
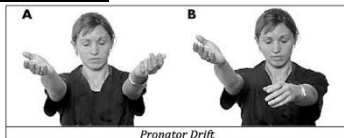


# Motor Examination

- Always Compare
- Ask about pain which may interfere with testing.
- As a quick review (motor examination) composed of: inspection → tone → power → reflex

What to examine	How to do it																																																											
<b>Inspection</b>	<ul style="list-style-type: none"> <li>Scars, striae, swelling, dilated vein</li> <li>Abnormal position e.g: Hemiplegia, Mask face,</li> <li>Abnormal movement, e.g. :tremor or drifting.</li> <li>Muscle wasting</li> <li>Deformity, e.g. :Wrist or foot drop, Claw hand.</li> <li>Fasciculations</li> </ul>																																																											
<b>Tone</b> 	<p>1) on supine position, ask the pt to <b>RELAX</b></p> <p>2) Move his\her big joints passively through the range of motions, start from upper limb distal then proximal or vasa versa:</p> <ul style="list-style-type: none"> <li><b>For upper limb</b> [pronate &amp; supinate the hand → flex &amp; extend the wrist → flex &amp; extend the elbow → abduct &amp; adduct the shoulder]</li> <li><b>For lower limb</b> [ flex &amp; extend the ankle → flex &amp; extend the knee → flex &amp; extend the hip]</li> </ul>																																																											
<b>Power</b>	<p>1) Pt position: for upper limb power :<b>sitting</b>   For lower limb power :<b>supine</b>.</p> <p>2) Test the muscle strength of upper \lower limb by asking the pt to do: اقلوه يسوي هالحركات وأنا احاول اعكس حركته بيدي واقوله حاول تقاوم حركتي! ابي اشوف قد ايش عضلاته قوية وبتقدر تقاوم حركتي,</p> <table border="1" style="margin: 10px auto;"> <thead> <tr> <th colspan="5">UPPER LIMB</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;">Shoulder abduction</td> </tr> <tr> <td colspan="2" style="text-align: center;">Elbow flexion</td> <td colspan="3" style="text-align: center;">Elbow extension</td> </tr> <tr> <td colspan="5" style="text-align: center;">Wrist extension</td> </tr> <tr> <td style="text-align: center;">Finger extension</td> <td style="text-align: center;">Finger flexion</td> <td style="text-align: center;">Finger abduction</td> <td colspan="2" style="text-align: center;">Thumb abduction</td> </tr> </tbody> </table> <table border="1" style="margin: 10px auto;"> <thead> <tr> <th colspan="5">LOWER LIMB</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="text-align: center;">Hip flexion</td> <td colspan="3" style="text-align: center;">Hip extension</td> </tr> <tr> <td colspan="2" style="text-align: center;">Knee flexion</td> <td colspan="3" style="text-align: center;">Knee extension</td> </tr> <tr> <td style="text-align: center;">Ankle dorsiflexion</td> <td style="text-align: center;">Ankle plantar flexion</td> <td style="text-align: center;">Great toe extension</td> <td style="text-align: center;">Ankle eversion</td> <td style="text-align: center;">Ankle inversion</td> </tr> </tbody> </table> <p>3) Compare muscle strength on both sides, and grade it on the MRC Scale:</p> <table border="1" style="margin: 10px auto;"> <thead> <tr> <th colspan="2">11.18 Medical Research Council scale for muscle power</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0</td> <td>No muscle contraction visible</td> </tr> <tr> <td style="text-align: center;">1</td> <td>Flicker of contraction but no movement</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Joint movement when effect of gravity eliminated</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Movement against gravity but not against examiner's resistance</td> </tr> <tr> <td style="text-align: center;">4</td> <td>Movement against resistance but weaker than normal</td> </tr> <tr> <td style="text-align: center;">5</td> <td>Normal power</td> </tr> </tbody> </table> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p><b>To test truncal strength</b> عرفوها عشان تصيروا فنانين اذا سالوكم ask the patient to sit up from the lying position, or rise from a chair, without using the arms</p> </div> <p>4) <b>pronator drift</b>: Observe the patient with his arms outstretched and supinated (palms up) and eyes closed for 'pronator drift', when one arm starts to pronate . *Pronator drift is an early feature of an upper motor neurone lesion</p> <div style="text-align: right; margin-top: 10px;">  <p style="text-align: center;">Pronator Drift</p> <p style="text-align: right;">Right cerebral lesion: left side finding</p> </div>	UPPER LIMB					Shoulder abduction					Elbow flexion		Elbow extension			Wrist extension					Finger extension	Finger flexion	Finger abduction	Thumb abduction		LOWER LIMB					Hip flexion		Hip extension			Knee flexion		Knee extension			Ankle dorsiflexion	Ankle plantar flexion	Great toe extension	Ankle eversion	Ankle inversion	11.18 Medical Research Council scale for muscle power		0	No muscle contraction visible	1	Flicker of contraction but no movement	2	Joint movement when effect of gravity eliminated	3	Movement against gravity but not against examiner's resistance	4	Movement against resistance but weaker than normal	5	Normal power
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## Reflex (Deep tendon reflexes)

