CAMBRIDGE NATIONAL

LEVEL 1/LEVEL 2

CHILD DEVELOPMENT

SECOND EDITION

J809

Miranda Walker

A textbook endorsed by

OCR Oxford Cambridge and RSA | Cambridge Nationals

Boost

HODDER EDUCATION
LEARN MORE

Contents

Introduction

This book will help you to develop the knowledge, understanding and practical skills you need to complete your Level 1/Level 2 Cambridge National in Child Development course. As well as preparing you for your final exam and set assignments, the book will introduce you to the childcare sector. You will learn specialist childcare knowledge and skills and will have the opportunity to design a safe environment for a childcare setting as well as carry out an observation on a child and plan a suitable play activity.

Each of the chapters in this book closely follows all the topics required for each unit in the course specification, which you can find on the OCR website. To help with your learning, the book covers the key content in detail and includes a range of real-world examples. There are also lots of activities and learning features; you can find out more about these and how to use them on page vi.

Note for teachers: You can find out more about how we have designed the textbook to support you at: www.hoddereducation.co.uk/cambridge-national-child-development

Assessment: Examined unit and final set assignments

The Cambridge National in Child Development qualification is made up of three different units. All students will need to complete Unit R057 (Health and well-being for child development), Unit R058 (Create a safe environment and understand the nutritional needs of children from birth to five years) and Unit R059 (Understand the development of a child from one to five years).

- **Unit R057** is an examined unit where you will sit a one hour 15-minute examination paper, which is set and marked by OCR.
- **Units R058 and R059** are assessed through a series of tasks for a set assignment that you will be given. The assignments are set by OCR, marked by your tutor and then moderated by OCR.

All the examination questions contain 'command' words. These tell you what you have to do to answer a question or complete the task. A full list of common command words is available on the OCR website. Always check the command word before starting a task or answering a question. For example, if you describe something when an explanation is required, you will not be able to gain full marks; this is because an explanation requires more detail than a description. There are a range of practice questions in this book in Unit R057 to help you get to grips with the command words.

Once you have learned all the required parts of the moderated units, you will complete an assignment that will be used to assess your knowledge and skills of the subject. It will be set in a vocational context, which means that it will simulate what it would be like to be given a project by a client or employer in a work situation. You will use the OCR set assignment for the assessment. This assignment will include a series of tasks that follow the same process and sequence of the units for R058 (Create a safe environment and understand the nutritional needs of children from birth to five years) and R059 (Understand the development of a child from one to five years). The assignment practice features in this book in Units R058-R059 will help you get used to working using a childcare context.

Note: The practice questions and accompanying marks and mark schemes included in this resource are an opportunity to practice exam skills, but they do not replicate examination papers and are not endorsed by OCR.

Plagiarism and referencing

Your work for the OCR set assignments in Units R058-R059 must be in your own words. You must not plagiarise. Plagiarism is the submission of another's work as one's own and/or failure to acknowledge the source correctly.

Sometimes you might need to use a diagram or include a quotation from someone else or a website. If you do this it is very important that you always provide a reference for any information you use that is not your own work. Quotation marks should be placed around any quoted text. You should put the source reference next to the information used. In addition to referencing the picture, diagram, table or quotation, you should explain in your own words why you have used it, what it tells you, how it relates to your work, or summarise what it means. Providing a reference means that you will include details of the source, which is where you found the information. You should include the full website address (URL) and date that you found it or, for a textbook, the page number, title, author's name, date it was published and the name of the publisher. For newspaper or magazine articles you should give the date of publication, title of the paper or magazine and the name of the author. When producing your work for the assessment, you should never use any templates or writing frames. You must always decide yourself how to present your information.

How to use this book

Key features of the book

The book is organised by the units in the qualification. Each unit is broken down into the topic areas from the specification. Each unit opener will help you to understand what is covered in the unit, the list of topic areas covered, and what you will be assessed on, fully matched to the requirements of the specification.

Topic areas

The topic areas are clearly stated so you know exactly what is covered.

How will I be assessed?

Assessment criteria are clearly listed and fully mapped to the specification.

Getting started

Short activities to introduce you to the topic.

Key term

Definitions of important **terms**.

Case study

See how concepts are applied in settings and learn about real-life scenarios.

Stretch activity

Further activities designed to test you and provide you with more in-depth knowledge and understanding of the topic.

Test your knowledge

Questions and quick tasks to test your knowledge and understanding. Answers are provided online at: **hoddereducation.co.uk/cambridge-nationals-2022/answers**

Activity

A short task to help you understand an idea or assessment criteria.

Research

Activities that draw on the content covered in the book to reinforce your understanding.

Good practice

Useful advice for when you are working with children. You don't need to know this content for your exam.

Synoptic links

Links to relevant details in other parts of the book so you can see how topics link together.

Read about it

Includes references to books, websites and other sources for further reading and research.

Practice questions

This feature appears in Unit R057 where you will be assessed via an exam. Mark schemes and example answers are provided online at: **hoddereducation.co.uk/cambridge-nationals-2022/answers**

Assignment practice

This feature appears in Units R058 and R059 and will help you prepare for non-examined assessment with model assignments. Mark schemes and example answers are provided online at: **hoddereducation.co.uk/cambridge-nationals-2022/answers**

Unit R057

Health and well-being for child development

About this unit

In this unit you will learn about the importance of being healthy before and during pregnancy, and creating conditions in which a child can thrive. You will also learn how to prevent and manage childhood illnesses, and how to create a safe environment. Understanding these key factors will enable you to help and support those in your care.

