Warwick Medical School

MB ChB Phase II

Clinical History & Examination Sequences Set

Handbook

2018-19

Student Name: ____________________________________________
Acknowledgements

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Edited by

Professor Vinod Patel
Professorial Clinical Teaching Fellow
Clinical Skills and Diabetes
Warwick Medical School
There are as many ways of completing a history and examination sequences as there are books on the subject. You can then add on the many thousands of slight variations introduced by individual experienced clinicians. There are essentially no single standard sequences for clinical history or examination. For teaching purposes, we would advise students to use the following examination sequences where possible in the early stages of developing clinical experience and mastery. However always, learn from your tutors and integrate what you reasonably see as best practice into your own clinical history and examination sequences. There are a set of Clinical Skills videos which can be accessed on YouTube and searching for “Warwick Medical School Clinical Skills videos”. These were created by Dr James Gill but based on the sequences in this workbook.

In actual clinical practice the clinician is integrating history with examination right from the start of the consultation. The actual sequence of the history will be individualised to the patient to minimise interruption and facilitate clinical dialogue. Often there will be well thought out omissions and shortcuts in both the clinical history and examination. A novice clinician cannot be encouraged to work like this and will have to display practise and knowledge of the full history and examination sequences in the main or focussed history or examinations. The actual process of obtaining a clinical history in terms of the communication skills is as important as the actual content. The former facilitates the latter.

If you see important differences in what is taught at the Medical School and the Hospital please do email the hospital tutors and myself and we should be able to advise on a way forward together.

At all times ensure the right standards in relation to patient confidentiality are met. Summarised GMC guidance is given overleaf. Always use the WMS encrypted memory stick as directed.

Here’s to mastery!

Professor Vinod Patel  
MD, FRCP, FHEA, DRCOG, MRCGP  
Professorial Clinical Teaching Fellow  
Clinical Skills and Diabetes

How to use this workbook

- The sequences should all be read through during Advanced Cases 1. This should you an opportunity to do some directed learning to know the basics well.

- Please use the notes pages to write in aspects of history, examination, differential diagnosis, final diagnosis as you encounter clinical cases. This booklet has the potential to become a great revision aid throughout your course. Use the sequences to carry out self-assessment, peer assessment and tutor assessment. The i-COMPAT worksheet will be very useful for recording clinical notes on aspects of history-taking, examination, differential diagnosis, management including drug therapies. This will be very useful for revision.

- This workbook will be supplied as an A5 booklet for ease of use in the clinical environment. It will also be supplied as a word document that you can edit and add notes to (e-version). There will also be a PDF which you can email to yourself and use as an iBook.
### Experience and an Approach to Clinical History and Examination

The following table attempts to differentiate the approaches to history and examination used by differently experienced clinicians. Even as a medical student, we would expect you to progress through the stages on some cases.

| Apprentice | **Definition:** Someone who has agreed to work for a skilled person for a period of time and often for low payment, in order to learn that person’s skills  
Eg Medical Student, F1 doctor |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>History:</strong> Systematic, one section to the next with clear set of questions in each domain. Eg all the social history questions, family history, ICE, Pets, the lot! Can appear like form filling and not-integrated as a whole. Important information will not be missed.</td>
<td></td>
</tr>
<tr>
<td><strong>Examination:</strong> Thorough, eg General then a full inspection, palpation, percussion, auscultation of all main systems</td>
<td></td>
</tr>
</tbody>
</table>
| Journeyman | **Definition:** A worker who has a skills making them able to a particular job, and who usually works for somebody else  
Eg F2 and beyond not yet Specialist |
| **History:** Systematic, but starting to integrate questions, less appearance of form-filling and greater focus on targeted history pertaining to the actual problem. A clear “line” of enquiry is appearing |
| **Examination:** Becoming targeted towards the main problems potentially associated with the history. Eg thorough respiratory examination and a very brief abdo palpation only |
| Mastery | **Definition:** A person who has control over a particular situation  
Eg Specialist, GP, Consultant, Senior Specialist Registrar |
| **History:** Integrated and very focussed on the specific line of enquiry judged from the history of presenting complaint and early history. Various sections such as FH may be omitted altogether. |
| **Examination:** Becoming targeted towards the main problems potentially associated with the history. Eg Inspection, and thorough specific sections of the respiratory examination only |
Training records and case studies

14. You must anonymise patient information in training records and case studies as far as it is possible to do so. The anonymisation code of practice published by the Information Commissioner’s Office considers data to be anonymised if it does not itself identify any individual, and if it is unlikely to allow any individual to be identified through its combination with other data. Simply removing the patient’s name, age, address or other personal identifiers is unlikely to be enough to anonymise information to this standard.

15. If it is difficult to anonymise information about patients while retaining enough detail to make a training record useful, or if it is necessary to include potential identifiers to allow the record to be audited, you should ask for the patient’s consent to use their information if you can. If it is not practicable to seek the patient’s consent, you may use potentially identifiable information in a training record as long as you are satisfied that the record will be kept securely and will be managed in accordance with other data protection requirements. You must still remove as many identifiers as you can.

16. If the information is likely to be more widely accessible (for example, in discussion at a seminar or conference, or published in a journal), and you consider that the patient could be identified, you should usually use the information only when you have the patient’s explicit consent.

17. When asking for the patient’s consent, you must give the patient enough information about the nature and purpose of the disclosure to enable them to make an informed decision. This should include a description of the information to be disclosed and an indication of who will have access to it and how it will be used.

18. You may disclose information only for the purposes for which the patient has given consent, and you must remove as many identifiers as you can. You must respect a patient’s refusal to consent to the publication of their identifiable information.

19. If for any reason you cannot get a patient’s consent – for example, because the information you want to disclose is so old that efforts to trace the patient have been or are likely to be unsuccessful – you will need to consider whether disclosing potentially identifiable information can be justified in the public interest. You should seek advice from a Caldicott or data guardian or a legal adviser, who is not directly connected with the use for which the disclosure is being considered, before disclosing personal information without consent.

Additional WMS Notes

- There is a named Caldicott guardian at each trust that your Undergraduate Co-ordinator can advise you of if needed. In the first instance all concerns/problems should be communicated to the Undergraduate co-ordinator and the WMS School office.

- Do not use initials, name of patient, date of birth, age (use age band e.g. 50-65), specific occupation in notes.
Receiving and Giving Feedback

One of the key teaching outcomes is to have received and given feedback. Your clinical tutors will often give feedback and this should be sought out as it is a very powerful impetus to further learning and improvement.

Previously you should have demonstrated to the tutor and peers

- Your ability to conduct a clinical history
- Your ability to conduct a general examination
- Your ability to conduct a systems examination
- Your ability to give constructive feedback to a fellow student

The tutors will also expect you to complete your “Personal Reflections on Clinical Performance” table (see table at end of this section). This will be a useful summary of your stronger areas of performance and add focus to areas for improvement or further learning.

Giving Feedback

All students will value constructive feedback given in a professional well-meaning manner. This should be done sensitively. It is important to be specific. So for example do not use: “that was not great, in fact it was quite poor”. You could be more specific (and helpful) such as: “although you started to examine the palms in detail, you only appeared to glance at the nails and did not check thoroughly for clubbing or capillary return.”

The following format, after Pendleton (1984), is useful. It is often clear that students know what they did well and what they should have done differently! It is also important to ensure that the student is happy to have feedback from you. A brief chat about the importance or not of the clinical skill being assessed is often useful.

<table>
<thead>
<tr>
<th>Pendleton’s Rules of Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student:</strong> First discuss what went well.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Ask: what did you do well?</td>
</tr>
<tr>
<td><strong>Student:</strong> What could have been better and recommendations for change.</td>
</tr>
<tr>
<td>Ask: how could you have done it better?</td>
</tr>
</tbody>
</table>

Allow further discussion and an action plan for improvement may be suggested
Preparing for Feedback

- Review all previous sessions
- Revise reading material for the specific sections
- Recognise your strengths and weakness in the skills taught to date so that you can specifically concentrate on any areas that need attention
- Use the Clinical History and Clinical Examination Sequences in this Handbook.

Clinical Histories
For practising clinical history-taking, take the history or part of the history with a real patient. Ideally use cases that you have seen yourself on the wards. Any information that is missing in case scenarios can be added with artistic licence. Use sufficient details to allow a more thorough and realistic history to be elicited in role play by your fellow student. The template can then be used to practise history-taking with a peer student or tutor. Ensure patient confidentiality at all times.

General Examination
Use the clinical template supplied to observe a peer student conduct a General Examination and give feedback using the Pendleton Model.

Systems Examination
Use the clinical template supplied to observe a peer student conduct a systems examination and give feedback using the Pendleton Model.

Tutor/Peer Feedback Grades:
Use the Clinical History and Clinical Examination sequences as an OSCE and give a tentative grade using the following criteria. Have a discussion with the tutor/student and try to agree a final grade based on objective feedback (if possible!).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>Consistently demonstrates mastery of all components for this level in the MB ChB course.</td>
</tr>
<tr>
<td>Good</td>
<td>Competent in almost all components to a high standard and to a satisfactory standard in all. No significant omissions.</td>
</tr>
<tr>
<td>Pass</td>
<td>Competent in a large majority of components. Few minor omissions</td>
</tr>
<tr>
<td>Borderline</td>
<td>Competent in a bare majority of components. A number of omissions</td>
</tr>
<tr>
<td>Fail</td>
<td>Some major omissions. Competent in a minority or only a few testable components Not competent for this level in the MB ChB course.</td>
</tr>
<tr>
<td>Personal Reflections on Clinical Performance</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td><strong>“What went well”</strong></td>
<td></td>
</tr>
<tr>
<td>Your ability to conduct a clinical history</td>
<td></td>
</tr>
<tr>
<td>Your ability to conduct a general examination</td>
<td></td>
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<tr>
<td>Your ability to conduct a systems examination</td>
<td></td>
</tr>
<tr>
<td>Your ability to present</td>
<td></td>
</tr>
<tr>
<td>Your ability to give constructive feedback to a fellow student</td>
<td></td>
</tr>
<tr>
<td><strong>“Areas of improvement”</strong></td>
<td></td>
</tr>
<tr>
<td>Your ability to conduct a clinical history</td>
<td></td>
</tr>
<tr>
<td>Your ability to conduct a general examination</td>
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<tr>
<td>Your ability to conduct a systems examination</td>
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<td>Your ability to present</td>
<td></td>
</tr>
<tr>
<td>Your ability to give constructive feedback to a fellow student</td>
<td></td>
</tr>
</tbody>
</table>

**Plan for Improvement**
Summary

Guidelines for GIVING Constructive Feedback

- Give feedback only when asked to do so or when your offer is accepted.
- Give feedback as soon after the event as possible.
- Focus on the positive initially.
- Be descriptive (of behaviour) not evaluative (of motives).
- Talk about specific behaviours and give examples where possible.
- Use “I” and give your experience of the behaviour (“When you said…, I thought that you were…”)
- When giving negative feedback, suggest alternative behaviours.
- Ask yourself, “Why am I giving this feedback?” (Is it for you or for the person concerned?)
- Remember that feedback says a lot about you as well as about the person to whom it is directed.
- Try to confine negative feedback to things that can be changed. You are trying to help someone achieve their full potential.
- Do not overload.

Guidelines for RECEIVING Constructive Feedback

- Listen to it, pause and think before responding (rather than prepare your response/defence).
- Ask for it to be repeated if you did not hear it clearly.
- Assume it is constructive until proven otherwise; then consider and use those elements that are constructive.
- Ask for clarification and examples if statements are unclear or unsupported.
- Accept it positively (for consideration) rather than dismissively (for self-protection).
- Ask for suggestions of ways you might modify or change your behaviour.
- Respect and thank the person giving feedback.

Examples of useful feedback you have received

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Clinical Skills: Clinical history Warwick 4 Frames, Examination, 4 point Presentation

Clinical History
The Warwick 4 Frames

1: Presenting Complaint
- History of PC? SQITAS
- Click into one system: eg cvs, rs, git, cns
- Systems review
- Check Red Flags

2: Past Medical Hx, Drugs, Allergies
- Ops, Serious Illnesses, Past and current
- Drugs: POM, OTC, Recreational, Previous Drugs
- Allergies & Intolerances: eg penicillin, foods

3: Social and Family Hx (Lifestyle Factors)
- Smoking, Alcohol, Occupation, Home Circs
- Effect of condition on life and ADL
- Family Hx

4: Ideas, Concerns, Expectations, ??
- Ideas, Concerns, Expectations
- Do you have any other information for me?
- Do you have any questions for me?

Consider recap or summary at end to patient to check information

Clinical History: Process vs 4 Frames content

Initiating the Consultation
- Introduction, Infection control
- Explain process and consent
- Open statement to start

Gathering Information
- Facilitates responses: silence, repetition, paraphrase
- Clear language, avoids jargon
- Sequence of events, analysis of symptoms
- Systems review and PMH
- Effects of symptoms on patient’s life, feelings
- Appropriately & actively determines ICE

Building the Relationship
- Acknowledges pts views/feelings, not judgemental
- Provides support: expresses concern, understanding, willingness to help

Closing the Consultation
- Ends consultation and provides opportunity to ask questions or volunteer further information
- Maintains friendly, professional relationship throughout
- Thanks Patient

1: Presenting Complaint
- History of PC? SQITAS
- Click into one system: eg cvs, rs, git, cns
- Systems review
- Check Red Flags

2: Past Medical Hx, Drugs, Allergies
- Ops, Serious Illnesses, Past and current
- Drugs: POM, OTC, Recreational
- Allergies: drugs, penicillin, foods

3: Social & Family Hx (Lifestyle Factors)
- Smoking, Alcohol, Occupation, Home Circs
- Effect of condition on life and ADL
- Family Hx

4: Ideas, Concerns, Expectations, ??
- Ideas, Concerns, Expectations
- Do you have any other information for me?
- Do you have any questions for me?
The Warwick 4 Point Presentation:

History, Examination, signs, reports, ECGs, X-rays,

General Findings
O/E the patient was comfortable and well orientated

Important Positive Findings
My main findings were jaundice, anaemia and an enlarged liver that was hard and nodular

Important “Negative” Findings
However, there was no ascites or dilated veins on the abdomen

Clinical Conclusion
These findings would be consistent with cirrhosis of the liver or malignancy

Helps with Clinical Decision Making:
Hegelian- thesis to anti-thesis to thesis

Examination Outline

Introduction

General Observations
• End of Bed inspection
• Specific: BP, Pulse rate, Temp

General Examination
Hands, Pulse, Neck, tongue, lymph-nodes, oedema

Systemic Examination
CVS, RS, Abdo, CNS, other

Clinical Presentation
Clinical Conclusion
The Calgary-Cambridge Approach to Clinical Consultation (modified 2011)

Initiating the session

- Preparation - including infection control
- Identifying the patient’s problem(s)

Gathering information: taking the history

<table>
<thead>
<tr>
<th>Biomedical perspective (&quot;disease&quot;)</th>
<th>Patient’s perspective (&quot;illness&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequence of events</td>
<td>ICE</td>
</tr>
<tr>
<td>Analysis of symptoms</td>
<td>Effects of symptoms on life</td>
</tr>
<tr>
<td>Review of relevant system(s)</td>
<td>Feelings</td>
</tr>
</tbody>
</table>

Context: Background information

- Past Medical History
- Treatment history and allergies
- Personal and social history
- Smoking, alcohol, recreational drugs, lifestyle
- Family history
- Review of other systems

Physical examination

- Explanation and consent
- Correct position and adequate exposure
- General inspection
- General examination
- System(s) examination(s)
- Additional examination

Differential diagnosis

- Biomedical
- Patient’s perspective
- Social context

Explanation and planning

- Clinician’s plan of management
- Explanation and negotiation
- Shared decision-making & care planning
- Self-management by patient

Closing the consultation

- Forward planning
- Ensuring appropriate point of closure
- Documentation

### Clinical history: Quick template

<table>
<thead>
<tr>
<th>PC</th>
<th>SH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HPC</strong> ► “open”</td>
<td>Smoking?</td>
</tr>
<tr>
<td>► “closed” ► specific system ► ?red flags</td>
<td>Alcohol?</td>
</tr>
<tr>
<td>► systems review</td>
<td>Occupation?</td>
</tr>
<tr>
<td>CVS, RS, GIT</td>
<td>Home circumstances?</td>
</tr>
<tr>
<td>UT, CNS</td>
<td>Social input?</td>
</tr>
<tr>
<td>Locomotor/Skin</td>
<td>Effect of problem on life?</td>
</tr>
<tr>
<td>Endo</td>
<td></td>
</tr>
<tr>
<td>Red flags (if not done above)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMH: ?major illnesses ? ops</th>
<th>Drugs: Prescribed, OTC, Recreational</th>
<th>Allergies:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be specific, many cases ask about penicillin</td>
<td>Ask about intolerances and reactions</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ideas</th>
<th>Concerns/Feelings</th>
<th>Expectations:</th>
<th>? Further information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>? Any questions</td>
</tr>
</tbody>
</table>

The history should then allow you to move onto basic aspects of management

- Working Diagnosis/Problem List
- Presentation of the case: see Warwick 4 Point Presentation
- Investigation and Management Plan
- Information given to patient
### Systems Review: Cardinal Symptoms ICE??

“Click” into relevant system and then conduct Brief Systems Review

**Brief Systems Review**

“Do you have any other symptoms at all?” …… “Can I just check?”

