

# 4 Development through the life stages

This unit is about understanding the way we change over time. It explores the course of human development and the range of genetic, biological and social factors that influence how your life turns out. You will investigate the major events which affect people throughout their lifetimes and look at the effects of ageing, and theories about it.

You will need to think creatively about some very deep questions. Will you have a fixed life course where you can predict much of what will happen to you? How can people with genetic conditions be helped? And how far is your life fixed for you, by your genetic inheritance, or by the social and economic environment you grow up in?

You will also need to consider the ageing process. How and why do we age? What does it take to ensure a long and happy old age? And how can health and social care provision provide opportunities for older people to remain as active as they wish?

## Learning outcomes

After completing this unit, you should:

- 1 know the stages of growth and development throughout the human lifespan
- 2 understand the potential effects of life factors and events on the development of the individual
- 3 understand physical and psychological changes of ageing.

## Assessment and grading criteria

This table shows you what you must do in order to achieve a **pass**, **merit** or **distinction** grade, and where you can find activities in this book to help you.

To achieve a <b>pass</b> grade the evidence must show that you are able to:	To achieve a <b>merit</b> grade the evidence must show that, in addition to the pass criteria, you are able to:	To achieve a <b>distinction</b> grade the evidence must show that, in addition to the pass and merit criteria, you are able to:
<b>P1</b> Describe physical, intellectual, emotional and social development for each of the life stages of an individual <b>See Assessment activity 4.1, page 145</b>	<b>M1</b> Discuss the nature-nurture debate in relation to the development of an individual <b>See Assessment activity 4.1, page 145</b>	<b>D1</b> Evaluate how nature and nurture may affect the physical, intellectual, emotional and social development for two stages of the development of an individual <b>See Assessment activity 4.1, page 145</b>
<b>P2</b> Explain the potential effects of five different life factors, on the development of an individual <b>See Assessment activity 4.2, page 162</b>		
<b>P3</b> Explain the influences of two predictable and two unpredictable major life events on the development of the individual <b>See Assessment activity 4.2, page 162</b>		
<b>P4</b> Explain two theories of ageing <b>See Assessment activity 4.3, page 171</b>	<b>M2</b> Discuss two major theories of ageing in relation to the development of the individual <b>See Assessment activity 4.3, page 171</b>	<b>D2</b> Evaluate the influence of two major theories of ageing on health and social care provision <b>See Assessment activity 4.3, page 171</b>
<b>P5</b> Explain the physical and psychological changes which may be associated with ageing <b>See Assessment activity 4.3, page 171</b>	<b>M3</b> Discuss the effects on self esteem and self confidence, of the physical changes associated with ageing <b>See Assessment activity 4.3, page 171</b>	

## How you will be assessed

In this unit you will be assessed through written work. You will be given an assignment which will require you to develop a fact file. Your fact file will contain a wide range of material about the human lifespan, life factors and the effects of ageing. Your file may focus on imagining the development of an individual person. Guidance is included throughout this unit to help you prepare your work.



### Kiara, 17 years old

At first I thought – ‘oh there’s so much to learn for this unit’, but my tutor helped me to see how stages of development work. To begin with I set up a fact file to contain information on life stages. Then I chose to study the biography of a famous tennis player. This gave me lots of information about a real person’s life experiences. I focused on adolescence and adulthood and explored the nature–nurture debate in order to write my own conclusions about intellectual, emotional and social development.

For the second assignment I had to work out how five life factors may have influenced the famous person’s adolescence and adulthood. I also had to explain the influence of two predictable and unpredictable life events. At first this seemed complicated but it all clicked into place for me when we discussed the idea of holistic development. I realised that you have to step back and see the big picture and not get tripped up with all the detail.

For the third assignment I explained disengagement and activity theory and went on to discuss how my celebrity would keep an interest in tennis after he was unable to carry on playing. I looked at ways in which care workers could help to support someone like my celebrity. I also had to imagine the effects of physical and psychological changes on the person as they became older. I was careful not to think that later life is always unpleasant and has to involve withdrawing from life. The person I studied had faced great challenges in order to become successful and I realised that they might find ways of coping with the problems of later life. I said it was possible that my person would maintain a high level of self-esteem and confidence because of their previous life.

### Over to you!

- 1 What do you think it takes to become famous? Can anyone become anything that they want to be – what are the limitations?
- 2 Do things always get worse for people as they grow old?
- 3 Which sections of this unit do you think will help you to answer these questions?

# 1 Know the stages of growth and development throughout the human lifespan

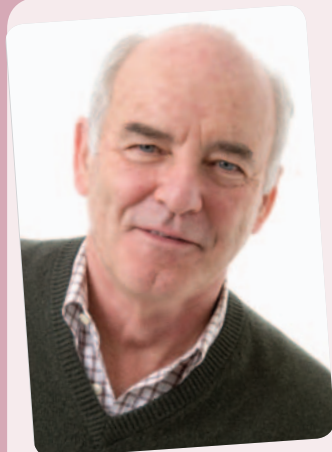


Get started

## Life stories

What do you think? Can someone become successful and famous just because they want to? Do you believe that people become important and successful because they are born to do well? How far does success and fame depend on your upbringing and your opportunities? What does later life hold for people? This unit will help you to explore and make sense of individual people's life stories.

## Case study: An interview with John



### Talking to John now:

**John:** It makes me laugh looking back at my old school work. When you're only 10 you don't have much idea of life. I got some of it right. I did start delivering milk and I did get married in my twenties, but I ended up having loads of different jobs and have been divorced twice.

John had a clear idea of his life course when he was 10, but his life experiences did not fit a straightforward pattern.

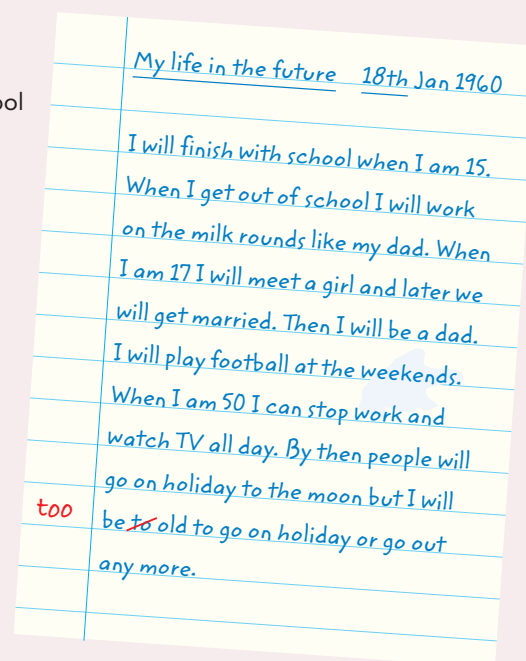
**Interviewer:** So you would say you can't predict your life course?

**John:** Well, life throws you lots of challenges – things don't always work out like you want them to. I worked for lots of companies but they went out of business and I had to retrain to do different jobs. Nowadays I work in IT – in 1960 there wasn't any information technology. As the world changes you have to change too.

**Interviewer:** Would you say that there is no such thing as a life course?

**John:** No, you do change as you get older, and some things you can predict. I mean, I'm just not fit enough to play football any more – too many aches and pains – your body does let you down as you get older. But I think if you've got a dream, something you really want to do – well you just might achieve your dream eventually. For instance I'm really happy now – good job, happy family – everything is going great, but I had a lot of setbacks along the way.

**Fig. 4.1:**  
John's school book from 1960



- 1 Do you think John is unusual in not having a straightforward life story?
- 2 Why is it difficult to predict what will happen in your life?
- 3 How far can you choose how your life works out?



## 1.1 Life stages

The human lifespan has been described in terms of life stages for centuries. The life stages are listed in Table 4.1. The age ranges of some life stages are defined by social criteria. However, the age ranges for certain stages can vary depending on the expert who is describing it.

**Table 4.1:** Life stages

Life stage	Age	Key features
Conception	9 months before birth	Egg and sperm fuse after sexual intercourse and create a new living being
Pregnancy (gestation)	9 months to birth	Physical development of embryo and fetus
Birth and infancy	0–3 years	Attachment to carers
Childhood	4–9 years	First experience of education
Adolescence	10–18 years	Identification with peer group – puberty takes place during this period
Adulthood	18–65 years	The right to vote, and manage one's own financial affairs, happens at 18
Older adulthood	65 years onwards	65 is the current age when men (and women born after 6 April 1955) receive a state pension
Final stages of life	Variable	Physical 'decline'

### Life expectancy

Social Trends (2009) states that boys born in 2006 can expect to live to 77 while girls born in 2006 can expect to live to 82 years of age. So **life expectancy** at birth is 77 for males and 82 for females. Life expectancy at birth is an average, not some kind of limit. As you grow older there is more chance that you might live longer than the average expected life at birth. A man who has already reached the age of 65 is expected, on average, to live until the age of 82 while a woman who has lived to be 65 is expected to live until the age of 85. So the life expectancy of a man who is already 65 is a further 17 years and the life expectancy of a woman of 65 is a further 20 years.

### Can you map your 'life course'?

A life course describes the path of the human life cycle. Stages such as infancy, childhood and adulthood, can be described alongside the social roles and expectations associated with different stages of the life course.

In the past many experts assumed that the human **life course** would be controlled by biology. Growth and development progress until adults are able to reproduce. As people get older a process of physical decline sets in and continues until the person dies. This view of the life course can be described as the 'springboard theory'.

In the past people often assumed that everyone would have similar experiences of the life course. John's story at the beginning of this unit provides an example of people's expectations.

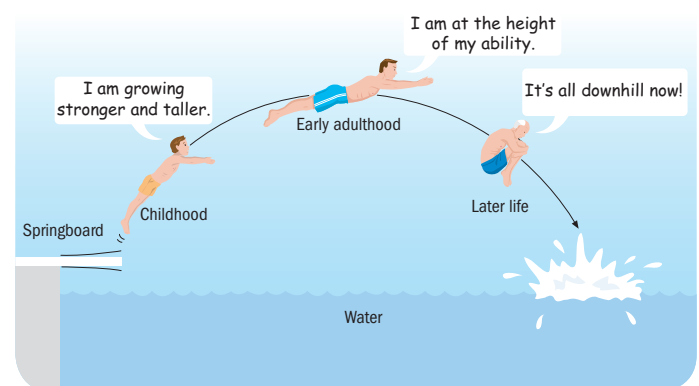
### Key terms

**Life expectancy** – an estimate of the number of years that a person can expect to live (on average).

**Life course** – a life course is a map of what is expected to happen at the various stages of the human life cycle.

### Reflect

Do you think that there is a 'best age to be' or can every period of life be the best time in some way?



**Fig. 4.2:** The 'springboard' model of the life course

Bromley (1966) designed a three-page outline of the human life cycle, detailing physical and social development across the life course. Havighurst (1972) produced a theory of 'life tasks' that people had to cope with at the different stages of their life course. Levinson et al (1978) described a series of transitions that most people could expect to go through during their life course.

Nowadays it is much more difficult to describe the general life course. Biology does not control the adult life course like it used to! With the advent of reliable contraception, one in five young adults may deliberately choose not to have children. Many adults choose to delay starting a family until they have established their career. Some women even choose to freeze their eggs in order to postpone pregnancy until their forties. In recent times children have been born to mothers in their fifties and even sixties using artificial techniques.

### Did you know?

In December 2006 a woman called Maria del Carmen Bousada de Lara, aged 66, gave birth to her first children (twin boys) after receiving fertility treatment. She died in July 2009, just over two and a half years later!



### Activity 1: Discuss the idea of the 'life course'

Get together with other course members and discuss how far you can choose your own life course and how far you should choose to step outside the traditional life stages?



### PLTS

**Creative thinker:** Discussing the idea of the life course will help you develop creative thinking skills, by generating ideas, exploring possibilities and asking questions. The activity may also help to develop team working and participation skills.



Many people have multiple careers. People may retire from one career and start another. The state pension age is changing – after 2048 you may not retire until you are 68.

Health in later life is immensely variable – some people experience heart disease in their forties, while others remain healthy and active into their nineties. Many people may continue to work part-time after retirement age. Huge variety is now possible in the human life course. Your adult life course may turn out to be quite different – even from that of your friends. It is difficult to describe a general life course that will be true for most people. However, it is possible to describe some patterns of growth and development relevant to everyone.

### Growth

**Growth** is a term used to describe an increase in quantity. For example, children grow taller as they get older. As height and weight increase, we can refer to the increase as a process of growth.

### Development

The word **development** is used to describe changes that might be complex and involve a change in the quality of some ability, as well as a change in measured quantity such as height or weight. Most social, intellectual and emotional change across the lifespan is described in terms of development.

### Maturation

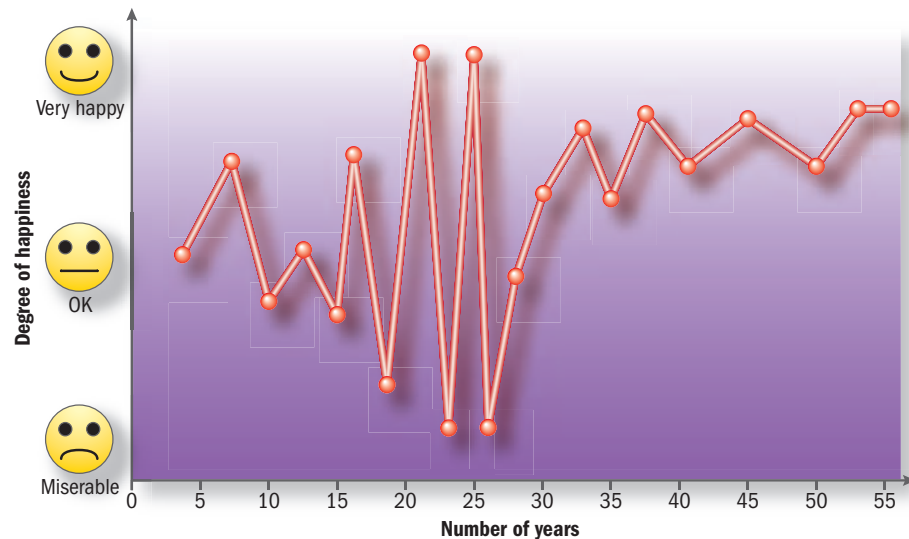
People grow and they develop. **Maturation** is different again from either growth or development. The term 'maturation' is used when development is assumed to be due to a genetically programmed sequence of change. For example, your experience of puberty can be explained as caused by an in-built genetic process that unfolds as you grow older. Puberty can be seen as an example of maturation.

### Key terms

**Growth** – an increase in some measured quantity, such as height or weight.

**Development** – complex changes including an increase in skills, abilities and capabilities.

**Maturation** – when development is assumed to be due to a genetically programmed sequence of change.



**Fig. 4.3:** Does happiness follow a 'springboard' pattern for most people? Your life will involve more than your biology.

## Developmental norms

A norm is something that is expected. Certain sequences and developments are expected with respect to physical and intellectual development. Although there are norms it is important to remember that every child will develop in their own way. Norms describe an average set of expectations; if a child develops faster than the norm it does not mean that the child is necessarily 'gifted' and if a child develops more slowly, it does not necessarily mean that there is something wrong. The term 'milestones' is sometimes used instead of the term '**developmental norms**'.

## Developmental milestones

Early human development can be seen as travelling on a journey. On a journey milestones can tell you how far you have travelled. Developmental milestones describe the skills children may be expected to develop during the first months and years of life.

## 1.2 Development

### Holistic development

Very few people experience their life in compartments labelled 'physical', 'intellectual', 'emotional' or 'social'. Most people experience a life course where all these issues come together as one whole. **Holistic development** comes from the idea of 'holism' – that things need to be understood as a whole. It is possible to analyse human development under separate aspects such as physical, intellectual, social and emotional development, but all these aspects interact with each other in the life stories of real people.

### Activity 2: Research developmental milestones

Undertake an Internet search to obtain a chart or list of developmental milestones. Compare your chart or lists with charts that other students have researched. Discuss the advantages and disadvantages of different styles of charts.

### PLTS

**Independent enquirer:** This activity will help you to evidence your ability to act as an independent enquirer. It will show that you can plan and carry out research, together with analysing and evaluating information. The activity may also help to develop team working and participation skills.