Topic areas

In this unit you will learn about:

1. Pre-conception health and reproduction
2. Antenatal care and preparation for birth
3. Postnatal checks, postnatal care and the conditions for development
4. Childhood illnesses and a child-safe environment

Working as a health or childcare professional needs an understanding of the care needs for children of all ages, starting right from the pre-conception stage. It's important to understand the key factors that impact on becoming pregnant, having a healthy pregnancy and creating a safe and healthy environment for the baby when it is born, so that you can help and support those in your care.

How will I be assessed?

You will take an exam covering the four topic areas of this unit:

Refer to the tables in the qualification specification to find out more about the aims for each topic area. The first column sets out the teaching content. In the exam, a direct question may be asked about any of this content. The second column shows the breadth and depth of teaching needed and indicates the range of knowledge and understanding that may be assessed in the exam.

Knowledge and understanding

The exam will test your knowledge and understanding.

- You will need to *understand* all of the content unless the breadth and depth column identifies it as knowledge only.
- Any content that you should *know* only will start with the word 'know' in the breadth and depth column.

Topic area 1 Pre-conception health and reproduction

Getting started

Think of the important factors that might impact on a woman's health before she conceives. In pairs, compare and discuss your lists. If your partner has a suggestion you have overlooked, add it to your own list for future reference.

Before deciding to have children, a couple will want to be sure that they are ready. Considering their pre-conception health has an important part to play. To ensure that they do not conceive before they are ready, and to know what to expect when they do try to conceive, couples also need a good understanding of reproduction and contraception.

1.1 Factors affecting pre-conception health for women and men

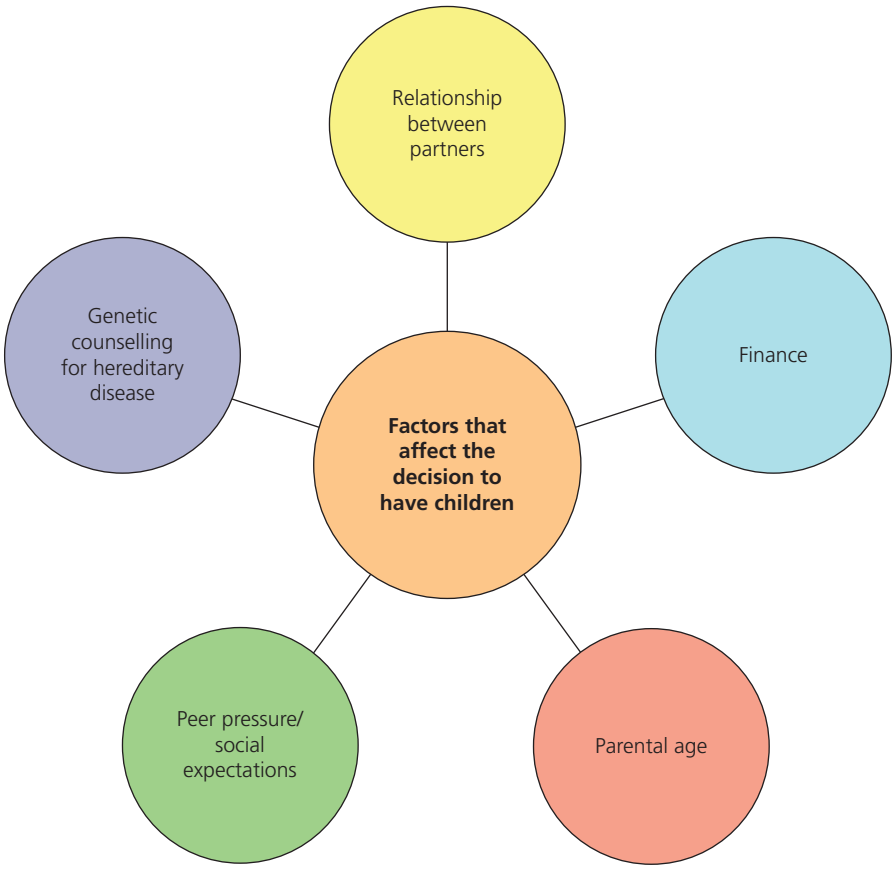


Figure 1.1 Factors that affect pre-conception health for women and men. Why do you think it is important for men and women to be aware of these?

Every woman who could get pregnant is advised to think about her health even if she isn't currently planning a pregnancy. There are many reasons for this:

- Health can impact on levels of **fertility**. This is the case for both female and male fertility.
- Health can impact on risks to the pregnant mother and the baby.
- Around 50 per cent of pregnancies are not planned. Unplanned pregnancies are at greater risk of preterm birth and low birthweight babies.
- Around 1 in 8 babies are born too early.

Before trying to conceive a baby, women and men can take action to help prevent fertility problems. Women can also prevent some later problems by taking action on health issues and risks in advance of pregnancy.

Key term

Fertility Being able to conceive children.

Research

Using the internet, research:

- the definition of 'primary infertility'
- the definition of 'secondary infertility'
- how many couples in the UK experience fertility difficulties.

Weight

Being a healthy weight helps to safeguard both a mother and her baby.

- In women, being overweight or obese can affect ovulation, which can in turn affect fertility and make it harder to conceive. It can also make fertility treatment less likely to work.
- However, being underweight can affect periods and ovulation, which can both affect fertility and make it harder to conceive.

