Chapter
Factors affecting food selection

Have you ever heard the song ‘Food Glorious Food’ that was sung in the Broadway musical Oliver? Oliver and his friends were always hungry but when they closed their eyes and imagined ‘Hot sausage and mustard’ and ‘Cold jelly and custard’ they didn’t feel quite as bad. Most of us don’t ever go truly hungry, though, as Oliver and his friends did. We have access to food and in many cases plenty of it. So what determines our food choices?

In this chapter you will learn about:

Factors affecting food selection

- physiological factors, including: hunger, appetite, satiety; nutritional requirements, e.g. age, gender, size, activity level; reactions to food, e.g. appearance, odour, taste, allergy
- psychological factors, including: values, beliefs, habits, attitudes, emotions, self-concept, experiences
- social factors, including: traditions and culture; lifestyle, e.g. employment, education, household structures, roles, geographic location, interests; social interaction, e.g. peer group, family hospitality; media
- economic factors, including: the marketplace (retail and purchasing practices); resource availability such as food processing equipment and food preparation skills, occupation and finances.

We eat for all sorts of reasons; the sheer love and desire for food because it tastes great is one of them.
When was the last time you felt really hungry — your stomach grumbled and had an empty feeling; you felt tired; you had difficulty concentrating; and maybe you had a dull headache? Perhaps it was when you signed up for World Vision’s 40 Hour Famine, went on a diet or you may have fasted to observe religious customs. Some of us are so accustomed to regularly eating food that we may not know the true signs of hunger. There are a variety of reasons why we eat food and hunger is just one of them.

So why do we eat if we are not truly hungry? For most of us the answer is fairly simple; food tastes great! Eating is so enjoyable that food forms a basis of many celebrations and social gatherings. Some of us can also think back to a time when we have eaten out of boredom, or perhaps because food has a soothing effect and makes up for something that is missing in our lives.

Food is essential for life, and informed decisions when selecting food are essential for a happy and healthy life. Food choices are influenced by physiological factors, social factors, economic factors and psychological factors.

**Hunger, appetite and satiety**

**Hunger**

*Hunger* may be defined as that feeling of emptiness, weakness or pain caused by a lack of food. It becomes more intense as time passes, until we are able to think of little else but food. For those suffering extreme hunger, relieving the body of this pain is the focus of life.

Hunger is controlled by a small gland in the base of the brain called the hypothalamus. The hypothalamus has a number of functions in the body, and works closely with the pituitary gland to:

- control body temperature
- regulate appetite, thirst and body fluids
- induce sleep and wakefulness
- control the release of growth and sex hormones from various glands throughout the body.

**Appetite**

People often confuse appetite with hunger, but the two are very different. *Appetite* is the desire for food even when the body is not hungry. Appetite can be triggered by the sight of appetising food, the aroma of food in preparation, and even the mention of food in conversation. The hypothalamus registers these cues from the senses and sends messages to the brain which encourage you to think about food. The salivary glands are stimulated and produce extra fluid: your mouth then begins to water. Unlike hunger, if appetite is not satisfied it will eventually go away.

**Satiety**

*Satiety* is the feeling of fullness that comes with eating adequate amounts of food. The body digests foods at differing...
rates, so different foods remain in the stomach for varying lengths of time. Simple carbohydrates, such as sugar, are easily digested and move through the stomach fairly quickly, whereas complex carbohydrates, such as dietary fibre, remain in the stomach for a longer period. Because they leave the stomach more slowly, fibrous foods give a feeling of fullness, or satiety, for an extended time after eating.

Food moves through the stomach at different rates. Slow-moving foods have a higher satiety value.

**Nutritional requirements**

Many of us select food that is nutritious because we know that we will feel and stay healthy. The food we eat should provide essential nutrients that the body can absorb, and metabolise (be used by the cells in the body for energy, building or repair). When you are next in the supermarket, take a quick look at someone else’s shopping trolley; it will tell you a lot about that person’s eating habits. Unfortunately, many of us need to learn more about the nutritional value of food as statistics from the latest national health survey show that the rate of overweight and obese adults and children has doubled over the past 20 years. Take a look inside your own pantry and refrigerator and ask yourself whether food has been purchased with nutritional value in mind.

Governments are taking steps to educate Australians about nutritious food. The Australian Dietary Guidelines were developed out of concern for the health of our population. The guidelines aim to encourage Australians to eat a more varied and nutritious diet, and reduce the risk of suffering from nutritionally related disorders.

In addition, the Australian government has introduced new initiatives:
- The Healthy Active Ambassadors Program invites well-known people who live a healthy life to speak publicly to help create an awareness of how to adopt a healthier lifestyle.
- A National Children’s Nutrition and Physical Activity Survey will find out what Australians are eating and their level of physical activity.
- A Healthy Weight website has been launched by the government to promote healthy eating and provide tools such as the Body Mass Index (BMI) calculator, as well as specific dietary requirements for people of different ages and genders.
- Other government initiatives include community and school grants programs, and the creation of consumer resources on being overweight and obese.
- Each state has developed its own Healthy School Canteen Strategy based on the national Healthy Schools Canteen framework.

It’s evident that many of us need better education when it comes to eating nutritious food. Nutritional requirements depend on a number of factors such as our age, gender, body size, level of physical activity, how healthy we are at the moment, and whether we are pregnant or breast feeding.

**Body size/type and heredity**

Anyone who owns a car is aware that there are major differences in the costs of running and maintaining large and small cars. Obviously, large cars use more petrol and therefore they have larger petrol tanks.

The nutritional requirements of different sized human bodies vary in the same way. Individuals who have larger builds require more nutrients to maintain and operate their body processes. They have the same type of body tissue and organs as have people with smaller builds, but a larger
person requires more carbohydrates because they need the extra energy to move a larger body mass and to maintain normal body functions. Similarly, those with a smaller body size require less protein for the maintenance and repair of body tissues because their body mass is less.

Each person can be described according to their body type, regardless of age. Body type is identified according to a person’s:
- skeleton size (height and overall size of the body frame)
- amount of body fat
- weight
- amount of muscle.

Heredity controls the skeleton shape, but a person can control their fat and muscle levels, and their weight. The correct types of exercise will allow you to change your body shape to some extent, which could be endomorph, mesomorph or ectomorph.

Which body type are you? Endomorphs have a large skeletal frame with a high percentage of body fat centred on the waist, buttocks, hips and thighs. Mesomorphs have a medium to large frame with a low level of body fat and well-developed muscles. Ectomorphs have a light skeletal frame and may be any height. They have a low percentage of body fat and not much muscle development. Which body type do you think this Sumo wrestler has?