- 1) Ask the patient to lie supine with the limbs exposed. He should be as relaxed and comfortable as possible,
- 2) Strike the tendon, not the muscle or bone [فهمهم تعرفون تحددون مكان التندون بالزبط]

### Testing the deep tendon reflexes of the upper limb:

Eliciting the biceps jerk, C5.



Triceps jerk, C7.



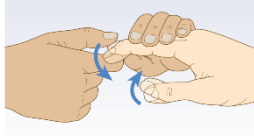
Supinator jerk, C6.



هالنقطه ماتكلموا عنها المتكثره وماظن مهمه بس لقرئتها بالكتاب وختت يكون عليها درجات بالتشويك ليست

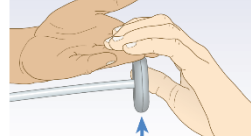
### Testing the deep tendon reflexes of the hand.

Hoffmann's sign.



بيوفين مياين اامسك يد المريض نفس الصورة (يد الاقتران هي السمراء) واقوم اخذ الاصبع الاوسط واؤرك ظفره رايحه جايه طينيعيا بيصير ردة الفعل Adduction of the thumb and flexion of the index

Eliciting a finger



### Testing the deep tendon reflexes of the lower limb:

Eliciting the knee jerk (note that the legs should not be in contact with each other), L3, L4.



Ankle jerk, S1



- 3) Record the response as: increased-normal-diminished present only with reinforcement-absent.

- 4) Use reinforcement whenever a reflex appears absent:

- To reinforce Lower limb reflexes: ask the patient to interlock the fingers and pull one hand against the other, immediately before you strike the tendon (**Jendrassik's manoeuvre**). **نفس الي بالصورة عجنب**
- To reinforce upper limb reflexes: ask the patient to clench the teeth or to make a fist with the contralateral hand.

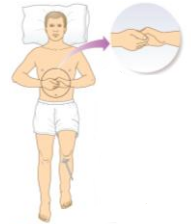
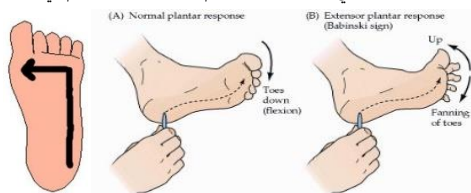


Fig. 11.20 Reinforcement while eliciting the knee jerk.

## Reflex (Superficial reflexes)

### Plantar response (S1–2)

- **How to do it:** خوذوا شي حاد زي مفتاح السيارة ولا طرف الهامر وامشي به على باطن القدم بنفس اتجاه السهم الي بالصورة



- **Abnormal findings:** An abnormal plantar response is extension of the large toe (extensor plantar or **Babinski response**). This is a sign of upper motor neuron damage and is usually associated with other upper motor neurone signs, e.g. spasticity, clonus and hyperreflexia. Fanning of the toes is normal and not pathological.

### Abdominal reflexes (T8–12) *not imp just mention it*

- **How to do it:** The patient should be supine and relaxed. Use an orange stick and briskly, but lightly, stroke the upper and lower quadrants of the abdomen in a medial direction. The normal response is contraction of the underlying muscle,
- **Abnormal findings:** Superficial abdominal reflexes (T8–12) are lost in upper motor neurone lesions but are also affected by lower motor neurone damage affecting T8–12. Usually absent in the obese

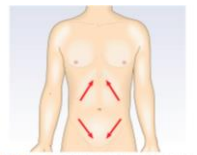


Fig. 11.23 Abdominal reflexes. Sites and direction of stroke to elicit the reflexes.

### For males Cremasteric reflex (L1–2): *not imp just mention it*

- **How to do it:** Abduct and externally rotate the patient's thigh. The upper medial aspect of the thigh. Normally the testis on the side stimulated will rise.
- **Abnormal findings:** The cremasteric reflex in males (L1 and L2) is rarely elicited, but typically is lost in spinal cord or root lesions.

NOTE:

- ✧ If they ask you in the osce to do upper limb examination do It in this way: motor examination → sensory examination → coordination
- ✧ If they ask you in the osce to do upper limb examination do It in this way: motor examination → sensory examination → coordination → Gait
- ✧ The details of each examination have been discussed separately