For men, eating a healthy, balanced diet and maintaining a healthy weight is essential to keep sperm in good condition.

- Being overweight may affect the quality and quantity of sperm.
- Being underweight can also reduce a man's sperm quality and therefore his fertility.

Smoking

Smoking can make conception more difficult. A woman's fertility can be affected, and men who smoke may have a lower sperm count than non-smokers. They may also produce a higher proportion of abnormal sperm.

Infertility rates in both male and female smokers are about twice the rate of infertility found in non-smokers. The risk for fertility problems increases with the number of cigarettes smoked each day.

Key term

Infertility Not being able to conceive children after 12 months (or more) of regular unprotected sex.

Drinking alcohol

Drinking excessive amounts of alcohol can cause men to have lower sperm counts, and it can also affect the quality of sperm.

There is also a direct link between alcohol and fertility in women. Although research is ongoing into exactly why this is, many studies have shown that even drinking lightly can have an effect.

There has also been much debate over how much alcohol is safe for a mother to drink during pregnancy. But from research it is clear that the more a woman drinks, the higher the risk to her baby. The Chief Medical Officers (CMO) for the UK recommend that if a woman is pregnant, or planning to become pregnant, the safest approach is not to drink alcohol at all.

Figure 1.2 It is recommended that women should not drink alcohol during pregnancy

Taking recreational drugs

Recreational drug use can affect fertility in both men and women. If taken over a long period of time, recreational drugs can cause permanent problems with the reproductive system and infertility. Many recreational drugs can cause these issues, including:

- cannabis
- anabolic steroids
- ecstasy
- cocaine
- heroin.

The specific effects of recreational drugs differ, but sperm quality and quantity can be damaged in men, and hormonal production, ovulation and menstrual cycles may become erratic in women.

Very serious damage can be caused to an unborn child by smoking (including passive smoking), drinking alcohol and using recreational drugs in pregnancy. It is extremely important to protect a foetus from these factors throughout its development in the womb.

Parental age

The age of the couple can affect the likelihood of conception.

Age of the mother

As a woman ages, her ability to conceive and the quality of her eggs begin to decline. This decline becomes more rapid after the age of 35.

The National Health Service (NHS) reports that around one-third of couples in which the woman is over 35 have fertility problems. This rises to two-thirds when the woman is over 40. When a woman stops having a reproductive cycle (known as menopause), she will no longer be able to get pregnant.

In recent years, figures have shown more mothers are waiting to have their first child until the ages of between 35 and 45 years. This might be because women are settling down or getting married later in life than earlier generations, or they may be waiting until they are financially secure. They might have been building a career, gaining qualifications and/or training for work.

Figure 1.3 The age of the couple can affect the likelihood of conception

Age of the father

Men produce sperm all their adult life, including into old age. As long as they are physically capable of sexual intercourse, men can father children.

Test your knowledge

1 List all the factors that can contribute to fertility problems in women.

Parental age can increase the chances of a baby being born prematurely. It has also been linked to increased chances of a baby being born with certain neurological conditions.

1.2 Other factors affecting the pre-conception health for women

Folic acid

Taking folic acid during pregnancy can help prevent birth defects known as neural tube defects. This includes spina bifida, a condition where a baby's spine and spinal cord do not develop properly.

Women who could become pregnant or who are planning a pregnancy are advised to take 400 micrograms (mcg) of folic acid per day as a supplement before conception and until the 12th week of pregnancy. They should also eat folate-rich foods such as green vegetables, brown rice and fortified breakfast cereals, to consume a combined total of 6000 mcg of folate a day from folate-rich foods and a supplement.

Test your knowledge

1 Write down the reasons why women should take a folic acid supplement before conception and up to week 12 of their pregnancy.

Up-to-date immunisations

Keeping immunisations up to date will contribute to keeping a woman healthy both before and during pregnancy. This in turn benefits the baby.

1.3 Types of contraception methods and their advantages and disadvantages

There are many factors to consider for any couple when it comes to choosing an appropriate method of contraception. There are a range of options available that will suit a couple's preferences and needs.

Barrier methods

The term **barrier method** means that a device is used to prevent semen (containing sperm) from passing through the cervix and coming into contact with the egg, so that this prevents conception. Barrier prevention methods are:

- male and female condoms
- diaphragm or cap.

Key term

Barrier method A method of contraception in which a device or preparation prevents sperm from reaching an egg.

Male and female condoms

A male condom is a sheath made from latex. Polyurethane condoms are also available for those with a latex sensitivity or allergy. It is put onto the erect penis before it comes into contact with the vagina, which does mean interrupting sex in order to put one on.

A condom is 98 per cent effective if used correctly, and it also helps to protect against many sexually transmitted infections (STIs). If used incorrectly, however, a condom can come off or split open, making it ineffective.

Condoms are widely available from chemists, supermarkets, pubs, clubs and garages. They are also provided free by family planning clinics. They must be discarded after one use. An advantage of condoms is that they allow the man to take responsibility for contraception.

A female condom is a sheath made from polyurethane. It is put inside the vagina before it comes into contact with the penis, again meaning that sex is interrupted in order to put one in.

It is 95 per cent effective if used correctly, and it also helps to protect against many STIs. A disadvantage is that it is possible for the condom to be pushed too far into the vagina.