**Red Flag Check**

- **Lumps or bumps anywhere?:** breast, neck, tummy, skin
- **Blood loss or bleeding?:** from anywhere: mouth, coughing, vomiting, bowels, urine, genitalia
- **Any change in bowel habit?:** dark stools, blood, diarrhoea, constipation, mucous
- **Any change in weight or appetite?:** unintentional weight gain versus intentional
- **Any nausea or vomiting?:** think malignancy, pregnancy
- **General symptoms:** change in mood, fever, itching, energy

<table>
<thead>
<tr>
<th>Cardiovascular</th>
<th>Respiratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest pain</td>
<td>Shortness of breath (dyspnoea): tolerance</td>
</tr>
<tr>
<td>Palpitations (heart racing or thumping)</td>
<td>Cough: duration, haemoptysis</td>
</tr>
<tr>
<td>Shortness of breath (dyspnoea): tolerance</td>
<td>Sputum: amount, character, blood, pink</td>
</tr>
<tr>
<td>PND and Orthopnoea</td>
<td>Chest pain on breathing (pleuritic pain)</td>
</tr>
<tr>
<td>Peripheral oedema</td>
<td>Wheeze, stridor, snoring</td>
</tr>
<tr>
<td>Pain in legs on walking, cold limbs (PVD)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gastro-intestinal</th>
<th>Neurological &amp; Psychiatric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty/Pain chewing or swallowing, ulcers</td>
<td>Headache, fits, faints, dizzy, blackouts,</td>
</tr>
<tr>
<td>Nausea, vomiting, ? blood</td>
<td>Numbness (or any change in sensation), weakness or clumsiness in arms or legs</td>
</tr>
<tr>
<td>Indigestion or heartburn or abdo pain/mass</td>
<td>Changes in vision, double vision, hearing (deafness, tinnitus), speech, taste, smell,</td>
</tr>
<tr>
<td>Change in appetite, weight loss, weight gain</td>
<td>Change in mood, stress levels, thoughts</td>
</tr>
<tr>
<td>Bowel habit: changes, blood, mucous, melaena, pale stools or floating (steatorrhoea)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Genito-urinary</th>
<th>Diabetes &amp; Endocrinology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain or difficulty passing urine, ? dribbling</td>
<td>Polyuria, polydipsia, weight loss/gain, , blurred vision, thrush</td>
</tr>
<tr>
<td>Day urination versus nocturia</td>
<td>Heat or cold intolerance, neck swelling.</td>
</tr>
<tr>
<td>? Amount ? need to drink fluids overnight</td>
<td>Change in appearance, sweating, hirsutism, periods, energy, libido, ED</td>
</tr>
<tr>
<td>Vaginal or penile discharge, lesions</td>
<td></td>
</tr>
<tr>
<td>Periods: last one, changes, usual pattern,</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Musculo-skeletal and Skin</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain, stiffness in joints ? circadian rhythm</td>
<td>Falls, difficulty walking or dressing or ADL</td>
</tr>
<tr>
<td>Pain, stiffness in muscles</td>
<td>Any skin lesions: rash, ulcer, blisters, heat bruising, itching, bleeding, colour change</td>
</tr>
<tr>
<td>Tingling/weakness in hand eg CTS</td>
<td></td>
</tr>
</tbody>
</table>

**ICE ??**

**Ideas:** “What do you think is going on with you?”

**Concerns:** “What concerns you the most?”

**Expectations:** “How can we best help you with this problem?”

?: “Is there anything else that you want to tell me about this problem?”

?: “Do you have any questions for me?”

**Pain History in detail**

**SQITAS**

Site, Quality, Intensity, Time course/timing, Aggravating/Relieving factors, Associated Symptoms

**SOCRATES**

Site, Onset, Character, Radiation, Associated symptoms, Time course/timing, Exacerbating/Relieving, Severity

**Intensity or Severity:** How bad is the pain? 10 is very severe like a fracture, 1 very mild pain.

Avoid jargon or explain it as you go along
### Template for Clinical History Taking: The 4 Frames Approach

<table>
<thead>
<tr>
<th>Patient Name/Demographics</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Frame 1. Presenting Complaint</th>
</tr>
</thead>
</table>

**History of Presenting Complaint:** ► “open” ► “closed” ► specific system ► ?red flags

**Systems review:** CVS, RS, GIT, UT, CNS, Locomotor/Skin, Endo, Red flags(if not done above)

<table>
<thead>
<tr>
<th>Frame 2. Past Medical History: ?major illnesses ? ops</th>
</tr>
</thead>
</table>

**Drug History:** Prescribed, OTC, Recreational

<table>
<thead>
<tr>
<th>Allergies</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Frame 3. Social History: smoking, alcohol, occupation, home circumstances/social input</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Family History</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Frame 4. ICE: Ideas Concerns Expectations</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Further information and Questions from Patient</th>
</tr>
</thead>
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<table>
<thead>
<tr>
<th>Working Diagnoses/Problem List</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Information given to patient</th>
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</thead>
</table>
Health Promotion: Making Every Contact Count

4 As Approach

<table>
<thead>
<tr>
<th>Brief Intervention</th>
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<tbody>
<tr>
<td>Brief interventions with respect to life-style changes have been proven to be the most cost-effective method in persuading people to adopt healthier lifestyle choices. A Cochrane review (Kaner et al CD 004148, 2009) showed that in 7000 participants randomised to brief-intervention or control intervention with respect to safer alcohol consumption, the brief-intervention group drank 4 to 6 units less (per week) at the end of the 12 month study. With respect to smoking the quit rate was 69% higher with Brief Intervention. Longer counselling was actually found to confer little additional benefit. The 5 minute brief intervention can usefully be structured using the 4 As Approach below.</td>
</tr>
</tbody>
</table>

- **Throughout**: try to ascertain and work out the stage that the patient is terms of readiness to change using the stages of change or similar model.
- **Prochaska and DiClemente model is**: *Pre-contemplation, Contemplation, Preparation, Action and Maintenance*.
- **Actively engage** in Clinical Conversation with ideas and reflections from the patient during the consultation.
- **Positively reinforce** maintenance of beneficial behaviours- do this initially- eg: they may not smoke, or have an active lifestyle

<table>
<thead>
<tr>
<th>4 As Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ask</strong></td>
</tr>
<tr>
<td>• “Can I explore lifestyle factors that may apply to your current problem. .?”</td>
</tr>
<tr>
<td>• Do general lifestyle history of the “Big 5” at least: <em>Smoking, Alcohol, Physical activity, Diet and weight, Mental health</em></td>
</tr>
<tr>
<td>• “Moving onto your social history, can I ask whether you smoke? ... Drink alcohol?...how active are you do you think? ... Have you had difficulty with weight control? ... Can you tell me about your diet? ... You have any mental health concerns such as low mood, stress or anxiety?”</td>
</tr>
<tr>
<td><strong>Focus on one specific important issue- initially. This may be all there is time for</strong></td>
</tr>
<tr>
<td><strong>Assess</strong></td>
</tr>
<tr>
<td>• Smoking history: eg cigarettes daily x years = pack years</td>
</tr>
<tr>
<td>• Alcohol: units/week, ? safe (≤ 14 units), ? binge drinking (6 female, 8 male)</td>
</tr>
<tr>
<td>• Physical activity: ? 30 mins x 5 per week, ? SOB , hot, sweaty</td>
</tr>
<tr>
<td>• Weight/diet: ? normal BMI… ? 5 fruit and vegetables per day?</td>
</tr>
</tbody>
</table>
| • Mental Health: Low mood, stress or anxiety?
| **Assess stage of change**: “ How do you feel about your smoking…?” |
| **Advise** |
| • Cover harms and benefits of lifestyle factor- use facts from MECC cards or HEALTH Passport, for example. Personalise; “How will this help you?” |
| • Assist whatever stage the patient is at |
| • Clear, personalised, supportive, evidence-based, non-confrontational messages. “ the most importance factor…. etc |
| • 5 Rs: Clear basic advice on how to address the problem: relevance, risk, rewards, roadblocks, repetition |
| **Use**: MECC Conversation cards, Quitlines, Information, Change for Life Websites etc |
| **Arrange** |
| **Follow-up**: ? visit, ? email, ? questionnaire, ? signpost to community support, friends, family, websites, Apps, etc |

Throughout and again at the end: Opportunity to ask questions or offer further information. Person-centred consultation/interview style.

At end: Ask patient what changes they think they can make. Finish on a positive.

PS: This is far more difficult than Cranial Nerve Examination!
## Clinical Examination Sequences

### General Examination Sequence

<table>
<thead>
<tr>
<th>Objective: specifically looking for JACCOLG</th>
<th>Jaundice, Anaemia, Clubbing, Cyanosis, Oedema, Lymphadenopathy, Goitre</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Explanation and consent “WIPE”</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Washes hands, Introduction, Patient Consent, Explains procedure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Correct position and adequate exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Positions patient flat with one pillow.</td>
</tr>
<tr>
<td>• Adequately exposes the upper body (and legs where appropriate) whilst maintaining patient dignity.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inspects patient from end of bed, commenting on any relevant findings.</td>
</tr>
<tr>
<td>• Inspects patient’s surroundings for ‘clues’ eg walking stick, splints,</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Hands and Palms: arthritis, temperature/sweaty, tremor, capillary refill time, peripheral cyanosis, palmar erythema, Dupuytren’s contracture, palmar creases, tar staining</td>
</tr>
<tr>
<td>• Nails: clubbing, leuconychia, koilonychia, splinter haemorrhages, peripheral cyanosis</td>
</tr>
<tr>
<td>• Radial Pulse: for rate and rhythm - but-</td>
</tr>
<tr>
<td>• Carotid or Brachial pulse: for character and volume</td>
</tr>
<tr>
<td>• BP/Vitals: Takes the blood pressure, comments on need to take temperature and assess respiratory rate. Oxygen saturations in most emergency cases</td>
</tr>
<tr>
<td>• Eyes: pallor in conjunctivae, jaundice in upper sclerae, corneal arcus, xanthelasmata, Thyroid eye signs if relevant (lid retraction, lid lag, exophthalmos)</td>
</tr>
<tr>
<td>• Face and mouth: Inspected for malar flush, central cyanosis</td>
</tr>
<tr>
<td>o Smell: hepatic foetor, diabetic ketoacidosis, ethanol</td>
</tr>
<tr>
<td>o Tongue: hydration, glossitis, central cyanosis, ? large, wasting</td>
</tr>
<tr>
<td>o Mouth: ulcers, teeth, gingivitis, angular stomatitis</td>
</tr>
<tr>
<td>• Neck</td>
</tr>
<tr>
<td>o Lymph nodes: submental, submandibular, tonsillar, preauricular, deep cervical chain (jugular), supraclavicular, posterior cervical chain, postauricular, occipital. Consider axillary lymph nodes/breast</td>
</tr>
<tr>
<td>• Upper chest: ?Spider naevus, gynaecomastia, scratch marks</td>
</tr>
<tr>
<td>• Groin: Inguinal lymph nodes</td>
</tr>
<tr>
<td>• Peripheral Oedema: lower limb oedema and then sacral oedema if present</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professionalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Covers patient, thanks patient, explanation to patient, washes hands.</td>
</tr>
</tbody>
</table>
### Vital Signs Examination Sequence

**Objective:** specifically examining temperature, BP, Pulse, Respiratory rate, Oxygen saturation. Urine Output: Covered in Block Teaching

**Explanation and consent “WIPE”**
- **W**ashes hands, **I**ntroduction, **P**atient Consent, **E**xplains procedure

**Correct position and adequate exposure**
- Ensure subject rested and calm, feet flat on the floor and back rested or supine. Arm horizontal & supported (e.g. pillow)

**Pulse**
- *Measure pulse:* radial artery for rate and rhythm, character and volume from major artery, usually the carotid.

**Respiratory rate**
- *Measure the respiratory rate:* usually over 30 seconds

**O$_2$ saturation and Temperature**
- Use non-invasive device.
- Ensure optimal conditions for true reading for O$_2$ saturation: hands not cold, device correctly placed, no nail varnish.

**BP Measurement**
- **BP cuff:** Check size: bladder 80% of arm circumference. Correctly place cuff in relation to the brachial artery.
- **Brachial artery** location by palpation (medial to biceps tendon), inflate cuff after BP bulb locked, 70mmHg rapidly then in increments of 10mmHg until pulse disappears and then re-appears during deflation.
- **Estimated systolic pressure:** the pressure at which brachial pulse returns after deflation.
- **Auscultation:** apply stethoscope to brachial artery just above the ante-cubital fossa. Inflate BP cuff until 20 mmHg above the estimated systolic.
- **Systolic BP:** deflate cuff 2 mmHg per second until repetitive, clear tapping sounds first appear for at least 2 consecutive beats (Korotkoff’s first sound).
- **Diastolic BP:** deflate cuff again. After Korotkoff’s fourth sounds (muffling then soft and blowing) sounds disappear (Korotkoff’s fifth sound = Diastolic BP).
- **BP recoding:** systolic and diastolic rounded upwards to the nearest even number e.g. 152/86. Write down BP. Avoid digit preference.

**Additional examination bedside investigation:** e.g. urine output, glucose,

**Professionalism**
- Covers patient, thanks patient, explanation to patient, washes hands.
# Abdominal Examination Sequence

**Objective:** General Examination in relation to abdominal disease, specifically for jaundice, liver, spleen, kidneys, bladder, abdominal aortic aneurysm, ascites

- **Washes hands,** Introduction, **Patient Consent,** Explains procedure

## Correct position and adequate exposure

- Positions patient flat with one pillow, arms by side
- Adequately exposes the abdomen whilst maintaining patient dignity.

## General inspection

- End of bed: comment on any relevant findings eg Well, comfortable, nutritional status, distressed, pain, colour – jaundice, surroundings, drains

## General examination: Consider Vital signs

- **Hands and nails:** palmar erythema, Dupuytren’s contracture, liver flap, clubbing, leuconychia, koilonychia,
- **Skin:** jaundice, scratch marks, bruising
- **Pulse:** tachycardia, bounding
- **Eyes:** anaemia (conjunctivae), jaundice (upper sclerae)
- **Mouth:** ulcers, dentition, gingivitis, angular stomatitis, hydration
  - Perioral telangiectasia or pigmentation
  - Smell: hepatic foetor, diabetic ketoacidosis, ethanol
  - Tongue: size, surface (smooth may indicate glossitis), candidiasis,
- **Neck and Chest:** Lymph nodes (neck, Virchow’s, axillary), spider naevi, gynaecomastia

## Abdominal examination

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Palpation (enquire about pain and start away from site of pain)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distension, swellings eg herniae</td>
<td><strong>Superficial:</strong> Palpate each region in turn. Look for tenderness and guarding.</td>
</tr>
<tr>
<td>Visible peristalsis or pulsation</td>
<td><strong>Deep:</strong> Palpate each region in turn for masses and palpate for enlarged organs: liver, spleen, kidneys, abdominal aortic aneurysm.</td>
</tr>
<tr>
<td>Scars, skin changes or fistulae</td>
<td><strong>Auscultation</strong></td>
</tr>
<tr>
<td>Dilated veins</td>
<td>- Bowel sounds, renal bruit</td>
</tr>
</tbody>
</table>

## Percussion

- Liver, spleen, bladder, ascites (shifting dullness).
- **Groin:** Inguinal lymph nodes, hernia orifices
- **Peripheral Oedema:** lower limb oedema and then sacral oedema if present

## Additional examination bedside investigation: e.g. rectal examination, external genitalia, urine, glucose, stool

**Professionalism:** Covers patient, thanks patient, explanation to patient, washes hands.
### Respiratory Examination Sequence

**Objective:** Examination in relation to respiratory disease, specific general examination, followed by system examination

**Explanation and consent “WIPE”**
- **W**ashes hands, **I**ntroduction, **P**atient Consent, **E**xplains procedure

**Correct position and adequate exposure**
- Positions patient with trunk at 45°. Head comfortable.
- Adequately exposes chest and arms. Cover females until removal is appropriate.

**General inspection**
- End of bed: Comment on any relevant findings eg Well, comfortable, dyspnoea, cachexia, accessory muscle use, oxygen therapy, inhalers/nebulisers,

**General examination: Consider Vital signs**
- **Hands and nails:** peripheral cyanosis, tremor, muscle wasting, tar staining, CO\(_2\) retention flap, clubbing.
- **Respiratory rate and rhythm**
- **Pulse:** tachycardia, bounding
- **Eyes:** anaemia (conjunctivae), Horner’s syndrome (pupils), jaundice
- **Mouth:** hydration, central cyanosis
- **Neck and Chest:** Lymph nodes (neck, Virchow’s, axillary), JVP hepato-jugular reflux

**Chest examination: Perform anteriorly then repeat all posteriorly**

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Palpation</th>
<th>Auscultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shape of chest: excavatum, carinatum, scars,</td>
<td><strong>Trachea:</strong> Position: central, deviated</td>
<td>Chest including the supraclavicular fossae and axillae, comparing both sides.</td>
</tr>
<tr>
<td>Ask patient to take deep breath ?pain ?symmetrical</td>
<td><strong>Chest expansion:</strong> symmetry, range</td>
<td>Vocal resonance comparing both sides.</td>
</tr>
<tr>
<td><strong>Percussion</strong></td>
<td></td>
<td><strong>Apex beat position:</strong> ?displaced</td>
</tr>
<tr>
<td>Chest including the supraclavicular fossae and axillae</td>
<td></td>
<td>Chest including the supraclavicular fossae and axillae, comparing both sides.</td>
</tr>
<tr>
<td>Compare both sides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tactile fremitus: Usually no need to examine for both tactile and vocal fremitus.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Groin:</strong> Inguinal lymph nodes,</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peripheral Oedema:</strong> lower limb oedema and then sacral oedema if present</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional examination bedside investigation:** e.g. peak flow, oxygen saturation

**Professionalism:** Covers patient, thanks patient, explanation to patient, washes hands.
# Cardiovascular Examination Sequence

**Objective:** Examination in relation to cardiovascular disease, specific general examination, followed by system examination

- Washes hands, *Introduction, Patient Consent, Explains procedure*

## Correct position and adequate exposure
- Positions patient with trunk at 45°. Head comfortable.
- Adequately exposes chest and arms. Cover females until removal is appropriate.

## General inspection
- End of bed: Comment on any relevant findings eg well, comfortable, nutritional status, Oxygen therapy, GTN spray, ? Down’s, Marfan’s

## General examination: Vital signs

- **Hands and nails**: temperature, capillary return time, peripheral cyanosis, Osler’s nodes, clubbing, koilonychia, splinter haemorrhages, tar staining, Janeway lesions,
- **Radial Pulse**: rate and rhythm. *Radio-radial delay and for collapsing pulse*
- **BP**: manual sphygmomanometry bu auscultation
- **Eyes**: xanthelasmata, anaemia, jaundice, corneal arcus
- **Face/Mouth**: malar flush, glossitis, hydration status, central cyanosis.
- **Neck**: JVP inspected, elicits hepato-jugular reflux, measures in cm vertical height above sternal angle: normal < 4cm
- **Carotid Pulse**: for character and volume

### Inspection
- Precordium: scars (also check axillae), pacemaker, visible pulsation

### Palpation
- **Apex beat**: lowest, most lateral position of cardiac impulse
- **Heaves and thrills** – apex and parasternally

### Auscultation
- **Mitral**: 5th ICS Mid-Clavicular Line, **Aortic**: 2nd ICS R parasternal border - A1 (also A2)
- **Tricuspid**: 4th ICS L parasternal border, **Pulmonary**: 2nd ICS L parasternal border
- **Carotid arteries** (both sides for bruit)
  - **Special manoeuvres**
    - **Mitral stenosis**: roll patient to the left side, use the bell of stethoscope at apex
    - **Aortic regurgitation**: lean forwards, hold breath after expiration, L sternal edge (A2)
    - **Mitral regurgitation**: radiates to the axilla
    - **Aortic stenosis/Aortic sclerosis**: aortic area (A1) and carotid radiation

## Additional examination:
- **Lung bases**: percussion & auscultation
- **Peripheral Pulses**: Dorsalis pedis, posterior tibial, popliteal (if pedal pulses impalpable) Femoral pulse. Radio-femoral delay for coarctation
- **Peripheral Oedema**: lower limb oedema and then sacral oedema if present
- **Abdominal examination** – Hepatomegaly, AAA

## Bedside investigation:
- cardiac monitor, ECG

## Professionalism:
- Covers patient, thanks patient, explanation to patient, washes hands.
Neurological Examination Sequence: Cranial Nerves

**Explanation and consent “WIPE”**
- Washes hands, Introduction, Patient Consent, Explains procedure

**General inspection**

**Cranial Nerve Examination:**

**Olfactory Nerve (1)**
- Ask “has there has been any difficulty or change in your sense of smell?”. Rarely need to formally examine with easily available “smells” such as coffee or orange.
- Check nose not blocked.