**Table 2.1** Estimated energy requirements* for children and adolescents (MJ/day)

<table>
<thead>
<tr>
<th>AGE</th>
<th>REFERENCE WEIGHT**</th>
<th>REFERENCE HEIGHT (M)</th>
<th>BMR*** (MJ/DAY)</th>
<th>BED REST</th>
<th>LIGHT ACTIVITY</th>
<th>MODERATE ACTIVITY</th>
<th>HEAVY ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boy</td>
<td>8</td>
<td>25.6</td>
<td>1.28</td>
<td>4.5</td>
<td>5.5</td>
<td>7.3</td>
<td>8.2</td>
</tr>
<tr>
<td>Boy</td>
<td>16</td>
<td>60.9</td>
<td>1.74</td>
<td>7.3</td>
<td>8.9</td>
<td>11.8</td>
<td>13.2</td>
</tr>
<tr>
<td>Girl</td>
<td>8</td>
<td>25.6</td>
<td>1.28</td>
<td>4.2</td>
<td>5.2</td>
<td>6.9</td>
<td>7.7</td>
</tr>
<tr>
<td>Girl</td>
<td>16</td>
<td>53.9</td>
<td>1.63</td>
<td>5.9</td>
<td>7.2</td>
<td>9.5</td>
<td>10.7</td>
</tr>
</tbody>
</table>

* Estimated energy requirements were calculated using BMR predicted from weight, height and age
** Reference weights from Kuczmarski et al. (2000) (see also FNB/IOM 2002)
*** Estimated using Schofield et al. (1985) equations for weight, height and age groups 3–10, 10–18

Source: Data derived from Nutrient Reference Values for Australia and New Zealand, 2005, pp. 298–9

**Age**

The human body undergoes specific growth stages throughout life. An infant's body has an enlarged head, and the arms and legs are short in relation to the rest of the body. Early childhood sees dramatic changes in body proportions. The arms increase in length and muscle tone, which allows for greater movement and coordination, and the legs extend to make up half the body’s height. The period of growth and development continues throughout adolescence until the body attains a more adult form.

Because nutrients carry out specific functions within the body, the amount of nutrients needed by an individual is regulated by the growth processes.

3 to 19 years — more calcium + protein for growth of bones and tissues + carbohydrates for energy

20 to 40–50 years — genetically predetermined height and build achieved, muscle tone and amount of fatty tissue varies, depending on diet and exercise

40+ years — basal metabolic rate (BMR) slows down (BMR is the rate at which the body uses energy). Intake of energy-rich foods needs to be lowered and exercise increased or the ‘middle-age spread’ commonly occurs.

Individual nutrient needs change throughout a person’s life; sensible food choices and adequate exercise can keep the body healthy and enable people to do what they want to do.

Table 2.1 below shows the estimated energy requirements for children and adolescents in terms of megajoules (MJ) per day (1000 kilojoules = 1 MJ). Energy requirements vary with age, gender, body size and especially activity levels. A 16-year-old male undertaking heavy physical activity will need 39 per cent more energy than a 16-year-old male prescribed bed rest. More detail about basal metabolic rate (BMR) can be found in chapter seven.
Level of activity
An individual who is physically active needs to consume more energy-giving foods than an individual who leads a sedentary (less active) life. A sedentary person requires less of all nutrients than an active person.

If an individual consumes large quantities of energy but does not move around much, the body stores the excess as adipose tissue (fat).

A sedentary person's requirement for protein is also lower because the protein is needed only for the maintenance of muscle tissue, and not for the development of muscle fibres that occurs with physical activity.

Many athletes believe they require greatly increased protein intakes to build additional muscle, but some research does not support this belief. The body can use only a certain amount of protein on a daily basis, and any excess is chemically altered and stored as adipose tissue for future energy use.

Gender
The sex of an individual also determines their nutrient requirements. Biological activities such as menstruation and childbirth mean that women need to have a higher dietary intake of iron and calcium. Men have a higher proportion of muscle tissue on their bodies, so they require a higher intake of protein than women.

Gender will also affect the parts of the body where adipose tissue is stored. Women are most likely to find extra adipose tissue on their upper arms, bust, waist, hips and thighs. During middle age, an individual's metabolic rate slows; if the person does not reduce their energy intake, they will gain weight. Women normally experience an increase in adipose tissue around the buttocks, hips and thighs, and they become pear shaped. Men continue to have more muscle tissue than women through middle age, but their basal metabolic rate also slows. Men's extra adipose tissue can quickly build up, usually around the waist and midriff region so they become more apple shaped.

Remember
1. What is the difference between appetite and hunger?
2. Why do people with more muscle require more protein?

Apply
3. Explain why a breakfast of a glass of juice, Weet-Bix with milk, and a piece of toast with butter and jam will keep you satisfied until lunch.

Do an activity
4. Each person in the class collects five pictures of food that he or she likes. Label each picture according to what it is. Sort the pictures by placing any similar food items together (for example, if three people have named pizza as their favourite food, these pictures all go together). Can you identify a general theme? Are these foods high in salt and/or fat? Are the foods popular with one sex more than another, or to other age groups?

Health status
We have conversations like this nearly every day — 'How are you?' ‘Oh, very well thanks’. Some people are so well it shows; their hair shines, their skin is rosy, their nails are strong and they exude vitality. Others are unwell and require specific nutrients to aid their recovery. Nobel Prize winner Sir Frederick Gowland Hopkins (1861–1947) discovered in the early 1900s that mice fed a diet of pure carbohydrate, pure protein, fats and salts would stop growing unless their diet was supplemented with milk. He realised that milk must contain vitamins that lead to growth and help maintain good health. Hopkins went on to study the nutritional value of margarine, which was lacking in Vitamins A and D, and this led to vitamins being added to margarine.

Some diseases that may be related to poor diet include beri-beri, pellagra, rickets, scurvy, osteoporosis and anaemia. Anaemia (meaning without blood in Greek) is a deficiency disease where the person affected is deficient in red blood cells and/or haemoglobin. The common symptoms of anaemia are tiredness and fatigue. If the anaemia is caused by an iron deficiency, consumption of food rich in iron may be recommended along with other treatments. Canned clams, fortified dry cereals, cooked oysters and organ meat such as liver or giblets are rich sources of iron.

A person's state of health may lead them to consume certain types of food and/or less of other types of food. For example, a person who has high cholesterol (that could eventually lead to heart disease), may opt to reduce the amount of animal fat in their diet, which may reduce cholesterol by as much as 10 per cent, according to research undertaken by the CSIRO.

Pregnancy and lactation
The nutrient needs of a pregnant woman will obviously increase, because the foetus shares the nutrients supplied in the mother's bloodstream. Nature always makes sure that the nutritional requirements of the foetus are met. Therefore, if the mother's dietary intake of a nutrient is not increased during pregnancy, the baby's needs for that nutrient will be met, but the mother will develop a deficiency.

To ensure both the mother and the child receive the nutrients they need, careful selection of food is required. Pregnant women should choose a variety of nutritious foods daily, including:

- bread, cereals, rice, pasta and noodles (wholegrain or wholemeal is best)
- vegetables and legumes (plants that bear their seeds in a double-seamed pod such as peas, beans, lentils, soy beans and peanuts)
- fruit
- milk, yoghurt and hard cheese (low fat preferred)
- meat, fish, poultry, cooked eggs and nuts.

It is common to gain weight during pregnancy (as much as 12–14 kg), so pregnancy is not the time to diet or skip meals. Many women in the first three months of pregnancy take
folic acid supplements to prevent birth abnormalities such as spina bifida. Foods that are naturally rich in folate include green leafy vegetables, chick peas, nuts and orange juice, as well as some fruits. It is also important to remember that during pregnancy the need for iron increases. Good sources of iron include lean beef, duck with the skin removed, chicken, fish, green vegetables and cooked legumes such as chick peas or lentils. Calcium is also extremely important during pregnancy. The RDI for calcium is 1100 mg or 300 mg above the requirements for a woman of that age. Dairy products, especially cheese, tofu and tahini are good sources of calcium.

Protein, calcium and iron are important nutrients. Protein is required to build new cells and repair any damaged tissues; the body cannot function without it and muscle development would be poor. Calcium is needed to make our bones and teeth strong, and iron is required to build red blood cells and carry oxygen to cells. Iron in the diet is important to prevent disease such as iron-deficient anaemia. There are Recommended Dietary Intakes (RDIs) for these nutrients established by the National Health and Medical Research Council and the Department of Health and Ageing. As you can see, boys and girls aged 9 to 13 need the same amount of calcium and iron, but the RDI for protein differs between boys and girls. What are the major differences in RDIs of protein, calcium and iron for males and females aged 31 to 50?