Female condoms are widely available in chemists and supermarkets, but they are more expensive than male condoms. They are often free from family planning clinics.

Some contraceptive methods are not compatible with use immediately after giving birth or when breastfeeding, but male and female condoms can be used at any time following a birth.

Figure 1.4 Condoms are barrier prevention methods

Diaphragm or cap

This is a dome-shaped piece of latex or silicone that covers the cervix. It is inserted into the vagina before sex, and must be used with spermicidal gel or cream, which will kill sperm. It can be inserted a few hours in advance, so it need not interrupt the enjoyment of sex. It is reusable, so must be removed and washed after intercourse.

The cap is 92 per cent effective if used correctly, and helps to protect against some STIs. A disadvantage is diaphragms and caps can be difficult to use, and they can cause cystitis.

If a woman has had a baby, these methods can be used again from around six weeks after giving birth. If a woman used a diaphragm or cap before becoming pregnant, she will need to see a doctor or nurse at a contraception clinic or her GP surgery after the birth, to make sure it still fits correctly. She may need a different size.

Hormonal methods

Hormonal methods of contraception are available free on the NHS, and are usually prescribed following a discussion with a GP.

Contraceptive pills

The contraceptive pill is a hormonal method of contraception, and comes in two forms:

- combined pill
- progestogen-only pill (sometimes referred to as the 'mini pill').

Women need a prescription to access the contraceptive pill, which is available for free on the NHS.

Combined pill

The combined pill is a tablet containing hormones (oestrogen and progestogen) that prevent ovulation and so reduce the likelihood of sperm reaching an egg and of the egg becoming implanted in the womb lining.

The woman takes the pill for 21 days, then has a break for seven days, in which time she will have a period. She then starts to take the pill for another 21 days, and so on.

The pill needs to be taken regularly at the same time of day. It is 99 per cent effective if used correctly, but a woman can still become pregnant if she forgets to take it, vomits after taking it or has severe diarrhoea.

While it can help women with heavy/painful periods and may help to protect against cancer of the womb, ovaries and colon, the combined pill can also cause side effects such as weight gain, headaches, mood swings or depression, raised blood pressure and, uncommonly, blood clots. Using this method does not interrupt sex.

If a woman is breastfeeding, has certain health conditions or is at risk of blood clots, they are generally advised not to take the combined contraceptive pill until at least six weeks after birth. If these factors do not apply, it is usually fine to take the combined pill from three weeks after giving birth.

Progestogen-only pill

This pill contains the progestogen hormone only. It is taken every day, and this needs to be done within a specified three-hour period.

This kind of pill works by causing the mucus in the cervix to thicken so that sperm cannot come into contact with an egg. It also thins the womb lining, stopping a fertilised egg from becoming implanted. (Some women actually stop ovulating altogether when taking this pill.)

Key term

Hormonal method A method of contraception in which hormones prevent eggs from being released from the ovaries, thicken cervical mucus to prevent sperm from entering the uterus, and thin the lining of the uterus to prevent implantation.

This pill is 99 per cent effective if used correctly, but a woman can still become pregnant if she forgets to take it, vomits after taking it, has severe diarrhoea or takes certain medication. Women who cannot take oestrogen may be able to take this pill.

Side effects can include spot-prone skin and tender breasts, and periods may be irregular. Using this method does not interrupt sex. This method can be used immediately after giving birth.

Figure 1.5 The contraceptive pill is a hormonal method of contraception

Contraceptive injection

A woman receives an injection every few weeks – the most common type is given every 12 weeks by a health professional. This might be a suitable choice for women who find it difficult to take a tablet at the same time each day.

This method works by causing the mucus in the cervix to thicken so that sperm cannot come into contact with an egg. It also thins the womb lining, stopping a fertilised egg from becoming implanted. (Some women actually stop ovulating altogether.) It is 99 per cent effective if used correctly, and can protect against some cancers and infections.

Side effects can include headaches, tender breasts, weight gain and mood swings, and there may be irregular periods.

After stopping the injections, it can take up to a year to get fertility levels back to normal, so this is not a good choice for those planning a pregnancy in the near future. Using this method does not interrupt sex. This method can be used immediately after giving birth.

Contraceptive implant

A health professional will insert this small flexible tube into the skin of a woman's upper arm. It releases the progestogen hormone into the body to stop the ovaries from releasing an egg and thickens the mucus in the cervix, preventing sperm from reaching an egg. It also makes the womb less likely to accept a fertilised egg.

The implant is 99 per cent effective if used correctly. It is removed after three years, therefore the couple do not need to think about contraception during this time. Some medicines may make it ineffective, however.

Possible side effects include swelling, tenderness or bruising after it is inserted, and periods may change to become lighter, or heavier and longer. It does not protect against STIs. This method can be used immediately after giving birth.

Intrauterine device/system

An intrauterine device or system (IUD or IUS), also referred to as the coil, is a small, T-shaped plastic device that is inserted into the uterus by a doctor or nurse. It releases the progestogen hormone into the womb, which thickens the mucus in the cervix, preventing sperm from reaching an egg. It also thins the womb lining so that a fertilised egg is less likely to be implanted. (Some women actually stop ovulating altogether.)

Figure 1.6 An IUD or IUS is a device that sits inside the uterus

This contraception is 99 per cent effective if used correctly for five years or three years, depending on the type, therefore the couple do not need to think about contraception during this time.

It may make periods lighter, shorter or stop altogether, so it can help women who have heavy or painful periods. It can also be used by women who cannot take the combined pill.