**Optic Nerve (II)**
- Check visual acuity with Snellen chart: consider pinhole to eliminate refraction problems (record as: Right VA 6/x, Left VA 6/y)
- Assess visual fields: by direct confrontation
- Consider checking colour vision with Ishihara plates
- Pupillary light and accommodation reflexes: check pupil size (state in mm, right and left), check axis, distant object then near, light reflex with pen torch
- Direct ophthalmoscopy: light reflex for cataract, optic disc, macular area, general retina and peripheries

**Oculomotor (III), Trochlear (IV) and Abducens (VI) Nerves**
- Inspect for ptosis, squint and check for diplopia. ? divergent or convergent squint
- Use the classic sequence: ↔ lateral to lateral and ask about double vision and assess range of movement, ↕ assess up and down movements eyes in midline, lateral and then medial
- When checking for diplopia, observe for nystagmus at same time: jerky, pendular, rotational
- **Oculomotor (III) all extraocular muscles except those supplied by Trochlear (IV) and Abducens (VI) Nerves**
- **Trochlear (IV) Nerve supplies superior oblique**
- **Abducens (VI) Nerve supplies lateral rectus**
- LR₆ SO₄ Mnemonic: All extraocular muscles are III, except LR lateral rectus is VI and SO superior oblique is IV

**Trigeminal Nerve (V)**
- Facial Sensation: ophthalmic, maxillary, mandibular
- Muscles of mastication: masseters and temporalis
- Corneal reflex: light wisp of cotton wool applied over the cornea on the lateral part of iris (motor efferent component is facial). This test rarely done (useful for pituitary examination)
- Jaw Jerk: positive in bilateral UMN lesions above the pons
Facial Nerve (VII)
- Facial movement muscles: frontalis, orbicularis oculi, buccinator, orbicularis oris, nasolabial,
- (Greater superficial petrosal N supplies lachrymal and salivary glands)
- (Stapedius nerves: dampens loud noises)
- (Chorda tympani: taste to anterior 2/3 of tongue)

Vestibulo-cochlear Nerve (VIII)
- Assess hearing
- Weber’s: lateralizing test, use 512 or 256 Hz tuning fork, place on middle of forehead and ask patient to lateralize the sound. ? equal or lateralized
- Rinné’s test: in healthy air conduction better than bone conduction. Use mastoid process

Glossopharyngeal (IX) and Vagus (X) Nerves
- Assess movement of the soft palate. Look at position of uvula. Check phonation.
- Assess sensation of the soft palate with a gag reflex (rarely done, mention only)
- Glossopharyngeal is taste to the posterior third of the tongue and afferent limb of the gag reflex
- Vagus is efferent in the gag reflex and motor supply to pharynx, soft palate and larynx

Accessory Nerve (XI)
- Assess trapezius and sternocleidomastoid muscles

Hypoglossal Nerve (XII)
- Assess the tongue and its movements: wasted, fasciculating, ? reduced power
- Assess power by asking patient to poke tongue into one cheek and you trying to push tongue towards the midline with your first two fingers on the cheek.

Professionalism: Maintains dignity of patient, communicates sensitively with patient, thanks patient, washes hands.

Clinical Notes
Neurological Examination Sequence: Upper Limb

Explanation and consent “WIPE”
- Washes hands, Introduction, Patient Consent, Explains procedure

Correct position and adequate exposure
- Ask patient to uncover and remove all clothes covering arms and shoulders. Offer to cover chest with a sheet, towel or item of clothing

General Inspection and Examination

Inspection

Tone
- Wrist, elbow and shoulder (? Normal, increased, decreased, cog-wheel, clasp knife, lead pipe)

Power
- Shoulder Abduction (C5, C6) and Adduction (C6, C7, C8)
- Elbow Flexion (C5, C6) and Extension (C7, C8)
- Wrist Extension (dorsiflexion, C5, C6, C7) and Flexion (palmar flexion, C6, C7, C8)
- Grip: use your index and middle finger (C8, T1)
- Fingers out straight, "stop me bending them" C7 Radial N.
- Spread fingers " stop me pushing them together (Dorsal interossei, ulnar N)
- “Hold this paper between your fingers, stop me pulling it out" (palmar interossei, ulnar N)
- “Point your thumb to the ceiling stop me pushing it down” (abductor pollicus brevis, median N)
- “Put your thumb and little finger together and stop me pulling them apart” (opponens pollicus, median N)
- Use MRC Scale:
  - 0= nil
  - 1= flicker/fasciculation
  - 2= movement if gravity eliminated
  - 3= versus gravity but not resistance
  - 4= versus gravity but weaker than normal
  - 5= normal.

Co-ordination
- Finger-nose test
- Alternating hand movements (dysdiadochokinesia).

Sensation
- Light touch:
  - C4 = shoulder tip
  - C5 = deltoid
  - C7 = middle finger
  - C8 = little finger
  - T1 = elbow
- Pin-prick, Proprioception, Vibration sense, temperature.
**Reflexes**
- Test biceps (C5, C6) ? Jendrassik Manoeuvre to reinforce
- Supinator (C5,6)
- Triceps (C7,8) also finger jerk (C8,T1)
- Use scale:
  - 0=absent
  - +reduced
  - ++ normal
  - +++increased
  - ++++increased with clonus

**Essential Extras:**
- Assessment of function: undoing buttons, writing, holding a cup, reach out for object
  - **Carpal Tunnel syndrome:** Median nerve muscles (abductor pollicis brevis and opponens pollicis, thenar eminence, sensation loss lateral half of palm and lateral 3.5 digits (palmar surface). Special tests which all lead to paraesthesiae (pins and needles) in median nerve distribution (→)
    - Tinel’s sign: tapping over the flexor retinaculum →
    - Phalen’s Sign: 60 second wrist flexion →
    - Durkan’s Sign: pressing over the flexor retinaculum & lunate/capitate →
    - Gilliat’s test: supra-systolic BP for 60 seconds →
    - Closed fist test: active finger flexion for 60 seconds →

**Professionalism:** Maintains dignity of patient, communicates sensitively with patient, thanks patient, washes hands.

**Clinical Notes**
Neurological Examination Sequence: Lower Limb

Explanation and consent “WIPE”

Correct position and adequate exposure
- Ask patient to uncover and remove all clothes covering legs. Cover groin and upper thighs with a sheet, towel or item of clothing

General Inspection and Examination

General Inspection and Examination

Tone
- Knee and Hip (? Normal, increased, decreased)

Power
- Hip Flexion (L1, L2) and Extension (L5, S1)
- Hip Adduction (L2, L3, L4) and Abduction (L4, L5, S1)
- Knee Extension (L3, L4) and Flexion (S1)
- Dorsiflexion of Foot (L4, L5), Plantarflexion (S1, S2)
- Inversion of foot (L4, L5) and Eversion (L5, S1)
- Toe Extension (L5) and Flexion (S1)
- Use MRC Scale:
  o 0= nil
  o 1= flicker/fasciculation
  o 2= movement if gravity eliminated
  o 3= versus gravity but not resistance
  o 4= versus gravity but weaker than normal
  o 5= normal.

Reflexes
- Knee (L3, L4) ? Jendrassik Manoeuvre to re-inforce
- Ankle (L5, S1)
  o Use scale: 0=absent
  o +reduced
  o ++ normal
  o +++increased
  o ++++increased with clonus
- Plantar Reflex (S1): extensor (upgoing) = UMN, flexor (downgoing) or absent = normal

Co-ordination
- Heel-shin test
- Foot tapping movements

Sensation
- Light touch: Outer thigh = L2, inner thigh = L3, outer calf = L5, lateral foot = S1,
- Pin-prick
- Proprioception:
- Vibration sense
- Temperature
- Romberg’s Test (Proprioception)

**Essential Extras:**
- Assessment of function: gait (ordinary, heel to toe for ataxia, on toes for foot drop)
- **Romberg's sign:** ensure safety catch patient if needed, feet together, arms outstretched, observe patient with eyes open and then closed for 15 to 30 seconds. If sensory ataxia-patient more unsteady with eyes closed.
- Putting on clothes

**Professionalism:** Maintains dignity of patient, communicates sensitively with patient, thanks patient, washes hands, writes appropriate record

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**Plantar Reflex (Babinski)**
- plantar extension indicates Upper Motor Neurone Lesion

**Co-ordination:**
- Checking for dysdiadochokinesia

**Reflexes:**
- note tendon hammer is held at the very end, correct swinging action essential to deliver short sharp knocks (2 or 3 usually)

**Clinical Notes**
Eye General Examination and Retinal Examination using a Direct Ophthalmoscope

Explanation and consent
- Washes hands with alcohol gel or soap and water.
- Explains procedure to patient and obtains verbal consent.

Correct position
- Comfortably seated, patient’s eye level appropriate.

General inspection
- Inspects patient commenting on any relevant findings: checks for thyroid disorders, facial asymmetry, pupil size, xanthelasma, corneal arcus.
- Spectacles- magnifying lens long-sight or demagnifying lens with short-sight.

Assessment of vision
- Uses Snellen chart and records patient best vision.
- Express as Right 6/x- Left 6/y, explains meaning.
- States how to do gross testing of VA.
- Assesses each eye individually using a patch or card to cover the non-test eye.
- Use pinhole to attempt to correct for any refraction problem.
- Visual fields by confrontational field testing.

External examination
- Inspects Lids, Conjunctiva, Cornea, Anterior chamber and name one clinical condition for each site.

Assessment of ocular function
- Checks Ocular position: Looks for proptosis, exophthalmos, and enophthalmos.
- Checks Ocular movement: lid lag, ocular palsy, nystagmus, diplopia.
- Checks Ocular alignment: assesses symmetry of corneal reflection. Uses the Cover test squints.

Direct Ophthalmoscopy
- Considers using short-acting mydriatic if detailed examination necessary (e.g. tropicamide drops).
- Asks patient to remove spectacles (contact lenses can be left in situ) and look straight ahead. Examine the right eye with your right eye and vice versa.
- Looks for red reflex and states why (?cataracts).
- Adjusts Ophthalmoscope lens if needs and correct position relative to patient.
- Examine the optic disc for colour, margins, cup/disc ratio. (papilloedema, disc cupping).
- Systematically examine four quadrants of retina, periphery and specifically the macula.
- States looking for: haemorrhages, exudates, cotton wool spots, pigmentation changes, scarring, drusen.

Additional examination
- Considers Intraocular pressure testing ?headache or red eye.
- Considers formal assessment of visual acuity (Snellen chart), visual fields (perimetry) and colour vision (Ishihara charts).
### Diabetic Retinopathy (DR):
If the visual acuity is 6/12 or worse this is maculopathy. Otherwise Background diabetic retinopathy.
Lesions: Microaneurysm, dot haemorrhage

### Diabetic Maculopathy:
Hard exudates within the macular area. Lesions: hard exudates, circinate hard exudates, MA, haemorrhages

### Pre-proliferative DR:
Lesions: intra-retinal micro-vascular abnormalities (IRMA), cotton wool spots, haemorrhages

### Proliferative DR
Lesions: new vessels on the disc, haemorrhages

### Proliferative DR with Hypertensive Changes.
Lesions: new vessels on the disc, hard exudates, A-V nipping, haemorrhages

### Advanced Proliferative DR:
Lesions: new vessels on the disc and elsewhere, pre-retinal fibrosis, exudates haemorrhages

### Pan Retinal Laser Photocoagulation
Macular spared. NVD have regressed and no longer seen. Lesions: laser scars, retinal pigment epithelium and fibrosis.

### Age-related macular degeneration (ARMD) and glaucoma
Lesions: dry macular degeneration, pale optic disc with glaucomatous cupping

### Macular Drusen
Precursor to ARMD in many cases. Can just be normal variant.
Lesions: drusen

### Retinal Detachment
Due to trauma in this case can be DR. Lesions: Margin between normal and detached retina

### Optic Atrophy
Pale disc. Incidental findings: blurring of the disc margin due to myelinated nerve fibres, choroidal vessels

### Papilloedema:
The optic disc is swollen and raised. Lesions: Papilloedema, congested retinal veins, blurred disc margin.
Cortical Cataract and Corneal arcus:
The red reflex is abnormal due to cataract most apparent “4-10pm” Lesions.  
Central cataract formation seen with slit lamp 
This can be due to steroid use or more commonly due to aging alone.

Thrombotic Glaucoma due to Diabetes:
The pupil is irregular, corneal suffused, abnormal mesh of vessels in the iris can be seen with difficulty.

Branch Retinal Vein Occlusion:
At point X there is marked A-V nipping with thrombotic occlusion of the distal retinal vein. Lesions:  
Retinal artery is patients and allows blood into the retinal but there is no outflow. Lesions: papilloedema, haemorrhages

Macular degeneration with haemorrhage:
This will be associated with marked oedema Lesions: retinal scarring, haemorrhages

Myelinated Nerve Fibres:
This is a normal variant, enlargement of the blind spot is rarely clinically apparent. 
Lesion: myelinated nerve fibres

Retinitis Pigmentosa
Results in poor rod function with night blindness and tunnel vision. Lesions: speculated peripheral lesions

Severe Retinal Haemorrhage in Hyperviscosity Syndrome
Often due to myeloma and bleeding diatheses. Lesions: haemorrhages

Tigroid retinal with myopic crescent
The tiger skin appearance is a normal but striking variant. In myopia the elongated eyeball stretches the globe Lesions: tigroid retina, myopic crescent

Central Retinal Artery Occlusion
This results in a pale retina and optic disc, the choroidal artery supply is still present and is seen as the “cherry red spot” (also seen in lipid storage disorders)

Cholesterol Embolus
Also known as a Hollenhorst Plaque, causes retinal TIA (amaurosis fugax). Embolus can originate from carotid artery, aortic valve or arch.

Central Retinal Vein Occusion
Retinal artery is patients and allows blood into the retinal but there is no outflow. Lesions: papilloedema, haemorrhages,
### Thyroid Status Examination Sequence

**Explanation and consent “WIPE”**
- **W**ashes hands, **I**ntroduction, **P**atient Consent, **E**xplains procedure

**Correct position and adequate exposure**
- Positions patient upright. Exposes neck and upper chest (maintaining patient dignity).

**General inspection**
End of bed: comment on any relevant findings eg Well, level of activity (hyper/hypo), tremor, weight gain/loss, general facies (eg skin and hair: waxy skin, balding, loss of lateral eyebrows), voice

**General examination:**
- **Hands and nails:** Temperature, Sweaty, scaly/dry skin, palmar erythema, evidence of carpal tunnel syndrome. Nails: brittle (hypothyroidism), onycholysis, clubbing (Graves)
- **Tremor:** Place sheet of paper on back of outstretched hand and observe
- **Pulse:** Rate: tachycardia/bradycardia, Volume: bounding, Rhythm: AF (associated with hyperthyroidism)
- **Eyes:** Lid lag, lid retraction, exophthalmos, diplopia

**Thyroid examination**

**Inspection (from front and side)**
- Swelling ?goitre
- Scars, skin changes
- Observe any masses while patient takes sip of water
- Ask patient to stick out tongue to see if any mass moves (thyroglossal cyst)

**Percussion**
- Over upper sternum for retrosternal goitre

**Palpation (enquire about pain and be wary of discomfort during the exam)**
- Test for movement of mass on swallowing
- Measure any masses/nodules
- Palpate cervical lymph nodes

**Auscultation**
- Bruit (heard over the thyroid)
- Exclude stridor due to tracheal compression

**Lower legs:** Inspect for pretibial myxoedema and test ankle reflexes.

**Additional examination:** BP, Muscle power (arms/legs), examine for carpal tunnel syndrome

**Professionalism:** Covers patient, thanks patient, washes hands.
Breast Examination Sequence

Introduction, Explanation, Consent, Position
- Explains procedure to patient, obtains verbal consent, asks for chaperone.
- Washes hands.

Correct position and adequate exposure
- Positions patient appropriately: usually flat (fig 4)
- Exposes neck, breasts, chest wall and arms.

General inspection
- Assesses symmetry and comments on any skin or nipple changes.
- Asks patient to slowly elevate hands above head and repeats inspection.
- Asks patient to press hands against hips and repeats inspection.

Examination Sequence Summary

1: Inspection: Ensure adequate exposure, maintain comfort and dignity.
2: Ask the patient to lift her hands above her head and hold head from behind.
3: Ask the patient to push her hands into hips to contract pectoral muscles
4: Palpation: With the patient lying down at 45 degrees, and arm resting on her forehead or hand behind the head. Palpate all 4 quadrants in a stepwise fashion using the pulps of three fingers, not the tips.

Palpation
- Lies patient back at 45 degrees with hands behind head.
- Starts palpation on asymptomatic side.
- Systematically palpates whole breast including areola and nipple.
- Palpates axillary tail.
- Palpates axilla for lymphadenopathy.
- Repeats palpation for symptomatic side.
- Palpates supraclavicular fossae for lymphadenopathy.
- Checks for nipple discharge.