<table>
<thead>
<tr>
<th>Girl 9–13 years old</th>
<th>Boy 9–13 years old</th>
<th>Adult, female 31–50 years old</th>
<th>Adult, male 31–50 years old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 35 g/day</td>
<td>Protein 40 g/day</td>
<td>Protein 46 g/day</td>
<td>Protein 64 g/day</td>
</tr>
<tr>
<td>Calcium 1000–1300 mg/day</td>
<td>Calcium 1000–1300 mg/day</td>
<td>Calcium 1000 mg/day</td>
<td>Calcium 1000 mg/day</td>
</tr>
<tr>
<td>Iron 8 mg/day</td>
<td>Iron 8 mg/day</td>
<td>Iron 18 mg/day</td>
<td>Iron 8 mg/day</td>
</tr>
</tbody>
</table>

**Review Questions**

**Remember**
1. The hypothalamus part of the brain controls:
   A. hunger, thirst, breathing, appetite
   B. body temperature, sleep, thirst, appetite
   C. release of sex hormones, heartbeat, hunger, sleep
   D. release of growth hormones, pain, body temperature, breathing

**Apply**
2. Why would an under-12s soccer team player use more energy than a 45-year-old weekend cricket player?

**Do an activity**
3. For a person of your age and sex, use food composition tables or software to identify your calcium, iron and fibre needs.

**Reactions to food**

Our personal perceptions have a major influence on our food selection. Individuals select or reject food based on their reaction to the food's physical appearance, its
presentation, smell, and texture. We use our senses to gauge the quality and appeal of food, and judgements based on these reactions are called **sensory perceptions**.

The perception of food plays an important role in food selection, as any restaurateur or gourmet takeaway operator will tell you. These businesses often rely on food displays to encourage the impulse purchase of food by passing customers. Attractive colours and the creative arrangement of food stimulates the appetite and the salivary glands, creating the desire for specific foods that may not otherwise have been chosen. Food preparers also take care in the placement of food on the plate because they are aware that the aesthetic appearance of the meal can enhance or retard the appetite of those to whom it is served.

**Appearance**

**Colour**

Colour, as well as shape and **turgor** (explained later), is an important part of the appearance of food.

The colour of food indicates its quality and nutritional value. Foods such as fruits and vegetables display their most desirable colours when they are at their peak, both texturally and nutritionally. As fruit and vegetables become over-ripe, their turgor (crispness) and nutritive value decrease, as does the intensity and desirability of their colour.

**Sensory reactions to colour**

**Syllabus outcome**

Students learn to:

- prepare foods that reflect various factors influencing food selection.

Contributes to the following outcome:

- plans, prepares and presents foods which reflect a range of influences on food selection.

**Aim**

To determine the effect of colour on the acceptability and appeal of food

**Equipment**

1 butter cake mix (and the ingredients to add to it)
5 mixing bowls
electric mixer
5 spoons
patty cake papers and tins
4 food colours (e.g. red, blue, green and black)

**Method**

1. Prepare the cake batter according to instructions on the packet.
2. Divide the batter into five separate bowls.
3. Set one bowl of batter aside to act as a ‘control’ for later colour comparison. Add food colours to each of the four remaining bowls and mix well.

4. Place mixture from the five bowls into lined patty tins, and bake as directed.
5. When the cakes are cool, ask up to ten people not connected with the experiment to:
   a) rank the five different coloured cakes in order of visual appeal, with 1 being the most appealing and 5 being the least appealing
   b) explain why they find cake 1 more appealing than cake 5.

**Results**

1. Record the responses of the people surveyed. Add your own opinions to the survey results.
2. Copy the table below and present tallies of your results.

<table>
<thead>
<tr>
<th>Number of people giving the response</th>
<th>CONTROL</th>
<th>RED</th>
<th>BLUE</th>
<th>GREEN</th>
<th>BLACK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most appealing colour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second most appealing colour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusions**

1. Which two colours were considered the most appealing? Why?
2. Which colours were considered undesirable? Why?

*Note: This experiment could also be carried out using other foods — for example, ice-cream, custard or rice.*
of the impact of shape on consumer approval. One of the recent innovations in the shape of food is the change in portion size for well-known products. Consumers feel that they are eating what they like, but eating less of it, and thereby reducing their kilojoule intake.

The chocolate looks glossy and smooth, and the manufacturer has even catered for those who are watching their waistlines by creating mini-Magnums. Marketing gurus have turned the Magnum into more than just an ice-cream though. You may have seen Liz Hurley seductively bite into an ice-cream and, in fact, the company released an edition of the ice-cream named after the senses: Magnum Aroma, Magnum Touch, Magnum Sound, Magnum Taste and Magnum Vision.

Turgor

Turgor refers to the pressure placed on cell walls or membranes by fluids within the cell. Turgor gives many foods a full, fresh appearance, a firm texture and a crisp mouth-feel. Wilted greens and soft vegetables have lost some of their turgor and are visually unappealing, as well as having a lower nutritional value.

Textural differences in foods create interest in meals and stimulate the appetite. Firm textures are complemented by foods with softer textures — for example, cheddar cheese on biscuits. Creamy textures are contrasted by crunchy mouth feel — for example, a vanilla slice with its puffy pastry and custard filling.

Flavour

Flavour is a sensory impression of food based on its taste and smell. Our body uses taste sensors on the tongue to detect differences in flavour, with the help of the sense of smell. You may know from personal experience that when you have a cold and your nose is blocked, it is harder to taste the flavours in foods.

The human mouth contains approximately 9000 to 10 000 taste receptors or ‘tastebuds’. Most of these are located on the tongue, but some are also on the roof of the mouth (the soft palate) and the back of the epiglottis (at the top of the throat). Tastebuds have a short life span in the body, lasting only about ten days before dying and being replaced. The number of active tastebuds also decreases with age. Young children have a good sense of taste and do not need foods to be highly flavoured to be acceptable. However, ageing adults have a decreased sensitivity to taste as their tastebuds gradually die and are not replaced. Thus, many adults are unable to distinguish subtle flavours in foods, and they compensate for this by eating foods that are highly spiced, salted or sweetened.

There are four types of tastebuds (located in different areas of the mouth) which taste different flavours. The four taste sensations that these receptors register are sweet, salty, sour and bitter. The sites of these taste receptors are shown in the diagram below.

Can you determine which parts of the tongue will react to the following: Pepsi Max, corn chips, orange and poppy seed muffin, fetta cheese?

To be tasted, the flavouring substance must be dissolved in a liquid. This liquid may be present in the food or it may be provided by the saliva of the mouth. If a person has a dry mouth, as is often the case when someone is suffering from an illness (particularly if the person is on medication), the ability to taste is reduced. When the tastebud has been stimulated, it sends a nerve impulse to the brain, which registers that particular taste sensation.

Aroma

Aroma describes how something smells. In our nose there are odour receptor nerves that transmit signals to the hypothalamus in the brain. Taste and aroma are related; many foods give off aromas that can be smelled before the food is eaten, as well as when the food is being eaten. We associate some aromas and tastes with the dishes of specific cultures, such as Indian and Italian foods.