### Key terms

**Developmental norms** – Description of an average set of expectations with respect to an infant or child's development.

**Holistic development** – A person's physical, intellectual, emotional and social development as a whole. Development can be analysed under each of the individual categories to help identify issues but, in life, the categories interact.

## Physical development

### Conception

Human life begins with conception. A fertile woman usually produces one egg cell each month, roughly two weeks after the last menstrual period. The egg cell travels from the ovary, along the fallopian tube towards the uterus. If sexual intercourse takes place while the egg is in the fallopian tube, there is a possibility of conception. Millions of sperm are ejaculated by a man during orgasm. Just one sperm may fertilise the egg. Fertilisation means that the genetic material in the sperm joins with the genetic material in the egg to start a new life. Only about half of all fertilised eggs develop to become babies. Many eggs are lost without a woman knowing that fertilisation ever happened.

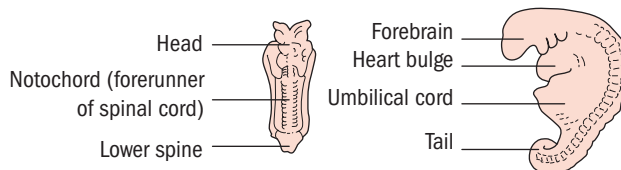
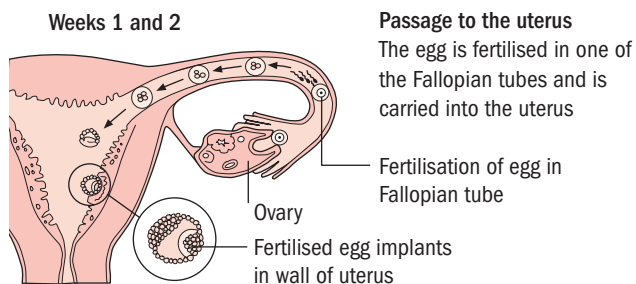
### Pregnancy

Pregnancy begins when a sperm penetrates an egg. One to one and a half days later, the single fertilised egg cell begins to divide. After two or three days there are enough new cells to make the fertilised egg the size of a pin head. This collection of cells travels to the lining of the uterus where it becomes anchored. The developing collection of cells is now called an embryo – it is attached to the wall of the uterus by a placenta. Once the embryo is attached to the uterus wall, a chemical signal stops the woman from having another menstrual period. After eight weeks, the embryo may have grown to between 3 and 4 cm, has a recognisable heartbeat and the beginnings of eyes, ears, a mouth, legs and arms. At this stage the growing organism is called a foetus.

During the remaining seven months before birth, all the organs continue to develop. By 20 weeks, the foetus will have reached about half the length of the baby at birth. By 32 weeks, the foetus will be about half its birth weight.

### Birth and infancy

At about nine months after conception the baby will be born. The newborn baby (or neonate) has to take easily digestible food such as mother's milk in the first weeks in order to grow. A newborn baby does not have a fully developed brain but can usually hear sounds, tell differences in the way things taste, and identify the smell of their own mother or carer. Infants are born with various temporary and primitive **reflexes**.



#### Three weeks

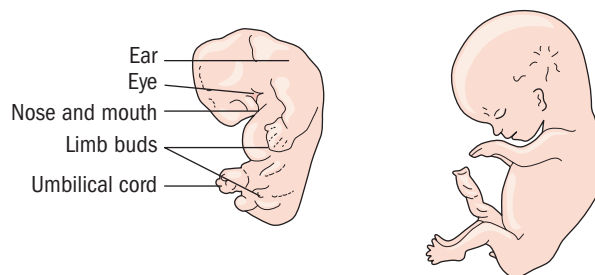
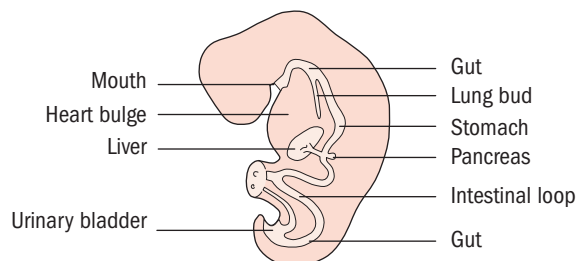
The embryo becomes pear-shaped, with a rounded head, pointed lower spine, and notochord running along its back.

#### Four weeks

The embryo becomes C-shaped and a tail is visible. The umbilical cord forms and the forebrain enlarges.

#### Internal organs at five weeks

All the internal organs have begun to form by the fifth week. During this critical stage of development, the embryo is vulnerable to harmful substances consumed by the mother (such as alcohol and drugs), which may cause defects.



#### Six weeks

Eyes are visible and the mouth, nose and ears are forming. The limbs grow rapidly from tiny buds.

#### Eight weeks

The face is more 'human', the head is more upright, and the tail has gone. Limbs become jointed. Fingers and toes appear.

Fig. 4.4: Embryo development

## Key term

**Reflexes** – a rapid automatic response to a stimulus.



The primitive reflexes that infants are born with include the following.

- A newborn baby will turn their head towards any touch on the cheek. This reflex is called the rooting reflex and helps the baby to get the nipple into their mouth to feed.
- If you place your finger in the palm of a baby's hand, they will grasp your finger tightly. This reflex is called the grasp reflex.
- If a baby is startled – perhaps by a loud noise – they will throw their hands and arms outwards, arching the back and straightening the legs. This is called the startle reflex.
- If a newborn baby is held upright with their feet touching the ground, they will make movements as if trying to walk. This is called the walking reflex.

Infants have the physical ability to recognise and interact with people. Babies prefer the sound of human voices to other sounds and soon learn to recognise their mother's voice.

Babies are helpless when it comes to muscle co-ordination and control. Babies cannot hold up their head, roll over, sit up or use their hands to move objects deliberately. Table 4.2 shows the average age for some types of body control.

### Childhood

Children grow steadily at this time but less rapidly than during infancy. By the age of 6, a child's head will be 90 per cent of adult size, even though the body still has a

**Table 4.2:** Average ages for some types of body control

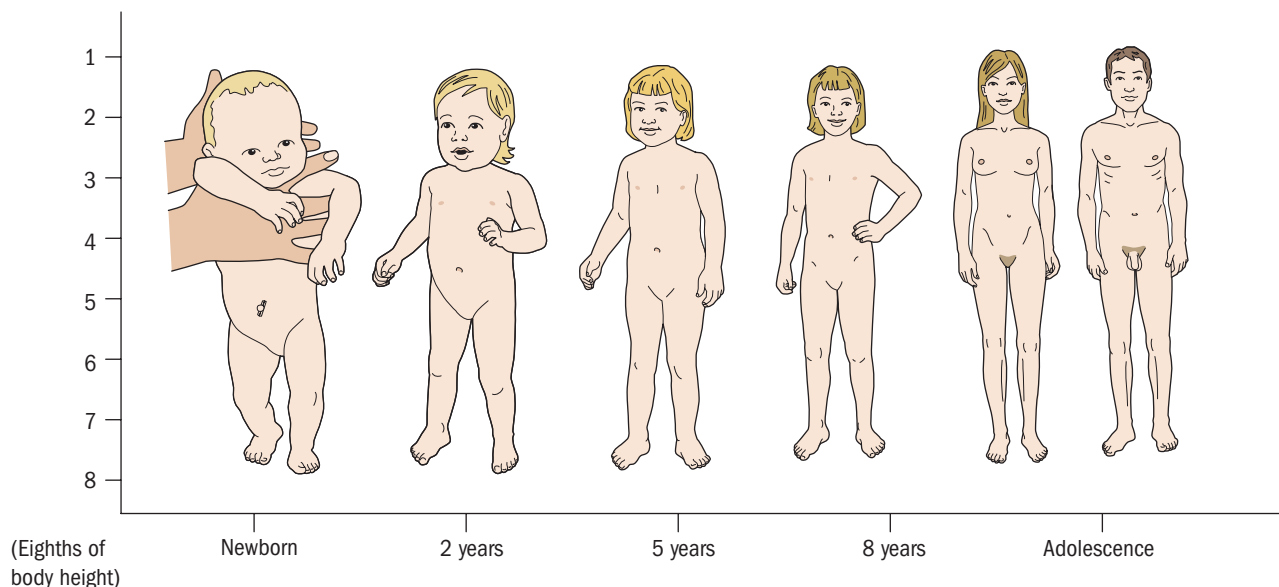
Type of body control	Age
Ability to lift head slightly	0–1 month
Ability to pass an object from one hand to another	6 months
Ability to roll over	6 months
Ability to crawl	9–10 months
Ability to stand alone	12 months

lot of growing to do. Reproductive organs remain small until the onset of puberty.

Children's practical abilities continue to develop; at the age of 2, children may be able to run and to climb stairs one step at a time. By age 4, children may be able to kick and throw a large ball. By age 6 or 7, a child may be able to skip and ride a bicycle.

### Adolescence

**Puberty** in girls often starts between the ages of 11 and 13, although it may begin earlier in some girls. Girls generally start puberty before 13 but boys generally start puberty later, often between 13 and 15 years of age. Puberty is a development stage which prepares the body for sexual reproduction. It is triggered by the action of hormones that control sexual development. Both boys and girls may experience a 'growth spurt', where they grow taller at a faster rate than before.



**Fig. 4.5:** Growth profiles from birth to the end of adolescence

Girls' sexual development during puberty includes the enlargement of breasts, the development of pubic hair, increased fat layers under the skin and the start of menstrual periods. Boys will experience the enlargement of their testes and penis, the development of pubic and facial hair and increased muscle strength. Boys' voices also 'break' and become deeper in tone. These major changes mean that adolescents look and behave very differently from children.

### Did you know?

Physical development is not purely controlled by genetics. Berryman et al (1991) argue that records show that in the 1860s, girls did not start puberty until 16 years of age. It seems that children now start puberty earlier than in the past. This may be because of improved diet and increased body weight and shows that our environment interacts with genetics in order to influence physical development.



## Adulthood

Young adults are often at the peak of their physical performance between the ages of 18 and 28. Most champions of highly active sport are aged between 16 and 30. Older adults generally tend to lose some strength and speed with age, although these changes are often unnoticed outside competitive sport.

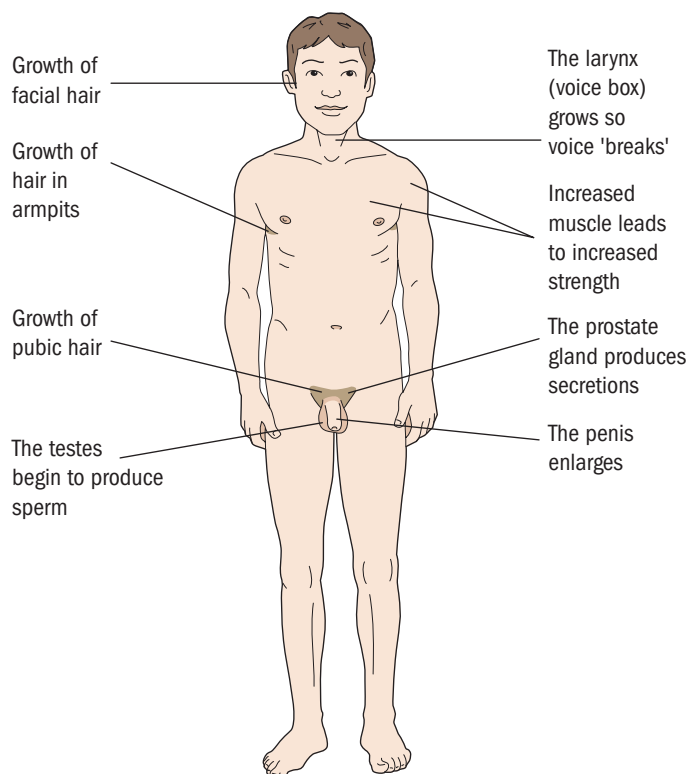
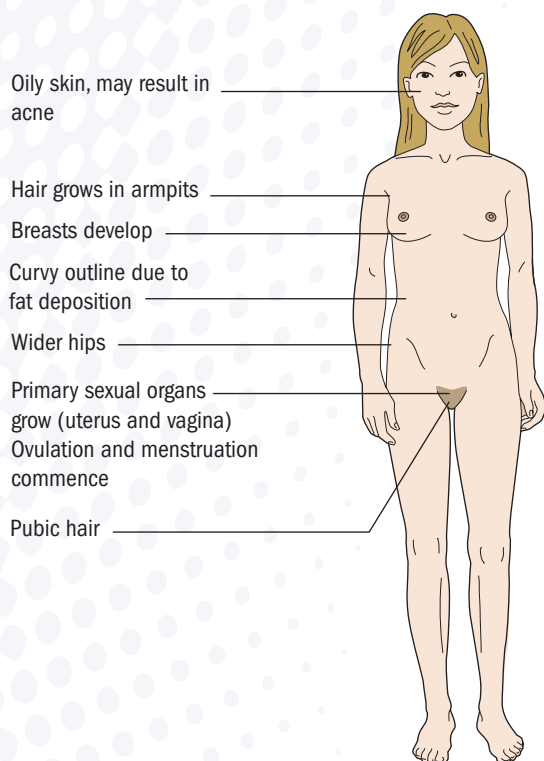
Exercise can help develop physical fitness and athletic skills. An older adult could easily achieve a personal peak of fitness at 40 or 50 if they take up exercise late in life.

There are a number of age-related changes that slowly become apparent as we grow older. During their forties, many people find that they need to wear reading glasses. Some people cannot hear high-pitched sounds so well during late adulthood. Many adults show a thinning of hair, with hair loss being common in men.

## Key terms

**Adolescence** – a general stage of lifespan development that includes puberty.

**Puberty** – the developmental process where hormones prepare the body for sexual reproduction.



**Fig. 4.6:** Body changes at puberty in males and females

## The menopause

Women are most fertile (able to conceive children) in their late teens and early twenties. The risk of miscarriages and pregnancy complications rises with age. Between 45 and 55, fertility reduces and then comes to an end in a process called the menopause. It takes several years to complete.

The menopause involves:

- the gradual ending of menstruation (or having periods) and a large reduction in the number of viable eggs in the ovary.
- an increase in the production of hormones called gonadotrophins to try and stimulate egg production which can cause irritability, hot flushes and night sweats.
- a reduction in sex hormones (oestrogen and progesterone) produced by a woman's ovaries, resulting in some shrinkage of sexual organs and sometimes a reduction in sexual interest.
- associated problems, such as osteoporosis, which can be caused by a reduction in the production of sex hormones (see page 38 for more information).

Older adults in Britain often put on weight. 'Middle-aged spread' may happen because adults still eat the same amount of food as they did when they were younger although they have become much less active. Older adults are more at risk of disease and disability. See pages 163–166 for more details of the ageing process.

### Reflect

Can you think of any ideas that might help you to stay healthy and fit for longer?



## The final stages of life

The longest any human being has been verified to have lived is just over 122 years. In round figures 120 years is often accepted as the maximum lifespan for a human being. But why is there a limit to life?

A range of processes may limit our lifespan. It seems that our body cells have a limited ability to renew themselves. If cells cannot renew themselves, then we cannot repair ourselves and stay healthy. The following are theories about why we have a limit to our lifespan.

- A Doctor Hayflick proposed that most body cells can only renew themselves fifty times or so. When cells can no longer renew themselves, body processes break down, body tissue becomes wasted and eventually we die. This limit to cell life is called the Hayflick limit.
- A theory that links with the Hayflick limit is one which suggests that cell DNA contains a region at each end called a telomere. Each time a cell renews itself, the DNA inside it is copied and part of the telomere is lost. By old age, all the telomere can be used up and DNA can no longer be replicated. This results in cell death.
- Hormone production decreases with age and this reduction results in an inevitable breakdown of biological systems.
- It is also possible that cell DNA simply becomes damaged with age. The longer we live the more risk of cell mutation we may experience. Accumulations of damaging chemical reactions involving protein structure may result in a range of degenerative conditions such as hardened arteries and loss of nerve function.
- Another theory is that our cells become changed by the build up of molecules known as 'free radicals'. Free radicals are toxic substances that we breathe or eat and are capable of damaging DNA and disrupting the way body cells work.