Professionalism
- Assists patient to dress, thanks patient, washes hands.
Description of a lump

- Describe a lump in the following terms:

  **S P A S E C T I T**

  - **S**ize and **P**hape: use diagram
  - **P**osition: anatomical size and related structures, ? lymphnodes involved
  - **A**tachment to skin: ? fixed, ? mobile
  - **S**urface characteristics: smooth, lobulated, regular
  - **E**dge characteristics: sharp, blunt, diffuse
  - **C**onsistency: soft (lip), firm (tip of nose), hard (forehead)
  - **T**hrills or pulsations: ? vascular bruit, cough impulse?
  - **I**nflammation: redress, heat, pain, tenderness, oozing, crusting
  - **T**ransillumination: ? solid cystic (use pen torch)

Clinical Notes
<table>
<thead>
<tr>
<th>Endocrinology History and Examination Checklist</th>
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<tr>
<td><strong>History</strong></td>
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<td><strong>Adrenal Cortex</strong></td>
</tr>
<tr>
<td><strong>Adrenal Insufficiency (Addison’s Disease)</strong></td>
</tr>
<tr>
<td>Weakness, fatigue, sleepiness</td>
</tr>
<tr>
<td>Dizziness on standing</td>
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<tr>
<td>Pallor</td>
</tr>
<tr>
<td>Weight loss or gain</td>
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<tr>
<td>Abdominal pain</td>
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<tr>
<td></td>
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<tr>
<td><strong>Glucocorticoid Excess (Cushing’s Syndrome)</strong></td>
</tr>
<tr>
<td>See pituitary gland</td>
</tr>
<tr>
<td><strong>Aldosterone Excess (Conn’s Syndrome)</strong></td>
</tr>
<tr>
<td>Often no specific symptoms</td>
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<td></td>
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<tr>
<td>Headache</td>
</tr>
<tr>
<td><strong>Androgen Excess : females esp PCOS</strong></td>
</tr>
<tr>
<td>(adrenal and ovary)</td>
</tr>
<tr>
<td>Hirsutism,</td>
</tr>
<tr>
<td>irregular periods,</td>
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<tr>
<td>failure to conceive,</td>
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<tr>
<td>weight gain,</td>
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<tr>
<td>voice change</td>
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<tr>
<td><strong>Adrenal Medulla</strong></td>
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<tr>
<td><strong>Catecholamine Excess (phaeochromocytoma)</strong></td>
</tr>
<tr>
<td>Headaches</td>
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<tr>
<td>Sweating</td>
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<tr>
<td>Palpitations</td>
</tr>
<tr>
<td>Anxiety</td>
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<tr>
<td><strong>Anterior Pituitary</strong></td>
</tr>
<tr>
<td><strong>Prolactin Excess (hyperprolactinaemia)</strong></td>
</tr>
<tr>
<td>Female</td>
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<tr>
<td>Menstrual irregularity</td>
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<tr>
<td>Infertility</td>
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<tr>
<td>Galactorrhoea</td>
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<tr>
<td>Headaches</td>
</tr>
<tr>
<td>Low mood, tiredness</td>
</tr>
<tr>
<td><strong>Male</strong></td>
</tr>
<tr>
<td>Galactorrhoea, gynaecomastia</td>
</tr>
<tr>
<td>Erectile dysfunction</td>
</tr>
<tr>
<td>Headaches</td>
</tr>
<tr>
<td>Low mood, tiredness</td>
</tr>
<tr>
<td><strong>Glucocorticoid Excess (Cushing’s Syndrome)</strong></td>
</tr>
<tr>
<td>(pituitary and adrenal)</td>
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<tr>
<td>Weight gain</td>
</tr>
<tr>
<td>Depression</td>
</tr>
<tr>
<td>Weakness</td>
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<tr>
<td>Infection</td>
</tr>
<tr>
<td>Easy bruising</td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Gonadotrophin Deficiency (LH, FSH)</strong></td>
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<tr>
<td>---</td>
</tr>
<tr>
<td><strong>Female</strong></td>
</tr>
<tr>
<td>Amenorrhoea, oligomenorrhoea</td>
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<tr>
<td>Infertility, lack of libido</td>
</tr>
<tr>
<td>Dyspareunia</td>
</tr>
<tr>
<td>Breast atrophy</td>
</tr>
<tr>
<td>Loss of secondary sexual hair</td>
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<tr>
<td><strong>Male</strong></td>
</tr>
<tr>
<td>Low libido/erectile dysfunction</td>
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<tr>
<td>Infertility</td>
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<tr>
<td>Testicular atrophy/softness</td>
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<tr>
<td>Loss of secondary sexual hair</td>
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<table>
<thead>
<tr>
<th><strong>Growth Hormone Excess (Acromegaly)</strong></th>
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<tbody>
<tr>
<td>Enlargement of tissues: larger hands, rings not fitting, clothes size change</td>
<td>Coarse facies with soft tissue enlargement: nose, lips, tongue (macroglossia), goitre</td>
</tr>
<tr>
<td>Sweating</td>
<td>Supra-orbital ridge enlargement</td>
</tr>
<tr>
<td>Headaches</td>
<td>Prognathism with teeth separation</td>
</tr>
<tr>
<td>Arthritis</td>
<td>Hypertension</td>
</tr>
<tr>
<td>Visual field loss</td>
<td>Visual field defect (bitemporal hemianopia), diplopia, corneal reflex reduced</td>
</tr>
<tr>
<td><strong>Growth Hormone Deficiency</strong></td>
<td></td>
</tr>
<tr>
<td>Low mood, tiredness</td>
<td>Truncal obesity with increased waist hip ratio</td>
</tr>
<tr>
<td>Social isolation</td>
<td>Reduction in muscle strength</td>
</tr>
<tr>
<td>Weight gain</td>
<td>Low mood on full mental state examination</td>
</tr>
<tr>
<td>Reduced stamina and strength</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>TSH Deficiency</strong></th>
<th></th>
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<tbody>
<tr>
<td>As for hypothyroidism</td>
<td></td>
</tr>
<tr>
<td>TSH excess is extremely rare</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ACTH Deficiency</strong></th>
<th></th>
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<tbody>
<tr>
<td>As for adrenocortical insufficiency</td>
<td></td>
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<tr>
<td>No skin pigmentation</td>
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<table>
<thead>
<tr>
<th><strong>Posterior Pituitary</strong></th>
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<tbody>
<tr>
<td><strong>ADH Deficiency (diabetes insipidus)</strong></td>
<td></td>
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<tr>
<td>Polyuria, polydipsia</td>
<td>Carries water bottle</td>
</tr>
<tr>
<td>Nocturia</td>
<td></td>
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<tr>
<td>Copious light coloured urine</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th><strong>Diabetes Mellitus</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyuria</td>
<td>Foot: dorsalis pedis, posterior tibial, neuropathy testing (10g monofilament), odour, ulcers, infection, maceration of skin, deformity, heat, cold</td>
</tr>
<tr>
<td>Polydipsia</td>
<td>Retina: background, maculopathy, pre-proliferative, proliferative, advanced, laser</td>
</tr>
<tr>
<td>Weight loss</td>
<td>Hands: diabetes cheiroarthropathy, carpal tunnel</td>
</tr>
<tr>
<td>Tiredness</td>
<td>General: obesity, injection sites esp. for hypertrophy and bruising, acanthosis nigricans, necrobiosis lipoidica diabetorum</td>
</tr>
<tr>
<td>Blurred vision</td>
<td></td>
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<tr>
<td>Thrush</td>
<td></td>
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<tr>
<td>Delayed wound healing</td>
<td></td>
</tr>
<tr>
<td>History due to complications</td>
<td></td>
</tr>
<tr>
<td>Precipitating factors: steroids, stress, infection, pancreatitis</td>
<td></td>
</tr>
</tbody>
</table>
### Parathyroid disorders

<table>
<thead>
<tr>
<th>Hyperparathyroid (Hypercalcaemia)</th>
<th>Polyuria, Polydipsia, Tiredness, Abdo pains, Low mood</th>
<th>Rarely enlarged palpable glands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoparathyroid (Hypocalcaemia)</td>
<td>Tingling around mouth, twitching, hand spasm</td>
<td>Chvostek's sign; is the twitching of the facial muscles in response to tapping over the facial nerve at the zygomatic arch. Trousseau's sign: is carpal spasm caused by inflating a BP cuff to above systolic BP for 3 minutes.</td>
</tr>
</tbody>
</table>

### Hyperlipidaemia

| Family history of atherosclerotic disease | Atherosclerotic disease symptoms: angina, TIA, stroke, PVD | corneal arcus, xanthelasmsata, tendon xanthomata (Achilles, extensor tendons of hands), eruptive xanthomata (especially buttocks and palms), atherosclerotic disease: eg carotid stenosis, aortic sclerosis, lipaemia retinalis |

### Chronic Fatigue Syndrome (“ME”)

| Fatigue, especially post exertion | Look tired/exhausted |
| Sleep disturbance | Dark glasses (photophobia) |
| Pain: myalgia, fibromyalgia | Tender lymph nodes |
| Headaches, neuropathic pain | Postural hypotension |
| General poorer cognition | Low temperature |
| Photophobia, phonophobia | Reduced reflexes, atonic pupils, reduced reflexes |
| Dizziness, abnormal thermoregulation, sweating | |
| Recurrent infections | |

### CFS Patient safety tips

Some memorable missed diagnoses include:
- **Hypothyroidism**: misdiagnosed as cardiac failure, depression or stroke
- **Addison’s disease** or **diabetic ketoacidosis**: acute abdomen
- **Ovarian malignancy**: hirsutism and weight gain,
- **Hypopituitarism**: depression
- **Diabetes mellitus**: recurrent infections, incontinence and poor vision
- **Phaeochromocytoma**: anxiety with mild hypertension
- **Chronic fatigue/ME**: myasthenia gravis, Addison’s disease, SLE, Ehlers-Danlos
  - Hypermobile type, cerebral tumours, vitamin D or B12 deficiencies (common)
### Thyroid and Neck Examination Sequence

**Explanation and consent “WIPE”**
- **W**ashes hands, **I**ntroduction, **P**atient Consent, **E**xplains procedure

**Correct position and adequate exposure**
- Ask patient to uncover and remove clothes such that neck is exposed and at least the top half of the sternum. Seated position is usually most suitable.

**Inspection**
- Inspect the neck for swellings: size, shape, asymmetry?, surface changes ? scars
- Ask the patient to stick out their tongue to see if any mass moves (thyroglossal cyst)
- Ask the patient to swallow (have a glass of water handy).

**Palpation**
- Use the right index and middle finger to feel below the thyroid cartilage where the normal isthmus of the gland overlies the trachea. Then palpate the two lateral lobes of the thyroid gland.
- With the next slightly flexed ask the patient to hold some water in the mouth and swallow as you palpate. If mass ? soft ? firm ? hard, nodular or diffusely enlarged ? moves on swallowing,
- Check for lymphadenopathy: supraclavicular, cervical, sub-mandibular, sub-mental, post-auricular, sub-occipital
- Use note the examination can be quite uncomfortable for the patient: warn and re-assure.

**Percussion**
- Check for possible retro-sternal extension of the thyroid gland by percussion over the sternum

**Auscultation**
- Check for thyroid bruit and exclude stridor due to tracheal compression

**Essential Extras:**
- Reflexes: slow-relaxing ankle or biceps reflex. ? a brief, brisk contraction followed by a more prolonged relaxation phase.
- Examine for pre-tibial myxoedema. Consider examination for cardiac failure.

Consider examination for Carpal Tunnel Syndrome in hypothyroidism with inspection, muscle power in hands (abductor pollicis brevis, flexor pollicis brevis, opponens pollicis), Tinel's sign, Phalen's sign, sensation radial side of palm (3 and a half digits).

**Professionalism:** Maintains dignity of patient, communicates sensitively with patient, thanks patient, washes hands, writes appropriate record
Musculoskeletal System History and Examination

(From Arthritis Research UK Clinical Assessment of the Musculoskeletal System: A guide for Medical students and Healthcare Professionals 2011)

Musculoskeletal disorders are the commonest cause of disability in the UK. Each year 15 per cent of patients on a general practitioner’s list will consult their doctor with a locomotor problem, and such conditions form 20–25 per cent of a GP’s workload. About 30 per cent of those with any physical disability, and 60 per cent of those with a severe disability, have a musculoskeletal disorder as the primary cause of their problems.

Clinical skills – i.e. competent history taking and examination – are the key to making an accurate diagnosis and assessment of a patient complaining of joint problems. This booklet aims to outline the methods you might use. It is not intended to replace clinical teaching and experience but to be used as an aid to learning.

‘Arthritis’ is a term that is frequently used to describe any joint disorder (and not infrequently any musculoskeletal problem). It could be argued that the term ‘arthritis’ should be used to describe inflammatory disorders of the joint whilst ‘arthropathy’ should be used to describe non-inflammatory disorders. Other musculoskeletal problems should similarly be described according to their anatomical site (e.g. muscle or tendon) and whether they are of inflammatory or non-inflammatory aetiology. However, the term ‘arthritis’ is in such widespread general use to describe any disorder of the joint that, for the purpose of this guide, it will be used in that sense.

There are over 200 different types of ‘arthritis’ (both inflammatory and non-inflammatory) and, in general, it is not necessary for a practising clinician to know about all of these. A more realistic approach is to adopt a classification scheme, and to learn how to place patients’ problems within this classification, using information gained through a full history and examination (as described in detail in the sections which follow).

The five key questions which need to be answered are:

- Does the problem arise from the joint, tendon or muscle?
- Is the condition acute or chronic?
- Is the condition inflammatory or non-inflammatory?
- What is the pattern of affected areas/joints?
- What is the impact of the condition on the patient’s life?

The answers to these questions should enable you to produce a succinct summary of the patient’s condition. An example of a patient summary produced using this method might be:

‘This patient has a chronic symmetrical inflammatory polyarthritis, mainly affecting the small joints of the hands and feet, which is causing pain, difficulty with dressing and hygiene, and is limiting her mobility.’

This would result in the patient being placed as indicated on the classification tree (see Figure 1).
The musculoskeletal history

History taking is one of the most important skills for any doctor or practitioner to acquire and this can only be achieved through regular practice. This handbook is primarily concerned with problems arising from the joints – that is from the articular and periarticular structures. (These structures are shown in Figure 2, while Figure 3 represents diagrammatically the changes which occur in the two main types of arthritis.) However, it is clearly important to identify those cases where pain may appear to arise from the joint but is in fact referred pain – for example, where the patient describes pain in the left shoulder, which might in fact be referred pain from the diaphragm, the neck, or perhaps ischaemic cardiac pain. In cases where examination reveals no abnormalities in the joint, other clues will be obtained by taking a full history.

Assuming the patient’s problems do arise from the joint(s), the aims of the history will be to differentiate between inflammatory and degenerative/mechanical problems, to identify patterns that may help with the diagnosis, and to assess the impact of the problem upon the patient. There are four important areas which need to be covered when taking a musculoskeletal history:

- the current symptoms
- the evolution of the problem (is it acute or chronic?)
- the involvement of other systems
- the impact of the disease on the person’s life.

The assessment of these four areas is discussed in the sections which follow.

Current symptoms

The main symptoms of musculoskeletal conditions are pain, stiffness and joint swelling affecting one or more joints. Assessment of the patient’s current symptoms may allow differentiation to be made between inflammatory and non-inflammatory conditions. Inflammatory joint conditions are frequently associated with prolonged early morning stiffness that eases with activity, whilst non-inflammatory conditions are associated with pain more than stiffness, and the symptoms are usually exacerbated by activity.
Pain

As with all pain, it is important to record the site, character, radiation, and aggravating and relieving factors. Patients may localize their pain accurately to the affected joint, or they may feel it radiating from the joint or even into an adjacent joint. In the shoulder, for example, pain from the acromioclavicular joint is usually felt in that joint, whereas pain from the glenohumeral joint or rotator cuff is usually felt in the upper arm. Pain from the knee may be felt in the knee, but can sometimes be felt in the hip or the ankle. Pain due to irritation of a nerve will be felt in the distribution of the nerve – as in sciatica, for example. The pain may localize to a structure near rather than in the joint – for example, the pain from tennis elbow will usually be felt on the outside of the elbow joint.

The character of the pain is sometimes helpful. Pain due to pressure on nerves often has a combination of numbness and tingling associated with it. However, the character of musculoskeletal pain can be very variable and is not always helpful in making a diagnosis.

Pain of a non-inflammatory origin is more directly related to use: the more you do the worse it gets. Pain caused by inflammation is often present at rest as well as on use, and tends to vary from day to day and from week to week in an unpredictable fashion. It flares up and then it settles down. Severe bone pain is often unremitting and persists through the night, disturbing the patient’s sleep.

Stiffness

In general, inflammatory arthritis is associated with prolonged morning stiffness which is generalized and may last for several hours. The duration of the morning stiffness is a rough guide to the activity of the inflammation. Commonly, patients with inflammatory disease will also describe worse stiffness in the evening as part of a diurnal variation. With inflammatory diseases such as rheumatoid arthritis (RA), where joint destruction occurs over a prolonged period, the inflammatory component may eventually become less active and the patient may then only complain of brief stiffness in the morning. In contrast, osteoarthritis (OA) causes localized stiffness in the affected joints which is short-lasting (less than 30 minutes) but recurs after periods of inactivity. It is sometimes difficult for patients to distinguish between pain and stiffness, so your questions will need to be specific. It may help to remind the patient that stiffness means difficulty in moving the joint.

Joint swelling

A history of joint swelling, especially if it is intermittent, is normally a good indication of an inflammatory disease process – but there are exceptions. Nodal osteoarthritis, for example, causes bony, hard and non-tender swelling in the proximal interphalangeal (PIP) and distal interphalangeal (DIP) joints of the fingers. Swelling of the knee is also less suggestive of inflammatory disease as it can also occur with trauma and in OA. Ankle swelling is a common complaint, but this is more commonly due to oedema than to swelling of the joint.
**Pattern of joint involvement**

The pattern of joint involvement is very helpful in defining the type of arthritis, as different patterns are associated with different diseases. Common patterns of joint involvement include:

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Monoarticular</td>
<td>only one joint affected</td>
</tr>
<tr>
<td>Pauciarticular</td>
<td>less than four joints affected</td>
</tr>
<tr>
<td>Polyarticular</td>
<td>a number of joints affected</td>
</tr>
<tr>
<td>Axial</td>
<td>the spine is predominantly affected</td>
</tr>
</tbody>
</table>

As well as the number of joints affected, it is useful to consider whether the large or small joints are involved, and whether the pattern is symmetrical or asymmetrical. Rheumatoid arthritis, for example, is a polyarthritis (it affects lots of joints) which tends to be symmetrical (if it affects one joint it will affect the same joint on the other side), and if it affects one of a group of joints it will often affect them all, for example, the MCP joints. Note, however, that this describes established disease and early RA can affect any pattern of joints. Spondyloarthritides, such as psoriatic arthritis, are more likely to be asymmetrical and may be associated with inflammatory symptoms, such as early morning stiffness, involving the spine. Osteoarthritis tends to affect weight-bearing joints and the parts of the spine that move most (lumbar and cervical).
Figure 3. Diagrammatic representation of the two main types of arthritis: (a) a normal joint; (b) a joint affected by rheumatoid arthritis; (c) a joint affected by osteoarthritis

Figure 2. Cross-sectional diagram of a synovial joint and its perilarticular structures

Figure 4. Graphs representing the chronology of a condition: (a) for a patient with gout; (b) for a patient with rheumatoid arthritis
Evolution of the problem: is it acute or chronic?

You will need to listen to the patient's history to find out:

- When did the symptoms start and how have they evolved? Was the onset sudden or gradual?
- Was the onset associated with a particular event, e.g. trauma or infection?
- Which treatments has the condition responded to?

The way in which symptoms evolve and respond to treatment can be an important guide in making a diagnosis. Gout, for example, is characterized by acute attacks – these often start in the middle of the night, become excruciatingly painful within a few hours, and respond well to non-steroidal anti-inflammatory drugs (NSAIDs).

Musculoskeletal symptoms lasting more than 6 weeks are generally described as chronic. Chronic diseases may start insidiously and may have a variable course with remissions and exacerbations influenced by therapy and other factors. It may be helpful to represent the chronology of a condition graphically (see Figure 4).