Possible side effects include mood swings, skin problems, breast tenderness and getting an infection after it is inserted. Insertion can also be uncomfortable. It does not protect against STIs.

This method can be used immediately after giving birth. However, if an IUD or IUS is not inserted within 48 hours of the birth, women will usually be advised to wait until four weeks after the birth.

Also available is a copper IUD, which is also 99 per cent effective. The copper, rather than a hormone, stops the sperm moving through the womb towards the egg. In the first six months of use, it is common to have spotting and light bleeding between periods, and heavier or prolonged bleeding and pain.

Contraceptive patch

This patch is worn on the skin and introduces hormones to the body (oestrogen and progestogen).

- It works by causing the mucus in the cervix to thicken so that sperm cannot come into contact with an egg.
- It also thins the womb lining, stopping a fertilised egg from becoming implanted.

It is 99 per cent effective if used correctly and may protect against some cancers and infections. It is still effective if the woman vomits or has severe diarrhoea (unlike the pill).

Side effects can include headaches and raised blood pressure, and, uncommonly, blood clots. The patch must be changed each week for three weeks, then there is a week off.

Using this method does not interrupt sex.

Emergency contraceptive pill

This is designed to prevent pregnancy after a woman has had unprotected sex, or if she thinks that the method of conception has failed – a condom may have split, for instance. The sooner a woman takes an emergency contraceptive pill after unprotected sex, the more effective it will be. But it must be taken within either 72 hours (three days) or 120 hours (five days).

The emergency pill can be bought from a pharmacy (by those aged 16 and over) and is also available free of charge from some GP surgeries, family planning and sexual health clinics, NHS walk-in centres and hospitals.

There are two types of emergency contraceptive pill.

- Levonelle: This must be taken within 72 hours (3 days) of unprotected sex. It is more effective if taken as soon as possible after unprotected sex. It is thought to prevent up to 95 per cent of pregnancies if taken within 24 hours, up to 85 per cent if taken within 25–48 hours and up to 58 per cent if taken within 49–72 hours.

  Levonelle is safe to take when breastfeeding. Small amounts of the pill's hormones may pass into the breast milk, but it is not thought to be harmful to babies.
- ellaOne: This must be taken within five days (120 hours) of unprotected sex – allowing an extra 48 hours over Levonelle. ellaOne is thought to remain up to 98 per cent effective throughout the five-day window. It is not recommended for use more than once in one menstrual cycle.

  The safety of this pill during breastfeeding is not yet known. The manufacturer recommends that women do not breastfeed for one week after taking the pill.

Natural family planning

In this process, a woman records the symptoms in her body that indicate when she is fertile and able to conceive. This includes:

- the temperature method: monitoring her temperature
- the cervical mucus method: monitoring bodily secretions
- the calendar method: monitoring the dates in her menstrual cycle.

A woman may monitor all of these and might use a diary or app to help her track observations. This method requires rigorous tracking and monitoring to be accurate.

A woman will be fertile and able to conceive for a period of around eight days in each month. On other days, she will be able to have sex without conceiving.

On the fertile days, a condom can be used if the couple wish to have sex, or they can abstain (not have sex). This means that the method is compatible with all cultures and faiths (because some do not permit the use of contraception).

This form of contraception is up to 98 per cent effective if used correctly, but it can take time to learn to identify the fertile days, and it does not offer protection against STIs. There are no side effects or costs, and it can be used when breastfeeding.

Figure 1.7 Using a calendar to track symptoms

Activity

Imagine that you have been asked to make a poster that informs young adults of the important factors to consider when choosing a method of contraception (e.g. effectiveness and protection against STIs).

- Decide what factors the poster will incorporate.
- Decide what information will be given about each factor.
- Design the poster.

Test your knowledge

1 Outline the choices available for couples who want to use barrier methods of contraception.
2 What is the main difference between the functions of the contraceptive pill and the emergency contraceptive pill?

1.4 The structure and function of the reproductive systems

To understand how reproduction happens, you first need to understand the structure and function of the male and female reproductive systems.

The female reproductive system

The female reproductive system includes the:

- ovaries
- Fallopian tubes
- uterus/womb
- cervix
- vagina
- the menstrual cycle.