So far scientific research has not yet provided a single simple definitive explanation of why there is a maximum lifespan. It may be that there is some truth in all of the different theories.

### Reflect

At present we do not know how to extend the human lifespan, but you might like to think about the conclusions below that may help you to survive to be as old as possible.



To increase your potential lifespan you should avoid exposure to toxic substances such as tobacco smoke. Nicotine from tobacco smoke may directly damage cell DNA. Eat a healthy diet with a good balance of fruit and vegetables and fibre. A balanced diet may help to limit the impact of free radicals that may damage body cells. You should also take regular exercise. Research suggests that people who exercise regularly have a lower risk of degenerative diseases such as heart disease.

## Intellectual development

We do not simply learn more as we grow older – we also develop more useful ways of thinking. Piaget (1896–1980) was a famous theorist who studied how our ability to think and reason develops. Piaget believed that there were four stages of intellectual development which mature or ‘unfold’. In his theory, infants and children learn from experience, but the ability to think logically depends on an underlying process. A 4-year-old cannot use abstract logic because they are not mature enough to think this way (no matter how well they are taught).

Nowadays, research suggests that infants are more able to understand their world than Piaget thought. It also appears that most people take a lot longer than 11 years to become skilled at **abstract logical thinking**. Your ability to use formal logical thought may depend on how much encouragement you have received to think logically. The ability to use formal

### Key terms

**Concrete logical thinking** – the ability to solve problems providing you can see or physically handle the issues involved.

**Abstract logical thinking** – the ability to solve problems using imagination, without having to be involved practically; an advanced form of thinking that does not always need a practical context in order to take place.

logic may not be part of a process of maturation – it might depend on your education.

Piaget's theory stops in adolescence but many theorists believe that adults continue to improve their thinking ability. Some psychologists suggest that there is a ‘post-formal operations’ stage of thinking where adults become more skilled in their ability to make flexible judgements. It may be that many adults develop an ability that could be called ‘wisdom’ as they grow older.

**Table 4.3:** Piaget's stages of development

#### **The sensorimotor stage: birth to 1½ or 2 years** Learning to use senses and muscles – thinking without language

- Babies are born with the ability to sense objects.
- Babies are also born with a range of reflexes such as the sucking reflex to enable them to feed. These reflexes lead to ‘motor actions’ controlling body muscles.
- The sensorimotor stage is a stage when thinking is limited to sensing objects and performing motor actions.
- Piaget believed that a baby would not have a working system for remembering and thinking about the world until they were about 18 months old.

#### **The pre-operational stage: 2–7 years** Pre-logical thinking – thinking in language but without understanding logic

- Pre-operational means pre-logical; during this stage Piaget believed that children could not think in a logical way. Children can use words to communicate but they do not understand the logical implications involved in language.
- Piaget explained that pre-operational children cannot properly understand how ideas like number, mass and volume really work. A child might be able to count to 10 but might not understand what the number 10 really means. For example, in the case of 10 buttons stretched out in a line and the same number of buttons in a pile, a young child might agree that there are 10 buttons in the line and 10 buttons in the pile, but then they might say that there are more buttons in the line because it is longer!

#### **The concrete operational stage: 7–11 years** A stage where logical thinking is limited to practical situations

- Children in the concrete operations stage can think logically provided the issues are ‘down to earth’ or concrete. In the concrete operational stage children may be able to understand simple logical puzzles.
- For example, if you ask a question such as ‘Samira is taller than Corrine, but Samira is smaller than Leslie so who is the tallest?’ you might find that the 7- or 8-year-old has difficulty in mentally imagining the information in a way that will enable them to answer the question. But if the child can see a picture of Samira, Corrine and Leslie they might quickly point out who is the tallest.

#### **The formal operational stage: from 11+ years** Thinking using logic and abstract thought processes – adult thinking

- With formal logical reasoning, an adult can solve complex problems in their head.
- Formal logical operations enable adolescents and adults to use abstract concepts and theories in order to be able to gain an understanding of the world beyond their own experiences.
- Adults with formal operations can think scientifically. For example, an adult can use formal logic to reason why a car won't start. They can work out that perhaps the car won't start because the fuel is not getting to the engine or because there is insufficient air or an electrical fault; each theory can be tested in turn until the problem is solved.
- Abstract thinking enables us to think through complicated ideas in our head without having to see the concrete pictures.



## Language development

Both Noam Chomsky (1959) and Steven Pinker (1994) believe that the ability to develop a signed or spoken language is genetically programmed into us. Chomsky states that we are born with a 'language acquisition device' that enables us to recognise and develop languages that we experience. Children do develop language extremely rapidly and it is likely that the ability to use language is genetically programmed in the same way as our ability to stand and walk. The ability to use language develops because of maturation – it is an unfolding of our biological potential. We need to experience other people using language but we do not need to be trained in order to speak.

Some children will develop speech much more rapidly than others. Just because language development involves a maturation process, it does not mean that every child will develop at the same rate. Language development is outlined in Table 4.4.

### Activity 3: 'Learning languages' discussion



Get together with other course members and discuss how quickly you learned to speak when you were young. Compare this with your experience of trying to learn a second language in school. Reflect on how far personal experiences can be explained in terms of a genetic basis for first language.

### PLTS

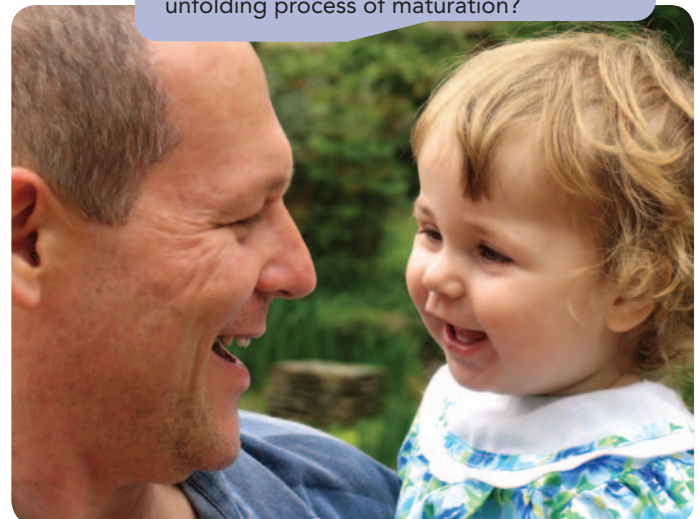


**Independent enquirer:** This activity may help you to evidence independent enquirer skills by exploring issues from different perspectives. It may also contribute towards team worker and effective participator skills.

**Table 4.4:** The development of language

Age	The development of language
Around 3 months	Infants begin to make babbling noises as they learn to control the muscles associated with speech.
Around 12 months	Infants begin to imitate sounds made by carers such as 'da-da'; this develops into the use of single words.
Around 2 years	Infants begin to make two-word statements such as 'cat goed' (meaning the cat has gone away). The infant begins to build their vocabulary (knowledge of words).
Around 3 years	Children begin to make simple sentences such as 'I want drink'. This develops into the ability to ask questions, 'When we go?' Knowledge of words (vocabulary) grows very rapidly.
Around 4 years	Children begin to use clear sentences that can be understood by strangers. Children can be expected to make some mistakes with grammar 'We met lots of peoples at the shops today'.
5 years onwards	Children can speak using full adult grammar. Although vocabulary will continue to grow, and formal grammar will continue to improve, most children can be expected to use language effectively by age 5.

Is language development just part of an unfolding process of maturation?



## Activity 4: Observing speech

Visit a playgroup, nursery or household where you can observe some young children. Listen to the way that they speak and make notes of some examples of one or two word utterances or phrases that you hear. Later, get together and discuss your examples with other

course members. Can you identify a general pattern in the way children develop language? Can you identify ways in which individual children develop differently?



## Social development

There are great differences and cultural variations in the way individuals will experience social relationships during the course of their life. Some generalisations are listed in Table 4.5.

### PLTS

**Independent enquirer:** This activity will enable you to demonstrate independent enquiry skills by carrying out research and analysing information.



**Table 4.5:** Key aspects of social development

Life stage	Social development
<b>Infancy</b> 0–3 years	<b>Interacting with carers</b> Infants appear to have an in-built tendency to interact with carers. By 2 months they may start to smile at human faces. At 3 months they will respond when adults talk. At 5 months infants can distinguish between familiar and unfamiliar people. Infants make their first relationships as they form an emotional attachment to carers. In the later stages of infancy, infants will play alongside other children (parallel play).
<b>Childhood</b> 4–9 years	<b>First social learning</b> Young children are emotionally attached and dependent on the adults that care for them. Children begin to learn social roles and behaviour within their family context. This is called first or primary socialisation. A family environment might provide a 'safe base' from which to explore social relationships with other children through play. Children will learn to co-operate with other children (co-operative play). As children grow older they will become increasingly independent and begin to form friendships based on a sense of mutual trust. Friendships become increasingly important as children grow towards adolescence. Children may begin to form social networks or 'circles' of friends who like and agree with each other.
<b>Adolescence</b> 10–18 years	<b>Secondary social learning</b> During adolescence a person's sense of self-worth may be more influenced by other adolescents than by the family. Adolescents will copy the styles of dress, beliefs, cultural values and behaviours of their own network of friends. Historically, adolescence was seen as a time of 'storm and stress'. Adolescents have to cope with the development of their own sexuality (the impact of sex hormones at puberty) and the social transition to full independence from the family. Recent research suggests that many adolescents experience a smooth transition to adult roles without serious conflict with parents.
<b>Adulthood</b> 19–65 years	During early adulthood, friendship networks continue to be very important. For most people, early adulthood is dominated by the formation of adult sexual partnerships and by the need to find employment/establish a career. For many people marriage and parenthood represent major social developments in their life. Many adults in their forties and fifties experience time pressures that may limit their social activity. Mature adults may have to split their time between work, care of parents, other family commitments and wider social activities. Some mature adults report a reduction in the amount of social activity due to these pressures.
<b>Older adulthood</b> 65+ years	Following retirement, older adults have more free time. However, many older adults may choose to increase their involvement with close friends and family rather than extend their network of social contacts. See page 170 for further details.

## Activity 5: Discussing adolescence



Fifty years ago adolescence was often seen as a time of 'storm and stress' where young people would automatically find themselves in conflict with (or rebel against) their parents and older people. Organise a discussion with other course members to decide how far this idea is still true today and what may have changed since the 1960s. Record your conclusions for incorporation into information sheets on lifespan development.

## Functional skills



**English:** In discussing the changes in social development, you will develop your speaking and listening skills and skills of presenting arguments and listening to others. Recording your conclusions will develop your writing skills.

## Emotional development

The way we understand and feel about ourselves and other people develops as we grow older. Some key features of emotional development associated with life stages are set out in Table 4.6.

**Table 4.6:** Key features of emotional development

Life stage	Emotional development
<b>Infancy 0–3 years</b>	<b>Attachment</b> Bowlby (1953) argued that infants have an in-built need to form an attachment with a carer. The quality of this attachment may affect emotional development for the rest of the child's life. Ainsworth et al (1978) and Marris (1996) argue that the quality of our early attachment influences the assumptions we make about our self and others. Infants who are securely attached will grow up with the emotional resources needed to cope with uncertainty in life. Infants who are insecurely attached may have a reduced ability to cope with stress and major life events.
<b>Childhood 4–9 years</b>	<b>Understanding self and others</b> Children use their imagination to begin to understand the social roles that other people play. Children begin to imagine a 'me' – an idea of self. Relationships with other family members may influence how a child feels valued – a sense of self-worth. The way a child gets on with teachers and friends may influence their self-confidence. The child might develop a permanent sense of confidence or a sense of failure and inferiority.
<b>Adolescence 10–18 years</b>	<b>Identity</b> During adolescence this sense of self continues to develop. An adolescent needs to develop a secure sense of identity. Identity theory was first proposed by Erikson (1963). A person needs a clear understanding of identity in order to feel secure when working with other people or in order to make a loving sexual attachment. This may be a stressful time as self-esteem may depend on the development of identity.
<b>Adulthood 19–65 years</b>	<b>Intimacy</b> Erikson argued that the key task of early adulthood was learning to cope with emotional attachment to a sexual partner. This may involve not being too self-centred or defensive and not becoming emotionally isolated. <b>Staying involved</b> Later on adults may face a risk of emotional 'stagnation' when they lose interest in social issues. According to Erikson, the developmental task is to stay emotionally involved with social life.
<b>Older adulthood 65+ years</b>	<b>Making sense of your life</b> Erikson argued that older people need to develop a secure sense of self that enables them to cope with the physical changes associated with ageing and death. People who fail to make sense of their life might experience emotional despair.

## Delayed development – potential causes and effects

**Delayed development** happens when a baby or young child has not shown developments within the expected time range. The term is usually restricted to development within the first five years of life. Delayed development may be caused by issues such as:

- brain damage (this can happen before and during birth or during infancy)
- poor social interaction with carers
- disease
- visual disability
- hearing disability
- poor nutrition.

### Key term

**Delayed development** – when a child's development lags behind the developmental norms or developmental milestones for his or her age.

Developmental progress will be checked by health professionals such as health visitors, although parents and GPs may be the first to notice problems. Children who appear to have delayed development will be referred to appropriate specialists for advice or therapy.

## Case study: Nia

Nia is a student visiting a centre for people who have learning difficulties. Nia has been watching Alex (a care worker) helping Jaylen to download some music from the Internet. Jaylen has Down's syndrome. Down's syndrome is a condition where a person inherits extra genetic information – usually a whole chromosome. This extra genetic information causes extra proteins to be made and these extra proteins disturb normal development. Down's syndrome is complex and people are affected differently. Many people with Down's syndrome have learning difficulties and health problems.

**Nia is now talking to Alex in private.**

**Nia:** Jaylen really enjoys his music but he can't really use the computer. Will he always need help to find the music that he wants?

**Alex:** Yes, 'Jay' has a lot of difficulty with anything complicated and I have to guide him and tell him when to click the mouse. He is genuinely choosing his own music.

**Nia:** Jay doesn't speak properly; he often uses just one or two words. He kept saying 'broken' if something went wrong or didn't work quickly.

**Alex:** Yes, Jay says 'broken' to mean anything that isn't going right. He is communicating his feelings but he can't explain things like we can.

**Nia:** His speech is more like a three-year-old's, and he can do practical tasks like my six-year-old brother; but he is in his 20s isn't he? Has the Down's syndrome delayed or arrested his development?

**Alex:** Well, we learn things quickly, but Jay finds it very difficult – he has a disability. He couldn't use his music player when I first knew him and I spent a lot of time showing him how to make it work, again and again. Now he can listen to his own music whenever he wants to. Having Down's syndrome should not limit the quality of life that a person has but it's down to us to provide the right kind of support to help him take control of his life.

**Nia:** So have I got this right? Down's syndrome is genetic, and that causes the problems with development, but the quality of life that Jay experiences depends on the quality of care that you provide. So what Jay can and can't do is partly to do with Down's syndrome and partly to do with the quality of care here?

**Alex:** Yes, we are here to make a difference to people's quality of life – to make life better for them.

- 1 Describe some of the differences Jaylen may have experienced during childhood and adolescent development compared with Nia and Alex?
- 2 Down's syndrome could be said to have delayed and limited Jaylen's development. Can you identify three of the effects of Down's syndrome?
- 3 Explain what might have happened to Jaylen if care workers had assumed that nature (genetics) was the only important issue and that nurture (quality of care) was not important?





## Arrested development

The term 'arrested development' means development that has stopped. The word 'arrest' means to stop something or someone. In the past people with severe mental disability were sometimes regarded as

'arrested'. But people with serious learning difficulty can develop and the term 'arrested' can be argued to be misleading if used to refer to people with learning difficulty or disability.

### Activity 6: Undertake a web search for arrested development



Undertake a web search to explore the concept of arrested development. Write some short notes to summarise your research. Discuss your research with other course members.

### Functional skills



**ICT:** The web search will demonstrate your ability to select information from a variety of Internet sites. The task will also enable you to demonstrate the skills of speaking and listening.

## Assessment activity 4.1

P1 M1 D1

BTEC

Imagine you are an investigative reporter for a magazine and you have been asked to discover as much as possible about a famous person in order to describe the stages of their life so far and what might happen in their future.