Some people have a keen sense of smell and can identify subtle differences in aromas. For example, experienced winemakers have to learn to identify the right time to bottle their wine. Another word used to describe the smell of something is odour. Normally when we describe a food as having an odour, it indicates a lack of freshness as in sour milk, or ripeness as in the ripeness of a pineapple.
**The electronic nose**

Electronic noses, sophisticated sensors that create digital fingerprints of smells, are being used by an increasing number of industries for quality control and product development. Food manufacturers may now be able to follow suit.

One of the most important objectives of food production is to achieve a uniform, high quality of both raw materials and the final product... Engineers have recently devised an ‘electronic nose’ that will help both the food producers and ordinary shoppers solve the perennial problem of how to determine the ripeness of fruit consistently.

...the electronic nose calculates the exact ripeness of fruit by its smell. Once it has been ‘trained’ on a particular fruit it does not require a skilled operator and can obtain the results in a few seconds with over 92 per cent accuracy.

Of all the human senses, smell has always been the most arbitrary to define... The odour of food comprises many chemical substances that give it its unique quality and character. The ability to reliably measure and identify optimal flavour development and constant taste characteristics is therefore crucial in the development of many products. Traditionally, this difficult task has been the main prerogative of sensory panels, people whose individual assessments will always include personal appreciation.

...Measurement by the electronic nose is by contrast objective, repeatable, highly accurate and relatively cheap. Interpretation is simple, quick and in real time. Like the human sense of smell, the electronic smell learns by experience and improves the more it is used. It is designed to analyse, recognise and identify volatile chemicals at low (parts per billion) levels. The technology is based on the absorption and desorption (passing through) of volatile chemicals onto an array of sensors, which exhibit specific changes in electrical resistance, measurable across each sensor element, on exposure to different odours and aromas.

Work in this area has concentrated on the ripeness of bananas and apples, but the technology can easily be applied to most other fruits. It has also been used to test the quality of coffee, beer and wine. This could be just a scent of things to come.

*Source:* Extract from European Food Information Council, www.eufic.org

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**CASE STUDY QUESTIONS**

Carefully consider the article above. Remember that this is not just a comprehension task; use the stimulus material along with your knowledge of the sense of smell to complete the tasks ahead.

1. What does an electronic nose do?
2. Does the electronic nose require a person skilled in assessing a particular food to operate it?
3. What does a sensory panel do? Why isn’t a sensory panel an objective way to judge smells?
4. Identify five foods that would benefit from an electronic nose.

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**Allergies**

Some people’s food choices are limited because they have a physical reaction to specific foods or ingredients. The reactions vary between individuals but may include abdominal swelling, vomiting, diarrhoea, itches and skin rashes, wheezing, headaches and disturbed sleep. The foods commonly associated with food allergies are cow’s milk, shellfish, eggs, peanuts, wheat and soy. (See chapter 19 for more information on allergies and food intolerances.)

People who suffer from reactions to food must be cautious in their food selection. They must read labels and menus carefully so that they are aware of what they are actually eating. You may have seen labels on foods that say ‘nut free’ or heard of kindergartens and schools having a ‘nut free zone’. This is because some individuals are so sensitive to nuts that they will react when near a food that contains them or even when their food is cooked in a visibly clean pot that was previously used for something containing nuts, for example to heat peanut oil.
CASE STUDY

The healthy canteen menu

You may have seen the television program *Jamie’s school lunch project*, where Jamie takes on English youth and challenges them to eat, and the staff who run the school canteens to serve, healthy lunches instead of junk food. The healthy lunch trend is also catching on here in Australia. Foods prepared in the canteen at Kincumber High School in NSW include Burritos, jacket potatoes, vegetable stir-fry, chicken Caesar salad wraps, ‘Zappa’ wraps (chicken tenderloin, lettuce and tomato in a tortilla), pasta, kebabs (pita bread, tabouli, lettuce, with lamb or chicken) and fresh fruit salad. In winter, there are homemade soups, nachos, bolognese pasta bake, pesto pasta bake and hamburgers; and in summer, there are fresh salads, fruit salads, and wraps.

OUTCOME TASK

Students learn to:

• analyse the eating patterns of a selected group to identify influences on food selection.

Contributes to the following outcome:

• accounts for individual and group food selection patterns in terms of physiological, psychological, social and economic factors.

Carefully consider the article above. Remember that this is not just a comprehension task; use the stimulus material along with your knowledge of factors affecting food selection to complete the tasks ahead.

1. Explain why some students may resist a move to a healthier choice of food in the school canteen.

2. How does your canteen food compare to the menu at Kincumber High School?

3. Log in to [www.jacplus.com.au](http://www.jacplus.com.au) and locate the Healthy canteens weblink for this chapter. Explain the difference between red, amber and green food choices.

4. Use the healthy kids calculator and assess five foods from your school canteen. Which foods are considered foods that should be eaten only occasionally?

Psychological factors affecting food selection

Psychological factors relate to the mind and the emotions. They are difficult to describe, and differ from person to person depending on their lifestyle and upbringing. Some psychological factors such as beliefs, habits, values and past experiences with food have a constant influence on the foods selected, while choices made as a result of emotions, self-concept and attitudes can vary from day to day.

Values

A value is a deep personal feeling about what is important. Values are strong enough to influence behaviour and motivate action. A person’s values may reflect those of the family and culture in which they were raised, or they may be a personal response to the experiences encountered throughout life. In terms of food selection, the values most likely to influence choices are related to food origins and the maintenance of health.
Most people value life very highly. They respect the rights of all living things to exist in peace, free from pain. Vegetarianism is often a reflection of value-based food selection. A person may find the thought of killing and eating an animal revolting, or they may disagree with the conditions under which some animals are raised as a food source. Some people value an animal’s right to freedom so highly that they do not agree with the consumption of any animal products, including eggs, milk or other dairy products. Other individuals become vegetarians for reasons other than the values suggested here.

Beliefs
Beliefs about what is acceptable to eat vary throughout the world and are often related to religion and cultural heritage. A belief is an opinion or conviction which need not be based on positive scientific proof. Beliefs can be challenged and changed, unlike values that remain fixed. Many religions have food customs and impose restrictions on what their followers eat. Buddhists, for example, are partial vegetarians. They may eat fish, eggs and dairy products but are not allowed red meat. (They believe it is wrong to kill or injure living things other than fish.) Hindus, on the other hand, are allowed to eat all forms of meat except beef, because the cow is sacred in their religion.

Many religion-based food restrictions were originally imposed to protect people from diseases related to poor food safety and hygiene. For example, in the past many people were infected by diseased pork and shellfish and died, but nowadays advances in the processing of food and medicine mean that observance of such restrictions is no longer necessary. As well as religious customs, some social groups and cultures have specific beliefs about food. Many of these beliefs cannot be substantiated and have little, if any, nutritional basis; many of the fad-diets published in popular magazines targeting women are examples of this.

Some cultural beliefs often prohibit the eating of specific foods and lead to food taboos. Such taboos are most common in primitive cultures and they may, unfortunately, restrict the consumption of animal products that are good sources of complete protein.

- In an area of mid-Africa, people believe that animal milk is a repulsive body secretion similar to urine. Consequently it is not consumed, despite its nutritional value.
- Some people in remote areas of South-East Asia avoid eating eggs or chicken because they are believed to destroy human fertility.
- In parts of Africa, fish are believed to be unclean or possessed by evil spirits. Eating them is thought to invite disaster.
- For Australians, the eating of dog is taboo because it is considered ‘man’s best friend’. However, in countries such as Indonesia, dog has the same status as other meat sources and is considered acceptable.