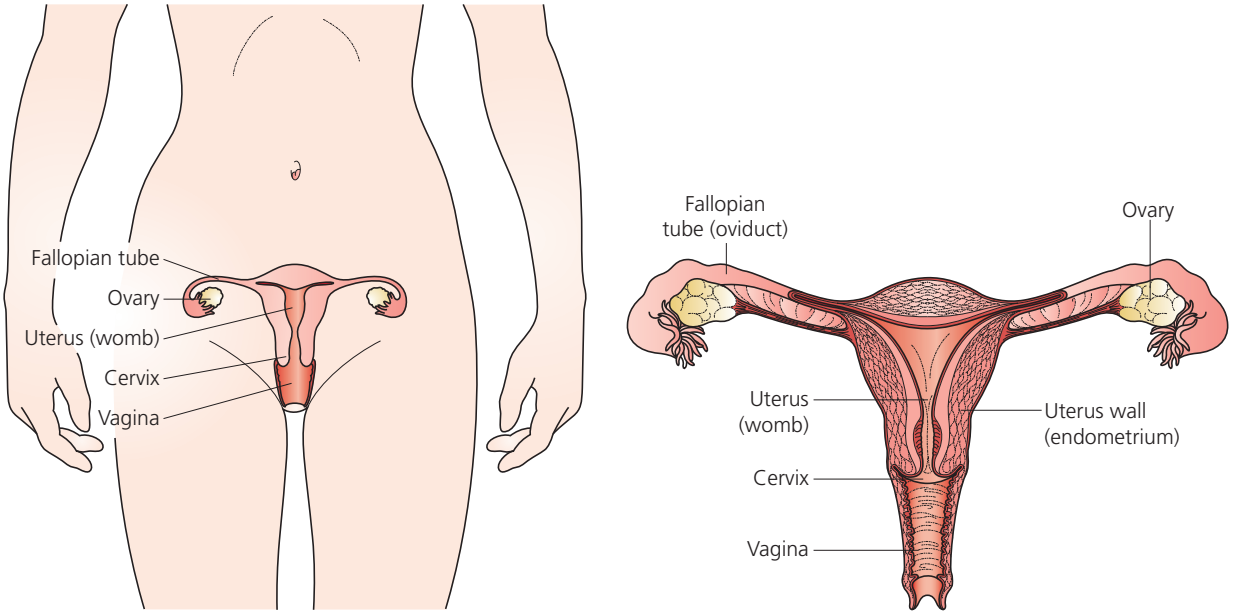


Figure 1.8 Female reproductive system

Ovaries

A woman's two ovaries control the production of the hormones oestrogen and progesterone, which govern the development of the female body and the menstrual cycle. Inside the ovaries are undeveloped egg cells called ova (one cell is called an ovum).

Fallopian tubes

These tubes connect the ovaries to the uterus and are lined by minute hairs called cilia. Each month, one of the ovaries releases an egg into a tube, and the hairs help the egg to reach the uterus by wafting it along the tube.

Uterus/womb

The uterus (also called the womb) is the hollow, pear-shaped muscular bag where the foetus grows and develops. The lining of the uterus is soft, and it is here that an egg will become implanted.

Cervix

This is a very strong ring of muscles between the uterus and vagina, and it is usually closed. It keeps the foetus securely in place in the womb throughout pregnancy. The cervix dilates (opens) during labour to allow the baby to be born.

Vagina

This muscular tube leads downwards, connecting the cervix to the outside of the body. It is here that the man's penis enters the body during sex. Folds of skin called labia meet at the entrance of the vagina, forming the vulva. Urine passes through the urethra, which opens into the vulva but is separate from the vagina.

The menstrual cycle

This is the cycle in which women have their periods and are fertile (can conceive). Girls begin having periods when they become sexually mature (the average age for periods starting is 12) and they continue until menopause (the average age for this is 51).

- Women experience periods differently, but menstruation (a period) generally lasts three to seven days, with an average of five days.
- A period signals the start of the menstrual cycle, when blood flows from the uterus and leaves the body via the vagina.
- A new egg then develops in one of the ovaries. About 14 days after the first day of menstruation, the egg is released from the ovary and travels along the Fallopian tube to the uterus.
- The lining of the uterus will be thickened and ready for an egg to be fertilised by sperm. If this occurs, a foetus will start to grow.
- If fertilisation does not occur by the end of the cycle, the blood, uterus lining and egg are flushed out via another period and the cycle begins again.

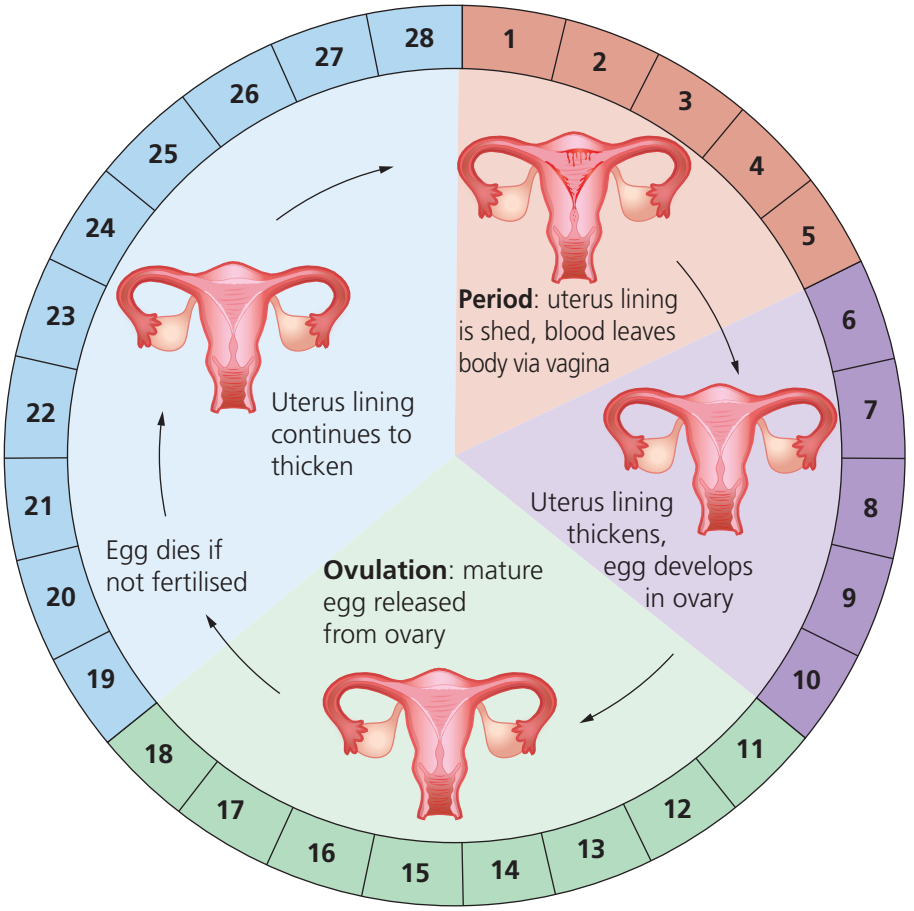


Figure 1.9 The menstrual cycle diagram

Male reproductive system

The male reproductive system includes the:

- testes
- sperm duct system/epididymis
- urethra
- penis
  - vas deferens
  - seminal vesicle.