When choosing your celebrity, try to pick someone who has outlined details of their past life in interviews, or has written a biography or Internet 'blog' about their life. You should use your ICT skills to undertake a web search to look for this information before finalising your choice of celebrity. It will be important to have some real information when you come to interpreting their life stages.

### Grading tips

**P1** To achieve a pass, develop a fact file and collect information on life stages including pictures, graphs and charts to help you interpret the information you collect about your celebrity. You could also produce a 'life map' showing the different stages in the life of this person.

- M1** To achieve this criterion you will need to research a range of arguments from both sides of the nature and nurture debate. In your assignment you should compare and contrast the different viewpoints in the debate. You should consider the different arguments in some detail and acknowledge the sources you use. You could use examples from the individual selected for P1 to illustrate the arguments for and against each side of the debate.
- D1** For this criterion you will need to apply the arguments of the nature-nurture debate in the context of your chosen person's intellectual, emotional and social development at two specific life stages. You should use examples from the person's life story to discuss how nature and nurture has affected the different aspects of their development and form a conclusion as to which has been most influential.

## 2 Understand the potential effects of life factors and events on the development of the individual



### Case study: Hanna

Hannah is a 12-year-old girl in foster care. She attacked two girls at school with a kitchen fork. Her statements below were made during an interview with a social worker.

*'They made me angry – I had to get them back.'*

*'Don't know why they make me angry – they just annoy me.'*

*'It's just the way I am – I can't stop it when I'm angry.'*

- 1 Hannah says she cannot stop herself being aggressive – are some people fixed from birth to be aggressive?
- 2 What social and environmental factors might influence Hannah to be aggressive?
- 3 Hannah's aggression could be seen as caused by 'nature' (i.e. she was 'born that way') or perhaps social and environmental issues (nurture) have caused her to be so aggressive. How far might Hannah have chosen to be aggressive?

### 2.1 The nature–nurture debate

Historically, some philosophers and theorists have argued that we are born to be the way we are. Other theorists have argued that it is the way we are brought up and influenced by our surroundings that makes us the way we are. This historical argument is known as the **nature–nurture** debate.

#### Key terms

**Nature** – genetic and biological influences.

**Nurture** – social, economic and environmental influences.

#### Determinism

Leijla is 65 and unable to walk very far. One of the nurses who works with her says, 'These people bring it on themselves you know. I bet she never did any exercise.'

Another nurse says, 'Oh, I don't think that's true at all. Her genes will have caused her to be like this.' Both the nurses' statements are 'determinist'.

Determinism is the belief that your future is fixed or determined either by what you have genetically inherited or by your social environment and experience. In Leijla's case, one nurse believes that the environment controls what happens while the other nurse believes that genes control what happens.

#### Choice and interaction

The alternative to determinism is the belief that people can take control of their own lives through the choices they make. In the past this has sometimes been labelled as the 'free will' viewpoint. Some people think that everything is fixed by nature or by nurture, or that everything is a matter of choice. However, most people understand that the human life course involves an interaction of nature, nurture and the decisions and choices that people make.

#### Biological programming

Genes provide the instructions (which can be thought of as like a computer program) for structuring amino acids which in turn influence the proteins within our body cells. In this way, genes program the chemical basis of our biology.

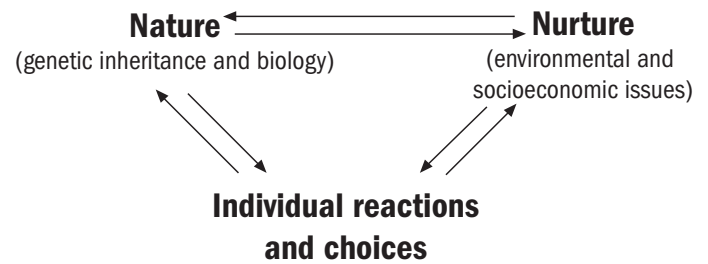
Our body shape and size, as well as our behaviour, depend on the interaction of our biology with broader environmental factors. A human being is the result of the interaction of genes (**biological programming**) and the environmental influences they are exposed to.

#### Key term

**Biological programming** – it is argued that our genes can 'programme' the amino acids which influence our body cells. Human development and behaviour are not 'programmed' by genes, although development may be influenced by genes.

## Maturation theory

Some aspects of development, such as the ability to speak a first language, are thought to be due to an inbuilt genetic process. Children 'naturally' become interested in the sounds and signs that they see around them and the ability to speak 'unfolds'. Although development may be guided by genes, genes cannot operate without an environment. A child who is born Deaf will not start to speak a language. Instead the child might learn to sign using a sign language, such as British sign language, if people in the child's environment use this system. The environment always interacts with a person's genetic inheritance – including during maturational processes.



### Activity 7: Research people's assumptions

How far are you and your friends determinists when it comes to the nature and nurture debate? Research the assumptions that your friends make by asking a few simple questions such as: 'Why are some people good at number work and other people are not'? 'Why are some people better than others at sport'?

People may give explanations such as 'they are born that way' or 'it's in their blood'. Others may say things like 'some people get better education'; 'some people have better opportunities'. Answers like these may suggest determinist assumptions. You may find that some people will mention the idea of choice, and mention things like deliberately studying hard. These answers might suggest non-determinist assumptions about the role of nature and nurture. Use your research to contribute towards a debate on nature/nurture with other course members.



Your environment includes cigarettes.  
Your genetic inheritance make you vulnerable to cigarette smoke.  
What happens to you depends on your reactions and choices.

### PLTS

**Independent enquirer:** These activities will enable you to evidence independent enquiry skills by carrying out research and exploring issues from different perspectives as well as creative thinking skills of questioning assumptions.

**Fig. 4.7:** Human development involves the interaction of nature, nurture and individual behaviour

## 2.2 Life factors

### Genetic factors

Each living cell in the human body has a nucleus with 23 pairs of chromosomes inside it. In each pair of chromosomes, one chromosome comes from the father and one from the mother. Each chromosome carries units of inheritance, known as genes, and these genes interact to create a new set of instructions for making a new person.

Genes are made of a substance called deoxyribonucleic acid (DNA). The DNA contains the instructions for producing proteins – it is these proteins that regulate the development of a human being. Although half of your chromosomes come from your mother and half from your father, your genetic pattern can be quite different from the patterns of either of your parents.

#### Did you know?

Although you inherit half of your chromosomes from your mum and half from your dad, you are not simply half your mum and half your dad – genetic inheritance is much more complicated! In 2006, scientists discovered that individuals often have multiple copies of the same gene and that the different numbers of copies may be the reason for people being different from one another.



A good example of the interaction of genes and the environment would be the genetic disorder called phenylketonuria or PKU for short. PKU is a rare genetic condition which prevents a person from being able to process a substance called phenylalanine, which is found in many foods. This condition causes the build-up of harmful substances in the body that in turn damages the development of the brain and can eventually kill the person. The condition cannot be cured and a baby born with undetected PKU would fail to meet developmental milestones and would experience developmental delay as their brain became damaged. PKU could result in severe learning disability, the sort of damage that might be regarded as arrested development.

Nowadays babies born in the UK are likely to be tested for this genetic condition soon after birth. If PKU is discovered then the child can be given a special diet

and medication to prevent the build up of harmful substances. Changing the infant's environment will prevent the genetic condition from causing damage. So although we can't yet alter nature (a person's genes) we can alter the environment so that the underlying genetic condition does not cause illness and people can go on to experience normal healthy development. Nurture always interacts with nature and sometimes it is possible to compensate for, or even prevent, any harmful effects of 'biological programming'.

### Cystic fibrosis

Cystic fibrosis is caused by a defective gene. This gene is thought to be carried by as many as 4 per cent of the UK population. The gene is recessive which means that children born to people who carry the gene will not develop cystic fibrosis unless both parents are carriers. When both parents have the defective gene, there is a one-in-four chance that their child will be born with cystic fibrosis.

Cystic fibrosis results in the production of a defective protein that can cause the lungs to become clogged with thick sticky mucus. People with cystic fibrosis may have problems absorbing nourishment from food and they may also suffer from respiratory and chest infections. In the past, children with cystic fibrosis often had a very short life expectancy but modern medical treatments have succeeded in extending it.

We can change the environment in order to help people with cystic fibrosis. Physiotherapy can help people to clear mucus from their lungs and various drugs can help breathing and control infection in the throat and lungs. People may be offered a special diet and drugs to help with food absorption. In the future it may become possible to use a form of genetic therapy to replace the faulty gene and so cure the condition.

### Coeliac disease

A substance called gluten is found in foods made from wheat, barley and rye. People who do not have coeliac disease usually experience no ill effects from eating gluten. In people with coeliac disease, gluten causes the body's immune system to attack the lining of the small intestine. The small intestine becomes damaged and people with coeliac disease have difficulty absorbing vitamins and minerals. These problems can lead to further diseases including diarrhoea, anaemia and osteoporosis.



You are more likely to develop coeliac disease if you have a close relative with the condition, and the condition is often assumed to result from genetic causes although the exact cause is not yet known. It is possible that some people may inherit a susceptibility to the condition which is then triggered by an environmental event such as an infection in the intestine. The medical treatment for coeliac disease is the gluten-free diet.

### Did you know?

Some food products carry a symbol and statement to show they are suitable for coeliacs.



## Asthma

Approximately one in 13 adults is treated for asthma – a disease that causes airways to the lungs to become swollen. The causes of asthma are not fully understood but genetic inheritance, diet and pollution may all contribute to causing the disease.

## Brittle bone disease

Children born with brittle bone disease are likely to fracture or break their bones easily because their bones develop without the right amount or type of a protein called collagen. Brittle bone disease is genetic.

The Crossed Grain Symbol, as it is known, is a registered trademark. It is known the world over as a reassuring sign that foods are gluten-free.



Often the problem is passed on from a person's parents, although brittle bone disease can develop from a genetic mutation; this means that a child might have the condition even though it does not run in the family. There are different types of the disease and some types are more serious than others. Brittle bone disease is different from osteoporosis. Osteoporosis is a different type of disease that can make bones more likely to break later in life.

Although brittle bone disease has a genetic cause, people can often be helped through physiotherapy, assistive equipment and drug treatments to help strengthen their bones.

## Rheumatic disease

The term rheumatic disease is used to cover a wide range of disorders usually involving inflammation of the joints but also disorders involving ligaments, bones and muscles. Rheumatoid arthritis is an example of a rheumatic disease that affects about eight in every thousand people in the UK. It is a painful and disabling condition that causes swelling and damage to the cartilage and bones around joints, most commonly the smaller bones in the hands, feet and wrists.

You have an increased risk of developing rheumatoid arthritis if you have relatives with the disease. However some people develop rheumatoid arthritis without anyone in the family having a history of the disease. The causes of rheumatoid arthritis are not fully understood yet, but it is likely that both genetic and environmental influences play a part. Rheumatoid arthritis is not simply transmitted from one generation to another and even when one identical twin has the disease the other twin, with exactly the same genes, may not develop the illness. It is almost certain that the role different genes play in the development of the illness will turn out to be complex.

### Reflect

Can you think of any ideas for helping people who have rheumatoid arthritis to cope more easily with daily living?



## 2.3 Biological influences before birth

The environment inside a mother's womb can have a dramatic influence on the development of a child. If a woman smokes or drinks during pregnancy then nicotine or alcohol can affect the development of the foetus. Nicotine can limit the amount of blood and nutrition that reaches the foetus. Children born to mothers who smoke tend to weigh less at birth and are more prone to infections. If you smoke during pregnancy then it is possible that your child may have difficulties regarding attention and learning in school. Drugs can also damage a child in the womb.

### Foetal alcohol syndrome

Alcohol can have a negative influence on a child's development before birth. Mothers who drink large amounts of alcohol when pregnant may give birth to children with foetal alcohol syndrome. Children with this condition tend to be smaller and to have smaller heads than normal. These children may also have heart defects and learning difficulties.

### Infections during pregnancy

Infections such as rubella (a type of measles) and cytomegalovirus (a herpes-type virus) can attack the foetus if a mother becomes infected. Rubella is particularly dangerous during the first month of pregnancy. If a mother becomes infected in this period her baby may be born with impaired hearing or eyesight, or a damaged heart. Most women are vaccinated against rubella to prevent this risk. Cytomegalovirus can cause deafness and learning difficulties.

The extent to which these biological influences before birth affect the quality of a person's life will depend on the way in which Deaf or disabled people are treated by others.

### Effects of diet

Our biological life starts at conception nine months before we are born. You will be affected by what your mother ate during pregnancy and breast-feeding. Some recent research on animals suggests that if a mother has a diet that is high in sugar and fat it can result in an increase of cholesterol and a risk of heart disease for her children later in their lives. Malnutrition or a lack of healthy food during pregnancy may result in a lifetime of poor health for the child. The Food Standards Agency (FSA) recommends that pregnant

women should eat plenty of fruit and vegetables; plenty of starchy foods such as bread and pasta and rice; foods rich in protein such as lean meat, chicken and fish; plenty of fibre; and foods which contain calcium such as milk and cheese. They also advise that women should avoid or limit alcohol and avoid too much caffeine as this may result in a low birth weight.

## 2.4 Environmental influences

### Pollution

Air and water pollution can influence development and be a major source of ill health. Historically, a lack of sanitation and sewerage in cities resulted in life-threatening diseases such as cholera. Until lead was removed from petrol and paint, there were major concerns that lead pollution in the air might affect the brain development of young children. There are still concerns about air and water pollution.

Motor vehicles produce a range of pollutants, including carbon monoxide, nitrogen oxides, volatile organic compounds and particulate matter. People who live near busy roads may be particularly exposed to this pollution.

### Reflect

Levels of pollution may be falling but are they acceptable?



Improved vehicle technology (such as the catalytic converter) is reducing air pollution. For example, carbon monoxide emissions fell by 81 per cent between 1970 and 2006. Emissions of nitrogen oxides fell by 46 per cent and particulate emissions by 50 per cent between 1990 and 2006. Power stations now burn less coal and this has contributed to a fall in sulphur dioxide pollution of 81 per cent between 1990 and 2006 (Social Trends, 2009)

While official statistics report improvements in the levels of air pollution, there are concerns that air pollution is still a serious problem. Professor Walters (2009) argues that 24,000 British people die prematurely every year because of air pollution. He states that more than 20 UK towns and cities, including London, have air that is polluted to twice the level permitted by World Health Organization standards. People who live in cities with air pollution may be more at risk of developing lung disease and asthma.

## Activity 8: Research air pollution



Just how serious is air pollution at present? Do an Internet search for news items on air pollution in Britain. You could share and discuss your findings with other course members in order to help you decide how serious this issue is.

## Functional skills



**ICT:** This activity will provide evidence of your ability to find and select information using your ICT skills.

In addition to traffic what else affects air quality?





