



BLOCK-02



MUSCULOSKELETAL AND LOCOMOTION MODULE		
Objectives	Skill	Miller's Pyramid Level Reflected
Measure body temperature using a mercury/digital thermometer	Body temperature	Shows
Examine the wrist joint for functionality	Wrist joint examination	Shows
Examine strength of the upper limb	Upper limb strength and power examination	Shows
Examine strength of the lower limb	Lower limb strength and power examination	Shows
Examine the knee joint for functionality	Knee joint examination	Shows
Examine the shoulder joint for functionality	Shoulder joint examination	Shows
Examine the hip joint for functionality	Hip joint examination	Shows
*Identify common fractures showing in x rays of upper limb	X ray common fractures Upper limb	Knows how

- ❖ These skills are at the 'Knows how' level of the miller's pyramid, meaning thereby that students need not perform them themselves but may develop a perception regarding them by observing performance/working on simulated patients/facilitation with videos.



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Date Observed: _____

<p align="center">CHECKLIST FOR BODY TEMPERATURE (Some of the following steps/tasks should be performed simultaneously.)</p>	<p align="center">CASES (Minimum 2 Entries)</p>		
STEP/TASK			
<p>GETTING READY:</p> <p>Before proceeding further, check if the patient has recently taken cold or hot food/drink or smoked.</p> <p>Dip the thermometer in antiseptic (spirit) and wipe dry. If analogue thermometer, shake it until the normal temperature is pushed below 35°C. If digital thermometer, switch it on and it will show the room temperature on the display.</p>			
<p>SKILL/ACTIVITY PERFORMED SATISFACTORILY</p>			
<p>THE PROCEDURE:</p> <ol style="list-style-type: none"> 1. Explain the procedure to the patient and get a verbal consent to proceed. 2. Keep the thermometer bulb/probe under the patient's tongue. Ask the patient to close the lips firmly around the thermometer but without biting it 			



3. Keep it in place for at least 2 minutes.			
4. Read the temperature as soon as you pull out the instrument			
5. After use, clean the instrument with antiseptic and wipe it off			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
Signatures of Supervisor			



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CHECKLIST FOR WRIST JOINT EXAMINATION (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE:			
1. Explain the procedure to the patient and get a verbal consent to proceed.			
2. Adequately expose hands and wrists of the patient			
3. before starting with the examination, inquire about pain in any area.			
4. Observe both hands and wrists for any asymmetry, scars, and muscle wasting			
5. Palpate the wrists for evidence of any joint line irregularities or tenderness			
6. Ask patients to perform wrist extension "put the palms of your hands together and extend your wrists fully ". normal range of movement is 90 degrees			
7. Ask the patient to perform wrist flexion "put the backs of your hands together and flex your wrist fully", normal range of motion id 90 degrees			
8. Ask the patient to fully relax and allow you to move their hand and wrist for them. Warn them that in case any pain is felt they should report immediately.			
9. Repeat movements 6 and 7 passively.			

SKILL/ACTIVITY PERFORMED SATISFACTORILY			
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CHECKLIST FOR EXAMINATION OF UPPER LIMB STRENGTH (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE: 1. Explain the procedure to the patient and get a verbal consent to proceed. 2. Ensuring privacy, adequately expose the arms of the patient 3. Before starting the testing for power and strength, for each muscle group check: a. appearance of the muscle (wasted, highly developed or normal) b. Feel tone of muscle (flaccid, normal, clinic) 4. Observe both hands and wrists for any asymmetry, scars, and muscle wasting 5. Starting with the deltoids, ask the patient to raise both their arms in front of them simultaneously as strongly as then can while the examiner provides resistance to this movement. Compare the strength of each arm. 6. Ask the patient to extend and raise both arms in front of them as if they were carrying a pizza. Ask the patient to keep their arms in place while they close their eyes and count to 10. Normally their arms will remain in place. 7. Test the biceps muscle flexion by holding the patient's wrist from above and instructing them to "flex their hand up to their shoulder". Provide resistance at the wrist. Repeat and compare to the opposite arm.			



<p>8. Ask the patient to extend their forearm against the examiner's resistance. Make certain that the patient begins their extension from a fully flexed position because this part of the movement is most sensitive to a loss in strength. This tests the triceps. Note any asymmetry in the other arm</p>			
<p>9. Test the strength of wrist extension by asking the patient to extend their wrist while the examiner resists the movement. This tests the forearm extensors. Repeat with the other arm.</p>			
<p>10. Examine the patient's hands and test the patient's grip by having the patient hold the examiner's fingers in their fist tightly and instructing them not to let go while the examiner attempts to remove them. Normally the examiner cannot remove their fingers. This tests the forearm flexors and the intrinsic hand muscles. Compare the hands for strength asymmetry</p>			
<p>11. Test the intrinsic hand muscles once again by having the patient abduct or "fan out" all of their fingers. Instruct the patient to not allow the examiner to compress them back in. Normally, one can resist the examiner from replacing the fingers</p>			
<p>12. Test the strength of the thumb opposition by telling the patient to touch the tip of their thumb to the tip of their little finger. Apply resistance to the thumb with your index finger. Repeat with the other thumb and compare.</p>			
<p>SKILL/ACTIVITY PERFORMED SATISFACTORILY</p>			
<p>Signatures of Supervisor</p>			



