，被收纳的东西；［医］摄取，~ of food 食物摄取
macronutrient 主要营养素，宏量营养素
micronutrient 微量营养素
micro- 小，微，微量，百万分之一；放大，扩大，如 microphone，microscope
ascorbic acid 抗坏血酸，维生素 C
niacin 烟酸，烟酰胺，维生素 B_5
thiamine 硫胺素，维生素 B_1
riboflavin 核黄素，维生素 B_2
folacin 叶酸（=folic acid），维生素 B_{11}
pantothenic acid 泛酸
pyridoxine 吡哆醇，吡哆素，维生素 B_6
biotin 生物素
macroelement 主要成分
microelement 微量成分
sodium 钠
potassium 钾
phosphorus 磷
phosphorous 磷的，亚磷的，含磷的

pregnant　怀孕的，怀胎的，孕育着的
lactate　分泌乳汁，喂奶，授乳；乳酸盐（或酯）
genetic　创始的，发生的，遗传学的
gene　基因
infection　传染，侵染；传染病；影响，感染
chronic　长期的，慢性的；惯常的，经常的；剧烈的，顽固的；患慢性病的人
precursor　先驱者，先锋；前辈，前任；预兆，先兆
carotene　胡萝卜素，叶红素
carrot　胡萝卜

Reading Material

Food Nutrition and Health

An important part is related to the function of the products in nutrition and health. Provision of calories has dominated the food industry for many years: firstly the basic need was to provide calories and then in recent years, the push to reduce calories. Early products in small groceries at the beginning of the 20th century were bread, butter and margarine, sugar, jam, bacon, beef suet—all high energy foods. In contrast, at the end of the century, supermarkets now sell low-fat milks, diet colas, trimmed pork and so on. There will always be "calorie" foods but the question is what calories they should provide in the next 50 years. Together with calorie foods, came protein foods—legumes, dairy products, meat and fish. It has taken some time to raise the amount of protein in the diet and even in the developed countries there are poor people who are not getting adequate amounts of protein. Legumes and cereals are the cheapest protein foods and these may be stronger areas for protein product development, but of course dairy products, meat and fish will remain major areas for product development for more affluent consumers. There are many more nutrients needed as well as the basic calories and protein, and there have been specific foods designed with fiber, vitamin and mineral enrichments. There is recent re-emphasis on what might be termed the older deficiencies such as calcium, iodine and iron. There will always be foods designed with this supplementation as there have been in the past.

Recently, the emphasis has shifted from foods supplying the essential nutrients to sustain life and growth to foods for prevention or indeed curing of disease; what have been termed functional foods. These functional foods have expanded from the health-food stores to the supermarkets, but there is some difficulty in defining what they are. One British definition is "processed foods containing ingredients that aid specific bodily

functions in addition to being nutritious" and an American definition is "foods that encompass potentially healthful products, including any modified food or food ingredient that may provide a health benefit beyond the traditional nutrients it contains". These definitions are very broad and cover a wide variety of products. If functional foods are to survive in the future they need to be based on scientific evidence and not emotional effects.

Exercise

Translating the following sentences into Chinese:

1. A large number of high school students use unsafe methods to lose or maintain weight.

2. Regular physical activity reduces feelings of depression and anxiety and promotes psychological well-being.

3. The prevalence of overweight among children aged 6 ~ 11 years has more than doubled in the past 20 years.

4. Early indicators of atherosclerosis, the most common cause of heart disease, begin as early as childhood and adolescence.

5. The terms physical activity and exercise are sometimes used interchangeably even though they represent different things.

Lesson 2 Protein
蛋白质

The amount of protein in food varies but the main sources include meat, fish, eggs, milk, cheese, cereals and cereal products (e. g., bread), nuts and legumes. Cereals, nuts and legumes are the principle sources of protein for people on a vegan diet. Different foods contain different amounts and combinations of amino acids (the building blocks of proteins). Vegans and vegetarians can get all the protein they need by eating a variety of nutrient rich foods. The amount of protein we need changes during a lifetime.

The building blocks of protein are amino acids. Amino acids are compounds containing carbon, hydrogen, oxygen, nitrogen, and in some cases, sulphur. All amino acids have an acid group and an amino group attached to a carbon atom. Figure 1 shows the general structure of an amino acid.