## Housing

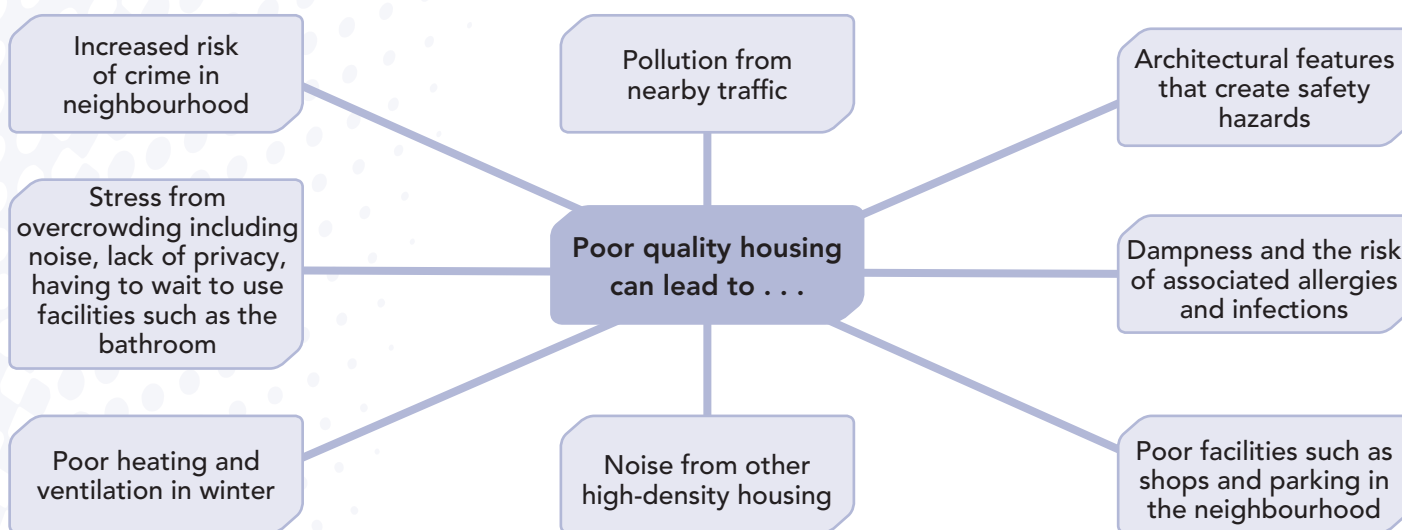
Poor quality housing is associated with poor health. Dampness and mould might increase the risk of allergic and inflammatory diseases including asthma. Poor housing is also more likely to mean problems such as poor lighting, non-safety glass in windows, loose rugs and poor maintenance of stairs, which may result in accidents. Overcrowded housing may cause stress due to lack of privacy, noise and difficulties in relaxing and sleeping. Overcrowded housing may limit people's ability to access washing facilities, TV programmes and Internet and computing facilities

and is likely to make it difficult to study. People on low incomes are more likely to live in damp or overcrowded housing than people with a higher income.

Some older people on low incomes will worry about the cost of heating in their homes. Older properties are often less well insulated than modern flats and houses so that people on low incomes might receive higher heating bills than people who are better off. Poor quality housing may result in the stresses summarised in Fig. 4.8.



How do occupation and income interact with other factors to influence where people live?



**Fig. 4.8:** Stresses that may arise from living in poor quality housing



## Access to recreational facilities

Low income may restrict access to travel and other recreational activities. Social Trends (2009) reported that, in 2007, 54 per cent of households in the lowest income group did not have access to a car. 92 per cent of households with high incomes had access to a home computer and had a home Internet connection. Only 35 per cent of households with a low

income had access to a home computer and only 25 per cent had an Internet connection. People with a low income may have more difficulty obtaining information about leisure activities and much more difficulty travelling to them if they live in neighbourhoods without regular public transport. The issues in Fig. 4.9 may create barriers to accessing leisure and recreational facilities.

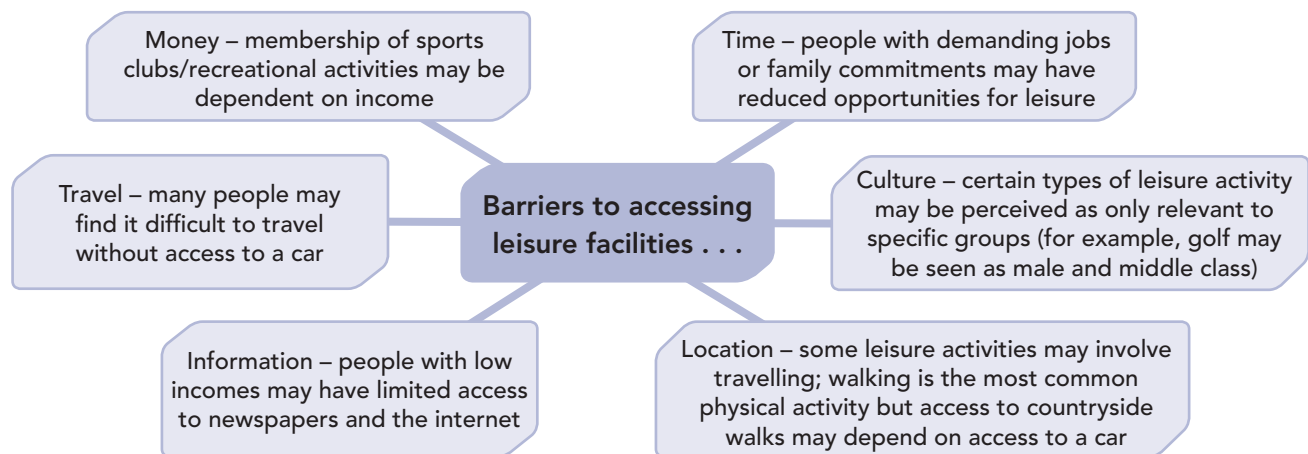


Fig. 4.9: Barriers to accessing leisure facilities

## Access to health and social care services

Areas with a high proportion of low income households may have poorer facilities than more wealthy areas. A range of studies has shown that life expectancy is shorter in deprived areas in comparison to that in more affluent areas of housing.

Although the National Health Service provides free health care for everyone, there are concerns that some groups of people may not receive the same quality of access to GP services and to preventative health services as others. Deprived areas may have greater difficulty in recruiting GPs and nurses.

A low income may make it difficult to get to health or care facilities. For example, National Statistics (2006) reports that 11 per cent of households without access to a car said they had difficulty in seeing their local GP compared with only 4 per cent of people with cars. People without home access to the Internet will have limited access to services such as NHS Direct.

## Bullying

Discrimination may result in **bullying**. Like discrimination, bullying may undermine your self-confidence and can create stress, depression and anxiety.

Many children experience bullying at school but adults also engage in bullying. Because bullying can threaten a person's self-confidence, victims sometimes keep quiet about their experience. The Department for Children, Schools and Families (DCSF) stresses the importance of telling others, talking about the problem and getting support, in order to cope with and prevent bullying within an educational context.

### Key term

**Bullying** – when an individual or group of people intimidate or harass others.

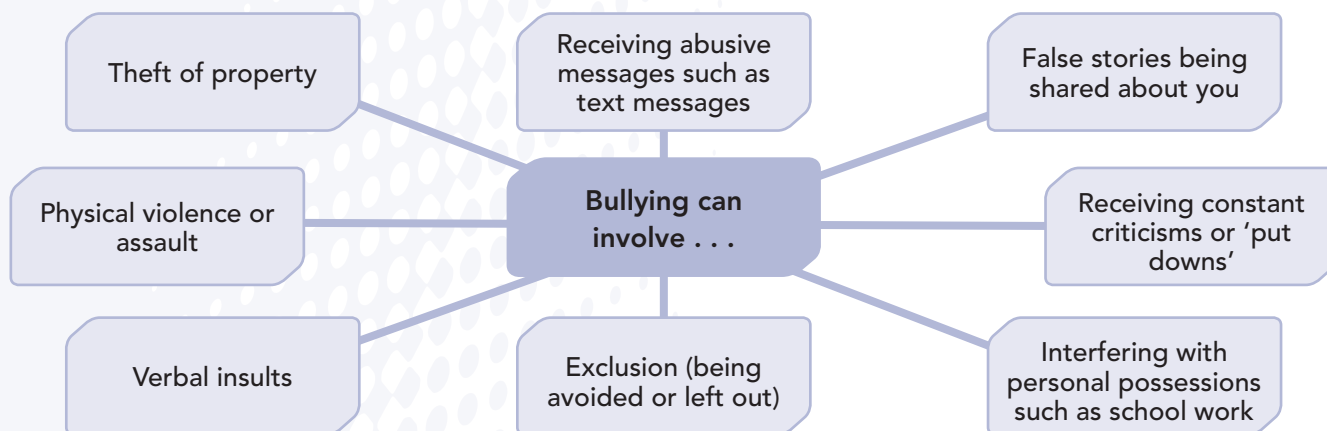


Fig. 4.10: What bullying can involve

## Family dysfunction

A family is a social group of people who are related genetically (historically called 'blood ties') or by marriage. There are four common types of family.

- 1 Extended – parents, children, grandparents and sometimes other relatives live together or near each other.
- 2 Nuclear – mother, father and children live together.
- 3 Reconstituted – as in a nuclear family, adults and children live together but the children are not all biologically related to both adults.
- 4 Lone parent – a lone parent lives with a child or with children.

A well-functioning family can help us to develop in the following ways.

- Families are where our first emotional relationships and attachments take place.
- They provide our first experiences of social interaction.
- Families influence our view of what is socially expected of us.
- Our experience of family life will influence what we assume to be normal or socially acceptable behaviour.
- The family home provides a setting that meets our physical needs for protection, food, shelter and warmth.
- Families can support each other emotionally and protect people from stress.
- Family members may help each other financially or practically. For example, families may support older relatives.

A **dysfunctional family** is a family that is not working well and not providing some or all of the benefits listed above. There are many reasons why a family may become dysfunctional. Family members may become stressed because of health problems, including mental health problems, poor housing and low income. Some adults have poor parenting skills. Some may try to control other family members in aggressive or manipulative ways. Others may be insufficiently involved with their children and so neglect them. Some parents may be inconsistent in the way that they teach children to behave socially. And some may have grown up within a dysfunctional family themselves and have little practical experience of providing appropriate relationships and support for other family members. Stressful family environments may disadvantage children. It may be hard to develop self-confidence if there are constant emotional tensions at home.

## Culture, religion and beliefs

A **culture** can be identified by distinct aspects of language, self-presentation, religion, music, art, architecture and literature. Children learn the customs associated with their family's culture during childhood (see Unit 2 for further details).

### Key terms

**Dysfunctional family** – a family that is not working well, and not providing all of the support and benefits associated with being in a family.

**Culture** – the collection of values, beliefs, customs and behaviours that might make one group of people distinct from others.

In the past, most children would have learned the culture and religion associated with their local community. Everyone on a particular estate, street or village might have shared similar beliefs about religion, work and social roles. Today, we live in a multicultural society where people in the same geographical location may belong to various different cultures. Many people identify with others over the Internet. To some extent people can choose the culture and religion that they identify with.

## Discrimination

People are often discriminated against because of their race, beliefs, gender, religion, sexuality, physical or mental ability, or age.

**Discrimination** could influence your development because it has a very negative impact. See Unit 2 for more details of the issues surrounding discrimination.

### Key term

**Discrimination** – treating some people less well than others because of differences.

## 2.5 Socio-economic factors

### Income and expenditure

The economic resources that you or your family have can make a major difference to your quality of life. A person's weekly income enables them to pay for their

accommodation and to buy food and clothes. Income mainly comes from:

- wages from employment
- profits from your business if you are self-employed
- benefits paid by the government
- money from invested wealth, such as interest on bank accounts or bonds
- money raised through the sale of property you own.

Income is not distributed equally in the UK. The top 20 per cent of households get around 18 times more money each year than the poorest 20 per cent of households before tax (Social Trends, 2004).

Households with an income that is less than 60 per cent of 'median' income in the UK are considered to be living in poverty. These people are poor relative to the expectations of most people. Just over a sixth of Britain's population (18 per cent), were estimated to be living on a low income in the period 2005–2007 (Social Trends, 2009).

Key groups of people who have to live on very little money include:

- lone-parent families
- the unemployed
- older people
- the sick or disabled
- single earners
- unskilled couples (where only one person works in an unskilled job).

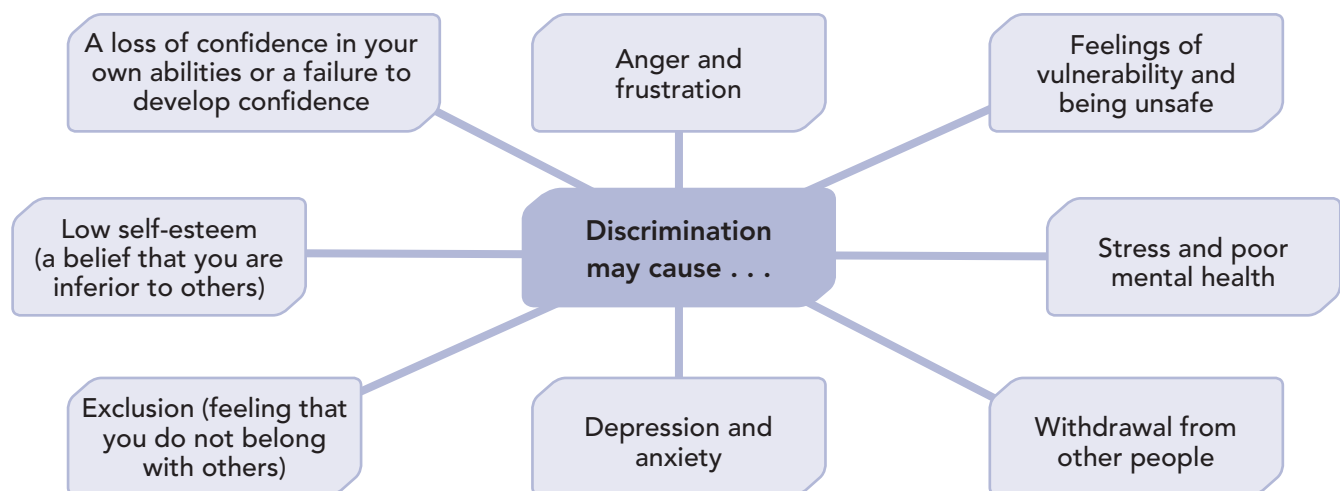


Fig. 4.11: The effects of discrimination

## Employment status

Being out of work is likely to mean that you live on a low income. You will also be affected if your parents live on a low income. Social Trends (2009) estimates that around 22 per cent of children (2.9 million children) lived in low income households in 2006/2007. Children living in workless families or households are more likely to have a low income than those in families where adults have full-time work.

## The impact of low income

Paxton and Dixon (2004) found that: children who grew up in poverty in the 1970s achieved less at school, were less likely to go to university or college, and one-and-a-half times more likely to be unemployed than those who did not experience poverty as children. They also earned 10 per cent less over their lifetime. Paxton and Dixon point out the following disadvantages of poverty:

- Poverty is associated with being a victim of crime
- Poorer communities are more likely to live in polluted areas.
- Poorer people have an increased risk of dying young.

## Activity 9: Researching information on poverty

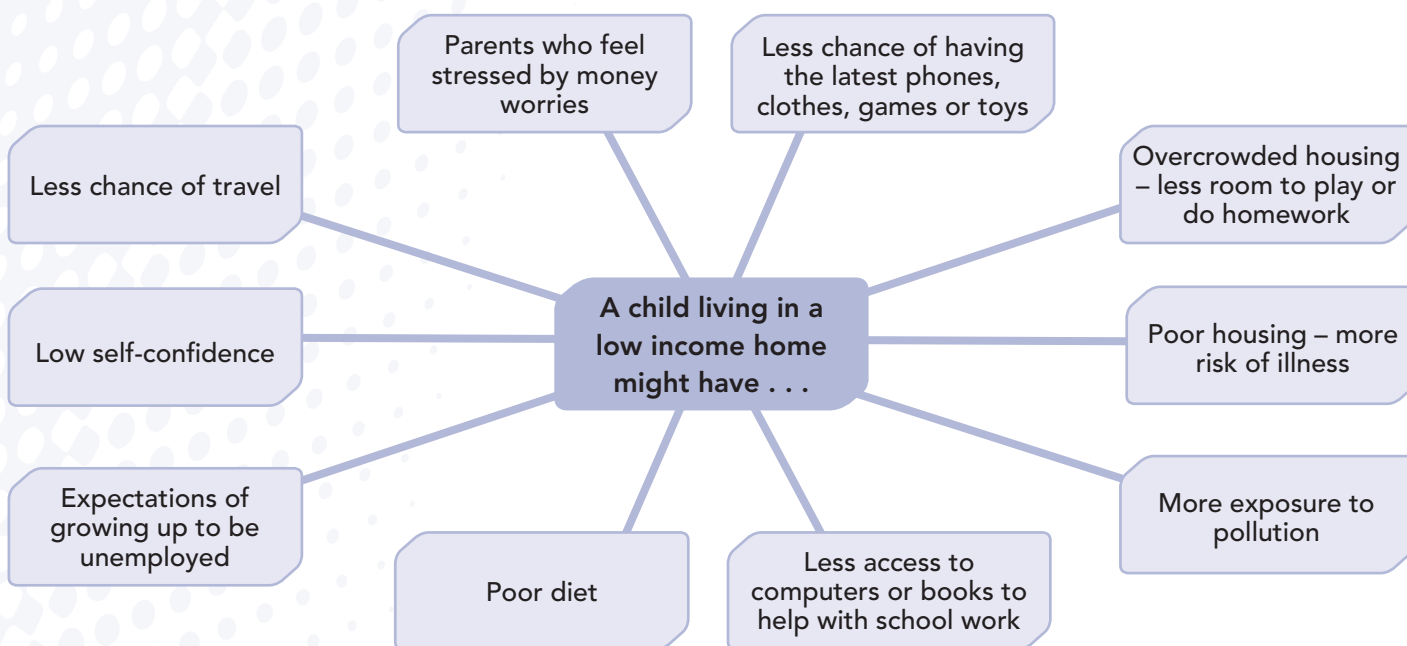


Use the Internet in order to look up recent statistics on the impact of low income on children and adults. The Office of National Statistics website ([www.statistics.gov.uk](http://www.statistics.gov.uk)) and the Poverty Site ([www.poverty.org.uk](http://www.poverty.org.uk)) collect and report statistics on poverty. Use the results of your research in order to discuss whether poverty rates are improving or getting worse with other course members.