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CHECKLIST FOR EXAMINATION OF LOWER LIMB STRENGTH (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE:			
1. Explain the procedure to the patient and get a verbal consent to proceed.			
2. Ask the patient to lie down and raise each leg separately while the examiner resists. Repeat and compare with the other leg. This tests the iliopsoas muscles.			
3. Test the adduction of the legs by placing your hands on the inner thighs of the patient and asking them to bring both legs together. This test the adductors of the medial thigh.			
4. Test the abduction of the legs by placing your hands on the outer thighs and asking the patient to move their legs apart. This tests the gluteus maximus and gluteus minimus.			
5. Test the extension of the hip by instructing the patient to press down on the examiner's hand which is placed underneath the patient's thigh. Repeat and compare to the other leg. This tests the gluteus maximus			
6. Test extension at the knee by placing one hand under the knee and the other on top of the lower leg to provide resistance. Ask the patient to "kick out" or extend the lower leg at the knee. Repeat and compare to the other leg. This tests the quadriceps muscle.			
7. Test flexion at the knee by holding the knee from the side and applying resistance under the ankle and instructing the patient to pull the lower leg towards their buttock as hard as possible. Repeat with the other leg. This tests the hamstrings			
8. Test dorsiflexion of the ankle by holding the top of the ankle			



and have the patient pull their foot up towards their face as hard as possible. Repeat with the other foot. This tests the muscles in the anterior compartment of the lower leg. Holding the bottom of the foot, ask the patient to "press down on the gas pedal" as hard as possible. Repeat with the other foot and compare. This tests the gastrocnemius and soleus muscles in the posterior compartment of the lower leg			
9. Ask the patient to move the large toe against the examiner's resistance "up towards the patient's face. This tests the extensor hallucis longus muscle.			
POST PROCEDURE:			
1. 'Wash your hands, thank the patient'			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
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CHECKLIST FOR EXAMINATION OF LOWER LIMB STRENGTH (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE:			
1. Explain the procedure to the patient and get a verbal consent to proceed.			
2. Ensure adequate exposure of the knee joints while maintaining patient privacy.			
3. Inspect the alignment of both legs, both paellas. Check for varus/vulgus deformities, swellings. Inspect skin for any scars, plaques, erythema.			
4. Check swelling at level of joints			
5. simultaneously assess and compare knee joint temperature using the back of your hands.			
6. Measure quadriceps with an inch tape 20 cm diameter above the tibial tuberosity and compare with other side.			
7. Ask the patient regarding any pan and discomfort and then start examining normal side of patient (in supine position)			
8. Flex the knee to (0 degrees, then feel along the joint line (quadriceps tendon → patella → patella tendon → tibial tuberosity → tibial plateau → femoral epicondyles and over course of medial collateral ligament and lateral collateral ligament → popliteal fossa) for ant swelling/ thickness/tenderness			
9. Test active then passive movements, keeping one hand on the knee to feel for crepitus. 1.Flexion (140°) 2.Extension (0°)			
10. Passively raise leg at ankle and look for knee hyperextension			



11. Perform the patellar tap: with patients knee fully extended, empty the suprapatellar pouch by sliding your left hand down the thigh to the upper border of the patella.			
12. Keep your left hand in position and use right hand to press downwards on the patella with your fingertips. if there is fluid present you will feel a distinct tap as patella bumps against femur			
POST PROCEDURE:			
1. 'Wash your hands, thank the patient'			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
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CHECKLIST FOR EXAMINATION OF HIP JOINT EXAMINATION (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE:			
1. Explain the procedure to the patient and get a verbal consent to proceed.			
2. Ensure adequate exposure of the legs while maintaining patient privacy. Provide a covering sheet for the patient. (Students examining patients of an opposite gender must be with a chaperone.)			
3. Ask the patient if they have any pain before proceeding			
4. Inspect the joint and legs for any deformity, scarring or swelling			
5. Ask the patient to walk to the end of the examination room and then turn and walk back whilst you observe their gait			
6. Ask patient to lie down for next part of the examination.			



