Third Edition

Paediatric Clinical Examination

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Forewords by
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pocket tutor



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chapter 1

History taking

History taking in paediatrics differs in many ways from history taking in adult medicine. Extra areas to ask about include perinatal history, immunisations and developmental milestones. As babies and young children cannot speak for themselves, history taking becomes a three-way process involving the child, the healthcare staff, and the parents or carers. Well-developed communication skills are a vital attribute for a paediatrician.

1.1 Clinical scenario

A baby in respiratory distress

A father brings a 9-month-old girl into the paediatric emergency department because she has a runny nose, has suddenly started coughing and is short of breath. These are all signs of a respiratory infection (see **Chapter 6**).

Differential diagnosis

The differential diagnosis includes:

- Bronchiolitis
- Virus-induced wheeze
- Pneumonia
- Pneumonitis
- Pertussis

Further information

The father says that his daughter has had a mild cold for 3 days but no fever. She had been well and playing happily until about 2 hours ago when he came back into the living room after making a cup of tea and saw she had suddenly become very short of breath.

The baby is fully vaccinated and developing normally. She can pick up small objects in a pincer grip and enjoys putting things in her mouth.

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When the father is asked what she had been playing with, he says that she was playing with her brother's small building bricks.

Conclusion

A good history prompts reconsideration of prior assumptions. The sudden onset of respiratory distress changes the differential diagnosis from respiratory infection to:

- Pneumothorax
- Inhaled foreign body

Suspicion of the latter yields results in this case: a chest radiograph shows a building brick in the right main bronchus.

1.2 Preparation

Ensure you have as much background information as possible, not just the notes for the most recent clerking. Relevant information can be obtained from multiple sources, not just the medical notes. For example, if a child is known to have a history of family neglect, information may be found on the 'Child Protection Register' and with social services. Nurseries, schools, midwives, health visitors and GPs are other sources.

Triage notes and referral letters contain, e.g., a brief summary of the presenting problem, physiological observations and some social history. However, make sure you approach each case freshly, so that any documented history does not unduly influence how you collect information in the current clinical encounter. A previous history of panic attacks could be a useful clue or a red herring, when presented with an adolescent with palpitations. Is it worsening anxiety? or is it hyperthyroidism declaring itself? An illness may have evolved since the most recent correspondence.

Setting up

Pay attention to the surroundings:

- Close the door or curtain to maintain confidentiality
- Avoid obstacles, e.g. a desk, between you and the family
- Ensure that everyone including the child has a place to sit

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- Aim to be on a similar eye level to the child
- Ensure distractions are available for younger children, e.g. toys and videos (see **Chapter 3**)

1.3 Communication

The complex dynamic of communication in paediatrics includes:

- A direct history from the patient
- A vicarious history from the accompanying adult
- A contextual history from a referring GP or school
- A different approach with patients of different ages
- A repeated history in the absence of the accompanying adult

Who am I talking to?

Most paediatric medicine involves children aged <5 years, so the history is usually taken from a parent. However, this approach is open to a number of challenges. For example, some older children have a good appreciation of their own health (sometimes very different from the parent's ideas).

Establish who has accompanied the child to hospital. Adults accompanying a child may include:

- Parents
- Grandparents, aunts and uncles
- Older siblings
- Nannies or babysitters
- Teachers
- Foster-parents
- Social workers
- Police, firefighters or paramedics
- Neighbours
- Interpreters
- Religious/community leaders

Clinical insight

Instead of asking the accompanying adult who they are, ask the child who they have brought to hospital with them. This keeps the child at the centre of the consultation. Confirm with the adult what they would like to be called. Many parents prefer to be addressed by their name, rather than 'Mum' or 'Dad'.

Many family units do not fit with the traditional family model. Be sensitive to the fact that a child may be being brought up by a same-sex couple.

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Establishing who is accompanying the child is more than simple courtesy. Throughout this book, the word 'parent' is often used to mean 'accompanying adult'. However, bear in mind that, regardless of who accompanies the child, only a parent or legal guardian can provide legal consent for procedures, operations and intimate examinations.