Testes

The scrotum is a bag of skin that contains two testes. These make millions of sperm – the male sex cells. They also produce hormones including testosterone, which governs the development of the male body.

Sperm duct system/epididymis

The sperm duct system consists of the epididymis, which contains the sperm, and the vas deferens, which are the sperm ducts (tubes) that sperm pass through.

Glands produce nutrient-rich fluid – called semen – which mixes with the sperm and carries it.

Urethra

This tube inside the penis carries both urine and semen, but not both at the same time. A ring of muscle controls this.

Penis

The penis consists of the shaft (the main part that goes inside the vagina) and the glans (the tip), which has a small opening. Through this opening, sperm and urine leave the body (separately) via the urethra.

- Vas deferens: This is a muscular tube that extends upwards from the testicles, transferring sperm that contains semen to the urethra.
- Seminal vesicles: The seminal vesicles are a pair of glands found in the male pelvis. The glands produce many of the ingredients of semen, providing around 70 per cent of the total volume of semen. During ejaculation, the smooth muscle layer of the seminal vesicles contracts, releasing the seminal vesicle fluid.

1.5 How reproduction takes place

There is a point in the menstrual cycle which either ends with conception and reproduction (a baby being born), or with the woman's body flushing out an unfertilised egg.

Ovulation

This occurs when an egg is released from one of the ovaries and travels along the Fallopian tube, around day 14 of the menstrual cycle. It is moved along by the cilia, and a jelly-like coating stops it from sticking to the sides of the tubes.

Conception/fertilisation

This occurs when a sperm penetrates an egg following ejaculation of sperm from the penis into the vagina. The sperm passes through the cervix and uterus, meets the egg in the Fallopian tube and loses its tail, which is no longer needed.

The egg and sperm then fuse as one cell. The fertilised egg continues along the Fallopian tube. Between four and five days later, there is a mass of around 16 cells. This forms a ball of tissue (the blastocyst).

Implantation

After around another seven days, the fertilised egg arrives in the uterus and implants itself in the enriched lining. Once it is attached firmly, conception has been achieved and the egg is called an embryo.

Development of the embryo and foetus

The outer cells of the embryo link with the mother's blood supply, forming the baby's support system – the umbilical cord, amnion and placenta (the baby will receive nutrients through the placenta from the mother).

Amniotic fluid

The amniotic fluid is the protective liquid which is contained in an amniotic sac. This provides a cushion for the foetus, helping to keep it safe from bumps and injury. It also contains nutrients, hormones and antibodies which are important for the baby.

At first, the fluid consists of water from the mother's body. As the foetus grows, it is also made up of the baby's urine.

Umbilical cord

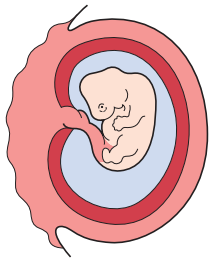
The umbilical cord is a tube that connects the foetus to the mother during pregnancy. It has a vein that takes food and oxygen from the placenta to the baby, and two arteries that carry waste from the baby to the placenta.

Placenta

The placenta is an organ that develops in the mother's uterus during pregnancy. It is attached to the wall of the uterus. The baby's umbilical cord arises from the placenta. The placenta supplies oxygen and nutrients to the baby and removes waste products from the baby's blood.

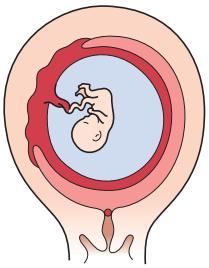
How the embryo becomes a foetus

At the age of eight weeks, the embryo becomes a foetus. At this point, the foetus is generally about 1 inch long and weighs around 1/30 of an ounce. The development of the embryo is shown in Figure 1.10 – study this carefully.

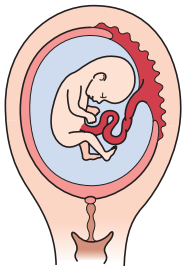


Embryo 6–7 weeks

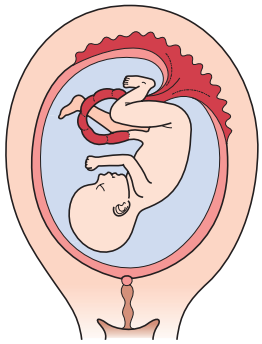
Figure 1.10 Development of the embryo



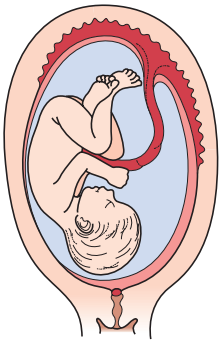
Foetus 8–9 weeks



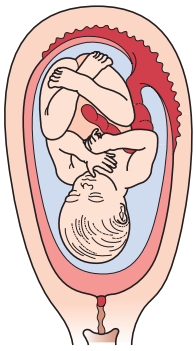
Foetus 10–14 weeks



Foetus 15–22 weeks



Foetus 23–30 weeks



Foetus 31–40 weeks

Figure 1.11 Development of the foetus

The development of the foetus is shown in Figure 1.11 – study this carefully as well.