7. With the patient still positioned supine on the clinical examination couch simultaneously assess and compare hip joint temperature using the back of your hands.			
8. Palpate the greater trochanter of each leg for evidence of tenderness			
9. To assess apparent leg length, measure and compare the distance between the umbilicus and the tip of the medial malleolus of each limb.			
10. To assess true leg length, measure from the anterior superior iliac spine to the tip of the medial malleolus of each limb.			
11. For active hip flexion Place your hand under the lumbar spine to detect masking of restricted hip joint movement by the pelvis and lumbar spine and ask the patient to "bring your leg to your chest as much as you can"			
12. For active hip extension ask the patient to extend their leg so that it lies flat on the bed.			
13. Perform passive hip flexion, Whilst supporting the patient's leg, flex the hip as far as you are able, making sure to observe for signs of discomfort.			
14. For passive hip internal rotation, Flex the patient's hip and knee joint to 90° and then rotate their foot laterally.			
15. For passive hip external rotation, flex the patients hip and knee joint to 90° and rotate the foot medially			
16. To perform passive hip abduction: a. With the patient's legs straight and flat on the bed, use one of your hands to hold the ankle of the hip being assessed and place your other hand over the contralateral iliac crest to stabilize the pelvis. b. Move the patient's ankle laterally to abduct the hip until the pelvis begins to tilt.			
17. To perform passive hip adduction: a. With the patient's legs straight and flat on the bed, use one of your hands to hold the ankle of the hip being assessed and place your other hand over the contralateral iliac crest to stabilize the pelvis. b. Move the patient's ankle medially to adduct the hip until the pelvis begins to tilt.			
18. To perform passive hip extension, ask the patient to lie in a prone position, use one hand to hold the ankle and the other should be placed on the pelvis.			
19. Thank and reassure the patient			

SKILL/ACTIVITY PERFORMED SATISFACTORILY			
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CHECKLIST FOR EXAMINATION OF SHOULDER JOINT EXAMINATION (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE: <ol style="list-style-type: none"> 1. Explain the procedure to the patient and get a verbal consent to proceed. 2. Ensure adequate exposure of the shoulder and arm and provide blanket to patient for the time when they are not being examined. 3. Position the patient standing for initial inspection and ask the patient if they have any pain before proceeding for examination. 4. Perform a brief general inspection looking for scars, alignment, and muscle wasting 5. Assess and compare shoulder joint temperature using the back of your hands. 6. Palpate the various components of the shoulder girdle, noting any swelling, bony irregularities, and tenderness. 7. To check for external rotation and abduction, ask the patient to put their hands behind their head and point their elbows out to the side 8. To check internal rotation and adduction, ask the patient to place each hand behind their back and reach as far up their spine as they are able to 9. For active shoulder flexion instruct the patient to raise their arms forward until they're pointing up towards the ceiling. 10. For active shoulder extension, ask the patient to stretch their arms behind them. 			



11. For active shoulder abduction, ask the patient to raise their arms out to the sides in an arc like mono until their hands touch above their head			
12. For active shoulder adduction, ask the patients to keep their arms straight and move them across the front of their body to the opposite side.			
13. For active internal rotation, ask the patient to place each hand behind their back and reach as far up the spine as they can.			
14. To check scapular movement, ask patient to abduct their shoulder while you simultaneously palpate inferior pole of the scapula.			
15. To judge passive movements, ask the patient to fully relax and allow you to move their arms for them. Go through steps 7-14 by moving the patients arm through those movements.			
16. Thank and reassure the patient			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
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CHECKLIST FOR UPPER LIMB X-RAY (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE:			
1. Observe the ABC's: a. Alignment and joint space b. Bone texture c. Cortices			
2. Changes in alignment will suggest a fracture/ complete or partial dislocation			
3. Describe the position of the fragment distal to the fracture site			
4. Look around the outline of each bone to see any step in the cortex as it may indicate a fracture			
5. Once a fracture is identified, describe which bone is involved and where the fracture is located (proximal/middle distal)/			
6. Recognize a fracture extending all the way through the bone as a complete fracture.			
7. Identify type of complete fracture accordingly: a. Transverse: fracture at right angles to the shaft b. Oblique: fracture at an angle to the shaft c. Spiral: caused by twisting injury d. Comminuted: 2 or more bone fragments e. Impacted: fractured bone forced together			



8. Recognize an incomplete fracture as one not involving the whole cortex.		
9. Types of incomplete fractures include: <ul style="list-style-type: none"> a. Torus/Buckle: a bulge in the cortex b. Bowing: associated bend in the bone shaft c. Greenstick: bending of the shaft with a fracture on the convex surface Salter-Harris: involving the growth plate 		
10. Identify an open fracture as having a puncture of the skin or an open wound identify closed fractures as not having any skin opening.		
11. Identify closed fractures as not having any skin opening.		
SKILL/ACTIVITY PERFORMED SATISFACTORILY		
Signatures of Supervisor		