Involvement of other systems

Inflammatory arthropathies often involve other systems including the skin, eyes, lungs and kidneys. In addition, patients with inflammatory disease often suffer from general symptoms such as malaise, weight loss, mild fevers and night sweats. Fatigue and depression are also common. Osteoarthritis in contrast is limited to the musculoskeletal system. A comprehensive history must include the usual screening questions for all systems as well as specific enquiries relating to known complications of specific musculoskeletal disorders.

The presence of an arthritis does not exclude other diseases, and these other conditions may affect both the patient and their arthritis. A combination of two disabling diseases will be worse than either one alone, and the impact on the patient will therefore be greater. In addition, other conditions may be affected by the treatments prescribed for the arthritis – for example, the presence of liver disease may limit the use of disease-modifying drugs for inflammatory arthritis, because most of these drugs can upset the liver.

Impact of the condition on the patient

Understanding the impact of the disease on the patient is crucial to negotiating a suitable management plan. Ask open questions about functional problems and difficulty in doing things. It may be easiest to get the patient to describe a typical day, from getting out of bed to washing, dressing, toileting etc. Potentially sensitive areas, such as hygiene or sexual activity, should be approached with simple, direct, open questions. The impact of the disease on the patient’s employment will be important.

A patient’s needs and aspirations are an important part of the equation and will influence their ability to adapt to the condition. Questions concerning the things a person would like to do, but is currently unable to, may pinpoint key problems. Later negotiations with the patient on balancing the risks and benefits of an intervention will be greatly affected by the patient’s priorities for treatment.

Medical students, doctors and practitioners should have an awareness of the relationship between functional loss, limitation of activity, and restriction of participation. Being unable to fully flex a finger (loss of function) might lead to difficulty, for example, with fastening buttons (activity) which might have a fairly minor impact on general life (participation). The same loss of function, however, might prevent a pianist from playing (activity) which, for a professional musician, might have a significant impact on his/her way of life (participation) (see Figure 5).
Screening questions for musculoskeletal disorders

These screening questions should be incorporated into the routine systemic enquiry of every patient. The main symptoms arising from disorders of the musculoskeletal system are pain, stiffness, swelling, and associated functional problems. The screening questions directly address these aspects:

- ‘Do you have any pain or stiffness in your muscles, joints or back?’
- ‘Can you dress yourself completely without any difficulty?’
- ‘Can you walk up and down stairs without any difficulty?’

A patient who has no pain or stiffness, and no difficulty with dressing or with climbing stairs is unlikely to be suffering from any significant musculoskeletal disorder. If the patient does have pain or stiffness, or difficulty with either of these activities, then a more detailed history should be taken (as described above).

![Figure 5. A model of disability – the relationship between loss of function, limitation of activity and restriction of participation. Based on the World Health Organization’s International Classification of Functioning, Disability and Health. Disability and function are the result of the interactions between a health condition and contextual factors (environmental and personal factors).](image-url)
<table>
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<th><strong>History taking: revision checklist</strong></th>
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**Screening questions:**
- Do you have any pain or stiffness in your muscles, joints or back?
- Can you dress yourself completely without any difficulty?
- Can you walk up and down stairs without any difficulty?

**Abbreviations:** CMC(J) carpometacarpal (joint); CT computerized tomography; DEXA dual-energy x-ray absorptiometry; DIP(J) distal interphalangeal (joint); ESR erythrocyte sedimentation rate; GALS gait, arms, legs and spine; MCP(J) metacarpophalangeal (joint); MRI magnetic resonance imaging; MTP(J) metatarsophalangeal (joint); NSAID non-steroidal anti-inflammatory drug; OA osteoarthritis; PIP(J) proximal interphalangeal (joint); RA rheumatoid

**Clinical Notes**
GALS Screening Examination

Screening examination for musculoskeletal disorders (‘GALS’)
A brief screening examination, which takes 2–3 minutes, has been devised for use in routine clinical assessment. This has been shown to be highly sensitive in detecting significant abnormalities of the musculoskeletal system. It involves inspecting carefully for joint swelling and abnormal posture, as well as assessing the joints for normal movement. This screening examination is known by the acronym ‘GALS’, which stands for Gait, Arms, Legs and Spine. The sequence in which these four elements are assessed can be varied – in practice, it is usually more convenient to complete the elements for which the patient is weight bearing before asking the patient to climb onto the couch. pGALS (paediatric GALS) is a modification of ‘GALS’ for use in school-aged children.

When should I do GALS screen, and when I should I do a more detailed assessment like REMS?
GALS screen is intended for patients who have presented with non-musculoskeletal problems, e.g., 70 year old who has presented with a community acquired pneumonia; while REMS is more suitable for patients who have active musculoskeletal problems.

Gait
Observe gait:
- Ask the patient to walk a few steps, turn and walk back.
- Observe the patient’s gait for symmetry, smoothness and the ability to turn quickly.

Observe patient in anatomical position
- With the patient standing in the anatomical position, observe from behind, from the side, and from in front for:
  - bulk and symmetry of the shoulder, gluteal, quadriceps and calf muscles;
  - limb alignment; alignment of the spine; equal level of the iliac crests;
  - ability to fully extend the elbows and knees; popliteal swelling;
  - abnormalities in the feet such as an excessively high or low arch profile, clawing/retraction of the toes and/or presence of hallux valgus

Arms
Observe movement – hands behind head
- Ask the patient to put their hands behind their head. Assess shoulder abduction and external rotation, and elbow flexion (these are often the first movements to be affected by shoulder problems).

Observe backs of hands and wrists
With the patient’s hands held out, palms down, fingers outstretched, observe the backs of the hands for joint swelling and deformity.

Observe palms
Ask the patient to turn their hands over and look at the palms for muscle bulk and for any visual signs of abnormality.

Assess power grip and grip strength
Ask the patient to make a fist. Visually assess power grip, hand and wrist function, and range of movement in the fingers.

Assess fine precision pinch
Ask the patient to squeeze your fingers. Assess grip strength. Ask the patient to bring each finger in turn to meet the thumb. Assess fine precision pinch (this is important functionally).

Squeeze MCPJs: Gently squeeze across the metacarpophalangeal (MCP) joints to check for tenderness suggesting inflammatory joint disease. (Be sure to watch the patient’s face for non-verbal signs of discomfort.)
**Legs**

**Assess full flexion and extension**
With the patient lying on the couch, assess full flexion and extension of both knees, feeling for crepitus.

**Assess internal rotation of hips**
With the hip and knee flexed to 90°, holding the knee and ankle to guide the movement, assess internal rotation of each hip in flexion (this is often the first movement affected by hip problems).

**Perform patellar tap**
Perform a patellar tap to check for a knee effusion. Slide your hand down the thigh, pushing down over the suprapatellar pouch so that any effusion is forced behind the patella. When you reach the upper pole of the patella, keep your hand there and maintain pressure. Use two or three fingers of the other hand to push the patella down gently. Does it bounce and ‘tap’? This indicates the presence of an effusion.

**Inspect feet**
From the end of the couch, inspect the feet for swelling, deformity, and callosities on the soles.

**Squeeze MTPJs**
Squeeze across the metatarsophalangeal (MTP) joints to check for tenderness suggesting inflammatory joint disease. (Be sure to watch the patient’s face for signs of discomfort.)

**Spine**

**Inspect spine**
With the patient standing, inspect the spine from behind for evidence of scoliosis, and from the side for abnormal lordosis or kyphosis.

**Assess lateral flexion of neck**
Ask the patient to tilt their head to each side, bringing the ear towards the shoulder. Assess lateral flexion of the neck (this is sensitive in the detection of early neck problems).

**Assess lumbar spine movement**
Ask the patient to bend to touch their toes. This movement is important functionally (for dressing) but can be achieved relying on good hip flexion, so it is important to palpate for normal movement of the vertebrae. Assess lumbar spine flexion by placing two or three fingers on the lumbar vertebrae.

Your fingers should move apart on flexion and back together on extension.
# ‘GALS’ screening examination: checklist

## Introduction
- Introduce yourself
- Gain verbal consent to examine

## Gait
- Observe gait
- Observe patient in anatomical position

## Arms
- Observe movement – hands behind head
- Observe backs of hands and wrists
- Observe palms
- Assess power grip and strength
- Assess fine precision pinch
- Squeeze MCPJs

## Legs
- Assess full flexion and extension
- Assess internal rotation of hips
- Perform patellar tap
- Inspect feet
- Squeeze MTPJs

## Spine
- Inspect spine
- Assess lateral flexion of neck
- Assess lumbar spine movement
Performing a regional examination of the musculoskeletal system
(‘REMS’)

Regional examination of the musculoskeletal system refers to the more detailed examination that should be carried out once an abnormality has been detected either through the history or through the screening examination (GALS). REMS involves the examination of a group of joints which are linked by function, and may require a detailed neurological and vascular examination.

REMS was born out of a desire to standardize examination of the musculoskeletal system, allowing for more systematic teaching and learning. It was developed through a national consensus process involving UK consultants in rheumatology, orthopaedics and care of the elderly and selected general practitioners. It led to an agreed set of ‘core’ skills. It is important to note, however, that a number of other specific tests may be used by musculoskeletal practitioners as an adjunct to the REMS examination.

There are five key stages which need to be completed during an examination of the joints in any part of the body:

- Introduce yourself.
- Look at the joint(s).
- Feel the joint(s).
- Move the joint(s).
- Assess the function of the joint(s).

Introduction

It is important to introduce yourself, explain to the patient what you are going to do, gain verbal consent to examine, and ask the patient to let you know if you cause them any pain or discomfort at any time. In all cases it is important to make the patient feel comfortable about being examined. A good musculoskeletal examination relies on patient cooperation, in order for them to relax their muscles, if important clinical signs are not to be missed.

Look

The examination should always start with a visual inspection of the exposed area at rest. Compare one side with the other, checking for symmetry. You should look specifically for skin changes, muscle bulk, and swelling in and around the joint. Look also for deformity in terms of alignment and posture of the joint.

Feel

Using the back of your hand, feel for skin temperature across the joint line and at relevant neighbouring sites. Any swellings should be assessed for fluctuance and mobility. The hard bony swellings of osteoarthritis should be distinguished from the soft, rubbery swellings of inflammatory joint disease. Tenderness is an important clinical sign to elicit – both in and around the joint. Identifying inflammation of a joint (synovitis) relies on detecting the triad of warmth, swelling and tenderness.

Move

The full range of movement of the joint should be assessed. Compare one side with the other. As a general rule both active movements (where the patient moves the joint themselves) and passive movements (where the examiner moves the joint) should be performed. If there is a loss of active movement, but passive movement is unaffected, this may suggest a problem with
the muscles, tendons or nerves rather than in the joints, or it may be an effect of pain in the joints. In certain instances joints may move further than expected – this is called hypermobility.

It is important to elicit a loss of full flexion or a loss of full extension as either may affect function. A loss of movement should be recorded as mild, moderate or severe. The quality of movement should be recorded, with reference to abnormalities such as increased muscle tone or the presence of crepitus.

**Function**

It is important to make a functional assessment of the joint – for example, in the case of limited elbow flexion, does this make it difficult for the patient to bring their hands to their mouth? In the case of the lower limbs, function mainly involves gait and the patient’s ability to get out of a chair.

For the purposes of this handbook the REMS examination has been divided into seven areas, each of which is described in detail below. However, it should be remembered that this is an artificial division and that one group of joints may need to be examined in conjunction with another group (e.g. the shoulder and cervical spine).

**Recording the findings from the regional examination**

The positive and significant negative findings of the REMS examination are usually documented longhand in the notes. If no abnormality is found then ‘REMS normal’ is sufficient. You may find it helpful to document joint involvement on a homunculus such as the one shown in Figure 21. The total number of tender and swollen joints can be used for calculating disease activity scores – these are useful in monitoring disease severity and response to treatment over time.

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<td>• Introduce yourself</td>
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<td>• Gain verbal consent to examine</td>
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<tr>
<td><strong>Look for:</strong></td>
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<tr>
<td>• scars</td>
</tr>
<tr>
<td>• swellings</td>
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<tr>
<td>• rashes</td>
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<tr>
<td>• muscle wasting</td>
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<tr>
<td><strong>Feel for:</strong></td>
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<tr>
<td>• temperature</td>
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<tr>
<td>• swellings</td>
</tr>
<tr>
<td>• tenderness</td>
</tr>
<tr>
<td><strong>Move</strong></td>
</tr>
<tr>
<td>• full range of movement – active and passive</td>
</tr>
<tr>
<td>• restriction – mild, moderate or severe?</td>
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<tr>
<td><strong>Function</strong></td>
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<tr>
<td>functional assessment of joint(s)</td>
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Figure 21. Printed homunculus for annotation
Examination of the hand and wrist

This should normally take place with the patient's hands resting on a pillow as it can be painful for patients with elbow or shoulder problems to hold their hands up for long.

Look

*With the patient's hands palms down:*

- Look at the posture and for obvious swelling, deformity, muscle wasting and scars.
- Look at the skin for thinning and bruising (signs of long-term steroid use) or rashes.
- Look at the nails for psoriatic changes such as pitting or onycholysis, and evidence of nailfold vasculitis.
- Decide whether the changes are symmetrical or asymmetrical.
- Do the changes mainly involve the small joints – PIPs and DIPs, MCPs, or the wrists?

*Ask the patient to turn their hands over:*

- Does the patient have problems with this due to radioulnar joint involvement?

*With the patient's hands palms up:*

- Look again for muscle wasting – if present, is it in both the thenar and hypothenar eminences? If it is only in the thenar eminence, then perhaps the patient has carpal tunnel syndrome. Look for signs of palmar erythema. *Check wrist for carpal tunnel release*

Feel

*With the patient's hands palms up:*

- Feel for peripheral pulses.
- Feel for bulk of the thenar and hypothenar eminences and for tendon thickening.
- Assess median and ulnar nerve sensation by gently touching over both the thenar and hypothenar eminences, and the index and little fingers respectively – is sensation normal and equal?

*Ask the patient to turn their hands back over, so their palms are face down:*

- Assess radial nerve sensation by light touch over the thumb and index finger web space.
- Using the back of your hand, assess skin temperature at the patient's forearm, wrist and MCP joints. Are there differences?
- Gently squeeze across the row of MCP joints to assess for tenderness (watching the patient's face for signs of discomfort).
- Bimanually palpate any MCP joints and any PIP or DIP joints that appear swollen or painful. Is there evidence of active synovitis? (The joints will be warm, swollen and tender and may have a ‘rubbery’ feel, or you may even detect effusions).

- Are there hard, bony swellings? Check for squaring of the carpometacarpal (CMC) joint of the thumb and for Heberden’s nodes on the DIPs and Bouchard nodes on the PIP. There may be evidence of previous synovitis (thickened, rubbery but non-tender joints).
- Compare one joint with another, or with your own, to decide whether the small joints are normal.

- Bimanually palpate the patient's wrists.
- Finally run your hand up the patient’s arm along the ulnar border to the elbow. Feel and look for rheumatoid nodules or psoriatic plaques on the extensor surfaces.
Move
- Ask the patient to straighten their fingers fully (against gravity). If the patient is unable to do this it may be due to joint disease, extensor tendon rupture or neurological damage – this can be assessed by moving the fingers passively.
- Ask the patient to make a fist. If they have difficulty tucking the fingers into the palm, this may be an early sign of tendon or small joint involvement. Move the fingers passively to assess whether the problem is with the tendon or nerves, or in the joint.
- Assess wrist flexion and extension actively (e.g. by making the ‘prayer’ sign) and passively (see Figure 11).
- In patients where the history and examination suggest carpal tunnel syndrome perform Phalen’s test (forced flexion of the wrists for 60 seconds) – in a positive test this reproduces the patient’s symptoms.
- Assess the median and ulnar nerves for power. This can be done by abduction of the thumb, and finger spread, respectively.

Function
- Ask the patient to grip your two fingers to assess power grip.
- Ask the patient to pinch your finger. This assesses pincer grip, which is very important functionally.
- Ask the patient to pick a small object such as a coin out of your hand or check their ability to undo buttons. This assesses pincer grip and function.

<table>
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<td>- Introduce yourself/gain consent to examine</td>
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<tr>
<td>- Inspect hands (palms and backs) for muscle wasting, skin and nail changes</td>
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<tr>
<td>- Check wrist for carpal tunnel release</td>
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<tr>
<td>- Feel for radial pulse, tendon thickening and bulk of thenar and hypothenar eminences</td>
</tr>
<tr>
<td>- Assess median, ulnar and radial nerve sensation</td>
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<tr>
<td>- Assess skin temperature</td>
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<tr>
<td>- Squeeze MCPJs</td>
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<tr>
<td>- Bimanually palpate swollen or painful joints, including wrists</td>
</tr>
<tr>
<td>- Look and feel along ulnar border</td>
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<tr>
<td>- Assess full finger extension and full finger tuck</td>
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<tr>
<td>- Assess wrist flexion and extension – active and passive</td>
</tr>
<tr>
<td>- Assess median and ulnar nerve power</td>
</tr>
<tr>
<td>- Assess function: grip and pinch, picking up small object</td>
</tr>
<tr>
<td>- Perform Phalen’s test (if suggestion of carpal tunnel syndrome)</td>
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Additional Notes: Tinel’s sign: percussion of the Median Nerve at the wrist leading to tingling in lateral 3½ digits. Tendon thickening/fibrosis in palm- Dupuytren’s contracture. Bouchard nodules at PIP in hands indicate OA. Palpate in the anatomical snuffbox for scaphoid tenderness (common site for OA). Screen for nerve problems by: assessing thumb abduction (median nerve), assessing little finger abduction (ulna nerve), assess light touch and pin prick sensation
Images in MSK examination

Figure 11. The ‘prayer sign’ assesses wrist flexion and extension. If the patient’s history and examination suggest carpal tunnel syndrome, Phalen’s test (forced flexion of the wrist for 60 seconds) may reproduce the patient’s symptoms.

Figure 12. Abduction of the arm to assess for a painful arc

Figure 10. Fingernails affected by psoriasis: (a) pitting; (b) onycholysis
Figure 13. Thomas’ test for fixed flexion deformity of the hip. Keep one hand under the patient’s back to ensure that there is no lumbar lordosis. Fully flex one hip. If the opposite leg lifts off the couch there is a fixed flexion deformity. (As the pelvis tilts a normal hip would extend allowing the leg to remain on the couch.)

Figure 14. The Trendelenberg Test assesses hip and gluteal muscle strength. In a normal test the pelvis remains level. In an abnormal test the pelvis dips on the contralateral side.
Examination of the shoulder

Look
• With the shoulder fully exposed, inspect the patient from the front, from the side and from behind, checking for symmetry, posture, muscle wasting and scars.

Feel
• Assess the temperature over the front of the shoulder.
• Palpate the bony landmarks for tenderness, starting at the sternoclavicular joint, then the clavicle, acromioclavicular joint, acromion process and around the scapula.
• Palpate the joint line – anterior and posterior.
• Palpate the muscle bulk of the supraspinatus, infraspinatus and deltoid muscles.