Attitudes and experiences
An attitude is the way in which a person views something and behaves towards it, usually after evaluating its merit. Our attitudes or views towards food are based on one or more of the following:

- **the origin of the food.** For example, some people believe that if food is organically grown, it must be better; also, snails and crocodile meat do not appeal to many people because of their habitat.
- **our culture.** For example, eating raw meat and fish is part of the Japanese culture.
- **personal history.** For example, being made to eat spinach as a child could result in someone avoiding all foods containing spinach as an adult.
- **travel experiences.** For example, eating the cuisine in foreign places is part of the cultural experience, but that cuisine would not necessarily be eaten at home.
- **perceived status (the position of something in relation to other things).** For example, lobster, truffles and filet mignon have a higher status than flake fish, turnips and chuck steak.
- **economic depression and war.** For example, older Australians and many new migrants, who have gone through major depressions and wars with rationing and food shortages, eat more offal (animal organs such as beef liver and tongue), and feel it is wasteful not to eat everything served on your plate.

Habits
Many of the food choices we make are routine. A habit is something that we do regularly without thinking. Food habits are the same and, like all habits, are difficult to break. Look at the chart below and ask yourself whether or not you have the following food habits. How many of these habits do you share with your classmates?

<table>
<thead>
<tr>
<th>DO YOU</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swipe a thick layer of butter or margarine on your toast?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Put tomato sauce on a meat pie?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eat the same cereal each morning?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drink soft drinks instead of water?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprinkle salt on food before you taste it?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buy the same type of bread?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have dressing on your green salad?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eat something as soon as you get home from school or work?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eat something sweet at the end of each meal?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Food habits, like the ones described, are sometimes unhealthy and need to be identified if you want or need to change your overall diet.

**Emotions**

Many people use food as a means of relieving emotional stress. For some people this means they reject food until the time of stress is over; for others it means they gain comfort from eating specific foods and may overeat when anxious. People who consume comfort foods tend to select foods with a high-energy value, such as chocolate. It may be that the sugar, fat and caffeine in these foods act as a stimulant and restore flagging energy levels. Or it may be that individuals associate these foods with more pleasant experiences than those at the time. For example, many homesick travellers crave foods from home as a means of lessening their loneliness.

**Self-concept**

Self-concept is a word used to describe how we feel about ourselves (self-esteem) and the way we see our personal appearance including the size, shape and weight of our body (body image). Each of us has a picture in our minds of:

- how we look physically — strengths and weaknesses
- how well-coordinated we are
- whether or not we are smart
- whether we are lucky or unlucky
- how shy or outgoing we are
- how well we manage our money
- whether or not we have good dress sense
- how talented we are at art, music, dance
- our importance as a brother or sister, son or daughter.

Self-concept develops during childhood and it is interesting that these days dissatisfaction with body image increases from the age of 11 years to the mid twenties, especially in females. Also, our self-concept is not static; it can change gradually over time or even several times a day! Some reasons for a change in self-concept could include:

- how we feel physically. For example, a dose of the flu makes us feel lethargic and miserable.
- what our friends and family say to and about us. For example, a compliment or a negative criticism can lift or crush self-esteem.
- gaining weight. Weight gain can make a person feel muscular if they have been training or unattractive if they haven't.
- messages presented by the media. For example, idealised images for both females and males make us feel unattractive.

The media present us with physically beautiful, successful, talented people who eat, drink or use a certain product. Even though we are not aware of it, we may think to ourselves, 'Maybe that product will help me to be more like them'. Did you know that while, on average, people weigh more than they did 20 years ago, the body type the media encourage as 'ideal' is getting thinner?

Organisations such as the Australian Medical Association (AMA) and many parenting groups are working towards better educating young people regarding the messages that the media send about body image. The next time you are watching television with someone (an older person can be helpful with this) really look at the message behind the ads. Can you see what the ad is trying to say, what the underlying messages might be and how the ad makes you feel? Use the questions below to help guide your analysis of the sometimes hidden messages behind advertising.

1. What age and sex is being targeted? How can you tell?
2. Is the aim of the ad or program to amuse, entertain and/or persuade?
3. Are stereotypes (labels or typecasting) used on purpose?
4. How does the advertisement make you feel? Why would they use the product being advertised?
5. Who is responsible for this song, commercial, television show, or movie?
6. Why did they choose to portray the product in this way? Was anything left out?

In late 2002, the AMA made a public statement about body image and what needed to be done to assist Australians to maintain a better body image and their health at the same time. In this statement, recommendations were made in the areas of the role of the practitioner, weight management, cosmetic procedures, fitness and health, eating disorders, education and schools, and research and funding. The following excerpt is from the recommendations given to the Marketing, Advertising and Media.

### AMA guidelines — body image

**4.1** While acknowledging the impact of other social pressures to conform to idealised body types, the AMA recommends that publishers, programmers and advertisers promote a more realistic range of body images and role models.

**4.2** Articles should not portray the wide range of normal bodily changes as pathological or be used to advertise body image products in ways that target younger audiences, as found in child and adolescent magazines.

**4.3** Direct to consumer advertising of pharmaceutical products designed to play on body image and weight concerns is an unacceptable practice.

**4.4** The teaching of critical literacy and advocacy skills to children and adolescents is essential to encourage constructive analysis of media content.
Young Australians Concerned by Body Image, Environment Issues

by ANDREW LOWCOCK

Body image has topped the list of issues that concern young Australians, with the environment also featuring prominently, according to a comprehensive new report.

Mission Australia’s annual national survey of young Australians found body image (32.3 per cent) overtook family conflict (29.3 per cent) as the number one issue concerning 11 to 24-year-olds.

The issue ranked number one for both 11 to 14 and 15 to 19-year-olds, and third for 20 to 24-year-olds, behind coping with stress and depression.

And both young females (34.9 per cent) and males (27.9 per cent) put body image issues at the top of their list of concerns.

‘We’ve got much more of a focus as a nation on the number of Australians who are overweight, including young Australians,’ Mission Australia’s Anne Hampshire told ABC News Online on 4 December.

‘At the other end of the spectrum we’ve got an increasing focus, I think, on body beautiful and what constitutes an acceptable and a healthy body.

‘In fact, what’s been presented as ultra thin probably isn’t a healthy body for most of us. So, I think young people are getting a bit caught in between these two potentially conflicting messages.

Young people are still overwhelmingly turning to three sources for advice and support: friends, parents and other relatives, with community agencies ranking alongside magazines and behind the internet.


Note: If you give poor nutritional examples, you must give a nutritious alternative.

1. Were you surprised at Mission Australia’s findings in their recent national survey of young Australians? Explain why or why not.

2. Explain why the campaign to highlight the problem of being overweight may actually contribute to concerns about a person’s body image.

3. Working in pairs, produce a PowerPoint slide show on any THREE of the psychological factors affecting food selection. The slide show is designed to make students in Years 6 to 8 more aware of what they eat. Please note, if you give poor nutritional examples, you must give a nutritious alternative.

4. a) Identify two current examples of how different media promote a certain body image, one for females and one for males.

b) Describe the body image being promoted.

c) Is the body image achievable for the average male or female? Justify your answer.

Culture and traditions

Traditions are customs that are repeated at specific times by members of a group or society. Many traditions relating to special occasions involve food. Festive and social occasions always involve food to some degree, and the meal is often the focus of the event. Family traditions often revolve around food, as do major social and cultural customs in most societies, for example:

- Easter — a time of giving and receiving painted hard-boiled eggs, or confectionery and chocolate eggs
- Chinese New Year — celebration with displays of special foods such as rice cakes
• the Aboriginal ceremony of initiation — a celebration with feasts of meat and traditional dancing.