Language

Check whether the individuals involved in the consultation speak the same language as you. Interpreting is a difficult skill. Be aware that family members acting as interpreters may have conflicting views or may try to help by directly answering questions that are intended for somebody else. An impartial professional interpreter (in person or on the phone) is the gold standard. 'In your own words' is a useful phrase to use.

Modify your language according to the age of the child. Do not patronise an adolescent or confuse a child with jargon.

Be aware that young children may not have a precise or accurate vocabulary. A 4-year-old complaining of pain in the 'neck' is just as likely to be describing pain in the throat. Young children may complain of 'headache' or 'tummy pain' as a way of articulating a general feeling of illness.

Clinical insight

A technique that allows you to spend a suitably long time observing a baby while maintaining conversation with the parents is to address your questions directly to the baby. This often feels silly, but the parents will answer.

Active observation

Remember to look at the child while you are taking the history. For example, if a child with 'awful tummy pain' is running around, the pain is at least sporadic and may be constipation rather than appendicitis.

Approaching a shy young child can make them cry, which makes the examination far more challenging. There are techniques to deal with this (see **Chapters 2** and **3**). Use the window of opportunity afforded by history taking to look from a distance for clinical signs such as lethargy, respiratory distress and cyanosis.

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1.4 Components of the paediatric history

The components of a paediatric history are:

- Name and date of birth
- Name of accompanying adult and relationship
- Age (adjusted for prematurity if necessary)
- Weight and height (known as 'auxology')
- Presenting complaint
- History of presenting complaint
- Past medical, drug and allergy history
- Antenatal, birth and developmental history
- Immunisation history
- Family and social history
- Systems review

Presenting complaint

The presenting complaint is a symptom or sign that has caused the parents or child to seek medical attention. This may be something:

1. Easily observed (e.g. respiratory distress)
2. Intermittent (e.g. a fever)
3. Harder to spot at first glance (e.g. reduced feeding)
4. Very nebulous (e.g. 'just not being himself')

Each of the four examples above could be a presentation of bronchiolitis but different parents will be the most concerned about different aspects of the condition based on their experience, culture and support network.

Start with an open question such as, 'What is the problem?' or 'How can I help?'

Clinical insight

Parents are not doctors: they may use medical terms inaccurately. Find out what they mean by 'wheeze' or 'dehydrated', to avoid jumping to the wrong conclusion and management plan.

History of the presenting complaint

Use the **SOCRATES** mnemonic to structure the history:

- **S**ite – where is the symptom precisely? Is it in a consistent anatomical location?
- **O**nset – does anything bring the symptom on? Is it the same time of day or following an activity?

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- **C**haracter – how does it manifest or feel?
- **R**adiation – does the symptom move or create problems elsewhere?
- **A**ssociated symptoms – do other symptoms manifest at the same time?
- **T**ime – how has the symptom changed over time? Does it come and go? How long does it last?
- **E**xacerbating factors – does anything cause it to worsen/improve?
- **S**everity – can it be rated on a scale or quantified? How worrying is it for the child or parent?

The **SOCRATES** mnemonic allows a differential diagnosis to be whittled down. For example, vomiting in an 8-week-old baby, with an **O**nset of coughing, over 2 days' **T**ime and variable **S**everity from a couple of teaspoons to a whole feed, is likely to be tussive vomiting in the context of bronchiolitis (see page 90) or pneumonia (see page 91). Vomiting **E**xacerbated by feeding, worsening over a few weeks' **T**ime and a **S**everity that is now projectile vomiting of whole feeds is more likely to be pyloric stenosis (see page 135).

Past medical history

Enquire about previous illnesses, hospital admissions and operations. Note whether the child was born prematurely (see page 20).

Drug and allergy history

This should cover:

- Medications and allergies
- previous medications
- over-the-counter medications and dietary supplements that the child is taking

Clarify the dose the child is taking: parents often quote the dose of syrups in millilitres rather than milligrams.

As some medications can be used for more than one indication, document why a child is taking a particular drug.