Move
• Ask the patient to put their hands behind their head to assess external rotation, and then behind their back to assess internal rotation, comparing one side with the other. If there is a restriction in the latter movement, describe how far the patient can reach – for example, to the lumbar, lower thoracic or mid-thoracic level.
• With the elbow flexed at 90° and tucked into the patient’s side, assess external rotation of the shoulder. Loss of external rotation may indicate a frozen shoulder.
• Ask the patient to raise their arms behind them and to the front. Assess flexion and extension.
• Ask the patient to abduct the arm to assess for a painful arc (between 10° and 120°) (see Figure). Can you passively take the arm further? Be sure to assess abduction from behind the patient and observe scapular movement. Restricted glenohumeral movement can be compensated for by scapular/thoracic movements.

Function
• Function of the shoulder includes getting the hands behind the head and back. This is important in washing and grooming. If this has not been assessed during the screening examination it should be done now.

Examination of the shoulder: checklist

| Introduce yourself/gain consent to examine |
| Inspect shoulders from in front, from the side and from behind |
| Assess skin temperature |
| Palpate bony landmarks and surrounding muscles |
| Assess movement and function: hands behind head, hands behind back |
| Assess (actively and passively) external rotation, flexion, extension and abduction |
| Observe scapular movement |

Additional Notes: Another test for the integrity and strength of the rotator cuff muscles

Drop test: patient is asked to actively lower their arm from full abduction to their side in a slow and controlled manner. In a positive test is an inability to smoothly control the lowering of their arm or the inability to hold the arm at 90 degrees of abduction. In a positive test that starts above 90 degrees of abduction, the patient will tend to have difficulty controlling the movement around 90 degrees of abduction. There may or may not be pain reported. Pain alone is not a positive test.

Kennedy-Hawkins test a further test for impingement:
• Flex the patient’s elbow to 90 degrees.
• Abduct the shoulder to 90 degrees.
• Rotate the shoulder. As the tendon of supraspinatus is caught under the acromion the patient will experience discomfort.
Examination of the hip

**Look**
- With the patient standing, assess for muscle wasting (gluteal muscle bulk in particular).
- With the patient lying flat and face up, observe the legs, comparing one side with the other – is there an obvious flexion deformity of the hip?
- If there is a suggestion of leg length disparity, assess true leg lengths using a tape measure. Measurements are taken from the anterior superior iliac crest to the medial malleolus of the ankle on the same side. Compare the measurements. In a fractured neck of femur the leg is shortened and externally rotated.
- Check for scars overlying the hip.

**Feel**
- Palpate over the greater trochanter for tenderness.

**Move**
- With the knee flexed at 90°, assess full hip flexion, comparing one side with the other and watching the patient’s face for signs of pain.
- In general terms, painful rotations of the hip is a good indicator of a hip pathology, usually arthritis.
- Assess for a fixed flexion deformity of the hip by performing Thomas’ test. Keep one hand under the patient’s back to ensure that normal lumbar lordosis is removed. Fully flex one hip and observe the opposite leg (see Figure). If it lifts off the couch then there is a fixed flexion deformity in that hip. (As the pelvis is forced to tilt a normal hip would extend allowing the leg to remain on the couch.)
- With the hip and knee flexed at 90°, assess internal and external rotation of both hips. This is often limited in hip disease.
- Assess the hip and proximal (gluteal) muscle strength by performing the Trendelenberg test. This involves the patient alternately standing on each leg alone. In a negative test the pelvis remains level or even rises. In an abnormal test the pelvis will dip on the contralateral side. (See Figure 14.)

**Function**
- Ask the patient to walk – look for an antalgic or Trendelenberg gait. An antalgic gait simply means a painful gait, normally resulting in a limp. A Trendelenberg gait results from proximal muscle weakness and commonly results in a ‘waddling’ walk.

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**Examination of the hip: checklist**

- Introduce yourself/gain consent to examine
- **With the patient lying on couch:**
  - Look for flexion deformity and leg length disparity
  - Check for scars
  - Feel the greater trochanter for tenderness
  - Assess full hip flexion, internal and external rotation
  - Perform Thomas' test
- **With the patient standing:**
  - Look for gluteal muscle bulk
  - Perform the Trendelenberg test
  - Assess the patient's gait
Hip Examination Additional Notes:

- Palpate over the greater trochanter (many patients complaining of “hip pain” have trochanteric bursitis).
- Palpate over the ischial tuberosities (again in more athletic patients “hip pain” may be due to a bursitis here or hamstring origin, enthesitis).

Clinical Notes
Examination of the knee

Look
- From the end of the couch and with the patient’s legs straight, observe the knees, comparing one with the other, for symmetry and alignment.
- Is the posture of the knee normal? Look for valgus deformity – where the leg below the knee is deviated laterally (knock-kneed) – and for varus deformity – where the leg below the knee is deviated medially (bow-legged).
- Check for a knee flexion deformity (distinguishing this from hip flexion deformity by examining hip movements as above).
- Check for muscle wasting or scars.
- Look for redness suggesting inflammation or infection. Look for obvious swelling.
- Check for a rash suggesting psoriasis.
- NOTE: Popliteal swellings, varus and valgus deformities may be more apparent with the patient weight-bearing.

Feel
- Using the back of your hand, feel the skin temperature, starting with the mid-thigh and comparing it to the temperature over the knee. Compare one knee to the other.
- Palpate for tenderness along the borders of the patella.
- With the knee flexed to 90°, palpate for tenderness and swelling along the joint line from the femoral condyles to the inferior pole of the patella, then down the inferior patella tendon to the tibial tuberosity.
- Feel behind the knee for a popliteal (Baker’s) cyst.
- Assess for an effusion by performing a patellar tap, as described for the screening examination.
- If there is no obvious patellar tap, assess for a fluid bulge by cross fluctuation. Stroke the medial side of the knee upwards (towards the suprapatellar pouch) to empty the medial compartment of fluid, then stroke the lateral side downwards (distally) (see Figure 15). The medial side may refill, and produce a bulge of fluid indicating an effusion.

Move
- Ask the patient to flex the knee as far as possible to assess active movement. Making sure the patient is fully relaxed, assess passive movement. This is done by placing one hand on the knee (feeling for crepitus) and flexing the knee as far as possible, noting the range of movement. Assess full flexion and extension of the knees, comparing one to the other.
- Assess medial and lateral collateral ligament stability by flexing the knee to 15° and alternately stressing the joint line on each side. Place one hand on the opposite side of the joint line to that which you are testing, and apply force to the lower tibia (see Figure 17). This may be done with the leg on the couch or with the lower tibia supported on the examiner’s pelvis.
- With the knee flexed to 90°, palpate the medial and lateral joint lines. These can be palpated only with the knee in flexion. Check the stability of the knee ligaments. Look initially from the side of the knee, checking for a posterior sag or stepback of the tibia, suggesting posterior cruciate ligament damage. Perform an anterior draw test. Place both hands round the upper tibia, with your thumbs over the tibial tuberosity and index fingers tucked under the hamstrings to make sure these are relaxed. Stabilize the lower tibia with your forearm and gently pull the upper tibia forward (see Figure 16). In a relaxed, normal patient there is normally a small degree of movement. More significant movement suggests anterior cruciate ligament laxity. In general terms, examination of the drawer tests is not required in an arthritic knee. It is more relevant in the younger patient with a history of trauma.
Function
- Ask the patient to stand and then walk a few steps, looking again for a varus or valgus deformity (see Figure 18).

Examination of the knee: checklist

- Introduce yourself/gain consent to examine

**With the patient lying on couch:**
- Look from the end of the couch for varus/valgus deformity, muscle wasting, scars and swellings
- Look from the side for fixed flexion deformity
- Assess skin temperature
- With the knee flexed palpate the joint line and the borders of the patella
- Feel the popliteal fossa
- Perform a patellar tap and cross fluctuation (bulge sign)
- Assess full flexion and extension (actively and passively)
- Assess stability of knee ligaments – medial and lateral collateral – and perform anterior draw test

**With the patient standing:**
- Look again for varus/valgus deformity and popliteal swellings
- Assess the patient's gait

Clinical Notes
Figure 15. Cross fluctuation ('The Bulge Sign'). Stroke the medial side of the knee upwards towards the suprapatellar pouch. This empties the medial compartment of fluid. Then stroke the lateral side downwards (distally). The medial side may refill and produce a bulge of fluid, indicating the presence of an effusion.

Figure 16. Anterior Draw Test. Place both hands around the upper tibia, with your thumbs over the tibial tuberosity and your index fingers tucked under the hamstrings to make sure those are relaxed. Stabilize the lower tibia with your forearm and gently pull the upper tibia forward. There should normally be a small degree of movement; more substantial movement suggests laxity of the anterior cruciate ligaments.

Figure 17. Assessing medial and lateral collateral ligament stability. With the patient's leg on the couch or supported on your pelvis, place one hand on the opposite side of the joint line to that which you are testing and alternately stress the joint line on each side by applying gentle force on the tibia.

Figure 18. With the patient standing, assess for a varus or valgus deformity.
Examination of the Spine

Look
- Observe the patient standing. Look initially from behind the patient for any obvious muscle wasting, asymmetry, or scoliosis of the spine.
- Look from the side for normal cervical lordosis, thoracic kyphosis, and lumbar lordosis.

Feel
- Feel down the spinal processes and over the sacroiliac joints for alignment and tenderness.
- Palpate the paraspinal muscles for tenderness.

Move
- Assess lumbar flexion and extension by placing two or three fingers over the lumbar spine. Ask the patient to bend to touch their toes. Your fingers should move apart during flexion and back together during extension (see Figure 8).
- Ask the patient to run each hand in turn down the outside of the adjacent leg to assess lateral flexion of the spine.
- Next, assess the cervical spine movements. Ask the patient to: tilt their head to each side, bringing the ear towards the adjacent shoulder (lateral flexion); turn their head to look over each shoulder (rotation); bring their chin towards their chest (flexion); and tilt their head backwards (extension).
- With the patient sitting on the edge of the couch to fix their pelvis and their arms crossed in front of them, assess thoracic rotation (with your hands on the patient’s shoulders to guide the movement) (see Figure 19).
- With the patient lying as flat as possible, perform straight leg raising (see Figure 20). Dorsiflexion of the foot with the leg raised may exacerbate the pain from a nerve root entrapment or irritation such as that caused by a prolapsed intervertebral disc.
- Assess limb reflexes (upper and lower) and dorsiflexion of the big toe.

A brief neurovascular examination should be carried out including assessment of upper and lower limb reflexes, dorsiflexion of the big toe, and assessment of peripheral pulses. If there has been any indication from the history of a relevant abnormality, a full neurological and vascular assessment – including sensation, tone and power – should also be made.

<table>
<thead>
<tr>
<th>Examination of the Spine: checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>With the patient standing:</strong></td>
</tr>
<tr>
<td>Inspect from the side and from behind</td>
</tr>
<tr>
<td>Palpate the spinal processes and paraspinal muscles</td>
</tr>
<tr>
<td>Assess movement: lumbar flexion and extension and lateral flexion; cervical flexion, extension, rotation and lateral flexion</td>
</tr>
<tr>
<td><strong>With the patient sitting on couch:</strong></td>
</tr>
<tr>
<td>Assess thoracic rotation</td>
</tr>
<tr>
<td><strong>With the patient lying on couch:</strong></td>
</tr>
<tr>
<td>Perform straight leg raising and dorsiflexion of the big toe</td>
</tr>
<tr>
<td>Assess limb reflexes</td>
</tr>
</tbody>
</table>
Additional Notes:

A special test is the modified Schober’s test to assess how much flexion is occurring in the lumbar spine as opposed to movement from the hip joints.

- Identify the two dimples that occur at the top of the sacroiliac joints.
- With the patient standing, use a tape measure to mark a spot 10cm above and 5cm below an imaginary line between the two dimples.
- Ask the patient to bend as far forwards as they can.
- Measure the distance between the two marks. It should be more than 20cm.
Other Specialities

**Psychiatric History Sequence including LD**

**Any specific communication requirements/preferences prior to being seen/capacity issues**

**Presenting Complaint**
- Name, age, address, type of accommodation, marital status, religion, occupation
- Name of any informants present and their relationship to the patient
- Chief (presenting) complaints with duration [reasons for referral]

**History of present illness**
- Onset & course of presenting problems, and any precipitating and/or exacerbating factors
- Description of the time relations between symptoms and physical disorders and psychological or social problems
- Current treatment, and any treatment since the onset of this episode
- Important negative history

**Past Psychiatric history**
- Similar or different episodes and duration
- Pharmacological and psychological treatments and effectiveness of these. Hospital admissions
- Response to the treatment/outcome
- Any residual deficits
- History of deliberate self harm.
- Has the patient been previously told a diagnosis.

**Past Medical history**
- Illness, operations, accidents (especially in childhood) and any time spent in hospital
- Epilepsy, medical problems related to genetic disorders

**Drug history and allergies**
- Illness, operations, accidents and any time spent in hospital

**Family History**
- Parents: age now or at death (cause of death), health, occupation, personality, quality of relationship with patient,
- Siblings: names, ages, marital status, occupation, personality and psychiatric illness, relationships with patient
- Family history of mental illness or relevant neurological or disorder Include family history of common medical conditions such as diabetes or cardiovascular disease any learning disabilities or Autism Spectrum Disorder, any known genetic syndromes in family, consanguinity.

**Personal and Social History**
- Mother’s pregnancy (e.g. infections, alcohol intake), the birth (e.g. extended) and postnatal depression
- Early development and milestones (Tone, feeding difficulties, speech). Any delays
- Childhood: separations, illnesses, bullying
- Description of family environment
- Any emotional and behavioural problems (including 'odd' or ritualistic), limited development of social skills, development, truanting, special schooling, drug use
- Abuse: financial, sexual, neglect.
- Education and higher qualifications – remember to ask about peer relationships.
- Mainstream or Special Educational Needs. Any Educational psychology reports
- Occupations (chronologically, and including reasons for leaving jobs)
- Menstrual history
- Relationship. Functioning within, how many, how long did they last, any violence.
- Sexual history
Consider Multi-Axial Formulation in Learning Disability (DC-LD, RCPsych):

- **Axis I** - Severity of Learning Disability
- **Axis II** - Associated medical conditions
- **Axis III** - Psychiatric Disorders (including Autistic Spectrum disorders)
- **Axis IV** - Assessment of Psychosocial Disability
- [Axis V - Abnormal Psychosocial Situations]

For all mental illness consider ICD/DSM Hierarchy (Foulds):

- “Organic"
- Schizophrenia and related disorders
- Bipolar spectrum disorders
- Depressive disorders
- Anxiety and Somatoform disorders
- Personality disorders
**Mental State Examination Sequence**

**Objective:** Ascertain the patient’s current mental state.

### Appearance and Behaviour
- Appearance, especially self-care
- Facial expression
- Posture
- Movements (including abnormal movements)
- Eye contact
- Rapport with the interviewer

### Speech
- Reaction time and spontaneous speech
- Rate and amount
- Volume: normal, quiet or loud?
- Tone: reactive or monotonous?

### Affect
- Your objective opinion of the patient’s mood during the course of the interview
- Changes in the variability of mood
- Lability
- Incontinence
- Blunting, flattening

### Mood
- Subjective mood
- Changes in the nature of mood
  - Depressed
  - Elated
  - Anxious
  - Angry and irritable

  Inconsistency between mood and thinking ("incongruent mood"), for example speaking of a recent bereavement while simultaneously laughing and smiling.

  Thoughts about the future, including hopelessness, thoughts of death or dying, and ideas (and any plans) about self-harm

### Thought
**Form of thought** (how thoughts are organized and expressed), which can be abnormal in

- (a) the *amount or volume* of thoughts expressed
- Pressure of thought
- Poverty of thought
- Thought blocking
- Perseveration (persistent and inappropriate repetition)

- (b) The way in which thoughts are connected to one another
  - Flight of ideas

  Rhyming, clang associations
  - Punning
  - Loosening of associations (including tangential thinking)

**Content of thought** (what the person is thinking about)
- Delusions
- Delusional mood
- Delusional memory
<table>
<thead>
<tr>
<th>Overvalued ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoughts of self-harm, self-esteem, hopelessness, worthlessness and guilt</td>
</tr>
<tr>
<td>Obsessional and compulsive symptoms</td>
</tr>
</tbody>
</table>

**Possession of thought**  
- Thought insertion  
- Thought broadcast  
- Thought withdrawal  

**Passivity Experiences**  

**Perception**  
- Illusions: a misperception of an external stimulus  
- Hallucinations: a perception experienced in the absence of an external stimulus in any modality  
- Depersonalisation  
- Derealisation  

**Cognition**  
- Tests of cognition*  

**Insight**  
- Does the patient believe they are ill?  
- Do they think the illness is mental or physical?  
- Does he or she see him/herself as needing treatment?  

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**Clinical Notes**
Obstetrics and Gynaecology History and Examination

Background
The aim of obstetric management is to maintain or improve the health of the mother and to produce as normal a pregnancy and as safe a delivery as possible. Gynaecological history can be viewed as a surgical history with details specific to obstetrics. The obstetrics history taking and examination should focus on:

- Highlighting any previous medical, surgical or obstetric complications
- Identification of actual and potential risks to the pregnancy and delivery
- Formulation of the management pathway for the current pregnancy - explore ICE
- Identify any need for an interpreter.
- Use of a template will help you take the history in a logical manner and minimise the risk of omissions.

Table 1: Management objectives by trimester

| First trimester 1-13 weeks | • Record details of the pregnancy including the EDD (expected date of delivery)  
                            | • Identify any existing medical problems  
                            | • Assess risks to pregnancy and explore lifestyle  
                            | • Undertake relevant screening tests  
                            | • Assess need for additional services |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Second trimester 14-26 weeks | • Monitor maternal health  
                             | • Monitor growth of baby  
                             | • Assess for any new problems  
                             | • Discuss labour and delivery plans |
| Third trimester 27 weeks to term | • Monitor overall health and progress  
                                     | • Monitor growth of baby  
                                     | • Plan childbirth |

Images in Obstetrics and Gynaecology Clinical Practice
Obstetrics and Gynaecology: History Taking

Personal History and PC

- **Personal details**: Age, Marital status: single, partnership, married or divorced
- **Gravid**: the number of all pregnancies including the current one.
- **Parity**: the number of births beyond 24 weeks.
- **Last menstrual period** (LMP) first day of LMP
- **EDD**: Naegle’s Rule: [LMP + 1 year +7 days] minus 3 months. Dating scans more accurate.
- **Previous menstrual cycle history**: regular or irregular.
- **Relevant Reproductive System History**: Recent use of contraception (esp OCP), History of subfertility, Sexually transmitted diseases, Previous cervical smears, Female circumcision, Urinary and/or faecal incontinence. Full history of gynaecological PC
- **Red flags, Systems review**

PMH

Current obstetric health
- Hospital admissions during current pregnancy.
- Foetal movements after 20 weeks.
- Date and detail of booking scan and anomaly scan.
- Results of other scans and laboratory tests.
- Subsequent antenatal check ups

Past obstetric history: **Outcome of previous pregnancies**:
- Antepartum, intrapartum or postpartum complications.
- Gestational age at delivery.
- Labour: spontaneous, induced or planned caesarean section.
- Mode of delivery: normal, assisted, breech or caesarean section (elective or emergency)
- Birth weight and health of baby since delivery.
- Previous miscarriages, ectopic pregnancies or terminations.
- Causes of early and late pregnancy losses, if known

Current and past medical history
- **General**: Anaemia, UTI, TB exposure, back problem, asthma, PE/DVT, epilepsy.
- **CVD**: Heart disease, Hypertension
- **Diabetes and Endocrine**: Type 1 or type 2 diabetes mellitus, thyroid disorders.
- Any other medical condition.