## Functional skills



**ICT:** This activity could evidence your ICT skills in finding and selecting information.



**Fig. 4.12:** Some problems a child may face if they belong to a low income family



## Education

People with few or no qualifications are more likely to be unemployed or employed in low paid work.

A government report called *Unleashing Aspiration* was published in July 2009. This report points out that the majority of professional people such as doctors and lawyers grow up in families with substantially higher incomes than average. The report also highlights growing inequality in the degree to which professions are staffed by people from wealthy backgrounds. People from low income families may have less chance of achieving high qualifications and good careers.

### Did you know?

The Poverty Site ([www.poverty.org.uk](http://www.poverty.org.uk)) reported in August 2009, that around half of all employees with no GCSEs at grade C or above were paid less than seven pounds an hour in 2008. Only one in 10 young people with degrees were paid less than seven pounds an hour; 20% of people between 25 and 29 years of age with poor qualifications were unemployed compared with only 5% of graduates.



beliefs might be copied from the people we mix with, or at least from people who we see as being similar to ourselves. Peer groups provide a second source of social learning after our family, which provides our primary socialisation.

## Values and attitudes

Your beliefs, values and attitudes are influenced by your socialisation with family, carers and peer groups. Your **values** and attitudes will also be influenced by your life experiences (issues like bullying and discrimination) and the culture that you are exposed to in your neighbourhood and that you access through social networking and the Internet.

### Key terms

**Attitudes** – assumptions that we use to make sense of our social experience.

**Values** – principles that we use to guide our thoughts and decisions. They explain what we 'value'.

## Peer groups

As a child you will have learned a lot about social relationships when you played with other children. During adolescence we are very influenced by people of our own age group – our peer group. **Attitudes** and

### Reflect

What social pressures do people experience to achieve good educational qualifications? Where do these pressures come from? How far have you chosen your own values and attitudes and how far have you copied them from other people?

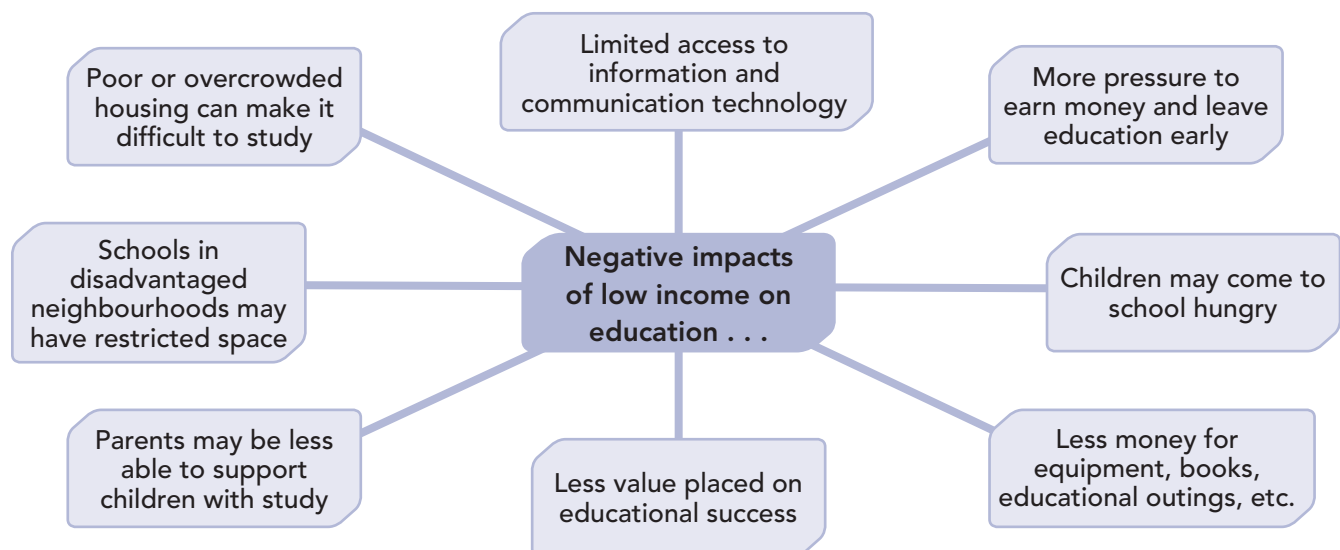


Fig. 4.13: Possible educational disadvantages faced by low income families

## 2.6 Lifestyle

What leisure activities do you engage in? Do you exercise? Are you careful about your diet? How do you dress and present yourself when you are among your friends? These are some of the questions that will explain your **lifestyle**. Your lifestyle represents the way you choose to spend your time and money.

### Key term

**Lifestyle** – how a person spends their time and money in order to create a 'style' of living.

To some extent your lifestyle is something that you choose. Your choices will be limited by the money that you have and influenced by your culture and the people in your life. People on low incomes have limited choices. Most people develop habits connected to diet, exercise and use of alcohol. Many people never actively choose a lifestyle – it just happens – but people can choose to change their lifestyle. Some lifestyle issues are presented below.

### Nutrition and dietary choices

Some people may choose to eat a diet that includes unhealthy fatty, salty or sugary food. But some people may eat an unhealthy diet because of convenience and cost. Some authors argue that convenience food that has a high fat, salt or sugar content is often cheaper than healthier or more labour intensive alternatives. People with a low income will find it harder to travel to supermarkets and stock up on cheaper food. A low income may push people to choose an unhealthy diet, because it can be harder and more expensive to choose a healthy one.

### Use and misuse of substances

#### Alcohol

The Department of Health recommends that, in a day, men should not drink more than four units of alcohol and women should not drink more than three units. Social Trends (2009) states that 65 per cent of men and 49 per cent of women reported drinking more than the recommended limits in 2007. Statistics also show that 32 per cent of young men and 24 per cent of young women have a lifestyle that involves heavy drinking.

### Did you know?

Government guidelines recommend that a healthy diet should include at least five portions of fruit and vegetables a day.



### Activity 10: Research supermarket food

Do some research by reading the labels on processed supermarket food. Look at the amounts of sugar and salt in budget or low-priced ready meals and compare these amounts with the sugar and salt content in more expensive food products. Can you find any evidence to suggest that a low income might influence people to choose products containing more sugar and salt?



### PLTS

**Independent enquirer:** This activity may enable you to evidence the independent enquirer skills by carrying out research.



### Drugs

National Statistics (2006) reported that 14 per cent of men and 8 per cent of women said that they had taken illicit (illegal) drugs in the previous year. Fewer than one in three young men and one in five young women reported that they had used cannabis.

### Smoking

Among other serious risks to health, smoking is associated with heart and lung disease. Smoking is associated with socio-economic class. More people in manual occupations smoke than in the higher social classes. In 2007 roughly one in five people in the UK were smokers (Social Trends 2009).

### Did you know?

The number of people who smoke has halved since 1974 when 51% of men and 41% of women were smokers (Social Trends 2009).



### Activity 11: Discuss high-risk lifestyles



Get together with other course members and discuss the role of nature and nurture in influencing lifestyle choices. You may know of people who put their health at risk by excessive drinking, smoking or taking drugs. To what extent do you think these habits might be influenced by genetics? Are some people more at risk from alcohol, tobacco or other drugs? How far are lifestyles copied from friends, with people just going along with what others are doing? To what extent do people choose to use alcohol, tobacco or other drugs in order to reduce stress in their lives?

### Functional skills



**English:** This activity will help you to evidence English speaking and listening skills.

## 2.7 Major life events

### Predictable and unpredictable events

During our life we are influenced by a range of life factors and we are also influenced by the events which happen to us. Some major changes in life can be predicted and even chosen, while others may be unpredicted. If your life suddenly changes there is always the risk that you will feel out of control and stressed. If you have chosen to leave home, marry or retire you may feel in control of these major events. The idea of predictable and unpredictable life events involves generalisation. For some people issues like divorce or redundancy may be predictable, but other people may not have expected to be divorced or lose their job.

Changes in life often involve positive learning as well as a risk of stress. Some major life events are set out in Table 4.7.

Table 4.7: Predictable life changes

Events that are often predicted	Possible influence on development	
	Positive learning	Risk of stress
Starting school/nursery	Learning to make new friends and cope with change	Feeling unsafe – withdrawing from others. Loss of support from parents
Beginning and changing employment	Choosing a work role and having an income from employment	Feeling pressured by new demands on time and mental energy. Finding difficulty in adapting. Loss of past lifestyle
Leaving home/leaving care	Achieving independence – controlling personal environment	Feeling unable to cope in a new situation. Feeling pressured by all the new tasks. Loss of family/care support
Leaving prison	Coping with freedom and choice	Loss of routine, loss of a structured environment, possible lack of support with finding an income and housing. Coping with possible discrimination.
Marriage	Making emotional attachments and experiencing intimacy	Feeling threatened by intimacy and sharing possessions. Possible loss of independence
Parenthood	Attachment to infant. Learning parenting skills	Disruption of previous lifestyle, loss of free time. New demands on time and energy. Feeling tired and loss of sleep.
Retirement	Controlling own life – disengaging from work	Loss of previous work roles. Loss of contact with work colleagues. Difficulty establishing a new lifestyle.

**Table 4.8:** Unpredictable life changes

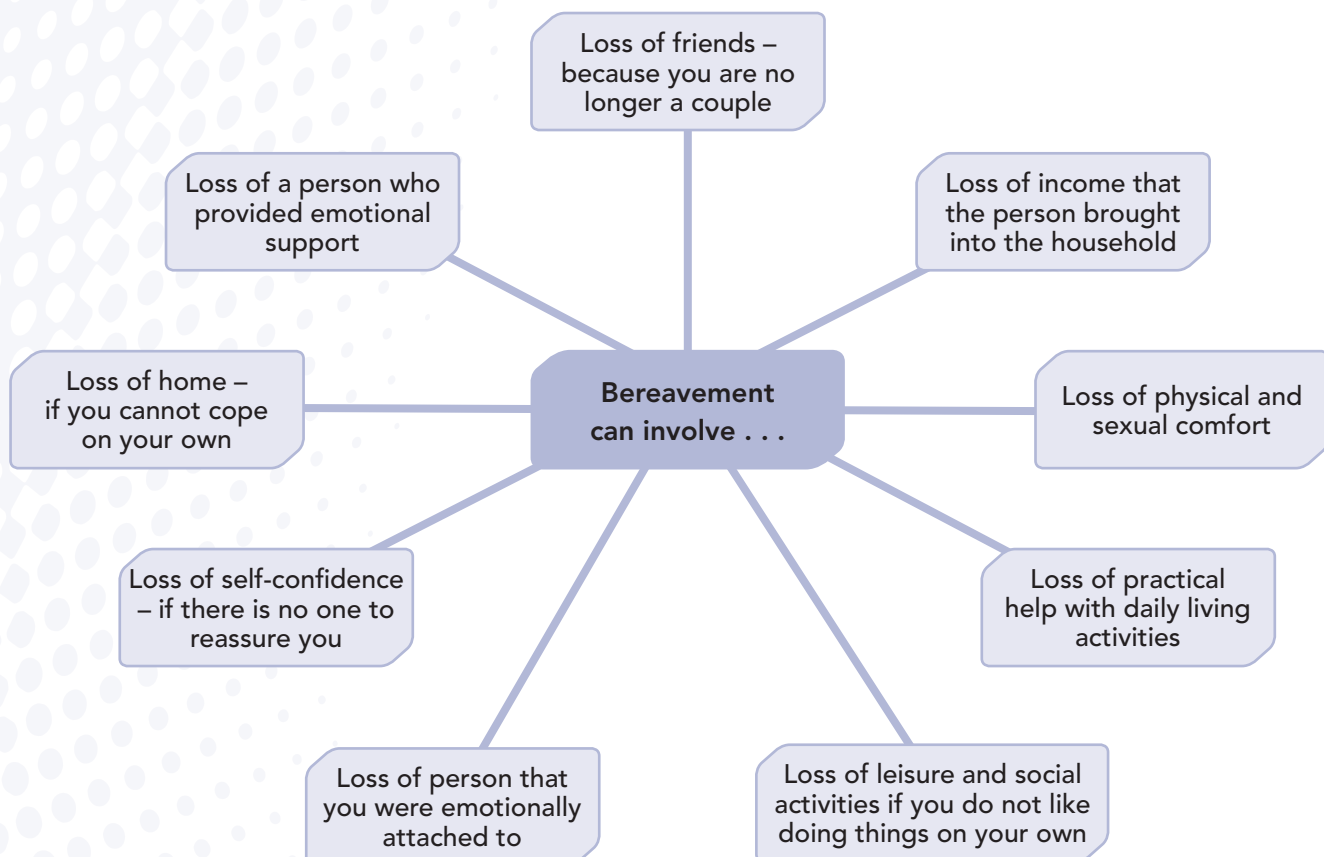
Events that are often unpredictable	Possible influence on development	
	Positive learning	Risk of stress
Birth of a sibling	Learning to make new emotional attachments	Jealousy and rivalry – emotional tension because your role within the family has changed. You may lose attention from parents
Redundancy	Learning to adapt to changes in income and lifestyle	Refusal to accept change. Anger or depression. Failure to cope with a loss of income and lifestyle
Illness and serious injury	Learning to adapt to physical change	Grief at the loss of good health. Anger or depression and failure to adapt to disability
Divorce	Learning to cope with a new lifestyle	Resentment or depression. Grief at the loss of the relationship. Failure to adapt to a new lifestyle. Possible financial hardship
Bereavement	Learning to cope with loss and new lifestyle	Grief at the loss of the relationship. Failure to adapt to an unwanted lifestyle

## The interrelationship between factors

Major changes in life may interact with all the life factors discussed in this section. For example, retirement, redundancy, divorce, bereavement or serious injury might all result in a loss of income or having to live on a low income. Leaving home, marriage or parenthood might all involve changes

in your home, or in your community and friendship networks. Major life events will change your social, emotional and economic circumstances.

Many life events involve some kind of loss, but this change is rarely simple. For example, bereavement can involve a whole range of other losses and changes.



**Fig. 4.14:** The effects of bereavement



Most major changes in life involve a whole range of issues. Being seriously injured or being divorced will involve a range of losses. Even predictable and welcome changes can involve a great deal of new learning and coping with a range of losses.

## Reciprocal influence

Leonie Sugarman (1986) discusses the theory of reciprocal influence. Reciprocal means 'goes both ways' or 'give and take'. Biology and environment impact on us, but we can influence our biology and the environment around us. We respond to the environment we find ourselves in. For example, some people may respond to the stress of poverty

and overcrowded housing by smoking, drinking and taking drugs. Smoking, drinking and taking drugs may damage physical health. Poor health may in turn increase problems of low income and negative life events. The whole thing is an interactive process or a 'vicious circle'. Just saying that pollution, or low income, can influence development, does not explain very much. If you are going to make sense of someone's life you need to be able to understand how factors interact with each other and that the choices that a person makes also interact with life factors. You can influence your environment – and even your own biology.