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Beta-blockers, for example, can be used in the treatment of hypertension, migraine or anxiety.

Clinical insight

Some medications taste unpleasant and are spat out or refused. Other medications such as inhalers are difficult to take. Always establish whether the child is actually compliant with the medication that they have been prescribed.

Paediatric extras

A paediatric history also includes:

- Antenatal history
- Birth history
- Developmental history
- Immunisation history

The level of detail required depends on the context. For example, it is vital to elicit a detailed perinatal history for a child who has a developmental problem but less important for an adolescent with asthma.

Antenatal history

The antenatal history should cover:

- Whether the pregnancy was planned or unplanned
- Whether the conception was natural or, e.g. involved in vitro fertilisation or donor eggs
- The results of antenatal ultrasound scans
- Drugs used by the mother and illnesses that occurred during pregnancy
- The mother's blood group

Antenatal complications can have repercussions on the developing fetus (see **Chapter 2**).

Birth history

Make a note of:

- The type of delivery – spontaneous, induced, instrumental or caesarean?
- The reasons for a caesarean delivery
- Complications surrounding the birth
- Apgar scores (see **Chapter 2**)
- Birthweight

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- Admissions to the neonatal intensive care unit
- Treatment that was required in the postnatal ward

Developmental history

Delayed milestones or regression should be recorded (see **Chapter 5**).

Immunisations

Most countries have a national schedule for immunisation, but these also vary on a local level. For example, the Bacille Calmette-Guérin (BCG) vaccine (against tuberculosis) is given at birth in some, but not all, areas of London based on local prevalence of tuberculosis. Some vaccines are offered on a more individualised basis – for example, in the UK, typhoid vaccine is only given to individuals who are travelling to designated at-risk countries.

Table 1.1 shows the vaccination schedule for children in the UK at the time of publication.

Age	Vaccine*
8 weeks	6-in-1, meningococcus B and rotavirus
12 weeks	6-in-1, pneumococcal and rotavirus
16 weeks	6-in-1 and meningococcus B
1 year	HiB/Men C, MMRV, pneumococcus and meningococcus B
18 months	6-in-1 and MMRV
3 years 4 months	4-in-1 and MMRV
2–9 years annually	Influenza
12 years (both boys and girls)	Human papillomavirus (cervical and oral cancers, genital warts)
14 years	3-in-1 and meningococcus ACWY

*__6-in-1__, diphtheria, tetanus, pertussis, *Haemophilus influenzae* B (HiB), hepatitis B and polio combined in one injection.
__4-in-1__, diphtheria, tetanus, pertussis and polio combined in one injection.
__3-in-1__, diphtheria, tetanus and polio.
__MMRV__, measles, mumps, rubella and Varicella Zoster combined in one injection.

Table 1.1 The UK vaccination schedule (2026). Always check national resources for updates

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Controversies You need to be able to have an informed discussion with children, parents and families about immunisations because there has been conflicting and misleading media coverage of their safety. This particularly relates to:

- A postulated link between the measles, mumps and rubella (MMR) vaccine and autism
- The contents of vaccines being toxic
- Vaccination when young 'overloading' the immune system

None of these claims has held up to scientific scrutiny. Countries which stopped using the combined MMR vaccine, such as Japan, have seen no change in incidence of autism.

Be aware that families may have opinions contrary to your own. Focus on establishing the child's vaccination status, and forming a differential diagnosis.

Family and social history

Children have two core social units: the family, and school or nursery. A good opening question is, 'Who lives at home?' Ask about school, nursery, childcare and relationships, including whether the child's parents are still in a relationship with each other.

Ask about major illnesses in the family and whether the mother has a history of recurrent miscarriages. Bear in mind some conditions that run in families may be adult-onset 'red herrings': explore what parents mean by, for example, 'diabetes' or 'heart disease'. Ask about consanguinity in the parents.