Surgical history
- **Previous Obstetrics or Gynaecology surgery**: Caesarean section, myomectomy, cervical cone biopsy, LLETZ (Large Loop Excision of Transformation Zone), cervical circlage. Bowel surgery or laparotomy
- Anaesthetic complications

Mental health history
- Present or past mental health problems.
- Depression, Personality disorder, Suicidal tendency.
- Details of treatment, if any

Drug History and Allergies
- Intake of any **teratogenic drugs**, e.g. warfarin, ACE-inhibitors, statins, ARBs.
- Any other drugs, e.g. beta blockers which may impair foetal growth.
- OTC, recreational drugs (smoking, alcohol)
- Previous referral to a substance misuse or smoking cessation advisor

Allergies:
- Drugs (? Penicillin), Food, Latex, Any others
### Social History
- Smoking Hx, Alcohol intake
- Housing and/or employment issues.
- Support from partner, friends and family.
- Religion.
- Social issues.
- Domestic violence.

### Family history
- Diabetes mellitus.
- Thromboembolism.
- Hypertension.
- Pre-eclampsia / HELLP.
- Congenital hip disorders.
- Neural tube defects.
- Down’s syndrome.
- Cystic fibrosis.
- Thalassemia.
- Congenital abnormalities.
- Metabolic disorders.
- Mental health problems.
- Any other familial disorders.
- Twins.
- Consanguinity.
- Smoking

### Ideas, Concerns, Expectations: ??
- Ideas
- Concerns
- Expectations
- Is there anything else that you want to tell me?
- Do you have any questions?

### Clinical Notes
## Obstetrics and Gynaecology: Physical Examination

### General examination
- **General appearance**
- **Weight, height and body mass index, Temperature**
- **Cardiovascular examination**: pulse, blood pressure in the semi-recumbent position or at 45°, heart and lungs
- **Breast and Thyroid**, especially for nodules
- **Reflexes if pre-eclampsia**
- **Fundoscopy if history of headaches, pre-eclampsia or diabetes**

### Abdominal Examination

#### Inspection
- **Scars**
- **Over-distension**: multiple pregnancy, polyhydramnios, fibroids or ovarian cysts
- **Visible foetal movements**
- **Rash**
- **Scratch marks**
- **Striae gravidarum**
- **Linea nigra**
- **Oedema (peau d'orange)**

#### Palpation
- **Tenderness or mass**: localised or generalised tenderness in the 2\textsuperscript{nd} or 3\textsuperscript{rd} trimester may indicate placental abruption
- **Uterine size**: The uterus should be palpable at the symphysis at 12/13 weeks and at the umbilicus at 20-22 weeks. Up to 22 weeks, uterine size is assessed as one week = one fingerbreadth. From 24 weeks, symphysiofundal height (SFH) is measured with a tape in centimetres from the pubic symphysis to the highest point on the fundus: it should be recorded every 2-3 weeks.
- **Increased SFH**: multiple pregnancy, fibroid, ovarian cyst, macrosomia, polyhydramnios
- **Reduced SFH**: foetal growth restriction, small for gestational age, oligohydramnios
- **Foetal lie**: is defined as the relationship of the longitudinal axis of the foetus to the longitudinal axis of the uterus. It can be: longitudinal, transverse or oblique
- **Foetal Presentation**: is defined as the leading part of the foetus which lies over the pelvic brim. It can be: cephalic, breech, hand, footling, cord, compound, e.g. hand presenting with head
- **Foetal Position**: is defined as the relationship of the foetal back to the maternal back

#### The four grips of Leopold's manoeuvre are palpation of:
1. The uterine fundus
2. The uterine sides
3. The foetal presenting part between two hands
4. The presenting part between index finger and thumb to assess for foetal descent and engagement (2/5\textsuperscript{th} or less palpable)

#### Percussion
This is not generally used in obstetric examination but a fluid thrill may be demonstrated in polyhydramnios.

#### Auscultation
Use a hand held Doppler over the anterior foetal shoulder or back to auscultate the heart for one minute: normal is 110-150 beats per minute.
You can also use a Pinard's stethoscope to listen to the foetal heart

#### Vaginal examination: speculum and digital
This is not a part of routine obstetric examination and is indicated only when there is:
- **Suspected bleeding**
- **Ruptured membranes**
- **Offensive vaginal discharge**
- **Suspected labour or active labour**
Table 1: Physical examination by Trimester

<table>
<thead>
<tr>
<th>Examination</th>
<th>1st Trimester</th>
<th>2nd Trimester</th>
<th>3rd Trimester</th>
<th>Labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>General examination including BP &amp; urinalysis</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Abdominal</td>
<td>Tenderness or mass</td>
<td>Tenderness</td>
<td>SFH</td>
<td>Foetal Presentation</td>
</tr>
<tr>
<td>CVS/Resp</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Breast/thyroid</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal</td>
<td>Indicated only if bleeding, vaginal discharge, ruptured membranes, suspected labour / active labour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflexes</td>
<td></td>
<td></td>
<td>If pre-eclampsia</td>
<td></td>
</tr>
<tr>
<td>Fundoscopy</td>
<td></td>
<td></td>
<td>If pre-eclampsia, headache or diabetes</td>
<td></td>
</tr>
</tbody>
</table>

Plan of care
- Identify risks to the pregnancy with a detailed history and examination
- Diagnose and treat any medical disorders
- Offer a multidisciplinary team approach
- Individualise the management plan in accordance with need and the severity of any disorder
- Monitor health of the mother and baby
  - Monitor growth of the baby
  - Plan safe delivery
  - Give adequate information to the woman to enable her to make informed choices.

Safety Tips
- Always take the history in a logical sequence and take care to avoid inadvertent omissions of detail
- Refer to the medical team and offer a multidisciplinary approach in case of possible medical, surgical or anaesthetic problems
- Establish good communication with the woman and satisfy her needs
- List all her problems and make a care plan for each one before she leaves
- Vary the history taking template according to the clinical problem
- Always obtain consent before carrying out examination and use a chaperone.
- Each examination should be tailored to the woman’s circumstances.
- Carry out speculum if suspected ruptured membranes, bleeding or threatened preterm labour.
- Never carry out a digital vaginal examination if placenta praevia is suspected or known.
- Avoid digital vaginal examination with ruptured membranes unless the woman is in labour.
- Always seek advice and senior support when necessary.
Paediatric History and Examination

Paediatrics can often seem intimidating to medical students. There are a number of aspects of the approach which will be significantly different to other specialties, but equally much of the information required and problem-solving will be very similar. This section summarizes the main differences in the paediatric history and examination, and some helpful hints and tips which will hopefully benefit your clinical experience. The most important thing to remember is that your approach will have to vary considerably depending on the developmental stage of the child. Be flexible. While the information that you are trying to establish is much the same as when clerking an adult, you may have to vary your style to accommodate the child’s ability and cooperativeness, particularly in examination. When being assessed in paediatrics, examiners bear these factors in mind.

### Presenting Complaint

**Who will your history be from?**

If the child is able and willing to contribute to the history, include them as much as possible.

When clerking an adolescent, they may or may not want their parent / guardian present. It is polite to ask!

If the history is from an adult, clarify their relationship to the child and whether they have parental responsibility.

**Start with open questions**, allowing the patient to use their own words.

**Proceed to closed questions** to elucidate the detail, until you are fully satisfied that you have an understanding of the symptoms.

**Timing** – onset and duration

**Severity** - numerical scales are useful for children aged >8years, for younger children facial expression scales are available

**Exacerbating** and relieving factors

**Associated** symptoms – eg weight loss

**Presence of red flags/ Systems review**

**Impact** on function / school attendance

**Consider general health** - diet, fluid intake, sleep pattern, micturition and bowel habit

**Exposure** to infectious diseases / foreign travel

### Past Medical History

**Birth history**

Gestational age at delivery

Mode of delivery and complications

Antenatal problems / abnormal screening results

Admission to neonatal unit

**Immunisations**

**Medical conditions**

Severity and impact on function

**Hospital or PICU admissions**

**Previous surgeries**

**Growth**

Ask to see the Personal Child Health Record (“red book”) – are they growing along centile lines? Consider weight, height and head circumference

If there are concerns re: stature calculate mid-parental height (in cm)

\[ \text{mid-parental height} = \frac{(\text{dad's height} + \text{mum's height})}{2} + 7 \text{ (boys)} - 7 \text{ (girls)} \]
**Basic Observations**

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Heart Rate</th>
<th>Respiratory Rate</th>
<th>Systolic BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>120-160</td>
<td>30-60</td>
<td>60-95</td>
</tr>
<tr>
<td>1-3</td>
<td>90-140</td>
<td>24-40</td>
<td>95-105</td>
</tr>
<tr>
<td>3-5</td>
<td>75-110</td>
<td>18-30</td>
<td>95-110</td>
</tr>
<tr>
<td>8-12</td>
<td>75-100</td>
<td>18-30</td>
<td>90-110</td>
</tr>
<tr>
<td>12-16</td>
<td>60-90</td>
<td>12-16</td>
<td>112-130</td>
</tr>
</tbody>
</table>

**Hints and Tips**

It may be helpful to examine very young children on their parent's lap as far as possible. A cuddle with the head over the shoulder is particularly helpful for posterior chest examination. If a newborn is crying, sucking on a clean finger or dummy may help you auscultate. Parents can help hold young or uncooperative children still for ENT examination so you can safely use the instruments. Always bring a tongue depressor. Distraction techniques may be useful for examination and procedures eg. watching on a smartphone.

**General Examination**

**Observe**

- playful / miserable / clingy / normal movements
- appearance – well-nourished / well-kempt / obvious injuries
- dysmorphic features
Plot

weight and height on appropriate centile chart

Rashes

blanching, non-blanching, distribution, macular/papular

Ears and Throat

often left to the end of an examination as it is not well tolerated

Respiratory Examination

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Auscultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effort of breathing</td>
<td>Compare both sides, perform front and back</td>
</tr>
<tr>
<td>use of accessory muscles</td>
<td><strong>Vesicular</strong></td>
</tr>
<tr>
<td>subcostal / intercostal / sternal descent</td>
<td><strong>Bronchial</strong> – harsh, expiratory and inspiratory phase are of equal length with pause</td>
</tr>
<tr>
<td>tracheal tug</td>
<td>between - indicates consolidation or fibrosis</td>
</tr>
<tr>
<td>head bobbing</td>
<td><strong>Wheeze</strong> - musical sound, indicates narrowing of the bronchi</td>
</tr>
<tr>
<td>Additional sounds</td>
<td><strong>Crackles</strong> (crepitations) - secretions / reopening of small airways with each breath. Widespread fine crackles are common in viral LRTIs. Localised coarse crackles indicate pneumonia</td>
</tr>
<tr>
<td>grunting</td>
<td><strong>Absent</strong> – “silent chest” - may occur in severe asthma</td>
</tr>
<tr>
<td>stridor (inspiratory / biphasic)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td><strong>Oxygen saturations</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Heart rate</strong></td>
</tr>
</tbody>
</table>

Cyanosis

Conscious level

Chest shape

Palpation

Lymphadenopathy: Cervical, pre- and post-auricular, occipital, axilla

Chest expansion

Percussion

Dull: collapse/consolidation

Stony dull: pleural effusion

Hyper-resonant: pneumothorax

Cardiovascular Examination

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Auscultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyanosis: potentially a sign of congenital HD</td>
<td><strong>Murmurs</strong> are common indicate turbulent blood flow may not be pathological common in hyperdynamic states (eg fever, hyperthyroidism)</td>
</tr>
<tr>
<td>Respiratory distress: heart failure</td>
<td><strong>Assessing murmurs</strong>: grade (1-6), timing, most paediatric murmurs are systolic, location, radiation</td>
</tr>
<tr>
<td>Surgical scars</td>
<td><strong>Innocent murmurs</strong>: soft, blowing quality, grade 1 or 2, no radiation, positional</td>
</tr>
<tr>
<td>Palpation</td>
<td><strong>Lung bases</strong> – bilateral basal crackles in heart failure</td>
</tr>
<tr>
<td>Pulse: Rate, character and volume. Brachial in infants, radial in older children Femoral pulses – weak / absent in aortic coarctation and should be part of all paediatric cardiac examinations</td>
<td></td>
</tr>
<tr>
<td>Apex beat: location (third IC space, MC line), heave, thrill</td>
<td></td>
</tr>
<tr>
<td>Liver edge: displaced downwards in heart failure</td>
<td></td>
</tr>
</tbody>
</table>

Gastrointestinal Examination

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Auscultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaundice, anaemia, mouth ulcers, failure to thrive, scars, herniae</td>
<td><strong>Murmurs</strong></td>
</tr>
<tr>
<td>Palpation</td>
<td><strong>Assessing murmurs</strong>: grade (1-6), timing, most paediatric murmurs are systolic, location, radiation</td>
</tr>
<tr>
<td>Ask about tenderness, light then deep palpation</td>
<td><strong>Innocent murmurs</strong>: soft, blowing quality, grade 1 or 2, no radiation, positional</td>
</tr>
<tr>
<td>Degree of tenderness, ? rigidity rebound tenderness</td>
<td><strong>Lung bases</strong> – bilateral basal crackles in heart failure</td>
</tr>
</tbody>
</table>
liver is larger in infants, may be palpable 1 cm below the right costal margin

**Masses**
- renal – ballotable
- tumours eg. nephroblastoma, neuroblastoma
- faecal masses are indentable

**PR exam** is rarely called for in children however inspection of the external anus may be useful, eg if querying anal fissure

### Neurological Examination

This will have to be extensively adapted according to the developmental stage and cooperativeness of the child.

**Inspection**

In young children who will not cooperate with neurological assessment, observation is one of the mainstays of neurological assessment
- conscious level (AVPU)
- movement - all limbs and gait
- facial symmetry
- turning to sounds
- fixing and following on bright objects (use a toy)

**Tone, Power, Reflexes**

Assess upper and lower limbs, comparing both sides
Compare power to your own strength (but remember the smaller the child the weaker they should be!)
Reflexes include triceps, brachial, supinator, knee jerk ankle jerk and plantar response.
Adaptations for infants
- head lag
- lie prone – can they lift head / support thorax with arms

**Coordination**

Finger pointing, dysdiadokinesis

**Sensation**

Light touch, temperature, two-point discrimination, proprioception
Compare both sides

**Cranial Nerves**

Depending on developmental age you may be able to do a full assessment as in adults.
For younger children, observe
- facial movements
- speech articulation
- response (eg turning) to loud noises
- fixing and following on bright objects
- copying funny faces (VII) if cooperative
- picture Snellen charts for children who cannot recognise letters but who can name common objects
### Useful Clinical Examination/Assessment Guidelines in Emergencies

| Moderate asthma | Able to talk in sentences  
|                 | $\text{SpO}_2 \geq 92\%$  
|                 | PEF $\geq 50\%$ best or predicted  
|                 | Heart rate $\leq 140\text{min in children aged 1-5 years}$  
|                 | $\leq 125\text{min in children > 5 years}$  
|                 | Respiratory rate $\leq 40\text{min in children aged 1-5 years}$  
|                 | $\leq 30\text{min in children > 5 years}$  
| Acute severe asthma | Can't complete sentences in one breath or too breathless to talk or feed  
|                     | $\text{SpO}_2 < 92\%$  
|                     | PEF 33–50% best or predicted  
|                     | Heart rate $> 140\text{min in children aged 1-5 years}$  
|                     | $> 125\text{min in children > 5 years}$  
|                     | Respiratory rate $> 40\text{min in children aged 1-5 years}$  
|                     | $> 30\text{min in children > 5 years}$  
| Life-threatening asthma | Any one of the following in a child with severe asthma:  
|                          | Clinical signs  
|                          | Measurements  
|                          | Silent chest $\text{SpO}_2 < 92\%$  
|                          | Cyanosis PEF $< 33\%$ best or predicted  
|                          | Poor respiratory effort  
|                          | Hypotension  
|                          | Exhaustion  
|                          | Confusion  

#### British Guideline on the management of asthma, British Thoracic Society, 2016

<table>
<thead>
<tr>
<th>Moderate dehydration</th>
<th>Severe Dehydration/ Shock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altered responsiveness (e.g. irritable/ lethargic)</td>
<td>A decreased level of consciousness</td>
</tr>
<tr>
<td>Sunken eyes / fontanelle</td>
<td>Prolonged capillary refill time</td>
</tr>
<tr>
<td>Dry mucous membranes</td>
<td>Cool peripheries</td>
</tr>
<tr>
<td>Reduced skin turgor</td>
<td>Pale or mottled skin</td>
</tr>
<tr>
<td>Tachycardia and tachypnoea</td>
<td>Tachycardia and tachypnoea</td>
</tr>
<tr>
<td>Decreased urine output</td>
<td>Weak peripheral pulses</td>
</tr>
</tbody>
</table>

#### Diarrhoea and vomiting in children under 5. NICE Guideline CG84 April 2009

**Patient Safety Tips**

*Use National and Local Guidelines:* Familiarise yourself with national guidelines, such as NICE or British Thoracic Society Guidelines. These are a useful resource and aim to provide an evidence base to support current practise.

*Take time over your communication:* whether with parents, children or colleagues, written or verbal.

*Check all dosages and routes of administration carefully:* medications are usually prescribed by weight in paediatrics. Check your calculations.

*Senior Clinician involvement:* Have a low threshold for senior involvement. If you are unsure or are new to paediatrics you should always discuss your cases with a senior colleague.

*Create safety nets:* When discharging patients ensure they have a safety net i.e. a clear plan of what to do and who to contact if symptoms reoccur or child becomes more unwell.

*Child Protection Red flags:* have a low threshold for suspecting this in a child if the red flags detailed above apply. Seek senior help and advice at all times.
**Growth charts:** are available in categories of age and sex. There are also specific growth charts for premature infants, children with Down’s Syndrome, and some ethnic minorities.

**Red flag:** examinations signs include purpuric rash. Others include silent chest, inactive child, confusion, pallor, mottled skin.