Multiple pregnancies

A multiple pregnancy is when more than one baby grows in the uterus. There are different types of multiple pregnancies:

- Identical twins: one fertilised egg divides into two cells.
- Non-identical/fraternal twins: two separate eggs are released and fertilised by two different sperm.

Activity

Discuss the following with a partner:

- At what age do you think the foetus looks human, and is fully formed in miniature?
- At what age do you think the foetus can be felt by the pregnant mother?
- At what age do you think the baby could realistically be expected to survive if born early? (This is known as the age at which a baby is 'legally viable'.)

1.6 The signs and symptoms of pregnancy

There are some common signs and symptoms of pregnancy, but not all women will have all of the symptoms. Women also experience signs and symptoms at different rates – this means that some women are further along in the pregnancy than others when they find out that they are pregnant.

Figure 1.12 Women experience different signs and symptoms of pregnancy

Breast changes

The breasts may feel similar to just before a period, becoming larger and feeling tender. Some women may feel tingling and veins may be more visible. The nipples may appear darker and stand out.

Missed period

The first sign of pregnancy is often a missed period, or a very light period. This is generally the most reliable sign for women who usually have a regular monthly menstrual cycle.

Nausea

Feeling sick and nauseous, and/or vomiting when pregnant, is often called 'morning sickness', although it can occur at any time of day. This symptom generally begins around six weeks after a pregnant woman's last period.

Passing urine frequently

Pregnant women often need to pass urine more frequently. There may also be constipation and an increase of vaginal discharge without any soreness or irritation.

Tiredness

Women may feel tired or exhausted, particularly during the first 12 weeks of pregnancy, because of hormonal changes in the body. These hormonal changes can also cause a woman to feel emotional and upset at this time.

Practice question

Daniel and Melanie are considering their contraceptive options.

State the different types of barrier methods available to them. [5 marks]

Test your knowledge

1 What is the function of a woman's ovaries in reproduction?
2 What happens at the implantation stage of conception?

Promoting positive behaviour

This is by far the best way to limit inappropriate behaviour. When adults notice and praise specific positive behaviour, a child tends to feel proud of themselves, and they enjoy the approval they receive. This encourages them to repeat the socially acceptable behaviour, until it becomes an ingrained, normal part of what they do.

Verbal praise is the most effective form of praise, and the easiest to give.

If there is a behaviour goal in place for a child, a reward chart can also be an effective visual reward system – see the case study here for an example.

Case study

Three-year-old Darius has been having tantrums at bedtime most nights for the past three weeks. His auntie, whom he lives with, has made a sticker chart to try and help Darius settle down for sleep appropriately.

She has shown him the chart, which features a picture of a space rocket, one of Darius's favourite things. Each time he goes to bed without a fuss, Darius will be given a sticker to put on the rocket. They talk about how wonderful the rocket will look when all of the stickers have been collected.

Within a few days, Darius has received three stickers. By the second week, he receives a sticker for five days out of seven.

1. Why do you think Darius's behaviour is changing?
2. What other sorts of behaviour do you think might be improved with the use of a sticker chart?
3. Can you suggest other ways in which positive behaviour could be promoted in this scenario?

Practice question

Couple Daniel and Melanie have brought their new baby home from the hospital. The midwife has advised them to establish a routine.

State the benefits of a routine for bath time and feeding. [2 marks]

Topic area 4 Childhood illnesses and a child-safe environment

Getting started

Think back to when you were young. Working with a partner, discuss a childhood illness that you had, such as chickenpox. Talk about how you felt physically (e.g. itchy and tired) and emotionally (e.g. upset to miss out on activities with friends). Now swap roles and listen to your partner.

CAMBRIDGE NATIONAL

LEVEL 1/LEVEL 2

CHILD DEVELOPMENT

SECOND EDITION

J809

Trust highly experienced author, Miranda Walker, to guide you through the refreshed Cambridge National in Child Development (for examination from 2023 onwards). This OCR-endorsed resource will strengthen your understanding of the content and boost the skills required to tackle the NEA with confidence.

This Student Textbook is:

- **Comprehensive** – gain in-depth knowledge of the examined unit with clear explanations of every concept and topic, plus improve your understanding of the non-examined units with easy-to-follow chapters.
- **Accessible, reliable and trusted** – structured to match the specification and provide you with the information you need to build knowledge, understanding and skills.
- **Designed to support you** – boost your confidence when tackling the internal and external assessment with plenty of activities to test and consolidate knowledge.
- **Your go-to guide** – the expert author has carefully designed tasks and activities to build your skillset in order to aid progression and questions to assess understandings.

ABOUT THE AUTHOR

Miranda Walker is an early years specialist and has worked as a practitioner, inspector and teacher trainer. She is an experienced author of print and digital resources for Child Development.

HODDER EDUCATION

t: 01235 827827

e: education@hachette.co.uk

w: hoddereducation.co.uk

ISBN 978-1-3983-5120-2

FSC