Traditions relating to food are usually maintained even when the individual changes social groups or societies.

**Lifestyle**

In general, lifestyle factors that influence food selection relate to:

- the type of employment a person has
- the structure of their family (size and whether they live with one or both parents)
- where they live (geographic location)
- travel and other interests.

Let’s take a closer look at all the above factors.

**Employment**

What you choose to eat may depend on the physical demands of your job. For example, construction work requires more energy than working in a video store does. Active jobs require the worker to eat more carbohydrate-rich foods for energy, while people who do sedentary work (a task that requires little bodily movement) need to be careful not to overeat. Because of the pressure to meet deadlines, recent research has found that up to 40 per cent of office workers eat lunch while working at their desk, and an increasing number of people just snack through the workday instead of taking a break for lunch.

Some occupations combine social occasions with work. Meeting for a meal at a café or restaurant is a common event and the temptation to indulge in energy-rich foods is ever present — even ordering a salad can mean a high-fat dressing is eaten.

Whether people work or not also impacts on food selection because when a person is employed it usually means that there is more money to spend on food, but it may also mean there is less time to prepare it. More pre-prepared meals or parts of meals may be purchased, and there may be more interest in using tools and equipment that make cooking easier and quicker.

**Education**

Obviously, wiser choices come from having more information about the options. All students in early high school learn about nutrients in food, digestion and the main food groups. The Food Technology course teaches students even more — food preparation, meal planning, food safety and food presentation, to name but a few areas. This information allows them to make wiser decisions when selecting food.

People also become better informed about nutrition and food choices through government programs, reading magazines, watching various television shows, food store handouts and fast food brochures. The better informed a person is about the nutrient content of foods, dietary requirements and food preparation, the greater the likelihood of wiser food selections. See chapter 7 for more information on guidelines to healthy eating.

**REVIEW QUESTIONS**

**Remember**

1. The aspects of a person’s culture that will affect individual food choices are:
   - A. beliefs, traditions, celebrations
   - B. type of work, taboos, religion
   - C. celebrations, type of work, unemployment rates
   - D. food preparation tools, traditions, beliefs

**Apply**

2. Log in to www.jacplus.com.au and locate the Healthy canteens weblink for this chapter. Keep a diary for two days during the school week and refer back to the healthy kids calculator to determine whether your food choices should be classified as red, amber or green.

**Do an activity**

3. Not including your peers, ask five people who work what they have for morning and afternoon tea, and lunch. Do your findings support the information just covered on lifestyle factors and food selection?

**Household structures and roles**

The make-up of the family unit determines the variety, quality and quantity of food consumed in a meal. For example, young children who have very sensitive tastebuds prefer less spicy foods, while elderly people may have a reduced sense of taste and often like more heavily flavoured (especially salty and sweet) foods. Personal likes and dislikes are often the most important factor in food selection within a household. Leading by example is a method of setting up healthy eating habits in the family. Nowadays there is a wide range of cookbooks aimed at serving up healthier meals to children. There is also information available to tailor food to specific dietary requirements. For example, if a family member cannot tolerate gluten (protein found in grains including wheat, rye, oats and barley), there are many gluten-free products and cookbooks on the market. Catering to different dietary needs within the family may mean that more care needs to be taken to prepare food in an attractive and enjoyable way.

Another factor affecting food selection is each family member’s commitment to work, sport or leisure. This often means that family members eat at different times — for example, getting home from soccer training at 7.30 pm, when the rest of the family has already eaten dinner at 6.00 pm, can result in the latecomer having to reheat a meal or prepare a meal themselves. The role of each person in the family can affect food selection as well. In many homes it is considered the mother’s role to prepare meals. If she works, the chances of the family having pre-prepared, partially
prepared or takeaway food increase because she may not have either the time or energy to cook a meal from scratch after working all day.

Climate and geographic location
As already discussed in chapter 1, the staple food of a country will most likely depend on whether it can be grown given the geography and climatic conditions. If the climate is tropical, then growing sugar cane, pineapples, bananas and coconuts is perfect and these foods will be cheaper, more plentiful and often used in a variety of culinary ways. While we import a wide variety of food, it should be noted that locally grown food is cheaper and fresher. In developing nations, however, this is not the case where modern production methods and equipment, cold and dry storage, and refrigerated transport are not readily available. Yields are usually low and food losses due to poor storage and lack of transport mean a limited choice of available foods.

Climate affects not only the types of food grown in an area but also the food choices people make. Summer brings the desire for bright, fresh, light foods — fresh fruit salads, juices and smoothies, cold quiches and crispy salads, ice-creams and barbecues. Winter is the season of porridge and thick soups, meat pies and lunchtime pastas, warm drinks and hot desserts. This difference in food choice is closely related to the physiological and psychological factors mentioned earlier in the chapter.

Travel and other interests
Most countries are now open to tourists; the internet allows us to make purchases from faraway places; and trade agreements between nations have meant that major events in one part of the world can be felt throughout the rest of the world. When travelling, we experience a wide range of foods, some of which we like and seek out upon returning home. Personal interests and the interests of close personal friends can also influence food choices. For example, an interest in environmental issues such as free range chickens, organically grown fruit and vegetables, and less-processed foods will affect choices made in the supermarket and at restaurants.

Social interaction
Food has long been a symbol of friendship and hospitality. When friends enter your home one of the first things you do is offer them something to eat and drink.

Food helps to create a relaxed atmosphere in which even a shy person can be part of the group by busying themselves with preparing or serving food. Alcohol can also form part of this social interaction. The food served at a social gathering is often controlled by social expectations. An invitation to a traditional Aussie barbecue would bring with it expectations of freshly cooked steak and sausages, accompanied by a salad or two. If the invitation was to a cocktail party in aid of Cancer Research at the Opera House, such things as smoked salmon canapés, stuffed mushrooms and vegetable crudité would be expected. Even sharing a meal with workmates or friends can influence food choices. For example, if your friend orders a Caesar salad you might think twice about ordering a chicken burger and fries.

The media as a social influence on food choice
In an affluent country like Australia, the media play a big role in the food selections we make. Advertising of food is everywhere — each day we are exposed to thousands of advertising text, images and sounds from magazines, billboards, the radio, cinemas, the internet and television. Promotion by well-known celebrities, scientific experts and restaurant reviewers try to interest us in new snack foods, never-fail exercise machines, amazing weight loss schemes or new restaurants.

Much of the food advertised through the media is lower in nutritional value than its unprocessed or less refined alternatives. However, these products are presented as if they are the very basis of a healthy and happy lifestyle. The models who appear in food commercials are always the picture of health and have the body type that our society idealises. Food manufacturers do not specifically claim that their products will help people achieve this body image, but the association is subconsciously made and the products are bought and consumed.

Peer group
An individual's peers are people in roughly the same age group with the same social status. By interacting with the peer group and the family, a person develops their own food-related beliefs, attitudes and habits.

The influence of the peer group is strongest during adolescence. The need for acceptance makes teenagers eat what and when their friends eat rather than what their parents think they should eat and what is nutritionally sound. Trying new things is safer in a peer group, and sharing food is a good way to get to know people and cement friendships. Peer pressure can encourage fad dieting.
in order to be thin in the way the media portray beautiful and popular people.

Hospitality at home
Welcoming people into the family home for a visit and a drink or meal is called family hospitality. In some families having many friends and family over at the one time happens often, while in others an occasional small dinner party is more usual. The table setting and food served at such times depends on the money and food available, the skill and time the cook has, and who the guests are.