It often helps to draw a family tree, going back two generations. **Figure 1.1** shows the symbols that are used. A family tree enables you to trace a genetic illness to establish heritability, as well as to work out who is who in a complex social setting. Ask

Clinical insight

Adolescents may have a more complex social history than their parents realise. Ask about mental health, sex, relationships, bullying, drugs, alcohol and social media. This is best done with the parents out of the room and a chaperone present. Do not miss an ectopic pregnancy just because an adolescent denies being sexually active when her parents are present. (See the HEADS Assessment below)

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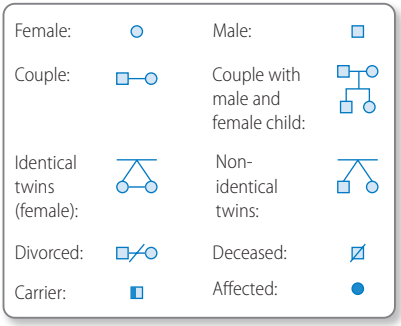

Figure 1.1 Symbols used when constructing a family tree.

whether other children in school or nursery have been ill, and how long the child has been attending. Children are exposed to multiple infections in the first few months at nursery.

Systems review

These questions allow you to ask about the function of organ systems that the parent believes are only tangentially related to the presenting problem. Significant clues can be found, such as constipation in hypothyroidism, or obstructive sleep apnoea in a hyperactive child. Ask about:

- Growth, feeding and diet (see **Chapter 4**)
- respiratory or cardiac problems (see **Chapters 6** and **7**)
- Bowel and bladder habit (see **Chapter 8**)
- Headaches, fits and 'funny turns' (see **Chapter 9**)
- exercise
- Fever and rashes (see **Chapter 12**)
- Concentration, sleep and social interaction (see **Chapter 13**)

If the child is of an appropriate age, ask about school and whether the symptoms are equally apparent in the classroom and at home.

Adolescent history taking

Adolescents require particular care in history-taking. They are of an age where their parents no longer know everything about them, and they may expose themselves to health risks, which

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they are unlikely to admit to in front of their parents. The HEADS Assessment provides a framework for taking a history of psychosocial factors which may be pertinent to the presenting problem. Take a HEADS History without the parent present, but in the company of a chaperone.

Clinical insight

If you wish to talk to the parent on their own, do so *before* talking to the adolescent on their own. If you perform a HEADS Assessment first and then speak to the parents alone, the child may become suspicious that you are telling their parents things they told you in confidence.

Home – Who lives at home? Do you have your own room? Do you live in one place or split your time between more than one place? Is your home and neighbourhood safe? – These questions are not very probing: they start to establish a rapport. But, they may also give an insight as to how supervised or independent an adolescent is, and whether their family environment is stable or chaotic.

Education/**E**mployment – Are you at school/college? How is your attendance/attainment? Are you bullied at school? Do you have a job? – These questions start simple, but move into areas that can have a significant impact on adolescent mental health, such as bullying, family expectations, and balancing work and educational commitments.

Eating – Are you eating regularly and healthily? Do you have concerns about your weight or body image? Do you worry about food? – These questions do not just only explore nutrition (which can impact mental and physical health) but also identify concerns about obesity, anorexia and bulimia (See **Chapter 13**).

Activities – What do you do for fun? Sports? Video games? What do you do with your friends? Are you part of a close friendship group? – Asking questions like this will give you an idea of how solitary or gregarious an adolescent is, how much exercise they get, but also whether they are exposed to risky environments or gangs.

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Drugs – Some people around your age try smoking, alcohol or drugs. Is this something you or your friends have experienced? When do you use them? How often? Where do you get your drugs from? How do you get the money? Would you like to cut down or stop? Many adolescents will experiment with drugs or alcohol, and the purpose is not to extort a 'confession' from them. Drug and alcohol use can impact sleep, attention and academic attainment. Older adolescents and adults can use drugs and alcohol to engage in coercive behaviours with young people (See **Chapter 15**).