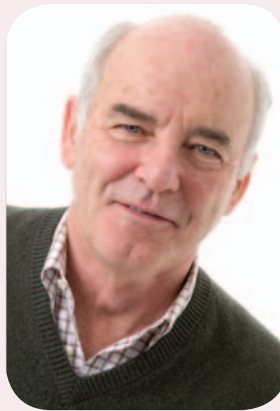
## Case study: John continued

**Interviewer:** Thinking about your life, can you think of any major life factors and events that really influenced you?

**John:** Well, I think the big things are that when I was younger I couldn't find work that I enjoyed so I kept changing jobs. The same really with relationships. I've been divorced twice. I suppose I didn't really have a happy childhood. My parents were always fighting, I was an only child – I didn't know what to expect from family life. Also, I went to a rubbish school. I just drifted around in different jobs, no real idea of what I wanted to do. I felt like I was useless – other people put me down.

**Interviewer:** So what factors changed your life to the happy life you've got now?

**John:** I suppose you could say 'they invented computers'. No really! I had a computer in the 1980s and I just got fascinated with it all – went on courses to develop my skills. I found I was really good at solving problems and for the first time in life I was good at work. You know it was the first



time I got respect from other people, I was the person that could solve their problems – it made me feel good. I think I started to look after myself – you know – care about my health and appearance more. Because I felt good about myself I think that helped me to find the right partner – find a happy marriage. Once I had self-confidence at work, well – I became different – better to be with. I suppose you could say I had a lucky break in finding something I was good at.

- 1 Using John's story at the beginning of this unit and the story above can you explain how environmental factors such as family and educational opportunity have influenced his development?
- 2 Can you explain how major life events, like finding a job he was good at, interacted with other issues such as a successful relationship in John's life?
- 3 Can you use the theory of reciprocal influence to explain how life events influenced John's early life but how he started to influence events such as his health and appearance once he felt respected?



## Assessment activity 4.2

P2 P3

**BTEC**

Imagine you have been writing about the life of your chosen celebrity for a magazine. The editor of the magazine has now asked you to describe the effects that five life factors have had on two life stages your chosen person has experienced.

You will already have found out about some of the experiences your celebrity has had during two stages of their life. Your two stages are most likely to be chosen from childhood, adolescence or adulthood. You now have to imagine how the following factors may have influenced the individual:

- the person's genetic background and early biological experiences
- the person's general environment during these stages
- the social and economic circumstances of the individual's family or carers
- the person's lifestyle or the lifestyle of their family
- the impact of major life events.

Your editor has also asked you to explain the influence of two predictable and unpredictable life events on the person that you are writing about.

### Grading tips

- P2** You are unlikely to have any genetic or biological information about your celebrity.

Even the person you are writing about is unlikely to know much about their own biological background. However you can collect information on general issues associated with genetics and biological influences. For example you could discuss the fact that genetic influences interact with the environment to create people with different body shapes, sizes and personalities. Your research may have given you some information on the person's past environment, their socioeconomic background, lifestyle and perhaps some of the major life events that happened to them. You can use this information to help assemble a fact file that will explain how these different life factors could have influenced the development of this individual.

- P3** It is quite likely that your celebrity will have written about major life events such as the life events listed in Tables 4.7 and 4.8 on pages 159 and 160. You may be able to explain how predictable and unpredictable events have influenced this person using the person's own story. If not, then you should try to imagine how events such as starting school or work, and setbacks such as illness or career difficulties, may have influenced the celebrity you are writing about.

## 3 Understand physical and psychological changes of ageing

Each person's experience of ageing is different. Some people develop serious problems associated with the ageing process in their fifties; other people have few problems even in their nineties. There is no simple process that affects everyone in the same way.

### 3.1 Physical changes

Some physical changes associated with ageing are summarised below.

#### Skin, bones, joints and muscles

- The skin becomes thinner, less elastic and more wrinkled.
- Bones can become less dense and more likely to fracture.
- Joints can become stiffer and may become painful as the cartilage on the bone ends becomes thinner.
- The ligaments which reinforce joints can become looser.
- A person can lose height because the cartilage that separates vertebrae in the backbone becomes compressed. The spine may also become more rounded.
- Muscles become weaker.

#### Senses

- The sense of balance can become impaired.
- The ability to taste and smell can deteriorate.
- Vision can deteriorate because of a range of problems and cataracts can develop.

- Hearing can deteriorate with a failure to hear high-pitched sounds.
- A lack of skin sensitivity can lead to an increased risk of hypothermia.

#### Organs

- Muscles in the digestive tract can become weaker creating a risk of constipation.
- The heart is less efficient at pumping blood.
- Blood pressure can rise.
- Nutrients from food are not absorbed as well as in earlier life.
- Breathing can become less efficient because respiratory muscles are weaker.
- Gas exchange in the lungs becomes impaired as the elastic walls of the small air pockets called alveoli become damaged.
- Body metabolism is reduced due to lowered performance of the endocrine glands.

These physical changes do not come about just because we 'wear out'. If you take regular exercise, you may expect to live longer and stay healthier than people who do not. The physical changes associated with ageing may come about because there is a limit to how many times body cells can repair and renew themselves, and because of damage that builds up over a lifetime. For more information, see the section on the final stage of life on page 139.

### Case study: Ivy

Ivy attends a day centre for older people. She is 84 years old. She is talking about her experiences in the day centre.

*'The dinner here isn't very good – it's all just tasteless mush. You can't get real food nowadays, not like we used to have.'*

*'I get tired out on the days that I come here – there's so much activity – well it takes me a day to get over it. I do enjoy the keep fit activity but I get breathless doing it. I suppose it's all just my age.'*

*'I do get cold in here sometimes – all the young ones – I mean the staff – they always complain it's too hot. But I feel the cold nowadays. It's never warm enough in here for me.'*

Using your understanding of physical changes of ageing answer the following questions:

- 1 Can you explain why Ivy might experience food as being tasteless nowadays?
- 2 Why might Ivy become tired and breathless following physical activity?
- 3 Why does Ivy feel cold all the time?



## Hormones and the menopause

Women usually experience a major decrease in the hormone oestrogen following the menopause. This decrease in oestrogen is associated with osteoporosis. Women are more at risk of osteoporosis than men because bone strength is influenced by the reduction of oestrogen. Some people may be more at risk of osteoporosis than others because osteoporosis may be influenced by genetic inheritance. The environment can make a difference as exercise is known to strengthen muscle and bone and may help to prevent osteoporosis.

## Cardiovascular system

The heart pumps blood around the body. Older people may develop a narrowing of the arteries and other blood vessels due to fats such as cholesterol being laid down in the walls of the blood vessels. This process of 'clogging up' is called atherosclerosis. 'Athero' indicates fatty deposits and 'sclerosis' indicates the hardening of the arteries.

Atherosclerosis can result in higher blood pressure and high blood pressure puts the person at risk of stroke (where the blood supply to the brain is blocked) and heart attack.

The elasticity in the walls of the blood vessels can also decrease (sclerosis), causing the heart to work harder, increase in size and cause a rise in blood pressure. Fatty deposits can break away and cause a blockage in an artery. These blockages can result in coronary heart disease. If the coronary artery is partly blocked a person may experience the breathlessness and chest pains associated with angina. Where blood flow is seriously blocked a person may experience a heart attack.

## Respiratory system

When blood is not being pumped round the body efficiently, breathlessness may result. The strength of the chest muscles may reduce with ageing and the efficiency of the lungs may deteriorate. Chronic diseases such as bronchitis may develop. Bronchitis involves inflammation of the airways that connect the windpipe to the lungs. Common disorders of the respiratory system include emphysema and chronic obstructive pulmonary disease.

### Emphysema

Emphysema is a disease in which the air sacs in the lungs (alveoli) become damaged. This causes shortness of breath and can result in respiratory or heart failure.

Emphysema can be induced by smoking, which causes the lungs to produce chemicals that damage the walls of the air sacs. In time, this results in a drop in the amount of oxygen in the blood.

### Chronic obstructive pulmonary disease (COPD)

When there is an airflow obstruction, perhaps due to emphysema or bronchitis, the resulting condition is described as chronic obstructive pulmonary disease (COPD). This condition can create a progressively worse disruption of airflow into the lungs. Some people with COPD increase their rate of breathing in order to cope, whereas others may have a bluish appearance or might look bloated because of a lack of oxygen and a build-up of fluid in the body.

## Activity 12: Research physical changes



Get together with other course members and choose one topic each to look up using the NHS direct health encyclopaedia ([www.nhs.uk](http://www.nhs.uk)). Present your topic in detail to the group. Make notes on other course members' presentations so that you have detailed information on the physical changes associated with ageing.

## Functional skills



**ICT and English:** You can use your ICT skills to find and select information regarding your chosen topic. Presenting this information to the group allows you to practice your speaking skills. You can use writing skills to make notes on the other presentations.

## Nervous system

Ageing may involve the loss of nerve cells that activate muscles. Neurotransmitters (the chemicals released by the nerves in order to communicate and control muscles) may also function less effectively with age.

### Motor neurone disease

Motor neurone disease is a rare disorder that is more common among people aged 50 to 70 than in other age groups. The disease causes nerves to degenerate, resulting in weakness and loss of muscle tissue. The causes of motor neurone disease are not understood but it is possible that genetic inheritance may play a role, or that exposure to toxic chemicals may increase a person's risk of developing the disease.



## Degeneration of the sense organs

### Sight

After 45 years of age, the ability of the eye to focus begins to weaken and by 65 years there may be little focusing power left, making small print more difficult to read. Up to half of people over the age of 90 may have serious problems with vision.

Cataracts result from changes in the lens of the eye. As people grow older the lenses can become hard and cloudy. This process stops the lens of the eye from being able to change shape or transmit light appropriately. This process results in symptoms such as blurred vision. Cataracts may start to form between the ages of 50 and 60 years and often take time to

develop. The majority of people over 75 years have some degree of cataract formation. Diabetes can also cause the development of cataracts.

Another problem that can affect eyesight in later life is glaucoma. Glaucoma involves an increase of fluid pressure within the eye.

### Hearing

Many older people experience difficulty in hearing high frequency (or high-pitched) sounds. This can happen because the sensitivity of nerve cells in the inner ear may decrease. There may also be a loss of nerve cells, which results in hearing loss. Some older people experience an increase in wax in the outer ear and this can block the transmission of sound to the sensory nerves.

### Case study: Joe

Since retiring, Joe works as a volunteer in a day centre. At first he found it very difficult to hear what people were saying. When talking to a colleague he said,

*'It's strange that people here don't talk clearly – even the staff group mumble all the time. It can't be a problem with my hearing because I can understand my family all right.'*

Joe has since had a hearing check and now uses a hearing aid. He says,

*'It's funny how you don't notice change – I really didn't believe I had a hearing problem but everything is much clearer now that I use a hearing aid.'*

- 1 Would you generally expect problems with vision and hearing associated with ageing to develop slowly over time or would they be sudden crises?
- 2 Joe had a problem with hearing high-pitched sounds – he thought other people 'mumbled'. Would it have helped if other people had raised their voices and shouted at him or would it have caused more problems?
- 3 Why was Joe able to understand his family but not new people at the day centre? Why did he originally refuse to believe that he had a hearing loss?

## Cognitive changes

Ageing can involve a loss of nerve cells in the brain and a reduction in the ability of nerves to transmit electrical signals. But this does not mean that people lose their ability to think logically or reason. Many older people do report problems with memory recall, for example, 'where did I put my glasses?' Older people often report that it takes longer to do things; there may be a feeling of slowing down. They may take longer to respond to questions. Response times might also be slower, meaning that, for example, older people need to drive more carefully in order to compensate for slower response times. Slower response times and difficulty recalling recent memories are not symptoms of dementia. Senile dementia is not part of a general ageing process, although the disease is more common among people who are over 85

### Key term

**Cognitive changes** – changes to a person's thinking, memory or mental abilities that influence their behaviour.

## Musculoskeletal

Older people may experience the following:

- muscle thinning
- decline in mobility
- arthritis.

Ageing can result in a general reduction and shrinkage of skeletal muscles (the muscles we use to walk, lift things and move about). This loss of muscle tends to start after the age of 40 even in people who enjoy a healthy diet. Lack of exercise may contribute to muscle thinning in some people.



## Absorption of nutrients

Absorption of food, including minerals and vitamins, becomes less efficient in older people, meaning that some people can experience malnourishment even though they continue to eat the same diet that was adequate in early adulthood. Some older people are prescribed additional supplements of calcium and vitamin D in order to prevent osteoporosis as the body may not absorb sufficient calcium and vitamin D from the person's diet. Other major deficiencies in the diets of older people often include insufficient iron and fibre.

## Arthritis

Arthritis involves damage to joints within the body. A substance called cartilage covers the ends of our bones and helps to 'cushion' our bones as we move. Cartilage can become thinner and less elastic with age. In osteoarthritis the bone ends can thicken and even form bony spurs which restrict movement of the joint. Many people with arthritis experience stiffness and pain when they move their hips or knees, especially after a period of immobility.

Osteoporosis is a major problem associated with ageing, affecting about 3 million people in the UK. Osteoporosis involves a thinning and weakening of bone, making it easier for bones to become fractured.

## Skin

As people grow older the elasticity of the skin reduces. The amount of fat stored under the skin decreases, its appearance becomes looser and it develops wrinkles. Skin can also be damaged by excessive exposure to sunlight. Strong sunlight contains ultraviolet rays which can damage unprotected skin. Ultraviolet rays may cause an increase in freckles, age spots, wrinkles and even rough and leathery skin. Using a sun cream with a high ultraviolet protection factor can help to reduce this damage.

## The effects of smoking

### Did you know?

Smoking exposes the body to around 400 different toxic substances including nicotine, tar and carbon monoxide.



Smoking is a major cause of a range of cancers including lung cancer. Some medical experts argue

that if no one smoked, lung cancer would be a rare disease. Smoking also causes cardiovascular disease associated with the hardening and narrowing of the arteries causing high blood pressure, heart attacks, strokes and lowered blood supply to extremities such as the feet. Smoking also causes chronic obstructive pulmonary disease (COPD) and emphysema. Smoking is an example of exposure to toxic substances that may cause damage to DNA. Damage to cell DNA may result in skin developing a more aged appearance including what is sometimes described as a leathery or wrinkled appearance.

## Dementia – a disorder more common in ageing

Dementia is more likely to occur in older people. Approximately 5 per cent of people over the age of 65 years have dementia. The Alzheimer's Society estimates that as many as 20 per cent of people over the age of 80 are affected by dementia. The majority of people who live to extreme old age will never develop dementia.

Dementia is a disorder that causes damage to the structure and chemistry of the brain. A person with dementia is likely to experience problems with understanding what is happening around them, communicating, reasoning, finding their way and remembering recent events. There are different kinds of dementia; two major types are Alzheimer's disease, and dementia caused by vascular disease, which involves problems with blood supply to the brain.

Remember that many older people remain physically active well into later life



### Activity 13: Stereotypes of ageing



Ask some of your friends or family to name some major health problems they expect older people to have. Historically, many older people have been negatively stereotyped as suffering from disease and dementia. Can you find evidence that these stereotypes still exist?

#### PLTS



**Creative thinkers:** This activity may help you to evidence the ability to question your own and others' assumptions as part of your creative thinking skills.

experiences of 160 of her friends and colleagues. Her study showed that even within a group of people with similar cultural and life experiences, there were wide variations in how people experienced later life. Some people reported an increase in social confidence; some people appeared to become more tolerant, while others became more irritable; some people appreciated the respect that they received from other people, while others complained of a lack of respect. The study suggested that ageing is full of contradictions with no clear rules.

Heim suggested that confidence in undertaking practical tasks decreases in old age but that social confidence increases – and that this is one of the contradictions involved in the ageing process.

## 3.2 Psychological changes

### The effects of ageing on personal confidence and self-esteem

As with physical ageing, each person's experience of psychological change is likely to be different. Cumming (1975) argued that some people disengage from social activity as they get older (see page 170 for more information about Cumming's argument), but many people remain in close contact with friends and family. Another famous theorist, Erik Erikson, argued in 1963 that older people would need to develop a sense of 'ego integrity' if they were to avoid despair in later life. Ego integrity involves making sense of your life – holding on to a clear and meaningful sense of who you are. In part, ego integrity involves holding on to your self-esteem. One theory is that older people need to engage in telling their life story, reminiscing or reviewing their life in order to help create self-esteem and confidence. Coleman (1994) argued that some types of reminiscence work can be useful for most people, but that there are wide differences in individual needs. Joining a group to discuss past events may not be good for everybody.