Family entertaining in the home environment is becoming more informal and less frequent. People’s lives are busier and, with the increasing range of takeaway food outlets and restaurants, it is often easier to have others do the cooking. Working parents do not have the time to shop and cook for a dinner party; it is easier to use takeaway meals or go to a restaurant where the washing up is done by others.

### REVIEW QUESTIONS

**Remember**

1. Three factors that influence the food served in a household are _____________. _____________. and _____________.

**Apply**

2. Explain why most Australians have a wide range of foods to choose from, while many people living in middle African countries do not.

**Do an activity**

3. Prepare a survey of six to eight questions to determine the cultural background of your neighbours and what they eat. Prepare questions on the following topics.

- **Table 2.2** Gross household income quintile, 2003–04

<table>
<thead>
<tr>
<th>GROSS HOUSEHOLD INCOME QUINTILE</th>
<th>LOWEST</th>
<th>SECOND</th>
<th>THIRD</th>
<th>FOURTH</th>
<th>HIGHEST</th>
<th>ALL HOUSEHOLDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and non-alcoholic beverages</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>152.87</td>
</tr>
<tr>
<td>$</td>
<td></td>
<td>111.72</td>
<td>145.73</td>
<td>181.56</td>
<td>247.25</td>
<td></td>
</tr>
<tr>
<td>Alcoholic beverages</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>23.32</td>
</tr>
<tr>
<td>$</td>
<td></td>
<td>14.15</td>
<td>22.61</td>
<td>27.03</td>
<td>44.08</td>
<td></td>
</tr>
</tbody>
</table>
The marketplace

The marketplace refers to the place where consumers purchase food. It may be the corner store, the small local supermarket, the suburban shopping centre, or the buying and selling of goods on world markets. Generally, the smaller the selling venue is, the more expensive the food items are. Small stores buy their food items from larger stores or wholesalers, and increase the selling price to cover their costs.

Even the largest supermarket cannot sell every brand of every product made in Australia, let alone what is made overseas. In order to make a profit, the food retailer has to

<table>
<thead>
<tr>
<th>Broad expenditure group</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current housing costs (selected dwelling)</td>
<td>%</td>
<td>18.4</td>
<td>16.5</td>
<td>16.8</td>
<td>14.1</td>
</tr>
<tr>
<td>Domestic fuel and power</td>
<td>%</td>
<td>4.0</td>
<td>3.4</td>
<td>2.8</td>
<td>2.4</td>
</tr>
<tr>
<td>Food and non-alcoholic beverages</td>
<td>%</td>
<td>19.0</td>
<td>18.6</td>
<td>17.2</td>
<td>16.9</td>
</tr>
<tr>
<td>Alcoholic beverages</td>
<td>%</td>
<td>2.1</td>
<td>2.4</td>
<td>2.7</td>
<td>2.5</td>
</tr>
<tr>
<td>Tobacco products</td>
<td>%</td>
<td>1.8</td>
<td>1.9</td>
<td>1.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Clothing and footwear</td>
<td>%</td>
<td>3.1</td>
<td>3.2</td>
<td>3.6</td>
<td>4.3</td>
</tr>
<tr>
<td>Household furnishings and equipment</td>
<td>%</td>
<td>6.1</td>
<td>6.0</td>
<td>6.0</td>
<td>5.8</td>
</tr>
<tr>
<td>Household services and operation</td>
<td>%</td>
<td>7.7</td>
<td>6.9</td>
<td>6.4</td>
<td>6.1</td>
</tr>
<tr>
<td>Medical care and health expenses</td>
<td>%</td>
<td>5.3</td>
<td>5.4</td>
<td>5.4</td>
<td>4.9</td>
</tr>
<tr>
<td>Transport</td>
<td>%</td>
<td>13.9</td>
<td>15.0</td>
<td>15.7</td>
<td>17.2</td>
</tr>
<tr>
<td>Recreation</td>
<td>%</td>
<td>10.1</td>
<td>12.3</td>
<td>11.5</td>
<td>13.2</td>
</tr>
<tr>
<td>Personal care</td>
<td>%</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Miscellaneous goods and services</td>
<td>%</td>
<td>6.7</td>
<td>6.8</td>
<td>8.6</td>
<td>9.4</td>
</tr>
<tr>
<td>Total goods and services expenditure</td>
<td>%</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Estimate has a relative standard error of 25% to 50% and should be used with caution.

Source: ABS.

Students learn to:
• investigate current food consumption and expenditure patterns in Australia.

Contributes to the following outcome:
• accounts for individual and group food selection patterns in terms of physiological, psychological, social and economic factors.

Carefully consider the table above. Remember that this is not just a comprehension task; use the stimulus material along with your knowledge of food consumption and expenditure patterns to complete the tasks ahead.

1. Compare the percentage of money spent on food and non-alcoholic beverages by a low-income family in one week to that of a middle-income earner (a quintile equals 20 per cent of people).
2. What is the greatest expense for middle-income earners? Is it the same for all households?
3. Name three goods or services that low-income households spend less on as a proportion of their total expenditure each week.
4. Is there any good or service that low-income households spend more on as a proportion of their total expenditure than the other groups? Can you explain why?
know the products and brands that people who live in the area want. In this way the food store influences the food selection we have; we can request a certain product and/or brand but unless there are many requests for the same thing, we have to shop elsewhere (even perhaps on the internet).

Many supermarkets have their own delicatessen, meat section, bakery, pre-prepared chilled foods, and fruit and vegetable section, making it easy for customers to shop for all their food requirements at the one time. Generally, supermarkets are situated within large shopping centres, along with other food specialty stores which give customers a wide range of services and choices.

Available resources

A resource is something that we use to achieve our goals, such as time, money or our skill levels.

As varied as our resources may be, the supply of each is limited. For example, money once spent is gone until you make or are given more; and equipment wears out or technology makes it obsolete. Time is a resource that commonly limits what we buy and prepare for meals, while our knowledge of and skills in cooking may become rusty over time without use. Some Australians with limited money need to use the resources of government agencies and charity groups to obtain food parcels and vouchers.

Resources can be interchangeable. If you have the money you can choose to go to a restaurant for a meal, but if money is short you can use your skills, knowledge and food ingredients to make a meal. If you don’t have time to cook a meal from scratch, you can use a frozen meal or pre-packaged stir-fry sauce with pre-chopped meat and vegetables.

Recipe books and leaflets on display at the butcher, greengrocer, seafood and poultry shops can provide meal ideas with information about the ingredients and equipment needed to make a dish. So, in effect, they are a resource we use that affects the food we eat. Another resource required is the equipment to prepare a meal at home, such as a fridge, freezer or microwave. Time and money can be used wisely by freezing and safely storing foods that are in season, on sale, or in larger quantities than can be used immediately. The microwave can defrost foods quickly and is cheaper to run than a conventional oven. (See Case study below).

Occupation and finances

As discussed previously, the type of job a person does influences their food selection. The physical demands of the job and its social expectations are reflected in food choices. The income received from employment also determines the quality and quantity of food chosen. For many Australian families, and many other individuals throughout the world, economic factors are the most important consideration when purchasing food. The expenses incurred in raising a family, paying for accommodation, getting to and from work, and so on, often add up to more money than many families earn. When cutting costs, these families often have little option but to cut back on their food expenditure. What they would like to eat and what they can afford to eat are two different things.