---

**Family tree key** (Health Education England)

Family trees are part of a paediatric clerking. If there is any suspicion of inherited disease this should include at least three generations.
**Ear General and Otoscopic Examination**

**Explanation and consent**
- Washes hands with alcohol gel or soap and water.
- Expains procedure to patient and obtains verbal consent.

**Correct position**
- Seats patient comfortably on a chair.
- Asks which is the better hearing ear and starts with this side.
- Asks if there is any tenderness before touching patient.

**General inspection**
- Looks for hearing aids, facial palsy, dysarthria, dysmorphic features.

**Examination of Pinna and Mastoid:**
- Uses pen torch or head light.
- Inspects mastoid process
- scars, skin lesions (? BCC, ? SCC, ? tophi), ear-lobe crease, accessory auricles, sinuses, discharge, inflammation and swellings.
- Palpates for tenderness over mastoid, pinna and tragus.

**Direct Otoscopy**
- Holds otoscope in same hand as the ear, which is examined.
- Handle of auroscope is held between thumb and index finger with little finger braced against side of patient's face.
- Adults: Pinna is pulled superiorly, laterally and posteriorly with other hand.
- Children: Pinna is pulled inferiorly and posteriorly with other hand.
- Inspects ear canal and comments on appearance and need or otherwise for cleaning.
- Indicate limitations of further assessment if meatus is not clear
- Systematically examines tympanic membrane: (pars tensa and flaccida) and comments on findings.

*Basic tips:* use largest speculum that fits comfortably. Brace hand onto patient's face to minimize speculum trauma. *Speculum:* insert into meatus under direct vision to avoid missing any lesions in wall of outer meatus. Not be positioned beyond the hair bearing meatus as contact with the very sensitive wall may produce a reflex movement which can damage meatal skin or tympanic membrane. **Ear canal:** Examine full length, ear drum to be examined systematically. Failure to achieve: ? atresia or narrowing of the meatus or wax, foreign body, discharge, space occupying lesion of the meatal wall or an inflammatory polyp or other lesion.

**Drum:** Identify handle and lateral process of the malleus. Note: abnormalities of colour and translucency, thinning, bulging, discharge, granulations, crusting and perforations. During the Valsalva manoeuvre, a meatal hissing sound may confirm presence of drum perforation.

**Colour and vascularity of meatal wall:** Normal variation considerable, meatal instrumentation, syringing, child crying all can result in marked hyperaemia, misinterpreted as inflammation.

**Light reflex:** Dependent drum reflectivity, the contour and angulation of the drum to long axis of meatus & angle of light source. Reflex is usually conical and directed inferior to the umbo but may appear in other areas of the drum, or be absent. Its clinical usefulness is therefore minimal.

**Clinical Hearing Tests**
- Performs free field voice test.
- Performs Rinne’s test and Weber’s test and interprets correctly.

**Additional examination**
- Cranial nerve examination (particulary CN VII).
- Considers formal audiological testing.
**Ear Examination Images**

<table>
<thead>
<tr>
<th>Left tympanic membrane: auroscopic view</th>
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<tbody>
<tr>
<td>1. Pars flaccida (attic)</td>
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<tr>
<td>2. Lateral process of malleus</td>
</tr>
<tr>
<td>3. Handle of malleus</td>
</tr>
<tr>
<td>4. Light reflex</td>
</tr>
<tr>
<td>5. Annulus</td>
</tr>
<tr>
<td>6. Umbo</td>
</tr>
<tr>
<td>7. Pars tensa</td>
</tr>
<tr>
<td>8. Incus (through TM)</td>
</tr>
<tr>
<td>9. Chorda tympani (through TM)</td>
</tr>
<tr>
<td>10. Tympanic ring</td>
</tr>
</tbody>
</table>

| Normal outer meatus                     |

| Normal right ear; incus visible         |

| Dry wax                                 |
| Mucopurulent discharge & inflammatory polyp |
| Otitis externa                          |
| Thin mucoid discharge                   |

| Otitis media with effusion              |
| Otitis media with effusion              |
| Attic cholesteatoma with polyp          |
| Large perforation and dry cholesteatoma |

| Tophi on pinna due to gout              |
| Earlobe crease: CVD sign                |
| Pinna squamous Ca                       |
| Cauliflower ear: Resolved haematoma     |
Hearing tests

The gold standard test of hearing is provided by Pure Tone Audiometry. It can, however, be backed up by other clinical techniques using Tuning Forks and Voice Tests of Hearing which, although inherently less accurate, are still to a degree quantitative and can usefully be included in the standard clinical assessment of patients with otological problems.

This is a graphical representation of the thresholds of hearing in decibels of hearing level below a standard of 0dB at frequencies between 125 and 8000Hz. In the diagram below the responses in the right ear are represented by the O---O graph and those in the left ear by X---X. The colour coding and the annotation on the right of the chart indicate the degrees of deafness represented by hearing thresholds at various levels below the 0dB line.

Pure Tone Audiogram

Tuning Fork Tests

These are performed using a tuning fork of 512 cycles/second and are really reliable only if the meati are clean and a single pathology is present, i.e. a conductive or sensorineural deficit in one ear.

- **Weber Test:** The tuning fork is struck and placed firmly over the bony, midline vertex or forehead. The patient is asked to say whether the sound is heard centrally in the head or better in one ear.

Weber's Test

- If both ears are normal or there is a symmetrical sensorineural loss the response is central.
- If there is a sensorineural loss in one ear or a markedly asymmetrical bilateral sensorineural loss the sound is referred to the better ear.
- If there is a conductive loss in one ear the sound is referred to the deaf ear. (less distraction from surroundings as sound not conducted in and heightened sensorineural input in conductive loss ear)
Rinne’s Test: The tuning fork is struck and placed close to one ear with the axis of vibration of the prongs in line with the axis of the meatus (air conduction). If the patient hears the sound he is asked to indicate when it is no longer audible and the fork is then placed firmly on the mastoid process (bone conduction). The patient is asked whether or not the sound is again audible.

**Positive**
- If air conduction is better than bone conduction (normal pattern). This is present in a normal ear or in one with a sensorineural deafness. In sensorineural deficit both AC and BC are affected but normal pattern persists.

**Negative**
- If bone conduction is better than air conduction. This is found in an ear with a conductive deafness.

Logic table for Interpreting finding on Weber’s and Rinne’s Tests

<table>
<thead>
<tr>
<th>Clinical Findings:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weber:</strong> Normal central response</td>
<td>Both ears normal or →</td>
</tr>
<tr>
<td>Sound referred to R</td>
<td>Sensorineural loss L or →</td>
</tr>
<tr>
<td>Sound referred to L</td>
<td>Sensorineural loss R or →</td>
</tr>
<tr>
<td><strong>Rinne:</strong> Air Conduction better</td>
<td>Normal L ear or →</td>
</tr>
<tr>
<td>Bone Conduction better</td>
<td>Normal R ear or →</td>
</tr>
<tr>
<td>Conduction loss L or →</td>
<td>Conduction loss R</td>
</tr>
</tbody>
</table>

**Interpretation**

- Conduct both tests and tick all that are possible.
- Only one possibility will emerge with the proviso that the tests only apply if a single pathology is present, i.e. a conductive or sensorineural loss or deafness in one ear only.

An abbreviated form of the Rinne Test involves placing the tuning fork first near the meatus and then on the mastoid process and asking the patient in which position the sound is heard the louder. The interpretation is as above.
Voice Test of Hearing

This test is reliable only if the meati are clean. If well performed it gives a useful semi-quantitative assessment of the range of hearing loss present in each ear.

Free Field Voice Test for Assessment of Hearing

- Instruct the patient on the procedure, testing each ear in turn. Steps 1 to 4 if needed
- Use tragal masking (rubbing the tragus firmly against the outer meatus) to eliminate the non-test ear from the assessment.
- **Whisper** multi-syllable numbers in the test ear at arm’s length distance (approximately 1 metre). Ensure patient is unable to lip read the examiner.

<table>
<thead>
<tr>
<th>Technique and Clinical Findings</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Whisper: at arm’s length. Patient repeats the numbers correctly. If OK →</td>
<td>Hearing is within the normal range the second ear is then tested.</td>
</tr>
<tr>
<td>2 Whisper: Mouth positioned close to the test ear. If OK →</td>
<td>Hearing loss is between 30 and 60dB and the second ear is tested.</td>
</tr>
<tr>
<td>3 Normal spoken voice: Mouth positioned close to the test ear. If OK →</td>
<td>Hearing loss is between 60 and 90dB and the second ear is tested.</td>
</tr>
<tr>
<td>4 If still cannot repeat numbers correctly:</td>
<td>Hearing loss is greater than 90dB. The second ear is then tested.</td>
</tr>
</tbody>
</table>

Patient Safety Considerations:

- Good hearing is profoundly important to quality of life (and general patient safety in the home) and therefore tests of hearing should be undertaken far more often than is the current norm in clinical practice. Even removal of wax will markedly improve hearing.
- Pure tone audiometry will be needed to complete a full assessment and hearing aids if indicated
- Full ENT examination if the complaint is of otalgia and otological examination is normal. Nasal and oral examination if a middle ear effusion is suspected.
- Change in voice should be investigated if persisting for longer than a few weeks: common causes include laryngeal malignancy, damage to recurrent laryngeal nerve or hypothyroidism.
- Full cranial nerve examination if a sensorineural deafness of uncertain cause is identified.

Clinical Notes
## Dermatological History & Examination

**History**

Full standard history, specifically enquire about:
- Presenting complaint and duration.
- Ascertain the patient's main concern about the condition (e.g. appearance, fear of cancer, pain, itching etc). Itching is usually the most prominent feature of atopic eczema, scabies and dermatitis herpetiformis. Always remember that itching may also be caused by non-cutaneous disease (Hodgkin's disease, iron deficiency, thyroid dysfunction etc)
- If an eruption is extensive, ask how and where it began
- Change in colour of the lesion: bleeding, darker, new variation in colour
- Previous skin disease, (broadly rashes and tumours) and other previous medical disorders.
- Family history of skin disease.
- Drug history and Allergies/Reactions and food intolerances
- Occupation and hobbies (e.g. gardening) may be relevant.

**General inspection and examination**

- Seat patient comfortably in a good light, preferably daylight.
- Clean your hands discreetly before and after the examination.
- Wear examination gloves, if suspicion of infection, infestation or examining genitalia.

**Describing rashes: Examine as much of the skin surface as practical, examine the hair and nails.**

**Record:**
- Distribution and pattern of the rash, well margined? Diffuse? Discreet lesions?
- Colour and pigmentation, erythema blanches, purpura does not blanch. Brown pigment may be haemosiderin or melanin. Drugs may also stain the skin.
- Erythema may be faint, livid, pink, red, blue, purple, violaceous etc.
- Scaling. Large or small scales? Adherent? Continuous or at the periphery of lesions?
- Dryness, exudation, vesication (lesions <5mm), bullae (lesions >5mm).
- Is there erosion (partial loss of epidermis) or ulceration (full thickness loss)?
- Is the eruption flat and impalpable (macular) or palpable due to induration (hardening) or elevation (papules or plaques).

**Describing lumps**

**Record:**
- Location / distribution, size, shape, colour(s) and symmetry of lesion(s).
- Macules not palpable, Papules are raised < 5mm diameter, Nodules are > 5 mm diameter.
- Depth. Epidermal? Dermal? Within fat? Subcutaneous?
- Is the lesion tender?
- ? cellulitis ? local lymph-node involvement

**Nail changes**

- Onycholysis is separation of the nail plate from the nail bed. This is a characteristic feature of psoriasis.
- Pitting of the nails is seen in numerous dermatoses such as psoriasis, eczema, alopecia areata, lichen planus etc.
- Subungual haemorrhage may mimic melanoma (or vice versa). Splinter haemorrhages may occur in psoriasis, or result from sepsis (e.g. subacute bacterial endocarditis). Both are usually due to trauma, (which is more likely if splinters are acral).
### Basic Dermatology Terminology

<table>
<thead>
<tr>
<th><strong>Term</strong></th>
<th><strong>Definition</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulla</td>
<td>A fluid filled elevated lesion on the surface of the skin &gt;5 mm diameter.</td>
</tr>
<tr>
<td>Comedo</td>
<td>A keratin plug in a hair follicle, the hallmark of acne vulgaris.</td>
</tr>
<tr>
<td>Crust</td>
<td>Dried exudates.</td>
</tr>
<tr>
<td>Cyst</td>
<td>A cavity lined by epithelium.</td>
</tr>
<tr>
<td>Erosion</td>
<td>Partial thickness epidermal loss.</td>
</tr>
<tr>
<td>Erythema</td>
<td>Red or blue discolouration due to dilated capillaries.</td>
</tr>
<tr>
<td>Exudate</td>
<td>Fluid on the skin surface ‘exuding’ from the tissue.</td>
</tr>
<tr>
<td>Hirsutes</td>
<td>Excess hair in a secondary sexual distribution.</td>
</tr>
<tr>
<td>Hypertrichosis</td>
<td>Excess hair.</td>
</tr>
<tr>
<td>Keloid</td>
<td>Scar tissue growing in tumour-like, beyond the site of the original causative injury.</td>
</tr>
<tr>
<td>Macule</td>
<td>A flat area of colour or textural change &lt;2 cm diameter.</td>
</tr>
<tr>
<td>Nodule</td>
<td>A solid elevated lesion &gt;5 mm diameter.</td>
</tr>
<tr>
<td>Papule</td>
<td>A solid elevated lesion up to 5 mm diameter.</td>
</tr>
<tr>
<td>Patch</td>
<td>A large macule &gt;2 cm in diameter.</td>
</tr>
<tr>
<td>Petechia</td>
<td>A purpuric lesion up to 2 mm in diameter.</td>
</tr>
<tr>
<td>Plaque</td>
<td>A palpable, elevated, flat-topped, patch or large macule.</td>
</tr>
<tr>
<td>Poikioloderma</td>
<td>A skin appearance comprising hyperpigmentation, atrophy and telangiectasia.</td>
</tr>
<tr>
<td>Purpura</td>
<td>Red or purple discolouration due to extravasation of erythrocytes.</td>
</tr>
<tr>
<td>Pustule</td>
<td>A dense liquid accumulation of extravasated neutrophils.</td>
</tr>
<tr>
<td>Scale</td>
<td>A detachable fragment of thickened keratin.</td>
</tr>
<tr>
<td>Ulcer</td>
<td>A discontinuity of epidermis.</td>
</tr>
<tr>
<td>Vesicle</td>
<td>A fluid filled lesion on the skin surface up to 5 mm diameter.</td>
</tr>
<tr>
<td>Wheal</td>
<td>A transient, elevated area of dermal oedema, the hallmark of urticaria.</td>
</tr>
</tbody>
</table>

### Specialised Examination

**KOH (potassium hydroxide) prep**

1. Obtain generous sample of scale from rash edge. Place this on a microscope side. Cover with a cover slip. Place a drop of 10% KOH at the edge of the cover slip and allow to run under the cover slip by capillary action. The KOH will dissolve the keratin in a few minutes, leaving fungal hyphae intact. Examine under the microscope (X20 or X40 magnification) for fungal hyphae.

2. This ‘prep’ is frequently invaluable for rapid diagnosis of dermatophyte infection.

3. Placing a drop of KOH on top of a burrow, gently scraping the roof off the burrow and examining the contents in the same way can provide rapid and incontrovertible confirmation of scabies.

**Examination using Woods (ultra violet) lamp**

Wood's light is an ultraviolet lamp used:

- To highlight contrast in subtle pigmentary changes
- To elicit green fluorescence in tinea capitis infection with microsporum canis
- To elicit coral pink fluorescence in erythrasma.

**Elicitation of dermographism**

Although the triple response (erythema, wheal, and flare), is normal, it is exaggerated in dermographism. This is the commonest variety of physical urticaria, (i.e. an urticarial eruption with a physical trigger) and often accompanies chronic idiopathic urticaria.

Stroke the skin on the back firmly (but not so hard as to cause any bleeding) with an orange stick or similar blunt pointed instrument. A positive test manifests as a palpable wheal developing at the site, usually within five minutes.
<table>
<thead>
<tr>
<th>Malignant melanoma (superficial spreading type).</th>
<th>Basal cell carcinoma, in a common location.</th>
<th>Squamous cell carcinoma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alopecia areata.</td>
<td>Necrobiosis lipoidica diabetorum. Waxy yellow, erythematous plaques on the legs which can ulcerate.</td>
<td>Venous leg ulceration.</td>
</tr>
</tbody>
</table>
# i-Compat Worksheet (Composite Patient)–

for recording clinical notes on multiple cases or a single case

<table>
<thead>
<tr>
<th>Date &amp; LEP</th>
</tr>
</thead>
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<table>
<thead>
<tr>
<th>Presenting Complaint: key features of Hx</th>
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<tbody>
<tr>
<td>● .....</td>
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<td>● .....</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Frame 1: Systems Review/ Red Flags, <strong>F2</strong>: PMH, DH, Allergies, <strong>F3</strong>: SH, FH, <strong>F4</strong>: ICE ??</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main diagnosis &amp; DDx</strong></td>
</tr>
<tr>
<td>● .....</td>
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</table>
Past Medical History, Drugs, Allergies:

Current & past illnesses, operations

<table>
<thead>
<tr>
<th>Drug</th>
<th>Indication</th>
<th>Mode of Action</th>
<th>Side-effects</th>
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<tbody>
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Allergies and Intolerances:

Social and Family History:

Making Every Contact Count

Smoking: x daily, Pack Years

Alcohol: Units/week

Accommodation/ Mobility

Effect of life/ADL

Family History

ICE: Ideas, Concerns, Expectations ??: Extra information, Questions from patient or carers

Initial observations

BP: Pulse: Temp.

O₂ Sat: Resp. Rate

MEWS: Pain score

GCS: ……/15 Cap. glucose

Other:
**Clinical Examination**

*Inspection, specific signs ±*

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**A&E Red Flags**

Glasgow Coma Scale, Distress, Red rash- non-blanching, Signs of meningeal irritation, BP both arms if chest pain, absent bowel sounds, silent chest, FAST symptoms and signs, fractures, dislocations, burns, pacemaker/ICD
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### Investigations: Bedside, Bloods, Imaging, Special tests

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### Clinical skills acquisition

### Professional behaviours and attitudes

### Patient Safety Issues learnt:
i-Compat Worksheet  (Composite Patient)—
for recording clinical notes on multiple cases or a single case

Date & LEP

Presenting Complaint: key features of Hx

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Main diagnosis & DDx

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### Past Medical History, Drugs, Allergies:

*Current & past illnesses, operations*

<table>
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<th>Side-effects</th>
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**Initial observations**

- **BP:**
- **Pulse:**
- **Temp.:**
- **O₂ Sats:**
- **Resp. Rate**
- **MEWS:**
- **Pain score**
- **GCS:** ……/15
- **Cap. glucose**
- **Other:**
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Clinical skills acquisition

**Patient Safety Issues learnt:**