Alice Heim (1990) was a psychologist who wrote a book about her own experiences of ageing and the

#### Reflect



Imagine a fit, healthy 16-year-old and a frail 84-year-old person with poor eyesight who both have to cross a busy road. Which of these two people is likely to feel more confident in coping with the situation? Now imagine the same two people faced with the task of standing up at a wedding reception and making a speech. Imagine that the older person has had a lifetime's experience of public speaking. Which of the two people is now likely to feel more confident?

Think about why some individuals may choose to take part in reminiscence sessions as an important social activity.







## Case study: Grace

Grace is 82 years old. She suffers from osteoporosis and recently fell and broke her hip. She made the following statements in conversation with her physiotherapist who is helping her to learn to walk again using sticks to support herself while walking in her bungalow.

*'Sometimes I have a little cry because I can't get to the shops.'*

*'I don't know when I'll have the strength and confidence to go shopping on my own again.'*

*'I can still get on my mobility scooter and go down the club – that's easier because there are other people to help you there.'*

*'I don't know what I'd do if I couldn't get down the club because there's other people with problems and you can talk to them.'*

*'My old mum used to say that a problem shared is a problem halved. It's a real help down the club – it lifts my feelings up when I'm down.'*

- 1 Can you explain how osteoporosis has resulted in a problem that threatens Grace's confidence and self-esteem?
- 2 Can you explain what Grace does in order to keep her social confidence and self-esteem intact?
- 3 How far can services such as social clubs help to prevent older people from experiencing a loss of confidence and self-esteem despite physical changes?

Physical illness may cause some people to lose confidence in doing certain activities but it would be wrong to assume that physical decline automatically removes everyone's general self-esteem and confidence.

**Table 4.9:** General issues that may influence individual psychology

Issue	Explanation
<b>Ageism</b>	Older people are sometimes stereotyped as being useless, diseased, demented and unable to cope. Older people may experience prejudice from younger people who see them as 'having had their lives'. Many older people fear that they will not be treated with dignity in hospital or care settings.
<b>Role changes</b>	The majority of older people enjoy effective social networks with only one person in five experiencing a degree of isolation. For many people retirement provides more opportunity for contact with grandchildren and other relatives. Older people are more likely to vote than any other age group suggesting more involvement in politics, whereas younger people may be more disengaged from politics. Loss of work role, loss of partner and loss of income may all result in major life changes that are difficult to cope with.
<b>Loss of a partner</b>	Bereavement may result in a range of changes and losses including role changes. Bereavement may cause temporary anxiety and depression.
<b>The effects of retirement</b>	For many people retirement provides freedom. Retired people may be seen as 'time rich' and free from work stress. But for some people retirement could result in a loss of income, contact with work colleagues and the loss of interest in life.
<b>Increased leisure time</b>	Free time may enable many older people to engage in physical leisure activities such as walking and activity holidays. Gardening is very popular among people aged 50 to 70. Free time may enable many older people to engage in enjoyable social and mental activities such as taking new college courses, developing ICT skills etc. National Statistics Online (2006) reported that 51 per cent of people between 60 and 69 participated in some form of learning.
<b>Financial concerns</b>	The majority of people aged 65 and over own their own home and people over 65 have higher levels of savings in general than any other age group. Many older people enjoy a high standard of living. Only about one in five older people live in poverty. Most of these people will not have a private pension fund. These people may have concerns about paying for heating, shopping and coping financially.



## Other issues that may influence individual psychology

The majority of people over state retirement age experience reasonable health, a satisfactory social life and a reasonable standard of living. Only a minority of older people experience poor health, poverty and isolation. It is important to guard against the stereotype that old age is always a story of decline and isolation. Old age is like any other life stage – whether or not you lead a happy and fulfilled life depends on a large range of individual issues.

### Culture, religion and beliefs

The way in which you react to physical changes in later life will depend on your attitudes and beliefs. Attitudes and beliefs are influenced by social issues such as culture and religion. Some people can maintain a happy and positive outlook on life despite having serious physical health problems. Other people may appear to be depressed or withdrawn despite being relatively fortunate in terms of physical health.

### Case study: Jake and Joshua

Jake and Joshua are residents in a care home. Both have heart disease and serious mobility problems. In conversations with the care home staff, Jake has said:

*I'm finished with my life. I'm just a burden to my family. My body has packed up, there is nothing to live for, I can't walk, I can't get out, I'm no use to anyone – I wish I was dead.*

Joshua has said:

*I can't get around anymore but I still enjoy my life. It's a joy just to wake up in the morning, to see the sun, to see a smiling face. You should never give up on life – I learned that attitude from my family.*

*I believe in a spiritual 'me'. If my body lets me down – well my spirit hasn't altered – why should I be sad?*

Jake believes that if you haven't got your health life is not worth living. Joshua thinks quite differently.

- 1 Can you identify possible cultural and religious reasons for these different beliefs?
- 2 Does physical health completely control and determine how much a person can enjoy life?
- 3 Can you use Erikson's theory of 'ego integrity' in order to explain Joshua's positive attitude?

### Case study: Interview with John continued

**Interviewer:** Do you think that the best time in life is when you are young and that you are less confident now that you are older?



**John:** No. The best time for my body was my early 20s, it is true. But I think now is the best time in my life. When I think back I had a lot of problems in my 20s and 30s. I wasn't really settled, I kept changing jobs. I got divorced twice. Looking back I pretended to be confident but I didn't really know who I was. I love the work that I'm doing now – I don't want to retire. I finally found a relationship that works so I've never been happier.

**Interviewer:** But what about the aches and pains you mentioned? Don't they get you down?

**John:** Yes. I've got arthritis and every time I try to do things, like decorate the house, my wrists and knees hurt. But I've got an answer – I don't decorate the house any more – I pay someone else to do it! I'd love to be back in a 25-year-old

body but I wouldn't like to give up the life that I have now.

**Interviewer:** Would you say you are more confident and your self-esteem has increased with age?

**John:** Yes. I'm more confident in myself. I don't care what other people think – I know who I am and what I'm good at, so I have self-esteem. I know I don't look so good these days – but so what! You are what you are, and at my age I don't have to be attractive!

- 1 Can you describe some of the physical changes that John has experienced and how they have limited his life?
- 2 Can you explain why John still enjoys self-confidence and high self-esteem even though he has experienced physical changes with ageing?
- 3 John might be said to have successfully adapted to physical ageing. Can you explain why some people might adapt successfully while other people might experience loss of self-esteem?



## Theories of ageing

### Social disengagement

Engagement means being involved with people or activities. **Disengagement** means to withdraw from involvement. In 1961 two authors called Cumming and Henry put forward a disengagement theory that older people would naturally tend to withdraw from social involvement with others as they got older; older people would have restricted opportunities to interact with others. The issues that surround this are outlined in Table 4.10.

Cumming (1975) argued that older people would experience a reduction in social contact as they grew older and become increasingly 'individual' and less concerned with the expectations of others. He argued that it was appropriate and healthy for older people to withdraw from others – disengagement was a natural part of ageing.

The theory of disengagement was widely accepted in the past. For example, Bromley (1974) argued that 'although some individuals fight the process all the way, disengagement of some sort is bound to come,

### Key term

**Disengagement** – a theory that older people will need to withdraw from social contact with others. Older people will disengage because of reduced physical health and loss of social opportunities.

simply because old people have neither the physical nor the mental resources they had when they were young.'

The theory of disengagement fits with the 'springboard' view of life (see page 133) and suggests that losing contact with other people is an inevitable consequence of biological decline and that withdrawing from other people is a natural and appropriate response to ageing. However, there is little statistical evidence to suggest that this is a general rule for everyone.

Zimbardo (1992) argued that 'The disengagement view of social ageing has been largely discredited for a number of reasons'. The majority of older people do remain socially involved with family and friends and many older people become more involved with close family as they become older. It may be that many older people choose to spend their time with people they feel close to, rather than seeking to make new friends. If people only interact with close friends, does this mean that they are disengaged?

While many researchers today do not agree with disengagement theory, it is important to remember that when Cummings and Henry first proposed the theory in 1961 there was no Internet or text messaging; many older people did not have access to a car and quite a few would not even have had a phone in their home!

**Table 4.10:** Issues that limit social interaction.

Problem	Explanation
Ill-health	Poor mobility or problems with hearing or vision may make interaction with other people more difficult.
Geographical mobility	Many people retire to areas away from friends and relatives. Family members may move away from older people in order to seek better housing or employment.
Retirement	Retiring from work may mean less contact with colleagues in a social setting.
Ill-health of friends and relatives	If friends or relatives have poor mobility or other disabilities they may have reduced social contact with you.
Travel and technology	Some older people do not have access to a car, the Internet or a mobile phone – this may limit opportunities for social contact.

### Reflect

Imagine you have broken your legs. You have no access to a phone, text messages or the Internet and you cannot go out. Would you begin to disengage?

Now imagine the same situation but this time you have a mobile phone and an Internet connected laptop. Would technology help? Do health problems automatically cause social withdrawal or might it be more complicated?



### Activity theory

Writing in 1966 Bromley argued that older people needed to disengage, but that they also needed to remain 'active' in order to prevent disengagement from going too far. Bromley said: 'It is not sufficient merely to provide facilities for elderly people. They need to be educated to make use of them and encouraged to abandon apathetic attitudes and fixed habits.' Bromley argued that it was important to remain mentally active and maintain an interest in life and enjoy the company of others. Too much disengagement would lead to 'stagnation' and a loss of mental and physical skills.

### Continuity theory

**Continuity theory** (Atchley, 1989) stresses the importance of continuing as the person you have always been. For many people this may involve continuing with interests, lifestyles and social contacts from the past. The important thing is that people can continue to develop an internal sense of self-esteem and self-concept. Memories of the past may be important because they can help a person to tell their life story.

Continuity theory suggests that people will have different needs when it comes to activity. Some people may wish to withdraw from social and physical activity because they see themselves as a person who is entitled to retire and adopt a disengaged lifestyle. Other people may have lived with active involvement with family, friends or with hobbies and may not be able to cope without staying active. Some people can disengage without losing their sense of who they are. Some people need to stay actively involved

with people or hobbies in order to feel that life is worthwhile.

### Key terms

**Activity theory** – a theory which argues that older people need to stay mentally and socially active in order to limit the risks associated with disengagement.

**Continuity theory** – a theory that older people will generally maintain a continuous sense of who they are and continue to adapt the self concept they developed earlier in life.

### Ageing and health and social care provision

The majority of older people remain in their own home in the community, where they may be supported by friends, family and health and social services. Some older people choose to move to sheltered housing. Sometimes people choose sheltered housing because maintaining the family home has become too difficult. Day care centres provide a social setting where people can meet and some health authorities provide day care to assist with physiotherapy and other health needs. A small proportion of older people choose residential care where 24-hour support is available.

All services for older people will aim to provide respect and choice for service users as part of their policy on quality assurance. Many day and residential services will provide a range of social and leisure activities for service users. Older people should always have a choice as to how active they wish to be. Quality services will never attempt to force older people to be active and engaged, but they will provide opportunities for individuals to maintain the continuity of their lives and remain as active as they wish.

### Assessment activity 4.3

P4 P5 M2 M3 D2

BTEC

In your role as a reporter for a magazine, you now need to write about the life of your chosen celebrity as they grow older. You must imagine some of the physical and psychological changes that could affect the person in the future. You will also need to explain two theories of ageing such as disengagement and activity theory.

#### Grading tips

**P4** To achieve P4 you could choose to explain disengagement and activity theory or you could research alternative theories such as continuity theory.

**P5** To achieve P5 it will be important to use creative thinking and consider different possibilities. Some older people may no longer want to appear in public or be photographed. Other people will continue to develop their celebrity status. Some people are celebrities because they have overcome serious difficulties in their lives. These people might cope effectively with the challenges of later life. You can discuss the different possibilities that the future may hold within your fact file.

**M2** To achieve M2 you need to discuss the degree to which your celebrity might disengage or stay

actively involved with social activities as they become older. You might like to consider the role of continuity (how important it will be for your celebrity to keep their interests) when you discuss disengagement and activity theory.

**M3** To achieve M3 you will need to discuss how these changes could affect your celebrity's self-esteem and self-confidence.

**D2** To achieve D2 you should evaluate how theories of ageing influence health and social care provision. If your celebrity was being supported at home or in care would they be supported to maintain continuity with their past? Would they be expected to withdraw, or would they be encouraged to remain active in order to prevent excessive disengagement?

## Resources and further reading

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## Useful websites

Institute for Public Policy Research [www.ippr.org](http://www.ippr.org)

National Statistics [www.statistics.gov.uk](http://www.statistics.gov.uk)

The Food Standards Agency [www.eatwell.gov.uk](http://www.eatwell.gov.uk)

The Poverty site [www.poverty.org.uk](http://www.poverty.org.uk)



# Kayla Jones

## Day centre worker



Kayla works at a day centre for older people. About 20 people attend the day centre each day, although most members only come twice a week. The centre offers a range of activities including artwork on Thursdays, keep fit exercises, music and discussion groups. Many members enjoy taking part in reminiscence sessions where a volunteer will bring in old photographs from 40 or 50 years ago and ask members to talk about their memories of that time.

Kayla is talking with the centre manager at the end of the day after the members have gone home. She is concerned about Mary who refused to join in discussion with other day centre members.

**Kayla:** I enjoyed that reminiscence session. Some of the members had so much to say, you could tell they were really enjoying it too, but I can't understand why Mary wouldn't join the discussion.

I invited her to but she refused. She said: 'Wait till you're my age my girl, then you'll know how it feels to be old. I don't want to do the things younger people do, I just want peace and quiet'. The other members enjoyed talking, so why is Mary so difficult?

**Manager:** Mary isn't being difficult. It's her choice to join in or not. It would be against our code of practice to try and make her.

**Kayla:** I understand that we must respect people's choices but wouldn't Mary be happier in the long run if we could find a way to help her to be more active?

**Manager:** Perhaps not. You have to try and imagine Mary's point of view. She's not used to taking part in group discussions. She does like doing art on Thursdays though, so perhaps individual art work is more right for her?

### Think about it!

- 1 Can you identify the theory of ageing that describes the way Kayla thinks?
- 2 Why might Mary think that discussion groups are not appropriate for her?
- 3 How would disengagement theory explain Mary's behaviour?
- 4 Can you describe how continuity theory explains Mary's behaviour differently?
- 5 How could Kayla have talked with Mary in order to find out what Mary would enjoy doing at the day centre?

## Just checking

- 1 It can be argued that children develop language through a process of maturation. What does this statement mean?
- 2 Are people biologically programmed to grow to be a certain height, no matter what?
- 3 If you have a genetically inherited disease, does that mean that nothing can be done to help you?
- 4 If you knew everything about a new born baby's genetic inheritance and her current environment, would it be possible to accurately predict her life course?
- 5 Some older people have difficulty with walking and moving around the home. Can you describe two possible reasons for these difficulties?
- 6 Do the physical changes associated with ageing force all older people to lose confidence and self-esteem?
- 7 Should older people be made to be more active in order to prevent excessive disengagement?

edexcel

## Assignment tips

- 1 When you choose a famous person to study remember to 'keep it real'. You will need to find somebody who has made details of their life story public. You can use your imagination about general issues: for example you could speculate about the way in which nature and nurture might affect people, but you should not choose your favourite star and then make up a story about them. You must be careful not to write things that could be seen as unfair, judgemental or offensive about real people. Celebrities have human rights too!
- 2 You could construct a grid or chart listing the main issues associated with the five life factors. You can then think about the information you have collected about your celebrity while looking at your grid. It may help you think creatively about ways in which life factors interact within a real person's story.
- 3 Within your fact file you could emphasise that different people experience different problems as they grow older. It could be interesting to plan an article which starts with the question 'Does physical ageing always make life unpleasant for older people?' You could identify the problems that your celebrity may face as an older person, and also ways in which older people can adapt successfully to the changes age brings. No one knows what will happen to your celebrity in the future, so you could leave your fact file with an open ending.