Social media – Do you use 'Social Media'? Which platforms do you use? What do you use it for? Do you have any friends whom you only know online? Is there anything you do with your online friends that you do not do with your day-to-day friends? It is not sufficient just to have heard of different social media platforms. A working knowledge of how they operate and the various risks involved with each is essential to be able to work out if a child's usage puts them at risk. For example, platforms which delete messages as soon as they are viewed put a child more at risk of being bullied or threatened, and provide an opportunity to make secret arrangements, which parents will not see if they check their child's phone. Platforms which allow the sharing of photos or videos can be used for sexual exploitation (see page 336). Adolescents can believe that they are communicating with other children through such apps, but may be at risk of being groomed by adults.

Sex – Are you dating anyone at the moment? Are they a boy or a girl? Do your friends or family know? Are you confident in your own body? Some people of your age have started having sex, are you? What contraception are you using? How do you handle any pressure to do things you do not feel you are ready for? Adolescents can begin to explore sexual impulses at ages that are younger than many adults appreciate. They can also struggle with their sexuality or gender identity. Asking about consent versus coercion is essential, to rule out the possibility of sexual exploitation or abuse (see page 336). Relationships between adolescents of the same age are

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often less concerning than relationships where there is a significant age gap.

Self-harm and **S**uicide – Have you thought about hurting yourself or other people? Are you happy? Have you lost interest in things? This provides the opportunity to explore an adolescent's mental health, which is detailed further in **Chapter 13**.

Safety – Are you a thrill-seeker or cautious? Do you wear a seat belt in the car? Have you driven after drinking or taking drugs? Do you feel the need to protect yourself? The single biggest cause of death of adolescents worldwide is accidents and physical injury. These questions will help you to get an idea of whether the young person is at risk of coming to harm, either from their own behaviour or the behaviour of others around them. Many young people in violent neighbourhoods feel the need to carry a weapon or get involved with gangs for their own protection. This can put them at increased risk of physical injury.

After taking a HEADS Assessment, you should provide resources to the adolescent to help inform them about any risks you feel they are exposed to. This may include contraception advice, helplines or websites about drug use, and details of local youth workers who help people exposed to gang violence. Invite the child's parents back into the room. Do not discuss anything that you have found out with the parents, unless you have consent from the adolescent, or unless it is absolutely necessary to safeguard their child's safety.

Summary and questions

Summarise to the child and parents what they have just told you, only leaving out things you have agreed to keep confidential from the parent as part of a HEADS Assessment. This gives you a chance to go back over their concerns if they feel something has been missed.

Follow this summary by giving the opportunity to ask questions. People may not ask direct questions unless they are invited to.

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1.5 Red flags

'Red flag' symptoms or signs are suggestive of serious pathology and must be managed with advice from senior medical and nursing staff. **Table 1.2** contains a list of red flags symptoms that the history can uncover.

Children are not little adults. Symptoms that are red flags in adult medicine may not carry the same level of concern in paediatrics. For example, it is very unlikely that central chest pain is a myocardial infarction in a 5-year-old – gastric reflux is more likely. Similarly, an apparently innocuous symptom such as a limp, which may be of little concern in an adult, can be a sign of malignancy in a child.

Red flags from the examination are discussed in **Chapter 3.**

Red flag	Possible diagnosis
Headache waking child at night – Nocturnal vomiting	Brain tumour
Fracture in non-ambulant child	Non-accidental injury
Green vomit	Bowel obstruction
Fever in a child < 4 months old	Sepsis
Limp without a history of trauma	Sepsis and malignancy
Weight loss	Diabetes, malignancy and inflammatory bowel disease
Non-blanching rash	Sepsis, idiopathic thrombocytopenic purpura, haemolytic uraemic syndrome, leukaemia and haemophilia
Anuria	Renal failure
Irritable baby/acute behavioural change	Meningitis and encephalitis

Table 1.2 Red flags symptoms in the history

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Paediatric Clinical Examination

Practical, concise, and easy to carry, the **pocket tutor** series offers structured, on-the-go guidance for students and early-career clinicians, breaking down complex topics into clear and bite-sized sections to build confidence in everyday clinical practice. Now in its third edition, **pocket tutor Paediatric Clinical Examination** is an indispensable guide to the examination of children, combining clinical scenarios with step-by-step examination to strengthen both practical skills and clinical reasoning.

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