CASE STUDY

Elissia is a working single mum with two children, Brett, aged 7, and Felicity, aged 13. Elissia is a good cook and has planned a menu for her daughter’s upcoming birthday dinner that includes Felicity’s favourites — sausage rolls, chicken burritos and a flourless chocolate roll for her birthday cake.

Because of an unexpected car repair, money is tight and Elissia has to work extra shifts to pay for the repair. She needs some advice on how to make the foods identified as cheaply as possible, and in the least amount of time.

CASE STUDY QUESTIONS

1. Log in to www.jacplus.com.au and locate the Australian Women’s Weekly recipes weblink for this chapter. Visit the site to find the recipes for sausage rolls, chicken burritos and a flourless chocolate roll. Make a list of the ingredients needed for each dish and how long it will take to make.

2. Identify the most expensive ingredients (check them out in your local food store).

3. Substitute a cheaper ingredient where you can (check local newspapers or junk mail for specials). Will this substitute increase or decrease the time needed to make the food?

4. Identify the preparations that Elissia could make ahead of time.

5. Divide into groups and make each of these products.
Compared with many other countries in the world, Australia’s food supply is very reasonably priced. We have an excellent supply of nutritious food, both fresh and processed, that is priced within the reach of most people.

Every five years the Australian Bureau of Statistics conducts a Household Expenditure Survey to determine how people in different income groups are spending their money. (See table 2.2 on pages 35–6.)

CASE STUDY

Ozzies skip lunch!

While most Australians think that eating a substantial, healthy lunch is important, one in three skip this vital meal at least once a week, and one in ten rarely or never have it.

A new AC Nielsen Omnibus poll of 1400 Australians shows that people engaged in home duties are most likely to skip lunch; with almost half those surveyed (46%) doing so at least once in the past week.

Too busy is the catch-cry of lunch-skippers — 43% said they didn’t have time to go out or make themselves something to eat. A further 20% said they weren’t hungry at lunchtime while another one in ten (11%) said they had too many personal tasks to do to fit food into their break.

The more work responsibilities people have, the more likely they are to claim they can’t do lunch. More than half the respondents on annual salaries of $60,000 or more said they were simply too busy.

Only a handful of those surveyed blamed their lack of lunch on takeaways being too expensive, fattening or unavailable in their area. Nor were they worried about being perceived as slacking off at work if they take time out. One in five men who don’t lunch (21%) think skipping lunch helps them lose weight compared to only 13% of women. Of the one in ten people who rarely eat lunch, more than half (55%) don’t think it’s important as long as they have a good dinner.

Sanitarium dietitian, Cathy McDonald, said the research shows that many Australians are clearly not making lunch — and their health — a priority.

‘It’s essential that we all make time to put our health — and our children’s health — first,’ said Ms McDonald. ‘Eating lunch assists in ensuring you get all the vitamins, minerals and other nutrients you need each day to keep healthy.’

‘A lunch that is high in fibre, low in fat, and is based on low GI foods also provides the long-lasting energy to help avoid the mid-afternoon slump and keep us feeling good through the day.’

‘Taking time out can also help improve concentration levels, enable time for building relationships and even build fitness levels if you do some exercise during your break.

More concerning is what people are actually eating for lunch. Almost two-thirds (61%) eat takeaways during the week, with hot chips (24%), hamburgers (19%) and meat pies (19%) top of the menu.

More 18 to 24 year olds eat takeaway food than any other age group. About once a week more than half (52%) eat snack food for lunch, 46% munch on toasted foccacia, 44% a hamburger, 43% hot chips, 41% a chicken burger, 29% sausage rolls and 26% meat pies and Chinese takeaway.

Men outnumber women in the fast food stakes with 28% of men having hot chips and meat pies once a week compared to 19% of women eating hot chips and 11% meat pies.

Blue-collar workers are more likely than white-collar workers to eat unhealthy lunch options.

Almost a third (30%) of people on home duties eat hot chips every week, with a further 20% biting into burgers, 18% kebabs and 17% sausage rolls.

The AC Nielsen Omnibus poll shows only 16% of Australians take between 45 minutes and an hour for lunch. One in three people have a 20 to 30 minute lunch break with a further one in five spending less than 20 minutes. Five per cent don’t stop for lunch at all.

And one in five Australians eat their lunch while at their desk or on the move.

Cathy McDonald said the study confirms that few people are taking the traditional lunch hour and many have a rushed lunch break.

‘This might seem great for productivity, but a rushed lunch-time means people are missing out on important health benefits both from a nutritional, stress management and a relaxation perspective,’ she said.

‘It’s important for us to realise that taking time to eat lunch is critical to maintaining health. A healthy lunch is important in controlling weight, boosting energy and concentration levels, as well as feeling better overall.’

CASE STUDY QUESTIONS

Carefully consider the article opposite. Remember that this is not just a comprehension task; use the stimulus material along with your knowledge of the factors affecting food selection to complete the tasks ahead.

1. What percentage of people skip lunch at least once a week?

2. What reason did men often give for skipping lunch?

3. What are the advantages of having a high-fibre, low-fat lunch?

4. Which age group eats the most takeaway food for lunch?

5. What percentage of Australians eat their lunch at their desks or on the move?

REVIEW QUESTIONS

Remember

1. The most common resource in short supply is ______________. In many situations it is possible to substitute the resource of ______________ instead.

Apply

2. Read the following scenario and identify the resources available to ensure that Ed has proper meals. Ed is 81 and lives by himself in the family home in the central part of a medium-sized town. He reads a lot and friends collect him (because he can’t drive anymore) twice a week to play cards. A new kitchen was installed just before his wife died two years ago, and as much as he loves food and has a good appetite, Ed doesn’t know much about cooking.

Do an activity

3. Basic food ingredients are available under the label of generic brands.
   a) As a class, make a list of what foods would be included under the heading of basic ingredients.
   b) Organise for each class member to have five of the ingredients.
   c) Using the internet, a store visit or newspapers compare the price of a generic brand of the ingredients to a brand name.
   d) How much more is the brand name than the generic brand?
• Physical, psychological, social and economic factors affect what we eat.
• Nutrient needs depend upon a person’s age, sex, body size, level of physical activity, health status and whether or not the person is pregnant or lactating.
• Body type is dictated by height and overall body frame, amount of body fat, weight and amount of muscle.
• BMR (basal metabolic rate) decreases in middle age.
• Active people need more energy than those who are sedentary.
• Pregnancy requires increased amounts of energy, folic acid, calcium and iron.
• Colour, shape and turgor are important to the appearance of food.
• Aroma and taste work together to give food flavour.
• A value is a deep feeling about something; a belief is an opinion; while an attitude is a way of looking at something.
• A food habit is easily and sometimes unconsciously picked up, and is hard to change.
• Depending on the person, emotional times can cause someone to eat food for comfort or even stop eating altogether.
• Body image is greatly influenced by the media’s concept of beauty.
• All cultures have traditions that include food either before, during or after the event.
• Lifestyle describes the things you do each day — at work and in leisure time. Lifestyle is dictated by financial resources, education, travel opportunities and where you live.
• The age, sex, number of people in the household, who works and when, all affect food choices.
• Peer pressure is a factor in deciding what to eat when you are with your friends.
• The cost of food depends on the type of retailer and your geographical location.
• Available resources to purchase and prepare foods will vary from household to household.
• Time, money and skills are most often the resources in short supply in our busy lifestyles.

KEY TERMS

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<tr>
<th>Adipose tissue</th>
<th>Flavour</th>
<th>Metabolise</th>
<th>Satiety</th>
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